



Solution Architecture Reference Manual for IPCC

IP Communications Systems Test Release 2.0

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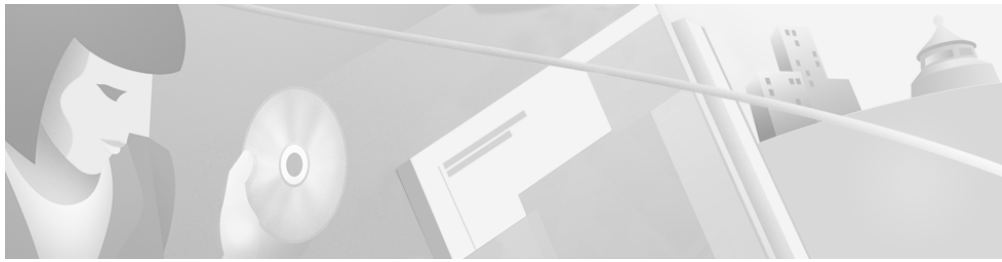
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Solution Architecture Reference Manual for IPCC: IP Communications Systems Test Release 2.0

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Preface

Purpose

This manual provides a description of the components and configurations that have been tested and verified as part of IP Communications Systems Test Release 2.0 for IPCC.

This manual also includes related information for selected call flows, troubleshooting, tips, call failures, and failover behavior.

Audience

This manual is intended for system administrators who are familiar with the various hardware and software components included in IP Communications Systems Test Release 2.0. It assumes that readers have the technical and product knowledge to install, configure, manage, and troubleshoot the systems described.

Organization

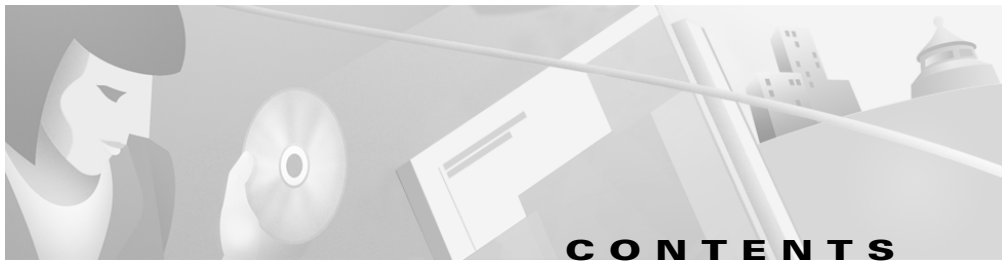
The manual is divided into the following chapters.

Chapter	Description
Chapter 1, “Test Scenarios and Site Models”	Contains the IP Communications Systems IPCC test site definitions, as well as the business logic behind choosing these particular test site scenarios.
Chapter 2, “Component Configurations”	Provides information on configuring components, including as appropriate: version numbers, related hardware, and related documentation.
Chapter 3, “Call Flows”	Provides specifics for three sample call flows.
Chapter 4, “Troubleshooting and Tips”	Provides troubleshooting information specific to the installation and configuration of the test scenarios, as well as tips on items to be aware of and ways to avoid problems.
Chapter 5, “Failure, Failover, and Recovery”	Observed failure and failover behavior.

Conventions

This manual uses the following conventions.

Format	Example
<p>Boldface type is used for user entries, keys, buttons, and folder and submenu names.</p>	<p>Choose Edit > Find from the ICM Configure menu bar.</p>
<p>Italic type indicates one of the following:</p> <ul style="list-style-type: none"> • A newly introduced term • For emphasis • A generic syntax item that you must replace with a specific value • A title of a publication 	<ul style="list-style-type: none"> • <i>A skill group</i> is a collection of agents who share similar skills. • <i>Do not</i> use the numerical naming convention that is used in the predefined templates (for example, persvc01). • IF (<i>condition, true-value, false-value</i>) • For more information, see the <i>Cisco ICM Software Database Schema Handbook</i>.
<p>An arrow (>) indicates an item from a pull-down menu.</p>	<p>The Save command from the File menu is referenced as File > Save.</p>



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Test Scenarios and Site Models

This chapter contains the IP Communications Systems IPCC test site definitions, as well as the business logic behind choosing these particular test site scenarios.

What Was Tested

The testing involved an IPCC Multi-Site Distributed Deployment Model encompassing two Multi-Site Centralized configurations and a Single Site configuration. Seven separate sites make up these various configurations.

Single Site

A Single Site deployment refers to any scenario where all voice gateways, agents, desktops, IP Phones, and call processing servers (Cisco CallManager, ICM and IP IVR) are located at the same site and have no WAN between any IPCC software modules or hardware components. Site1, Site4 and Site7 (which are described below) participate in Single Site deployment configurations.

Multi-Site Centralized

In the multi-site WAN model with centralized call processing, the Cisco CallManager Cluster resides at a main (or central hub) campus and communications with remote offices normally takes place over the IP WAN. This model also provides PSTN connectivity for centralized toll free calling ("800"

numbers) with the ISN acting as a network and edge IVR. Also, in multi-site deployments with distributed voice gateways, the ICM's Pre-Routing capability can be used to load balance calls dynamically across the multiple sites.

Site1, Site2 and Site3 participate in Multi-Site Centralized configurations with Site1 as hub and with CTI OS Agent Desktop application for agents. Similarly, Site4, Site5 and Site6 participate in Multi-Site Centralized configurations with Site4 as hub and with Cisco Agent Desktop applications for agents.

Multi-Site WAN Distributed

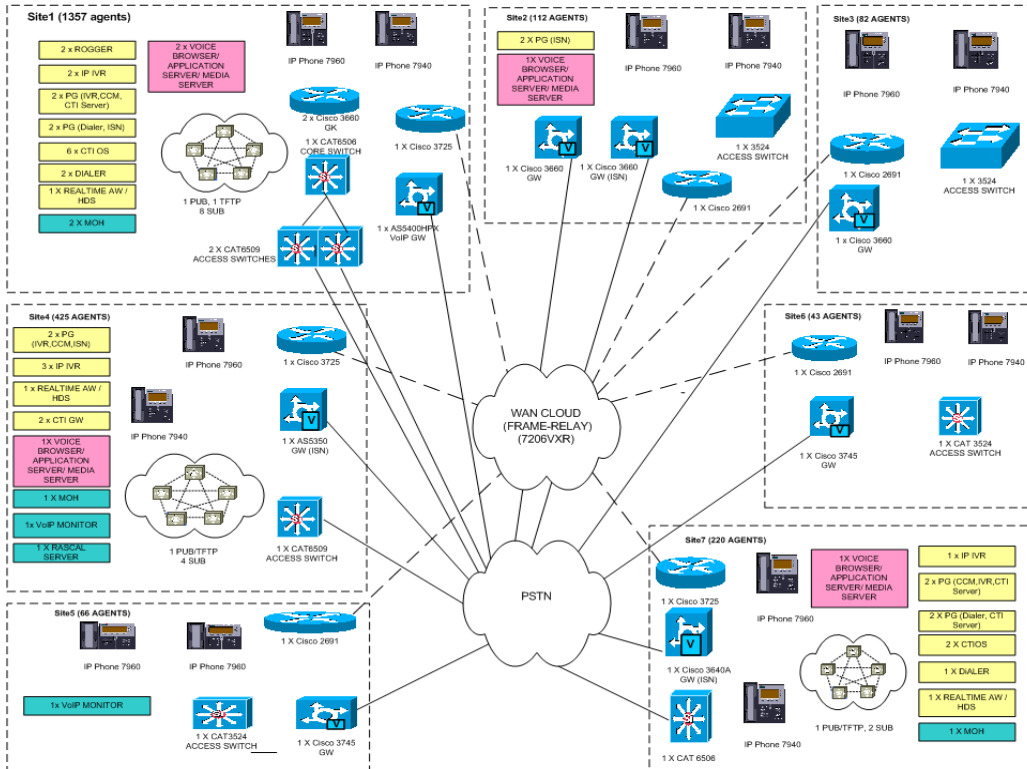
In the multi-site WAN model with distributed call processing, each site has its own Cisco CallManager Cluster for call processing. Communication between sites normally takes place over the IP WAN, with PSTN serving as a backup. The solution requires distributed sites to interconnect across the IP WAN. This model also provides PSTN connectivity for centralized toll free calling ("800" numbers) with the ISN acting as a network and edge IVR and as an IP switch to load balance calls to other sites using the WAN

Site1, Site4 and Site7 participate in an IPCC Multi-Site WAN Distributed deployment model with distributed call processing.

Topology of the Seven Sites

The topology and relationships of the seven sites used in the above configurations is indicated in the following figure:

Figure 1-1 Topology of Seven Sites Used in IP Communications Systems Tests



Site Definitions

Site1: Large Site

Site1 is a hub in a Multi-Site Centralized configuration and involves testing of 1325 agents in an IP Contact Center environment. Components include Intelligent Contact Manager (ICM), Cisco CallManager, IP IVR (CRS), Music on Hold (MOH) Server, Catalyst T1 Gateways 6608 and SVC CMM modules, hardware-based transcoders, hardware-based conference bridges, IOS GWs and GKs. Catalyst 6509 is used as access switch and 6506 as core switch. AS5400HPX is used to terminate the ISN Post-Routed traffic.

For ICM, the Router and Logger are co-resident (referred to as a Rogger). One PG is used to interface with the peripherals Cisco CallManager and IP IVR, with CTI Server co-resident. Another PG is used to interface with peripherals ISN and Dialer. For the CallManager Cluster, there are 1 Publisher/TFTP and 8 Subscribers. Site1 has failover capabilities for Cisco CallManager, Rogger, PGs, ISN, Dialer and CTI OS.

Since Site1 is the hub in a Multi-Site Centralized configuration (Site1 + Site2 + Site3) that has 1500 (1325 + 100 + 75) agents, and more than 1000 agents per Cisco CallManager PIM is not recommended, two Cisco CallManager PIMs are defined and these reside on the same PG server.

There are 100 Blended Agents at this site and these Agents (BA) handle both inbound calls from PSTN and ICM-system initiated outbound calls.

ISN at Site1 plays the role of both Network and Edge IVR. ISN Post-Routed Network IVR traffic from the PSTN arriving at Site1 is handled by agents at Site1, Site2, Site3, Site4, Site5, Site6 and Site7. ISN Post-Routed Edge IVR traffic from the PSTN arriving at Site1 are handled by agents at Site1.

Agents at Site1 use CTI OS Desktop Application for call control and may also use call control functions available on Agent IP Phones. Phone types include 7960 and 7940.

Figure 1-2 Site 1 Logical Topology

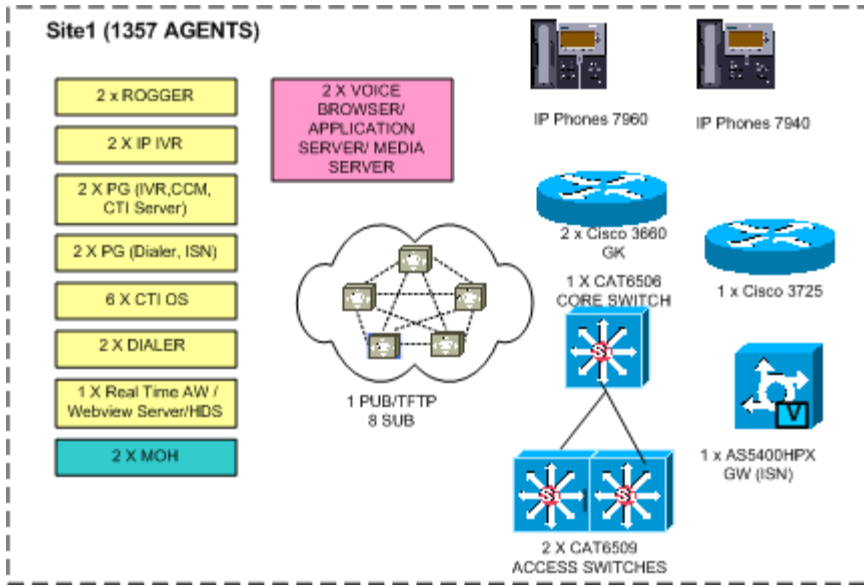


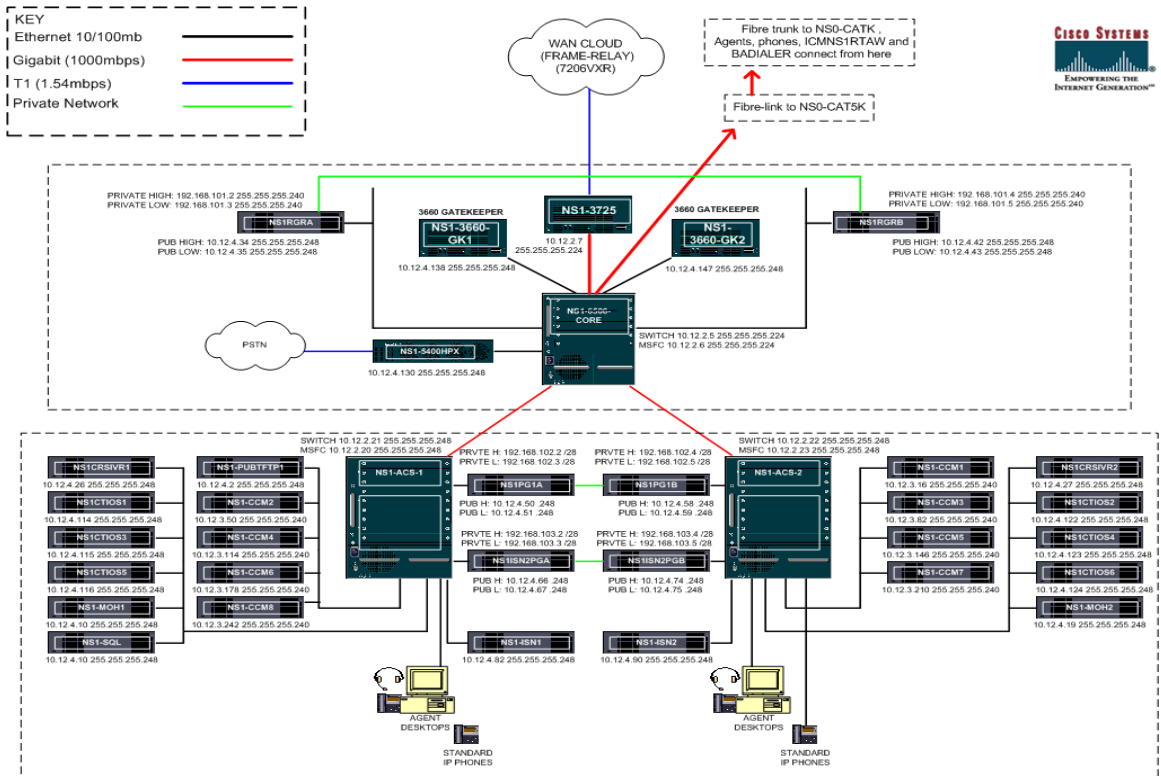
Table 1-1 Site Equipment List

Component	Hardware Platform	Qty	Reference
Cisco CallManager	MCS-7845H-2.4-EVV1 (HPQ DL380G3, Dual CPU, 4 GB memory)	9	CallManager, page 2-2
IP IVR	MCS-7845H-2.4-CC1 (HPQ DL380G3, Dual CPU, 4 GB memory)	2	IP IVR, page 2-6
Music on Hold	MCS 7835-1266	2	CallManager, page 2-2
Rogger	MCS-7845H-2.4-EVV1 (HPQ DL380G3, Dual CPU, 4 GB memory)	2	ICM, page 2-4

Table 1-1 Site Equipment List (continued)

Component	Hardware Platform	Qty	Reference
Peripheral Gateway (PG)	MCS-7845H-2.4-EVV1 (HPQ DL380G3, Dual CPU, 4 GB memory)	4	ICM, page 2-4
CTI Object Server (CTI OS)	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	6	CTI OS, page 2-3
Blended Agent (BA) / Dialer	MCS 7845-1400	2	ICM, page 2-4
Real-Time Admin Workstation / HDS / WebView	MCS 7845-1400	1	ICM, page 2-4
Internet Service Node (ISN) / Voice Browser / Application Server / Media Server	MCS 7845-1400	2	ISN, page 2-7
Access Switch	Catalyst 6509	2	Catalyst 6500 Series, page 2-3
Core Switch	Catalyst 6506	1	Catalyst 6500 Series, page 2-3
Gateway (for ISN)	AS5400HPX	1	Gateways, page 2-4
Gatekeeper	Cisco 3660	2	Routers, page 2-8
IP Phones	Cisco IP Phones 7960 and 7940	10	Phones, page 2-8
CTI OS Agent and Supervisor Desktop	Pentium IV Desktop	3	CTI OS, page 2-3
WAN Router	Cisco 3725	1	Routers, page 2-8
WAN Router	Cisco 7206 VXR	1	Routers, page 2-8

Figure 1-3 Site1 Physical Topology



Site2: Remote of Large Site

Site2 is a remote office of Site1 with Site1 as the hub in the Multi-Site Centralized configuration. Site2 covers testing of 100 agents in an IP Contact Center environment. Components include PG for peripheral ISN, Cisco 3660 VoIP GW, Catalyst 3524 and IP Phones. Cisco 3660 GW is used to terminate PSTN Pre-Routed, Cisco CallManager Post-Routed and ISN Post-Routed traffic.

ISN plays the role of Edge IVR. All ISN Post-Routed traffic from the PSTN arriving at Site2 is handled by agents in both Site2 and Site3.

Agents at Site2 use CTI OS Desktop Application for call control and may also use call control functions available on Agent IP Phones. There are no Blended Agents at this site. Phone types include Cisco 7960 and 7940.

Figure 1-4 Site2 Logical Topology

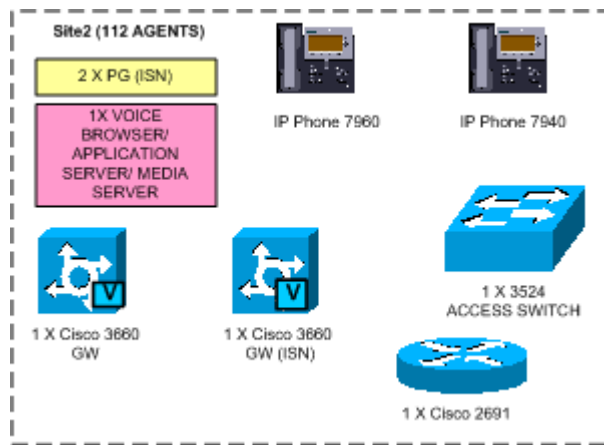
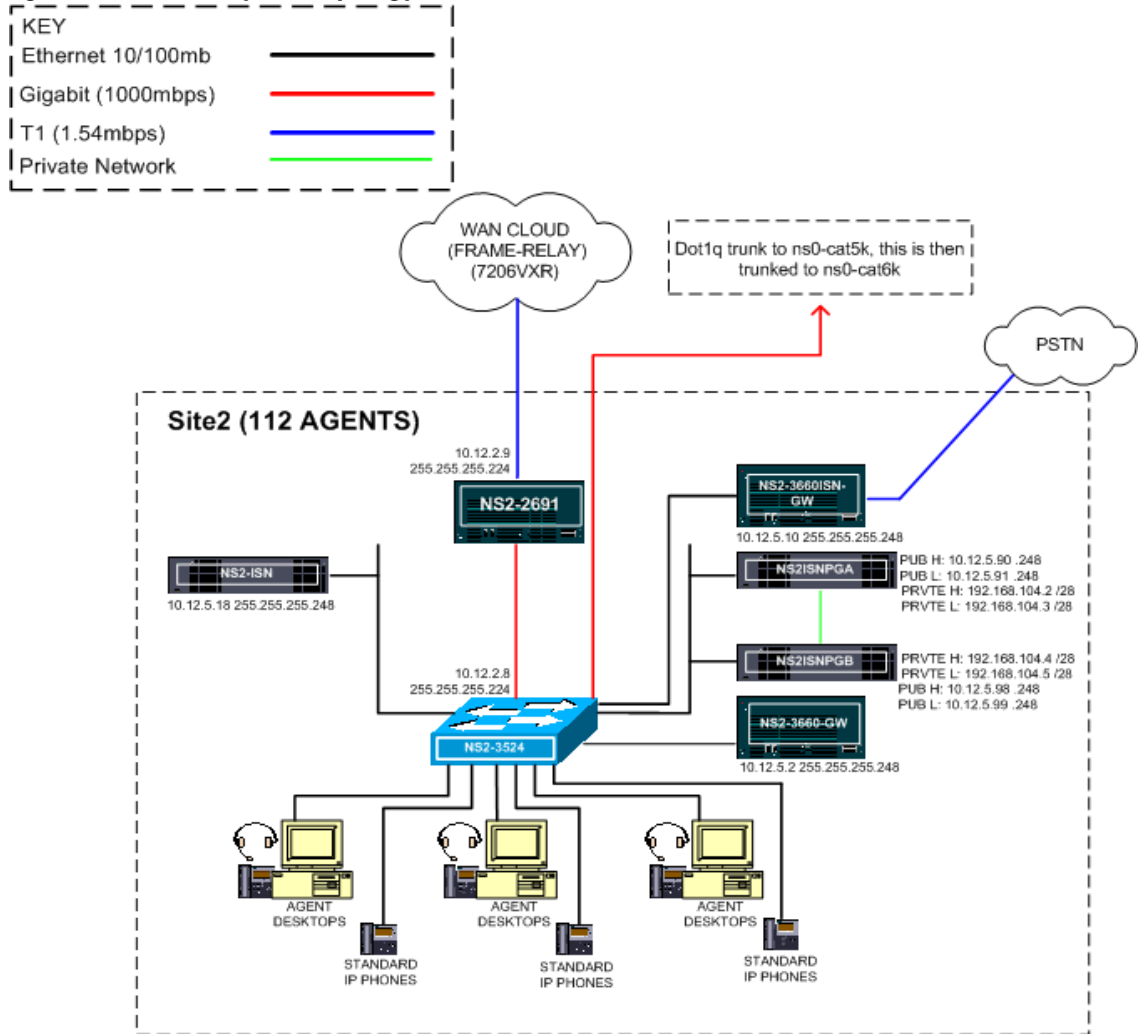


Table 1-2 Site2 Equipment List

Component	Hardware Platform	Qty	Reference
Peripheral Gateway (PG)	MCS 7845-1400	2	ICM, page 2-4
Internet Service Node (ISN) / Voice Browser / Application Server / Media Server	MCS 7845-1400	1	ISN, page 2-7
Access Switch	Catalyst 3524	1	Catalyst 3500 Series, page 2-3
Gateway	Cisco 3660	1	Routers, page 2-8
Gateway (for ISN)	Cisco 3660	1	Routers, page 2-8
IP Phones	Cisco IP Phones 7960/7940	5	Phones, page 2-8
CTI OS Agent and Supervisor Desktop	Pentium IV Desktop	1	CTI OS, page 2-3
WAN Router	Cisco 2691	1	Routers, page 2-8

Site Definitions

Figure 1-5 Site2 Physical Topology



Site3: Remote of Large Site

Site3 is another remote office of Site1 with Site1 as the hub in the Multi-Site Centralized configuration. Site3 covers testing of 75 agents in an IP Contact Center environment. Components include Cisco 3660 VoIP GW, Catalyst 3524 and IP Phones. Cisco 3660 GW is used to terminate the PSTN Pre-Routed and Cisco CallManager Post-Routed traffic.

Agents at Site3 use CTI OS Desktop Application for call control and may also use call control functions available on Agent IP Phones. There are no Blended Agents at this site. Phone types include Cisco 7960 and 7940.

Figure 1-6 Site3 Logical Topology

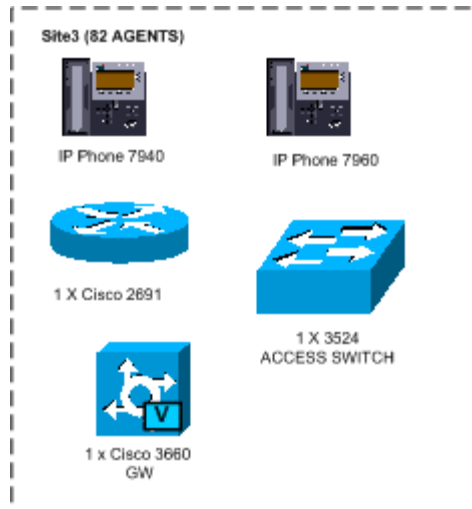
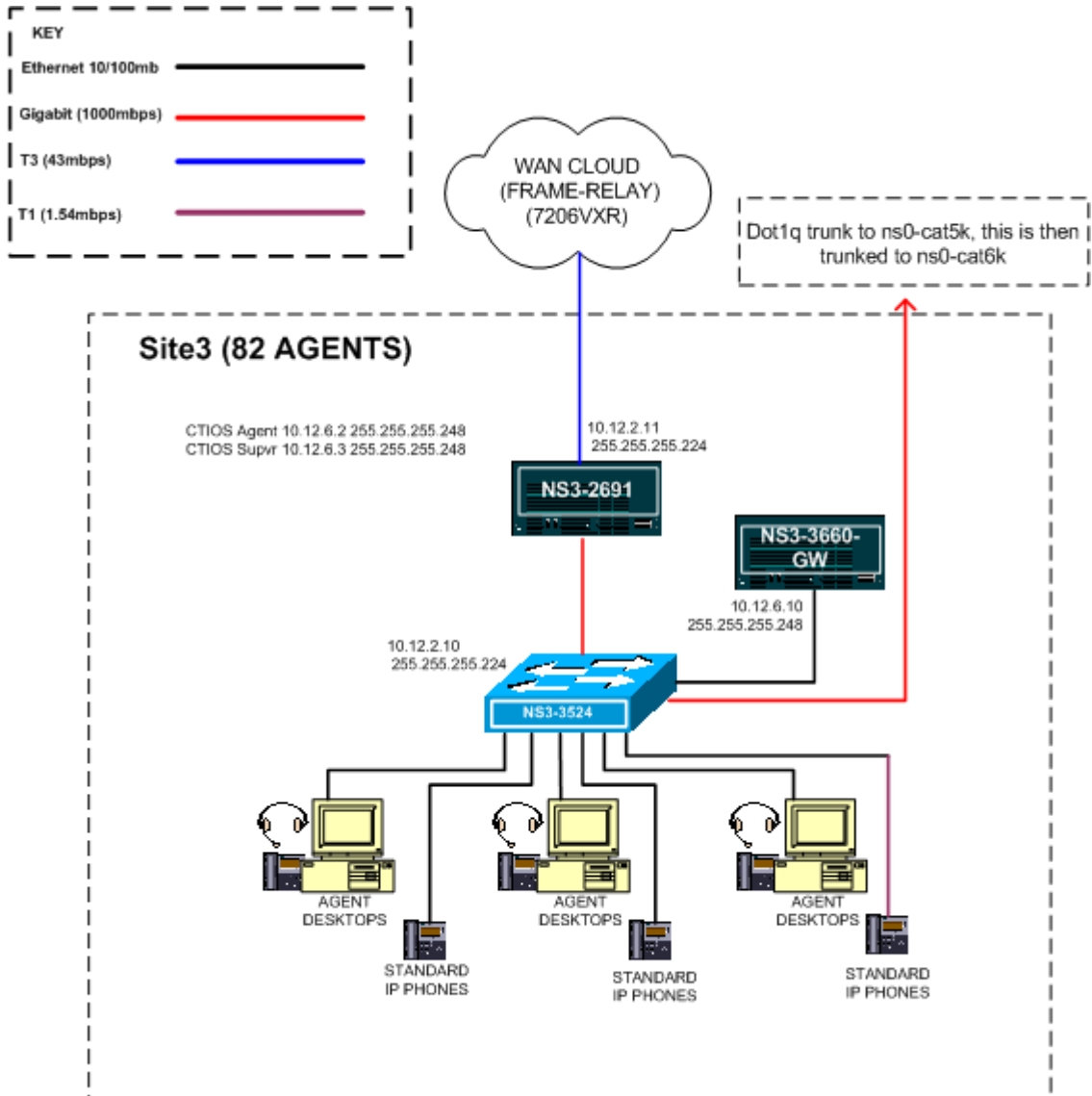


Table 1-3 Site3 Equipment List

Component	Hardware Platform	Qty	Reference
Access Switch	Catalyst 3524	1	Catalyst 3500 Series, page 2-3
Gateway	Cisco 3660	1	Routers, page 2-8
IP Phones	Cisco IP Phones 7960/7940	5	Phones, page 2-8
CTI OS Agent and Supervisor Desktop	Pentium IV Desktop	1	CTI OS, page 2-3
WAN Router	Cisco 2691	1	Routers, page 2-8

Figure 1-7 Site3 Physical Topology



Site4: Medium Site

Site4 is a hub in a Multi-Site Centralized configuration. Site4 covers testing of 425 agents in an IP Contact Center Environment. Components include Cisco CallManager, IP IVR (CRS), Music on Hold (MOH), Catalyst 6509 as access/core switch, Catalyst T1 GWs 6608 and SVC CMM modules, IOS GWs and GKs, VoIP Monitor and RASCAL server. A PG is used to interface with peripherals Cisco CallManager, IP IVR, and ISN. CTI Server is on a stand-alone server. For the CallManager Cluster, there are 1 Publisher/TFTP, 4 Subscribers. Site4 has failover capabilities for Cisco CallManager, PGs, CTI GW.

ISN at Site4 plays the role of Edge IVR. ISN Post-Routed traffic arriving at Site4 is handled by agents at Site4, Site5 and Site6.

Agents at Site4 use the Cisco Agent Desktop (CAD) Application for call control and may also use call control functions available on Agent IP Phones. Phone types include 7960 and 7940. IP Phone agents (Agents without Desktop) are used at this site for manual tests.

Figure 1-8 Site4 Logical Topology

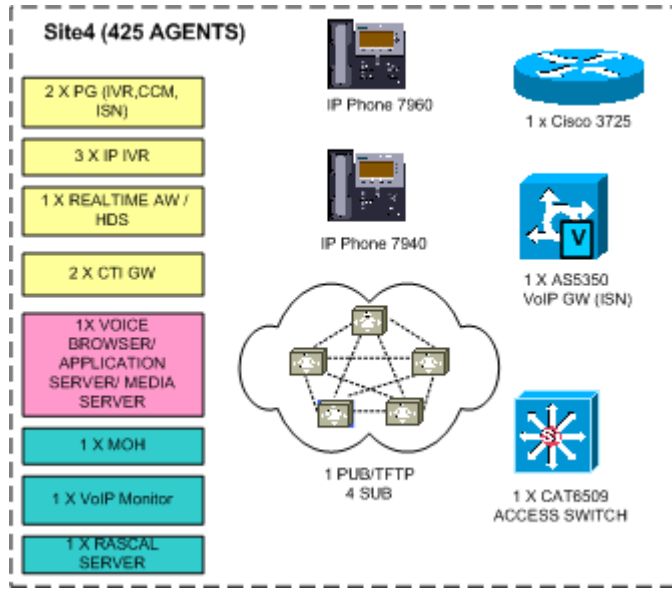


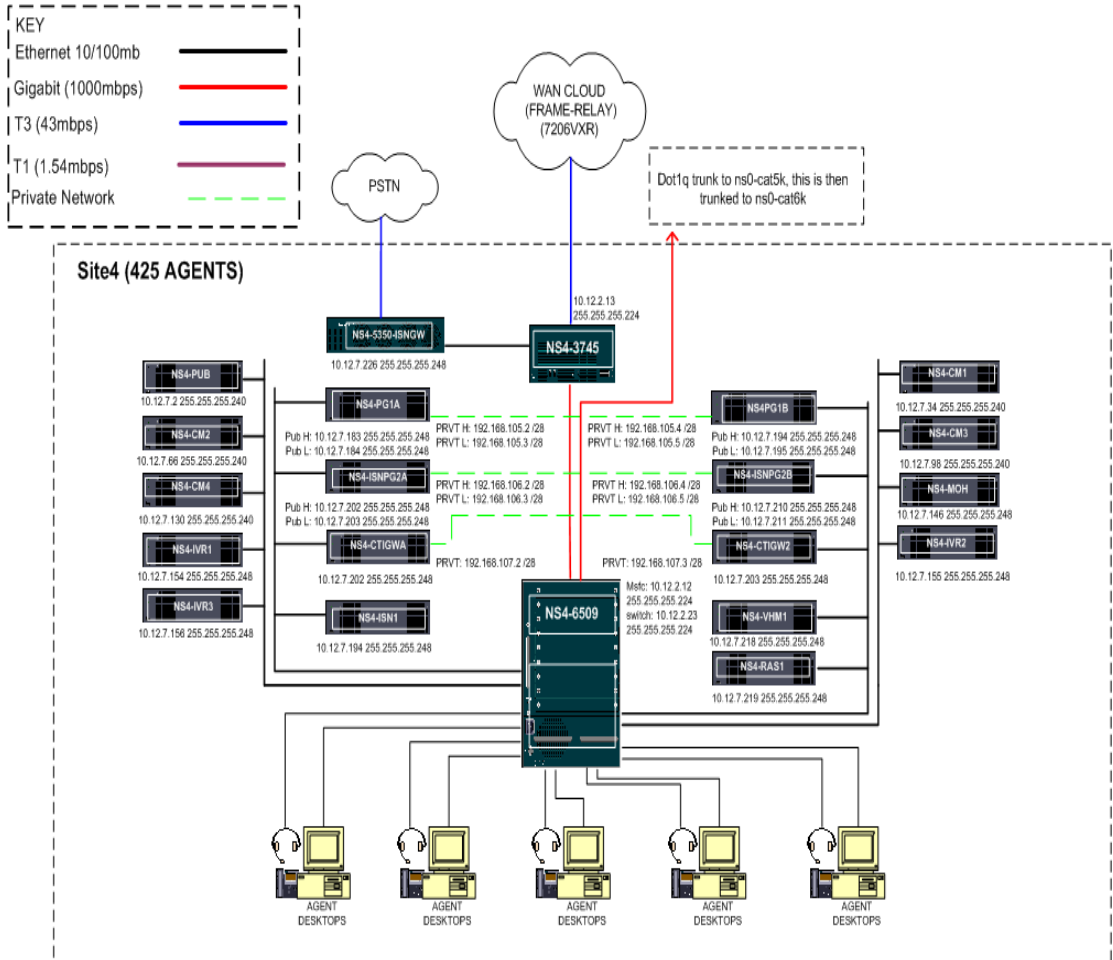
Table 1-4 Site4 Equipment List

Component	Hardware Platform	Qty	Reference
Cisco CallManager	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	5	CallManager, page 2-2
IP IVR	MCS-7835I-2.4-CC1 (HPQ DL380G3, Single CPU, 1 GB memory)	3	IP IVR, page 2-6
Music on Hold	MCS 7835-1266	1	CallManager, page 2-2
Peripheral Gateway (PG)	MCS 7845-1400	4	ICM, page 2-4
CTI Gateway	MCS-7835I-2.4-EVV1	2	ICM, page 2-4

Table 1-4 Site4 Equipment List (continued)

Component	Hardware Platform	Qty	Reference
Real-Time Admin Workstation / HDS / WebView	MCS 7845-1400	1	ICM, page 2-4
Internet Service Node (ISN) / Voice Browser / Application Server / Media Server	MCS 7845-1400	1	ISN, page 2-7
Access/Core Switch	Catalyst 6509	1	Catalyst 6500 Series, page 2-3
Gateway (for ISN)	AS5350	1	Gateways, page 2-4
IP Phones	Cisco IP Phones 7960/7940	10	Phones, page 2-8
Cisco Agent and Supervisor Desktop	Pentium IV Desktop	3	CAD, page 2-1
VoIP Monitor	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	1	CAD, page 2-1
RASCAL and other CAD server components	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	1	CAD, page 2-1
WAN Router	Cisco 3725	1	Routers, page 2-8

Figure 1-9 Site4 Physical Topology



Site5: Remote of Medium Site

Site5 is a remote office of Site4, with Site4 as the hub in a Multi-Site Centralized configuration. Site5 covers testing of 50 agents in an IP Contact Center environment. Components include Cisco 3745 as VoIP GW, Catalyst 3524 as access switch, VoIP Monitor, and IP Phones 7960/7940. Cisco 3745 GW is used to terminate the PSTN Pre-Routed and Cisco CallManager Post-Routed traffic.

Agents at Site5 use Cisco Agent Desktop Application for call control and may also use call control functions available on Agent IP Phones. Phone types include Cisco 7960 and 7940. IP Phone agents (Agents without Desktop) are used at this site for manual tests.

Figure 1-10 Site5 Logical Topology

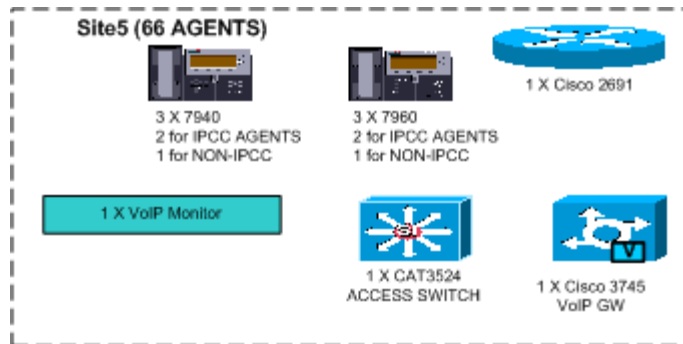
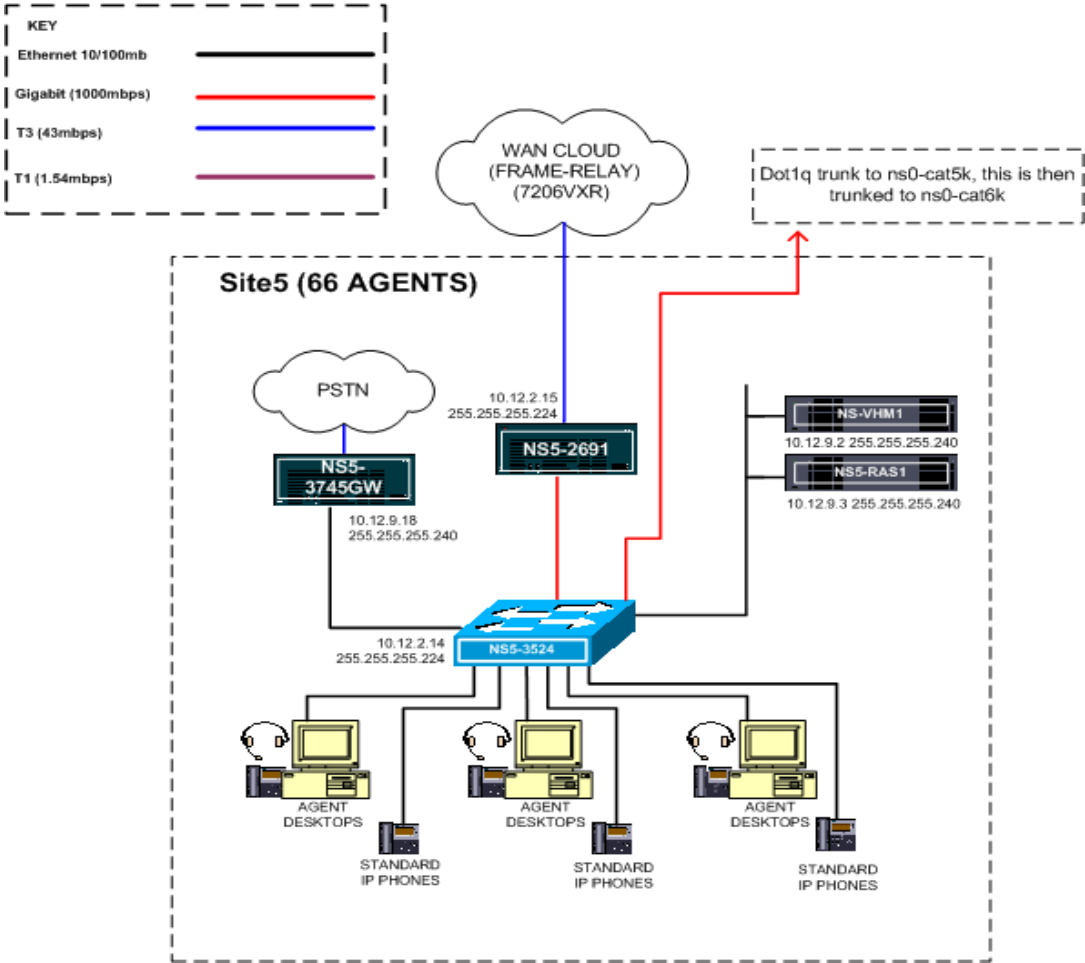


Table 1-5 Site5 Equipment List

Component	Hardware Platform	Qty	Reference
Access Switch	Catalyst 3524	1	Catalyst 3500 Series, page 2-3
Gateway	Cisco 3745	1	Routers, page 2-8
IP Phones	Cisco IP Phones 7960/7940	5	Phones, page 2-8
Cisco Agent and Supervisor Desktop	Pentium IV Desktop	2	CAD, page 2-1
VoIP Monitor	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	1	CAD, page 2-1
WAN Router	Cisco 2691	1	Routers, page 2-8

Site Definitions

Figure 1-11 Site5 Physical Topology



Site6: Remote of Medium Site

Site6 is another remote office of Site4, with Site4 as the hub in a Multi-Site Centralized configuration. Site6 covers testing of 25 agents in an IP Contact Center environment. Components include Cisco 3745 as VoIP GW, Catalyst 3524 as access switch and IP Phones 7960/7940. Cisco 3745 GW is used to terminate the PSTN Pre-Routed and Cisco CallManager Post-Routed traffic.

Agents at Site6 use Cisco Agent Desktop Application for call control and may also use call control functions available on Agent IP Phones. Phone types include Cisco 7960 and 7940. IP Phone agents (Agents without Desktop) are used at this site for manual tests.

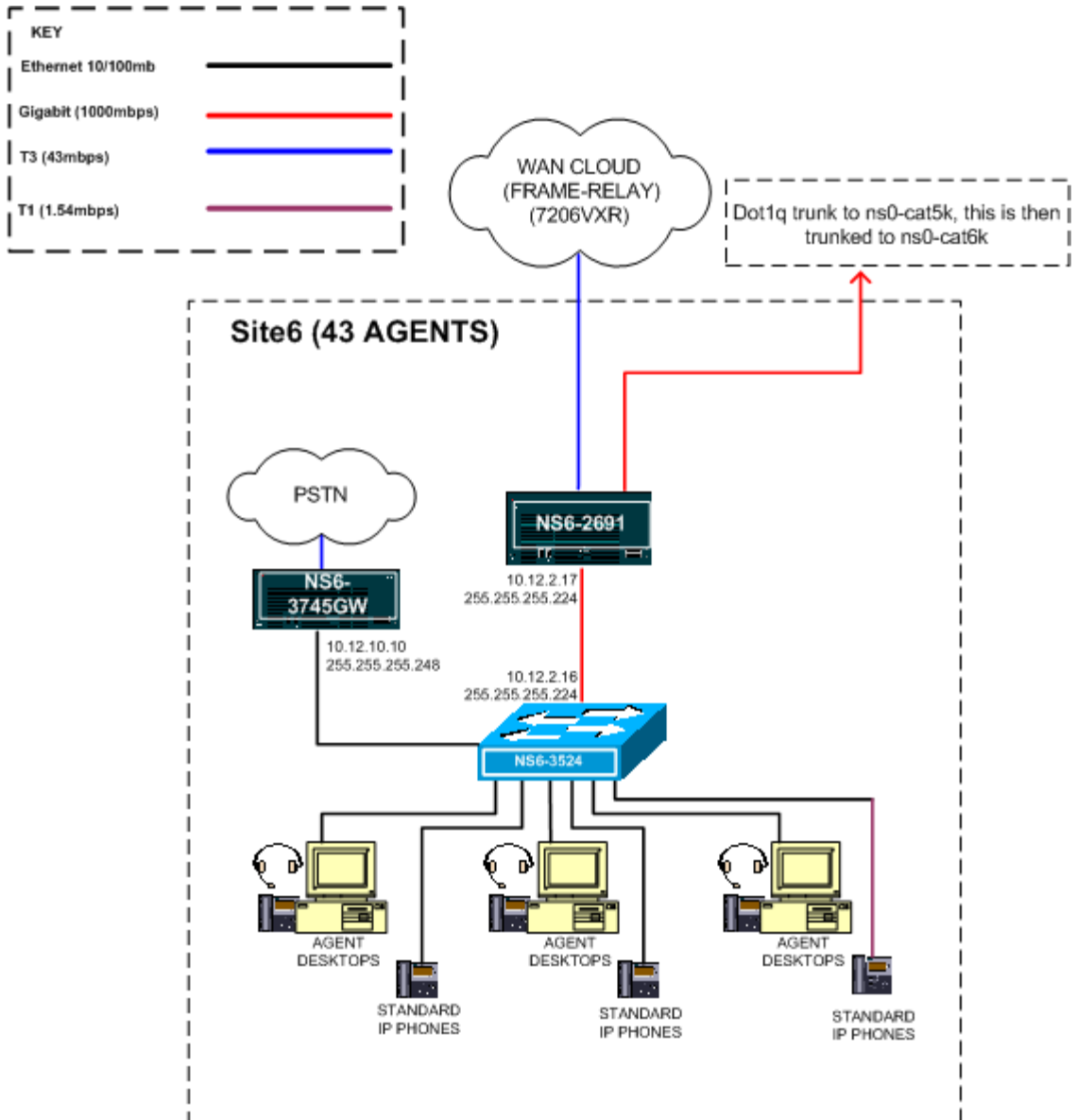
Figure 1-12 Site6 Logical Topology



Table 1-6 Site6 Equipment List

Component	Hardware Platform	Qty	Reference
Access Switch	Catalyst 3524	1	Catalyst 3500 Series, page 2-3
Gateway	Cisco 3745	1	Routers, page 2-8
IP Phones	Cisco IP Phones 7960/7940	5	Phones, page 2-8
Cisco Agent and Supervisor Desktop	Pentium IV Desktop	2	CAD, page 2-1
WAN Router	Cisco 2691	1	Routers, page 2-8

Figure 1-13 Site6 Physical Topology



Site7: Small Site

Site7 is a Single Site configuration and covers testing of 200 Agents in an IP Contact Center environment. Components include Cisco CallManager, IP IVR (CRS), Music on Hold (MOH), Catalyst T1 Gateways 6608 and CMM SVC modules, IOS GWs and GKs. Catalyst 6509 is used as access switch. A PG is used to interface with peripherals Cisco CallManager and IP IVR, with CTI Server co-resident. Another PG is used to interface with peripherals Dialer and ISN. For the CallManager Cluster, there are 1 Publisher/TFTP, 2 Subscribers. Site7 has failover capabilities for Cisco CallManager, PGs and CTI OS.

PSTN Pre-Routed and Cisco CallManager Post-Routed traffic arriving at Site7 is handled by 100 agents at Site7.

100 Agents at Site7 are Blended Agents and these agents handle only ICM system initiated outbound calls.

Agents at Site7 use CTI OS Desktop Application for call control and may also use call control functions available on Agent IP Phones. Phone types include 7960 and 7940.

Figure 1-14 Site7 Logical Topology

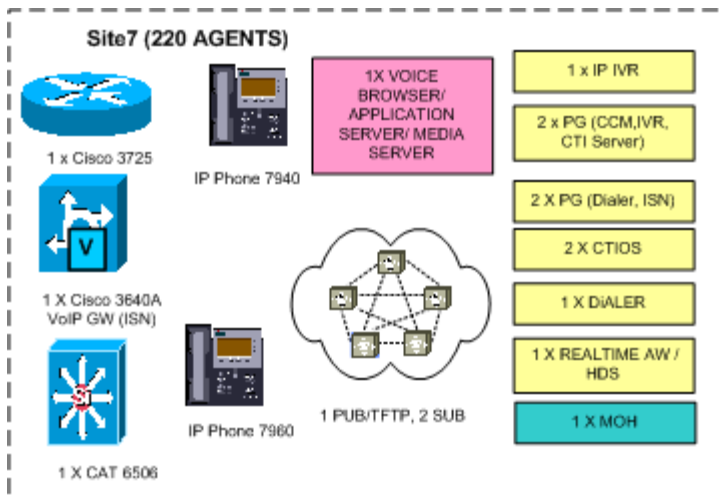
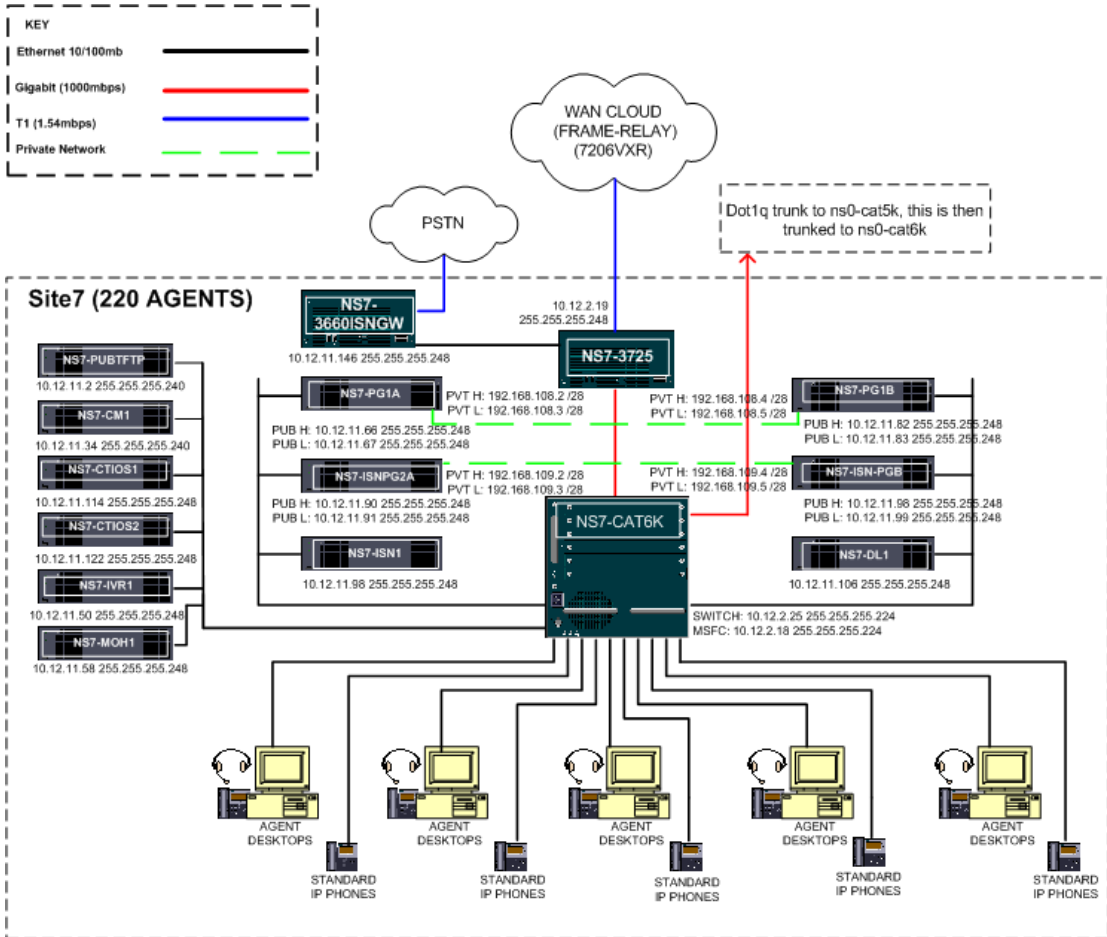


Table 1-7 Site7 Equipment List

Component	Hardware Platform	Qty	Reference
Cisco CallManager	MCS 7835-1266	3	CallManager, page 2-2
IP IVR	MCS 7835-1266	1	IP IVR, page 2-6
Music on Hold	MCS 7835-1266	1	CallManager, page 2-2
Peripheral Gateway (PG)	MCS 7845-1400	4	ICM, page 2-4
CTI OS	MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)	2	CTI OS, page 2-3
Blended Agent (BA) / Dialer	MCS 7845-1400	1	ICM, page 2-4
Real-Time Admin Workstation/WebView	MCS 7845-1400	1	ICM, page 2-4
Internet Service Node (ISN) / Voice Browser / Application Server / Media Server	MCS 7845-1400	1	ISN, page 2-7
Access/Core Switch	Catalyst 6509	1	Catalyst 6500 Series, page 2-3
Gateway (for ISN)	Cisco 3640A	1	Routers, page 2-8
WAN Router	Cisco 3725	1	Routers, page 2-8

Site Definitions

Figure 1-15 Site7 Physical Topology



Business Logic

In order to design IP Contact Center call flows, and the software and hardware topologies that would support these call flows, a sample business case and customer requirements were defined. From those requirements, the complex scripting and configuration models were developed for testing.

What follows are the basic business foundation, agent profiles, and call flows. Chapter 3 provides specifics for three sample call flows:

- Cisco CallManager Post-Routed call flow (Multi-Site Distributed—call arrives at Site1 but is handled by agent at Site7)
- ISN Post-Routed call flow (ISN Post-Routes call to Site1 IOS GW (ISN) and call is handled by agent at Site1)
- Outbound Call Flow (Blended Agent)

Customer Business Requirements

Global Siren Financial, a global multi-billion dollar financial services firm offers traditional brokerage services and securities sales as well as a new Internet Bank for its customers, and typical account and collection services. GSF depends on its contact centers to be the primary interface to its customers and brokers who resell their securities in the United States and need to have a reliable, cost effective and efficient way to manage their customer contacts across the seven contact-center sites:

Table 1-8 *Number of Agents at Sites*

Site	Number of Agents
Nickerson, KS (Site 1) [multi-site hub]	1,357
Northbrook, IL (Site 2) [remote of Site 1]	112
Nash, TX (Site 3) [remote of Site 1]	82
Newark, DE (Site 4) [multi-site hub]	425
Newton, MA (Site 5) [remote of Site 4]	66
Norcross, GA (Site 6) [remote of Site 4]	43
Northridge, CA (Site 7) [single site]	220

The contact centers provide the following services to the customers of Global Siren:

Table 1-9 Services, Activities, and Locations

Skill #	Service	Activity	Locations
01	Account Inquiry	Statement Review, Balance Inquiry	All locations plus self-service for Balance Inquiry Additionally, There are sub-groups created to handle overflow calls from other groups of pre-routed and post-routed calls
02	Literature Request	Process request for new prospectus and other literature for customers	All locations Additionally, there is a sub-group created to handle overflow calls from another group of pre-routed and post-routed calls
03	Sales and Brokerage	Selling specific securities (stocks, bonds, etc.) to customers directly	Newark, Newton and Norcross sites only
04	Member Banking	Internet Banking Service for customers	Nickerson, Northbrook, Nash and Northridge sites only
05	Collections	Credit Card collections and account services Note: There are inbound groups across most of the sites	Nickerson (blended both inbound and outbound), Northridge (outbound only), Northbrook, Nash, Newark, Newton, and Norcross (inbound only)
07	Brokerage Services	Account services for Brokers who re-sell Global Siren securities	All locations

Table 1-9 Services, Activities, and Locations (continued)

Skill #	Service	Activity	Locations
09	Broker Technical Support	Technical support for GSF Brokers for web-based and on-line tools	All locations via local calls only (no toll-free)
08	Password and Account Lockout	Support group to reset, look-up and modify customer and broker accounts	All locations via local calls only (no toll-free)
07	Billing and Back Office Support	Assistance for Brokers with questions on settlement statements, account problems and billing issues	All locations via local calls only (no toll-free)
01	Account Inquiry	Backup group for Member Banking: Call Flow #2a	All locations
01	Account Inquiry	Primary group for Brokerage Accounts: Call Flow #2b	All Locations
02	Literature Request	Backup group for Brokerage Accounts: Call Flow #2b	All Locations

Global Siren Financial has cross-trained the majority of their agents at the sites to provide account services to both end customers and brokers who resell their securities.

Agents in the Newark, Newton and Norcross sites are licensed to provide brokerage services. These agents also are required to record calls and the supervisors need access to monitor calls in progress on an ad-hoc basis.

Global Siren Financial also offers a banking service to its customers with traditional checking, savings and investment options like money market and 401K accounts as an “internet bank” with no traditional branch banking locations. The contact centers in Nickerson, Northbrook, Nash, and Northridge are set up to handle these customer calls and services.

Agents in the Nickerson site are also set up to perform outbound calling for collections on their customer credit card accounts, blending with the inbound calls to this service as well (agents are cross-trained).

A group of agents in the Northridge site are set up to do only outbound collections calls to their customer credit card accounts.

The Northbrook and Nash sites also handle collection account calls but only on an inbound basis.

Agent Profiles by Site

Table 1-10 Agent Profile for Site 1

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Nickerson, KS Site 1	#11001 – Account Inquiry	78
	#11002 – Literature Request	41
	#11004 – Member Banking	60
	#11007 – Brokerage Service	23
Skills used for Call Flow #2a – Member Banking Requests		
	#12104 – Member Banking	266
	#12101 – Acct Inq (Backup A)	82
Skills used for Call Flow #2b – Brokerage Account Info		
	#12201 – Account Inquiry	133
	#12202 – Lit Req (Backup B)	79
Skills used for Call Flow #2c – Broker Help Line		

Table 1-10 Agent Profile for Site 1 (continued)

Site	Skills and Services	# of Agents
	#12307 – Broker Inq	132
	#12302 – Lit Req (Backup C)	27
Skills used for Call Flow #2d – Inbound Collections		
	#12405 – Collections Inbound	92
Skills used for Call Flow #2e – Sales and Brokerage		
	N/A – NOT AT THIS SITE	0
Skills used for Call Flow #3a – Broker Tech Support		
	#13109 – Tech Support	120
Skills used for Call Flow #3b – Password Support		
	#13208 – Password Support	87
Skills used for Call Flow #3c – Billing Support		
	#13307 – Billing Support	137*
Skills used for Call Flow #6 – Outbound Collections		
	#13307 – Billing Support	137*

Note: This group will also be used to handle blended collections calls for Outbound Calling

Table 1-11 Agent Profile for Site 2

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Northbrook, IL Site 2	#21001 – Account Inquiry	6
	#21002 – Literature Request	5
	#21004 – Member Banking	6
	#21007 – Brokerage Service	3
Skills used for Call Flow #2a – Member Banking Requests		
	#22104 – Member Banking	17
	#22101 – Acct Inq (Backup A)	6
Skills used for Call Flow #2b – Brokerage Account Info		
	#22201 – Account Inquiry	9
	#22202 – Lit Req (Backup B)	5
Skills used for Call Flow #2c – Broker Help Line		
	#22307 – Broker Inq	14
	#22302 – Lit Req (Backup C)	3
Skills used for Call Flow #2d – Inbound Collections		
	#22405 – Collections Inbound	7
Skills used for Call Flow #2e – Sales and Brokerage		
	N/A – NOT AT THIS SITE	0
Skills used for Call Flow #3a – Broker Tech Support		

Table 1-11 Agent Profile for Site 2 (continued)

Site	Skills and Services	# of Agents
	#23109 – Tech Support	11
Skills used for Call Flow #3b – Password Support		
	#23208 – Password Support	8
Skills used for Call Flow #3c – Billing Support		
	#23307 – Billing Support	12

Table 1-12 Agent Profile for Site 3

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Nash, TX Site 3	#31001 – Account Inquiry	5
	#31002 – Literature Request	3
	#31004 – Member Banking	3
	#31007 – Brokerage Service	2
Skills used for Call Flow #2a – Member Banking Requests		
	#32104 – Member Banking	12
	#32101 – Acct Inq (Backup A)	5
Skills used for Call Flow #2b – Brokerage Account Info		
	#32201 – Account Inquiry	7
	#32202 – Lit Req (Backup B)	4

Table 1-12 Agent Profile for Site 3 (continued)

Site	Skills and Services	# of Agents
Skills used for Call Flow #2c – Broker Help Line		
	#32307 – Broker Inq	10
	#32302 – Lit Req (Backup C)	2
Skills used for Call Flow #2d – Inbound Collections		
	#32405 – Collections Inbound	5
Skills used for Call Flow #2e – Sales and Brokerage		
	N/A – NOT AT THIS SITE	0
Skills used for Call Flow #3a – Broker Tech Support		
	#33109 – Tech Support	8
Skills used for Call Flow #3b – Password Support		
	#33108 – Password Support	6
Skills used for Call Flow #3c – Billing Support		
	#33107 – Billing Support	10

Table 1-13 Agent Profile for Site 4

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Newark, DE Site 4	#41001 – Account Inquiry	20
	#41002 – Literature Request	10

Table 1-13 Agent Profile for Site 4 (continued)

Site	Skills and Services	# of Agents
	#41004 – Member Banking	15
	#41007 – Brokerage Service	6
Skills used for Call Flow #2a – Member Banking Requests		
	#42104 – Member Banking	38
	#42101 – Acct Inq (Backup A)	10
Skills used for Call Flow #2b – Brokerage Account Info		
	#42201 – Account Inquiry	30
	#42202 – Lit Req (Backup B)	20
Skills used for Call Flow #2c – Broker Help Line		
	#42307 – Broker Help Line	44
	#42302 – Lit Req (Backup C)	5
Skills used for Call Flow #2d – Inbound Collections		
	#42405 – Collections Inbound	29
Skills used for Call Flow #2e – Sales and Brokerage		
	#42503 – Sales and Brokerage	83
Skills used for Call Flow #3a – Broker Tech Support		
	#43109 – Tech Support	40
Skills used for Call Flow #3b – Password Support		
	#43208 – Password Support	29
Skills used for Call Flow #3c – Billing Support		

Table 1-13 Agent Profile for Site 4 (continued)

Site	Skills and Services	# of Agents
	#43307 – Billing Support	46

Table 1-14 Agent Profile for Site 5

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Newton, MA Site 5	#51001 – Account Inquiry	7
	#51002 – Literature Request	4
	#51004 – Member Banking	5
	#51007 – Brokerage Service	3
Skills used for Call Flow #2a – Member Banking Requests		
	#52104 – Member Banking	3
	#52101 – Acct Inq (Backup A)	3
Skills used for Call Flow #2b – Brokerage Account Info		
	#52201 – Account Inquiry	4
	#52202 – Lit Req (Backup B)	3
Skills used for Call Flow #2c – Broker Help Line		
	#52307 – Broker Inquiry	2
	#52302 – Lit Req (Backup C)	2
Skills used for Call Flow #2d – Inbound Collections		

Table 1-14 Agent Profile for Site 5 (continued)

Site	Skills and Services	# of Agents
	#52405 – Collections Inbound	3
Skills used for Call Flow #2e – Sales and Brokerage		
	#52503 – Sales and Brokerage	10
Skills used for Call Flow #3a – Broker Tech Support		
	#53109 – Tech Support	6
Skills used for Call Flow #3b – Password Support		
	#53208 – Password Support	4
Skills used for Call Flow #3c – Billing Support		
	#53307 – Billing Support	7

Table 1-15 Agent Profile for Site 6

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Norcross, GA Site 6	#61001 – Account Inquiry	7
	#61002 – Literature Request	4
	#61004 – Member Banking	5
	#61007 – Brokerage Service	2
Skills used for Call Flow #2a – Member Banking Requests		
	#62104 – Member Banking	2

Table 1-15 Agent Profile for Site 6 (continued)

Site	Skills and Services	# of Agents
	#62101 – Acct Inq (Backup A)	1
Skills used for Call Flow #2b – Brokerage Account Info		
	#62201 – Account Inquiry	1
	#62202 – Lit Req (Backup B)	1
Skills used for Call Flow #2c – Broker Help Line		
	#62307 – Account Inquiry	2
	#62302 – Lit Req (Backup C)	1
Skills used for Call Flow #2d – Inbound Collections		
	#62405 – Collections Inbound	2
Skills used for Call Flow #2e – Sales and Brokerage		
	#62503 – Sales and Brokerage	5
Skills used for Call Flow #3a – Broker Tech Support		
	#63109 – Tech Support	3
Skills used for Call Flow #3b – Password Support		
	#63208 – Password Support	3
Skills used for Call Flow #3c – Billing Support		
	#63307 – Billing Support	4

Table 1-16 Agent Profile for Site 7

Site	Skills and Services	# of Agents
Skills used for Call Flow #1 – General Info Requests		
Northridge, CA Site 7	#71001 – Account Inquiry	7
	#71002 – Literature Request	4
	#71004 – Member Banking	6
	#71007 – Brokerage Service	3
Skills used for Call Flow #2a – Member Banking Requests		
	#72104 – Member Banking	17
	#72101 – Acct Inq (Backup A)	11
Skills used for Call Flow #2b – Brokerage Account Info		
	#72201 – Account Inquiry	13
	#72202 – Lit Req (Backup B)	11
Skills used for Call Flow #2c – Broker Help Line		
	#72307 – Broker Inquiry	13
	#72302 – Lit Req (Backup C)	4
Skills used for Call Flow #2d – Inbound Collections		
	N/A – NOT AT THIS SITE	0
Skills used for Call Flow #2e – Sales and Brokerage		
	N/A – NOT AT THIS SITE	0
Skills used for Call Flow #3a – Broker Tech Support		

Table 1-16 Agent Profile for Site 7 (continued)

Site	Skills and Services	# of Agents
	#73109 – Tech Support	11
Skills used for Call Flow #3b – Password Support		
	#73208 – Password Support	8
Skills used for Call Flow #3c – Billing Support		
	#73307 – Billing Support	12
Skills used for Call Flow #6 – Outbound Collections		
	#76005 – Outbound Collections	100

Note: All sites are open 7 x 24. The “agents” noted here are the “staffed agents per shift”. So, at the Norcross site there are typically only 25 agents logged in during any particular shift.

Additionally, there is a self-service application that GSF uses for their customers to obtain fund balances and make electronic account payments using an IVR platform.

Call Flows

Call Flow #1 – General Information Requests – Routed to All Sites

GSF provides its customers with a single toll-free number to contact them for customer information requests: 1-800-GSF-INFO (1-800-473-4636). This number directly delivers the caller to a centralized IVR at the Nickerson, Kansas (Site 1) location, which allows the caller to choose from one of four information services. Additionally, each of the main site locations also has direct dial/local numbers that are used to direct callers to the same treatment using an “edge IVR” that directs callers to agents in those specific sites:

Site	Number	BHCA	Available Agent Targets
Nickerson, KS (Site 1)	1-800-GSF-INFO	2,333	All seven sites with agents in the four information groups
Nickerson, KS (Site 1)	620-422-4636 (INFO)	1,473	Local Site 1 agents only for this local call to the site
Northbrook, IL (Site 2)	224-405-4636 (INFO)	196	Local Site 2 and Site 3 agents for this call type (although calls will terminate at the Site 2 location only)
Newark, DE (Site 4)	302-266-4636 (INFO)	555	Local Site 4 plus Site 5 and Site 6 agents for this call type (although calls will terminate at the Site 2 location only)
Northridge, CA (Site 7)	818-341-4636 (INFO)	111	Local Site 7 agents only for this local call to the site

Regardless of the entry into the system (toll-free or local), the IVR plays the same series of prompts and messages: (opening menu)

“Thank you for calling Global Siren Financial. Please select from one of the following services:

Press one if you have a question about your brokerage account or most recent statement

Press two if you want to request a new prospectus on any GSF fund

Press three if you are a GSF Banking customer and have a question about your account

Press four if you are a GSF Broker and have questions about your customer accounts

Or stay on the line and the next available representative will assist you”

If the caller presses one:

The call is routed to any agent at any site who has the “x1001 – Account Inquiry Skill” if there is one available. If there are no agents available in this group, the call is held in queue for the next available agent in this group.

If the caller presses two:

The call is routed to any agent at any site who has the “x1002 – Literature Request Skill” if there is one available. If there are no agents available in this group, the call is held in queue for the next available agent in this group.

If the caller presses three:

The call is routed to any agent at any site who has the “x1004 – Member Banking Skill” if there is one available. If there are no agents available in this group, the call is held in queue for the next available agent in this group.

If the caller presses four:

The call is routed to any agent at any site who has the “x1007 – Brokerage Service Skill” if there is one available. If there are no agents available in this group, the call is held in queue for the next available agent in this group.

The selection of agents is driven by the call type:

Toll-Free Calls – GSF wants to answer these calls quickly to save toll-charges. They have allocated agents at each site to answer these calls and want the calls to look across all the sites for an available agent (the longest available agent) and then, if there are no agents available at any site in the specific group, the call will stay in queue at the Site 1 location until an agent becomes available at any site.

Local Calls – GSF has installed the local line calls to encourage local contact with the office locations. To that end, all the calls that come into these local lines will be “homed” to the specific office (or cluster of offices) the call arrived at. For example, local calls to the Northridge, CA (Site 7) site will be answered by an agent at that site (based on longest available agent), and if there are no available agents, the call will stay at that site in queue for the next available agent. This also will save on intra-site call transfers and network usage to keep the calls “local.”

Calls to the menu choices will remain in their respective queues regardless of the length of time they are in queue. If there are more than 20 calls in any of these queues (this will be controlled by a variable in an “admin script”, which will vary based upon conditions), the caller will hear an announcement at the start of being put on hold:

“We are experiencing heavier than normal call volumes. There are” << insert number of calls from real time feed >> “ahead of you in this queue. You may wish to call back later for faster service.”

Agent Load / Call Flow

For the toll-free traffic, the agent distribution is as follows for the 2,333 BHCA:

Site	X1001-Acct	X1002-Lit	X1004-Bank	X1007-Brk	Total
Site 1	38	20	29	11	98
Site 2	2	2	2	1	7
Site 3	2	1	1	1	5
Site 4	12	6	9	3	30
Site 5	3	1	2	1	7
Site 6	2	1	1	1	5
Site 7	2	1	2	1	6

(These agents are dedicated to the toll-free traffic.)

The breakdown of the BHCA for the toll-free traffic is:

Skills & Services Offered	% of Total Traffic	Estimated BHCA	# Agents
#x11 – Account Inquiry	40%	933	61
#x12 – Literature Request	20%	466	32
#x14 – Member Banking	30%	699	46
#x17 – Brokerage Service	10%	233	19

For the local-line traffic, the agent distribution is as follows (note BHCA is per delivered site):

Site	BHCA	X1001-Acct	X1002-Lit	X1004-Bank	X1007-Brk	Total
Site 1	1473	40	21	31	12	104
Site 2	196	4	3	4	2	13
Site 3		3	2	2	1	8
Site 4	555	8	4	6	3	21
Site 5		4	3	3	2	12
Site 6		5	3	4	1	13
Site 7	111	5	3	4	2	14

The breakdown of the BHCA traffic for these local call flows is:

Table 1-17 BHCA Traffic for Site 1

Skills & Services Offered	% of Total Traffic	Estimated BHCA	# Agents
#11001 – Account Inquiry	40%	589	40
#11002 – Lit Request	20%	294	21
#11004 – Member Banking	30%	441	31
#11007 – Brokerage Srv	10%	147	12

Table 1-18 BHCA Traffic for Site 2 + Site 3

Skills & Services Offered	% of Total Traffic	Estimated BHCA	# Agents
#x1001 – Account Inquiry	40%	78	7
#x1002 – Lit Request	20%	39	5
#x1004 – Member Banking	30%	58	6
#x1007 – Brokerage Srv	10%	19	3

Table 1-19 BHCA Traffic for Site 4+ Site 5 + Site 6

Skills & Services Offered	% of Total Traffic	Estimated BHCA	# Agents
#x1001 – Account Inquiry	40%	222	17
#x1002 – Lit Request	20%	111	10
#x1004 – Member Banking	30%	166	13
#x1007 – Brokerage Srv	10%	55	6

Table 1-20 BHCA Traffic for Site 7

Skills & Services Offered	% of Total Traffic	Estimated BHCA	# Agents
#71001 – Account Inquiry	40%	44	5
#71002 – Lit Request	20%	22	3
#71004 – Member Banking	30%	33	4
#71007 – Brokerage Srv	10%	11	2

Call Flow #2 – Directed Pre-Routed Information Calls

The Brokerage and the Banking groups provide their customers with direct toll-free numbers for the specific services they offer beyond the general information line. These directed numbers have specific escalation targets within their call flows as well.

Member Banking Services – Call Flow #2a

Member Banking provides a number: 1-800-GSF-BANK that provides customers with a direct number to access their member banking services. Callers who call this number will be pre-routed to one of the sites that can handle their request.

Calls coming into this number will look first across all the sites for available agents who are associated with the “x04-Member Banking Skill”. If there is an agent available at one of the sites, the pre-route will send that call to the site with the longest available agent. Agent selection is driven by looking for the Longest Available Agent in the event that multiple agents are available to handle this call.

If there are no agents available with this skill, the system will look at all of the sites that have agents logged into this skill but are currently talking to customers. Based upon a calculation, it can be determined which of the sites would have the shortest wait time to talk to an agent, in a “look ahead queuing” selection method. If the shortest wait time is less than 30 seconds, that site will be selected and the call sent to that site.

We are not looking for available agents when the call arrives with DN 1-800-GSF-BANK. We are only determining the site that has minimum MED (MED could be zero also).

If the shortest wait time, considering the last five minute’s average handle time is over 30 seconds, the system will consider sending the call to another skill group to handle the call using a “look back queuing” method. GSF cross-trains their agents in the “x01-Account Inquiry Skill” to also handle Member Banking questions—if there is an available agent in this group, the call will be sent to that site.

If there are no available agents in the “x2101-Account Inquiry Skill” and the shortest wait time for the “x2104-Member Banking Skill” is greater than 30 seconds, the call will go to the site with the shortest wait time—even if it is over 30 seconds.

We need to consider queuing the calls to “x2101-Account Inquiry Skill”, otherwise the queue will build up for this call flow

When the call arrives at the contact center site, the local site CallManager Cluster will query the ICM to run a script and determine the best resource to handle this call. Since the call was “pre-routed” to the site based upon real-time conditions, the logic will try to keep the call local to the site first—assuming that the pre-route selected that site because it was most likely to be able to handle the call first. Similar logic is applied to the call locally:

The site’s “x2104-Member Banking Skill” will be considered first—looking for an available agent. If there is an available agent, the call is sent to that agent immediately.

If there are no agents available, it will consider the local “x2101-Account Inquiry Skill” for the call. If there is an available agent in that group, the call will be sent to that agent immediately.

If there are no agents available in either group, the call will queue for the next available “x2104-Member Banking Skill” agent at that site.

GSF estimates the traffic on the 1-800-GSF-BANK number will be 7,590 BHCA serviced by the following two enterprise (multi-site) skill groups:

Skills & Services Offered	Number of Agents (all sites)
X2104 – Member Banking	355 (Primary Skill Target)
X2101 – Account Inquiry (Backup A)	118 (Secondary Skill Target)

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected that, at this BHCA rate:

- The skill groups across the sites will maintain a service level of about 80% of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 11 seconds
- The Average Queue Time for calls in these applications will be 20 seconds
- The Average Queue Depth will have 24 calls at any given time

Brokerage Account Info – Call Flow #2b

The GSF Brokerage provides a number: 1-800-GSF-STOC that provides customers with a direct number to access their Brokerage Account services. Callers who call this number will be pre-routed to one of the sites that can handle their request.

Calls coming into this number will look first across all the sites for available agents who are associated with the “x2201-Account Inquiry Skill”. If there is an agent available at one of the sites, the pre-route will send that call to the site with the available agent. Agent selection is driven by looking for the Longest Available Agent in the event that multiple agents are available to handle this call.

If there are no agents available with this skill, the system will look at all of the sites that have agents logged into this skill but are currently talking to customers. Based upon a calculation, it can be determined which of the sites would have the shortest wait time to talk to an agent. If the shortest wait time is less than 45 seconds, that site will be selected and the call sent to that site.

If the shortest wait time is over 45 seconds, the system will consider sending the call to another skill group to handle the call. GSF cross-trained their agents in the “x2202-Literature Request Skill” to also handle Account Inquiry questions—if there is an available agent in this group, the call will be sent to that site.

If there are no available agents in the “x2202-Literature Request Skill” and the shortest wait time for the “x2201-Account Inquiry Skill” is greater than 45 seconds, the call will go to the site with the shortest wait time—even if it is over 45 seconds.

When the call arrives at the contact center site, the local site will run a script to determine the best resource to handle this call. Since the call was “pre-routed” to the site based upon real-time conditions, the logic will try to keep the call local to the site first—assuming that the pre-route selected that site because it was most likely to be able to handle the call first. Similar logic is applied to the call locally:

The site’s “x2201-Account Inquiry Skill” will be considered first—looking for an available agent. If there is an available agent, the call is sent to that agent immediately.

If there are no agents available, it will consider the local “x2202-Account Inquiry Backup” skill group for the call. If there is an available agent in that group, the call will be sent to that agent immediately.

If there are no agents available in either group, the call will queue for the next available “x2201-Account Inquiry Skill” agent at that site.

Queuing to agents for this service uses “look ahead queuing”, which means before a call will be queued to the back up group (x2202 – Account Inquiry Backup), the system will check to see if the expected wait in the backup group is less than the current wait—if it is, the call will be queued to the second group; if not, it will only queue to the primary group.

GSF estimates the traffic on the 1-800-GSF-STOC number will be 5,240 BHCA serviced by the following two enterprise (multi-site) skill groups:

Skills & Services Offered	Number of Agents (all sites)
X2201 – Account Inquiry	197 (Primary Skill Target)
X2202 – Account Inquiry (Backup B)	123 (Secondary Skill Target)

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate:

- The skill groups across the sites will maintain a service level of about 80% of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 11 seconds
- The Average Queue Time for calls in these applications will be 23 seconds
- The Average Queue Depth will have 15 calls at any given time

Broker’s Help Line – Call Flow #2c

Global Siren Financial also resells their securities with a network of smaller Brokers who have their own number: 1-800-GSF-BROK that provides these brokers with a direct number to access account services. Callers who call this number will be pre-routed to one of the sites that can handle their request.

Calls coming into this number will look first across all the sites for available agents who are associated with the “x2307-Brokerage Services Skill”. If there is an agent available at one of the sites, the pre-route will send that call to the site with the available agent. Agent selection is driven by looking for the Longest Available Agent in the event that multiple agents are available to handle this call.

If there are no agents available with this skill, the system will look at all of the sites that have agents logged into this skill but are currently talking to customers. Based upon a calculation, it can be determined which of the sites would have the shortest wait time to talk to an agent. If the shortest wait time is less than 20 seconds, that site will be selected and the call sent to that site.

If the shortest wait time is over 20 seconds, the system will consider sending the call to another skill group to handle the call. GSF cross-trains their agents in the “x2301-Account Inquiry Skill” to also handle Broker questions—if there is an available agent in this group, the call will be sent to that site.

If there are no available agents in the “x2301-Account Inquiry Skill” and the shortest wait time for the “x2307-Broker Services Skill” is greater than 20 seconds, the call will go to the site with the shortest wait time—even if it is over 20 seconds.

When the call arrives at the contact center site, the local site will run a script to determine the best resource to handle this call. Since the call was “pre-routed” to the site based upon real-time conditions, the logic will try to keep the call local to the site first—assuming that the pre-route selected that site because it was most likely to be able to handle the call first. Similar logic is applied to the call locally:

The site’s “x2307-Broker Services Skill” will be considered first—looking for an available agent. If there is an available agent, the call is sent to that agent immediately.

If there are no agents available, it will consider the local “x2301-Account Inquiry Skill” for the call. If there is an available agent in that group, the call will be sent to that agent immediately.

If there are no agents available in either group, the call will queue for the next available “x2307-Broker Services Skill” agent at that site.

GSF estimates the traffic on the 1-800-GSF-BROK number will be 4,350 BHCA serviced by the following two enterprise (multi-site) skill groups:

Skills & Services Offered	Number of Agents (all sites)
X2307 – Broker Services	217 (Primary Skill Target)
X2302 – Account Inquiry (Backup C)	44 (Secondary Skill Target)

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate:

- The skill groups across the sites will maintain a service level of about 80% of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 10 seconds
- The Average Queue Time for calls in these applications will be 23 seconds
- The Average Queue Depth will have 12 calls at any given time

Inbound Collections – Call Flow #2d

Global Siren Financial provides a toll-free number for its customers who are in a “collection status” and need to talk to a collections representative to make payment arrangements for their credit cards: 1-800-GSF-CRED. Callers who call this number will be pre-routed to one of the sites that can handle their request.

Calls to this number will consider the “x2405-Collections Skill” at any site that has an available agent. Agent selection is driven by looking for the Longest Available Agent in the event that multiple agents are available to handle this call.

If there is an available agent at the site, the call will be sent to that site directly.

If there are no available agents, a calculation will be done to determine the site with the shortest expected wait time for the caller, and the call will be sent there.

When the call arrives at the contact center, it will be routed again to select the agent to handle the call at that site. Since the call was pre-routed to that site, it is assumed that is the best site to handle or queue the call at that time.

If there is an agent available in the “x2405-Collections Skill” at that site, it will be sent to that agent immediately. If there are no agents available at that site, the call will be queued for the site.

While in queue, the caller will hear customized wait messages:

During the hours of 9:00AM and 2:00PM the system will add a queue message that says:

“You are calling during a time that is normally our highest call volume of the day, you may wish to call back later when your wait time may not be as long.”

Regardless of the time of day, if the Expected Wait Time is greater than 30 seconds (configured by a system variable), the caller will also hear a message in queue:

“We are experiencing very heavy call volume at this time. Your wait may be longer than normal.”

GSF estimates the traffic on the 1-800-GSF-CRED number will be 2,250 BHCA serviced by the following enterprise (multi-site) skill group (note—only one group):

Skills & Services Offered	Number of Agents (all sites)
X2405 – Inbound Collections	138

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate:

- The skill groups across the sites will maintain a service level of about 80% of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 10 seconds
- The Average Queue Time for calls in these applications will be 27 seconds
- The Average Queue Depth will have 7 calls at any given time

Member Brokerage Sales Line – Call Flow #2e

Global Siren Financial provides a toll-free number for its customers who are members in their Brokerage Services Account program. This program allows the customer to purchase and sell securities with a licensed GSF broker over the phone. Due to the regulatory requirements of this type of transaction, all calls must be able to be recorded and monitored. The agent desktop software to provide this function is installed only at the Newark (Site 4), Newton (Site 5) and Norcross (Site 6) sites, and the skill group “x2503 – Sales and Brokerage” is only offered at these sites.

GSF has targeted a select group of members in this program to receive priority treatment based upon their account status and trading balance. These customers (about 10% of the customer base) have been given a special toll free number to call for the premium treatment: 1-800-GSF-PREM. Standard customers use the number: 1-800-GSF-TRDE

Since there is only one sales group to handle these calls across the three sites, premium callers will be queued at a higher priority than the normal callers to this service. When they are identified by the system (using the dialed number to identify them), the caller will be set to a priority of 3. Normal callers will be set to a priority 5.

Normal priority callers who have waited in queue longer than 45 seconds (which can be adjusted by the use of a variable in the scripting), will have their priority adjusted upward by one—escalating:

Start of queue: Priority = 5

After 45 Seconds: Priority = 3

Any calls queued longer than 45 seconds will remain at priority 3 to ensure they are handled before a new premium caller.

GSF estimates the traffic on the 1-800-GSF-PREM and 1-800-GSF-TRDE numbers will be:

Premium: 155 BHCA (approx 10%)

Standard: 1,395 BHCA

Total: 1,550 BHCA

This call volume will be serviced by the following enterprise (multi-site) skill group:

Skills & Services Offered	Number of Agents (all sites)
X2503 – Sales & Brokerage	98

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate:

- The skill groups across the sites will maintain a service level of about 80% of the calls answered within 20 seconds

- The Average Speed of Answer across all sites for these skills will be 9 seconds
- The Average Queue Time for calls in these applications will be 28 seconds
- The Average Queue Depth will have 4 calls at any given time

Call Flow #3: Local Line Inbound – CallManager Post-Route

GSF provides some of their support services to its brokers and end customers using local line (toll) calls rather than providing toll-free service.

Call Flow #3a – Broker Technical Support

Brokers who re-sell GSF securities have access to on-line and web-based tools to support their business functions with GSF. Because GSF provides these services free of charge, they ask their brokers to call a local-access line, which may be long-distance for the broker. Each of the seven regional offices has local lines that are used for this purpose:

Table 1-21 Regional Office Local Lines

Site	Local Number	Est. BHCA / Site	Agents / Site
Nickerson, KS (Site 1)	620-422-9977	1920	120
Northbrook, IL (Site 2)	224-405-9977	135	11
Nash, TX (Site 3)	903-319-9977	90	8
Newark, DE (Site 4)	302-266-9977	600	40
Newton, MA (Site 5)	617-215-9977	50	6

Table 1-21 Regional Office Local Lines (continued)

Site	Local Number	Est. BHCA / Site	Agents / Site
Norcross, GA (Site 6)	678-344-9977	25	3
Northridge, CA (Site 7)	818-341-9977	135	11

Each site has a group of Broker Technical Support agents in the “x3109 – Tech Suppt” group. Calls to this group will originate locally, and try to satisfy the request first locally at the site, then consider available agents at clustered sites that share a common queue point:

Cluster #1: Site 1, Site 2, Site 3

Cluster #2: Site 4, Site 5, Site 6

Cluster #3: Site 7

Calls will remain in queue for their “cluster” until an agent becomes available, calls will not cross the cluster groupings and attempt to queue in another site cluster.

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate per site:

- The skill groups across the sites will maintain a service level of about 80% (80% - 84%) of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 9 - 30 seconds
- The Average Queue Time for calls in these applications will be 26 seconds – 2 minutes
- The Average Queue Depth will have 0 - 5 calls at any given time

Call Flow #3b – Password Reset – Account Lockout Line

Brokers and end customers who use GSF tools on-line, and on the web, may need to have their passwords reset or accounts locked out/reset from time-to-time. To facilitate this service, GSF provides a local number for each service center to directly access this function. Each of the seven regional offices has local lines that are used for this purpose:

Table 1-22 Regional Office Local Lines

Site	Local Number	Est. BHCA / Site	Agents / Site
Nickerson, KS (Site 1)	620-422-8877	1380	87
Northbrook, IL (Site 2)	224-405-8877	90	8
Nash, TX (Site 3)	903-319-8877	50	6
Newark, DE (Site 4)	302-266-8877	420	29
Newton, MA (Site 5)	617-215-8877	38	4
Norcross, GA (Site 6)	678-344-8877	25	3
Northridge, CA (Site 7)	818-341-8877	90	8

Each site has a group of Broker Technical Support agents in the “x3208 – Password” group. Calls to this group will originate locally, and try to satisfy the request first locally at the site, then consider available agents at other sites within its “home cluster” after queuing locally for 30 seconds (which can be adjusted on a variable basis).

Before a call is considered to queue to another cluster site, the expected wait time of the target site must be less than the current expected wait time for the site/queue the call is queued for. If a call is re-queued at another site, it will be removed from the current queue and only queue at the new site.

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate per site:

- The skill groups across the sites will maintain a service level of about 80% (80% - 84%) of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 12 - 30 seconds
- The Average Queue Time for calls in these applications will be 32 seconds – 2 minutes
- The Average Queue Depth will have 0 - 5 calls at any given time

Call Flow #3c – Billing and Back Office Line

Brokers who re-sell GSF securities occasionally have questions about their settlement statements and billing reports and need to speak with an accounting representative at GSF. Because GSF provides these services free of charge, they ask their brokers to call a local-access line, which may be long-distance for the broker. Each of the seven regional offices has local lines that are used for this purpose:

Table 1-23 Regional Office Local Lines

Site	Local Number	Est. BHCA / Site	Agents / Site
Nickerson, KS (Site 1)	620-422-7777	425 Inbound 1,715 Outbound	37 Inbnd 107 Outbnd
Northbrook, IL (Site 2)	224-405-7777	150	12
Nash, TX (Site 3)	903-319-7777	120	10

Table 1-23 Regional Office Local Lines (continued)

Site	Local Number	Est. BHCA / Site	Agents / Site
Newark, DE (Site 4)	302-266-7777	695	46
Newton, MA (Site 5)	617-215-7777	80	7
Norcross, GA (Site 6)	678-344-7777	38	4
Northridge, CA (Site 7)	818-341-7777	150	12

(Note: This group at Site 1 is also used as a blended outbound collections group with 100 agents that will make an estimated 1,715 BHCA from that group as well.)

Each site has a group of Broker Billing and Back Office Support agents in the “x3307 – Billing” group. Calls to this group will originate locally, and try to satisfy the request first locally at the site, then consider available agents at other sites after queuing locally for 30 seconds (which can be adjusted on a variable basis). If a call is re-queued at another site, it will be removed from the current queue and only queue at the new site.

Given this agent population, an average talk time of 2 minutes and average wrap-up time of 90 seconds, it is expected at this BHCA rate per site:

- The skill groups across the sites will maintain a service level of about 80% (80% - 83%) of the calls answered within 20 seconds
- The Average Speed of Answer across all sites for these skills will be 11 - 27 seconds
- The Average Queue Time for calls in these applications will be 27 seconds – 2 minutes
- The Average Queue Depth will have 0 - 6 calls at any given time

Call Flow #4: Self-Service Application

GSF provides a self-service application to its customers to allow them to make balance inquiries and perform simple payment transactions to their accounts. The applications are hosted at several of the sites for redundancy and need to be pre-routed based upon a ratio of available application ports per site to handle the calls. The two applications have their own toll free numbers:

Automatic Account Balance Inquiry: 1-800-GSF-BBAL

GSF Bank Credit Card Payments: 1-800-GSF-CPAY

Call Flow #4a – Account Balance Inquiry:

Calls to this line are pre-routed to the sites that host the IP IVR “Edge IVR” to select the site based upon available ports to handle the call. The calls are load balanced across the sites with available ports. If there are no sites with available ports, a “busy signal” is played to the caller as an indication that the service is not currently available.

When the call is sent to an available port for processing, the caller is presented the following message:

“Thank you for calling Global Siren Financial Brokerage Services. To obtain your fund balance, please enter your five digit personal identification number and press the pound key.”

The application (ICM) looks up the account number and plays back the customer balance from a dedicated SQL Server database.

If the account number is not found in the database, the application plays back the message:

“The account number you entered was not found. Please try again to enter your five digit personal identification number and press the pound key.”

The system will repeat this prompt again for a third time if the account number is still not found. After the third attempt, the following message is played:

“You are having difficulty entering your five digit personal identification number. Please hang up and try again later.”

Call Flow #4b – Credit Card Payment:

Calls to this line are pre-routed to the sites that host the IP IVR “Edge IVR” to select the site based upon available ports to handle the call. The calls are load balanced across the sites with available ports. If there are no sites with available ports, the following message is played to the caller:

“Thank you for calling Global Siren Financial Bank Credit Card Services. We are unable to accept your payment at this time, please call back later and try your transaction again.”

When the call can be sent to an IVR for processing, the system plays the following message:

“Thank you for calling Global Siren Financial Bank Credit Card Services. To make a payment on your account, please enter your sixteen digit account number followed by the pound sign.”

The application script in the IP IVR looks up the account number. If the account number is valid, it plays the following message:

“Your account balance is” <<insert amount from the database>> “Please enter your payment amount now.”

The caller will enter the amount—it will be played back to verify:

“You entered,” <<insert amount>> “This amount will be deducted from your checking account along with the fee of two dollars. Please confirm your payment by pressing one now.”

If the caller presses one, the system will update the database by subtracting the payment amount from the prior balance and play back the message and disconnect the call:

“Thank you. Your payment of” <<payment amount>> “has been applied to your account. Your current balance is” <<new balance>> “Thank you.”

Note that callers can “overpay” their accounts and have a credit balance. The system should handle this and not tell them they have a negative balance but a credit balance.

If the caller did not press one, the system will play the following message and disconnect the call:

“You did not confirm your payment of” <<payment amount>> “and this transaction has been cancelled. Thank you.”

If the account number is not found in the database, the application plays back the message:

“The account number you entered was not found. Please try again to enter your sixteen digit credit card number and press the pound key.”

The system will repeat this prompt again for a third time if the account number is still not found. After the third attempt, the following message is played:

“You are having difficulty entering your sixteen digit credit card number. Please hang up and try again later.”

Call Flow #5: Agent Initiated Conference/Transfers using CCM Post-Route

Once a call is answered by an agent, the agent may need to perform more call processing with the call manually—using the conference and transfer features of the IPCC. Based upon historical volumes, GSF expects 5% of all calls terminated at agents (inbound pre-routing or ISN post-routed) will need to be transferred using a Post-Route initiated by the agent.

Call Flow #5a – Conference/Transfer to Another Skill Group

Callers do make mistakes on selecting menu choices and dial wrong numbers on occasion and the agent who takes the call may need to re-direct the caller to a different agent to handle their request. Rather than telling the customer to “call back” with the correct number, GSF wants the agents to be able to re-qualify calls using the same routing logic that would have been used if the caller had made the correct choice initially to move the call for them.

Calls from the Call Flow #1 – Network IVR treatment and Edge IVR Treatment are most likely to need re-direction to a different site because of caller error in the menu tree. Other call types will be handled on an exception basis.

Calls being transferred by an agent to another group should be done using the CTI Desktop and re-routing using the Dial Plan. When the Dial Plan sees a transfer or conference like this, it should consider the local groups first—to prevent the call from having to be re-routed over the network if it does not have to use that path.

Transfer and conference calls should always look to the local site first for an available agent, then across the “clustered” sites (Site 1+Site 2+Site 3 calls stay within that cluster, Site 4+Site 5+Site 6 stay within that cluster, Site 7 stays within itself), then it should consider crossing clustered sites if and only if there is an available agent to take the call immediately in the other location.

If there are no agents available, a call should be put into queue for an agent in the new group; however, at a higher priority, as the caller may already have waited in queue for an agent prior to the transfer.

An example of this transfer might be:

A caller in the IVR Menu pressed “1” when they really needed to press “4” and was routed to the Account Inquiry Group at Site 1. The caller explains the service they require and the agent uses the system transfer numbers:

To move a call to the ...	Use Conf/Transfer to...
Account Inquiry Group	4001
Literature Request Group	4002
Member Banking	4004
Brokerage Service	4007

(Note that not all sites use a four digit dial plan; for those that use longer plans, add an extra “4” in front of the number.)

If the customer is a large volume VIP customer, the agent could do a “conference” to stay on the line with the customer and introduce the customer to the Sales and Brokerage agent. This could also be done as a “consultative transfer” as well.

If there were no Brokerage agents available at that site (Site 1), the system would consider agents at other sites in the clustered grouping, at Site 2 and Site 3. If there were no available agents at any of the three sites, it would consider the remaining sites and transfer the call only if there was an available Brokerage agent at the remaining sites (Site 4, Site 5, Site 6 or Site 7).

If no agents were available in that skill set at any location, the system should queue the call at the current location for an agent in the local site.

When the call is queued, an announcement will be played telling the caller how many calls are already in queue for this service using a real-time message.

Call Flow #5b – Agent to Agent Transfers & Queuing:

At each center, there are a number of agents who are designated as “Super” Agents who handle customer escalations for any group. Additionally, in this role they may have customers who call specifically asking for them by name—in this case an agent may need to transfer a call to a specific agent and/or queue a call directly to them.

Table 1-24 Site “Super” Agents

Site	Agent ID	Agent Name
Nickerson, KS (Site 1)	19901	HARRY JONES
	19902	SARAH BROWN
	19903	GEORGE HILL
	19904	BOB WEST
	19905	MARY SMITH
	19906	KEVIN HOLIDAY
	19907	KELLY JOHNSON
Northbrook, IL (Site 2)	29901	BILL GREEN
	29902	SALLY WADE
	29903	TIM WRIGHT
	29904	ALLEN TIMOTHY
	29905	JADE EASTON

Table 1-24 Site "Super" Agents (continued)

Site	Agent ID	Agent Name
Nash, TX (Site 3)	39901	NICHOLAS PARSONS
	39902	EVAN PEACE
	39903	JOY RIGBY
	39904	LINDA O'DELL
Newark, DE (Site 4)	49901	KAREN BUSH
	49902	WENDY TRUMP
	49903	WESLEY COLE
	49904	DAVID KLEIN
	49905	MATT HOUSLEY
	49906	TRAVIS TOOLMAN
	49907	CARL CARLSON
Newton, MA (Site 5)	59901	TRUDY GOODE
	59902	SAM ADAMS
	59903	BENNY FRANKLIN
Norcross, GA (Site 6)	69901	MELVIN PATTERSON
	69902	ROBERT BUTLER
	69903	MARY MEADE

Table 1-24 Site “Super” Agents (continued)

Site	Agent ID	Agent Name
Northridge, CA (Site 7)	79901	LIZ CRUISE
	79902	HOLLY VINE
	79903	WOODY STREETER
	79904	KEVIN MANN
	79905	MISSY BELMAN
	79906	EVA TOLE

If a customer requests any of these agents, they are transferred to the agent transfer number—if the agent is logged on. If the agent is not currently logged on, the system does not queue the call but plays a message back to the caller as follows—and then disconnects the call:

“I’m sorry, the person you’re trying to reach is not currently on site. Please try your call again later.”

If the agent is logged in and available, the call will go directly to them, regardless of the site or location they are at.

If the agent is logged in but talking on another call already, the call will be queued for that specific agent. The caller will hear a message as they enter the queue to let them know what is going on:

“I’m sorry, the person you are trying to reach is currently on the phone assisting another customer. There are” <insert number> “calls already in queue for this person. If you wish to hold, please stay on the line and you’ll be handled in the order you called. If you prefer not to wait at this time, please hang up and try your call again later.”

These “super” agents will log into a separate skill group that is not used in any other call routing logic as their function is to take direct callbacks from customers as they are transferred by agents directly to them from any site.

Call Flow #5c – Agent “Supervisor Assist” Calls

During normal call handling, agents may need the assistance of their supervisor to help them on the call they are currently handling. Each site has a number of supervisors assigned to each skill group at the site—with one supervisor being responsible for each 15 agents in the group. A large group of 130 agents would have 9 supervisors assigned to that skill group at that site.

If the agent needs assistance during a call, the “supervisor assist” or “emergency assist” button on the agent desktop can be used to have the system automatically find and conference in an available supervisor for that group.

The system will look for a supervisor for that agent group first locally within the site, then across the sites if there is not one available locally. In the event that no supervisor is available anywhere in the system, the agent will get a message from the desktop that says “no supervisor available.”

If there are no supervisors available, the agent can use the conference function to conference in a supervisor from the supervisor skill group—but since there are none available, the call will queue for the next available supervisor.

Call Flow #6 – Outbound Collection Calls

The collections group provides customer follow-up calls to the customers of GSF. The group at the Northridge site (Site 7) has 100 agents who are dedicated to outbound calling using the “collections” campaign. The Nickerson site (Site 1) has 100 agents available to handle both inbound and outbound calls.

The outbound calls are handled in a predictive dialer—which means that the system will attempt to dial several calls at once, given that some of the calls will not complete because of bad numbers, busy lines or other problems in the phone network. When a caller is connected to the system, an agent is connected to the caller to make the collections request.

Agents may also be asked to call back later. Using a feature called “personal callback”, the agent is able to schedule a time with the customer when the customer is to be called back. At that time, the system will place a call to the customer, transferring the call to the specific agent.

At the Site 1 location, calls will be made in the “Predictive” Mode, using agents from the “13307 – Billing Support” skill group to make the outbound calls as well as taking inbound calls from their normal skill group assignment.

At the Site 7 location, the agents are dedicated to the “76005 – Outbound Collections” group, and the Outbound Option will function in “Progressive” Mode to make maximum use of the agent pool assigned to making outbound calls.

Additional conditions and considerations:

In the event that a site has to be closed on an “emergency” basis, for a bomb threat or some other emergency, a “site emergency” skill group is defined with a specific agent associated with the skill group. All the standard call flows will check to make sure that the emergency agent has not logged into the emergency skill group before attempting to process the call for that site.

During an “emergency close”, all the calls would ignore the local agents for that closed site and consider only agents from the other sites—provided they are not also closed for the same reason. If all sites are in “emergency close” mode, the system will act as if the company is closed for “out of hours.”

Calls that are queued for a site that is in “emergency close” will be re-qualified to select another site for the queue.

In the event that a site is not closed for an emergency, is scheduled to be open, but the agents cannot log in for some reason (snow storm, black-out, etc.), the system will not accept calls into the queues for that site and treat the site as if it was closed as well.

The company is closed on the traditional U.S. holiday calendar—callers who call into the contact centers on holidays should be provided a call treatment similar to the “out of hours” closure but with a different greeting message to let the caller know the company is closed for the holiday.



Component Configurations

This chapter provides information on configuring components. This information includes, as appropriate: version numbers, related hardware, and related documentation. Specific call flow configuration information is provided in [Chapter 3, “Call Flows”](#).



Note

For specific information on the precise product versions used, including Service Releases, Hotfixes, and Engineering Specials where applicable, see the *IP Communications Systems Test Release 2.0: IPCC Release Notes*.

CAD

Components: Cisco Agent Desktop 4.4.1
Voice over IP Monitor Server

Hardware:

Server: MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)
Agent & Supervisor Desktops: Pentium IV Desktop

Configuration: Install and configure Cisco Agent Desktop as described in the installation and configuration documentation.

Related documentation:

- http://www.cisco.com/en/US/products/sw/custcosw/ps427/prod_technical_documentation.html

- *Cisco Agent Desktop Installation Guide*—Guides you through the Cisco Desktop Product Suite installation process.
http://www.cisco.com/en/US/products/sw/custcosw/ps427/prod_installation_guides_list.html

CallManager

Component: Cisco CallManager 3.3(3)
Music on Hold

Hardware: MCS-7845H-2.4-EVV1 (HPQ DL380G3, Dual CPU, 4 GB memory)
or
MCS-7835I-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)
or
MCS 7835-1266

Configuration: Install and configure CallManager and its components as described in the CallManager installation and configuration documentation.

Related documentation:

- http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/index.htm
- *Installing Cisco CallManager Release 3.3(3)*—Provides procedures for installing Cisco CallManager on the publisher database and subscriber servers.
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/install/instcall/index.htm
- *Cisco CallManager Administration Guide, Release 3.3(3)*—Provides step-by-step instructions for configuring, maintaining, and administering the Cisco CallManager voice over IP network.
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/sys_ad/3_3_3/ccmcfg/index.htm
- *Cisco CallManager Documentation Guide for Release 3.3(3)*—Provides an overview of the available Cisco CallManager documentation.
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/doc_gd/index.htm

Catalyst 3500 Series

Components: Catalyst 3524 12.0(5)

Hardware: Catalyst 3524

Configuration: Install and configure Catalyst 3500 Series Switches as described in the Catalyst 3500 Series installation and configuration documentation.

For sample configuration files, see the section [Catalyst, Gateway and Router Configuration Files, page 2-9](#).

Related documentation:

- http://www.cisco.com/univercd/cc/td/doc/product/lan/c2900x1/29_35wc5/index.htm

Catalyst 6500 Series

Components: Catalyst 6506/6509 8.1(1)

Hardware: Catalyst 6506/6509

Configuration: Install and configure Catalyst 6500 Series Switches as described in the Catalyst 6500 Series installation and configuration documentation.

For sample configuration files, see the section [Catalyst, Gateway and Router Configuration Files, page 2-9](#).

Related documentation:

- <http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/index.htm>

CTI OS

Components: Cisco CTI Object Server 5.1
IPCC Supervisor Desktop
CTI OS Agent Desktop

Hardware:

CTI OS: MCS-7845H-2.4-EVV1 (HPQ DL380G3, Single CPU, 1 GB memory)
Agent & Supervisor Desktops: Pentium IV Desktop

Configuration: Install and configure CTI OS and its Supervisor and Agent Desktops as described in the installation and configuration documentation.

Related documentation:

- <http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/ipccfam/ipcccti/ipccctios/index.htm>
- *Cisco ICM Software Release 5.0 CTI OS System Manager's Guide*—Provides procedures for installing and configuring the CTI OS product.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/icmcti/ctios/ctisys.pdf>

Gateways

Component: Cisco AS5350/AS5400HPX universal gateway 12.2(13)

Hardware: Cisco AS5350/AS5400HPX universal gateway

Configuration: For sample configuration files, see the section [Catalyst, Gateway and Router Configuration Files, page 2-9](#).

Related documentation:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122reInt/xprn122t/122tfeat.htm#1003904>

ICM

Components: Cisco Intelligent Contact Management 5.0 /
Cisco IP Contact Center (IPCC) 5.0
Peripheral Gateway (PG)
Admin Workstation
CTI Server

Historical Data Server (HDS)

WebView

Blended Agent - including IPCC compatible dialer

Hardware:

PG: MCS-7845H-2.4-EVV1 (HPQ DL380G3, Dual CPU, 4 GB memory)

PG: MCS 7845-1400

Admin Workstation: MCS 7845-1400

CTI Server: MCS-7835I-2.4-EVV1

HDS: MCS 7845-1400

WebView: MCS 7845-1400

Blended Agent: MCS 7845-1400

Configuration: Install and configure ICM/IPCC and its components as described in the installation and configuration documentation.

Related documentation:

- <http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/index.htm>
- *Cisco ICM Software Release 5.0 Installation Guide*—Describes how to install the components of ICM software, including information about hardware configuration and software setup.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/entered/core/instlgd.pdf>
- *Cisco ICM Software Release 5.0 Configuration Guide*—Describes how to use the ICM Configuration Manager tools to configure ICM software once it has been installed.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/entered/core/configde.pdf>
- *Cisco ICM Software Release 5.0 IP Contact Center Installation and Configuration Guide*—Describes how to install and configure the ICM components that are used for the IPCC solution, including information about installing the CallManager PG, VRU PG, and CTI Server.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/ipccfam/ipccent/ipcccnfg.pdf>
- *Cisco ICM Software Release 5.0 WebView Installation Guide*—Discusses how to install WebView and how to set up users to access WebView.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/icmreprt/wvinstl.pdf>

- *Cisco ICM Software Release 5.0 Blended Agent Setup and Configuration Guide*—Provides installation and configuration information about the Blended Agent (BA) application.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/icmout/ba5config.pdf>

IOS

Component: Cisco Internet Operating System 12.2

Configuration: Configure IOS as described in the configuration documentation.

Related documentation:

- <http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/index.htm>
- *Cisco IOS Release 12.2 Configuration Guides and Command References*—Documentation for tasks and commands necessary to configure and maintain access servers or routers.
<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgr/index.htm>

IP IVR

Component: Cisco IP IVR 3.1(2)

an application which is part of Cisco Customer Response Solutions (CRS) 3.1(2)

Hardware: MCS-7845H-2.4-CC1 (HPQ DL380G3, Dual CPU, 4 GB memory) or MCS-7835I-2.4-CC1 (HPQ DL380G3, Single CPU, 1 GB memory)

or

MCS 7835-1266

Configurations: Install and configure Cisco CRS as described in the CRS installation documentation.

Related documentation:

- http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/apps_3_1/index.htm
- *Getting Started with Cisco Customer Response Applications*—Overview, installation, and basic configuration information.
http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/apps_3_1/english/admn_app/get_str/index.htm
- *Cisco CRS Administrator Guide*—Detailed reference of the Cisco CRS Administration web interface.
http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/apps_3_1/english/admn_app/cra_adm/index.htm
- *Cisco CRS Serviceability Guide*—Instructions for configuring and using tools to monitor, discover, and troubleshoot Cisco CRS and its installed components, subsystems, and services.
http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/apps_3_1/english/admn_app/service/index.htm

ISN

Components: Cisco Internet Service Node 2.0
Voice Browser
Application Server
Media Server (but see below)

Hardware: MCS 7845-1400

Configuration: Install and configure ISN and its components as described in the installation and configuration documentation.

Media Server is not actually part of ISN, but is used by ISN. Information on installation of Media Server is not contained in the ISN documentation, though Media Server configuration information is provided.

Related documentation:

- <http://www.cisco.com/univercd/cc/td/doc/product/icm/isn/isn20/index.htm>

- *Cisco Internet Service Node Release 2.0 Installation Guide*—Describes how to install the ISN components and perform initial configuration.
<http://www.cisco.com/univercd/cc/td/doc/product/icm/isn/isn20/isn2nstl.pdf>
- *Cisco Internet Service Node Release 2.0 Configuration and Administration Guide*—Describes configuration and administration of ISN components and associated ICM software; provides troubleshooting information, as appropriate.
http://www.cisco.com/univercd/cc/td/doc/product/icm/isn/isn20/isn_conf.pdf

Phones

Components: Cisco IP Phone 7960/7940

Hardware: Cisco IP Phone 7960/7940

Configuration: Install and configure Cisco IP Phone 7960/7940 as described in the installation and configuration documentation.

Related documentation:

- http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/index.htm
- *Cisco IP Phone Administration Guide for Cisco CallManager, Cisco IP Phone 7960, 7940, and 7910*—Provides the information you need to understand, install, configure, and manage the Cisco IP Phone models 7960, 7940, and 7910 on your network.
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/admin/3_3/7900_mid.pdf

Routers

Components: Cisco 2691/3640A/3660/3725/3745/7206 router

Hardware: Cisco 2691/3640A/3660/3725/3745/7206 router

Configuration: For sample configuration files, see the section [Catalyst, Gateway and Router Configuration Files, page 2-9](#).

Related documentation:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122relnt/xprn122t/122tfeat.htm#1003904>

Catalyst, Gateway and Router Configuration Files

Site1 Cisco 3725 WAN Router

```
NS1-3725#sh run
Building configuration...

Current configuration : 25691 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
service compress-config
!
hostname NS1-3725
!
boot system flash flash:c3725-is-mz.122-15.T8
boot system flash:c3725-is-mz.122-15.T5
logging queue-limit 100
logging buffered 10000 debugging
!
clock timezone EDT -5
ip subnet-zero
ip tcp synwait-time 5
!
!
ip cef
no ip ftp passive
ip ftp username Administrator
```

```
ip ftp password gbipcc
ip domain name ipcc.com
ip host whirlwind 172.18.137.110
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
controller T1 1/0
    framing esf
    clock source line primary
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1/0 7206
!
controller T1 1/1
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1/1 7206
!
controller T1 1/3
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1/3 7206
!
controller T1 1/2
    framing esf
    clock source line primary
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1/2 7206
```

```
!  
controller T1 2/0  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/4 7206  
!  
controller T1 2/1  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/5 7206  
!  
controller T1 2/3  
  framing sf  
  linecode ami  
!  
controller T1 2/2  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/6 7206  
!  
class-map match-any af21-ns4  
  match access-group name af11-ns4  
  match access-group name af21-ns4  
class-map match-all af31-ns4  
  match access-group name af31-ns4  
class-map match-all af31-ns7  
  match access-group name af31-ns7  
class-map match-any af21-ns7  
  match access-group name af21-ns7  
  match access-group name af11-ns7  
class-map match-any af21-ns2  
  match access-group name af11-ns2  
  match access-group name af21-ns2  
class-map match-all af31-ns2  
  match access-group name af31-ns2  
!  
!  
policy-map qos-ns4  
  class af31-ns4  
    priority 287  
  class af21-ns4  
    bandwidth 13  
  class class-default  
    bandwidth 274  
policy-map qos-ns7
```

```
class af31-ns7
  priority 324
class af21-ns7
  bandwidth 8
class class-default
  bandwidth 272
policy-map qos-ns2
  class af31-ns2
    priority 76
  class af21-ns2
    bandwidth 8
  class class-default
    bandwidth 274
!
!
!
!
interface Loopback0
  description router-id for ospf
  ip address 200.0.0.1 255.255.255.255
!
interface FastEthernet0/0
  description link to NS1-CORE1-4/48
  no ip address
  speed 100
  full-duplex
!
interface FastEthernet0/0.1
  encapsulation isl 2
  ip address 10.12.2.7 255.255.255.224
  no ip redirects
!
interface FastEthernet0/0.10
  description link to NS1-CORE1 4/48 OSPF Vlan
  encapsulation isl 10
  ip address 10.12.14.162 255.255.255.248
  no ip redirects
  ip ospf priority 255
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface FastEthernet1/0
  no ip address
  shutdown
```

```
duplex auto
speed auto
!
interface Serial1/0:1
no ip address
encapsulation frame-relay
load-interval 30
no fair-queue
!
interface Serial1/0:1.2 point-to-point
description link to NS2-2691_S0/1:1.1
ip address 10.12.17.1 255.255.255.252
frame-relay interface-dlci 102
class qos-ns2
!
interface Serial1/0:1.3 point-to-point
description link to NS3-2691_S0/0:1.1
ip address 10.12.17.5 255.255.255.252
frame-relay interface-dlci 103
!
interface Serial1/0:1.4 point-to-point
description link to NS4-3725_S1/0:1.1
ip address 10.12.17.9 255.255.255.252
frame-relay interface-dlci 104
class qos-ns4
!
interface Serial1/0:1.5 point-to-point
description link to NS5-2691_S0/0:1.1
ip address 10.12.17.13 255.255.255.252
frame-relay interface-dlci 105
!
interface Serial1/0:1.6 point-to-point
description link to NS6-2691_S0/0:1.1
ip address 10.12.17.17 255.255.255.252
frame-relay interface-dlci 106
!
interface Serial1/0:1.7 point-to-point
description link to NS7-3725_S1/0:1.1
ip address 10.12.17.21 255.255.255.252
frame-relay interface-dlci 107
class qos-ns7
!
interface FastEthernet1/1
no ip address
shutdown
duplex auto
speed auto
!
```

```
interface Serial1/1:1
  no ip address
  encapsulation frame-relay
  !
interface Serial1/1:1.2 point-to-point
  description link to NS2-2691_S0/1:1.1
  ip address 10.12.17.25 255.255.255.252
  frame-relay interface-dlci 112
  !
interface Serial1/1:1.3 point-to-point
  description link to NS3-2691_S0/1:1.1
  ip address 10.12.17.29 255.255.255.252
  frame-relay interface-dlci 113
  !
interface Serial1/1:1.4 point-to-point
  description link to NS4-3725_S1/1:1.1
  ip address 10.12.17.33 255.255.255.252
  frame-relay interface-dlci 114
  !
interface Serial1/1:1.5 point-to-point
  description link to NS5-2691_S0/1:1.1
  ip address 10.12.17.37 255.255.255.252
  frame-relay interface-dlci 115
  !
interface Serial1/1:1.6 point-to-point
  description link to NS6-2691_S0/1:1.1
  ip address 10.12.17.41 255.255.255.252
  frame-relay interface-dlci 116
  !
interface Serial1/1:1.7 point-to-point
  description link to NS7-3725_S1/1:1.1
  ip address 10.12.17.45 255.255.255.252
  frame-relay interface-dlci 117
  !
interface Serial1/2:1
  no ip address
  encapsulation frame-relay
  !
interface Serial1/2:1.2 point-to-point
  description link to NS2-2691_S0/2:1.1
  ip address 10.12.17.49 255.255.255.252
  frame-relay interface-dlci 122
  !
interface Serial1/2:1.3 point-to-point
  description link to NS3-2691_S0/2:1.1
  ip address 10.12.17.53 255.255.255.252
  frame-relay interface-dlci 123
  !
```

```
interface Serial1/2:1.4 point-to-point
description link to NS4-3725_S1/2:1.1
ip address 10.12.17.57 255.255.255.252
frame-relay interface-dlci 124
!
interface Serial1/2:1.5 point-to-point
description link to NS5-2691_S0/2:1.1
ip address 10.12.17.61 255.255.255.252
frame-relay interface-dlci 125
!
interface Serial1/2:1.6 point-to-point
description link to NS6-2691_S0/2:1.1
ip address 10.12.17.65 255.255.255.252
frame-relay interface-dlci 126
!
interface Serial1/2:1.7 point-to-point
description link to NS7-3725_S1/2:1.1
ip address 10.12.17.69 255.255.255.252
frame-relay interface-dlci 127
!
interface Serial1/3:1
no ip address
encapsulation frame-relay
!
interface Serial1/3:1.2 point-to-point
description link to NS2-2691_S0/3:1.1
ip address 10.12.17.73 255.255.255.252
frame-relay interface-dlci 132
!
interface Serial1/3:1.3 point-to-point
description link to NS3-2691_S0/3:1.1
ip address 10.12.17.77 255.255.255.252
frame-relay interface-dlci 133
!
interface Serial1/3:1.4 point-to-point
description link to NS4-3725_S1/3:1.1
ip address 10.12.17.81 255.255.255.252
frame-relay interface-dlci 134
!
interface Serial1/3:1.5 point-to-point
description link to NS5-2691_S0/3:1.1
ip address 10.12.17.85 255.255.255.252
frame-relay interface-dlci 135
!
interface Serial1/3:1.6 point-to-point
description link to NS6-2691_S0/3:1.1
ip address 10.12.17.89 255.255.255.252
frame-relay interface-dlci 136
```

```
!  
interface Serial1/3:1.7 point-to-point  
description link to NS7-3725_S1/3:1.1  
ip address 10.12.17.93 255.255.255.252  
frame-relay interface-dlci 137  
!  
interface Serial2/0:1  
no ip address  
!  
interface Serial2/1:1  
no ip address  
!  
interface Serial2/2:1  
no ip address  
!  
router ospf 1  
router-id 200.0.0.1  
log-adjacency-changes  
area 1 range 10.12.3.0 255.255.255.0  
area 1 range 10.12.4.0 255.255.255.0  
area 1 range 10.12.14.0 255.255.255.0  
network 10.12.3.0 0.0.0.255 area 1  
network 10.12.4.0 0.0.0.255 area 1  
network 10.12.14.0 0.0.0.255 area 1  
network 10.12.17.0 0.0.0.255 area 0  
network 10.12.18.0 0.0.0.255 area 0  
!  
ip local policy route-map syslog  
ip http server  
ip classless  
ip route 10.12.5.24 255.255.255.248 10.12.17.2  
ip route 10.12.5.32 255.255.255.248 10.12.17.2  
ip route 10.12.7.160 255.255.255.248 10.12.17.10  
ip route 10.12.7.168 255.255.255.248 10.12.17.10  
ip route 10.12.7.176 255.255.255.248 10.12.17.10  
ip route 10.12.7.184 255.255.255.248 10.12.17.10  
ip route 10.12.11.64 255.255.255.248 10.12.17.22  
ip route 10.12.11.72 255.255.255.248 10.12.17.22  
ip route 10.12.11.80 255.255.255.248 10.12.17.22  
ip route 10.12.11.88 255.255.255.248 10.12.17.22  
ip route 172.0.0.0 255.0.0.0 10.12.2.1  
!  
!  
!  
ip access-list extended af11-ns2  
permit ip host 10.12.4.34 host 10.12.5.26 dscp af11  
permit ip host 10.12.4.35 host 10.12.5.26 dscp af11  
permit ip host 10.12.4.42 host 10.12.5.26 dscp af11
```



```
permit ip host 10.12.4.43 host 10.12.5.26 dscp af11
permit ip host 10.12.4.34 host 10.12.5.27 dscp af11
permit ip host 10.12.4.35 host 10.12.5.27 dscp af11
permit ip host 10.12.4.42 host 10.12.5.27 dscp af11
permit ip host 10.12.4.43 host 10.12.5.27 dscp af11
permit ip host 10.12.4.34 host 10.12.5.34 dscp af11
permit ip host 10.12.4.35 host 10.12.5.34 dscp af11
permit ip host 10.12.4.42 host 10.12.5.34 dscp af11
permit ip host 10.12.4.43 host 10.12.5.34 dscp af11
permit ip host 10.12.4.34 host 10.12.5.35 dscp af11
permit ip host 10.12.4.35 host 10.12.5.35 dscp af11
permit ip host 10.12.4.42 host 10.12.5.35 dscp af11
permit ip host 10.12.4.43 host 10.12.5.35 dscp af11
remark traffic from rgr's to ns2-pg's af11-dscp 10
ip access-list extended af11-ns4
permit ip host 10.12.4.34 host 10.12.7.162 dscp af11
permit ip host 10.12.4.35 host 10.12.7.162 dscp af11
permit ip host 10.12.4.42 host 10.12.7.162 dscp af11
permit ip host 10.12.4.43 host 10.12.7.162 dscp af11
permit ip host 10.12.4.34 host 10.12.7.163 dscp af11
permit ip host 10.12.4.35 host 10.12.7.163 dscp af11
permit ip host 10.12.4.42 host 10.12.7.163 dscp af11
permit ip host 10.12.4.43 host 10.12.7.163 dscp af11
permit ip host 10.12.4.34 host 10.12.7.170 dscp af11
permit ip host 10.12.4.35 host 10.12.7.170 dscp af11
permit ip host 10.12.4.42 host 10.12.7.170 dscp af11
permit ip host 10.12.4.43 host 10.12.7.170 dscp af11
permit ip host 10.12.4.34 host 10.12.7.171 dscp af11
permit ip host 10.12.4.35 host 10.12.7.171 dscp af11
permit ip host 10.12.4.42 host 10.12.7.171 dscp af11
permit ip host 10.12.4.43 host 10.12.7.171 dscp af11
permit ip host 10.12.4.34 host 10.12.7.178 dscp af11
permit ip host 10.12.4.35 host 10.12.7.178 dscp af11
permit ip host 10.12.4.42 host 10.12.7.178 dscp af11
permit ip host 10.12.4.43 host 10.12.7.178 dscp af11
permit ip host 10.12.4.34 host 10.12.7.179 dscp af11
permit ip host 10.12.4.35 host 10.12.7.179 dscp af11
permit ip host 10.12.4.42 host 10.12.7.179 dscp af11
permit ip host 10.12.4.43 host 10.12.7.179 dscp af11
permit ip host 10.12.4.34 host 10.12.7.186 dscp af11
permit ip host 10.12.4.35 host 10.12.7.186 dscp af11
permit ip host 10.12.4.42 host 10.12.7.186 dscp af11
permit ip host 10.12.4.43 host 10.12.7.186 dscp af11
permit ip host 10.12.4.34 host 10.12.7.187 dscp af11
permit ip host 10.12.4.35 host 10.12.7.187 dscp af11
permit ip host 10.12.4.42 host 10.12.7.187 dscp af11
permit ip host 10.12.4.43 host 10.12.7.187 dscp af11
remark traffic from rgr's to ns4-pg's af11-dscp 10
```

```
ip access-list extended af11-ns7
  permit ip host 10.12.4.34 host 10.12.11.66 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.66 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.66 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.66 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.67 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.67 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.67 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.67 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.74 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.74 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.74 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.74 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.75 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.75 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.75 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.75 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.82 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.82 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.82 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.82 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.83 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.83 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.83 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.83 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.90 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.90 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.90 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.90 dscp af11
  permit ip host 10.12.4.34 host 10.12.11.91 dscp af11
  permit ip host 10.12.4.35 host 10.12.11.91 dscp af11
  permit ip host 10.12.4.42 host 10.12.11.91 dscp af11
  permit ip host 10.12.4.43 host 10.12.11.91 dscp af11
  remark traffic from rgr's to ns7-pg's dscp 10
ip access-list extended af21-ns2
  permit ip host 10.12.4.34 host 10.12.5.26 dscp af21
  permit ip host 10.12.4.35 host 10.12.5.26 dscp af21
  permit ip host 10.12.4.42 host 10.12.5.26 dscp af21
  permit ip host 10.12.4.43 host 10.12.5.26 dscp af21
  permit ip host 10.12.4.34 host 10.12.5.27 dscp af21
  permit ip host 10.12.4.35 host 10.12.5.27 dscp af21
  permit ip host 10.12.4.42 host 10.12.5.27 dscp af21
  permit ip host 10.12.4.43 host 10.12.5.27 dscp af21
  permit ip host 10.12.4.34 host 10.12.5.34 dscp af21
  permit ip host 10.12.4.35 host 10.12.5.34 dscp af21
  permit ip host 10.12.4.42 host 10.12.5.34 dscp af21
  permit ip host 10.12.4.43 host 10.12.5.34 dscp af21
  permit ip host 10.12.4.34 host 10.12.5.35 dscp af21
```

```
permit ip host 10.12.4.35 host 10.12.5.35 dscp af21
permit ip host 10.12.4.42 host 10.12.5.35 dscp af21
permit ip host 10.12.4.43 host 10.12.5.35 dscp af21
remark traffic from rgr's to ns2-pg's af21-dscp 18
ip access-list extended af21-ns4
permit ip host 10.12.4.34 host 10.12.7.162 dscp af21
permit ip host 10.12.4.35 host 10.12.7.162 dscp af21
permit ip host 10.12.4.42 host 10.12.7.162 dscp af21
permit ip host 10.12.4.43 host 10.12.7.162 dscp af21
permit ip host 10.12.4.34 host 10.12.7.163 dscp af21
permit ip host 10.12.4.35 host 10.12.7.163 dscp af21
permit ip host 10.12.4.42 host 10.12.7.163 dscp af21
permit ip host 10.12.4.43 host 10.12.7.163 dscp af21
permit ip host 10.12.4.34 host 10.12.7.170 dscp af21
permit ip host 10.12.4.35 host 10.12.7.170 dscp af21
permit ip host 10.12.4.42 host 10.12.7.170 dscp af21
permit ip host 10.12.4.43 host 10.12.7.170 dscp af21
permit ip host 10.12.4.34 host 10.12.7.171 dscp af21
permit ip host 10.12.4.35 host 10.12.7.171 dscp af21
permit ip host 10.12.4.42 host 10.12.7.171 dscp af21
permit ip host 10.12.4.43 host 10.12.7.171 dscp af21
permit ip host 10.12.4.34 host 10.12.7.178 dscp af21
permit ip host 10.12.4.35 host 10.12.7.178 dscp af21
permit ip host 10.12.4.42 host 10.12.7.178 dscp af21
permit ip host 10.12.4.43 host 10.12.7.178 dscp af21
permit ip host 10.12.4.34 host 10.12.7.179 dscp af21
permit ip host 10.12.4.35 host 10.12.7.179 dscp af21
permit ip host 10.12.4.42 host 10.12.7.179 dscp af21
permit ip host 10.12.4.43 host 10.12.7.179 dscp af21
permit ip host 10.12.4.34 host 10.12.7.186 dscp af21
permit ip host 10.12.4.35 host 10.12.7.186 dscp af21
permit ip host 10.12.4.42 host 10.12.7.186 dscp af21
permit ip host 10.12.4.43 host 10.12.7.186 dscp af21
permit ip host 10.12.4.34 host 10.12.7.187 dscp af21
permit ip host 10.12.4.35 host 10.12.7.187 dscp af21
permit ip host 10.12.4.42 host 10.12.7.187 dscp af21
permit ip host 10.12.4.43 host 10.12.7.187 dscp af21
remark traffic from rgr's to ns4-pg's af11-dscp 18
ip access-list extended af21-ns7
permit ip host 10.12.4.34 host 10.12.11.66 dscp af21
permit ip host 10.12.4.35 host 10.12.11.66 dscp af21
permit ip host 10.12.4.42 host 10.12.11.66 dscp af21
permit ip host 10.12.4.43 host 10.12.11.66 dscp af21
permit ip host 10.12.4.34 host 10.12.11.67 dscp af21
permit ip host 10.12.4.35 host 10.12.11.67 dscp af21
permit ip host 10.12.4.42 host 10.12.11.67 dscp af21
permit ip host 10.12.4.43 host 10.12.11.67 dscp af21
permit ip host 10.12.4.34 host 10.12.11.74 dscp af21
```

```

permit ip host 10.12.4.35 host 10.12.11.74 dscp af21
permit ip host 10.12.4.42 host 10.12.11.74 dscp af21
permit ip host 10.12.4.43 host 10.12.11.74 dscp af21
permit ip host 10.12.4.34 host 10.12.11.75 dscp af21
permit ip host 10.12.4.35 host 10.12.11.75 dscp af21
permit ip host 10.12.4.42 host 10.12.11.75 dscp af21
permit ip host 10.12.4.43 host 10.12.11.75 dscp af21
permit ip host 10.12.4.34 host 10.12.11.82 dscp af21
permit ip host 10.12.4.35 host 10.12.11.82 dscp af21
permit ip host 10.12.4.42 host 10.12.11.82 dscp af21
permit ip host 10.12.4.43 host 10.12.11.82 dscp af21
permit ip host 10.12.4.34 host 10.12.11.83 dscp af21
permit ip host 10.12.4.35 host 10.12.11.83 dscp af21
permit ip host 10.12.4.42 host 10.12.11.83 dscp af21
permit ip host 10.12.4.43 host 10.12.11.83 dscp af21
permit ip host 10.12.4.34 host 10.12.11.90 dscp af21
permit ip host 10.12.4.35 host 10.12.11.90 dscp af21
permit ip host 10.12.4.42 host 10.12.11.90 dscp af21
permit ip host 10.12.4.43 host 10.12.11.90 dscp af21
permit ip host 10.12.4.34 host 10.12.11.91 dscp af21
permit ip host 10.12.4.35 host 10.12.11.91 dscp af21
permit ip host 10.12.4.42 host 10.12.11.91 dscp af21
permit ip host 10.12.4.43 host 10.12.11.91 dscp af21
remark traffic from rgr's to ns7-pg's dscp 18
ip access-list extended af31-ns2
permit ip host 10.12.4.34 host 10.12.5.26 dscp af31
permit ip host 10.12.4.35 host 10.12.5.26 dscp af31
permit ip host 10.12.4.42 host 10.12.5.26 dscp af31
permit ip host 10.12.4.43 host 10.12.5.26 dscp af31
permit ip host 10.12.4.34 host 10.12.5.27 dscp af31
permit ip host 10.12.4.35 host 10.12.5.27 dscp af31
permit ip host 10.12.4.42 host 10.12.5.27 dscp af31
permit ip host 10.12.4.43 host 10.12.5.27 dscp af31
permit ip host 10.12.4.34 host 10.12.5.34 dscp af31
permit ip host 10.12.4.35 host 10.12.5.34 dscp af31
permit ip host 10.12.4.42 host 10.12.5.34 dscp af31
permit ip host 10.12.4.43 host 10.12.5.34 dscp af31
permit ip host 10.12.4.34 host 10.12.5.35 dscp af31
permit ip host 10.12.4.35 host 10.12.5.35 dscp af31
permit ip host 10.12.4.42 host 10.12.5.35 dscp af31
permit ip host 10.12.4.43 host 10.12.5.35 dscp af31
remark traffic from rgr's to ns2-pg's af31-dscp 26
ip access-list extended af31-ns4
permit ip host 10.12.4.34 host 10.12.7.162 dscp af31
permit ip host 10.12.4.35 host 10.12.7.162 dscp af31
permit ip host 10.12.4.42 host 10.12.7.162 dscp af31
permit ip host 10.12.4.43 host 10.12.7.162 dscp af31
permit ip host 10.12.4.34 host 10.12.7.163 dscp af31

```

```
permit ip host 10.12.4.35 host 10.12.7.163 dscp af31
permit ip host 10.12.4.42 host 10.12.7.163 dscp af31
permit ip host 10.12.4.43 host 10.12.7.163 dscp af31
permit ip host 10.12.4.34 host 10.12.7.170 dscp af31
permit ip host 10.12.4.35 host 10.12.7.170 dscp af31
permit ip host 10.12.4.42 host 10.12.7.170 dscp af31
permit ip host 10.12.4.43 host 10.12.7.170 dscp af31
permit ip host 10.12.4.34 host 10.12.7.171 dscp af31
permit ip host 10.12.4.35 host 10.12.7.171 dscp af31
permit ip host 10.12.4.42 host 10.12.7.171 dscp af31
permit ip host 10.12.4.43 host 10.12.7.171 dscp af31
permit ip host 10.12.4.34 host 10.12.7.178 dscp af31
permit ip host 10.12.4.35 host 10.12.7.178 dscp af31
permit ip host 10.12.4.42 host 10.12.7.178 dscp af31
permit ip host 10.12.4.43 host 10.12.7.178 dscp af31
permit ip host 10.12.4.34 host 10.12.7.179 dscp af31
permit ip host 10.12.4.35 host 10.12.7.179 dscp af31
permit ip host 10.12.4.42 host 10.12.7.179 dscp af31
permit ip host 10.12.4.43 host 10.12.7.179 dscp af31
permit ip host 10.12.4.34 host 10.12.7.186 dscp af31
permit ip host 10.12.4.35 host 10.12.7.186 dscp af31
permit ip host 10.12.4.42 host 10.12.7.186 dscp af31
permit ip host 10.12.4.43 host 10.12.7.186 dscp af31
permit ip host 10.12.4.34 host 10.12.7.187 dscp af31
permit ip host 10.12.4.35 host 10.12.7.187 dscp af31
permit ip host 10.12.4.42 host 10.12.7.187 dscp af31
permit ip host 10.12.4.43 host 10.12.7.187 dscp af31
remark traffic from rgr's to ns4-pg's af11-dscp 26
ip access-list extended af31-ns7
permit ip host 10.12.4.34 host 10.12.11.66 dscp af31
permit ip host 10.12.4.35 host 10.12.11.66 dscp af31
permit ip host 10.12.4.42 host 10.12.11.66 dscp af31
permit ip host 10.12.4.43 host 10.12.11.66 dscp af31
permit ip host 10.12.4.34 host 10.12.11.67 dscp af31
permit ip host 10.12.4.35 host 10.12.11.67 dscp af31
permit ip host 10.12.4.42 host 10.12.11.67 dscp af31
permit ip host 10.12.4.43 host 10.12.11.67 dscp af31
permit ip host 10.12.4.34 host 10.12.11.74 dscp af31
permit ip host 10.12.4.35 host 10.12.11.74 dscp af31
permit ip host 10.12.4.42 host 10.12.11.74 dscp af31
permit ip host 10.12.4.43 host 10.12.11.74 dscp af31
permit ip host 10.12.4.34 host 10.12.11.75 dscp af31
permit ip host 10.12.4.35 host 10.12.11.75 dscp af31
permit ip host 10.12.4.42 host 10.12.11.75 dscp af31
permit ip host 10.12.4.43 host 10.12.11.75 dscp af31
permit ip host 10.12.4.34 host 10.12.11.82 dscp af31
permit ip host 10.12.4.35 host 10.12.11.82 dscp af31
permit ip host 10.12.4.42 host 10.12.11.82 dscp af31
```

```

permit ip host 10.12.4.43 host 10.12.11.82 dscp af31
permit ip host 10.12.4.34 host 10.12.11.83 dscp af31
permit ip host 10.12.4.35 host 10.12.11.83 dscp af31
permit ip host 10.12.4.42 host 10.12.11.83 dscp af31
permit ip host 10.12.4.43 host 10.12.11.83 dscp af31
permit ip host 10.12.4.34 host 10.12.11.90 dscp af31
permit ip host 10.12.4.35 host 10.12.11.90 dscp af31
permit ip host 10.12.4.42 host 10.12.11.90 dscp af31
permit ip host 10.12.4.43 host 10.12.11.90 dscp af31
permit ip host 10.12.4.34 host 10.12.11.91 dscp af31
permit ip host 10.12.4.35 host 10.12.11.91 dscp af31
permit ip host 10.12.4.42 host 10.12.11.91 dscp af31
permit ip host 10.12.4.43 host 10.12.11.91 dscp af31
remark traffic from rgr's to ns7-pg's dscp 26
ip access-list extended syslog
 permit ip any host 10.12.13.210
!
!
map-class frame-relay qos-ns2
 frame-relay cir 364000
 frame-relay bc 364
 frame-relay mincir 364000
 service-policy output qos-ns2
!
map-class frame-relay qos-ns4
 frame-relay cir 574000
 frame-relay bc 574
 frame-relay mincir 574000
 service-policy output qos-ns4
!
map-class frame-relay qos-ns7
 frame-relay cir 604000
 frame-relay bc 604
 frame-relay mincir 604000
 service-policy output qos-ns7
!
map-class frame-relay qos
 logging origin-id hostname
 logging source-interface FastEthernet0/0.1
 logging 10.12.13.210
access-list 101 permit ip host 10.12.4.43 host 10.12.5.27 dscp af12
access-list 101 remark matched af12 packets from ns1-rgrb
access-list 101 permit ip host 10.12.4.42 host 10.12.5.27 dscp af12
access-list 102 permit ip host 10.12.4.42 host 10.12.5.27 dscp af22
access-list 102 remark matched af22 packets from ns1-rgrb
access-list 102 permit ip host 10.12.4.43 host 10.12.5.27 dscp af22
access-list 103 permit ip host 10.12.4.42 host 10.12.5.27 dscp af32
access-list 103 permit ip host 10.12.4.43 host 10.12.5.27 dscp af32

```

```
access-list 150 permit ip host 10.12.3.242 any
!
route-map syslog permit 10
  match ip address syslog
  set ip next-hop 10.12.2.1
!
tftp-server flash:c3725-is-mz.122-15.T2
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
```

```
!  
!  
dial-peer cor custom  
!  
!  
!  
alias configure ro router ospf  
alias configure acle ip access-list ex  
alias configure acls ip access-list st  
alias exec c conf t  
alias exec r sh run  
alias exec son sh ip ospf neig  
alias exec ciop clear ip ospf process  
alias exec clog clear logg  
alias exec ipr sh ip route  
alias exec sip sh ip protocols  
alias exec NS1-3725 TELNET 10.12.2.7  
alias exec NS2-2691 TELNET 10.12.2.9  
alias exec NS3-2691 TELNET 10.12.2.11  
alias exec NS4-3725 TELNET 10.12.2.13  
alias exec NS5-2691 TELNET 10.12.2.15  
alias exec NS6-2691 TELNET 10.12.2.17  
alias exec NS7-3725 TELNET 10.12.2.19  
alias exec fr sh frame-relay  
alias exec sion sh ip ospf nei  
alias exec cipr clear ip ospf process  
alias exec sri sh run int  
alias exec sib sh ip int brief  
alias exec sacl sh ip access-list  
!  
line con 0  
  exec-timeout 30 0  
  privilege level 15  
  logging synchronous  
line aux 0  
line vty 0 4  
  exec-timeout 30 0  
  privilege level 15  
  logging synchronous  
  no login  
!  
ntp clock-period 17180506  
ntp server 10.12.2.1  
end
```


Site1 Cisco AS5400HPX Gateway for ISN

```
NS1-ISN-5400#sh run
Building configuration...
This command has no effect on this line; use modem AT commands instead
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Current configuration : 8426 bytes
!
version 12.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname NS1-ISN-5400
!
boot system flash:c5400-is-mz.122-13.T8
boot system flash:c5400-is-mz.122-13.T3
no boot startup-test
logging buffered 9999999 debugging
no logging console
enable password lab
!
!
!
resource-pool disable
spe default-firmware spe-firmware-1
ip subnet-zero
ip cef
ip domain name ipcc.com
ip name-server 10.12.4.35
!
isdn switch-type primary-ni
!
!
voice service voip
    fax protocol t38 ls-redundancy 0 hs-redundancy 0 fallback cisco
    h323
    call start slow
!
voice class codec 1
    codec preference 1 g711ulaw
    codec preference 2 g729r8
```

```
!  
!  
!  
!  
!  
!  
!  
!  
!  
mta receive maximum-recipients 0  
!  
!  
controller T1 6/0  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24  
    no yellow generation  
    no yellow detection  
!  
controller T1 6/1  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24  
    no yellow generation  
    no yellow detection  
!  
controller T1 6/2  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24  
    no yellow generation  
    no yellow detection  
!  
controller T1 6/3  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24  
    no yellow generation  
    no yellow detection  
!  
controller T1 6/4  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24  
    no yellow generation  
    no yellow detection  
!
```

```
controller T1 6/5
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 6/6
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 6/7
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 7/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 7/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 7/2
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 7/3
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
```

```
!  
controller T1 7/4  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24  
  no yellow generation  
  no yellow detection  
!  
controller T1 7/5  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24  
  no yellow generation  
  no yellow detection  
!  
controller T1 7/6  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24  
  no yellow generation  
  no yellow detection  
!  
controller T1 7/7  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24  
  no yellow generation  
  no yellow detection  
!  
!  
!  
interface FastEthernet0/0  
  description link to NS1-CORE1-4/46  
  ip address 10.12.4.130 255.255.255.248  
  logging event link-status  
  duplex full  
  speed 100  
  h323-gateway voip interface  
  h323-gateway voip id NS1-ISN-zone ipaddr 10.12.4.147 1719  
  h323-gateway voip h323-id 10.12.4.130  
  h323-gateway voip tech-prefix 1#  
!  
interface FastEthernet0/1  
  no ip address  
  shutdown  
  duplex auto  
  speed auto  
!
```

```
interface Serial0/0
  no ip address
  shutdown
  clockrate 2000000
!
interface Serial6/0
  no ip address
  shutdown
!
interface Serial7/0
  no ip address
  shutdown
!
interface Serial0/1
  no ip address
  shutdown
  clockrate 2000000
!
interface Serial6/0:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/1:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/2:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/3:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/4:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
```

```
interface Serial6/5:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/6:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial6/7:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/0:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/1:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/2:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/3:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/4:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
```

```
interface Serial7/5:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/6:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice modem
  no cdp enable
!
interface Serial7/7:23
  no ip address
  logging event link-status
  isdn switch-type primary-ni
  isdn protocol-emulate network
  isdn incoming-voice modem
  isdn T310 30000
  no cdp enable
!
interface Group-Async0
  no ip address
  group-range 1/00 5/107
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.4.129
no ip http server
!
!
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps isdn call-information
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps bgp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps dlsw
!
call rsvp-sync
!
voice-port 6/0:D
!
```

```
voice-port 6/1:D
!
voice-port 6/2:D
!
voice-port 6/3:D
!
voice-port 6/4:D
!
voice-port 6/5:D
!
voice-port 6/6:D
!
voice-port 6/7:D
!
voice-port 7/0:D
!
voice-port 7/1:D
!
voice-port 7/2:D
!
voice-port 7/3:D
!
voice-port 7/4:D
!
voice-port 7/5:D
!
voice-port 7/6:D
!
voice-port 7/7:D
!
!
mgcp profile default
!
dial-peer cor custom
!
!
!
dial-peer voice 1 voip
!
dial-peer voice 919 voip
  destination-pattern 919311....
  voice-class codec 1
  session target ras
  dtmf-relay rtp-nte h245-signal h245-alphanumeric
!
dial-peer voice 2 pots
  destination-pattern 2...
  no digit-strip
```



```
    direct-inward-dial
    port 6/0:D
    !
dial-peer voice 700 pots
    destination-pattern 520920....
    no digit-strip
    direct-inward-dial
    port 7/7:D
    !
dial-peer voice 10001 voip
    destination-pattern 1....
    session target ras
    codec g711ulaw
    no vad
    !
dial-peer voice 3 pots
    destination-pattern 3...
    no digit-strip
    direct-inward-dial
    port 6/1:D
    !
dial-peer voice 4 pots
    destination-pattern 4...
    no digit-strip
    direct-inward-dial
    port 6/2:D
    !
dial-peer voice 5 pots
    destination-pattern 4...
    no digit-strip
    direct-inward-dial
    port 6/3:D
    !
dial-peer voice 6 pots
    destination-pattern 5...
    no digit-strip
    direct-inward-dial
    port 6/4:D
    !
dial-peer voice 7 pots
    destination-pattern 7...
    no digit-strip
    direct-inward-dial
    port 6/5:D
    !
dial-peer voice 8 pots
    destination-pattern 8...
    no digit-strip
```

```
    direct-inward-dial
    port 6/6:D
    !
    dial-peer voice 9 pots
    destination-pattern 9...
    no digit-strip
    direct-inward-dial
    port 6/7:D
    !
    dial-peer voice 10 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/0:D
    !
    dial-peer voice 11 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/1:D
    !
    dial-peer voice 12 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/2:D
    !
    dial-peer voice 13 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/3:D
    !
    dial-peer voice 14 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/4:D
    !
    dial-peer voice 15 pots
    destination-pattern 1...
    no digit-strip
    direct-inward-dial
    port 7/5:D
    !
    dial-peer voice 16 pots
    destination-pattern 1...
    no digit-strip
```

```
direct-inward-dial
port 7/6:D
!
dial-peer voice 17 pots
destination-pattern 1...
no digit-strip
direct-inward-dial
port 7/7:D
!
!
num-exp 12206209110 9193119110
num-exp 12206209120 9193119120
num-exp 1220620100. 1000.
gateway
!
alias exec c conf t
alias exec sri sh run int
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
login
line 1/00 2/59
no flush-at-activation
modem InOut
line 3/00 3/107
no flush-at-activation
modem InOut
line 5/00 5/107
no flush-at-activation
modem InOut
!
scheduler allocate 10000 400
end
```

Site1 Cisco Catalyst 6509 Access1 Switch

```
ns1-acsl-sw (enable) sh sh run

begin
!
# ***** NON-DEFAULT CONFIGURATION *****
```

```
!
!
#time: Mon Oct 13 2003, 13:55:10
!
#version 8.1(1)
!
set prompt ns1-acsl-sw
set logout 0
set banner motd ^CCCC NSITE GB2.0 testing contact gb-ippc@cisco.com.^C

!
#dot1x
set dot1x shutdown-timeout 0
set feature dot1x-radius-keepalive disable
!
#system
set system name NS1-ACS1
set system location NSITE-lab2 rack 236
set system highavailability enable
!
#power
set power redundancy disable
!
#Default Inlinepower
set inlinepower defaultallocation 7000
!
#!
#snmp
set snmp community read-write public
set snmp community read-write-all public
!
#stp mode
set spanntree mode pvst+
!
#vtp
set vtp domain gb2.0-ippc
set vtp mode transparent vlan
set vtp passwd cisco
set vlan 100 name NS1-PUB type ethernet mtu 1500 said 100100 state
active
set vlan 101 name NS1-ccmlvoice type ethernet mtu 1500 said 100101
state active
set vlan 102 name NS1-ccmldata type ethernet mtu 1500 said 100102
state active
set vlan 103 name NS1-ccm2voice type ethernet mtu 1500 said 100103
state active
set vlan 104 name NS1-ccm2data type ethernet mtu 1500 said 100104
state active
```

```
set vlan 105 name NS1-ccm3voice type ethernet mtu 1500 said 100105
state active
set vlan 106 name NS1-ccm3data type ethernet mtu 1500 said 100106
state active
set vlan 107 name NS1-ccm4voice type ethernet mtu 1500 said 100107
state active
set vlan 108 name NS1-ccm4data type ethernet mtu 1500 said 100108
state active
set vlan 109 name NS1-ccm5voice type ethernet mtu 1500 said 100109
state active
set vlan 110 name NS1-ccm5data type ethernet mtu 1500 said 100110
state active
set vlan 111 name NS1-ccm6voice type ethernet mtu 1500 said 100111
state active
set vlan 112 name NS1-ccm6data type ethernet mtu 1500 said 100112
state active
set vlan 113 name NS1-ccm7voice type ethernet mtu 1500 said 100113
state active
set vlan 114 name NS1-ccm7data type ethernet mtu 1500 said 100114
state active
set vlan 115 name NS1-ccm8voice type ethernet mtu 1500 said 100115
state active
set vlan 116 name NS1-ccm8data type ethernet mtu 1500 said 100116
state active
set vlan 117 name NS1-SQL type ethernet mtu 1500 said 100117 state
active
set vlan 118 name NS1-MOH1,2 type ethernet mtu 1500 said 100118 state
active
set vlan 119 name NS1-IVR1,2 type ethernet mtu 1500 said 100119 state
active
set vlan 120 name NS1RGR1A type ethernet mtu 1500 said 100120 state
active
set vlan 121 name NS1RGR1B type ethernet mtu 1500 said 100121 state
active
set vlan 122 name NS1PG1A(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100122 state active
set vlan 123 name NS1PG1B(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100123 state active
set vlan 124 name NS1ISNPG2A(ISN) type ethernet mtu 1500 said 100124
state active
set vlan 125 name NS1ISNPG2B(ISN) type ethernet mtu 1500 said 100125
state active
set vlan 126 name NS1ISN1 type ethernet mtu 1500 said 100126 state
active
set vlan 127 name NS1ISN2 type ethernet mtu 1500 said 100127 state
active
set vlan 128 name NS1-DIALER-1 type ethernet mtu 1500 said 100128
state active
```

```
set vlan 129 name NS1-DIALER-2 type ethernet mtu 1500 said 100129
state active
set vlan 130 name NS1-CTIOS-1,3,5 type ethernet mtu 1500 said 100130
state active
set vlan 131 name NS1-CTIOS-2,4,6 type ethernet mtu 1500 said 100131
state active
set vlan 132 name NS1-RTS-HDS type ethernet mtu 1500 said 100132 state
active
set vlan 133 name NS1-5400_VoIP_GW type ethernet mtu 1500 said 100133
state active
set vlan 134 name NS1-GK1_gatekeeper type ethernet mtu 1500 said
100134 state active
set vlan 135 name NS1-GK2_gatekeeper type ethernet mtu 1500 said
100135 state active
set vlan 136 name NS1-sim1 type ethernet mtu 1500 said 100136 state
active
set vlan 137 name NS1-SIM1 type ethernet mtu 1500 said 100137 state
active
set vlan 138 name NS1-SIM2 type ethernet mtu 1500 said 100138 state
active
set vlan 139 name NS1-CIL1 type ethernet mtu 1500 said 100139 state
active
set vlan 140 name NS1-CIL2 type ethernet mtu 1500 said 100140 state
active
set vlan 141 name NS1-CIL3 type ethernet mtu 1500 said 100141 state
active
set vlan 142 name NS1-CIL4 type ethernet mtu 1500 said 100142 state
active
set vlan 143 name NS1-CIL5 type ethernet mtu 1500 said 100143 state
active
set vlan 144 name NS1-CIL6 type ethernet mtu 1500 said 100144 state
active
set vlan 145 name NS1_DHCP&SYSLOG type ethernet mtu 1500 said 100145
state active
set vlan 146 name NS1-CTIOSagent_subnet_1 type ethernet mtu 1500 said
100146 state active
set vlan 147 name NS1-spare type ethernet mtu 1500 said 100147 state
active
set vlan 148 name NS1-spare1 type ethernet mtu 1500 said 100148 state
active
set vlan 149 name NS1-spare2 type ethernet mtu 1500 said 100149 state
active
set vlan 150 name NS1-CMM-CORE1 type ethernet mtu 1500 said 100150
state active
set vlan 151 name NS1-CMM-ACS1 type ethernet mtu 1500 said 100151
state active
set vlan 152 name NS1-CMM-ACS2 type ethernet mtu 1500 said 100152
state active
```

```
set vlan 153 name NS1-CORE-6608-1 type ethernet mtu 1500 said 100153
state active
set vlan 154 name NS1-CORE-6608-2 type ethernet mtu 1500 said 100154
state active
set vlan 155 name NS1-CORE-6608-3 type ethernet mtu 1500 said 100155
state active
set vlan 156 name NS1-ACS1-CORE-1 type ethernet mtu 1500 said 100156
state active
set vlan 157 name NS1-ACS1-CORE-2 type ethernet mtu 1500 said 100157
state active
set vlan 158 name NS1-ACS1-CORE-3 type ethernet mtu 1500 said 100158
state active
set vlan 159 name NS1-ACS2-CORE-1 type ethernet mtu 1500 said 100159
state active
set vlan 160 name NS1-ACS2-CORE-2 type ethernet mtu 1500 said 100160
state active
set vlan 161 name NS1-ACS2-CORE-3 type ethernet mtu 1500 said 100161
state active
set vlan 162 name NS1-ACS1-T1-PRI type ethernet mtu 1500 said 100162
state active
set vlan 888 rspan name VLAN0888 state active
set vlan 901 name private_addresses_NS1-RGR1A&B type ethernet mtu 1500
said 100901 state active
set vlan 902 name private_address_NS1-PG1A&B type ethernet mtu 1500
said 100902 state active
set vlan 903 name private_address_NS1-ISNPG1A&B type ethernet mtu 1500
said 100903 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state
active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004
state active stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state
active stp ibm
set vlan 1,10
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003
state active mode srb aremaxhop 7 stemaxhop 7 backupcrf off
!
#ip
set interface sc0 10 10.12.14.164/255.255.255.248 10.12.14.167

set interface sc1 down
set ip route 0.0.0.0/0.0.0.0 10.12.14.161
set ip alias default 0.0.0.0
!
#command alias
set alias rtr sess 15
set alias cmm1 ses 4
set alias cmm2 ses 5
```

```
!  
#rcp  
set rcp username cwuser  
!  
#dns  
set ip dns server 10.12.4.43 primary  
set ip dns server 10.12.4.35  
set ip dns enable  
set ip dns domain ipcc.com  
!  
#syslog  
set logging server enable  
set logging server 10.12.13.210  
!  
#ntp  
set ntp client enable  
set ntp server 10.12.2.1  
set timezone EST -5 0  
set summertime enable  
!  
#set boot command  
set boot config-register 0xf  
set boot system flash bootflash:cat6000-sup2k8.8-1-1.bin  
set boot system flash slot0:cat6000-sup2cvk8.7-6-2.bin  
set boot system flash bootflash:cat6000-sup2k8.7-6-1.bin  
!  
#mls  
set mls agingtime long-duration 1920  
set mls agingtime 256  
set mls agingtime ipx 256  
!  
#qos  
set qos enable  
set qos acl default-action ip trust-dscp  
clear qos acl all  
#ACL_IP-PHONES  
set qos acl ip ACL_IP-PHONES trust-cos ip any any  
#ACL_TRUST-DSCP  
set qos acl ip ACL_TRUST-DSCP trust-dscp ip any any  
#  
commit qos acl all  
!  
# default port status is enable  
!  
!  
#module 1 : 2-port 1000BaseX Supervisor  
set port dot1x 1/1 guest-vlan 0  
set trunk 1/1 on isl 1-1005,1025-4094
```



```
set port qos 1/1 trust trust-dscp
!
#module 2 : 2-port 1000BaseX Supervisor
!
#module 3 : 48-port 10/100BaseTX Ethernet
set vlan 100 3/25
set vlan 102 3/26
set vlan 106 3/27
set vlan 110 3/28
set vlan 114 3/29
set vlan 118 3/33
set vlan 119 3/30
set vlan 120 3/31
set vlan 122 3/34
set vlan 124 3/36
set vlan 126 3/43
set vlan 128 3/41
set vlan 130 3/38-40,3/46
set vlan 132 3/42
set vlan 136 3/44
set vlan 138 3/45
set vlan 139 3/1
set vlan 140 3/2
set vlan 141 3/3
set vlan 901 3/32
set vlan 902 3/35
set vlan 903 3/37
set port speed 3/1-48 100
set port duplex 3/1-48 full
set port name 3/1 NS1-CIL1
set port name 3/2 NS1-CIL2
set port name 3/3 NS1-CIL3
set port name 3/25 NS1-PUB
set port name 3/26 NS1-CM1
set port name 3/27 NS1-CM3
set port name 3/28 NS1-CM5
set port name 3/29 NS1-CM7
set port name 3/30 NS1-IVR1
set port name 3/31 NS1-RGRA pub
set port name 3/32 NS1-RGRA pvt
set port name 3/33 NS1-MOH1
set port name 3/34 NS1-PG1A pub
set port name 3/35 NS1-PG1A pvt
set port name 3/36 NS1-PG2A pub
set port name 3/37 NS1-PG2A pvt
set port name 3/38 NS1-CTIOS1
set port name 3/39 NS1-CTIOS3
set port name 3/40 NS1-CTIOS5
```

```

set port name      3/41 NS1-DL1
set port name      3/42 NS1-RTAW1
set port name      3/43 NS1-ISN1
set port name      3/44 NS1-SIM1
set port name      3/45 NS1-SIM3
set port name      3/46 NS1-CTIOS7
set spantree portfast 3/1-48 enable
set port qos 3/31 trust trust-cos
set qos acl map ACL_TRUST-DSCP 3/31-32,3/34-37
set port qos 3/1-48 policy-source local
!
#module 4 : 5-port Communication Media Mod.
set vlan 150 4/1
!
#module 5 : 5-port Communication Media Mod.
set vlan 151 5/1
!
#module 6 : 8-port T1
set port voice interface 6/1 dhcp enable vlan 154
set port voice interface 6/2 dhcp enable vlan 154
set port voice interface 6/3 dhcp enable vlan 154
set port voice interface 6/4 dhcp enable vlan 154
set port voice interface 6/5 dhcp enable vlan 154
set port voice interface 6/6 dhcp enable vlan 154
set port voice interface 6/7 dhcp enable vlan 154
set port voice interface 6/8 dhcp enable vlan 154
set port name      6/1 Transcoder
set port name      6/2 Transcoder
set port name      6/3 Transcoder
set port name      6/4 Transcoder
set port name      6/5 Transcoder
set port name      6/6 Transcoder
set port name      6/7 Transcoder
set port name      6/8 Transcoder
!
#module 7 : 8-port T1
set port voice interface 7/1 dhcp enable vlan 155
set port voice interface 7/2 dhcp enable vlan 155
set port voice interface 7/3 dhcp enable vlan 155
set port voice interface 7/4 dhcp enable vlan 155
set port voice interface 7/5 dhcp enable vlan 155
set port voice interface 7/6 dhcp enable vlan 155
set port voice interface 7/7 dhcp enable vlan 155
set port voice interface 7/8 dhcp enable vlan 155
set port name      7/1 Conference Bridge
set port name      7/2 Conference Bridge
set port name      7/3 Conference Bridge
set port name      7/4 Conference Bridge

```

```
set port name      7/5  Conference Bridge
set port name      7/6  Conference Bridge
set port name      7/7  Conference Bridge
set port name      7/8  Conference Bridge
!
#module 8 : 8-port T1
set port voice interface 8/1 dhcp enable vlan 162
set port voice interface 8/2 dhcp enable vlan 162
set port voice interface 8/3 dhcp enable vlan 162
set port voice interface 8/4 dhcp enable vlan 162
set port voice interface 8/5 dhcp enable vlan 162
set port voice interface 8/6 dhcp enable vlan 162
set port voice interface 8/7 dhcp enable vlan 162
set port voice interface 8/8 dhcp enable vlan 162
!
#module 9 powered down
set module power down 9
!
#module 15 empty
!
#module 16 empty
!
#switch port analyzer
set rspan source 6/1-8 888 both multicast enable create
end
```

Site1 Cisco Catalyst 6509 Access1 CMM1 Switch

```
NS1-ACS-CMM-1#lab term len 0
NS1-ACS-CMM-1#sh run
Building configuration...

Current configuration : 6602 bytes
!
! Last configuration change at 15:54:44 EST Fri Oct 10 2003
! NVRAM config last updated at 15:54:49 EST Fri Oct 10 2003
!
version 12.2
no parser cache
no service config
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
```



```
controller T1 1/2
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
  description NS0-CG-11 Slot 6 T1-3
!
controller T1 1/3
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
  description NS0-CG-11 Slot 6 T1-4
!
controller T1 1/4
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/5
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/2
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/3
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/4
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/5
```

```
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
!
!
!
interface GigabitEthernet1/0
description NS1-CORE1-VLAN150
ip address 10.12.14.2 255.255.255.252
no ip proxy-arp
no negotiation auto
no keepalive
!
interface Serial1/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial1/1:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial1/2:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial1/3:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial1/4:23
no ip address
no logging event link-status
```

```
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/5:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/2:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/3:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/4:23
    no ip address
    no logging event link-status
```

```
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial2/5:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.14.1
ip http server
!
!
arp 127.0.0.40 0000.0400.0000 ARPA
arp 127.0.0.22 0000.2200.0000 ARPA
arp 127.0.0.21 0000.1200.0000 ARPA
arp 127.0.0.12 0000.2100.0000 ARPA
arp 127.0.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
voice-port 1/0:23
echo-cancel coverage 64
!
voice-port 1/1:23
echo-cancel coverage 64
!
voice-port 1/2:23
echo-cancel coverage 64
!
voice-port 1/3:23
echo-cancel coverage 64
!
voice-port 1/4:23
echo-cancel coverage 64
!
voice-port 1/5:23
echo-cancel coverage 64
!
voice-port 2/0:23
echo-cancel coverage 64
!
voice-port 2/1:23
echo-cancel coverage 64
```



```
!
voice-port 2/2:23
  echo-cancel coverage 64
!
voice-port 2/3:23
  echo-cancel coverage 64
!
voice-port 2/4:23
  echo-cancel coverage 64
!
voice-port 2/5:23
  echo-cancel coverage 64
!
mgcp
mgcp call-agent NS1-CM3 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 ecm
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer voice 9991023 pots
  application mgcpapp
  port 1/0:23
!
dial-peer voice 9991123 pots
  application mgcpapp
  port 1/1:23
!
dial-peer voice 9991223 pots
  application mgcpapp
  port 1/2:23
!
dial-peer voice 9991323 pots
  application mgcpapp
  port 1/3:23
!
```

```
dial-peer voice 9991423 pots
  application mgcpapp
  port 1/4:23
!
dial-peer voice 9991523 pots
  application mgcpapp
  port 1/5:23
!
dial-peer voice 9992023 pots
  application mgcpapp
  port 2/0:23
!
dial-peer voice 9992123 pots
  application mgcpapp
  port 2/1:23
!
dial-peer voice 9992223 pots
  application mgcpapp
  port 2/2:23
!
dial-peer voice 9992323 pots
  application mgcpapp
  port 2/3:23
!
dial-peer voice 9992423 pots
  application mgcpapp
  port 2/4:23
!
dial-peer voice 9992523 pots
  application mgcpapp
  port 2/5:23
!
banner motd ^CCCCCEmail gb-ipcc@cisco.com before using this router.^C
alias exec c conf t
alias exec ipr sh ip route
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  logging synchronous
  no login
!
ntp clock-period 17180002
ntp server 10.12.2.1
```

```
!  
end
```

Site1 Cisco Catalyst 6509 Access2 Switch

```
NS1-ACS2 (enable) sh run  
  
begin  
!  
# ***** NON-DEFAULT CONFIGURATION *****  
!  
!  
#time: Mon Oct 13 2003, 14:01:54  
!  
#version 8.1(1)  
!  
set prompt NS1-ACS2  
set logout 30  
set banner motd ^CCCC NSITE GB2.0 testing contact gb-ippc@cisco.com.^C  
  
!  
#dot1x  
set dot1x shutdown-timeout 0  
set feature dot1x-radius-keepalive disable  
!  
#system  
set system name NS1-ACS2  
set system location NSITE-lab2 rack 236  
set system highavailability enable  
set system core-dump enable  
!  
#Default Inlinepower  
set inlinepower defaultallocation 7000  
!  
#!  
#snmp  
set snmp community read-write public  
set snmp community read-write-all public  
set snmp trap enable module  
set snmp trap enable chassis  
set snmp trap enable bridge  
set snmp trap enable vtp  
set snmp trap enable vlancreate  
set snmp trap enable vldelete  
set snmp trap enable auth
```

```
set snmp trap enable entityfru
set snmp trap enable ippermit
set snmp trap enable vmpls
set snmp trap enable entity
set snmp trap enable config
set snmp trap enable stpx
set snmp trap enable syslog
set snmp trap enable system
set snmp trap enable envfan
set snmp trap enable envshutdown
set snmp trap enable envpower
set snmp trap enable envtemp
set snmp trap enable envstate
set snmp trap enable flashinsert
set snmp trap enable flashremove
set snmp trap enable macnotification
!
#stp mode
set spantree mode pvst+
!
#vtp
set vtp domain gb2.0-ipcc
set vtp mode transparent vlan
set vtp passwd cisco
set vlan 100 name NS1-PUB type ethernet mtu 1500 said 100100 state
active
set vlan 101 name NS1-ccmlvoice type ethernet mtu 1500 said 100101
state active
set vlan 102 name NS1-ccmldata type ethernet mtu 1500 said 100102
state active
set vlan 103 name NS1-ccm2voice type ethernet mtu 1500 said 100103
state active
set vlan 104 name NS1-ccm2data type ethernet mtu 1500 said 100104
state active
set vlan 105 name NS1-ccm3voice type ethernet mtu 1500 said 100105
state active
set vlan 106 name NS1-ccm3data type ethernet mtu 1500 said 100106
state active
set vlan 107 name NS1-ccm4voice type ethernet mtu 1500 said 100107
state active
set vlan 108 name NS1-ccm4data type ethernet mtu 1500 said 100108
state active
set vlan 109 name NS1-ccm5voice type ethernet mtu 1500 said 100109
state active
set vlan 110 name NS1-ccm5data type ethernet mtu 1500 said 100110
state active
set vlan 111 name NS1-ccm6voice type ethernet mtu 1500 said 100111
state active
```

```
set vlan 112 name NS1-ccm6data type ethernet mtu 1500 said 100112
state active
set vlan 113 name NS1-ccm7voice type ethernet mtu 1500 said 100113
state active
set vlan 114 name NS1-ccm7data type ethernet mtu 1500 said 100114
state active
set vlan 115 name NS1-ccm8voice type ethernet mtu 1500 said 100115
state active
set vlan 116 name NS1-ccm8data type ethernet mtu 1500 said 100116
state active
set vlan 117 name NS1-SQL type ethernet mtu 1500 said 100117 state
active
set vlan 118 name NS1-MOH1,2 type ethernet mtu 1500 said 100118 state
active
set vlan 119 name NS1-IVR1,2 type ethernet mtu 1500 said 100119 state
active
set vlan 120 name NS1RGR1A type ethernet mtu 1500 said 100120 state
active
set vlan 121 name NS1RGR1B type ethernet mtu 1500 said 100121 state
active
set vlan 122 name NS1PG1A(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100122 state active
set vlan 123 name NS1PG1B(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100123 state active
set vlan 124 name NS1ISNPG2A(ISN) type ethernet mtu 1500 said 100124
state active
set vlan 125 name NS1ISNPG2B(ISN) type ethernet mtu 1500 said 100125
state active
set vlan 126 name NS1ISN1 type ethernet mtu 1500 said 100126 state
active
set vlan 127 name NS1ISN2 type ethernet mtu 1500 said 100127 state
active
set vlan 128 name NS1-DIALER-1 type ethernet mtu 1500 said 100128
state active
set vlan 129 name NS1-DIALER-2 type ethernet mtu 1500 said 100129
state active
set vlan 130 name NS1-CTIOS-1,3,5 type ethernet mtu 1500 said 100130
state active
set vlan 131 name NS1-CTIOS-2,4,6 type ethernet mtu 1500 said 100131
state active
set vlan 132 name NS1-RTS-HDS type ethernet mtu 1500 said 100132 state
active
set vlan 133 name NS1-5400_VoIP_GW type ethernet mtu 1500 said 100133
state active
set vlan 134 name NS1-GK1_gatekeeper type ethernet mtu 1500 said
100134 state active
set vlan 135 name NS1-GK2_gatekeeper type ethernet mtu 1500 said
100135 state active
```

```
set vlan 136 name NS1-sim1 type ethernet mtu 1500 said 100136 state
active
set vlan 137 name NS1-SIM1 type ethernet mtu 1500 said 100137 state
active
set vlan 138 name NS1-SIM2 type ethernet mtu 1500 said 100138 state
active
set vlan 139 name NS1-CIL1 type ethernet mtu 1500 said 100139 state
active
set vlan 140 name NS1-CIL2 type ethernet mtu 1500 said 100140 state
active
set vlan 141 name NS1-CIL3 type ethernet mtu 1500 said 100141 state
active
set vlan 142 name NS1-CIL4 type ethernet mtu 1500 said 100142 state
active
set vlan 143 name NS1-CIL5 type ethernet mtu 1500 said 100143 state
active
set vlan 144 name NS1-CIL6 type ethernet mtu 1500 said 100144 state
active
set vlan 145 name NS1_DHCP&SYSLOG type ethernet mtu 1500 said 100145
state active
set vlan 146 name NS1-CTIOSagent_subnet_1 type ethernet mtu 1500 said
100146 state active
set vlan 147 name NS1-spare type ethernet mtu 1500 said 100147 state
active
set vlan 148 name NS1-spare1 type ethernet mtu 1500 said 100148 state
active
set vlan 149 name NS1-spare2 type ethernet mtu 1500 said 100149 state
active
set vlan 150 name NS1-CMM-CORE1 type ethernet mtu 1500 said 100150
state active
set vlan 151 name NS1-CMM-ACS1 type ethernet mtu 1500 said 100151
state active
set vlan 152 name NS1-CMM-ACS2 type ethernet mtu 1500 said 100152
state active
set vlan 153 name NS1-CORE-6608-1 type ethernet mtu 1500 said 100153
state active
set vlan 154 name NS1-CORE-6608-2 type ethernet mtu 1500 said 100154
state active
set vlan 155 name NS1-CORE-6608-3 type ethernet mtu 1500 said 100155
state active
set vlan 156 name NS1-ACS1-CORE-1 type ethernet mtu 1500 said 100156
state active
set vlan 157 name NS1-ACS1-CORE-2 type ethernet mtu 1500 said 100157
state active
set vlan 158 name NS1-ACS1-CORE-3 type ethernet mtu 1500 said 100158
state active
set vlan 159 name NS1-ACS2-CORE-1 type ethernet mtu 1500 said 100159
state active
```

```
set vlan 160 name NS1-ACS2-CORE-2 type ethernet mtu 1500 said 100160
state active
set vlan 161 name NS1-ACS2-CORE-3 type ethernet mtu 1500 said 100161
state active
set vlan 163 name NS0-ACS2-T1-PRI type ethernet mtu 1500 said 100163
state active
set vlan 888 rspan name VLAN0888 state active
set vlan 901 name private_addresses_NS1-RGR1A&B type ethernet mtu 1500
said 100901 state active
set vlan 902 name private_address_NS1-PG1A&B type ethernet mtu 1500
said 100902 state active
set vlan 903 name private_address_NS1-ISNPG1A&B type ethernet mtu 1500
said 100903 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state
active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004
state active stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state
active stp ibm
set vlan 1,10,165,828
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003
state active mode srb aremaxhop 0 stemaxhop 0 backupcrf off
!
#ip
set interface sc0 10 10.12.14.165/255.255.255.248 10.12.14.167

set interface sc1 0 0.0.0.0/0.0.0.0 0.0.0.0

set interface sc1 down
set ip route 0.0.0.0/0.0.0.0 10.12.14.161
set ip alias default 0.0.0.0
!
#command alias
set alias cmm1 ses 4
set alias cmm2 ses 5
!
#rcp
set rcp username cwuser
!
#syslog
set logging server enable
set logging server 10.12.13.210
!
#ntp
set ntp broadcastclient enable
set ntp client enable
set ntp server 10.12.2.1
set timezone EST -5 0
```

```
set summertime enable
!
#set boot command
set boot config-register 0xf
set boot system flash slot0:cat6000-sup2k8.8-1-1.bin
set boot system flash slot0:cat6000-sup2cvk8.7-6-2.bin
set boot system flash bootflash:cat6000-sup2k8.7-6-1.bin
!
#mls
set mls agingtime long-duration 1920
set mls agingtime 256
set mls agingtime ipx 256
!
#qos
set qos enable
clear qos acl all
#ACL_IP-PHONES
set qos acl ip ACL_IP-PHONES trust-cos ip any any
#ACL_TRUST-DSCP
set qos acl ip ACL_TRUST-DSCP trust-dscp ip any any
#
commit qos acl all
!
# default port status is enable
!
!
#module 1 : 2-port 1000BaseX Supervisor
set vlan 828 1/1
set port trap 1/1-2 enable
set port dot1x 1/1 guest-vlan 0
set trunk 1/1 on isl 1-1005,1025-4094
set port qos 1/1 trust trust-dscp
!
#module 2 : 2-port 1000BaseX Supervisor
set port trap 2/1-2 enable
set port dot1x 2/1 guest-vlan 0
!
#module 3 : 48-port 10/100BaseTX Ethernet
set vlan 104 3/25
set vlan 108 3/26
set vlan 112 3/27
set vlan 116 3/28
set vlan 117 3/33
set vlan 118 3/32
set vlan 119 3/31
set vlan 121 3/29
set vlan 123 3/34
set vlan 125 3/36
```



```
set vlan 127 3/42
set vlan 129 3/41
set vlan 131 3/38-40,3/46
set vlan 137 3/43
set vlan 142 3/1
set vlan 143 3/2
set vlan 144 3/3
set vlan 165 3/44
set vlan 901 3/30
set vlan 902 3/35
set vlan 903 3/37
set port speed 3/1-48 100
set port duplex 3/1-48 full
set port trap 3/1-48 enable
set port name 3/1 NS1-CIL4
set port name 3/2 NS1-CIL5
set port name 3/3 NS1-CIL6
set port name 3/25 NS1-CM2
set port name 3/26 NS1-CM4
set port name 3/27 NS1-CM6
set port name 3/28 NS1-CM8
set port name 3/29 NS1-RGRB pub
set port name 3/30 NS1-RGRB pvt
set port name 3/31 NS1-IVR2
set port name 3/32 NS1-MOH2
set port name 3/33 NS1-SQL
set port name 3/34 NS1-PG1B pub
set port name 3/35 NS1-PG1B pvt
set port name 3/36 NS1-PG2B pub
set port name 3/37 NS1-PG2B pvt
set port name 3/38 NS1-CTIOS2
set port name 3/39 NS1-CTIOS4
set port name 3/40 NS1-CTIOS6
set port name 3/41 NS1-DL2
set port name 3/42 NS1-ISN2
set port name 3/43 NS1-SIM2
set port name 3/44 NS1-CIL7
set port name 3/46 NS1-CTIOS8
set spanntree portfast 3/1-48 enable
set qos acl map ACL_TRUST-DSCP 3/29-30,3/34-37
set port qos 3/1-48 policy-source local
!
#module 4 : 5-port Communication Media Mod.
set vlan 152 4/1
!
#module 5 : 5-port Communication Media Mod.
set vlan 153 5/1
!
```

```
#module 6 : 8-port T1
set port voice interface 6/1 dhcp enable vlan 158
set port voice interface 6/2 dhcp enable vlan 158
set port voice interface 6/3 dhcp enable vlan 158
set port voice interface 6/4 dhcp enable vlan 158
set port voice interface 6/5 dhcp enable vlan 158
set port voice interface 6/6 dhcp enable vlan 158
set port voice interface 6/7 dhcp enable vlan 158
set port voice interface 6/8 dhcp enable vlan 158
set port trap          6/1-8  enable
set port name          6/1  NSITE0-5400-3
set port name          6/2  NSITE0-5400-3
set port name          6/3  NSITE0-5400-3
set port name          6/4  DMS
set port name          6/5  Transcoder
set port name          6/6  Transcoder
set port name          6/7  Transcoder
set port name          6/8  Transcoder
!
#module 7 : 8-port T1
set port voice interface 7/1 dhcp enable vlan 159
set port voice interface 7/2 dhcp enable vlan 159
set port voice interface 7/3 dhcp enable vlan 159
set port voice interface 7/4 dhcp enable vlan 155
set port voice interface 7/5 dhcp enable vlan 159
set port voice interface 7/6 dhcp enable vlan 159
set port voice interface 7/7 dhcp enable vlan 159
set port voice interface 7/8 dhcp enable vlan 159
set port trap          7/1-8  enable
set port name          7/1  Conference Bridge
set port name          7/2  Conference Bridge
set port name          7/3  Conference Bridge
set port name          7/4  Conference Bridge
set port name          7/5  Conference Bridge
set port name          7/6  Conference Bridge
set port name          7/7  Conference Bridge
set port name          7/8  Conference Bridge
!
#module 8 empty
!
#module 9 empty
!
#module 15 empty
!
#module 16 empty
end
```

Site1 Cisco Catalyst 6506 Core Switch

```
NS1-CORE1-SW (enable) sh run

begin
!
# ***** NON-DEFAULT CONFIGURATION *****
!
!
#time: Mon Oct 13 2003, 14:03:38
!
#version 8.1(1)
!
set prompt NS1-CORE1-SW
set logout 30
set banner motd ^CCCC NSITE GB2.0 testing contact gb-ipcc@cisco.com^C

!
#dot1x
set dot1x shutdown-timeout 0
set feature dot1x-radius-keepalive disable
!
#system
set system name NS1-CORE1
set system location NSITE-lab2 rack 236
set system highavailability enable
set system core-dump enable
!
#Default Inlinepower
set inlinepower defaultallocation 7000
!
#!
#snmp
set snmp community read-write public
!
#stp mode
set spantree mode pvst+
!
#vtp
set vtp domain gb2.0-ipcc
set vtp mode transparent vlan
set vtp passwd cisco
set vlan 10 name OSPF_Vlan_to_NS1-3725 type ethernet mtu 1500 said
100010 state active
set vlan 100 name NS1-PUB type ethernet mtu 1500 said 100100 state
active
```

```
set vlan 101 name NS1-ccmlvoice type ethernet mtu 1500 said 100101
state active
set vlan 102 name NS1-ccmldata type ethernet mtu 1500 said 100102
state active
set vlan 103 name NS1-ccm2voice type ethernet mtu 1500 said 100103
state active
set vlan 104 name NS1-ccm2data type ethernet mtu 1500 said 100104
state active
set vlan 105 name NS1-ccm3voice type ethernet mtu 1500 said 100105
state active
set vlan 106 name NS1-ccm3data type ethernet mtu 1500 said 100106
state active
set vlan 107 name NS1-ccm4voice type ethernet mtu 1500 said 100107
state active
set vlan 108 name NS1-ccm4data type ethernet mtu 1500 said 100108
state active
set vlan 109 name NS1-ccm5voice type ethernet mtu 1500 said 100109
state active
set vlan 110 name NS1-ccm5data type ethernet mtu 1500 said 100110
state active
set vlan 111 name NS1-ccm6voice type ethernet mtu 1500 said 100111
state active
set vlan 112 name NS1-ccm6data type ethernet mtu 1500 said 100112
state active
set vlan 113 name NS1-ccm7voice type ethernet mtu 1500 said 100113
state active
set vlan 114 name NS1-ccm7data type ethernet mtu 1500 said 100114
state active
set vlan 115 name NS1-ccm8voice type ethernet mtu 1500 said 100115
state active
set vlan 116 name NS1-ccm8data type ethernet mtu 1500 said 100116
state active
set vlan 117 name NS1-SQL type ethernet mtu 1500 said 100117 state
active
set vlan 118 name NS1-MOH1,2 type ethernet mtu 1500 said 100118 state
active
set vlan 119 name NS1-IVR1,2 type ethernet mtu 1500 said 100119 state
active
set vlan 120 name NS1RGR1A type ethernet mtu 1500 said 100120 state
active
set vlan 121 name NS1RGR1B type ethernet mtu 1500 said 100121 state
active
set vlan 122 name NS1PG1A(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100122 state active
set vlan 123 name NS1PG1B(CCM,IVR,CTIServer) type ethernet mtu 1500
said 100123 state active
set vlan 124 name NS1ISNPG2A(ISN) type ethernet mtu 1500 said 100124
state active
```

```
set vlan 125 name NS1ISNPG2B(ISN) type ethernet mtu 1500 said 100125
state active
set vlan 126 name NS1ISN1 type ethernet mtu 1500 said 100126 state
active
set vlan 127 name NS1ISN2 type ethernet mtu 1500 said 100127 state
active
set vlan 128 name NS1-DIALER-1 type ethernet mtu 1500 said 100128
state active
set vlan 129 name NS1-DIALER-2 type ethernet mtu 1500 said 100129
state active
set vlan 130 name NS1-CTIOS-1,3,5 type ethernet mtu 1500 said 100130
state active
set vlan 131 name NS1-CTIOS-2,4,6 type ethernet mtu 1500 said 100131
state active
set vlan 132 name NS1-RTS-HDS type ethernet mtu 1500 said 100132 state
active
set vlan 133 name NS1-5400_VoIP_GW type ethernet mtu 1500 said 100133
state active
set vlan 134 name NS1-GK1_gatekeeper type ethernet mtu 1500 said
100134 state active
set vlan 135 name NS1-GK2_gatekeeper type ethernet mtu 1500 said
100135 state active
set vlan 136 name NS1-sim1 type ethernet mtu 1500 said 100136 state
active
set vlan 137 name NS1-SIM1 type ethernet mtu 1500 said 100137 state
active
set vlan 138 name NS1-SIM2 type ethernet mtu 1500 said 100138 state
active
set vlan 139 name NS1-CIL1 type ethernet mtu 1500 said 100139 state
active
set vlan 140 name NS1-CIL2 type ethernet mtu 1500 said 100140 state
active
set vlan 141 name NS1-CIL3 type ethernet mtu 1500 said 100141 state
active
set vlan 142 name NS1-CIL4 type ethernet mtu 1500 said 100142 state
active
set vlan 143 name NS1-CIL5 type ethernet mtu 1500 said 100143 state
active
set vlan 144 name NS1-CIL6 type ethernet mtu 1500 said 100144 state
active
set vlan 145 name NS1_DHCP&SYSLOG type ethernet mtu 1500 said 100145
state active
set vlan 146 name NS1-CTIOSagent_subnet_1 type ethernet mtu 1500 said
100146 state active
set vlan 147 name NS1-spare type ethernet mtu 1500 said 100147 state
active
set vlan 148 name NS1-spare1 type ethernet mtu 1500 said 100148 state
active
```

```
set vlan 149 name NS1-spare2 type ethernet mtu 1500 said 100149 state
active
set vlan 150 name NS1-CMM-CORE1 type ethernet mtu 1500 said 100150
state active
set vlan 151 name NS1-CMM-ACS1 type ethernet mtu 1500 said 100151
state active
set vlan 152 name NS1-CMM-ACS2 type ethernet mtu 1500 said 100152
state active
set vlan 153 name NS1-CORE-6608-1 type ethernet mtu 1500 said 100153
state active
set vlan 154 name NS1-CORE-6608-2 type ethernet mtu 1500 said 100154
state active
set vlan 155 name NS1-CORE-6608-3 type ethernet mtu 1500 said 100155
state active
set vlan 156 name NS1-ACS1-CORE-1 type ethernet mtu 1500 said 100156
state active
set vlan 157 name NS1-ACS1-CORE-2 type ethernet mtu 1500 said 100157
state active
set vlan 158 name NS1-ACS1-CORE-3 type ethernet mtu 1500 said 100158
state active
set vlan 159 name NS1-ACS2-CORE-1 type ethernet mtu 1500 said 100159
state active
set vlan 160 name NS1-ACS2-CORE-2 type ethernet mtu 1500 said 100160
state active
set vlan 161 name NS1-ACS2-CORE-3 type ethernet mtu 1500 said 100161
state active
set vlan 162 name NS1-ACS1-T1-PRI type ethernet mtu 1500 said 100162
state active
set vlan 163 name NS0-ACS2-T1-PRI type ethernet mtu 1500 said 100163
state active
set vlan 164 name NS0-CORE1-T1-PRI type ethernet mtu 1500 said 100164
state active
set vlan 401 name NS4-CM1 type ethernet mtu 1500 said 100401 state
active
set vlan 403 name NS4-CM2 type ethernet mtu 1500 said 100403 state
active
set vlan 405 name NS4-CM3 type ethernet mtu 1500 said 100405 state
active
set vlan 407 name NS4-CM4 type ethernet mtu 1500 said 100407 state
active
set vlan 419 name NS4-CADagents type ethernet mtu 1500 said 100419
state active
set vlan 888 rspan name VLAN0888 state active
set vlan 901 name private_addresses_NS1-RGR1A&B type ethernet mtu 1500
said 100901 state active
set vlan 902 name private_address_NS1-PG1A&B type ethernet mtu 1500
said 100902 state active
```

```
set vlan 903 name private_address_NS1-ISNPG1A&B type ethernet mtu 1500
said 100903 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state
active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004
state active stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state
active stp ibm
set vlan 1-2,165-166,828
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003
state active mode srb aremaxhop 7 stemaxhop 7 backupcrf off
!
#ip
set interface sc0 2 10.12.2.5/255.255.255.224 10.12.2.31

set interface scl 0 0.0.0.0/0.0.0.0 0.0.0.0

set interface scl down
set ip route 0.0.0.0/0.0.0.0 10.12.2.6
set ip alias default 0.0.0.0
!
#command alias
set alias rtr sess 15
set alias cmm1 sess 5
set alias cmm2 sess 6
!
#rcp
set rcp username cwuser
!
#dns
set ip dns server 10.12.4.35 primary
set ip dns server 10.12.4.43
set ip dns enable
set ip dns domain ipcc.com
!
#spantree
#vlan <VlanId>
set spantree priority 8192 100
set spantree priority 8192 101
set spantree priority 8192 102
set spantree priority 8192 103
set spantree priority 8192 104
set spantree priority 8192 105
set spantree priority 8192 106
set spantree priority 8192 107
set spantree priority 8192 108
set spantree priority 8192 109
set spantree priority 8192 110
```

```
set spantree priority 8192 111
set spantree priority 8192 112
set spantree priority 8192 113
set spantree priority 8192 114
set spantree priority 8192 115
set spantree priority 8192 116
set spantree priority 8192 117
set spantree priority 8192 118
set spantree priority 8192 119
set spantree priority 8192 120
set spantree priority 8192 121
set spantree priority 8192 122
set spantree priority 8192 123
set spantree priority 8192 124
set spantree priority 8192 125
set spantree priority 8192 126
set spantree priority 8192 127
set spantree priority 8192 128
set spantree priority 8192 129
set spantree priority 8192 130
set spantree priority 8192 131
set spantree priority 8192 132
set spantree priority 8192 133
set spantree priority 8192 134
set spantree priority 8192 135
set spantree priority 8192 136
set spantree priority 8192 137
set spantree priority 8192 138
set spantree priority 8192 139
set spantree priority 8192 140
set spantree priority 8192 141
set spantree priority 8192 142
set spantree priority 8192 143
set spantree priority 8192 144
set spantree priority 8192 145
set spantree priority 8192 146
set spantree priority 8192 147
set spantree priority 8192 148
set spantree priority 8192 149
set spantree priority 8192 150
set spantree priority 8192 151
set spantree priority 8192 152
set spantree priority 8192 153
set spantree priority 8192 154
set spantree priority 8192 155
set spantree priority 8192 156
set spantree priority 8192 157
set spantree priority 8192 158
```



```
set spantree priority 8192 159
set spantree priority 8192 160
set spantree priority 8192 161
set spantree priority 8192 162
set spantree priority 8192 163
set spantree priority 8192 164
set spantree priority 8192 901
set spantree priority 8192 902
set spantree priority 8192 903
!
#syslog
set logging server enable
set logging server 10.12.4.211
set logging server 10.12.13.210
!
#ntp
set ntp broadcastclient enable
set ntp client enable
set ntp server 10.12.2.1
set timezone EST -5 0
set summertime enable
!
#set boot command
set boot config-register 0xf
set boot system flash bootflash:cat6000-sup2k8.8-1-1.bin
set boot system flash slot0:cat6000-sup2cvk8.7-6-2.bin
set boot system flash bootflash:cat6000-sup2k8.7-6-1.bin
!
#mls
set mls agingtime long-duration 1920
set mls agingtime 256
set mls agingtime ipx 256
!
#qos
set qos enable
clear qos acl all
#ACL_TRUST-DSCP
set qos acl ip ACL_TRUST-DSCP trust-dscp ip any any
#
commit qos acl all
!
# default port status is enable
!
!
#module 1 : 2-port 1000BaseX Supervisor
set port dot1x 1/1 guest-vlan 0
clear trunk 1/1 2-145,147-1005,1025-4094
set trunk 1/1 on isl 1,146
```

```

!
#module 2 : 2-port 1000BaseX Supervisor
!
#module 3 : 8-port 1000BaseX Ethernet
set vlan 2      3/7
set port name   3/1  Trunk_2_NS0CAT5K_1/2
set port name   3/2  Trunk_2_NS1-ACS1_1/1
set port name   3/3  Trunk_2_NS1-ACS2_1/1
set port name   3/4  Trunk_2_NS4-CAT6K1/1
set port name   3/7  Trunk_2_NS7-CAT6K1/1
set trunk 3/1   on isl 1-1005,1025-4094
set trunk 3/2   on isl 1-1005,1025-4094
set trunk 3/3   on isl 1-1005,1025-4094
clear trunk 3/4  3-400,402,404,406,408-418,420-901,903-1005,1025-4094
set trunk 3/4   on isl 1-2,401,403,405,407,419,902
clear trunk 3/7  3-700,702-713,715-1005,1025-4094
set trunk 3/7   on isl 1-2,701,714
set port qos 3/1-4 trust trust-dscp
!
#module 4 : 48-port 10/100BaseTX Ethernet
set vlan 100    4/1
set vlan 102    4/2
set vlan 104    4/3
set vlan 106    4/4
set vlan 108    4/5
set vlan 110    4/6
set vlan 112    4/7
set vlan 114    4/8
set vlan 116    4/9
set vlan 117    4/16
set vlan 118    4/14-15
set vlan 119    4/10-11
set vlan 120    4/12
set vlan 121    4/13
set vlan 122    4/17
set vlan 123    4/18
set vlan 124    4/19
set vlan 125    4/20
set vlan 126    4/30
set vlan 127    4/31
set vlan 128    4/27
set vlan 129    4/28
set vlan 130    4/21,4/23,4/25
set vlan 131    4/22,4/24,4/26
set vlan 132    4/29
set vlan 133    4/46
set vlan 134    4/32
set vlan 135    4/33

```

```
set vlan 136 4/41
set vlan 137 4/42
set vlan 138 4/43
set vlan 145 4/34
set vlan 901 4/35-36
set vlan 902 4/37-38
set vlan 903 4/39-40
set port speed 4/1-48 100
set port duplex 4/1-48 full
set port name 4/32 NS1-3660-GK1
set port name 4/33 NS1-3660-GK2
set port name 4/34 DNS
set port name 4/45 Snooper (guile hme2)
set port name 4/46 link_2_NS1-ISN-GW
set port name 4/47 link_2_NS0-CAT5K_6/5
set port name 4/48 link_to_NS1-3725
clear trunk 4/47
2-100,102,104,106,108,110,112,114,116-145,147-1005,1025-4094
set trunk 4/47 on isl 1,101,103,105,107,109,111,113,115,146
clear trunk 4/48 3-9,11-98,100-1005,1025-4094
set trunk 4/48 on isl 1-2,10,99
set spantree portfast 4/1-31,4/34-46 enable
set qos acl map ACL_TRUST-DSCP 4/47-48
!
#module 5 : 8-port T1
set port voice interface 5/1 dhcp enable vlan 164
set port voice interface 5/2 dhcp enable vlan 164
set port voice interface 5/3 dhcp enable vlan 164
set port voice interface 5/4 dhcp enable vlan 164
set port voice interface 5/5 dhcp enable vlan 164
set port voice interface 5/6 dhcp enable vlan 164
set port voice interface 5/7 dhcp enable vlan 164
set port voice interface 5/8 dhcp enable vlan 164
set port name 5/1 BA_NS1_ANS1
set port name 5/2 BA_NS1_ANS2
set port name 5/3 BA_NS1_ANS3
set port name 5/4 BA_NS1_ANS4
set port name 5/5 BA_NS1_ANS5
set port name 5/6 BA_NS1_ANS6
set port name 5/7 BA_NS1_NO_ANS1
set port name 5/8 BA_NS1_NO_ANS2
!
#module 6 : 8-port T1
set port voice interface 6/1 dhcp enable vlan 166
set port voice interface 6/2 dhcp enable vlan 166
set port voice interface 6/3 dhcp enable vlan 166
set port voice interface 6/4 dhcp enable vlan 166
set port voice interface 6/5 dhcp enable vlan 166
```

```

set port voice interface 6/6 dhcp enable vlan 166
set port voice interface 6/7 dhcp enable vlan 166
set port disable 6/7-8

set port name 6/1 BA_NS1_NO_ANS3
set port name 6/2 BA_NS1_BUSY1
set port name 6/3 BA_NS1_BUSY2
set port name 6/4 BA_NS1_BUSY3
!
#module 15 : 1-port Multilayer Switch Feature Card
!
#module 16 empty
!
#switch port analyzer
set span 4/48 4/45 both inpkts disable learning enable multicast
enable create
end

```

Site1 Cisco Catalyst 6506 Core MSFC Switch

```

NS1-CORE1#sh run
Building configuration...

Current configuration : 18696 bytes
!
! Last configuration change at 17:02:42 EST Sat Oct 11 2003
!
version 12.1
service nagle
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
service password-encryption
!
hostname NS1-CORE1
!
boot system flash bootflash:c6msfc2-psv-mz.121-13.E6
!
clock timezone EDT -5
clock summer-time EST recurring
clock calendar-valid
ip subnet-zero
!
!
ip host whirlwind 172.18.137.110
ip host gbipcc 172.18.141.128

```

```
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
ip multicast-routing
!
class-map match-all dscpAF21
  match access-group name dscpAF21
class-map match-all dscpAF31
  match access-group name dscpAF31
!
mls rp ip
!
!
!
interface Loopback0
  description router-id for ospf
  ip address 200.0.0.10 255.255.255.255
!
interface Vlan1
  no ip address
  no ip redirects
  no ip unreachable
!
interface Vlan2
  description Management VLAN
  ip address 10.12.2.6 255.255.255.224
  no ip redirects
  no ip unreachable
  ip ospf priority 200
  load-interval 30
  mls rp ip
!
interface Vlan10
  description vlan trunked to NS1-3725 F0/0
  ip address 10.12.14.161 255.255.255.248
  ip ospf priority 0
!
interface Vlan100
  description NS1-pub/TFTP
  ip address 10.12.4.1 255.255.255.248
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
!
```

```
interface Vlan101
  description NS1-ccm1 voice
  ip address 10.12.3.1 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp management-interface
  mls rp ip
!
interface Vlan102
  description NS1-ccm1data
  ip address 10.12.3.17 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan103
  description NS1-ccm2 voice
  ip address 10.12.3.33 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan104
  description NS1-ccm2data
  ip address 10.12.3.49 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan105
  description NS1-ccm3 voice
  ip address 10.12.3.65 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
```

```
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan106
description NS1-ccm3 data
ip address 10.12.3.81 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan107
description NS1-ccm4 voice
ip address 10.12.3.97 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan108
description NS1-ccm4data
ip address 10.12.3.113 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan109
description NS1-ccm5 voice
ip address 10.12.3.129 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan110
```

```
description NS1-ccm5 data
ip address 10.12.3.145 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan111
description NS1-ccm6 voice
ip address 10.12.3.161 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan112
description NS1-ccm6 data
ip address 10.12.3.177 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan113
description NS1-ccm7 voice
ip address 10.12.3.193 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan114
description NS1-ccm7 data
ip address 10.12.3.209 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
```



```
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan115
description NS1-ccm8 voice
ip address 10.12.3.225 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan116
description NS1-ccm8 data
ip address 10.12.3.241 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
no ip route-cache cef
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan117
description NS1-SQL
ip address 10.12.4.9 255.255.255.248
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan118
description NS1-MOH1,2
ip address 10.12.4.17 255.255.255.248
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan119
description NS1-IVR1,2
```

```
ip address 10.12.4.25 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan120
description NS1RGR1A
ip address 10.12.4.33 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan121
description NS1RGR1B
ip address 10.12.4.41 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan122
description NS1PG1A (CCM, IVR , CTI Server)
ip address 10.12.4.49 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan123
description NS1PG1B (CCM, IVR , CTI Server)
ip address 10.12.4.57 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
```

```
interface Vlan124
  description NS1ISNPG2A (ISN)
  ip address 10.12.4.65 255.255.255.248
  no ip redirects
  no ip unreachablees
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan125
  description NS1ISNPG2B (ISN)
  ip address 10.12.4.73 255.255.255.248
  no ip redirects
  no ip unreachablees
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan126
  description NS1ISN1
  ip address 10.12.4.81 255.255.255.248
  no ip redirects
  no ip unreachablees
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan127
  description NS1ISN2
  ip address 10.12.4.89 255.255.255.248
  no ip redirects
  no ip unreachablees
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan128
  description NS1-DIALER-1
  ip address 10.12.4.97 255.255.255.248
  no ip redirects
  no ip unreachablees
  ip policy route-map policyroute
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
```

```
mls rp ip
!
interface Vlan129
description NS1-DIALER-2
ip address 10.12.4.105 255.255.255.248
no ip redirects
no ip unreachables
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan130
description NS1-CTIOS-1,3,5
ip address 10.12.4.113 255.255.255.248
no ip redirects
no ip unreachables
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan131
description NS1-CTIOS-2,4,6
ip address 10.12.4.121 255.255.255.248
no ip redirects
no ip unreachables
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan132
description NS1-RTS-HDS
ip address 10.12.4.217 255.255.255.248
no ip redirects
no ip unreachables
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan133
description NS1-5400 VoIP GW (PSTN GW for ISN)
ip address 10.12.4.129 255.255.255.248
no ip redirects
no ip unreachables
ip policy route-map policyroute
```

```
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan134
description NS1-GK1 gatekeeper
ip address 10.12.4.137 255.255.255.248
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan135
description NS1-GK2 gatekeeper
ip address 10.12.4.146 255.255.255.248
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan136
description NS1-sim1
ip address 10.12.4.153 255.255.255.252
ip access-group 110 out
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan137
description NS1-sim2
ip address 10.12.4.157 255.255.255.252
ip access-group 110 out
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan138
description NS1-sim3
```

```
ip address 10.12.4.161 255.255.255.252
ip access-group 110 out
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan139
description NS1-CIL1
ip address 10.12.4.165 255.255.255.252
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan140
description NS1-CIL2
ip address 10.12.4.169 255.255.255.252
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan141
description NS1-CIL3
ip address 10.12.4.173 255.255.255.252
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan142
description NS1-CIL4
ip address 10.12.4.177 255.255.255.252
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
```

```
!  
interface Vlan143  
  description NS1-CIL5  
  ip address 10.12.4.181 255.255.255.252  
  no ip redirects  
  no ip unreachablees  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan144  
  description NS1-CIL6  
  ip address 10.12.4.185 255.255.255.252  
  no ip redirects  
  no ip unreachablees  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan145  
  description NS1-DHCP&SYSLOG  
  ip address 10.12.4.209 255.255.255.248  
  no ip redirects  
  no ip unreachablees  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan146  
  description NS1-CTIOSagent_subnet_1  
  ip address 10.12.4.225 255.255.255.248  
  ip helper-address 10.12.4.211  
  no ip redirects  
  no ip unreachablees  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan147  
  description NS1-spare  
  ip address 10.12.4.233 255.255.255.248  
  no ip redirects  
  no ip unreachablees  
  ip policy route-map policyroute
```

```
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan148
description NS1-spare
ip address 10.12.4.241 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan149
description NS1-spare
ip address 10.12.4.249 255.255.255.248
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan150
description NS1-ACS1-CMM-1
ip address 10.12.14.1 255.255.255.252
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan151
description NS1-ACS1-CMM-2
ip address 10.12.14.5 255.255.255.252
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan152
description NS1-ACS2-CMM-1
```



```
ip address 10.12.14.9 255.255.255.252
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan153
description NS1-ACS2-CMM-2
ip address 10.12.14.13 255.255.255.252
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan154
description NS1-ACS1-6608-1
ip address 10.12.14.33 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan155
description NS1-ACS1-6608-2
ip address 10.12.14.49 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan156
description NS1-ACS1-6608-3
ip address 10.12.14.65 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
```

```
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan157
description NS1-ACS1-6608-4
ip address 10.12.14.81 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan158
description NS1-ACS2-6608-1
ip address 10.12.14.97 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan159
description NS1-ACS2-6608-2
ip address 10.12.14.113 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan160
description NS1-ACS2-6608-3
ip address 10.12.14.129 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
```

```
!  
interface Vlan161  
  description NS1-ACS2-6608-4  
  ip address 10.12.14.145 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
  no ip unreachable  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan162  
  description NS1-ACS1-T1-PRI  
  ip address 10.12.14.177 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
  no ip unreachable  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan163  
  description NS1-ACS2-T1-PRI  
  ip address 10.12.14.193 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
  no ip unreachable  
  ip policy route-map policyroute  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan164  
  description NS1-6608 Mod 5  
  ip address 10.12.14.209 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
  no ip unreachable  
  load-interval 30  
  mls rp vtp-domain gb2.0-ipcc  
  mls rp ip  
!  
interface Vlan165  
  description NS1-CIL7  
  ip address 10.12.4.189 255.255.255.252  
  no ip redirects
```

```
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan166
description NS1-6608 Mod 6
ip address 10.12.14.225 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan901
description "private" addresses for NS1-RGR1A and B
ip address 192.168.101.1 255.255.255.240
!
interface Vlan902
description "private" addresses for NS1-PG1A and B
ip address 192.168.102.1 255.255.255.240
!
interface Vlan903
description "private" addresses for NS1-ISNPG1A and B
ip address 192.168.103.1 255.255.255.240
!
router ospf 1
router-id 200.0.0.10
log-adjacency-changes
network 10.12.3.0 0.0.0.255 area 1
network 10.12.4.0 0.0.0.255 area 1
network 10.12.14.0 0.0.0.255 area 1
!
ip local policy route-map policyroute
ip classless
ip route 172.0.0.0 255.0.0.0 10.12.2.1
no ip http server
!
!
ip access-list extended dscp32
ip access-list extended dscpAF21
 permit ip any any dscp af21
ip access-list extended dscpAF31
 permit ip any any dscp af31
!
logging source-interface Vlan1
```

```
logging 10.12.13.210
access-list 101 permit ip any 172.0.0.0 0.255.255.255
access-list 101 permit ip any host 10.12.13.210
access-list 110 permit udp 10.12.3.0 0.0.0.255 any
access-list 110 deny    udp any gt 16384 any
access-list 110 permit ip any any
access-list 150 permit ip host 10.12.3.242 any
access-list 175 permit ip host 10.12.4.226 host 10.12.7.228
route-map desk-routemap permit 10
  match ip address 175
  set ip next-hop 10.12.2.12
!
route-map policyroute permit 10
  match ip address 101
  set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps bgp
snmp-server enable traps frame-relay
snmp-server enable traps rtr
snmp-server enable traps isdn call-information
snmp-server enable traps dlsw
!
tftp-server bootflash:c6msfc2-psv-mz.121-13.E6
banner motd ^CCEmail gb-ipcc@cisco.com before using this router.^C
alias configure ro router ospf
alias exec c conf t
alias exec ipr sh ip route
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec sip sh ip protocols
alias exec cipr clear ip route *
alias exec sib sh ip int brief
!
line con 0
  exec-timeout 30 0
  logging synchronous
line vty 0 4
  privilege level 15
  password 7 030752180500
  no login
!
ntp clock-period 17180002
ntp update-calendar
```

```
ntp server 10.12.2.1
end
```

Site1 Cisco 3660 Gatekeeper

```
NS1-3660-GK1#sh run
Building configuration...

Current configuration : 2993 bytes
!
! No configuration change since last restart
!
version 12.2
no parser cache
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS1-3660-GK1
!
boot system flash flash:c3660-ix-mz.122-15.T8
logging queue-limit 100
logging buffered 10000000 debugging
enable secret 5 $1$ZbsJ$hIjrWuNnVwsmeKgA9.p2i0
!
clock timezone EDT -5
clock summer-time EST recurring
ip subnet-zero
!
!
ip ftp username Administrator
ip ftp password gbipcc
no ip domain lookup
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
!
!
```

```
!
!
!
!
!
!
!
controller T1 1/0
    framing esf
    clock source internal
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description connection to NSITE1-WAN T1 1/0
!
controller T1 1/1
    framing sf
    linecode ami
!
!
interface FastEthernet0/0
    description link to NS0-CAT5K port 7/2
    ip address 10.12.4.138 255.255.255.248
    speed 100
    full-duplex
!
interface FastEthernet0/1
    no ip address
    shutdown
    duplex auto
    speed auto
!
interface Serial1/0:1
    no ip address
!
ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.4.137
!
!
!
logging origin-id hostname
logging source-interface FastEthernet0/0
logging 10.12.13.210
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
```

```

snmp-server enable traps isdn call-information
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps bgp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
!
dial-peer cor custom
!
!
!
!
gatekeeper
  zone local cm1-zone ipcc.com 10.12.4.138
  zone local cm4-zone ipcc.com
  zone local cm7-zone ipcc.com
  zone prefix cm1-zone 1....
  zone prefix cm1-zone 2....
  zone prefix cm1-zone 3....
  zone prefix cm4-zone 4....
  zone prefix cm4-zone 5....
  zone prefix cm4-zone 6....
  zone prefix cm7-zone 7....
  gw-type-prefix 1#* default-technology
  arq reject-unknown-prefix
  lrq reject-unknown-prefix
  no shutdown
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 2006
alias exec NS6-3745-GW telnet 172.18.141.150 2007
!
line con 0
  exec-timeout 0 0
  privilege level 15

```



```
logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  password lab
  logging synchronous
  no login
!
ntp clock-period 17180385
ntp server 10.12.2.1
!
end
```

Site1 Cisco 3660 Gatekeeper for ISN

```
NS1-3660-GK2#sh run
Building configuration...

Current configuration : 4196 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS1-3660-GK2
!
boot system flash flash:c3660-ix-mz.122-15.T8
boot system flash:c3660-ix-mz.122-11.T8
boot system flash:c3660-ix-mz.122-11.T.bin
logging queue-limit 100
logging buffered 10000000 debugging
enable secret 5 $1$QHWv$ko/KTdbEFYX0wRBP5ZTC90
!
clock timezone EDT -5
clock summer-time EST recurring
ip subnet-zero
!
!
ip ftp username Administrator
```

```
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.43
ip name-server 10.12.4.35
!
!
!
voice call carrier capacity active
!
!
!
!
!
!
!
!
!
!
!
controller T1 1/0
    framing esf
    clock source internal
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description connection to NSITE2-WAN T1 1/0
!
controller T1 1/1
    framing sf
    linecode ami
!
controller T1 1/3
    framing sf
    linecode ami
!
controller T1 1/2
    framing sf
    linecode ami
!
controller T1 2/0
    framing esf
    clock source internal
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
!
controller T1 2/1
    framing sf
    linecode ami
!
```

```
controller T1 2/3
  framing sf
  linecode ami
!
controller T1 2/2
  framing sf
  linecode ami
!
controller T1 3/0
  framing esf
  clock source internal
  linecode b8zs
  channel-group 1 timeslots 1-24 speed 64
!
controller T1 3/1
  framing sf
  linecode ami
!
!
interface FastEthernet0/0
  description link to NS0-CAT5K port 7/3
  ip address 10.12.4.147 255.255.255.248
  speed 100
  full-duplex
!
interface FastEthernet0/1
  no ip address
  speed 100
  full-duplex
!
interface Serial1/0:1
  no ip address
!
interface Serial2/0:1
  no ip address
  shutdown
!
interface Serial3/0:1
  no ip address
!
ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.4.144
!
!
logging source-interface FastEthernet0/0
logging 10.12.13.210
```

```

snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps isdn call-information
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps bgp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
!
dial-peer cor custom
!
!
!
!
gatekeeper
zone local NS1-ISN-zone 10.12.4.147
zone local NS2-ISN-zone 10.12.4.147
zone local NS456-ISN-zone 10.12.4.147
zone local NS7-ISN-zone 10.12.4.147
zone remote cml-zone ipcc.com 10.12.4.138 1719
zone remote cm4-zone ipcc.com 10.12.4.138 1719
zone remote cm7-zone ipcc.com 10.12.4.138 1719
zone prefix cml-zone 1...
zone prefix NS456-ISN-zone 214564.... gw-priority 0 10.12.7.218
zone prefix cml-zone 2...
zone prefix NS2-ISN-zone 316422.... gw-priority 0 10.12.5.10
zone prefix cml-zone 3...
zone prefix cm4-zone 4...
zone prefix cm4-zone 5...
zone prefix cm4-zone 6...
zone prefix NS7-ISN-zone 770407.... gw-priority 0 10.12.11.146
zone prefix cm7-zone 7...
zone prefix NS1-ISN-zone 91931191.. gw-priority 0 10.12.4.130
zone prefix NS1-ISN-zone 919311....
gw-type-prefix 1#* default-technology
arq reject-unknown-prefix
lrq reject-unknown-prefix
no shutdown
endpoint alt-ep h323id ns1-isn1 10.12.4.90
endpoint alt-ep h323id ns1-isn2 10.12.4.82
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig

```

```
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 2006
alias exec NS6-3745-GW telnet 172.18.141.150 2007
!
line con 0
  exec-timeout 0 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  password lab
  logging synchronous
  no login
!
ntp clock-period 17180187
ntp server 10.12.2.1
!
end
```

Site2 Cisco 2691 WAN Router

```
NS2-2691#sh run
Building configuration...

Current configuration : 17657 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
```

```
hostname NS2-2691
!
boot system flash flash:c2691-is-mz.122-15.T8
boot system flash:c2691-is-mz.122-15.T5
logging queue-limit 100
logging buffered 4096 debugging
enable secret 5 $!$I6G9$3.XKUsApSWByNv3.et95t.
!
clock timezone EDT -5
ip subnet-zero
!
!
ip cef
ip ftp source-interface FastEthernet0/0.1
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
!
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
spanning-tree vlan 201 priority 8192
spanning-tree vlan 202 priority 8192
spanning-tree vlan 203 priority 8192
spanning-tree vlan 204 priority 8192
spanning-tree vlan 205 priority 8192
spanning-tree vlan 206 priority 8192
spanning-tree vlan 207 priority 8192
spanning-tree vlan 208 priority 8192
spanning-tree vlan 209 priority 8192
!
!
controller T1 0/0
```

```
framing esf
clock source line primary
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1/4 7206
!
controller T1 0/1
framing esf
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1/5 7206
!
controller T1 0/3
framing esf
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1/7 7206
!
controller T1 0/2
framing esf
clock source line primary
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1/6 7206
!
class-map match-any af21
  match access-group name af11
  match access-group name af21
class-map match-all af31
  match access-group name af31
!
!
policy-map qos
  class af31
    priority 76
  class af21
    bandwidth 8
  class class-default
    bandwidth 276
!
!
!
!
interface Loopback0
description router-id for ospf
ip address 200.0.0.2 255.255.255.255
!
interface FastEthernet0/0
```

```
no ip address
speed 100
full-duplex
!
interface FastEthernet0/0.1
description VLAN 2 management address
encapsulation isl 2
ip address 10.12.2.9 255.255.255.224
no ip redirects
ip policy route-map ns2-pbr
!
interface FastEthernet0/0.2
description NS2-3660-GW
encapsulation isl 201
ip address 10.12.5.1 255.255.255.248
no ip redirects
!
interface FastEthernet0/0.3
description NS2-3660-ISNGW
encapsulation isl 202
ip address 10.12.5.9 255.255.255.248
no ip redirects
!
interface FastEthernet0/0.4
description NS2-ISN
encapsulation isl 203
ip address 10.12.5.17 255.255.255.248
no ip redirects
!
interface FastEthernet0/0.5
description NS2-ISNPGA subnet
encapsulation isl 204
ip address 10.12.5.25 255.255.255.248
no ip redirects
ip policy route-map ns2-pbr
!
interface FastEthernet0/0.6
description NS-ISNPGB subnet
encapsulation isl 205
ip address 10.12.5.33 255.255.255.248
no ip redirects
ip policy route-map ns2-pbr
!
interface FastEthernet0/0.7
description NS2-CTI agent and server VLANs
encapsulation isl 206
ip address 10.12.5.41 255.255.255.248
no ip redirects
```



```
!  
interface FastEthernet0/0.8  
  description Private address vlan for ISNPGA  
  encapsulation isl 904  
  ip address 192.168.104.1 255.255.255.240  
  no ip redirects  
!  
interface FastEthernet0/0.9  
  description NS2-sim1  
  encapsulation isl 207  
  ip address 10.12.5.49 255.255.255.252  
  ip access-group 110 out  
  no ip redirects  
!  
interface FastEthernet0/0.10  
  description NS2-CIL  
  encapsulation isl 208  
  ip address 10.12.5.53 255.255.255.252  
  no ip redirects  
!  
interface FastEthernet0/0.11  
  description NS2-voice  
  encapsulation isl 209  
  ip address 10.12.5.65 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
!  
interface FastEthernet0/0.12  
  description OSPF vlan  
!  
interface Serial0/0:1  
  no ip address  
  encapsulation frame-relay  
  load-interval 30  
  no fair-queue  
!  
interface Serial0/0:1.1 point-to-point  
  description link to NS1-3725_s1/0:1.2  
  ip address 10.12.17.2 255.255.255.252  
  frame-relay interface-dlci 201  
  class qos  
!  
interface Serial0/0:1.3 point-to-point  
  description link to NS3-2691_S2/0:1.2  
  ip address 10.12.17.97 255.255.255.252  
  frame-relay interface-dlci 203  
!  
interface Serial0/0:1.4 point-to-point
```

```
description link to NS4-3725_S2/4:1.2
ip address 10.12.17.101 255.255.255.252
frame-relay interface-dlci 204
!
interface Serial0/0:1.5 point-to-point
description link to NS5-2691_S3/0:1.2
ip address 10.12.17.105 255.255.255.252
frame-relay interface-dlci 205
!
interface Serial0/0:1.6 point-to-point
description link to NS6-2691_S3/4:1.2
ip address 10.12.17.109 255.255.255.252
frame-relay interface-dlci 206
!
interface Serial0/0:1.7 point-to-point
description link to NS7-3725_S4/0:1.2
ip address 10.12.17.113 255.255.255.252
frame-relay interface-dlci 207
!
interface FastEthernet0/1
description link to NS0-CAT5K-4/1
ip address 10.12.19.3 255.255.255.248
speed 100
full-duplex
!
interface Serial0/1:1
no ip address
encapsulation frame-relay
!
interface Serial0/1:1.1 point-to-point
description link to NS1-3725_s1/1:1.2
ip address 10.12.17.26 255.255.255.252
frame-relay interface-dlci 211
!
interface Serial0/1:1.3 point-to-point
description link to NS3-2691_S2/1:1.2
ip address 10.12.17.117 255.255.255.252
frame-relay interface-dlci 213
!
interface Serial0/1:1.4 point-to-point
description link to NS4-3725_S2/5:1.2
ip address 10.12.17.121 255.255.255.252
frame-relay interface-dlci 214
!
interface Serial0/1:1.5 point-to-point
description link to NS5-2691_S3/1:1.2
ip address 10.12.17.125 255.255.255.252
frame-relay interface-dlci 215
```

```
!  
interface Serial0/1:1.6 point-to-point  
description link to NS6-2691_S3/5:1.2  
ip address 10.12.17.129 255.255.255.252  
frame-relay interface-dlci 216  
!  
interface Serial0/1:1.7 point-to-point  
description link to NS7-3725_S4/1:1.2  
ip address 10.12.17.133 255.255.255.252  
frame-relay interface-dlci 217  
!  
interface Serial0/2:1  
no ip address  
encapsulation frame-relay  
!  
interface Serial0/2:1.1 point-to-point  
description link to NS1-3725_s1/2:1.2  
ip address 10.12.17.50 255.255.255.252  
frame-relay interface-dlci 221  
!  
interface Serial0/2:1.3 point-to-point  
description link to NS3-2691_S2/1:1.1  
ip address 10.12.17.137 255.255.255.252  
frame-relay interface-dlci 223  
!  
interface Serial0/2:1.4 point-to-point  
description link to NS4-3725_S2/6:1.1  
ip address 10.12.17.141 255.255.255.252  
frame-relay interface-dlci 224  
!  
interface Serial0/2:1.5 point-to-point  
description link to NS5-2691_S3/2:1.1  
ip address 10.12.17.145 255.255.255.252  
frame-relay interface-dlci 225  
!  
interface Serial0/2:1.6 point-to-point  
description link to NS6-2691_S3/6:1.1  
ip address 10.12.17.149 255.255.255.252  
frame-relay interface-dlci 226  
!  
interface Serial0/2:1.7 point-to-point  
description link to NS7-3725_S4/2:1.1  
ip address 10.12.17.153 255.255.255.252  
frame-relay interface-dlci 227  
!  
interface Serial0/3:1  
no ip address  
encapsulation frame-relay
```

```
!  
interface Serial0/3:1.1 point-to-point  
description link to NS1-3725_s1/3:1.2  
ip address 10.12.17.74 255.255.255.252  
frame-relay interface-dlci 231  
!  
interface Serial0/3:1.3 point-to-point  
description link to NS3-2691_S2/3:1.2  
ip address 10.12.17.157 255.255.255.252  
frame-relay interface-dlci 233  
!  
interface Serial0/3:1.4 point-to-point  
description link to NS4-3725_S2/7:1.2  
ip address 10.12.17.161 255.255.255.252  
frame-relay interface-dlci 234  
!  
interface Serial0/3:1.5 point-to-point  
description link to NS5-2691_S3/3:1.2  
ip address 10.12.17.165 255.255.255.252  
frame-relay interface-dlci 235  
!  
interface Serial0/3:1.6 point-to-point  
description link to NS6-2691_S3/7:1.2  
ip address 10.12.17.169 255.255.255.252  
frame-relay interface-dlci 236  
!  
interface Serial0/3:1.7 point-to-point  
description link to NS7-3725_S4/3:1.2  
ip address 10.12.17.173 255.255.255.252  
frame-relay interface-dlci 237  
!  
interface FastEthernet1/0  
no ip address  
speed 100  
full-duplex  
!  
interface Serial1/0  
no ip address  
shutdown  
clockrate 2000000  
no fair-queue  
!  
interface FastEthernet1/1  
no ip address  
speed 100  
full-duplex  
!  
interface Serial1/1
```

```
no ip address
shutdown
clockrate 2000000
!
router ospf 1
router-id 200.0.0.2
log-adjacency-changes
area 0 range 10.12.17.0 255.255.255.0
area 0 range 10.12.18.0 255.255.255.0
area 2 range 10.12.5.0 255.255.255.0
area 10 range 10.12.13.0 255.255.255.0
area 10 range 10.12.19.0 255.255.255.0
network 10.12.5.0 0.0.0.255 area 2
network 10.12.13.0 0.0.0.255 area 10
network 10.12.17.0 0.0.0.255 area 0
network 10.12.18.0 0.0.0.255 area 0
network 10.12.19.0 0.0.0.255 area 10
!
ip local policy route-map syslog
ip http server
ip classless
ip route 172.0.0.0 255.0.0.0 10.12.2.1
!
!
!
ip access-list extended af11
permit ip host 10.12.5.26 host 10.12.4.35 dscp af11
permit ip host 10.12.5.26 host 10.12.4.43 dscp af11
permit ip host 10.12.5.34 host 10.12.4.35 dscp af11
permit ip host 10.12.5.34 host 10.12.4.43 dscp af11
permit ip host 10.12.5.27 host 10.12.4.35 dscp af11
permit ip host 10.12.5.27 host 10.12.4.43 dscp af11
permit ip host 10.12.5.35 host 10.12.4.35 dscp af11
permit ip host 10.12.5.35 host 10.12.4.43 dscp af11
permit ip host 10.12.5.26 host 10.12.4.34 dscp af11
permit ip host 10.12.5.26 host 10.12.4.42 dscp af11
permit ip host 10.12.5.34 host 10.12.4.34 dscp af11
permit ip host 10.12.5.34 host 10.12.4.42 dscp af11
permit ip host 10.12.5.27 host 10.12.4.34 dscp af11
permit ip host 10.12.5.27 host 10.12.4.42 dscp af11
permit ip host 10.12.5.35 host 10.12.4.34 dscp af11
permit ip host 10.12.5.35 host 10.12.4.42 dscp af11
remark traffic from ns2-pg's to rgr's af11-dscp 10
ip access-list extended af21
permit ip host 10.12.5.26 host 10.12.4.35 dscp af21
permit ip host 10.12.5.26 host 10.12.4.43 dscp af21
permit ip host 10.12.5.34 host 10.12.4.35 dscp af21
permit ip host 10.12.5.34 host 10.12.4.43 dscp af21
```

```
permit ip host 10.12.5.26 host 10.12.4.34 dscp af21
permit ip host 10.12.5.26 host 10.12.4.42 dscp af21
permit ip host 10.12.5.34 host 10.12.4.34 dscp af21
permit ip host 10.12.5.34 host 10.12.4.42 dscp af21
permit ip host 10.12.5.27 host 10.12.4.34 dscp af21
permit ip host 10.12.5.27 host 10.12.4.42 dscp af21
permit ip host 10.12.5.35 host 10.12.4.34 dscp af21
permit ip host 10.12.5.35 host 10.12.4.42 dscp af21
remark traffic from ns2-pg's to rgr's af21-dscp 18
ip access-list extended af31
permit ip host 10.12.5.26 host 10.12.4.35 dscp af31
permit ip host 10.12.5.26 host 10.12.4.43 dscp af31
permit ip host 10.12.5.34 host 10.12.4.43 dscp af31
permit ip host 10.12.5.34 host 10.12.4.35 dscp af31
permit ip host 10.12.5.27 host 10.12.4.35 dscp af31
permit ip host 10.12.5.27 host 10.12.4.43 dscp af31
permit ip host 10.12.5.35 host 10.12.4.43 dscp af31
permit ip host 10.12.5.35 host 10.12.4.35 dscp af31
permit ip host 10.12.5.26 host 10.12.4.34 dscp af31
permit ip host 10.12.5.26 host 10.12.4.42 dscp af31
permit ip host 10.12.5.34 host 10.12.4.42 dscp af31
permit ip host 10.12.5.34 host 10.12.4.34 dscp af31
permit ip host 10.12.5.27 host 10.12.4.34 dscp af31
permit ip host 10.12.5.27 host 10.12.4.42 dscp af31
permit ip host 10.12.5.35 host 10.12.4.42 dscp af31
permit ip host 10.12.5.35 host 10.12.4.34 dscp af31
remark traffic from ns2-pg's to rgr's af31-dscp 26
ip access-list extended ns2-pbr
permit ip host 10.12.5.26 host 10.12.4.35 dscp af11
permit ip host 10.12.5.26 host 10.12.4.43 dscp af11
permit ip host 10.12.5.34 host 10.12.4.35 dscp af11
permit ip host 10.12.5.34 host 10.12.4.43 dscp af11
permit ip host 10.12.5.27 host 10.12.4.35 dscp af11
permit ip host 10.12.5.27 host 10.12.4.43 dscp af11
permit ip host 10.12.5.35 host 10.12.4.35 dscp af11
permit ip host 10.12.5.35 host 10.12.4.43 dscp af11
permit ip host 10.12.5.26 host 10.12.4.34 dscp af11
permit ip host 10.12.5.26 host 10.12.4.42 dscp af11
permit ip host 10.12.5.34 host 10.12.4.34 dscp af11
permit ip host 10.12.5.34 host 10.12.4.42 dscp af11
permit ip host 10.12.5.27 host 10.12.4.34 dscp af11
permit ip host 10.12.5.27 host 10.12.4.42 dscp af11
permit ip host 10.12.5.35 host 10.12.4.34 dscp af11
permit ip host 10.12.5.35 host 10.12.4.42 dscp af11
permit ip host 10.12.5.26 host 10.12.4.35 dscp af21
permit ip host 10.12.5.26 host 10.12.4.43 dscp af21
permit ip host 10.12.5.34 host 10.12.4.35 dscp af21
permit ip host 10.12.5.34 host 10.12.4.43 dscp af21
```

```
permit ip host 10.12.5.26 host 10.12.4.34 dscp af21
permit ip host 10.12.5.26 host 10.12.4.42 dscp af21
permit ip host 10.12.5.34 host 10.12.4.34 dscp af21
permit ip host 10.12.5.34 host 10.12.4.42 dscp af21
permit ip host 10.12.5.27 host 10.12.4.34 dscp af21
permit ip host 10.12.5.27 host 10.12.4.42 dscp af21
permit ip host 10.12.5.35 host 10.12.4.34 dscp af21
permit ip host 10.12.5.35 host 10.12.4.42 dscp af21
permit ip host 10.12.5.26 host 10.12.4.35 dscp af31
permit ip host 10.12.5.26 host 10.12.4.43 dscp af31
permit ip host 10.12.5.34 host 10.12.4.43 dscp af31
permit ip host 10.12.5.34 host 10.12.4.35 dscp af31
permit ip host 10.12.5.27 host 10.12.4.35 dscp af31
permit ip host 10.12.5.27 host 10.12.4.43 dscp af31
permit ip host 10.12.5.35 host 10.12.4.43 dscp af31
permit ip host 10.12.5.35 host 10.12.4.35 dscp af31
permit ip host 10.12.5.26 host 10.12.4.34 dscp af31
permit ip host 10.12.5.26 host 10.12.4.42 dscp af31
permit ip host 10.12.5.34 host 10.12.4.42 dscp af31
permit ip host 10.12.5.34 host 10.12.4.34 dscp af31
permit ip host 10.12.5.27 host 10.12.4.34 dscp af31
permit ip host 10.12.5.27 host 10.12.4.42 dscp af31
permit ip host 10.12.5.35 host 10.12.4.42 dscp af31
permit ip host 10.12.5.35 host 10.12.4.34 dscp af31
ip access-list extended syslog
  permit ip any host 10.12.13.210
!
!
map-class frame-relay qos
  frame-relay tc 10
  frame-relay cir 1544000
  frame-relay bc 3640
  frame-relay mincir 1544000
  service-policy output qos
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
access-list 1 permit 10.12.5.26
access-list 1 permit 10.12.5.0 0.0.0.255
access-list 5 permit 10.12.3.242
access-list 101 permit ip host 10.12.5.27 host 10.12.4.43 dscp af12
access-list 101 permit ip host 10.12.5.27 host 10.12.4.42 dscp af12
access-list 102 permit ip host 10.12.5.27 host 10.12.4.42 dscp af22
access-list 102 permit ip host 10.12.5.27 host 10.12.4.43 dscp af22
access-list 102 permit ip host 10.12.5.26 host 10.12.4.42 dscp af22
access-list 102 permit ip host 10.12.5.26 host 10.12.4.43 dscp af22
access-list 103 permit ip host 10.12.5.27 host 10.12.4.42 dscp af32
access-list 103 permit ip host 10.12.5.27 host 10.12.4.43 dscp af32
```

```
access-list 103 permit ip host 10.12.5.26 host 10.12.4.42 dscp af32
access-list 103 permit ip host 10.12.5.26 host 10.12.4.43 dscp af32
access-list 110 permit udp 10.12.3.0 0.0.0.255 any
access-list 110 deny udp any gt 16384 any
access-list 110 permit ip any any
access-list 150 permit icmp any any
access-list 199 permit ip host 10.12.5.27 host 10.12.4.42 dscp cs2
access-list 199 permit ip host 10.12.5.27 host 10.12.4.42 dscp cs3
!
route-map syslog permit 10
  match ip address syslog
  set ip next-hop 10.12.2.1
!
route-map ns2-pbr permit 10
  match ip address ns2-pbr
  set ip next-hop 10.12.17.1
!
tftp-server c2691-is-mz.122-15.T2
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
```



```
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias configure acle ip access-list ex
alias configure acls ip access-list st
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec fr sh frame-relay
alias exec sion sh ip ospf nei
alias exec cipr clear ip ospf process
alias exec u u all
alias exec sri sh run int
alias exec sacl sh ip access-list
!
line con 0
exec-timeout 30 0
privilege level 15
logging synchronous
line aux 0
```

```
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
!
ntp clock-period 17180550
ntp server 10.12.2.1
end
```

Site2 Cisco Catalyst 3524 Access Switch

```
NS2-3524#sh run
Building configuration...

Current configuration:
!
! No configuration change since last restart
!
version 12.0
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS2-3524
!
!
!
!
!
clock timezone EST -5
!
spanning-tree vlan 209 priority 8192
no spanning-tree vlan 419
no spanning-tree vlan 420
no spanning-tree vlan 421
no spanning-tree vlan 700
no spanning-tree vlan 701
no spanning-tree vlan 702
no spanning-tree vlan 703
no spanning-tree vlan 704
no spanning-tree vlan 705
```

```
no spanning-tree vlan 706
no spanning-tree vlan 707
no spanning-tree vlan 708
no spanning-tree vlan 709
no spanning-tree vlan 710
no spanning-tree vlan 711
no spanning-tree vlan 712
no spanning-tree vlan 713
no spanning-tree vlan 714
no spanning-tree vlan 715
no spanning-tree vlan 716
no spanning-tree vlan 717
no spanning-tree vlan 204
ip subnet-zero
ip tftp source-interface VLAN1
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
interface FastEthernet0/1
  description NS2-ISN1
  duplex full
  speed 100
  switchport access vlan 203
  spanning-tree portfast
!
interface FastEthernet0/2
  description NS2-PG1A_PUB
  load-interval 30
  duplex full
  speed 100
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 204
  switchport trunk allowed vlan 1,204,1002-1005
  switchport mode trunk
  switchport priority extend cos 0
!
interface FastEthernet0/3
  description NS2-PG1B_PUB
  duplex full
  speed 100
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 205
  switchport trunk allowed vlan 1,205,1002-1005
  switchport mode trunk
  spanning-tree portfast
```

```
!  
interface FastEthernet0/4  
  description NS2-PG1A_PRIVATE  
  duplex full  
  speed 100  
  switchport access vlan 904  
  spanning-tree portfast  
!  
interface FastEthernet0/5  
  description NS2-PG1B_PRIVATE  
  duplex full  
  speed 100  
  switchport access vlan 904  
  spanning-tree portfast  
!  
interface FastEthernet0/6  
  description NS2-SIM1  
  duplex full  
  speed 100  
  switchport access vlan 207  
  spanning-tree portfast  
!  
interface FastEthernet0/7  
  description NS2-CIL1  
  duplex full  
  speed 100  
  switchport access vlan 208  
  spanning-tree portfast  
!  
interface FastEthernet0/8  
  duplex full  
  speed 100  
!  
interface FastEthernet0/9  
  duplex full  
  speed 100  
!  
interface FastEthernet0/10  
  duplex full  
  speed 100  
!  
interface FastEthernet0/11  
  duplex full  
  speed 100  
!  
interface FastEthernet0/12  
  duplex full  
  speed 100
```

```
!  
interface FastEthernet0/13  
  duplex full  
  speed 100  
!  
interface FastEthernet0/14  
  duplex full  
  speed 100  
!  
interface FastEthernet0/15  
  duplex full  
  speed 100  
!  
interface FastEthernet0/16  
  duplex full  
  speed 100  
!  
interface FastEthernet0/17  
  duplex full  
  speed 100  
!  
interface FastEthernet0/18  
  duplex full  
  speed 100  
!  
interface FastEthernet0/19  
  duplex full  
  speed 100  
!  
interface FastEthernet0/20  
  duplex full  
  speed 100  
  port monitor FastEthernet0/2  
  switchport access vlan 204  
  no cdp enable  
!  
interface FastEthernet0/21  
  description link to NS2-3660-ISN F0/0  
  duplex full  
  speed 100  
  switchport access vlan 202  
!  
interface FastEthernet0/22  
  description link to NS2-3660-GW f0/0  
  duplex full  
  speed 100  
  switchport access vlan 201  
!
```

```

interface FastEthernet0/23
  description link to NS2-2691 f0/0
  duplex full
  speed 100
  switchport trunk allowed vlan 1,2,200-209,904,1002-1005
  switchport mode trunk
!
interface FastEthernet0/24
  description link to CAT5K 6/1
  duplex full
  speed 100
  switchport trunk allowed vlan 1,2,206,207,209,1002-1005
  switchport trunk pruning vlan 2-200
  switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface VLAN1
  no ip address
  no ip directed-broadcast
  no ip route-cache
  shutdown
!
interface VLAN2
  description management vlan
  ip address 10.12.2.8 255.255.255.224
  no ip directed-broadcast
  no ip route-cache
!
logging source-interface VLAN1
logging 10.12.13.210
tftp-server c3500x1-c3h2s-mz.120-5.WC7.bin
snmp-server engineID local 0000000902000004C1535D80
snmp-server community gb-ipcc RW
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
snmp-server enable traps vlan-membership
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps hsrp
snmp-server enable traps c2900
snmp-server enable traps mac-notification
snmp-server enable traps vtp
snmp-server enable traps cluster
alias exec c conf t

```

```
alias exec r sh run
alias exec sri sh run interface
alias exec NS0-CAT5K telnet 10.12.2.1
alias exec NS2-3524 telnet 10.12.2.8
alias exec NS3-3524 telnet 10.12.2.10
alias exec NS5-3524 telnet 10.12.2.14
alias exec NS6-3524 telnet 10.12.2.16
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  transport input none
  stopbits 1
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  no login
line vty 5 15
  login
!
ntp clock-period 11259033
ntp server 10.12.2.1
end
```

Site2 Cisco 3660 Gateway

```
NS2-3660-GW1#sh run
Building configuration...

Current configuration : 5965 bytes
!
! Last configuration change at 17:02:17 US_EDT Sat Oct 11 2003
! NVRAM config last updated at 12:12:35 US_EDT Fri Oct 10 2003
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS2-3660-GW1
!
boot system flash flash:c3660-is-mz.122-15.T8
```

```
logging queue-limit 100
logging buffered 10000000 debugging
no logging console
!
clock timezone US_Eastern -5
clock summer-time US_EDT recurring
voice-card 1
!
voice-card 2
!
voice-card 3
!
voice-card 4
!
voice-card 5
!
ip subnet-zero
ip tcp synwait-time 13
!
!
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host whirlwind 172.18.137.110
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
isdn switch-type primary-dms100
!
!
voice call carrier capacity active
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
ccm-manager redundant-host NS1-CM8
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.12.4.2
ccm-manager config
```



```
fax interface-type fax-mail
mta receive maximum-recipients 0
!
!
controller T1 1/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 4/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 5/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 5/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
```

```
!  
!  
!  
interface FastEthernet0/0  
  description link to NS2-3524 f0/22  
  ip address 10.12.5.2 255.255.255.248  
  speed 100  
  full-duplex  
!  
interface FastEthernet0/1  
  no ip address  
  shutdown  
  duplex auto  
  speed auto  
!  
interface Serial1/0:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial1/1:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/0:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/1:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial3/0:23
```

```
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial3/1:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial4/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial5/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial5/1:23
no ip address
no logging event link-status
isdn switch-type primary-dms100
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
router ospf 2003
router-id 10.12.5.2
log-adjacency-changes
network 10.12.5.0 0.0.0.7 area 2
!
no ip http server
ip classless
!
!
```

```

!
logging source-interface FastEthernet0/0
logging 10.12.13.210
!
tftp-server flash:c3660-is-mz.122-15.T2
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps isdn call-information
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps bgp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps dlsw
!
call rsvp-sync
!
voice-port 1/0:23
!
voice-port 1/1:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
voice-port 3/0:23
!
voice-port 3/1:23
!
voice-port 4/0:23
!
voice-port 5/0:23
!
voice-port 5/1:23
!
mgcp
mgcp call-agent NS1-CM4 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp max-waiting-delay 3
mgcp restart-delay 10
mgcp modem passthrough voip mode nse
mgcp modem passthrough voaal2 mode nse
mgcp vad
mgcp package-capability rtp-package

```

```
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 2006
alias exec NS6-3745-GW telnet 172.18.141.150 2007
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  password lab
  logging synchronous
  no login
!
ntp clock-period 17180085
ntp server 10.12.2.1
ntp server 10.12.13.1
!
```

```
end
```

Site2 Cisco 3660 Gateway for ISN

```
NS2-3660ISN-GW#sh run
Building configuration...

Current configuration : 4267 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname NS2-3660ISN-GW
!
boot system flash flash:c3660-is-mz.122-15.T8
boot system flash:c3660-is-mz.122-13.T8
boot system flash:c3660-is-mz.122-13.T3
logging queue-limit 100
logging buffered 1000000 debugging
no logging console
!
voice-card 1
!
voice-card 2
!
ip subnet-zero
!
!
ip domain name ipcc.com
ip name-server 10.12.4.35
!
isdn switch-type primary-ni
!
!
!
voice service voip
    h323
    call start slow
!
voice class codec 1
    codec preference 1 g711ulaw
    codec preference 2 g729r8
!
```

```
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
fax interface-type fax-mail
mta receive maximum-recipients 0
!
!
controller T1 1/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
!
controller T1 1/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
!
controller T1 2/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
!
controller T1 2/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
!
!
!
interface FastEthernet0/0
    ip address 10.12.5.10 255.255.255.248
    speed 100
    full-duplex
    h323-gateway voip interface
    h323-gateway voip id NS2-ISN-zone ipaddr 10.12.4.147 1719
    h323-gateway voip h323-id 10.12.5.10
    h323-gateway voip tech-prefix 1#
!
interface FastEthernet0/1
    no ip address
    shutdown
```

```
duplex auto
speed auto
!
interface Serial1/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial2/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial2/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn T310 30000
  no cdp enable
!
ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.5.9
!
!
!
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps casa
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
```



```
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
voice-port 1/0:23
!
voice-port 1/1:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
```

```
dial-peer voice 1 voip
!
dial-peer voice 316 voip
 destination-pattern 316422....
 voice-class codec 1
 session target ras
 dtmf-relay rtp-nte h245-signal h245-alphanumeric
!
dial-peer voice 2 pots
 destination-pattern 2...
 no digit-strip
 direct-inward-dial
 port 2/1:23
!
dial-peer voice 3 pots
 destination-pattern 2...
 no digit-strip
 direct-inward-dial
 port 2/0:23
!
dial-peer voice 4 pots
 destination-pattern 2...
 no digit-strip
 direct-inward-dial
 port 1/0:23
!
dial-peer voice 5 pots
 destination-pattern 2...
 no digit-strip
 direct-inward-dial
 port 1/1:23
!
num-exp 1320720.... 316422....
gateway
!
alias exec c conf t
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
line vty 0 4
 exec-timeout 0 0
 privilege level 15
 logging synchronous
 no login
!
```

```
!  
end
```

Site3 Cisco 2691 WAN Router

```
NS3-2691#sh run  
Building configuration...  
  
Current configuration : 9440 bytes  
!  
! No configuration change since last restart  
!  
version 12.2  
service nagle  
service timestamps debug datetime msec localtime  
service timestamps log datetime msec localtime  
no service password-encryption  
!  
hostname NS3-2691  
!  
boot system flash flash:c2691-is-mz.122-15.T8  
boot system flash:c2691-is-mz.122-15.T5  
logging queue-limit 100  
enable secret 5 $1$CzEn$2nODB4.9LATcrvCIvH8z..  
!  
clock timezone EDT -5  
ip subnet-zero  
!  
!  
ip cef  
ip ftp source-interface FastEthernet0/0.1  
ip ftp username Administrator  
ip ftp password gbipcc  
ip domain name ipcc.com  
ip host gbipcc 172.18.141.128  
ip name-server 10.12.4.35  
ip name-server 10.12.4.43  
!  
!  
!  
!  
!  
!  
!
```

```
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
controller T1 0/0
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/0 7206
!
controller T1 0/1
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/1 7206
!
controller T1 0/3
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/3 7206
!
controller T1 0/2
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/2 7206
!
!
interface Loopback0
    description router-id for ospf
    ip address 200.0.0.3 255.255.255.255
!
interface FastEthernet0/0
    no ip address
    speed 100
    full-duplex
!
interface FastEthernet0/0.1
    description VLAN 2 management address
    encapsulation isl 2
    ip address 10.12.2.11 255.255.255.224
```

```
no ip redirects
!
interface FastEthernet0/0.2
description NS2-CTI agent and server VLANs
encapsulation isl 301
ip address 10.12.6.1 255.255.255.248
no ip redirects
!
interface FastEthernet0/0.3
description NS-3660-GW
encapsulation isl 302
ip address 10.12.6.9 255.255.255.248
no ip redirects
!
interface FastEthernet0/0.4
description NS3-sim1
encapsulation isl 303
ip address 10.12.6.17 255.255.255.252
ip access-group 110 out
no ip redirects
!
interface FastEthernet0/0.5
description NS3-CIL1
encapsulation isl 304
ip address 10.12.6.21 255.255.255.252
no ip redirects
!
interface FastEthernet0/0.6
description NS3-voice
encapsulation isl 305
ip address 10.12.6.33 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
!
interface Serial0/0:1
no ip address
encapsulation frame-relay
!
interface Serial0/0:1.1 point-to-point
description link to NS1-3725_s1/0:1.3
ip address 10.12.17.6 255.255.255.252
frame-relay interface-dlci 301
!
interface Serial0/0:1.3 point-to-point
description link to NS2-2691_S0/0:1.3
ip address 10.12.17.98 255.255.255.252
frame-relay interface-dlci 302
!
```

```
interface Serial0/0:1.4 point-to-point
description link to NS4-3725_S1/0:1.3
ip address 10.12.17.177 255.255.255.252
frame-relay interface-dlci 304
!
interface Serial0/0:1.5 point-to-point
description link to NS5-2691_S0/0:1.3
ip address 10.12.17.181 255.255.255.252
frame-relay interface-dlci 305
!
interface Serial0/0:1.6 point-to-point
description link to NS6-2691_S0/0:1.3
ip address 10.12.17.185 255.255.255.252
frame-relay interface-dlci 306
!
interface Serial0/0:1.7 point-to-point
description link to NS7-3725_S1/0:1.3
ip address 10.12.17.189 255.255.255.252
frame-relay interface-dlci 307
!
interface FastEthernet0/1
no ip address
speed 100
full-duplex
!
interface Serial0/1:1
no ip address
encapsulation frame-relay
!
interface Serial0/1:1.1 point-to-point
description link to NS1-3725_s1/1:1.3
ip address 10.12.17.30 255.255.255.252
frame-relay interface-dlci 311
!
interface Serial0/1:1.3 point-to-point
description link to NS2-2691_S0/1:1.3
ip address 10.12.17.118 255.255.255.252
frame-relay interface-dlci 312
!
interface Serial0/1:1.4 point-to-point
description link to NS4-3725_S1/1:1.3
ip address 10.12.17.193 255.255.255.252
frame-relay interface-dlci 314
!
interface Serial0/1:1.5 point-to-point
description link to NS5-2691_S0/1:1.3
ip address 10.12.17.197 255.255.255.252
frame-relay interface-dlci 315
```

```
!  
interface Serial0/1:1.6 point-to-point  
description link to NS6-2691_S0/1:1.3  
ip address 10.12.17.201 255.255.255.252  
frame-relay interface-dlci 316  
!  
interface Serial0/1:1.7 point-to-point  
description link to NS7-3725_S1/1:1.3  
ip address 10.12.17.205 255.255.255.252  
frame-relay interface-dlci 317  
!  
interface Serial0/2:1  
no ip address  
encapsulation frame-relay  
!  
interface Serial0/2:1.1 point-to-point  
description link to NS1-3725_s1/2:1.3  
ip address 10.12.17.54 255.255.255.252  
frame-relay interface-dlci 321  
!  
interface Serial0/2:1.3 point-to-point  
description link to NS2-2691_S0/2:1.1  
ip address 10.12.17.138 255.255.255.252  
frame-relay interface-dlci 322  
!  
interface Serial0/2:1.4 point-to-point  
description link to NS4-3725_S1/2:1.1  
ip address 10.12.17.209 255.255.255.252  
frame-relay interface-dlci 324  
!  
interface Serial0/2:1.5 point-to-point  
description link to NS5-2691_S0/2:1.1  
ip address 10.12.17.213 255.255.255.252  
frame-relay interface-dlci 325  
!  
interface Serial0/2:1.6 point-to-point  
description link to NS6-2691_S0/2:1.1  
ip address 10.12.17.217 255.255.255.252  
frame-relay interface-dlci 326  
!  
interface Serial0/2:1.7 point-to-point  
description link to NS7-3725_S1/2:1.1  
ip address 10.12.17.221 255.255.255.252  
frame-relay interface-dlci 327  
!  
interface Serial0/3:1  
no ip address  
encapsulation frame-relay
```

```
!  
interface Serial0/3:1.1 point-to-point  
description link to NS1-3725_s1/3:1.3  
ip address 10.12.17.78 255.255.255.252  
frame-relay interface-dlci 331  
!  
interface Serial0/3:1.3 point-to-point  
description link to NS2-2691_S0/3:1.3  
ip address 10.12.17.158 255.255.255.252  
frame-relay interface-dlci 332  
!  
interface Serial0/3:1.4 point-to-point  
description link to NS4-3725_S1/3:1.3  
ip address 10.12.17.225 255.255.255.252  
frame-relay interface-dlci 334  
!  
interface Serial0/3:1.5 point-to-point  
description link to NS5-2691_S0/3:1.3  
ip address 10.12.17.229 255.255.255.252  
frame-relay interface-dlci 335  
!  
interface Serial0/3:1.6 point-to-point  
description link to NS6-2691_S0/3:1.3  
ip address 10.12.17.233 255.255.255.252  
frame-relay interface-dlci 336  
!  
interface Serial0/3:1.7 point-to-point  
description link to NS7-3725_S1/3:1.3  
ip address 10.12.17.237 255.255.255.252  
frame-relay interface-dlci 337  
!  
interface FastEthernet1/0  
no ip address  
speed 100  
full-duplex  
!  
interface Serial1/0  
no ip address  
shutdown  
clockrate 2000000  
no fair-queue  
!  
interface FastEthernet1/1  
no ip address  
speed 100  
full-duplex  
!  
interface Serial1/1
```



```
no ip address
shutdown
clockrate 2000000
!
router ospf 1
router-id 200.0.0.3
log-adjacency-changes
area 3 range 10.12.6.0 255.255.255.0
network 10.12.6.0 0.0.0.255 area 3
network 10.12.17.0 0.0.0.255 area 0
network 10.12.18.0 0.0.0.255 area 0
!
ip local policy route-map syslog
ip http server
ip classless
!
!
!
ip access-list extended syslog
permit ip any host 10.12.13.210
!
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
access-list 110 permit udp 10.12.3.0 0.0.0.255 any
access-list 110 deny    udp any gt 16384 any
access-list 110 permit ip any any
!
route-map syslog permit 10
match ip address syslog
set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
```

```
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
```

```
alias exec fr sh frame-relay
alias exec sion sh ip ospf nei
alias exec cipr clear ip ospf process
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
!
ntp clock-period 17180268
ntp server 10.12.2.1
end
```

Site3 Cisco Catalyst 3524 Access Switch

```
NS3-3524#sh run
Building configuration...

Current configuration:
!
! No configuration change since last restart
!
version 12.0
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS3-3524
!
!
!
!
!
clock timezone EDT -5
clock summer-time EST recurring 1 Sun Apr 1:00 4 Sun Oct 1:00
!
```

```
no spanning-tree vlan 419
no spanning-tree vlan 420
no spanning-tree vlan 421
no spanning-tree vlan 700
no spanning-tree vlan 701
no spanning-tree vlan 702
no spanning-tree vlan 703
no spanning-tree vlan 704
no spanning-tree vlan 705
no spanning-tree vlan 706
no spanning-tree vlan 707
no spanning-tree vlan 708
no spanning-tree vlan 709
no spanning-tree vlan 710
no spanning-tree vlan 711
no spanning-tree vlan 712
no spanning-tree vlan 713
no spanning-tree vlan 714
no spanning-tree vlan 715
no spanning-tree vlan 716
no spanning-tree vlan 717
ip subnet-zero
ip host gbipcc 172.18.141.128
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
interface FastEthernet0/1
  description NS3-SIM1
  duplex full
  speed 100
  switchport access vlan 303
  spanning-tree portfast
!
interface FastEthernet0/2
  description NS3-CIL1
  duplex full
  speed 100
  switchport access vlan 304
  spanning-tree portfast
!
interface FastEthernet0/3
  duplex full
  speed 100
!
interface FastEthernet0/4
```

```
duplex full
speed 100
!
interface FastEthernet0/5
duplex full
speed 100
!
interface FastEthernet0/6
duplex full
speed 100
!
interface FastEthernet0/7
duplex full
speed 100
!
interface FastEthernet0/8
duplex full
speed 100
!
interface FastEthernet0/9
duplex full
speed 100
!
interface FastEthernet0/10
duplex full
speed 100
!
interface FastEthernet0/11
duplex full
speed 100
!
interface FastEthernet0/12
duplex full
speed 100
!
interface FastEthernet0/13
duplex full
speed 100
!
interface FastEthernet0/14
duplex full
speed 100
!
interface FastEthernet0/15
duplex full
speed 100
!
interface FastEthernet0/16
```

```
duplex full
speed 100
!
interface FastEthernet0/17
duplex full
speed 100
!
interface FastEthernet0/18
duplex full
speed 100
!
interface FastEthernet0/19
duplex full
speed 100
!
interface FastEthernet0/20
duplex full
speed 100
!
interface FastEthernet0/21
duplex full
speed 100
!
interface FastEthernet0/22
description link to NS3-3660-GW
duplex full
speed 100
switchport access vlan 302
!
interface FastEthernet0/23
description link to NS3-2691
duplex full
speed 100
switchport trunk allowed vlan 1,2,301-305,1002-1005
switchport trunk pruning vlan 2-300
switchport mode trunk
!
interface FastEthernet0/24
description link to CAT5K port 6/2
duplex full
speed 100
switchport trunk allowed vlan 1,2,301,305,1002-1005
switchport trunk pruning vlan 2-300,306-1001
switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
```

```
!  
interface VLAN1  
  no ip address  
  no ip directed-broadcast  
  no ip route-cache  
  shutdown  
!  
interface VLAN2  
  ip address 10.12.2.10 255.255.255.224  
  no ip directed-broadcast  
  no ip route-cache  
!  
logging source-interface VLAN1  
logging 10.12.13.210  
snmp-server engineID local 00000009020000C30155A40  
snmp-server community gb-ipcc RW  
snmp-server community public RW  
snmp-server system-shutdown  
snmp-server enable traps snmp authentication linkdown linkup coldstart  
snmp-server enable traps vlan-membership  
snmp-server enable traps config  
snmp-server enable traps entity  
snmp-server enable traps hsrp  
snmp-server enable traps c2900  
snmp-server enable traps mac-notification  
snmp-server enable traps vtp  
snmp-server enable traps cluster  
alias exec c conf t  
alias exec NS0-CAT5K telnet 10.12.2.1  
alias exec NS2-3524 telnet 10.12.2.8  
alias exec NS3-3524 telnet 10.12.2.10  
alias exec NS5-3524 telnet 10.12.2.14  
alias exec NS6-3524 telnet 10.12.2.16  
!  
line con 0  
  exec-timeout 30 0  
  privilege level 15  
  logging synchronous  
  transport input none  
  stopbits 1  
line vty 0 4  
  exec-timeout 30 0  
  privilege level 15  
  logging synchronous  
  no login  
line vty 5 15  
  login  
!
```

```
ntp clock-period 11258979
ntp server 10.12.2.1
end
```

Site3 Cisco 3660 Gateway

```
NS3-3660-GW1#sh run
Building configuration...

Current configuration : 6321 bytes
!
! Last configuration change at 09:22:43 EST Wed Oct 8 2003
! NVRAM config last updated at 12:13:19 EST Fri Oct 10 2003
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
service compress-config
!
hostname NS3-3660-GW1
!
boot system flash flash:c3660-is-mz.122-15.T8
logging queue-limit 100
logging buffered 10000000 debugging
!
memory-size iomem 10
clock timezone EDT -5
clock summer-time EST recurring
voice-card 1
!
voice-card 2
!
voice-card 3
!
voice-card 4
!
ip subnet-zero
ip tcp synwait-time 13
!
!
ip ftp username Administrator
ip ftp password gbipcc
```



```
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
isdn switch-type primary-ni
!
!
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
ccm-manager redundant-host NS1-CM7
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.12.4.2
ccm-manager config
fax interface-type fax-mail
mta receive maximum-recipients 0
!
!
controller T1 1/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 1/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 2/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
```

```
controller T1 3/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 3/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 4/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 4/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
!
!
interface FastEthernet0/0
  ip address 10.12.6.10 255.255.255.248
  speed 100
  full-duplex
!
interface Serial1/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial2/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
```

```
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial3/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial3/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn protocol-emulate network
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial4/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial4/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
no ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.6.9
!
```

```

!
!
logging origin-id hostname
logging 10.12.13.210
!
tftp-server flash:c3660-is-mz.122-15.T5
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps casa
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
voice-port 1/0:23
!

```

```
voice-port 1/1:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
voice-port 3/0:23
!
voice-port 3/1:23
!
voice-port 4/0:23
!
voice-port 4/1:23
!
mgcp
mgcp call-agent NS1-CM3 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp max-waiting-delay 3
mgcp restart-delay 10
mgcp modem passthrough voip mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
no mgcp explicit hookstate
mgcp bind control source-interface FastEthernet0/0
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
```

```

alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 2006
alias exec NS6-3745-GW telnet 172.18.141.150 2007
!
line con 0
  exec-timeout 0 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  password lab
  logging synchronous
  no login
!
ntp clock-period 17180244
ntp server 10.12.2.1
!
end

```

Site4 Cisco 3725 WAN Router

```

NS4-3725#sh run
Building configuration...

Current configuration : 20204 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS4-3725
!
boot system flash flash:c3725-is-mz.122-15.T8

```

```
boot system flash:c3725-is-mz.122-15.T5
logging queue-limit 100
logging buffered 4096 debugging
!
clock timezone EDT -5
ip subnet-zero
ip tcp synwait-time 5
!
!
ip cef
ip ftp source-interface FastEthernet0/0.1
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
!
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!
!
controller T1 1/0
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/4 7206
!
controller T1 1/1
    framing esf
    linecode b8zs
    channel-group 1 timeslots 1-24 speed 64
    description link to T1 2/5 7206
!
controller T1 1/3
    framing esf
```

```
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1 2/7 7206
!
controller T1 1/2
framing esf
linecode b8zs
channel-group 1 timeslots 1-24 speed 64
description link to T1 2/6 7206
!
class-map match-any af21
  match access-group name af21
  match access-group name af11
class-map match-all af31
  match access-group name af31
!
!
policy-map qos
  class af31
    priority 287
  class af21
    bandwidth 13
  class class-default
    bandwidth 274
!
!
!
!
interface Loopback0
  description router-id for ospf
  ip address 200.0.0.4 255.255.255.255
!
interface FastEthernet0/0
  description link to NS4-CAT6K 3/47
  no ip address
  speed 100
  full-duplex
!
interface FastEthernet0/0.1
  description link to NS4-CAT6K 3/47
  encapsulation dot1Q 2
  ip address 10.12.2.13 255.255.255.224
  no ip redirects
  ip policy route-map ns4-pbr
!
interface FastEthernet0/0.40
  description OSPF vlan
  encapsulation dot1Q 40
```



```
ip address 10.12.15.83 255.255.255.248
ip ospf priority 255
ip policy route-map ns4-pbr
!
interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto
!
interface FastEthernet1/0
no ip address
shutdown
duplex auto
speed auto
!
interface Serial1/0:1
no ip address
encapsulation frame-relay
load-interval 30
no fair-queue
!
interface Serial1/0:1.1 point-to-point
description link to NS1-3725_s1/0:1.4
ip address 10.12.17.10 255.255.255.252
frame-relay interface-dlci 401
class qos
!
interface Serial1/0:1.2 point-to-point
description link to NS2-2691_S0/0:1.4
ip address 10.12.17.102 255.255.255.252
frame-relay interface-dlci 402
!
interface Serial1/0:1.3 point-to-point
description link to NS3-2691_S0/0:1.4
ip address 10.12.17.178 255.255.255.252
frame-relay interface-dlci 403
!
interface Serial1/0:1.5 point-to-point
description link to NS5-2691_S0/0:1.4
ip address 10.12.17.241 255.255.255.252
frame-relay interface-dlci 405
!
interface Serial1/0:1.6 point-to-point
description link to NS6-2691_S0/0:1.4
ip address 10.12.17.245 255.255.255.252
frame-relay interface-dlci 406
!
```

```
interface Serial1/0:1.7 point-to-point
description link to NS7-3725_S1/0:1.4
ip address 10.12.17.249 255.255.255.252
frame-relay interface-dlci 407
!
interface FastEthernet1/1
no ip address
shutdown
duplex auto
speed auto
!
interface Serial1/1:1
no ip address
encapsulation frame-relay
!
interface Serial1/1:1.1 point-to-point
description link to NS1-3725_s1/1:1.4
ip address 10.12.17.34 255.255.255.252
frame-relay interface-dlci 411
!
interface Serial1/1:1.2 point-to-point
description link to NS2-2691_S0/1:1.4
ip address 10.12.17.122 255.255.255.252
frame-relay interface-dlci 412
!
interface Serial1/1:1.3 point-to-point
description link to NS3-2691_S0/1:1.4
ip address 10.12.17.194 255.255.255.252
frame-relay interface-dlci 413
!
interface Serial1/1:1.5 point-to-point
description link to NS5-2691_S0/1:1.4
ip address 10.12.17.253 255.255.255.252
frame-relay interface-dlci 415
!
interface Serial1/1:1.6 point-to-point
description link to NS6-2691_S0/1:1.4
ip address 10.12.18.1 255.255.255.252
frame-relay interface-dlci 416
!
interface Serial1/1:1.7 point-to-point
description link to NS7-3725_S1/1:1.4
ip address 10.12.18.5 255.255.255.252
frame-relay interface-dlci 417
!
interface Serial1/2:1
no ip address
encapsulation frame-relay
```

```
!  
interface Serial1/2:1.1 point-to-point  
description link to NS1-3725_s1/2:1.4  
ip address 10.12.17.58 255.255.255.252  
frame-relay interface-dlci 421  
!  
interface Serial1/2:1.2 point-to-point  
description link to NS2-2691_S0/2:1.4  
ip address 10.12.17.142 255.255.255.252  
frame-relay interface-dlci 422  
!  
interface Serial1/2:1.3 point-to-point  
description link to NS3-2691_S0/2:1.4  
ip address 10.12.17.210 255.255.255.252  
frame-relay interface-dlci 423  
!  
interface Serial1/2:1.5 point-to-point  
description link to NS5-2691_S0/2:1.4  
ip address 10.12.18.9 255.255.255.252  
frame-relay interface-dlci 425  
!  
interface Serial1/2:1.6 point-to-point  
description link to NS6-2691_S0/2:1.4  
ip address 10.12.18.13 255.255.255.252  
frame-relay interface-dlci 426  
!  
interface Serial1/2:1.7 point-to-point  
description link to NS7-3725_S1/2:1.4  
ip address 10.12.18.17 255.255.255.252  
frame-relay interface-dlci 427  
!  
interface Serial1/3:1  
no ip address  
encapsulation frame-relay  
!  
interface Serial1/3:1.1 point-to-point  
description link to NS1-3725_s1/3:1.4  
ip address 10.12.17.82 255.255.255.252  
frame-relay interface-dlci 431  
!  
interface Serial1/3:1.2 point-to-point  
description link to NS2-2691_S0/3:1.4  
ip address 10.12.17.162 255.255.255.252  
frame-relay interface-dlci 432  
!  
interface Serial1/3:1.3 point-to-point  
description link to NS3-2691_S0/3:1.4  
ip address 10.12.17.226 255.255.255.252
```

```
frame-relay interface-dlci 433
!
interface Serial1/3:1.5 point-to-point
description link to NS5-2691_S0/3:1.4
ip address 10.12.18.21 255.255.255.252
frame-relay interface-dlci 435
!
interface Serial1/3:1.6 point-to-point
description link to NS6-2691_S0/3:1.4
ip address 10.12.18.25 255.255.255.252
frame-relay interface-dlci 436
!
interface Serial1/3:1.7 point-to-point
description link to NS7-3725_S1/3:1.4
ip address 10.12.18.29 255.255.255.252
frame-relay interface-dlci 437
!
interface FastEthernet2/0
no ip address
shutdown
duplex auto
speed auto
!
interface FastEthernet2/1
no ip address
shutdown
duplex auto
speed auto
!
router ospf 1
router-id 200.0.0.4
log-adjacency-changes
area 0 range 10.12.17.0 255.255.255.0
area 0 range 10.12.18.0 255.255.255.0
area 4 range 10.12.7.0 255.255.255.0
area 4 range 10.12.15.0 255.255.255.0
network 10.12.7.0 0.0.0.255 area 4
network 10.12.15.0 0.0.0.255 area 4
network 10.12.17.0 0.0.0.255 area 0
network 10.12.18.0 0.0.0.255 area 0
!
ip local policy route-map syslog
ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.2.1
!
!
!
```

```
ip access-list extended af11
  permit ip host 10.12.7.162 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.162 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.162 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.162 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.163 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.163 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.163 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.163 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.170 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.170 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.170 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.170 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.171 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.171 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.171 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.171 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.178 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.178 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.178 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.178 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.179 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.179 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.179 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.179 host 10.12.4.42 dscp af11
  permit ip host 10.12.7.186 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.186 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.186 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.186 host 10.12.4.42 dscp af11
  remark traffic from ns4-pg's to rgr's dscp 10
  permit ip host 10.12.7.187 host 10.12.4.35 dscp af11
  permit ip host 10.12.7.187 host 10.12.4.43 dscp af11
  permit ip host 10.12.7.187 host 10.12.4.34 dscp af11
  permit ip host 10.12.7.187 host 10.12.4.42 dscp af11
ip access-list extended af21
  permit ip host 10.12.7.162 host 10.12.4.35 dscp af21
  permit ip host 10.12.7.162 host 10.12.4.43 dscp af21
  permit ip host 10.12.7.162 host 10.12.4.34 dscp af21
  permit ip host 10.12.7.162 host 10.12.4.42 dscp af21
  permit ip host 10.12.7.163 host 10.12.4.35 dscp af21
  permit ip host 10.12.7.163 host 10.12.4.43 dscp af21
  permit ip host 10.12.7.163 host 10.12.4.34 dscp af21
  permit ip host 10.12.7.163 host 10.12.4.42 dscp af21
  permit ip host 10.12.7.170 host 10.12.4.35 dscp af21
  permit ip host 10.12.7.170 host 10.12.4.43 dscp af21
  permit ip host 10.12.7.170 host 10.12.4.34 dscp af21
  permit ip host 10.12.7.170 host 10.12.4.42 dscp af21
  permit ip host 10.12.7.171 host 10.12.4.35 dscp af21
```

```
permit ip host 10.12.7.171 host 10.12.4.43 dscp af21
permit ip host 10.12.7.171 host 10.12.4.34 dscp af21
permit ip host 10.12.7.171 host 10.12.4.42 dscp af21
permit ip host 10.12.7.178 host 10.12.4.35 dscp af21
permit ip host 10.12.7.178 host 10.12.4.43 dscp af21
permit ip host 10.12.7.178 host 10.12.4.34 dscp af21
permit ip host 10.12.7.178 host 10.12.4.42 dscp af21
permit ip host 10.12.7.179 host 10.12.4.35 dscp af21
permit ip host 10.12.7.179 host 10.12.4.43 dscp af21
permit ip host 10.12.7.179 host 10.12.4.34 dscp af21
permit ip host 10.12.7.179 host 10.12.4.42 dscp af21
permit ip host 10.12.7.186 host 10.12.4.35 dscp af21
permit ip host 10.12.7.186 host 10.12.4.43 dscp af21
permit ip host 10.12.7.186 host 10.12.4.34 dscp af21
permit ip host 10.12.7.186 host 10.12.4.42 dscp af21
remark traffic from ns4-pg's to rgr's dscp 18
permit ip host 10.12.7.187 host 10.12.4.35 dscp af21
permit ip host 10.12.7.187 host 10.12.4.43 dscp af21
permit ip host 10.12.7.187 host 10.12.4.34 dscp af21
permit ip host 10.12.7.187 host 10.12.4.42 dscp af21
ip access-list extended af31
permit ip host 10.12.7.162 host 10.12.4.35 dscp af31
permit ip host 10.12.7.162 host 10.12.4.43 dscp af31
permit ip host 10.12.7.162 host 10.12.4.34 dscp af31
permit ip host 10.12.7.162 host 10.12.4.42 dscp af31
permit ip host 10.12.7.163 host 10.12.4.35 dscp af31
permit ip host 10.12.7.163 host 10.12.4.43 dscp af31
permit ip host 10.12.7.163 host 10.12.4.34 dscp af31
permit ip host 10.12.7.163 host 10.12.4.42 dscp af31
permit ip host 10.12.7.170 host 10.12.4.35 dscp af31
permit ip host 10.12.7.170 host 10.12.4.43 dscp af31
permit ip host 10.12.7.170 host 10.12.4.34 dscp af31
permit ip host 10.12.7.170 host 10.12.4.42 dscp af31
permit ip host 10.12.7.171 host 10.12.4.35 dscp af31
permit ip host 10.12.7.171 host 10.12.4.43 dscp af31
permit ip host 10.12.7.171 host 10.12.4.34 dscp af31
permit ip host 10.12.7.171 host 10.12.4.42 dscp af31
permit ip host 10.12.7.178 host 10.12.4.35 dscp af31
permit ip host 10.12.7.178 host 10.12.4.43 dscp af31
permit ip host 10.12.7.178 host 10.12.4.34 dscp af31
permit ip host 10.12.7.178 host 10.12.4.42 dscp af31
permit ip host 10.12.7.179 host 10.12.4.35 dscp af31
permit ip host 10.12.7.179 host 10.12.4.43 dscp af31
permit ip host 10.12.7.179 host 10.12.4.34 dscp af31
permit ip host 10.12.7.179 host 10.12.4.42 dscp af31
permit ip host 10.12.7.186 host 10.12.4.35 dscp af31
permit ip host 10.12.7.186 host 10.12.4.43 dscp af31
permit ip host 10.12.7.186 host 10.12.4.34 dscp af31
```

```
permit ip host 10.12.7.186 host 10.12.4.42 dscp af31
remark traffic from ns4-pg's to rgr's dscp 26
permit ip host 10.12.7.187 host 10.12.4.35 dscp af31
permit ip host 10.12.7.187 host 10.12.4.43 dscp af31
permit ip host 10.12.7.187 host 10.12.4.34 dscp af31
permit ip host 10.12.7.187 host 10.12.4.42 dscp af31
ip access-list extended ns4-pbr
permit ip host 10.12.7.162 host 10.12.4.35 dscp af11
permit ip host 10.12.7.162 host 10.12.4.43 dscp af11
permit ip host 10.12.7.162 host 10.12.4.34 dscp af11
permit ip host 10.12.7.162 host 10.12.4.42 dscp af11
permit ip host 10.12.7.163 host 10.12.4.35 dscp af11
permit ip host 10.12.7.163 host 10.12.4.43 dscp af11
permit ip host 10.12.7.163 host 10.12.4.34 dscp af11
permit ip host 10.12.7.163 host 10.12.4.42 dscp af11
permit ip host 10.12.7.170 host 10.12.4.35 dscp af11
permit ip host 10.12.7.170 host 10.12.4.43 dscp af11
permit ip host 10.12.7.170 host 10.12.4.34 dscp af11
permit ip host 10.12.7.170 host 10.12.4.42 dscp af11
permit ip host 10.12.7.171 host 10.12.4.35 dscp af11
permit ip host 10.12.7.171 host 10.12.4.43 dscp af11
permit ip host 10.12.7.171 host 10.12.4.34 dscp af11
permit ip host 10.12.7.171 host 10.12.4.42 dscp af11
permit ip host 10.12.7.178 host 10.12.4.35 dscp af11
permit ip host 10.12.7.178 host 10.12.4.43 dscp af11
permit ip host 10.12.7.178 host 10.12.4.34 dscp af11
permit ip host 10.12.7.178 host 10.12.4.42 dscp af11
permit ip host 10.12.7.179 host 10.12.4.35 dscp af11
permit ip host 10.12.7.179 host 10.12.4.43 dscp af11
permit ip host 10.12.7.179 host 10.12.4.34 dscp af11
permit ip host 10.12.7.179 host 10.12.4.42 dscp af11
permit ip host 10.12.7.186 host 10.12.4.35 dscp af11
permit ip host 10.12.7.186 host 10.12.4.43 dscp af11
permit ip host 10.12.7.186 host 10.12.4.34 dscp af11
permit ip host 10.12.7.186 host 10.12.4.42 dscp af11
permit ip host 10.12.7.187 host 10.12.4.35 dscp af11
permit ip host 10.12.7.187 host 10.12.4.43 dscp af11
permit ip host 10.12.7.187 host 10.12.4.34 dscp af11
permit ip host 10.12.7.187 host 10.12.4.42 dscp af11
permit ip host 10.12.7.162 host 10.12.4.35 dscp af21
permit ip host 10.12.7.162 host 10.12.4.43 dscp af21
permit ip host 10.12.7.162 host 10.12.4.34 dscp af21
permit ip host 10.12.7.162 host 10.12.4.42 dscp af21
permit ip host 10.12.7.163 host 10.12.4.35 dscp af21
permit ip host 10.12.7.163 host 10.12.4.43 dscp af21
permit ip host 10.12.7.163 host 10.12.4.34 dscp af21
permit ip host 10.12.7.163 host 10.12.4.42 dscp af21
permit ip host 10.12.7.170 host 10.12.4.35 dscp af21
```

```
permit ip host 10.12.7.170 host 10.12.4.43 dscp af21
permit ip host 10.12.7.170 host 10.12.4.34 dscp af21
permit ip host 10.12.7.170 host 10.12.4.42 dscp af21
permit ip host 10.12.7.171 host 10.12.4.35 dscp af21
permit ip host 10.12.7.171 host 10.12.4.43 dscp af21
permit ip host 10.12.7.171 host 10.12.4.34 dscp af21
permit ip host 10.12.7.171 host 10.12.4.42 dscp af21
permit ip host 10.12.7.178 host 10.12.4.35 dscp af21
permit ip host 10.12.7.178 host 10.12.4.43 dscp af21
permit ip host 10.12.7.178 host 10.12.4.34 dscp af21
permit ip host 10.12.7.178 host 10.12.4.42 dscp af21
permit ip host 10.12.7.178 host 10.12.4.35 dscp af21
permit ip host 10.12.7.179 host 10.12.4.35 dscp af21
permit ip host 10.12.7.179 host 10.12.4.43 dscp af21
permit ip host 10.12.7.179 host 10.12.4.34 dscp af21
permit ip host 10.12.7.179 host 10.12.4.42 dscp af21
permit ip host 10.12.7.186 host 10.12.4.35 dscp af21
permit ip host 10.12.7.186 host 10.12.4.42 dscp af21
permit ip host 10.12.7.187 host 10.12.4.42 dscp af21
permit ip host 10.12.7.162 host 10.12.4.35 dscp af31
permit ip host 10.12.7.162 host 10.12.4.43 dscp af31
permit ip host 10.12.7.162 host 10.12.4.34 dscp af31
permit ip host 10.12.7.162 host 10.12.4.42 dscp af31
permit ip host 10.12.7.178 host 10.12.4.34 dscp af31
permit ip host 10.12.7.178 host 10.12.4.42 dscp af31
permit ip host 10.12.7.179 host 10.12.4.35 dscp af31
permit ip host 10.12.7.179 host 10.12.4.43 dscp af31
permit ip host 10.12.7.186 host 10.12.4.43 dscp af21
permit ip host 10.12.7.186 host 10.12.4.34 dscp af21
permit ip host 10.12.7.186 host 10.12.4.42 dscp af21
permit ip host 10.12.7.187 host 10.12.4.35 dscp af21
permit ip host 10.12.7.187 host 10.12.4.43 dscp af21
permit ip host 10.12.7.187 host 10.12.4.34 dscp af21
permit ip host 10.12.7.163 host 10.12.4.35 dscp af31
permit ip host 10.12.7.163 host 10.12.4.43 dscp af31
permit ip host 10.12.7.163 host 10.12.4.34 dscp af31
permit ip host 10.12.7.163 host 10.12.4.42 dscp af31
permit ip host 10.12.7.170 host 10.12.4.35 dscp af31
permit ip host 10.12.7.170 host 10.12.4.43 dscp af31
permit ip host 10.12.7.170 host 10.12.4.34 dscp af31
permit ip host 10.12.7.170 host 10.12.4.42 dscp af31
permit ip host 10.12.7.171 host 10.12.4.35 dscp af31
permit ip host 10.12.7.171 host 10.12.4.43 dscp af31
permit ip host 10.12.7.171 host 10.12.4.34 dscp af31
permit ip host 10.12.7.171 host 10.12.4.42 dscp af31
permit ip host 10.12.7.178 host 10.12.4.35 dscp af31
permit ip host 10.12.7.178 host 10.12.4.43 dscp af31
permit ip host 10.12.7.179 host 10.12.4.34 dscp af31
permit ip host 10.12.7.179 host 10.12.4.42 dscp af31
permit ip host 10.12.7.186 host 10.12.4.35 dscp af31
```



```
permit ip host 10.12.7.186 host 10.12.4.43 dscp af31
permit ip host 10.12.7.186 host 10.12.4.34 dscp af31
permit ip host 10.12.7.186 host 10.12.4.42 dscp af31
permit ip host 10.12.7.187 host 10.12.4.35 dscp af31
permit ip host 10.12.7.187 host 10.12.4.43 dscp af31
permit ip host 10.12.7.187 host 10.12.4.34 dscp af31
permit ip host 10.12.7.187 host 10.12.4.42 dscp af31
ip access-list extended syslog
permit ip any host 10.12.13.210
!
!
map-class frame-relay qos
frame-relay cir 574000
frame-relay bc 574
frame-relay mincir 574000
service-policy output qos
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
!
route-map syslog permit 10
match ip address syslog
set ip next-hop 10.12.2.1
!
route-map ns4-pbr permit 10
match ip address ns4-pbr
set ip next-hop 10.12.17.9
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
```

```
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
alias exec sion sh ip ospf nei
alias exec cipr clear ip ospf process
!
line con 0
```

```
exec-timeout 30 0
privilege level 15
logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
!
ntp clock-period 17180470
ntp source FastEthernet0/0.1
ntp server 10.12.2.1
end
```

Site4 Cisco AS5350 Gateway for ISN

```
ns4-5350-isn#sh run
Building configuration...

Current configuration : 5916 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname ns4-5350-isn
!
boot system flash:c5350-is-mz.122-13.T8
boot system flash:c5350-is-mz.122-13.T3
no boot startup-test
logging buffered 1000000 debugging
no logging console
!
!
!
resource-pool disable
spe default-firmware spe-firmware-1
ip subnet-zero
ip cef
ip domain name ipcc.com
ip name-server 10.12.4.35
!
isdn switch-type primary-ni
```

```
!
!
voice service voip
    fax protocol t38 ls-redundancy 0 hs-redundancy 0 fallback cisco
    h323
    call start slow
!
voice class codec 1
    codec preference 1 g711ulaw
    codec preference 2 g729r8
!
!
!
!
!
!
!
!
!
mta receive maximum-recipients 0
!
!
controller T1 2/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
    no yellow generation
    no yellow detection
!
controller T1 2/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
    no yellow generation
    no yellow detection
!
controller T1 2/2
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
    no yellow generation
    no yellow detection
!
controller T1 2/3
    framing esf
    linecode b8zs
    pri-group timeslots 1-24
```

```
no yellow generation
no yellow detection
!
controller T1 2/4
 framing esf
 linecode b8zs
 pri-group timeslots 1-24
no yellow generation
no yellow detection
!
controller T1 2/5
 framing esf
 linecode b8zs
 pri-group timeslots 1-24
no yellow generation
no yellow detection
!
controller T1 2/6
 framing esf
 linecode b8zs
 pri-group timeslots 1-24
no yellow generation
no yellow detection
!
controller T1 2/7
 framing esf
 linecode b8zs
 pri-group timeslots 1-24
no yellow generation
no yellow detection
!
!
!
interface FastEthernet0/0
 description link to NS4-CAT6K
 ip address 10.12.7.218 255.255.255.248
 logging event link-status
 duplex full
 speed 100
 h323-gateway voip interface
 h323-gateway voip id NS456-ISN-zone ipaddr 10.12.4.147 1719
 h323-gateway voip h323-id 10.12.7.218
 h323-gateway voip tech-prefix 1#
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
```

```
speed auto
!
interface Serial0/0
no ip address
shutdown
clockrate 2000000
!
interface Serial2/0
no ip address
shutdown
!
interface Serial0/1
no ip address
shutdown
clockrate 2000000
!
interface Serial2/0:23
no ip address
isdn switch-type primary-ni
isdn incoming-voice modem
no cdp enable
!
interface Serial2/1:23
no ip address
isdn switch-type primary-ni
isdn incoming-voice modem
no cdp enable
!
interface Serial2/2:23
no ip address
isdn switch-type primary-ni
isdn incoming-voice modem
no cdp enable
!
interface Serial2/3:23
no ip address
isdn switch-type primary-ni
isdn incoming-voice modem
no cdp enable
!
interface Serial2/4:23
no ip address
logging event link-status
isdn switch-type primary-ni
isdn protocol-emulate network
isdn incoming-voice modem
isdn T310 30000
no cdp enable
```

```
!  
interface Serial2/5:23  
  no ip address  
  isdn switch-type primary-ni  
  isdn incoming-voice modem  
  no cdp enable  
!  
interface Serial2/6:23  
  no ip address  
  isdn switch-type primary-ni  
  isdn incoming-voice modem  
  no cdp enable  
!  
interface Serial2/7:23  
  no ip address  
  isdn switch-type primary-ni  
  isdn incoming-voice modem  
  no cdp enable  
!  
interface Group-Async0  
  no ip address  
  group-range 1/00 1/107  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.12.7.217  
no ip http server  
!  
!  
!  
snmp-server community public RW  
snmp-server enable traps snmp authentication linkdown linkup coldstart  
warmstart  
snmp-server enable traps calltracker  
snmp-server enable traps tty  
snmp-server enable traps modem-health  
snmp-server enable traps ds0-busyout  
snmp-server enable traps ds1-loopback  
snmp-server enable traps isdn call-information  
snmp-server enable traps isdn layer2  
snmp-server enable traps isdn chan-not-avail  
snmp-server enable traps isdn ietf  
snmp-server enable traps fru-ctrl  
snmp-server enable traps hsrp  
snmp-server enable traps config  
snmp-server enable traps entity  
snmp-server enable traps envmon  
snmp-server enable traps aaa_server  
snmp-server enable traps bgp
```

```
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
voice-port 2/0:D
!
voice-port 2/1:D
!
voice-port 2/2:D
!
voice-port 2/3:D
!
voice-port 2/4:D
!
voice-port 2/5:D
!
voice-port 2/6:D
!
voice-port 2/7:D
!
!
mgcp profile default
!
dial-peer cor custom
!
!
!
dial-peer voice 1 voip
!
dial-peer voice 214 voip
destination-pattern 214564....
voice-class codec 1
session target ras
```



```
dtmf-relay rtp-nte h245-signal h245-alphanumeric
!
dial-peer voice 2 pots
 destination-pattern 1234
 no digit-strip
 direct-inward-dial
 port 2/4:D
!
dial-peer voice 40001 voip
 destination-pattern 4....
 session target ras
 codec g711ulaw
 no vad
!
dial-peer voice 3 pots
 destination-pattern 1234
 no digit-strip
 direct-inward-dial
 port 2/0:D
!
dial-peer voice 4 pots
 destination-pattern 1234
 no digit-strip
 direct-inward-dial
 port 2/1:D
!
dial-peer voice 5 pots
 destination-pattern 1234
 no digit-strip
 direct-inward-dial
 port 2/2:D
!
dial-peer voice 6 pots
 destination-pattern 1234
 no digit-strip
 direct-inward-dial
 port 2/3:D
!
!
num-exp 15209209110 2145649110
num-exp 15209209120 2145649120
num-exp 1520920400. 4000.
gateway
!
alias exec c conf t
!
line con 0
 exec-timeout 0 0
```

```

privilege level 15
logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  logging synchronous
  no login
line 1/00 1/107
  no flush-at-activation
  modem InOut
!
scheduler allocate 10000 400
end

```

Site4 Cisco Catalyst 6509 Access Switch

```

begin
!
# ***** NON-DEFAULT CONFIGURATION *****
!
!
#time: Wed Oct 15 2003, 12:23:11 EST
!
#version 8.1(1)
!
set prompt NS4-CAT6K
set logout 30

!
#dot1x
set dot1x shutdown-timeout 0
set feature dot1x-radius-keepalive disable
!
#system
set system name NS4-CAT6K
set system location NSITE-lab2 rack 236
set system highavailability enable
set system core-dump enable
!
#Default Inlinepower
set inlinepower defaultallocation 7000
!
#!
#snmp

```

```
set snmp community read-write public
set snmp community read-write-all public
set snmp trap enable module
set snmp trap enable chassis
set snmp trap enable bridge
set snmp trap enable vtp
set snmp trap enable vlancreate
set snmp trap enable vlandelete
set snmp trap enable auth
set snmp trap enable entityfru
set snmp trap enable ippermit
set snmp trap enable vmps
set snmp trap enable entity
set snmp trap enable config
set snmp trap enable stpx
set snmp trap enable syslog
set snmp trap enable system
set snmp trap enable envfan
set snmp trap enable envshutdown
set snmp trap enable envpower
set snmp trap enable envtemp
set snmp trap enable envstate
set snmp trap enable flashinsert
set snmp trap enable flashremove
set snmp trap enable macnotification
!
#stp mode
set spanntree mode pvst+
!
#vtp
set vtp domain gb2.0-ipcc
set vtp mode transparent vlan
set vtp passwd cisco
set vlan 40 name OSPF_vlan type ethernet mtu 1500 said 100040 state
active
set vlan 400 name NS4-PUB type ethernet mtu 1500 said 100400 state
active
set vlan 401 name NS4-CM1_voice type ethernet mtu 1500 said 100401
state active
set vlan 402 name NS4-CM1_data type ethernet mtu 1500 said 100402
state active
set vlan 403 name NS4-CM2_voice type ethernet mtu 1500 said 100403
state active
set vlan 404 name NS4-CM2_data type ethernet mtu 1500 said 100404
state active
set vlan 405 name NS4-CM3_voice type ethernet mtu 1500 said 100405
state active
```

```
set vlan 406 name NS4-CM3data type ethernet mtu 1500 said 100406 state
active
set vlan 407 name NS4_CM4_voice type ethernet mtu 1500 said 100407
state active
set vlan 408 name NS4_CM4data type ethernet mtu 1500 said 100408 state
active
set vlan 409 name NS4-CM4_data type ethernet mtu 1500 said 100409
state active
set vlan 410 name NS4IVR1,2and3 type ethernet mtu 1500 said 100410
state active
set vlan 411 name NS4PG1A(CMandIPIVR) type ethernet mtu 1500 said
100411 state active
set vlan 412 name NS4PG1B(CMandIPIVR) type ethernet mtu 1500 said
100412 state active
set vlan 413 name NS4ISNPG2A type ethernet mtu 1500 said 100413 state
active
set vlan 414 name NS4ISNPG2B type ethernet mtu 1500 said 100414 state
active
set vlan 415 name NS4-ISN1 type ethernet mtu 1500 said 100415 state
active
set vlan 416 name NS7-MOH1 type ethernet mtu 1500 said 100416 state
active
set vlan 417 name NS4RTS-HDS type ethernet mtu 1500 said 100417 state
active
set vlan 418 name NS4-CADAgent,Supvr,VHMANDRAS type ethernet mtu 1500
said 100418 state active
set vlan 419 name NS4_CAD_Vlan type ethernet mtu 1500 said 100419
state active
set vlan 420 name NS4-SIMCLIENT1 type ethernet mtu 1500 said 100420
state active
set vlan 421 name NS4-SIMCLIENT2 type ethernet mtu 1500 said 100421
state active
set vlan 422 name NS4-SIMCLIENT3 type ethernet mtu 1500 said 100422
state active
set vlan 423 name NS4-CMM1 type ethernet mtu 1500 said 100423 state
active
set vlan 424 name NS4-CMM2 type ethernet mtu 1500 said 100424 state
active
set vlan 425 name NS4-6608-1 type ethernet mtu 1500 said 100425 state
active
set vlan 426 name NS4-6608-2 type ethernet mtu 1500 said 100426 state
active
set vlan 427 name NS4-6608-3 type ethernet mtu 1500 said 100427 state
active
set vlan 905 name private_address_NS4-PG1A&B type ethernet mtu 1500
said 100905 state active
set vlan 906 name private_address_NS4-ISNPG2A&B type ethernet mtu 1500
said 100906 state active
```

```
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state
active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004
state active stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state
active stp ibm
set vlan 1-2,902,907
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003
state active mode srb aremaxhop 7 stemaxhop 7 backupcrf off
!
#ip
set interface sc0 2 10.12.2.24/255.255.255.224 10.12.2.31

set interface sc1 0 0.0.0.0/0.0.0.0 0.0.0.0

set interface sc1 down
set ip route 0.0.0.0/0.0.0.0          10.12.2.12
set ip alias default                0.0.0.0
!
#command alias
set alias rtr sess 15
set alias cmm1 sess 4
set alias cmm2 sess 5
!
#rcp
set rcp username cwuser
!
#dns
set ip dns server 10.12.4.35 primary
set ip dns server 10.12.4.43
set ip dns enable
set ip dns domain ipcc.com
!
#spantree
#vlan          <VlanId>
set spantree priority 8192 400
set spantree priority 8192 401
set spantree priority 8192 402
set spantree priority 8192 403
set spantree priority 8192 404
set spantree priority 8192 405
set spantree priority 8192 406
set spantree priority 8192 407
set spantree priority 8192 408
set spantree priority 8192 409
set spantree priority 8192 410
set spantree priority 8192 411
set spantree priority 8192 412
```

```

set spantree priority 8192 413
set spantree priority 8192 414
set spantree priority 8192 415
set spantree priority 8192 416
set spantree priority 8192 417
set spantree priority 8192 418
set spantree priority 8192 419
set spantree priority 8192 420
set spantree priority 8192 421
set spantree priority 8192 422
set spantree priority 8192 423
set spantree priority 8192 424
set spantree priority 8192 425
set spantree priority 8192 426
set spantree priority 8192 427
!
#syslog
set logging server enable
set logging server 10.12.13.210
!
#ntp
set ntp server 10.12.2.1
set timezone EDT -5 0
set summertime enable EST
set summertime recurring first Sunday April 01:00 last Sunday October
01:00 60
!
#set boot command
set boot config-register 0xf
set boot system flash bootflash:cat6000-sup2k8.8-1-1.bin
set boot system flash slot0:cat6000-sup2cvk8.7-6-2.bin
set boot system flash bootflash:cat6000-sup2k8.7-6-1.bin
!
#mls
set mls agingtime long-duration 1920
set mls agingtime 256
set mls agingtime ipx 256
!
# default port status is enable
!
!
#module 1 : 2-port 1000BaseX Supervisor
set port trap 1/1-2 enable
set port name 1/1 NS1-CORE1
set port dot1x 1/1 guest-vlan 0
clear trunk 1/1 3-400,402,404,406,408-418,420-1005,1025-4094
set trunk 1/1 on isl 1-2,401,403,405,407,419
!

```

```
#module 2 : 2-port 1000BaseX Supervisor
set port trap      2/1-2  enable
set port dot1x 2/1 guest-vlan 0
!
#module 3 : 48-port 10/100BaseTX Ethernet
set vlan 400 3/1
set vlan 402 3/2
set vlan 404 3/3
set vlan 406 3/4
set vlan 408 3/5
set vlan 409 3/6
set vlan 410 3/7-9
set vlan 411 3/10
set vlan 412 3/14
set vlan 415 3/20
set vlan 416 3/21,3/23
set vlan 417 3/25
set vlan 418 3/46,3/48
set vlan 419 3/26-30,3/35
set vlan 420 3/31
set vlan 421 3/32
set vlan 905 3/13,3/15
set vlan 907 3/22,3/24
set port speed      3/1-10,3/13-32,3/35,3/46-48 100
set port duplex    3/1-10,3/13-32,3/35,3/46-48 full
set port trap      3/1-48  enable
set port name      3/1  NS4-PUB
set port name      3/2  NS4-CM1
set port name      3/3  NS4-CM2
set port name      3/4  NS4-CM3
set port name      3/5  NS4-CM4
set port name      3/6  NS4-MOH1
set port name      3/7  NS4-IVR1
set port name      3/8  NS4-IVR2
set port name      3/9  NS4-IVR3
set port name      3/10 NS4-PG1A pub
set port name      3/13 NS4-PG1A pvt
set port name      3/14 NS4-PG1B pub
set port name      3/15 NS4-PG1B pvt
set port name      3/20 NS4-ISN1
set port name      3/21 NS4-CTIGWA pub
set port name      3/22 NS4-CTIGWA pvt
set port name      3/23 NS4-CTIGWB pub
set port name      3/24 NS4-CTIGWB pvt
set port name      3/25 NS4-CTI
set port name      3/26 NS4-VHM
set port name      3/27 NS4-RAS
set port name      3/28 NS4-CADSIM1
```

```

set port name      3/29 NS4-CADSIM2
set port name      3/30 NS4-CADSIM3
set port name      3/31 NS4-SIM1
set port name      3/32 NS4-SIM2
set port name      3/35 unknown agent
set port name      3/46 snooper
set port name      3/47 NS4-3725
set port name      3/48 ns4-5350-isn
clear trunk 3/47 3-39,41-1005,1025-4094
set trunk 3/47 on dot1q 1-2,40
clear trunk 3/48 2-418,420-1005,1025-4094
set trunk 3/48 off isl 1,419
set spantree portfast 3/1-32 enable
set port errdisable-timeout 3/26 disable
!
#module 4 : 5-port Communication Media Mod.
set vlan 423 4/1
!
#module 5 : 5-port Communication Media Mod.
set vlan 424 5/1
!
#module 6 : 8-port T1
set port voice interface 6/1 dhcp enable vlan 425
set port voice interface 6/2 dhcp enable vlan 425
set port voice interface 6/3 dhcp enable vlan 425
set port voice interface 6/4 dhcp enable vlan 425
set port voice interface 6/5 dhcp enable vlan 425
set port voice interface 6/6 dhcp enable vlan 425
set port disable 6/7-8

set port trap 6/1-8 enable
!
#module 7 : 8-port T1
set port voice interface 7/1 dhcp enable vlan 426
set port voice interface 7/2 dhcp enable vlan 426
set port voice interface 7/3 dhcp enable vlan 426
set port voice interface 7/4 dhcp enable vlan 426
set port voice interface 7/5 dhcp enable vlan 426
set port voice interface 7/6 dhcp enable vlan 426
set port voice interface 7/7 dhcp enable vlan 426
set port voice interface 7/8 dhcp enable vlan 426
set port trap 7/1-8 enable
set port name 7/1 Conference Bridge
set port name 7/2 Conference Bridge
set port name 7/3 Conference Bridge
set port name 7/4 Conference Bridge
set port name 7/5 Conference Bridge
set port name 7/6 Conference Bridge

```



```

set port name          7/7  Conference Bridge
set port name          7/8  Conference Bridge
!
#module 8 : 8-port T1
set port voice interface 8/1  dhcp enable vlan 427
set port voice interface 8/2  dhcp enable vlan 427
set port voice interface 8/3  dhcp enable vlan 427
set port voice interface 8/4  dhcp enable vlan 427
set port voice interface 8/5  dhcp enable vlan 427
set port voice interface 8/6  dhcp enable vlan 427
set port voice interface 8/7  dhcp enable vlan 427
set port voice interface 8/8  dhcp enable vlan 427
set port trap          8/1-8  enable
set port name          8/1  Transcoder
set port name          8/2  Transcoder
set port name          8/3  Transcoder
set port name          8/4  Transcoder
set port name          8/5  Transcoder
set port name          8/6  Transcoder
set port name          8/7  Transcoder
set port name          8/8  Transcoder
!
#module 9 empty
!
#module 15 : 1-port Multilayer Switch Feature Card
!
#module 16 empty
!
#switch port analyzer
set span 403 3/26 both inpkts enable learning enable multicast enable
create
set span 3/10-15 3/46 both inpkts disable learning enable multicast
enable create
end

```

Site4 Cisco Catalyst 6509 Core MSFC Switch

Building configuration...

```

Current configuration : 9007 bytes
!
! No configuration change since last restart
!
version 12.1
service nagle

```

```
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
service password-encryption
!
hostname NS4-CAT6K
!
boot system flash bootflash:c6msfc2-psv-mz.121-13.E6
!
clock timezone EDT -5
clock summer-time EST recurring
clock calendar-valid
ip subnet-zero
!
!
ip ftp username dcransto
ip ftp password 7 123510163E1E0D547B
ip host whirlwind 172.18.137.110
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
mls rp ip
!
!
!
interface Loopback0
  description router-id for OSPF
  ip address 200.0.0.40 255.255.255.255
!
interface Vlan1
  no ip address
!
interface Vlan2
  description Management VLAN
  ip address 10.12.2.12 255.255.255.224
  mls rp ip
!
interface Vlan40
  description OSPF VLAN trunked to NS4-3725
  ip address 10.12.15.81 255.255.255.248
  ip ospf priority 0
!
interface Vlan400
  description NS4-pub
  ip address 10.12.7.1 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
```

```
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan401
description NS4-CM1 voice
ip address 10.12.7.17 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan402
description NS4-CM1data
ip address 10.12.7.33 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan403
description NS4-CM2 voice
ip address 10.12.7.49 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan404
description NS4-CM2data
ip address 10.12.7.65 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipc
mls rp ip
!
interface Vlan405
```

```
description NS4-CM3 voice
ip address 10.12.7.81 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan406
description NS4-CM3 data
ip address 10.12.7.97 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan407
description NS4-CM4 voice
ip address 10.12.7.113 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan408
description NS4-CM4data
ip address 10.12.7.129 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachablees
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan409
description NS4-MOH
ip address 10.12.7.145 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
```

```
mls rp ip
!
interface Vlan410
description NS4IVR1,2 and 3
ip address 10.12.7.153 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan411
description NS4PG1A (CM and IP IVR)
ip address 10.12.7.161 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan412
description NS4PG1B (CM and IP IVR)
ip address 10.12.7.169 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan413
description NS4ISNPG2A
ip address 10.12.7.177 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan414
description NS4ISNPG2B
ip address 10.12.7.185 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan415
```

```
description NS4-ISN1
ip address 10.12.7.193 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan416
description NS4CTIGW-A and B (CTI Server) PUBLIC
ip address 10.12.7.201 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan417
description NS4RTS-HDS
ip address 10.12.7.209 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan418
description NS4-5350ISN-GW
ip address 10.12.7.217 255.255.255.248
no ip redirects
no ip unreachablees
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan419
description NS4-CAD Agent,Supervisor, VHM and RAS subnets
ip address 10.12.7.225 255.255.255.240
no ip redirects
no ip unreachablees
ip policy route-map desk-routemap
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan420
description NS4-sim1
ip address 10.12.7.241 255.255.255.252
```

```
ip access-group 110 out
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan421
description NS4-sim2
ip address 10.12.7.245 255.255.255.252
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan422
description NS4-sim3
ip address 10.12.7.249 255.255.255.252
no ip redirects
no ip unreachable
load-interval 30
shutdown
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan423
description NS4-cmm1
ip address 10.12.15.1 255.255.255.252
no ip redirects
no ip unreachable
ip policy route-map policyroute
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan424
description NS4-cmm2
ip address 10.12.15.5 255.255.255.252
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan425
description NS4-6608-1
ip address 10.12.15.33 255.255.255.240
```

```
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan426
description NS4-6608-2
ip address 10.12.15.49 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan427
description NS4-6608-3
ip address 10.12.15.65 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
no ip unreachable
load-interval 30
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan905
description "private" addresses for NS4-PG1A and B
ip address 192.168.105.1 255.255.255.240
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan906
description "private" addresses for NS4-ISNPG2A and B
ip address 192.168.106.1 255.255.255.240
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan907
description "private" addresses for NS4-CTIGWA and B
ip address 192.168.107.1 255.255.255.240
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
router ospf 1
router-id 200.0.0.40
log-adjacency-changes
```



```
network 10.12.7.0 0.0.0.255 area 4
network 10.12.15.0 0.0.0.255 area 4
!
ip local policy route-map policyroute
ip classless
ip route 172.0.0.0 255.0.0.0 10.12.2.1
no ip http server
!
!
logging source-interface Vlan2
logging 10.12.13.210
access-list 101 permit ip any 172.0.0.0 0.255.255.255
access-list 101 permit ip any host 10.12.13.210
access-list 110 permit udp host 10.12.7.2 any
access-list 110 deny  udp any gt 16384 any
access-list 110 permit ip any any
access-list 175 permit ip host 10.12.7.228 host 10.12.4.226
route-map desk-routemap permit 10
  match ip address 175
  set ip next-hop 10.12.2.6
!
route-map policyroute permit 10
  match ip address 101
  set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication warmstart
snmp-server enable traps slb real virtual csrpf
snmp-server enable traps flash insertion removal
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps fru-ctrl
snmp-server enable traps bgp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps rtr
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps dlsw
!
banner motd ^CCCEmail gb-ipcc@cisco.com before using this router.^C
alias configure ro router ospf
alias exec c conf t
alias exec ipr sh ip route
alias exec ciop clear ip ospf process
alias exec clog clear logg
```

```

alias exec sion sh ip ospf neighbor
alias exec sip sh ip protocols
alias exec cipr clear ip route *
alias exec sib sh ip int brief
!
line con 0
  exec-timeout 30 0
  logging synchronous
line vty 0 4
  privilege level 15
  password 7 00071A150754
  no login
!
ntp clock-period 17180004
ntp update-calendar
ntp server 10.12.2.1
end

```

Site4 Cisco Catalyst 6509 Access CMM1 Switch

```

NS4-CAT6K#sh run
NS4-CMM1#sh run
Building configuration...

Current configuration : 5947 bytes
!
version 12.2
no parser cache
no service config
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname NS4-CMM1
!
boot system bootflash:wscmm-i6s-mz.iomem2
logging buffered 10000000 debugging
!
ip subnet-zero
ip tcp synwait-time 13
ip domain name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!

```

```
isdn switch-type primary-ni
!
!
ccm-manager redundant-host NS4-CM3
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.12.7.2
ccm-manager config
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller T1 1/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/2
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/3
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/4
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 1/5
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
```

```
controller T1 2/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/2
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/3
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/4
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
controller T1 2/5
  framing esf
  linecode b8zs
  pri-group timeslots 1-24 service mgcp
!
!
!
interface GigabitEthernet1/0
  ip address 10.12.15.2 255.255.255.252
  no ip proxy-arp
  no negotiation auto
  no keepalive
!
interface Serial1/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
!
interface Serial1/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-13 ccm-manager
  no cdp enable
```

```
!  
interface Serial1/2:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial1/3:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial1/4:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial1/5:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/0:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/1:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable
```

```
!  
interface Serial2/2:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/3:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/4:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial2/5:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.12.15.1  
no ip http server  
!  
!  
arp 127.0.0.40 0000.0400.0000 ARPA  
arp 127.0.0.22 0000.2200.0000 ARPA  
arp 127.0.0.21 0000.1200.0000 ARPA  
arp 127.0.0.12 0000.2100.0000 ARPA  
arp 127.0.0.11 0000.1100.0000 ARPA  
call rsvp-sync  
!  
voice-port 1/0:23  
  echo-cancel coverage 64  
!
```

```
voice-port 1/1:23
  echo-cancel coverage 64
!
voice-port 1/2:23
  echo-cancel coverage 64
!
voice-port 1/3:23
  echo-cancel coverage 64
!
voice-port 1/4:23
  echo-cancel coverage 64
!
voice-port 1/5:23
  echo-cancel coverage 64
!
voice-port 2/0:23
  echo-cancel coverage 64
!
voice-port 2/1:23
  echo-cancel coverage 64
!
voice-port 2/2:23
  echo-cancel coverage 64
!
voice-port 2/3:23
  echo-cancel coverage 64
!
voice-port 2/4:23
  echo-cancel coverage 64
!
voice-port 2/5:23
  echo-cancel coverage 64
!
mgcp
mgcp call-agent NS4-CM1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
```

```
!  
!  
dial-peer voice 9991023 pots  
  application mgcpapp  
  port 1/0:23  
!  
dial-peer voice 9991123 pots  
  application mgcpapp  
  port 1/1:23  
!  
dial-peer voice 9991223 pots  
  application mgcpapp  
  port 1/2:23  
!  
dial-peer voice 9991323 pots  
  application mgcpapp  
  port 1/3:23  
!  
dial-peer voice 9991423 pots  
  application mgcpapp  
  port 1/4:23  
!  
dial-peer voice 9991523 pots  
  application mgcpapp  
  port 1/5:23  
!  
dial-peer voice 9992023 pots  
  application mgcpapp  
  port 2/0:23  
!  
dial-peer voice 9992123 pots  
  application mgcpapp  
  port 2/1:23  
!  
dial-peer voice 9992223 pots  
  application mgcpapp  
  port 2/2:23  
!  
dial-peer voice 9992323 pots  
  application mgcpapp  
  port 2/3:23  
!  
dial-peer voice 9992423 pots  
  application mgcpapp  
  port 2/4:23  
!  
dial-peer voice 9992523 pots  
  application mgcpapp
```



```
    port 2/5:23
    !
    alias exec c conf t
    !
    line con 0
    line vty 0 4
        exec-timeout 0 0
        privilege level 15
        no login
    !
end
```

Site4 Cisco Catalyst 6509 Access CMM2 Switch

```
NS4-CMM2#sh run
Building configuration...

Current configuration : 4296 bytes
!
version 12.2
no parser cache
no service config
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS4-CMM2
!
boot system bootflash:wscmm-i6s-mz.iomem2
logging buffered 10000000 debugging
no logging console
enable secret 5 $1$xH8I$nLV.W9ZERTeudC76VQhL1.
!
clock timezone EDT -5
clock summer-time EST recurring
ip subnet-zero
ip tcp synwait-time 13
ip domain name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
isdn switch-type primary-dms100
!
```

```
!  
!  
!  
!  
!  
!  
!  
!  
ccm-manager redundant-host NS4-CM3  
ccm-manager mgcp  
ccm-manager music-on-hold  
ccm-manager config server 10.12.7.2  
ccm-manager config  
ms dsp firmware 0 bundled  
ms dsp firmware 1 bundled  
ms dsp firmware 2 bundled  
!  
!  
controller T1 1/0  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 1/1  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 1/2  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 1/3  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 1/4  
    framing sf  
    linecode ami  
!  
controller T1 1/5  
    framing sf  
    linecode ami  
!  
controller T1 2/0
```

```
framing sf
linecode ami
!
controller T1 2/1
framing sf
linecode ami
!
controller T1 2/2
framing sf
linecode ami
!
controller T1 2/3
framing sf
linecode ami
!
controller T1 2/4
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description AAR-T1-NS4-to-NS6
!
controller T1 2/5
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
!
!
!
interface GigabitEthernet1/0
description NS4-CMM2
ip address 10.12.15.6 255.255.255.252
no ip proxy-arp
no negotiation auto
no keepalive
!
interface Serial1/0:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
!
interface Serial1/1:23
no ip address
no logging event link-status
isdn switch-type primary-ni
isdn incoming-voice voice
```

```
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/2:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/3:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/4:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn protocol-emulate network
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/5:23
    no ip address
    no logging event link-status
    isdn switch-type primary-dms100
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.15.5
ip http server
!
!
arp 127.0.0.50 0000.0500.0000 ARPA
arp 127.0.0.22 0000.2200.0000 ARPA
arp 127.0.0.21 0000.1200.0000 ARPA
arp 127.0.0.12 0000.2100.0000 ARPA
arp 127.0.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
```

```
voice-port 1/0:23
  echo-cancel coverage 64
!
voice-port 1/1:23
  echo-cancel coverage 64
!
voice-port 1/2:23
  echo-cancel coverage 64
!
voice-port 1/3:23
  echo-cancel coverage 64
!
voice-port 2/4:23
  echo-cancel coverage 64
!
voice-port 2/5:23
  echo-cancel coverage 64
!
mgcp
mgcp call-agent NS4-CM1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer voice 9991023 pots
  application mgcpapp
  port 1/0:23
!
dial-peer voice 9991123 pots
  application mgcpapp
  port 1/1:23
!
dial-peer voice 9991223 pots
  application mgcpapp
  port 1/2:23
!
```

```

dial-peer voice 9991323 pots
  application mgcpapp
  port 1/3:23
!
dial-peer voice 9992423 pots
  application mgcpapp
  port 2/4:23
!
dial-peer voice 9992523 pots
  application mgcpapp
  port 2/5:23
!
alias exec c conf t
!
line con 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  no login
!
!
end

```

Site5 Cisco 2691 WAN Router

Building configuration...

```

Current configuration : 9607 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS5-2691
!
boot system flash flash:c2691-is-mz.122-15.T8
boot system flash:c2691-is-mz.122-15.T5
logging queue-limit 100
logging buffered 4096 debugging
enable secret 5 $1$2XBy$dMFEf4YxeGK8RCMSndyYGO

```

```
!  
clock timezone EDT -5  
ip subnet-zero  
!  
!  
ip cef  
ip ftp source-interface FastEthernet0/0.1  
ip ftp username Administrator  
ip ftp password gbipcc  
ip domain name ipcc.com  
ip host gbipcc 172.18.141.128  
ip name-server 10.12.4.35  
ip name-server 10.12.4.43  
!  
!  
!  
!  
!  
!  
!  
!  
!  
no voice hpi capture buffer  
no voice hpi capture destination  
!  
!  
mta receive maximum-recipients 0  
!  
!  
controller T1 0/0  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 3/0 7206  
!  
controller T1 0/1  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 3/1 7206  
!  
controller T1 0/3  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 3/3 7206  
!
```

```
controller T1 0/2
  framing esf
  linecode b8zs
  channel-group 1 timeslots 1-24 speed 64
  description link to T1 3/2 7206
!
!
!
interface Loopback0
  description router-id for ospf
  ip address 200.0.0.5 255.255.255.255
!
interface FastEthernet0/0
  no ip address
  speed 100
  full-duplex
!
interface FastEthernet0/0.1
  description VLAN 2 management address
  encapsulation isl 2
  ip address 10.12.2.15 255.255.255.224
  no ip redirects
!
interface FastEthernet0/0.2
  description NS5-CAD agent,server, VHM and RAS vlans
  encapsulation isl 501
  ip address 10.12.9.1 255.255.255.240
  no ip redirects
  ip policy route-map policyroute
!
interface FastEthernet0/0.3
  description N5-3745GW
  encapsulation isl 502
  ip address 10.12.9.17 255.255.255.240
  no ip redirects
!
interface FastEthernet0/0.4
  description NS5-sim1
  encapsulation isl 503
  ip address 10.12.9.33 255.255.255.252
  ip access-group 110 out
  no ip redirects
!
interface FastEthernet0/0.5
  description NS5-voice
  encapsulation isl 504
  ip address 10.12.9.49 255.255.255.240
  ip helper-address 10.12.4.211
```



```
no ip redirects
!
interface Serial0/0:1
no ip address
encapsulation frame-relay
!
interface Serial0/0:1.1 point-to-point
description link to NS1-3725_s1/0:1.5
ip address 10.12.17.14 255.255.255.252
frame-relay interface-dlci 501
!
interface Serial0/0:1.2 point-to-point
description link to NS2-2691_S0/0:1.5
ip address 10.12.17.106 255.255.255.252
frame-relay interface-dlci 502
!
interface Serial0/0:1.3 point-to-point
description link to ns3-2691_s0/0:1.5
ip address 10.12.17.182 255.255.255.252
frame-relay interface-dlci 503
!
interface Serial0/0:1.4 point-to-point
description link to NS4-2691_S0/0:1.5
ip address 10.12.17.242 255.255.255.252
frame-relay interface-dlci 504
!
interface Serial0/0:1.6 point-to-point
description link to NS6-2691_S0/0:1.5
ip address 10.12.18.33 255.255.255.252
frame-relay interface-dlci 506
!
interface Serial0/0:1.7 point-to-point
description link to NS7-3725_S1/0:1.5
ip address 10.12.18.37 255.255.255.252
frame-relay interface-dlci 507
!
interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto
!
interface Serial0/1:1
no ip address
encapsulation frame-relay
!
interface Serial0/1:1.1 point-to-point
description link to NS1-3725_s1/1:1.5
```

```
ip address 10.12.17.38 255.255.255.252
frame-relay interface-dlci 511
!
interface Serial0/1:1.2 point-to-point
description link to NS2-2691_S0/1:1.5
ip address 10.12.17.126 255.255.255.252
frame-relay interface-dlci 512
!
interface Serial0/1:1.3 point-to-point
description link to ns3-2691_s0/1:1.5
ip address 10.12.17.198 255.255.255.252
frame-relay interface-dlci 513
!
interface Serial0/1:1.4 point-to-point
description link to NS4-2691_S1/1:1.5
ip address 10.12.17.254 255.255.255.252
frame-relay interface-dlci 514
!
interface Serial0/1:1.6 point-to-point
description link to NS6-2691_S0/1:1.5
ip address 10.12.18.41 255.255.255.252
frame-relay interface-dlci 516
!
interface Serial0/1:1.7 point-to-point
description link to NS7-3725_S1/1:1.5
ip address 10.12.18.45 255.255.255.252
frame-relay interface-dlci 517
!
interface Serial0/2:1
no ip address
encapsulation frame-relay
!
interface Serial0/2:1.1 point-to-point
description link to NS1-3725_s1/2:1.5
ip address 10.12.17.62 255.255.255.252
frame-relay interface-dlci 521
!
interface Serial0/2:1.2 point-to-point
description link to NS2-2691_S0/2:1.5
ip address 10.12.17.146 255.255.255.252
frame-relay interface-dlci 522
!
interface Serial0/2:1.3 point-to-point
description link to ns3-2691_s0/2:1.5
ip address 10.12.17.214 255.255.255.252
frame-relay interface-dlci 523
!
interface Serial0/2:1.4 point-to-point
```

```
description link to NS4-3725_S1/2:1.5
ip address 10.12.18.10 255.255.255.252
frame-relay interface-dlci 524
!
interface Serial0/2:1.6 point-to-point
description link to NS6-2691_S0/2:1.5
ip address 10.12.18.49 255.255.255.252
frame-relay interface-dlci 526
!
interface Serial0/2:1.7 point-to-point
description link to NS7-3725_S1/2:1.5
ip address 10.12.18.53 255.255.255.252
frame-relay interface-dlci 527
!
interface Serial0/3:1
no ip address
encapsulation frame-relay
!
interface Serial0/3:1.1 point-to-point
description link to NS1-3725_s1/3:1.5
ip address 10.12.17.86 255.255.255.252
frame-relay interface-dlci 531
!
interface Serial0/3:1.2 point-to-point
description link to NS2-2691_S0/3:1.5
ip address 10.12.17.166 255.255.255.252
frame-relay interface-dlci 532
!
interface Serial0/3:1.3 point-to-point
description link to ns3-2691_s0/3:1.5
ip address 10.12.17.230 255.255.255.252
frame-relay interface-dlci 533
!
interface Serial0/3:1.4 point-to-point
description link to NS4-2691_S0/3:1.5
ip address 10.12.18.22 255.255.255.252
frame-relay interface-dlci 534
!
interface Serial0/3:1.6 point-to-point
description link to NS6-2691_S0/3:1.5
ip address 10.12.18.57 255.255.255.252
frame-relay interface-dlci 536
!
interface Serial0/3:1.7 point-to-point
description link to NS7-3725_S1/3:1.5
ip address 10.12.18.61 255.255.255.252
frame-relay interface-dlci 537
!
```

```
interface FastEthernet1/0
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial1/0
  no ip address
  shutdown
  clockrate 2000000
  no fair-queue
!
interface FastEthernet1/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial1/1
  no ip address
  shutdown
  clockrate 2000000
!
router ospf 1
  router-id 200.0.0.5
  log-adjacency-changes
  area 0 range 10.12.17.0 255.255.255.0
  area 0 range 10.12.18.0 255.255.255.0
  area 5 range 10.12.9.0 255.255.255.0
  network 10.12.9.0 0.0.0.255 area 5
  network 10.12.17.0 0.0.0.255 area 0
  network 10.12.18.0 0.0.0.255 area 0
!
ip local policy route-map syslog
ip http server
ip classless
!
!
!
ip access-list extended policyroute
  permit ip host 10.12.9.5 host 172.18.141.128
ip access-list extended syslog
  permit ip any host 10.12.13.210
!
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
access-list 110 permit udp host 10.12.7.2 any
```

```
access-list 110 deny    udp any gt 16384 any
access-list 110 permit ip any any
!
route-map syslog permit 10
  match ip address syslog
  set ip next-hop 10.12.2.1
!
route-map policyroute permit 10
  match ip address policyroute
  set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
```

```
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
!
ntp clock-period 17181012
ntp server 10.12.2.1
end
```

Site5 Cisco Catalyst 3524 Access Switch

```
NNS5-3524#sh run
Building configuration...

Current configuration:
!
! No configuration change since last restart
!
version 12.0
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS5-3524
!
!
!
!
!
clock timezone EDT -5
clock summer-time EST recurring 1 Sun Apr 1:00 4 Sun Oct 1:00
!
no spanning-tree vlan 419
no spanning-tree vlan 420
no spanning-tree vlan 421
no spanning-tree vlan 700
no spanning-tree vlan 701
no spanning-tree vlan 702
no spanning-tree vlan 703
no spanning-tree vlan 704
no spanning-tree vlan 705
no spanning-tree vlan 706
no spanning-tree vlan 707
no spanning-tree vlan 708
no spanning-tree vlan 709
no spanning-tree vlan 710
no spanning-tree vlan 711
no spanning-tree vlan 712
no spanning-tree vlan 713
no spanning-tree vlan 714
no spanning-tree vlan 715
no spanning-tree vlan 716
no spanning-tree vlan 717
```

```
ip subnet-zero
ip host whirlwind 172.18.137.110
ip host gbipcc 172.18.141.128
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
interface FastEthernet0/1
  description NS5-VHM1
  duplex full
  speed 100
  switchport access vlan 501
  spanning-tree portfast
!
interface FastEthernet0/2
  description NS5-RAS1
  duplex full
  speed 100
  switchport access vlan 501
  spanning-tree portfast
!
interface FastEthernet0/3
  description NS5-SIM1
  duplex full
  speed 100
  switchport access vlan 503
  spanning-tree portfast
!
interface FastEthernet0/4
  description NS5-CADSIM1
  duplex full
  speed 100
  switchport access vlan 501
  spanning-tree portfast
!
interface FastEthernet0/5
  duplex full
  speed 100
!
interface FastEthernet0/6
  duplex full
  speed 100
!
interface FastEthernet0/7
  duplex full
  speed 100
```



```
!  
interface FastEthernet0/8  
  duplex full  
  speed 100  
!  
interface FastEthernet0/9  
  duplex full  
  speed 100  
!  
interface FastEthernet0/10  
  duplex full  
  speed 100  
!  
interface FastEthernet0/11  
  duplex full  
  speed 100  
!  
interface FastEthernet0/12  
  duplex full  
  speed 100  
!  
interface FastEthernet0/13  
  duplex full  
  speed 100  
!  
interface FastEthernet0/14  
  duplex full  
  speed 100  
!  
interface FastEthernet0/15  
  duplex full  
  speed 100  
!  
interface FastEthernet0/16  
  duplex full  
  speed 100  
!  
interface FastEthernet0/17  
  duplex full  
  speed 100  
!  
interface FastEthernet0/18  
  duplex full  
  speed 100  
!  
interface FastEthernet0/19  
  duplex full  
  speed 100
```

```
!  
interface FastEthernet0/20  
  duplex full  
  speed 100  
!  
interface FastEthernet0/21  
  duplex full  
  speed 100  
!  
interface FastEthernet0/22  
  description link to NS5-3745-GW  
  duplex full  
  speed 100  
  switchport access vlan 502  
!  
interface FastEthernet0/23  
  description link to NS5-2691 f0/0  
  duplex full  
  speed 100  
  switchport trunk allowed vlan 1,2,501-504,1002-1005  
  switchport mode trunk  
!  
interface FastEthernet0/24  
  description link to cat5k port 6/3  
  duplex full  
  speed 100  
  switchport trunk allowed vlan 1,2,501,504,1002-1005  
  switchport mode trunk  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface VLAN1  
  no ip address  
  no ip directed-broadcast  
  no ip route-cache  
  shutdown  
!  
interface VLAN2  
  ip address 10.12.2.14 255.255.255.224  
  no ip directed-broadcast  
  no ip route-cache  
!  
logging source-interface VLAN1  
logging 10.12.13.210  
tftp-server flash:c3500x1-c3h2s-mz.120-5.WC7.bin  
snmp-server engineID local 000000090200000C3015DBC0
```

```
snmp-server community gb-ipcc RW
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
snmp-server enable traps vlan-membership
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps hsrp
snmp-server enable traps c2900
snmp-server enable traps mac-notification
snmp-server enable traps vtp
snmp-server enable traps cluster
alias exec c conf t
alias exec NS0-CAT5K telnet 10.12.2.1
alias exec NS2-3524 telnet 10.12.2.8
alias exec NS3-3524 telnet 10.12.2.10
alias exec NS5-3524 telnet 10.12.2.14
alias exec NS6-3524 telnet 10.12.2.16
alias exec sri sh run interface
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  transport input none
  stopbits 1
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
line vty 5 15
  login
!
ntp clock-period 11258969
ntp server 10.12.2.1
end
```

Site5 Cisco 3745 Gateway

```
NS5-3745-GW1#sh run
Building configuration...

Current configuration : 6141 bytes
!
```

```
! Last configuration change at 19:59:00 EST Tue Oct 7 2003
! NVRAM config last updated at 19:59:11 EST Tue Oct 7 2003
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS5-3745-GW1
!
boot system flash flash:c3745-is-mz.122-15.T8
boot system flash c3745-is-mz.122-15.T5
logging queue-limit 100
no logging console
enable secret 5 $1$4HtO$M6RrGsUlggsxuYNcmJPMa.
!
clock timezone EDT -5
clock summer-time EST recurring
voice-card 1
    dspfarm
!
voice-card 2
    dspfarm
!
voice-card 3
    dspfarm
!
voice-card 4
    dspfarm
!
ip subnet-zero
ip tcp synwait-time 13
!
!
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
isdn switch-type primary-ni
!
!
!
voice service voip
```

```
!  
!  
!  
!  
!  
!  
!  
no voice hpi capture buffer  
no voice hpi capture destination  
!  
!  
ccm-manager redundant-host NS4-CM3  
ccm-manager mgcp  
ccm-manager music-on-hold  
ccm-manager config server 10.12.7.2  
ccm-manager config  
fax interface-type fax-mail  
mta receive maximum-recipients 0  
!  
!  
controller T1 1/0  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 1/1  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 2/0  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 2/1  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 3/0  
    framing esf  
    linecode b8zs  
    pri-group timeslots 1-24 service mgcp  
!  
controller T1 3/1  
    framing esf  
    linecode b8zs
```

```
    pri-group timeslots 1-24 service mgcp
!
controller T1 4/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 4/1
    framing sf
    linecode ami
!
!
!
interface FastEthernet0/0
    ip address 10.12.9.18 255.255.255.240
    speed 100
    full-duplex
!
interface FastEthernet0/1
    no ip address
    shutdown
    duplex auto
    speed auto
!
interface Serial1/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-13 ccm-manager
    no cdp enable
!
interface Serial1/1:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-13 ccm-manager
    no cdp enable
!
interface Serial2/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-13 ccm-manager
    no cdp enable
!
```

```
interface Serial2/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-dms100
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable
!
interface Serial3/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable
!
interface Serial3/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable
!
interface Serial4/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  isdn bind-l3 ccm-manager
  no cdp enable
!
ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.9.17
!
!
!
!
snmp-server community public RW
snmp-server chassis-id
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
```

```

snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
voice-port 1/0:23
!
voice-port 1/1:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
voice-port 3/0:23
!
voice-port 3/1:23
!
voice-port 4/0:23
!
mgcp
mgcp call-agent NS4-CM1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band

```



```
mgcp rtp unreachable timeout 1000 action notify
mgcp max-waiting-delay 3
mgcp restart-delay 10
mgcp modem passthrough voip mode nse
mgcp modem passthrough voaal2 mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp bind control source-interface FastEthernet0/0
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 2006
alias exec NS6-3745-GW telnet 172.18.141.150 2007
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
```

```

password lab
logging synchronous
no login
!
ntp clock-period 17175720
ntp server 10.12.2.1
end

```

Site6 Cisco 2691 WAN Router

Building configuration...

```

Current configuration : 9359 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS6-2691
!
boot system flash flash:c2691-is-mz.122-15.T8
boot system flash:c2691-is-mz.122-15.T5
logging queue-limit 100
enable secret 5 $1$10Gt$xc6b9Vv0h9lc1L./OK4fK1
!
clock timezone EDT -5
ip subnet-zero
ip tcp synwait-time 5
!
!
ip cef
ip ftp source-interface FastEthernet0/0.1
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.43
ip name-server 10.12.4.35
!
!
!

```

```
!  
!  
!  
!  
!  
!  
!  
no voice hpi capture buffer  
no voice hpi capture destination  
!  
!  
mta receive maximum-recipients 0  
!  
!  
controller T1 0/0  
    framing esf  
    linecode b8zs  
    channel-group 1 timeslots 1-24 speed 64  
    description link to T1 3/4 7206  
!  
controller T1 0/1  
    framing esf  
    linecode b8zs  
    channel-group 1 timeslots 1-24 speed 64  
    description link to T1 3/5 7206  
!  
controller T1 0/3  
    framing esf  
    linecode b8zs  
    channel-group 1 timeslots 1-24 speed 64  
    description link to T1 3/7 7206  
!  
controller T1 0/2  
    framing esf  
    linecode b8zs  
    channel-group 1 timeslots 1-24 speed 64  
    description link to T1 3/6 7206  
!  
!  
!  
interface Loopback0  
    description routre-id for ospf  
    ip address 200.0.0.6 255.255.255.255  
!  
interface FastEthernet0/0  
    no ip address  
    speed 100  
    full-duplex
```

```
!  
interface FastEthernet0/0.1  
  description VLAN 2 management address  
  encapsulation isl 2  
  ip address 10.12.2.17 255.255.255.224  
  no ip redirects  
  ntp broadcast client  
!  
interface FastEthernet0/0.2  
  description NS6-CAD agent and server vlans  
  encapsulation isl 601  
  ip address 10.12.10.1 255.255.255.248  
  no ip redirects  
  ip policy route-map policyroute  
!  
interface FastEthernet0/0.3  
  description N6-3745GW  
  encapsulation isl 602  
  ip address 10.12.10.9 255.255.255.248  
  no ip redirects  
!  
interface FastEthernet0/0.4  
  description NS6-sim1  
  encapsulation isl 603  
  ip address 10.12.10.17 255.255.255.252  
  ip access-group 110 out  
  no ip redirects  
!  
interface FastEthernet0/0.5  
  description NS6-voice  
  encapsulation isl 604  
  ip address 10.12.10.33 255.255.255.240  
  ip helper-address 10.12.4.211  
  no ip redirects  
!  
interface Serial0/0:1  
  no ip address  
  encapsulation frame-relay  
!  
interface Serial0/0:1.1 point-to-point  
  description link to NS1-3725_s1/0:1.6  
  ip address 10.12.17.18 255.255.255.252  
  frame-relay interface-dlci 601  
!  
interface Serial0/0:1.2 point-to-point  
  description link to NS2-2691_S0/0:1.6  
  ip address 10.12.17.110 255.255.255.252  
  frame-relay interface-dlci 602
```

```
!  
interface Serial0/0:1.3 point-to-point  
description link to ns3-2691_s0/0:1.6  
ip address 10.12.17.186 255.255.255.252  
frame-relay interface-dlci 603  
!  
interface Serial0/0:1.4 point-to-point  
description link to NS4-2691_S0/0:1.6  
ip address 10.12.17.246 255.255.255.252  
frame-relay interface-dlci 604  
!  
interface Serial0/0:1.5 point-to-point  
description link to NS5-2691_S0/0:1.6  
ip address 10.12.18.34 255.255.255.252  
frame-relay interface-dlci 605  
!  
interface Serial0/0:1.7 point-to-point  
description link to NS7-3725_S1/0:1.6  
ip address 10.12.18.65 255.255.255.252  
frame-relay interface-dlci 607  
!  
interface FastEthernet0/1  
no ip address  
shutdown  
duplex auto  
speed auto  
!  
interface Serial0/1:1  
no ip address  
encapsulation frame-relay  
!  
interface Serial0/1:1.1 point-to-point  
description link to NS1-3725_s1/1:1.6  
ip address 10.12.17.42 255.255.255.252  
frame-relay interface-dlci 611  
!  
interface Serial0/1:1.2 point-to-point  
description link to NS2-2691_S0/1:1.6  
ip address 10.12.17.130 255.255.255.252  
frame-relay interface-dlci 612  
!  
interface Serial0/1:1.3 point-to-point  
description link to ns3-2691_s0/1:1.6  
ip address 10.12.17.202 255.255.255.252  
frame-relay interface-dlci 613  
!  
interface Serial0/1:1.4 point-to-point  
description link to NS4-2691_S1/1:1.6
```

```
ip address 10.12.18.2 255.255.255.252
frame-relay interface-dlci 614
!
interface Serial0/1:1.5 point-to-point
description link to NS5-2691_S0/1:1.6
ip address 10.12.18.42 255.255.255.252
frame-relay interface-dlci 615
!
interface Serial0/1:1.7 point-to-point
description link to NS7-3725_S1/1:1.6
ip address 10.12.18.69 255.255.255.252
frame-relay interface-dlci 617
!
interface Serial0/2:1
no ip address
encapsulation frame-relay
!
interface Serial0/2:1.1 point-to-point
description link to NS1-3725_s1/2:1.6
ip address 10.12.17.66 255.255.255.252
frame-relay interface-dlci 621
!
interface Serial0/2:1.2 point-to-point
description link to NS2-2691_S0/2:1.6
ip address 10.12.17.150 255.255.255.252
frame-relay interface-dlci 622
!
interface Serial0/2:1.3 point-to-point
description link to ns3-2691_s0/2:1.6
ip address 10.12.17.218 255.255.255.252
frame-relay interface-dlci 623
!
interface Serial0/2:1.4 point-to-point
description link to NS4-3725_S1/2:1.6
ip address 10.12.18.14 255.255.255.252
frame-relay interface-dlci 624
!
interface Serial0/2:1.5 point-to-point
description link to NS5-2691_S0/2:1.6
ip address 10.12.18.50 255.255.255.252
frame-relay interface-dlci 625
!
interface Serial0/2:1.7 point-to-point
description link to NS7-3725_S1/2:1.6
ip address 10.12.18.73 255.255.255.252
frame-relay interface-dlci 627
!
interface Serial0/3:1
```

```
no ip address
encapsulation frame-relay
!
interface Serial0/3:1.1 point-to-point
description link to NS1-3725_s1/3:1.6
ip address 10.12.17.90 255.255.255.252
frame-relay interface-dlci 631
!
interface Serial0/3:1.2 point-to-point
description link to NS2-2691_S0/3:1.6
ip address 10.12.17.170 255.255.255.252
frame-relay interface-dlci 632
!
interface Serial0/3:1.3 point-to-point
description link to ns3-2691_s0/3:1.6
ip address 10.12.17.234 255.255.255.252
frame-relay interface-dlci 633
!
interface Serial0/3:1.4 point-to-point
description link to NS4-2691_S0/3:1.6
ip address 10.12.18.26 255.255.255.252
frame-relay interface-dlci 634
!
interface Serial0/3:1.5 point-to-point
description link to NS5-2691_S0/3:1.6
ip address 10.12.18.58 255.255.255.252
frame-relay interface-dlci 635
!
interface Serial0/3:1.7 point-to-point
description link to NS7-3725_S1/3:1.6
ip address 10.12.18.77 255.255.255.252
frame-relay interface-dlci 637
!
router ospf 1
router-id 200.0.0.6
log-adjacency-changes
area 0 range 10.12.17.0 255.255.255.0
area 0 range 10.12.18.0 255.255.255.0
area 6 range 10.12.10.0 255.255.255.0
network 10.12.10.0 0.0.0.255 area 6
network 10.12.17.0 0.0.0.255 area 0
network 10.12.18.0 0.0.0.255 area 0
!
ip local policy route-map syslog
ip http server
ip classless
!
!
```

```

!
ip access-list extended policyroute
  permit ip host 10.12.10.3 host 172.18.141.128
ip access-list extended syslog
  permit ip any host 10.12.13.210
!
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
access-list 110 permit udp host 10.12.7.2 any
access-list 110 deny    udp any gt 16384 any
access-list 110 permit ip any any
!
route-map syslog permit 10
  match ip address syslog
  set ip next-hop 10.12.2.1
!
route-map policyroute permit 10
  match ip address policyroute
  set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw

```



```
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec cipr clear ip route *
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
```

```
logging synchronous
no login
!
ntp clock-period 17180755
ntp source FastEthernet0/0.1
ntp server 10.12.2.1
end
```

Site6 Cisco Catalyst 3524 Access Switch

```
NS6-3524#sh run
Building configuration...

Current configuration:
!
! No configuration change since last restart
!
version 12.0
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS6-3524
!
!
!
!
!
clock timezone EDT -5
clock summer-time EST recurring 1 Sun Apr 1:00 4 Sun Oct 1:00
!
no spanning-tree vlan 419
no spanning-tree vlan 420
no spanning-tree vlan 421
no spanning-tree vlan 700
no spanning-tree vlan 701
no spanning-tree vlan 702
no spanning-tree vlan 703
no spanning-tree vlan 704
no spanning-tree vlan 705
no spanning-tree vlan 706
no spanning-tree vlan 707
```

```
no spanning-tree vlan 708
no spanning-tree vlan 709
no spanning-tree vlan 710
no spanning-tree vlan 711
no spanning-tree vlan 712
no spanning-tree vlan 713
no spanning-tree vlan 714
no spanning-tree vlan 715
no spanning-tree vlan 716
no spanning-tree vlan 717
ip subnet-zero
ip host whirlwind 172.18.137.110
ip host gbipcc 172.18.141.128
ip domain-name ipcc.com
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
interface FastEthernet0/1
description NS6-SIM1
duplex full
speed 100
switchport access vlan 603
spanning-tree portfast
!
interface FastEthernet0/2
duplex full
speed 100
switchport access vlan 601
spanning-tree portfast
!
interface FastEthernet0/3
duplex full
speed 100
!
interface FastEthernet0/4
duplex full
speed 100
!
interface FastEthernet0/5
duplex full
speed 100
!
interface FastEthernet0/6
duplex full
speed 100
!
```

```
interface FastEthernet0/7
  duplex full
  speed 100
!
interface FastEthernet0/8
  duplex full
  speed 100
!
interface FastEthernet0/9
  duplex full
  speed 100
!
interface FastEthernet0/10
  duplex full
  speed 100
!
interface FastEthernet0/11
  duplex full
  speed 100
!
interface FastEthernet0/12
  duplex full
  speed 100
!
interface FastEthernet0/13
  duplex full
  speed 100
!
interface FastEthernet0/14
  duplex full
  speed 100
!
interface FastEthernet0/15
  duplex full
  speed 100
!
interface FastEthernet0/16
  duplex full
  speed 100
!
interface FastEthernet0/17
  duplex full
  speed 100
!
interface FastEthernet0/18
  duplex full
  speed 100
!
```

```
interface FastEthernet0/19
  duplex full
  speed 100
!
interface FastEthernet0/20
  duplex full
  speed 100
!
interface FastEthernet0/21
  duplex full
  speed 100
!
interface FastEthernet0/22
  description link to NS6-3745GW f0/0
  duplex full
  speed 100
  switchport access vlan 602
!
interface FastEthernet0/23
  description link to NS6-2691 f0/0
  duplex full
  speed 100
  switchport trunk allowed vlan 1,2,601-604,1002-1005
  switchport mode trunk
!
interface FastEthernet0/24
  description link to cat5k port 6/4
  duplex full
  speed 100
  switchport trunk allowed vlan 1,2,601,604,1002-1005
  switchport mode trunk
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface VLAN1
  no ip address
  no ip directed-broadcast
  no ip route-cache
  shutdown
!
interface VLAN2
  ip address 10.12.2.16 255.255.255.224
  no ip directed-broadcast
  no ip route-cache
!
logging source-interface VLAN1
```

```

logging 10.12.13.210
snmp-server engineID local 000000090200000BBEBE6E80
snmp-server community gb-ipcc RW
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
snmp-server enable traps vlan-membership
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps hsrp
snmp-server enable traps c2900
snmp-server enable traps mac-notification
snmp-server enable traps vtp
snmp-server enable traps cluster
alias exec c conf t
alias exec NS0-CAT5K telnet 10.12.2.1
alias exec NS2-3524 telnet 10.12.2.8
alias exec NS3-3524 telnet 10.12.2.10
alias exec NS5-3524 telnet 10.12.2.14
alias exec NS6-3524 telnet 10.12.2.16
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  transport input none
  stopbits 1
line vty 0 4
  exec-timeout 30 0
  privilege level 15
  logging synchronous
  no login
line vty 5 15
  no login
!
ntp clock-period 11259016
ntp server 10.12.2.1
end

```

Site6 Cisco 3745 Gateway

```

NS6-3745-GW1#sh run
Building configuration...

Current configuration : 5632 bytes

```

```
!  
! Last configuration change at 09:26:49 EST Wed Oct 8 2003  
! NVRAM config last updated at 09:27:00 EST Wed Oct 8 2003  
!  
version 12.2  
service nagle  
no service pad  
service timestamps debug datetime msec localtime  
service timestamps log datetime msec localtime  
no service password-encryption  
!  
hostname NS6-3745-GW1  
!  
boot system flash flash:c3745-is-mz.122-15.T8  
boot system flash c3745-is-mz.122-15.T5  
logging queue-limit 100  
enable secret 5 $1$bvHt$lWn6RqnXyFkc5j1AibV.P1  
!  
clock timezone EDT -5  
clock summer-time EST recurring  
voice-card 1  
    dspfarm  
!  
voice-card 2  
    dspfarm  
!  
voice-card 3  
    dspfarm  
!  
ip subnet-zero  
ip tcp synwait-time 13  
!  
!  
ip ftp username Administrator  
ip ftp password gbipcc  
ip domain name ipcc.com  
ip host gbipcc 172.18.141.128  
ip name-server 10.12.4.35  
ip name-server 10.12.4.43  
!  
isdn switch-type primary-ni  
!  
!  
!  
!  
!  
!
```

```
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
ccm-manager redundant-host NS4-CM3
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.12.7.2
ccm-manager config
fax interface-type fax-mail
mta receive maximum-recipients 0
!
!
controller T1 1/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 1/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 2/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
    description NS6-AAR-T1-to-NS4
!
controller T1 2/1
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
controller T1 3/0
    framing esf
    linecode b8zs
    pri-group timeslots 1-24 service mgcp
!
!
!
interface FastEthernet0/0
    description link to NS6-3524 f0/22
    ip address 10.12.10.10 255.255.255.248
    speed 100
    full-duplex
```



```
!  
interface FastEthernet0/1  
no ip address  
shutdown  
duplex auto  
speed auto  
!  
interface Serial1/0:23  
no ip address  
no logging event link-status  
isdn switch-type primary-ni  
isdn protocol-emulate network  
isdn incoming-voice voice  
isdn bind-l3 ccm-manager  
no cdp enable  
!  
interface Serial1/1:23  
no ip address  
no logging event link-status  
isdn switch-type primary-ni  
isdn incoming-voice voice  
isdn bind-l3 ccm-manager  
no cdp enable  
!  
interface Serial2/0:23  
no ip address  
no logging event link-status  
isdn switch-type primary-ni  
isdn incoming-voice voice  
isdn bind-l3 ccm-manager  
no cdp enable  
!  
interface Serial2/1:23  
no ip address  
no logging event link-status  
isdn switch-type primary-ni  
isdn incoming-voice voice  
isdn bind-l3 ccm-manager  
no cdp enable  
!  
interface Serial3/0:23  
no ip address  
no logging event link-status  
isdn switch-type primary-ni  
isdn incoming-voice voice  
isdn bind-l3 ccm-manager  
no cdp enable  
!
```

```

ip http server
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.9.9
ip route 0.0.0.0 0.0.0.0 10.12.10.9
!
!
!
logging 10.12.4.211
!
snmp-server community public RW
snmp-server chassis-id
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync

```

```
!
voice-port 1/0:23
!
voice-port 1/1:23
!
voice-port 2/0:23
!
voice-port 2/1:23
!
voice-port 3/0:23
!
mgcp
mgcp call-agent NS4-CM2 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp max-waiting-delay 3
mgcp restart-delay 10
mgcp modem passthrough voip mode nse
mgcp modem passthrough voaal2 mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp bind control source-interface FastEthernet0/0
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias exec NS6-3745-GW telnet 172.18.141.150 2007
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS0-3660-GK telnet 172.18.141.150 2001
```

```

alias exec NS1-3660-GK1 telnet 172.18.141.150 2002
alias exec NS1-3660-GK2 telnet 172.18.141.150 2003
alias exec NS2-3660-GW telnet 172.18.141.150 2004
alias exec NS3-3660-GW telnet 172.18.141.150 2005
alias exec NS5-3745-GW telnet 172.18.141.150 20
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 0 0
  privilege level 15
  password cisco
  logging synchronous
  no login
!
ntp clock-period 17175569
ntp server 10.12.2.1
end

```

Site7 Cisco 3640A Gateway for ISN

```

NS7-3640-GW#sh run
Building configuration...

Current configuration : 4735 bytes
!
! Last configuration change at 18:27:53 UTC Wed Oct 15 2003
! NVRAM config last updated at 18:27:54 UTC Wed Oct 15 2003
!
version 12.2
service nagle
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
no service dhcp
!
hostname NS7-3640-GW
!
boot system flash:c3640-is-mz.122-13.T8
logging buffered 1000000 debugging
no logging console
!

```

```
voice-card 0
!
voice-card 1
!
ip subnet-zero
!
!
!
isdn switch-type primary-ni
!
!
!
voice service voip
  h323
  call start slow
!
voice class codec 1
  codec preference 1 g711ulaw
  codec preference 2 g729r8
!
!
!
!
!
!
!
!
mta receive maximum-recipients 0
!
controller T1 0/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 0/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
controller T1 1/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
```

```
no yellow generation
no yellow detection
!
controller T1 1/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  no yellow generation
  no yellow detection
!
!
!
interface Serial0/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial0/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/0:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
interface Serial1/1:23
  no ip address
  no logging event link-status
  isdn switch-type primary-ni
  isdn protocol-emulate network
  isdn incoming-voice voice
  isdn T310 30000
  no cdp enable
!
interface FastEthernet2/0
  description link to NS7-CAT6K 3/17
  ip address 10.12.11.146 255.255.255.248
  speed 100
  full-duplex
```

```
no cdp enable
h323-gateway voip interface
h323-gateway voip id NS7-ISN-zone ipaddr 10.12.4.147 1719
h323-gateway voip h323-id 10.12.11.146
h323-gateway voip tech-prefix 1#
!
interface FastEthernet2/1
no ip address
duplex auto
speed auto
no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.11.145
ip http server
!
!
no cdp run
!
snmp-server community public RW
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps casa
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe
snmp-server enable traps atm subif
snmp-server enable traps dial
```

```
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
call rsvp-sync
!
voice-port 0/0:23
!
voice-port 0/1:23
!
voice-port 1/0:23
!
voice-port 1/1:23
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 1 voip
!
dial-peer voice 770 voip
  destination-pattern 770407....
  voice-class codec 1
  session target ras
  dtmf-relay rtp-nte h245-signal h245-alphanumeric
  no vad
!
dial-peer voice 2 pots
  destination-pattern 7...
  no digit-strip
  direct-inward-dial
  port 1/1:23
!
dial-peer voice 3 pots
  destination-pattern 7...
  no digit-strip
  direct-inward-dial
  port 1/0:23
!
dial-peer voice 4 pots
  destination-pattern 7...
```



```
no digit-strip
direct-inward-dial
port 0/0:23
!
dial-peer voice 5 pots
destination-pattern 7...
no digit-strip
direct-inward-dial
port 0/1:23
!
num-exp 12306309110 7704079110
num-exp 12306309120 7704079120
gateway
!
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
!
line con 0
exec-timeout 0 0
privilege level 15
logging synchronous
line aux 0
line vty 0 4
exec-timeout 0 0
privilege level 15
password lab
logging synchronous
no login
!
ntp clock-period 17179579
ntp server 10.12.2.1
!
end
```

Site7 Cisco 3725 WAN Router

```
NS7-3725#sh run
Building configuration...
```

```

Current configuration : 19591 bytes
!
! No configuration change since last restart
!
version 12.2
service nagle
no service pad
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS7-3725
!
boot system flash flash:c3725-is-mz.122-15.T8
boot system flash:c3725-is-mz.122-15.T5
logging queue-limit 100
logging buffered 4096 debugging
!
clock timezone EDT -5
ip subnet-zero
ip tcp synwait-time 5
!
!
ip cef
ip ftp source-interface FastEthernet0/0.1
ip ftp username Administrator
ip ftp password gbipcc
ip domain name ipcc.com
ip host gbipcc 172.18.141.128
ip name-server 10.12.4.35
ip name-server 10.12.4.43
!
!
!
!
!
!
!
!
!
no voice hpi capture buffer
no voice hpi capture destination
!
!
mta receive maximum-recipients 0
!

```

```
!  
controller T1 1/0  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/0 7206  
!  
controller T1 1/1  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/1 7206  
!  
controller T1 1/3  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/3 7206  
!  
controller T1 1/2  
  framing esf  
  linecode b8zs  
  channel-group 1 timeslots 1-24 speed 64  
  description link to T1 4/2 7206  
!  
class-map match-any af21  
  match access-group name af21  
  match access-group name af11  
class-map match-all af31  
  match access-group name af31  
!  
!  
policy-map qos  
  class af31  
    priority 324  
  class af21  
    bandwidth 8  
  class class-default  
    bandwidth 272  
!  
!  
!  
!  
interface Loopback0  
  description router-id for ospf  
  ip address 200.0.0.7 255.255.255.255  
!  
interface FastEthernet0/0
```

```
description link to NS7-CAT6K-3/48
no ip address
speed 100
full-duplex
!
interface FastEthernet0/0.1
encapsulation dot1Q 2
ip address 10.12.2.19 255.255.255.224
ip policy route-map ns7-pbr
!
interface FastEthernet0/0.70
description OSPF vlan
encapsulation dot1Q 70
ip address 10.12.16.106 255.255.255.248
ip ospf priority 255
ip policy route-map ns7-pbr
!
interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto
!
interface FastEthernet1/0
no ip address
shutdown
duplex auto
speed auto
!
interface Serial1/0:1
no ip address
encapsulation frame-relay
load-interval 30
no fair-queue
!
interface Serial1/0:1.1 point-to-point
description link to NS1-3725_s1/0:1.7
ip address 10.12.17.22 255.255.255.252
frame-relay interface-dlci 701
!
interface Serial1/0:1.2 point-to-point
description link to NS2-2691_S0/0:1.7
ip address 10.12.17.114 255.255.255.252
frame-relay interface-dlci 702
!
interface Serial1/0:1.3 point-to-point
description link to ns3-2691_s0/0:1.7
ip address 10.12.17.190 255.255.255.252
```

```
frame-relay interface-dlci 703
!
interface Serial1/0:1.4 point-to-point
description link to NS4-2691_S0/0:1.7
ip address 10.12.17.250 255.255.255.252
frame-relay interface-dlci 704
!
interface Serial1/0:1.5 point-to-point
description link to NS5-2691_S0/0:1.7
ip address 10.12.18.38 255.255.255.252
frame-relay interface-dlci 705
!
interface Serial1/0:1.6 point-to-point
description link to NS6-2691_S0/0:1.7
ip address 10.12.18.66 255.255.255.252
frame-relay interface-dlci 706
!
interface FastEthernet1/1
no ip address
shutdown
duplex auto
speed auto
!
interface Serial1/1:1
no ip address
encapsulation frame-relay
!
interface Serial1/1:1.1 point-to-point
description link to NS1-3725_s1/1:1.7
ip address 10.12.17.46 255.255.255.252
frame-relay interface-dlci 711
!
interface Serial1/1:1.2 point-to-point
description link to NS2-2691_S0/1:1.7
ip address 10.12.17.134 255.255.255.252
frame-relay interface-dlci 712
!
interface Serial1/1:1.3 point-to-point
description link to ns3-2691_s0/1:1.7
ip address 10.12.17.206 255.255.255.252
frame-relay interface-dlci 713
!
interface Serial1/1:1.4 point-to-point
description link to NS4-2691_S1/1:1.7
ip address 10.12.18.6 255.255.255.252
frame-relay interface-dlci 714
!
interface Serial1/1:1.5 point-to-point
```

```
description link to NS5-2691_S0/1:1.7
ip address 10.12.18.46 255.255.255.252
frame-relay interface-dlci 715
!
interface Serial1/1:1.6 point-to-point
description link to NS6-2691_S0/1:1.7
ip address 10.12.18.70 255.255.255.252
frame-relay interface-dlci 716
!
interface Serial1/2:1
no ip address
encapsulation frame-relay
!
interface Serial1/2:1.1 point-to-point
description link to NS1-3725_s1/2:1.7
ip address 10.12.17.70 255.255.255.252
frame-relay interface-dlci 721
!
interface Serial1/2:1.2 point-to-point
description link to NS2-2691_S0/2:1.7
ip address 10.12.17.154 255.255.255.252
frame-relay interface-dlci 722
!
interface Serial1/2:1.3 point-to-point
description link to ns3-2691_s0/2:1.7
ip address 10.12.17.222 255.255.255.252
frame-relay interface-dlci 723
!
interface Serial1/2:1.4 point-to-point
description link to NS4-3725_S1/2:1.7
ip address 10.12.18.18 255.255.255.252
frame-relay interface-dlci 724
!
interface Serial1/2:1.5 point-to-point
description link to NS5-2691_S0/2:1.7
ip address 10.12.18.54 255.255.255.252
frame-relay interface-dlci 725
!
interface Serial1/2:1.6 point-to-point
description link to NS6-2691_S0/2:1.7
ip address 10.12.18.74 255.255.255.252
frame-relay interface-dlci 726
!
interface Serial1/3:1
no ip address
encapsulation frame-relay
!
interface Serial1/3:1.1 point-to-point
```

```
description link to NS1-3725_s1/3:1.7
ip address 10.12.17.94 255.255.255.252
frame-relay interface-dlci 731
!
interface Serial1/3:1.2 point-to-point
description link to NS2-2691_S0/3:1.7
ip address 10.12.17.174 255.255.255.252
frame-relay interface-dlci 732
!
interface Serial1/3:1.3 point-to-point
description link to ns3-2691_s0/3:1.7
ip address 10.12.17.238 255.255.255.252
frame-relay interface-dlci 733
!
interface Serial1/3:1.4 point-to-point
description link to NS4-2691_S0/3:1.7
ip address 10.12.18.30 255.255.255.252
frame-relay interface-dlci 734
!
interface Serial1/3:1.5 point-to-point
description link to NS5-2691_S0/3:1.6
ip address 10.12.18.62 255.255.255.252
frame-relay interface-dlci 735
!
interface Serial1/3:1.6 point-to-point
description link to NS6-2691_S0/3:1.7
ip address 10.12.18.78 255.255.255.252
frame-relay interface-dlci 736
!
router ospf 1
router-id 200.0.0.7
log-adjacency-changes
area 0 range 10.12.17.0 255.255.255.0
area 0 range 10.12.18.0 255.255.255.0
area 7 range 10.12.11.0 255.255.255.0
area 7 range 10.12.16.0 255.255.255.0
network 10.12.11.0 0.0.0.255 area 7
network 10.12.16.0 0.0.0.255 area 7
network 10.12.17.0 0.0.0.255 area 0
network 10.12.18.0 0.0.0.255 area 0
!
ip local policy route-map syslog
ip http server
ip classless
!
!
!
ip access-list extended af11
```

```
permit ip host 10.12.11.66 host 10.12.4.35 dscp af11
permit ip host 10.12.11.66 host 10.12.4.43 dscp af11
permit ip host 10.12.11.66 host 10.12.4.34 dscp af11
permit ip host 10.12.11.66 host 10.12.4.42 dscp af11
permit ip host 10.12.11.67 host 10.12.4.35 dscp af11
permit ip host 10.12.11.67 host 10.12.4.43 dscp af11
permit ip host 10.12.11.67 host 10.12.4.34 dscp af11
permit ip host 10.12.11.67 host 10.12.4.42 dscp af11
permit ip host 10.12.11.74 host 10.12.4.35 dscp af11
permit ip host 10.12.11.74 host 10.12.4.43 dscp af11
permit ip host 10.12.11.74 host 10.12.4.34 dscp af11
permit ip host 10.12.11.74 host 10.12.4.42 dscp af11
permit ip host 10.12.11.75 host 10.12.4.35 dscp af11
permit ip host 10.12.11.75 host 10.12.4.43 dscp af11
permit ip host 10.12.11.75 host 10.12.4.34 dscp af11
permit ip host 10.12.11.75 host 10.12.4.42 dscp af11
permit ip host 10.12.11.82 host 10.12.4.35 dscp af11
permit ip host 10.12.11.82 host 10.12.4.43 dscp af11
permit ip host 10.12.11.82 host 10.12.4.34 dscp af11
permit ip host 10.12.11.82 host 10.12.4.42 dscp af11
permit ip host 10.12.11.83 host 10.12.4.35 dscp af11
permit ip host 10.12.11.83 host 10.12.4.43 dscp af11
permit ip host 10.12.11.83 host 10.12.4.34 dscp af11
permit ip host 10.12.11.83 host 10.12.4.42 dscp af11
permit ip host 10.12.11.90 host 10.12.4.35 dscp af11
permit ip host 10.12.11.90 host 10.12.4.43 dscp af11
permit ip host 10.12.11.90 host 10.12.4.34 dscp af11
permit ip host 10.12.11.90 host 10.12.4.42 dscp af11
permit ip host 10.12.11.91 host 10.12.4.35 dscp af11
permit ip host 10.12.11.91 host 10.12.4.43 dscp af11
permit ip host 10.12.11.91 host 10.12.4.34 dscp af11
permit ip host 10.12.11.91 host 10.12.4.42 dscp af11
remark traffic from ns7-pg's to rgr's dscp 10
ip access-list extended af21
permit ip host 10.12.11.66 host 10.12.4.35 dscp af21
permit ip host 10.12.11.66 host 10.12.4.43 dscp af21
permit ip host 10.12.11.66 host 10.12.4.34 dscp af21
permit ip host 10.12.11.66 host 10.12.4.42 dscp af21
permit ip host 10.12.11.67 host 10.12.4.35 dscp af21
permit ip host 10.12.11.67 host 10.12.4.43 dscp af21
permit ip host 10.12.11.67 host 10.12.4.34 dscp af21
permit ip host 10.12.11.67 host 10.12.4.42 dscp af21
permit ip host 10.12.11.74 host 10.12.4.35 dscp af21
permit ip host 10.12.11.74 host 10.12.4.43 dscp af21
permit ip host 10.12.11.74 host 10.12.4.34 dscp af21
permit ip host 10.12.11.74 host 10.12.4.42 dscp af21
permit ip host 10.12.11.75 host 10.12.4.35 dscp af21
permit ip host 10.12.11.75 host 10.12.4.43 dscp af21
```



```
permit ip host 10.12.11.75 host 10.12.4.34 dscp af21
permit ip host 10.12.11.75 host 10.12.4.42 dscp af21
permit ip host 10.12.11.82 host 10.12.4.35 dscp af21
permit ip host 10.12.11.82 host 10.12.4.43 dscp af21
permit ip host 10.12.11.82 host 10.12.4.34 dscp af21
permit ip host 10.12.11.82 host 10.12.4.42 dscp af21
permit ip host 10.12.11.83 host 10.12.4.35 dscp af21
permit ip host 10.12.11.83 host 10.12.4.43 dscp af21
permit ip host 10.12.11.83 host 10.12.4.34 dscp af21
permit ip host 10.12.11.83 host 10.12.4.42 dscp af21
permit ip host 10.12.11.90 host 10.12.4.35 dscp af21
permit ip host 10.12.11.90 host 10.12.4.43 dscp af21
permit ip host 10.12.11.90 host 10.12.4.34 dscp af21
permit ip host 10.12.11.90 host 10.12.4.42 dscp af21
permit ip host 10.12.11.91 host 10.12.4.35 dscp af21
permit ip host 10.12.11.91 host 10.12.4.43 dscp af21
permit ip host 10.12.11.91 host 10.12.4.34 dscp af21
permit ip host 10.12.11.91 host 10.12.4.42 dscp af21
remark traffic from ns7-pg's to rgr's dscp 18
ip access-list extended af31
permit ip host 10.12.11.66 host 10.12.4.35 dscp af31
permit ip host 10.12.11.66 host 10.12.4.43 dscp af31
permit ip host 10.12.11.66 host 10.12.4.34 dscp af31
permit ip host 10.12.11.66 host 10.12.4.42 dscp af31
permit ip host 10.12.11.67 host 10.12.4.35 dscp af31
permit ip host 10.12.11.67 host 10.12.4.43 dscp af31
permit ip host 10.12.11.67 host 10.12.4.34 dscp af31
permit ip host 10.12.11.67 host 10.12.4.42 dscp af31
permit ip host 10.12.11.74 host 10.12.4.35 dscp af31
permit ip host 10.12.11.74 host 10.12.4.43 dscp af31
permit ip host 10.12.11.74 host 10.12.4.34 dscp af31
permit ip host 10.12.11.74 host 10.12.4.42 dscp af31
permit ip host 10.12.11.75 host 10.12.4.35 dscp af31
permit ip host 10.12.11.75 host 10.12.4.43 dscp af31
permit ip host 10.12.11.75 host 10.12.4.34 dscp af31
permit ip host 10.12.11.75 host 10.12.4.42 dscp af31
permit ip host 10.12.11.82 host 10.12.4.35 dscp af31
permit ip host 10.12.11.82 host 10.12.4.43 dscp af31
permit ip host 10.12.11.82 host 10.12.4.34 dscp af31
permit ip host 10.12.11.82 host 10.12.4.42 dscp af31
permit ip host 10.12.11.82 host 10.12.4.35 dscp af31
permit ip host 10.12.11.82 host 10.12.4.43 dscp af31
permit ip host 10.12.11.82 host 10.12.4.34 dscp af31
permit ip host 10.12.11.83 host 10.12.4.35 dscp af31
permit ip host 10.12.11.83 host 10.12.4.43 dscp af31
permit ip host 10.12.11.83 host 10.12.4.34 dscp af31
permit ip host 10.12.11.83 host 10.12.4.42 dscp af31
permit ip host 10.12.11.90 host 10.12.4.35 dscp af31
permit ip host 10.12.11.90 host 10.12.4.43 dscp af31
permit ip host 10.12.11.90 host 10.12.4.34 dscp af31
permit ip host 10.12.11.90 host 10.12.4.42 dscp af31
```

```

permit ip host 10.12.11.91 host 10.12.4.35 dscp af31
permit ip host 10.12.11.91 host 10.12.4.43 dscp af31
permit ip host 10.12.11.91 host 10.12.4.34 dscp af31
permit ip host 10.12.11.91 host 10.12.4.42 dscp af31
remark traffic from ns7-pg's to rgr's dscp 26
ip access-list extended ns2-pbr
permit ip host 10.12.11.66 host 10.12.4.35 dscp af11
permit ip host 10.12.11.66 host 10.12.4.43 dscp af11
permit ip host 10.12.11.66 host 10.12.4.34 dscp af11
permit ip host 10.12.11.66 host 10.12.4.42 dscp af11
permit ip host 10.12.11.67 host 10.12.4.35 dscp af11
permit ip host 10.12.11.67 host 10.12.4.43 dscp af11
permit ip host 10.12.11.67 host 10.12.4.34 dscp af11
permit ip host 10.12.11.67 host 10.12.4.42 dscp af11
permit ip host 10.12.11.74 host 10.12.4.35 dscp af11
permit ip host 10.12.11.74 host 10.12.4.43 dscp af11
permit ip host 10.12.11.74 host 10.12.4.34 dscp af11
permit ip host 10.12.11.74 host 10.12.4.42 dscp af11
permit ip host 10.12.11.75 host 10.12.4.35 dscp af11
permit ip host 10.12.11.75 host 10.12.4.43 dscp af11
permit ip host 10.12.11.75 host 10.12.4.34 dscp af11
permit ip host 10.12.11.75 host 10.12.4.42 dscp af11
permit ip host 10.12.11.82 host 10.12.4.35 dscp af11
permit ip host 10.12.11.82 host 10.12.4.43 dscp af11
permit ip host 10.12.11.82 host 10.12.4.34 dscp af11
permit ip host 10.12.11.82 host 10.12.4.42 dscp af11
permit ip host 10.12.11.83 host 10.12.4.35 dscp af11
permit ip host 10.12.11.83 host 10.12.4.43 dscp af11
permit ip host 10.12.11.83 host 10.12.4.34 dscp af11
permit ip host 10.12.11.83 host 10.12.4.42 dscp af11
permit ip host 10.12.11.90 host 10.12.4.35 dscp af11
permit ip host 10.12.11.90 host 10.12.4.43 dscp af11
permit ip host 10.12.11.90 host 10.12.4.34 dscp af11
permit ip host 10.12.11.90 host 10.12.4.42 dscp af11
permit ip host 10.12.11.91 host 10.12.4.35 dscp af11
permit ip host 10.12.11.91 host 10.12.4.43 dscp af11
permit ip host 10.12.11.91 host 10.12.4.34 dscp af11
permit ip host 10.12.11.91 host 10.12.4.42 dscp af11
permit ip host 10.12.11.66 host 10.12.4.35 dscp af21
permit ip host 10.12.11.66 host 10.12.4.43 dscp af21
permit ip host 10.12.11.66 host 10.12.4.34 dscp af21
permit ip host 10.12.11.66 host 10.12.4.42 dscp af21
permit ip host 10.12.11.67 host 10.12.4.35 dscp af21
permit ip host 10.12.11.67 host 10.12.4.43 dscp af21
permit ip host 10.12.11.67 host 10.12.4.34 dscp af21
permit ip host 10.12.11.67 host 10.12.4.42 dscp af21
permit ip host 10.12.11.74 host 10.12.4.35 dscp af21
permit ip host 10.12.11.74 host 10.12.4.43 dscp af21

```

```
permit ip host 10.12.11.74 host 10.12.4.34 dscp af21
permit ip host 10.12.11.74 host 10.12.4.42 dscp af21
permit ip host 10.12.11.75 host 10.12.4.35 dscp af21
permit ip host 10.12.11.75 host 10.12.4.43 dscp af21
permit ip host 10.12.11.75 host 10.12.4.34 dscp af21
permit ip host 10.12.11.75 host 10.12.4.42 dscp af21
permit ip host 10.12.11.82 host 10.12.4.35 dscp af21
permit ip host 10.12.11.82 host 10.12.4.43 dscp af21
permit ip host 10.12.11.82 host 10.12.4.34 dscp af21
permit ip host 10.12.11.82 host 10.12.4.42 dscp af21
permit ip host 10.12.11.83 host 10.12.4.35 dscp af21
permit ip host 10.12.11.83 host 10.12.4.43 dscp af21
permit ip host 10.12.11.83 host 10.12.4.34 dscp af21
permit ip host 10.12.11.83 host 10.12.4.42 dscp af21
permit ip host 10.12.11.90 host 10.12.4.35 dscp af21
permit ip host 10.12.11.66 host 10.12.4.43 dscp af31
permit ip host 10.12.11.66 host 10.12.4.34 dscp af31
permit ip host 10.12.11.66 host 10.12.4.42 dscp af31
permit ip host 10.12.11.67 host 10.12.4.35 dscp af31
permit ip host 10.12.11.82 host 10.12.4.42 dscp af31
permit ip host 10.12.11.83 host 10.12.4.35 dscp af31
permit ip host 10.12.11.83 host 10.12.4.43 dscp af31
permit ip host 10.12.11.83 host 10.12.4.34 dscp af31
permit ip host 10.12.11.66 host 10.12.4.35 dscp af31
permit ip host 10.12.11.67 host 10.12.4.43 dscp af31
permit ip host 10.12.11.67 host 10.12.4.34 dscp af31
permit ip host 10.12.11.67 host 10.12.4.42 dscp af31
permit ip host 10.12.11.74 host 10.12.4.35 dscp af31
permit ip host 10.12.11.74 host 10.12.4.43 dscp af31
permit ip host 10.12.11.74 host 10.12.4.34 dscp af31
permit ip host 10.12.11.74 host 10.12.4.42 dscp af31
permit ip host 10.12.11.75 host 10.12.4.35 dscp af31
permit ip host 10.12.11.75 host 10.12.4.43 dscp af31
permit ip host 10.12.11.75 host 10.12.4.34 dscp af31
permit ip host 10.12.11.75 host 10.12.4.42 dscp af31
permit ip host 10.12.11.82 host 10.12.4.35 dscp af31
permit ip host 10.12.11.82 host 10.12.4.43 dscp af31
permit ip host 10.12.11.82 host 10.12.4.34 dscp af31
permit ip host 10.12.11.82 host 10.12.4.42 dscp af31
permit ip host 10.12.11.83 host 10.12.4.42 dscp af31
permit ip host 10.12.11.90 host 10.12.4.35 dscp af31
permit ip host 10.12.11.90 host 10.12.4.43 dscp af31
permit ip host 10.12.11.90 host 10.12.4.34 dscp af31
permit ip host 10.12.11.90 host 10.12.4.42 dscp af31
permit ip host 10.12.11.91 host 10.12.4.35 dscp af31
permit ip host 10.12.11.91 host 10.12.4.43 dscp af31
permit ip host 10.12.11.91 host 10.12.4.34 dscp af31
permit ip host 10.12.11.91 host 10.12.4.42 dscp af31
ip access-list extended syslog
```

```

    permit ip any host 10.12.13.210
    !
    !
map-class frame-relay qos
    frame-relay cir 604000
    frame-relay bc 604
    frame-relay mincir 604000
    service-policy output qos
logging origin-id hostname
logging source-interface FastEthernet0/0.1
logging 10.12.13.210
!
route-map syslog permit 10
    match ip address syslog
    set ip next-hop 10.12.2.1
!
route-map ns7-pbr permit 10
    match ip address ns7-pbr
    set ip next-hop 10.12.17.21
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication linkdown linkup coldstart
warmstart
snmp-server enable traps tty
snmp-server enable traps cnpd
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps isdn chan-not-avail
snmp-server enable traps isdn ietf
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps envmon
snmp-server enable traps ds0-busyout
snmp-server enable traps ds1-loopback
snmp-server enable traps bgp
snmp-server enable traps pim neighbor-change rp-mapping-change
invalid-pim-message
snmp-server enable traps ipmulticast
snmp-server enable traps msdp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps frame-relay subif
snmp-server enable traps rtr
snmp-server enable traps syslog
snmp-server enable traps dlsw
snmp-server enable traps pppoe

```

```
snmp-server enable traps atm subif
snmp-server enable traps dial
snmp-server enable traps dsp card-status
snmp-server enable traps ipmobile
snmp-server enable traps vtp
snmp-server enable traps voice poor-qov
snmp-server enable traps dnis
snmp-server enable traps xgcp
!
call rsvp-sync
!
!
mgcp profile default
!
!
!
dial-peer cor custom
!
!
!
alias configure ro router ospf
alias exec sib sh ip int brief
alias exec c conf t
alias exec r sh run
alias exec son sh ip ospf neig
alias exec ciop clear ip ospf process
alias exec clog clear logg
alias exec sion sh ip ospf neighbor
alias exec ipr sh ip route
alias exec sip sh ip protocols
alias exec NS1-3725 TELNET 10.12.2.7
alias exec NS2-2691 TELNET 10.12.2.9
alias exec NS3-2691 TELNET 10.12.2.11
alias exec NS4-3725 TELNET 10.12.2.13
alias exec NS5-2691 TELNET 10.12.2.15
alias exec NS6-2691 TELNET 10.12.2.17
alias exec NS7-3725 TELNET 10.12.2.19
alias exec rb sh run | beg
alias exec sri sh run int
!
line con 0
  exec-timeout 30 0
  privilege level 15
  logging synchronous
line aux 0
line vty 0 4
  exec-timeout 30 0
  privilege level 15
```

```

logging synchronous
no login
!
ntp clock-period 17180537
ntp source FastEthernet0/0.1
ntp server 10.12.2.1
end

```

Site7 Catalyst 6509 Access Switch

```

NS7-CAT6K (enable) sh run

begin
!
# ***** NON-DEFAULT CONFIGURATION *****
!
!
#time: Wed Oct 15 2003, 15:08:21
!
#version 8.1(1)
!
set prompt NS7-CAT6K
set banner motd ^CCC NSITE GB2.0 testing contact gb-ippc@cisco.com.^C

!
#dot1x
set dot1x shutdown-timeout 0
set feature dot1x-radius-keepalive disable
!
#system
set system name NS7-CAT6K
set system location NSITE-lab2 rack 236
set system highavailability enable
set system core-dump enable
!
#Default Inlinepower
set inlinepower defaultallocation 7000
!
#!
#snmp
set snmp community read-write public
set snmp community read-write-all public
!
#stp mode
set spantree mode pvst+

```

```
!  
#vtp  
set vtp domain gb2.0-ipcc  
set vtp mode transparent vlan  
set vlan 70 name OSPF_vlan type ethernet mtu 1500 said 100070 state  
active  
set vlan 700 name NS7-PUB type ethernet mtu 1500 said 100700 state  
active  
set vlan 701 name NS7-CM1_voice type ethernet mtu 1500 said 100701  
state active  
set vlan 702 name NS7-CM2_data type ethernet mtu 1500 said 100702  
state active  
set vlan 703 name NS7-IVR1 type ethernet mtu 1500 said 100703 state  
active  
set vlan 704 name NS7-MOH1 type ethernet mtu 1500 said 100704 state  
active  
set vlan 705 name NS7-PG1A_public type ethernet mtu 1500 said 100705  
state active  
set vlan 706 name NS7-PG1B_public type ethernet mtu 1500 said 100706  
state active  
set vlan 707 name NS7-PG2A_public type ethernet mtu 1500 said 100707  
state active  
set vlan 708 name NS7-PG2B_public type ethernet mtu 1500 said 100708  
state active  
set vlan 709 name NS7-ISN1 type ethernet mtu 1500 said 100709 state  
active  
set vlan 710 name NS7-DL1 type ethernet mtu 1500 said 100710 state  
active  
set vlan 711 name NS7-CTIOS1 type ethernet mtu 1500 said 100711 state  
active  
set vlan 712 name NS7-CTIOS2 type ethernet mtu 1500 said 100712 state  
active  
set vlan 713 name NS7-RTAW1 type ethernet mtu 1500 said 100713 state  
active  
set vlan 714 name NS7-CTI_agent&supvr type ethernet mtu 1500 said  
100714 state active  
set vlan 715 name NS7-ISN_GW type ethernet mtu 1500 said 100715 state  
active  
set vlan 716 name NS7-sim1 type ethernet mtu 1500 said 100716 state  
active  
set vlan 717 name NS7-cil1 type ethernet mtu 1500 said 100717 state  
active  
set vlan 718 name NS7-6608-1 type ethernet mtu 1500 said 100718 state  
active  
set vlan 719 name NS7-6608-2 type ethernet mtu 1500 said 100719 state  
active  
set vlan 720 name NS7-6608-3 type ethernet mtu 1500 said 100720 state  
active
```

```

set vlan 721 name NS7-CMM1 type ethernet mtu 1500 said 100721 state
active
set vlan 723 name NS7-CMM2 type ethernet mtu 1500 said 100723 state
active
set vlan 724 name NS7-CMM type ethernet mtu 1500 said 100724 state
active
set vlan 908 name NS7-PG1A&1B_private type ethernet mtu 1500 said
100908 state active
set vlan 909 name NS7-PG2A&B_private type ethernet mtu 1500 said
100909 state active
set vlan 1002 name fddi-default type fddi mtu 1500 said 101002 state
active
set vlan 1004 name fddinet-default type fddinet mtu 1500 said 101004
state active stp ieee
set vlan 1005 name trnet-default type trbrf mtu 1500 said 101005 state
active stp ibm
set vlan 1-2,162,889
set vlan 1003 name token-ring-default type trcrf mtu 1500 said 101003
state active mode srb aremaxhop 7 stemaxhop 7 backupcrf off
!
#ip
set interface sc0 2 10.12.2.25/255.255.255.224 10.12.2.31

set interface sl0 10.1.1.1 255.255.255.0
set interface sl0 down
set interface sc1 0 0.0.0.0/0.0.0.0 0.0.0.0

set interface sc1 down
set ip route 0.0.0.0/0.0.0.0          10.12.2.18
set ip route 172.18.0.0/255.255.0.0  10.12.2.18
set ip alias default                0.0.0.0
!
#command alias
set alias rtr sess 15
!
#rcp
set rcp username cwuser
!
#dns
set ip dns server 10.12.4.35 primary
set ip dns server 10.12.4.43
set ip dns domain ipcc.com
!
#spantree
#vlan                                <VlanId>
set spantree priority 8192   70
set spantree priority 8192   700
set spantree priority 8192   701

```



```
set spantree priority 8192 702
set spantree priority 8192 703
set spantree priority 8192 704
set spantree priority 8192 705
set spantree priority 8192 706
set spantree priority 8192 707
set spantree priority 8192 708
set spantree priority 8192 709
set spantree priority 8192 710
set spantree priority 8192 711
set spantree priority 8192 712
set spantree priority 8192 713
set spantree priority 8192 714
set spantree priority 8192 715
set spantree priority 8192 716
set spantree priority 8192 717
set spantree priority 8192 718
set spantree priority 8192 719
set spantree priority 8192 720
set spantree priority 8192 721
set spantree priority 8192 723
set spantree priority 8192 724
set spantree priority 8192 908
set spantree priority 8192 909
!
#syslog
set logging server enable
set logging server 10.12.13.210
!
#ntp
set ntp broadcastclient enable
set ntp client enable
set ntp server 10.12.2.1
set timezone EST -5 0
set summertime enable
!
#set boot command
set boot config-register 0xf
set boot system flash bootflash:cat6000-sup2k8.8-1-1.bin
set boot system flash slot0:cat6000-sup2cvk8.7-6-2.bin
set boot system flash bootflash:cat6000-sup2k8.7-6-1.bin
!
#mls
set mls agingtime long-duration 1920
set mls agingtime 256
set mls agingtime ipx 256
!
# default port status is enable
```

```

!
!
#module 1 : 2-port 1000BaseX Supervisor
set port name      1/1  Trunk_to_NS1-6K3/7
set port dot1x 1/1 guest-vlan 0
clear trunk 1/1  3-700,703-713,715-1005,1025-4094
set trunk 1/1  on isl 1-2,701-702,714
!
#module 2 : 2-port 1000BaseX Supervisor
!
#module 3 : 48-port 10/100BaseTX Ethernet
set vlan 700  3/1
set vlan 702  3/2
set vlan 703  3/3
set vlan 704  3/4
set vlan 705  3/5
set vlan 706  3/7
set vlan 707  3/9
set vlan 708  3/11
set vlan 709  3/13
set vlan 710  3/14
set vlan 711  3/15
set vlan 712  3/16
set vlan 713  3/18
set vlan 715  3/17
set vlan 716  3/19
set vlan 717  3/20
set vlan 723  3/21
set vlan 889  3/46
set vlan 908  3/6,3/8
set vlan 909  3/10,3/12
set port disable  3/9

set port speed      3/1-48  100
set port duplex    3/1-48  full
set port name      3/1  NS7-PUB
set port name      3/2  NS7-CM1
set port name      3/3  NS7-IVR1
set port name      3/4  NS7-MOH1
set port name      3/5  NS7-PG1A_public
set port name      3/6  NS7-PG1A_private
set port name      3/7  NS7-PG1B_public
set port name      3/8  NS7-PG1B_private
set port name      3/9  NS7-PG2A_public
set port name      3/10 NS7-PG2A_private
set port name      3/11 NS7-PG2B_public
set port name      3/12 NS7-PG2B_private
set port name      3/13 NS7_ISN1

```

```
set port name      3/14 NS7_DL1
set port name      3/15 NS7_CTIOS1
set port name      3/16 NS7_CTIOS2
set port name      3/17 ns7-3640isn
set port name      3/18 NS7-RTAW1
set port name      3/19 NS7-SIM1
set port name      3/20 NS7-CIL1
set port name      3/21 NS7-CM2
set port name      3/46 snooper
set port name      3/47 link_2_NS0CAT5K_6/6
set port name      3/48 link_2_NS7-3725
clear trunk 3/46 1-699,712-1005,1025-4094
set trunk 3/46 desirable dot1q 700-711
clear trunk 3/47 3-700,703-713,715-1005,1025-4094
set trunk 3/47 on isl 1-2,701-702,714
clear trunk 3/48 3-69,71-1005,1025-4094
set trunk 3/48 on dot1q 1-2,70
set spantree portfast 3/1-16,3/18-46 enable
set security acl capture-ports 3/46
!
#module 4 : 8-port T1
set port voice interface 4/1 dhcp enable vlan 718
set port voice interface 4/2 dhcp enable vlan 718
set port voice interface 4/3 dhcp enable vlan 718
set port voice interface 4/4 dhcp enable vlan 718
set port voice interface 4/5 dhcp enable vlan 718
set port voice interface 4/6 dhcp enable vlan 718
set port voice interface 4/7 dhcp enable vlan 718
set port voice interface 4/8 dhcp enable vlan 718
set port name      4/1 NS0-5400-5-SLOT-7
set port name      4/2 NS0-5400-5-SLOT-7
set port name      4/3 NS0-5400-5-SLOT-7
set port name      4/4 NS0-5400-5-SLOT-7
set port name      4/5 NS0-5400-5-SLOT-7
set port name      4/6 NS0-5400-5-SLOT-7
set port name      4/7 NS0-5400-5-SLOT-7
set port name      4/8 NS0-5400-5-SLOT-7
!
#module 5 : 8-port T1
set port voice interface 5/1 dhcp enable vlan 719
set port voice interface 5/2 dhcp enable vlan 719
set port voice interface 5/3 dhcp enable vlan 719
set port voice interface 5/4 dhcp enable vlan 719
set port voice interface 5/5 dhcp enable vlan 719
set port voice interface 5/6 dhcp enable vlan 719
set port voice interface 5/7 dhcp enable vlan 719
set port voice interface 5/8 dhcp enable vlan 719
set port name      5/1 NSITE0-CG-12
```

```

set port name      5/2  NSITE0-CG-12
set port name      5/3  NSITE0-CG-12
set port name      5/4  Conference Bridge
set port name      5/5  Conference Bridge
set port name      5/6  Conference Bridge
set port name      5/7  Conference Bridge
set port name      5/8  Conference Bridge
!
#module 6 : 5-port Communication Media Mod.
set vlan 724  6/1
!
#module 15 : 1-port Multilayer Switch Feature Card
!
#module 16 : 1-port Multilayer Switch Feature Card
!
#switch port analyzer
set span 6/1-4 3/46 both inpkts disable learning enable multicast
enable create
end

```

Site7 Catalyst 6509 Core MSFC Switch

```

NS7-CAT6K#sh run
Building configuration...

Current configuration : 6772 bytes
!
! No configuration change since last restart
!
version 12.1
service nagle
service timestamps debug datetime msec localtime
service timestamps log datetime msec localtime
no service password-encryption
!
hostname NS7-CAT6K
!
boot system flash bootflash:c6msfc2-psv-mz.121-13.E6
!
clock timezone EDT -5
clock summer-time EST recurring
clock calendar-valid
ip subnet-zero
!
!

```

```
ip host whirlwind 172.18.137.110
ip domain-name ipcc.com
ip name-server 10.12.4.43
ip name-server 10.12.4.35
!
mls rp ip
!
!
!
interface Loopback0
  description router-id for ospf
  ip address 200.0.0.70 255.255.255.255
!
interface Vlan1
  no ip address
!
interface Vlan2
  description Management VLAN
  ip address 10.12.2.18 255.255.255.224
!
interface Vlan70
  description OSPF vlan
  ip address 10.12.16.105 255.255.255.248
  ip ospf priority 0
!
interface Vlan700
  description NS7-PUBTFTP
  ip address 10.12.11.1 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  ip policy route-map policyroute
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan701
  description NS7-CM1 voice
  ip address 10.12.11.17 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan702
  description NS7-CM1data
  ip address 10.12.11.33 255.255.255.240
  ip helper-address 10.12.4.211
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
```

```
mls rp ip
!
interface Vlan703
description NS7-IVR1
ip address 10.12.11.49 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan704
description NS7-MOH1
ip address 10.12.11.57 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan705
description NS7PG1A (CM , IP IVR And CTI Server) & BA Dialer
ip address 10.12.11.65 255.255.255.248
no ip redirects
ip policy route-map policyroute
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan706
description NS7PG1B (CM , IP IVR And CTI Server) & BA Dialer
ip address 10.12.11.73 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan707
description NS7ISNPG2A
ip address 10.12.11.81 255.255.255.248
no ip redirects
ip policy route-map policyroute
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan708
description NS7ISNPG2B
ip address 10.12.11.89 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan709
description NS7-ISN1
```

```
ip address 10.12.11.97 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan710
description NS7-DL1
ip address 10.12.11.105 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan711
description NS7-CTIOS1
ip address 10.12.11.113 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan712
description NS7-CTIOS2
ip address 10.12.11.121 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan713
description NS7RTAW1 Real Time Distributor AW/Webview
ip address 10.12.11.129 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan714
description NS7-CTI Agent and supervisor vlan
ip address 10.12.11.137 255.255.255.248
no ip redirects
ip policy route-map policyroute
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan715
description NS7-3660ISN-GW VoIP GW PSTN GW for ISN
ip address 10.12.11.145 255.255.255.248
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
```

```
interface Vlan716
  description NS7-sim1
  ip address 10.12.11.153 255.255.255.252
  ip access-group 110 out
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan717
  description NS7-CIL1
  ip address 10.12.11.157 255.255.255.252
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan718
  description NS7-6608-1
  ip address 10.12.16.1 255.255.255.224
  ip helper-address 10.12.4.211
  no ip redirects
  no ip unreachable
  load-interval 30
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan719
  description NS7-6608-2
  ip address 10.12.16.33 255.255.255.224
  ip helper-address 10.12.4.211
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
!
interface Vlan720
  description NS7-6608-3
  ip address 10.12.16.65 255.255.255.224
  ip helper-address 10.12.4.211
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan721
  description NS7-CMM1
  ip address 10.12.16.97 255.255.255.252
  no ip redirects
  mls rp vtp-domain gb2.0-ipcc
  mls rp ip
!
interface Vlan722
```



```
description NS7-CM2 Voice
ip address 10.12.11.177 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
ip policy route-map policyroute
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan723
description NS7-CM2 Data
ip address 10.12.11.161 255.255.255.240
ip helper-address 10.12.4.211
no ip redirects
ip policy route-map policyroute
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan724
description NS7 CMM1
ip address 10.12.11.193 255.255.255.252
no ip redirects
mls rp vtp-domain gb2.0-ipcc
mls rp ip
!
interface Vlan908
description "private" addresses for NS7-PG1A and B
ip address 192.168.108.1 255.255.255.240
!
interface Vlan909
description "private" addresses for NS1-ISNPG2A and B
ip address 192.168.109.1 255.255.255.240
!
router ospf 1
router-id 200.0.0.70
log-adjacency-changes
network 10.12.11.0 0.0.0.255 area 7
network 10.12.16.0 0.0.0.255 area 7
!
ip local policy route-map policyroute
ip classless
ip route 172.0.0.0 255.0.0.0 10.12.2.1
no ip http server
!
!
logging source-interface Vlan1
logging 10.12.13.210
access-list 101 permit ip any 172.0.0.0 0.255.255.255
access-list 101 permit ip any host 10.12.13.210
```

```
access-list 110 permit udp any host 10.12.11.2
access-list 110 deny  udp any gt 16384 any
access-list 110 permit ip any any
route-map policyroute permit 10
  match ip address 101
  set ip next-hop 10.12.2.1
!
snmp-server community public RW
snmp-server system-shutdown
snmp-server enable traps snmp authentication warmstart
snmp-server enable traps slb real virtual csrps
snmp-server enable traps flash insertion removal
snmp-server enable traps hsrp
snmp-server enable traps config
snmp-server enable traps entity
snmp-server enable traps fru-ctrl
snmp-server enable traps bgp
snmp-server enable traps rsvp
snmp-server enable traps frame-relay
snmp-server enable traps rtr
snmp-server enable traps isdn call-information
snmp-server enable traps isdn layer2
snmp-server enable traps dlsw
!
alias configure ro router ospf
alias exec c conf t
alias exec ipr sh ip route
alias exec sion sh ip ospf nei
alias exec cipr clear ip route
!
line con 0
  exec-timeout 30 0
  logging synchronous
line vty 0 4
  privilege level 15
  password cisco
  no login
!
ntp clock-period 17179982
ntp update-calendar
ntp server 10.12.2.1
end
```



```
ccm-manager config server 10.12.11.2
ccm-manager config
ms dsp firmware 0 bundled
ms dsp firmware 1 bundled
ms dsp firmware 2 bundled
!
!
controller T1 1/0
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_ANS1
!
controller T1 1/1
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_ANS2
!
controller T1 1/2
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_ANS3
!
controller T1 1/3
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_ANS4
!
controller T1 1/4
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_ANS5
!
controller T1 1/5
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_NO_ANS1
!
controller T1 2/0
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
description BA_NS7_NO_ANS2
```

```
!  
controller T1 2/1  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24 service mgcp  
  description BA_NS7_BUSY1  
!  
controller T1 2/2  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24 service mgcp  
  description BA_NS7_BUSY2  
!  
controller T1 2/3  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24 service mgcp  
!  
controller T1 2/4  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24 service mgcp  
!  
controller T1 2/5  
  framing esf  
  linecode b8zs  
  pri-group timeslots 1-24 service mgcp  
  description NS7-DMS  
!  
!  
!  
interface GigabitEthernet1/0  
  ip address 10.12.11.194 255.255.255.252  
  no ip proxy-arp  
  no negotiation auto  
  no keepalive  
!  
interface Serial1/0:23  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-ni  
  isdn incoming-voice voice  
  isdn bind-l3 ccm-manager  
  no cdp enable  
!  
interface Serial1/1:23  
  no ip address  
  no logging event link-status
```

```
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/2:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/3:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/4:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial1/5:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/0:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/1:23
    no ip address
    no logging event link-status
```

```
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/2:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/3:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/4:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
interface Serial2/5:23
    no ip address
    no logging event link-status
    isdn switch-type primary-ni
    isdn incoming-voice voice
    isdn bind-l3 ccm-manager
    no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.12.11.193
no ip http server
!
!
logging 10.12.13.210
arp 127.0.0.60 0000.0600.0000 ARPA
arp 127.0.0.12 0000.2100.0000 ARPA
arp 127.0.0.11 0000.1100.0000 ARPA
call rsvp-sync
!
```

```
voice-port 1/0:23
  echo-cancel coverage 64
!
voice-port 1/1:23
  echo-cancel coverage 64
!
voice-port 1/2:23
  echo-cancel coverage 64
!
voice-port 1/3:23
  echo-cancel coverage 64
!
voice-port 1/4:23
  echo-cancel coverage 64
!
voice-port 1/5:23
  echo-cancel coverage 64
!
voice-port 2/0:23
  echo-cancel coverage 64
!
voice-port 2/1:23
  echo-cancel coverage 64
!
voice-port 2/2:23
  echo-cancel coverage 64
!
voice-port 2/3:23
  echo-cancel coverage 64
!
voice-port 2/4:23
  echo-cancel coverage 64
!
voice-port 2/5:23
  echo-cancel coverage 64
!
mgcp
mgcp call-agent NS7-CM1 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp vad
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
```



```
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
dial-peer voice 9991023 pots
  application mgcpapp
  port 1/0:23
!
dial-peer voice 9991123 pots
  application mgcpapp
  port 1/1:23
!
dial-peer voice 9991223 pots
  application mgcpapp
  port 1/2:23
!
dial-peer voice 9991323 pots
  application mgcpapp
  port 1/3:23
!
dial-peer voice 9991423 pots
  application mgcpapp
  port 1/4:23
!
dial-peer voice 9991523 pots
  application mgcpapp
  port 1/5:23
!
dial-peer voice 9992023 pots
  application mgcpapp
  port 2/0:23
!
dial-peer voice 9992123 pots
  application mgcpapp
  port 2/1:23
!
dial-peer voice 9992223 pots
  application mgcpapp
  port 2/2:23
!
dial-peer voice 9992323 pots
  application mgcpapp
  port 2/3:23
!
dial-peer voice 9992423 pots
  application mgcpapp
```

```
    port 2/4:23
    !
dial-peer voice 9992523 pots
    application mgcpapp
    port 2/5:23
    !
alias exec c conf t
!
line con 0
line vty 0 4
    exec-timeout 0 0
    privilege level 15
    no login
!
ntp clock-period 17179932
ntp server 10.12.2.1
!
end
```



Call Flows

This chapter provides specifics for three sample call flows:

- Cisco CallManager Post-Routed call flow (Multi-Site Distributed—call arrives at Site1 but is handled by agent at Site7)
- ISN Post-Routed call flow (ISN Post-Routes call to Site1 IOS GW (ISN) and call is handled by agent at Site1)
- Outbound Call Flow (Blended Agent)

Cisco CallManager Post-Routed Call Flow (Multi-Site Distributed)

General Description of Call Flow

1. The call comes into the CallManager CTI route point. CallManager sends a NEW_CALL message to ICM.
2. The call executes the script based on the dialed number that was sent from CallManager. The script determines the skillgroup that can best answer the call and checks for agent availability. An agent is not available. The ICM script then executes a Translation Route to a VRU node. ICM returns a ROUTE RESPONSE message, with a label, to CallManager. The label allows CallManager to route the call to the IVR. For IP IVR, the dialed number is a

CTI route point that is owned by the IP IVR user. On IP IVR this CTI route point is defined as a Translation Route Point. IP IVR could be on the same CallManager as the call or IP IVR could be connected to a different CallManager.

3. When the call arrives, the JTAPI link on CallManager informs IP IVR, which informs ICM via the IVR PG.
4. When the IVR PG receives the incoming call arrival message, it sends a REQUEST_INSTRUCTION to ICM.
5. ICM executes the Run VRU Script (Run External Script) node and returns the VRU script that the IVR should play for the caller.
6. The agent's PG sends an AGENT_STATE_CHG message to ICM indicating that a qualified agent has become available. ICM then:
 - Returns a ROUTE RESPONSE message with a label to CallManager. The label can be an internal line number if the agent resides in the same CallManager cluster as the post-route CallManager. If the agent resides in a different CallManager cluster than the post-route CallManager, then the label returned must adhere to the inter-cluster dialing plan.
 - Sends PRE_CALL Message to the agent's PG with call context information, so that the PG can reserve the agent and wait for the call to arrive at the agent's phone.
7. CallManager translates the digits in the label and decides whether the agent's phone is in the same CallManager cluster or in a different CallManager cluster. If the agent's phone is on a different CallManager, then the call is routed to the appropriate CallManager.
8. The agent's CallManager rings the agent's IP phone.
9. The agent's CallManager, via the JTAPI link, sends a notification to the agent's PG that the call has arrived.
10. The PG reports to ICM that the call has arrived and is ringing on the agent's phone.
11. When the agent answers the call via the IPCC Agent Desktop, JTAPI sends a MsgEstablished/CS_CONNECT message to the PG.
12. The PG reports to ICM that the agent has answered the call.

Specific Flow as per Given Configuration

The call comes to Site1 from the PSTN, but agents are unavailable to take the call. The call is queued at an IP IVR (CRS) at Site1 and a recording is played back to the caller. After approximately 30 seconds, ICM determines that an Agent at Site7 is available to handle the call and requests redirection of the call from Site1 IVR to Site7 Agent. Site7 Agent answers the call.

Configuration

The following screen shots provide the configuration used in this call flow for:

- Cisco CallManager
- Cisco ICM Software
- Cisco IP IVR

Cisco CallManager Configuration

N7 ICTTrunk

Trunk Configuration

[Add a New Trunk](#)
[Back to Find/List Trunk](#)
[Dependency Records](#)

Product: Inter-Cluster Trunk (Gatekeeper Controlled)
Device Protocol: Inter-Cluster Trunk
 Status: Ready

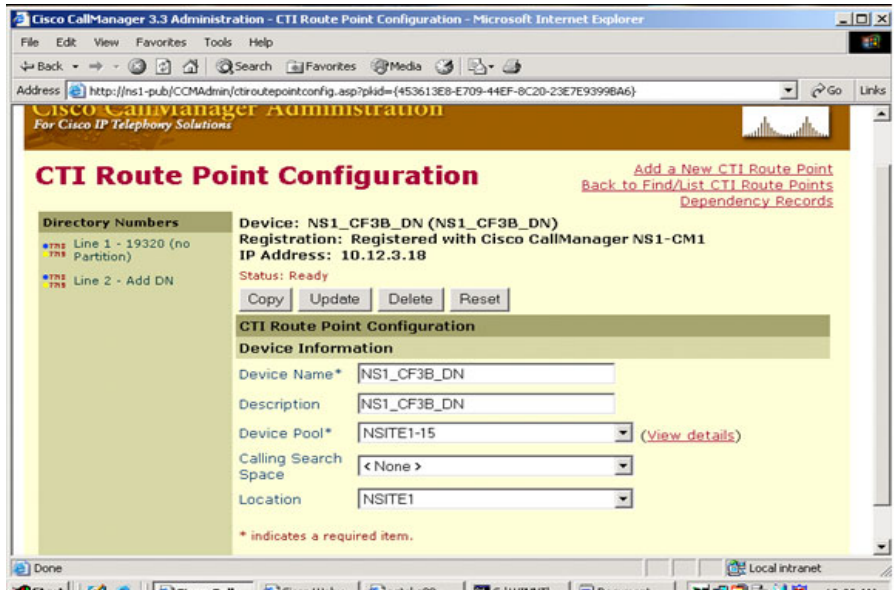
Device Information

Device Name*	<input type="text" value="CM7_GK_ICT"/>
Description	<input type="text" value="CM7_GK_ICT"/>
Device Pool*	<input type="text" value="NSITE-ICT"/>
Media Resource Group List	<input type="text" value="NS7-MRGL"/>
Location	<input type="text" value="< None >"/>
AAR Group	<input type="text" value="< None >"/>

Media Termination Point Required

Call Routing Information

NS1 CTIRP CallFlow3B



NS1 CTIRP IVR

CTI Route Point Configuration

[Add a New CTI Route Point](#)
[Back to Find/List CTI Route Points](#)
[Dependency Records](#)

Directory Numbers
 Line 1 - 16000 (no Partition)
 Line 2 - Add DN

Device: IVR1_CTIRP1 (IVR1_CTIRP1)
Registration: Registered with Cisco CallManager NS1-CM1
IP Address: 10.12.3.18
 Status: Ready

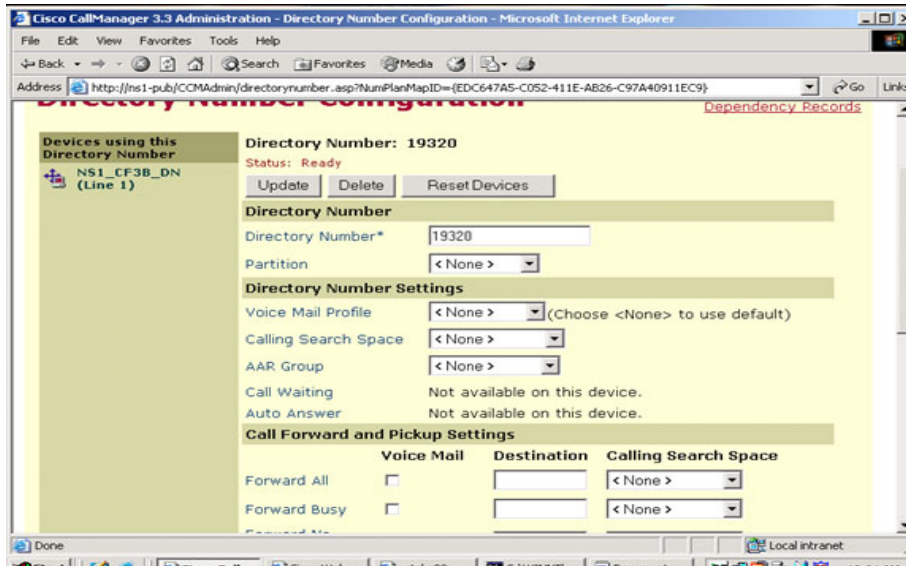
CTI Route Point Configuration

Device Information

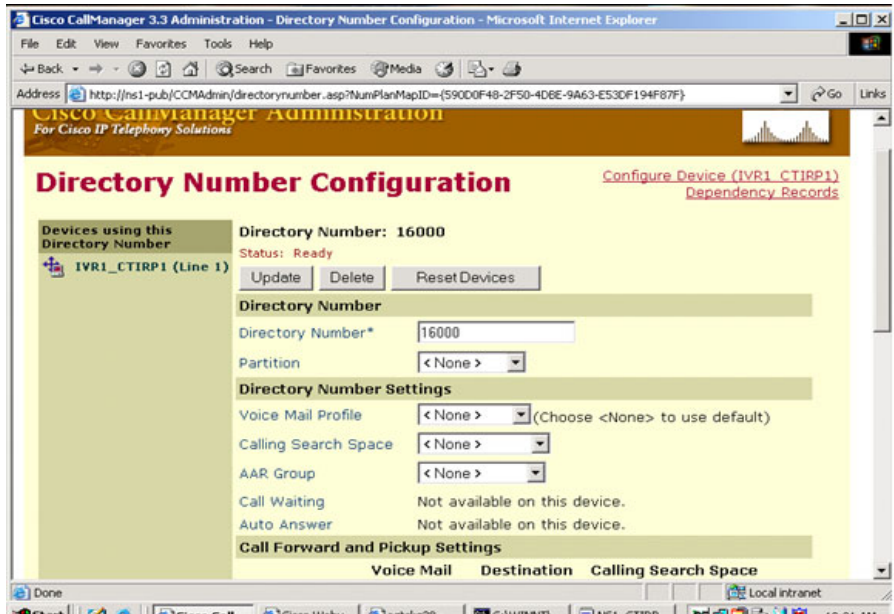
Device Name*
 Description
 Device Pool* ([View details](#))
 Calling Search Space
 Location

* indicates a required item.

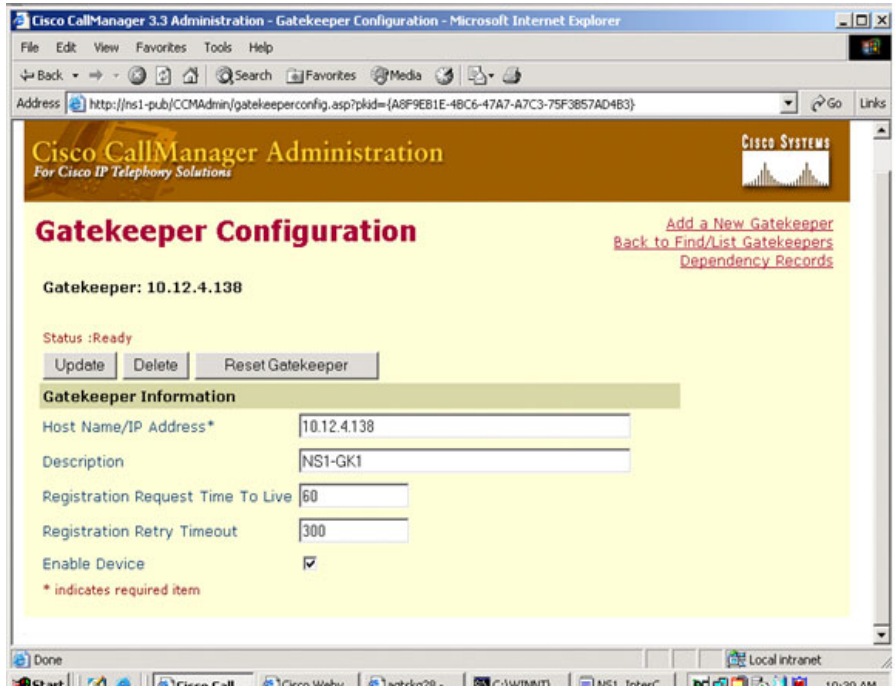
NS1 CTIRP LineInfo CallFlow3B



NS1 CTIRP LineInfo IVR



NS1 GK1



NS1 HFCFB Config

Conference Bridge Configuration

[Add a New Conference Bridge](#)
[Meet-Me Number/Pattern Configuration](#)
[Cisco CallManager Service Parameters](#)
[Back to Find/List Conference Bridges](#)
[Dependency Records](#)

Conference Bridge: CFB00027E39F732 (CFB00027E39F732)
 Registration: Registered with Cisco CallManager NS1-CM1
 IP Address: **10.12.14.114**

Status: Ready

Conference Bridge Type Cisco Conference Bridge Hardware

MAC Address*

Description

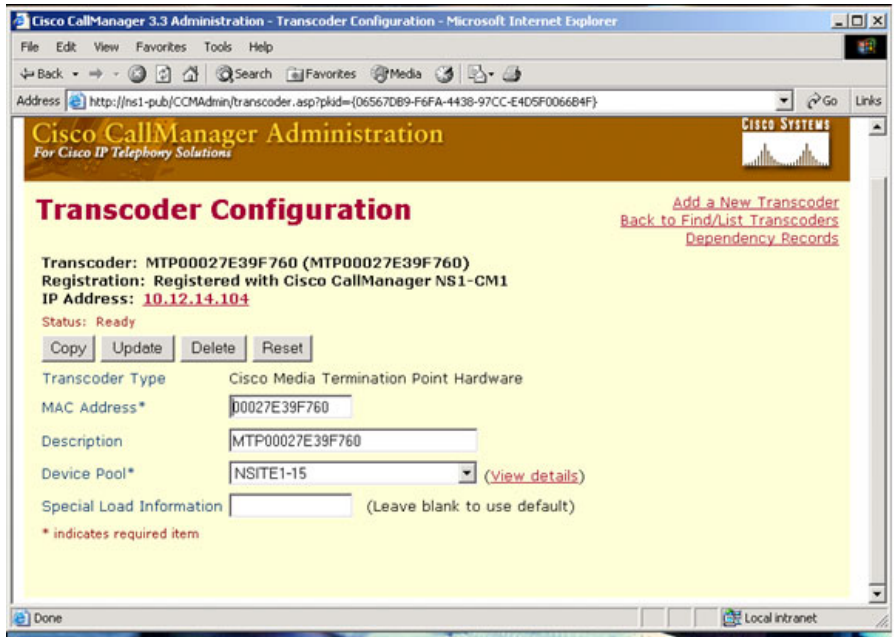
Device Pool*

Location

Special Load Information (Leave blank to use default)

* indicates required item

NS1 HFTRX Config



The screenshot shows the Cisco CallManager Administration interface for Transcoder Configuration. The browser window title is "Cisco CallManager 3.3 Administration - Transcoder Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns1-pub/CCMAdmin/transcoder.asp?pkid={06567DB9-F6FA-4438-97CC-E4D5F006684F}`. The page header includes the Cisco CallManager Administration logo and the Cisco Systems logo. The main heading is "Transcoder Configuration". On the right side, there are three links: "Add a New Transcoder", "Back to Find/List Transcoders", and "Dependency Records". The configuration details for a transcoder are as follows:

- Transcoder: MTP00027E39F760 (MTP00027E39F760)
- Registration: Registered with Cisco CallManager NS1-CM1
- IP Address: [10.12.14.104](#)
- Status: Ready

Below the status, there are four buttons: Copy, Update, Delete, and Reset. The configuration fields are:

- Transcoder Type: Cisco Media Termination Point Hardware
- MAC Address*: 00027E39F760
- Description: MTP00027E39F760
- Device Pool*: NSITE1-15 (View details)
- Special Load Information: (Leave blank to use default)

* indicates required item

NS1 ICTTrunk

Trunk Configuration

[Add a New Trunk](#)
[Back to Find/List Trunk](#)
[Dependency Records](#)

Product: Inter-Cluster Trunk (Gatekeeper Controlled)
Device Protocol: Inter-Cluster Trunk
 Status: Ready

Update Delete Reset Trunk

Device Information

Device Name*	CM1_GK_ICT
Description	CM1_GK_ICT
Device Pool*	NSITE-ICT
Media Resource Group List	NS1-MRGL
Location	NSITE1
AAR Group	<None >

Media Termination Point Required

Call Routing Information
 Inbound Calls

NS1 InterCluster RouteGroup Config

[Add a New Route Group](#)
[Back to Find/List Route Groups](#)
[Dependency Records](#)

Devices

- CM1_GK_ICT on all ports

Route Group Name: NS1_ICT_GK
Route Group QSIG Types: NON-QSIG

Status: Ready

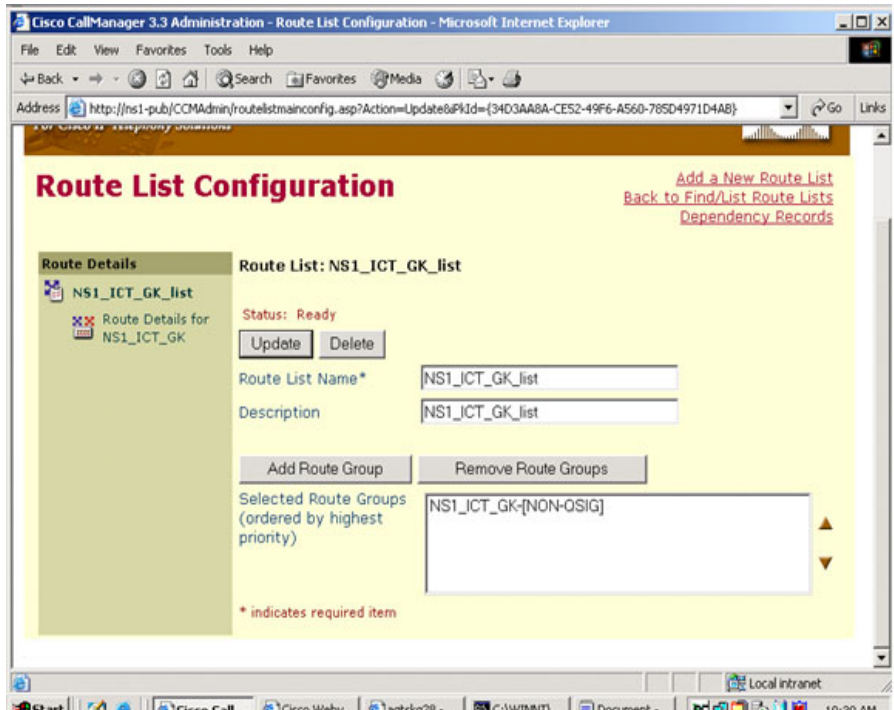
Route Group Name* NS1_ICT_GK

Route Group Members

Select	Device	Port	Order
<input type="checkbox"/>	CM1_GK_ICT	All	1

* indicates required item

NS1 InterCluster RouteList Config



NS1 InterCluster RoutePattern Config

The screenshot displays the Cisco CallManager 3.3 Administration interface for configuring a route pattern. The browser window title is "Cisco CallManager 3.3 Administration - Route Pattern Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns1-pub/CCMAdmin/routepatternconfig.asp?pkid={D7A952EE-1E21-4811-AD28-AD586F08695C}&status=uc`.

The configuration is organized into several sections:

- Pattern Definition:**
 - Route Pattern*: `8XX[4-7]XXXX`
 - Partition: `< None >`
 - Description: `Route_patt_for_ICT`
 - Numbering Plan*: `North American Numbering Plan`
 - Route Filter: `< None >`
 - Gateway/Route List*: `NS1_ICT_GK_list` (with an `(Edit)` link)
 - Route Option: Route this pattern Block this pattern
 - Provide Outside Dial Tone Urgent Priority
- Calling Party Transformations:**
 - Use Calling Party's External Phone Number Mask
 - Calling Party Transform Mask:
 - Prefix Digits (Outgoing Calls):
 - Calling Party Presentation: `Default`
- Called Party Transformations:**
 - Discard Digits: `PreDot`

NS1 IVR1 CTIPort

The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The browser address bar shows the URL: `http://ns1-pub/CCMAdmin/phoneconfig.asp?pkid={8C453D84-D073-428C-8C74-52068DB940E3}`. The page title is "Phone Configuration".

Phone Configuration

Directory Numbers

- Line 1 - 17000 (no Partition)
- Line 2 - Add new DN

Phone: IVR1_CTIPORT1
Registration: Registered with Cisco CallManager NS1-CM1
IP Address: 10.12.4.26
 Status: Ready

Buttons: Copy, Update, Delete, Reset Phone

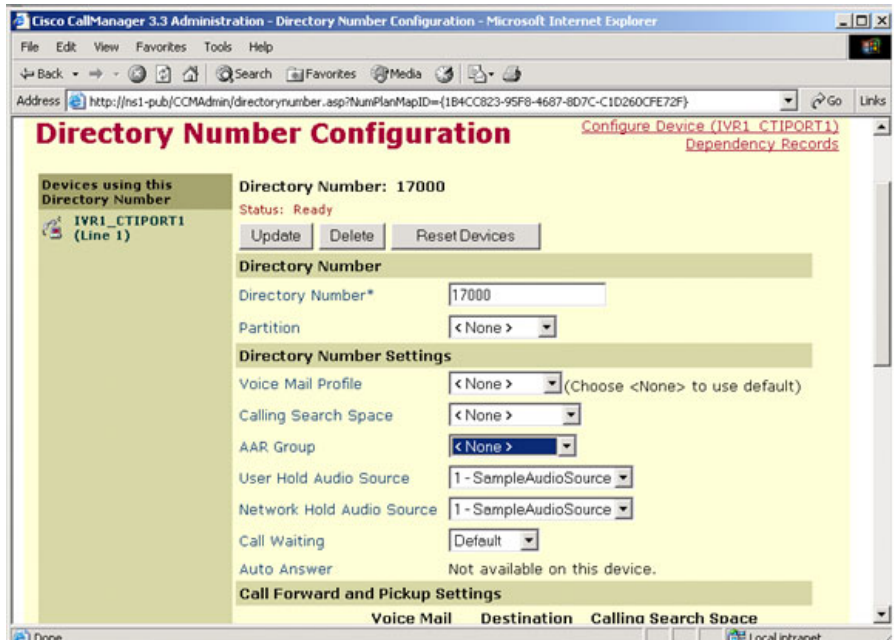
Phone Configuration (Model = CTI Port)

Device Information

Device Name*	IVR1_CTIPORT1
Description	
Device Pool*	NSITE1-15 (View details)
Calling Search Space	< None >
AAR Calling Search Space	< None >
Media Resource Group List	< None >
User Hold Audio Source	1 - SampleAudioSource
Network Hold Audio Source	1 - SampleAudioSource
Location	NSITE1

Additional links: [Add a new phone](#), [Dependency Records](#), [Back to Find/List Phones](#)

NS1 IVR1 LineInfo CTIPort



NS1 IVR1User CTIPort DeviceAssociation

The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The browser address bar shows the URL: `http://ns1-pub/CCMAdmin/userprefsconfig.asp?pageType=Config&userID=ns1-ivr1&action=GoToPhones`. The page title is "Device Association".

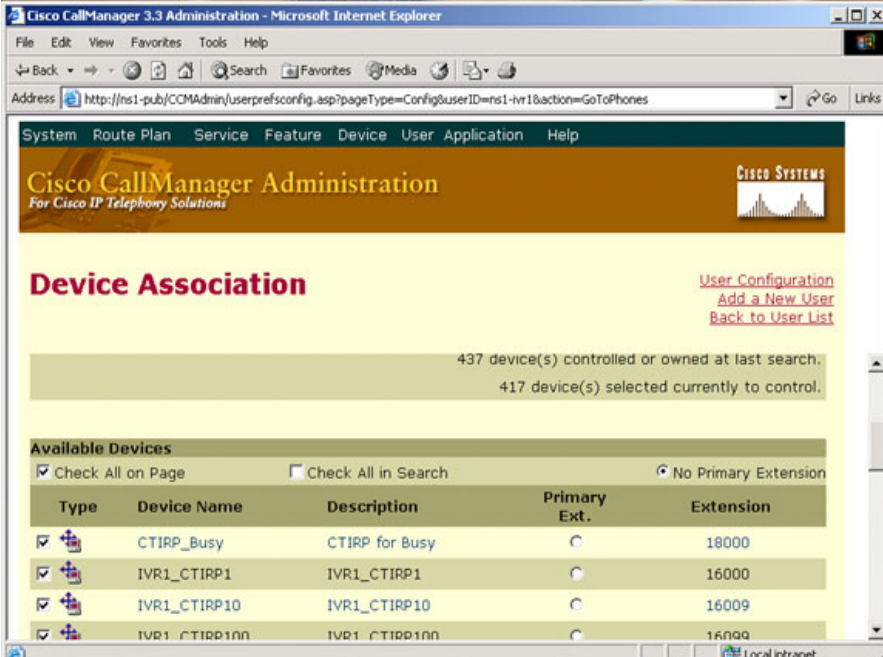
At the top, there is a navigation menu with the following items: System, Route Plan, Service, Feature, Device, User, Application, Help. A dropdown menu is open under "Device", showing options: Add a New Device, CTI Route Point, Gatekeeper, Gateway, Phone, Trunk, and Device Settings.

The main content area has a yellow background. On the left, it says "Device Association". On the right, there are links: [User Configuration](#), [Add a New User](#), and [Back to User List](#). Below these links, it states: "437 device(s) controlled or owned at last search." and "417 device(s) selected currently to control."

Under the heading "Available Devices", there are two checkboxes: Check All on Page and Check All in Search. To the right, there is a radio button for "No Primary Extension".

Type	Device Name	Description	Primary Ext.	Extension
<input checked="" type="checkbox"/>	IVR1_CTIPORT1		<input type="radio"/>	17000
<input checked="" type="checkbox"/>	IVR1_CTIPORT10		<input type="radio"/>	17009
<input checked="" type="checkbox"/>	IVR1_CTIPORT100		<input type="radio"/>	17099

NS1 IVR1User CTIRP DeviceAssociation



Cisco CallManager Administration - Microsoft Internet Explorer

Address: http://ns1-pub/CCMAdmin/userprefsconfig.asp?pageType=Config&userID=ns1-ivr1&action=GoToPhones

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

Device Association

[User Configuration](#)
[Add a New User](#)
[Back to User List](#)

437 device(s) controlled or owned at last search.
417 device(s) selected currently to control.

Available Devices

Check All on Page Check All in Search No Primary Extension

Type	Device Name	Description	Primary Ext.	Extension
<input checked="" type="checkbox"/>	CTIRP_Busy	CTIRP for Busy	<input type="radio"/>	18000
<input checked="" type="checkbox"/>	IVR1_CTIRP1	IVR1_CTIRP1	<input type="radio"/>	16000
<input checked="" type="checkbox"/>	IVR1_CTIRP10	IVR1_CTIRP10	<input type="radio"/>	16009
<input checked="" type="checkbox"/>	IVR1_CTIRP100	IVR1_CTIRP100	<input type="radio"/>	16009

NS1 IVRUser

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser title is "Cisco CallManager 3.3 Administration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns1-pub/CCMAdmin/userprefsconfig.asp?pageType=Config&userID=ns1-ivr1`. The page has a navigation menu with items: System, Route Plan, Service, Feature, Device, User, Application, Help. The main heading is "User Configuration" with a sub-heading "For Cisco IP Telephony Solutions". There are two links: "Add a New User" and "Back to User List".

On the left, under "Application Profiles of ns1-ivr1", there are four expandable sections: Device Association, Cisco IPMA, Extension Mobility, and SoftPhone. The main configuration area contains the following fields:

Last Name*	<input type="text" value="ns1-ivr1"/>
User ID	<input type="text" value="ns1-ivr1"/>
User Password*	<input type="button" value="Change..."/>
PIN *	<input type="button" value="Change..."/>
Telephone Number	<input type="text"/>
Manager User ID	<input type="text"/>
Department	<input type="text"/>
User Locale	<input type="text" value="English United States"/>
Enable CTI Application Use	<input checked="" type="checkbox"/>

NS1 MediaResourceGroup HFCFB

The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The page title is "Media Resource Group Configuration - Microsoft Internet Explorer". The address bar shows the URL: [http://ns1-pub/CCMAdmin/mediaresourcegroup.asp?pkid=\(EB4B780B-FEB0-424E-9E7C-6D605AC0E19A\)](http://ns1-pub/CCMAdmin/mediaresourcegroup.asp?pkid=(EB4B780B-FEB0-424E-9E7C-6D605AC0E19A)).

The main content area is titled "Media Resource Group: HW_CFB (used by 2857 devices)". Below the title, the status is "Ready". There are four buttons: "Copy", "Update", "Delete", and "Reset Devices".

The "Media Resource Group Information" section contains two text input fields: "Media Resource Group Name*" with the value "HW_CFB" and "Description" with the value "HW_CFB".

The "Devices for this Group" section has two list boxes. The "Available Media Resources" list box contains: CFB_NS1-CM1 (CFB), CFB_NS1-CM2 (CFB), CFB_NS1-CM3 (CFB), CFB_NS1-CM4 (CFB), and CFB_NS1-CM5 (CFB). Below this list are two small triangles (down and up). The "Selected Media Resources*" list box contains: CFB00027E39F732 (CFB), CFB00027E39F733 (CFB), CFB00027E39F734 (CFB), CFB00027E39F735 (CFB), and CFB00027E39F736 (CFB).

At the bottom, there is a checkbox labeled "Use Multicast for MOH Audio (requires at least one multicast MOH resource)" which is currently unchecked. Below the checkbox is a note: "* indicates required item".

NS1 MediaResourceGroup HFTRX

Cisco CallManager 3.3 Administration - Media Resource Group Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ns1-pub/CCMAdmin/mediaresourcegroup.asp?pkid={A32DA1A3-BBCB-4737-973F-C831089CA089}>

Copy Update Delete Reset Devices

Media Resource Group Information

Media Resource Group Name*

Description

Devices for this Group

Available Media Resources
Includes Conference Bridges (CFB),
Media Termination Points (MTP),
Music On Hold Servers (MOH),
and Transcoders (XCODE)

CFB_NS1-CM1 (CFB)
CFB_NS1-CM2 (CFB)
CFB_NS1-CM3 (CFB)
CFB_NS1-CM4 (CFB)
CFB_NS1-CM5 (CFB)

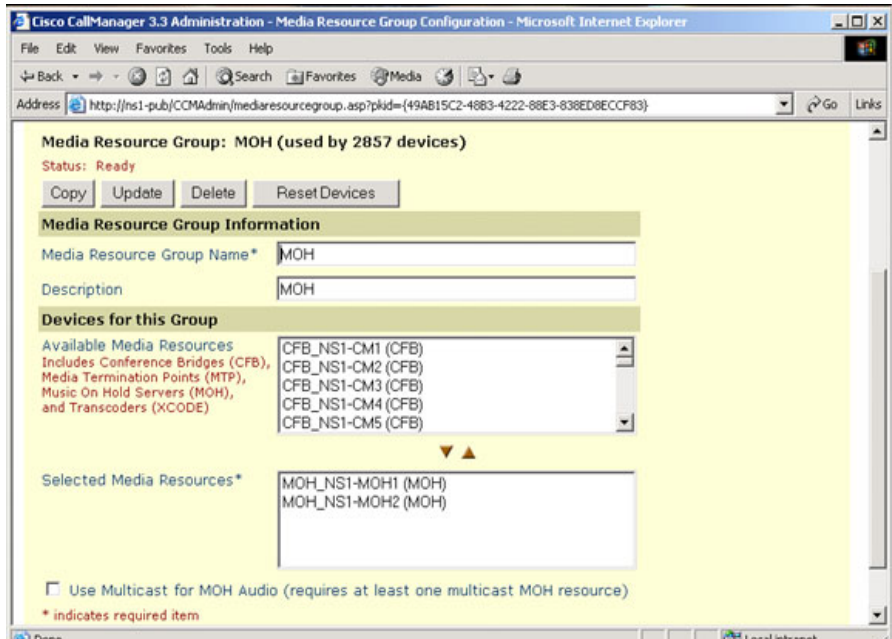
Selected Media Resources*

MTP00027E39F6FA (XCODE)
MTP00027E39F6FB (XCODE)
MTP00027E39F6FC (XCODE)
MTP00027E39F6FD (XCODE)
MTP00027E39F6FE (XCODE)

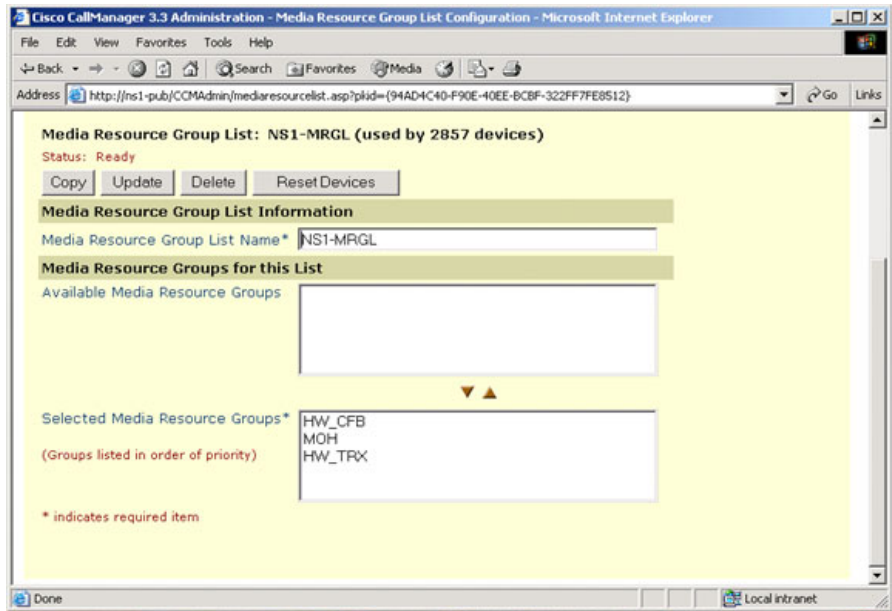
Use Multicast for MOH Audio (requires at least one multicast MOH resource)

* indicates required item

NS1 MediaResourceGroup MOH



NS1 MediaResourceGroupList



NS1 MOH Config

The screenshot displays the Cisco CallManager 3.3 Administration web interface for configuring a Music On Hold (MOH) server. The browser window title is "Cisco CallManager 3.3 Administration - Music On Hold (MOH) Server Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns1-pub/CCMAdmin/mohserver.asp?plid={6A81AFC2-57A9-470F-97F4-2B523D9DE1C4}`.

The configuration page shows the following details:

- Music On Hold Server:** MOH_NS1-MOH1 (MOH_NS1-MOH1)
- Registration:** Registered with Cisco CallManager NS1-CM2
- IP Address:** 10.12.4.18
- Status:** Ready

Below the status, there are four buttons: Copy, Update, Delete, and Reset.

The **Device Information** section contains the following fields:

Host Server	NS1-MOH1
Music On Hold Server Name*	MOH_NS1-MOH1
Description	MOH_NS1-MOH1
Device Pool*	Default
Location	< None >
Maximum Half Duplex Streams*	250
Maximum Multicast Connections*	30
Fixed Audio Source Device	
Run Flag*	Yes

The **Multicast Audio Source Information** section includes a checkbox labeled "Enable Multicast Audio Sources on this MOH Server", which is currently unchecked.

NS1 PG2User

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar displays the URL: `http://ns1-pub/CCMAdmin/userprefsconfig.asp?pageType=Config&userID=PG2user`. The page title is "Cisco CallManager Administration" with the subtitle "For Cisco IP Telephony Solutions". The navigation menu includes: System, Route Plan, Service, Feature, Device, User, Application, and Help. The main heading is "User Configuration". On the right side, there are two links: "Add a New User" and "Back to User List".

On the left side, under "Application Profiles of", there is a tree view with the following items:

- Device Association
- Cisco IPMA
- Extension Mobility
- SoftPhone

The main configuration area contains the following fields:

User ID	PG2user
User Password*	<input type="button" value="Change..."/>
PIN *	<input type="button" value="Change..."/>
Telephone Number	<input type="text"/>
Manager User ID	<input type="text"/>
Department	<input type="text"/>
User Locale	< None >
Enable CTI Application Use	<input checked="" type="checkbox"/>
Call Park Retrieval Allowed	<input type="checkbox"/>

The status bar at the bottom indicates "Local intranet".

NS1 PG2User AgentPhoneAssociation

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar displays the URL: `http://ns1-pub/CCMAdmin/Userprefconfig.asp?pageType=Config&userID=PG2user&action=GoToPhones`. The page title is "Cisco CallManager Administration" with the tagline "For Cisco IP Telephony Solutions". The navigation menu includes System, Route Plan, Service, Feature, Device, User, Application, and Help. The main content area is titled "Device Association" and contains a table of device associations for the PG2User. To the right of the table are links for "User Configuration", "Add a New User", and "Back to User List".

Device	SEP	Device Name	Extension
<input checked="" type="checkbox"/>	7940	SEP0008BEF86082	NS1-A2 (10002)
<input checked="" type="checkbox"/>	7940	SEP0008BEF86128	NS1-A5 (10005)
<input checked="" type="checkbox"/>	7940	SEP0008BEF8614C	NS1-B4 (10015)
<input checked="" type="checkbox"/>	7960	SEP0008BEF9E75E	NS3-A12 (30002)
<input checked="" type="checkbox"/>	7940	SEP0008FD04266E	NS2-A9 (20001)
<input checked="" type="checkbox"/>	7940	SEP0008FD04282E	NS1-A8 (10011)
<input checked="" type="checkbox"/>	7960	SEP0008FD5DF4C5	NS1-B1 (10009)
<input checked="" type="checkbox"/>	7960	SEP0008FDCD9988	NS1-B3 (10011)
<input checked="" type="checkbox"/>	7960	SEP0008FDCD9BAD	NS2-B10 (20004)

NS1 PSTN TranslationPattern Config

Pattern Definition

Translation Pattern	70530.6XXXX
Partition	< None >
Description	Incoming DMS Trunk28 (NS1)
Numbering Plan*	North American Numbering Plan
Route Filter	< None >
Calling Search Space	< None >
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern
<input type="checkbox"/> Provide Outside Dial Tone	<input checked="" type="checkbox"/> Urgent Priority

Calling Party Transformations

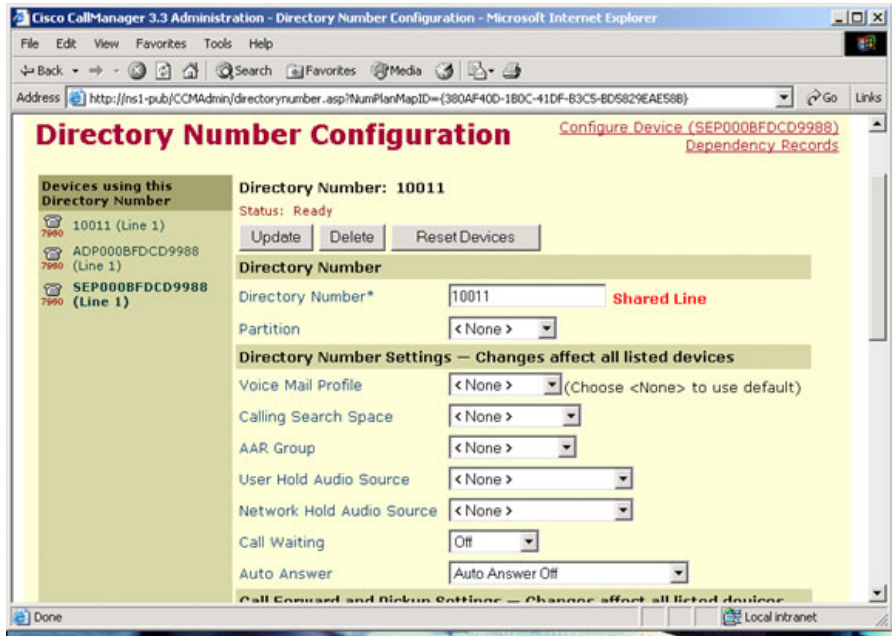
<input type="checkbox"/> Use Calling Party's External Phone Number Mask	
Calling Party Transform Mask	
Prefix Digits (Outgoing Calls)	
Calling Party Presentation	Default

Called Party Transformations

Discard Digits	PreDot
Called Party Transform Mask	1XXXX

Done Local intranet

NS1Agent Line



NS1Agent Phone

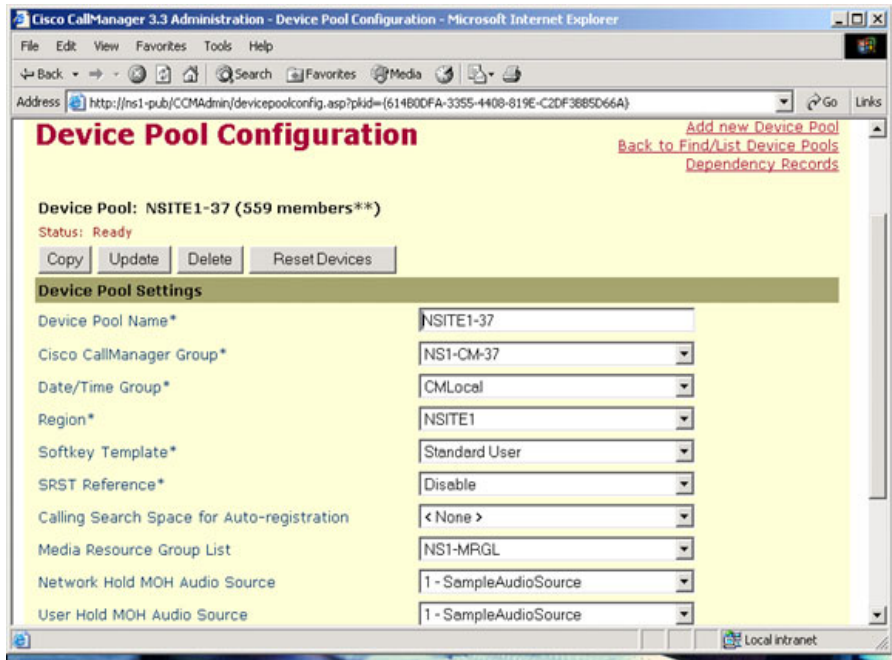
The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The browser address bar shows the URL: `http://ns1-pub/CCMAdmin/phoneconfig.asp?pkid=(D6856E2C-769B-4DE3-8D72-D3F490296F23)`. The page title is "Cisco CallManager 3.3 Administration - Phone Configuration - Microsoft Internet Explorer".

The main content area is divided into several sections:

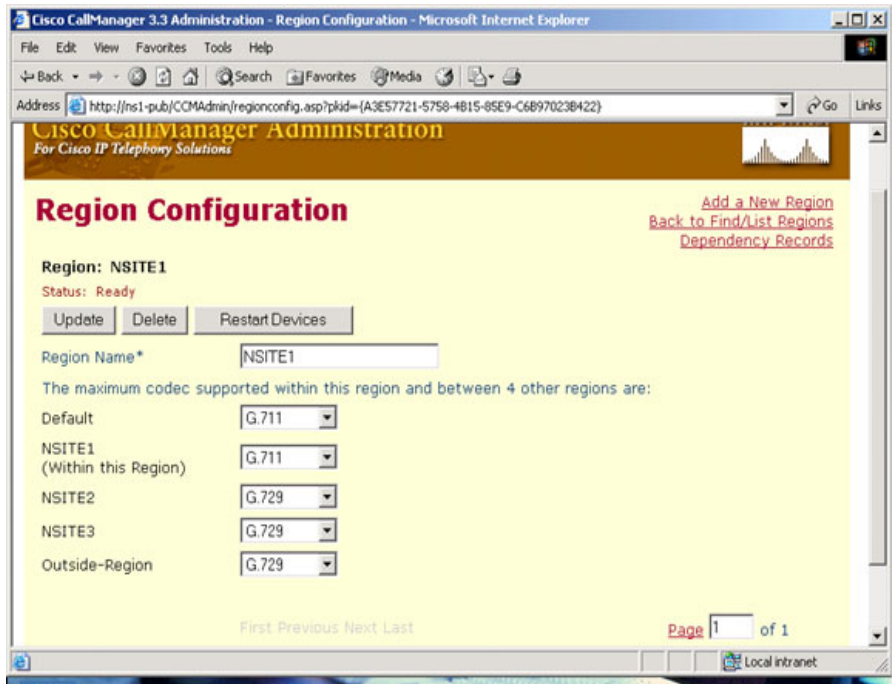
- Directory Numbers:**
 - Base Phone:**
 - Line 1 - 10011 (no Partition)
 - Line 2 - Add new DN
- Phone:** SEP000BFDCD9988 (NS1-B3 (10011))
- Registration:** Registered with Cisco CallManager NS1-CM3
- IP Address:** 10.12.3.69
- Status:** Ready
- Buttons: Copy, Update, Delete, Reset Phone
- Phone Configuration (Model = Cisco 7960)**
- Device Information:**
 - MAC Address*: 000BFDCD9988
 - Description: NS1-B3 (10011)
 - Device Pool*: NSITE1-37 (View details)
 - Calling Search Space: < None >
 - AAR Calling Search Space: < None >
 - Media Resource Group List: NS1-MRGL
 - User Hold Audio Source: < None >
 - Network Hold Audio Source: < None >
 - Location: NSITE1

At the top right of the page, there are links for [Dependency Records](#) and [Back to Find/List Phones](#). The browser status bar at the bottom shows "Done" and "Local intranet".

NS1AgentPhone DevicePool



NS1Location Site1



NS7 HFCFB Config

Conference Bridge Configuration

[Add a New Conference Bridge](#)
[Meet-Me Number/Pattern Configuration](#)
[Cisco CallManager Service Parameters](#)
[Back to Find/List Conference Bridges](#)
[Dependency Records](#)

Conference Bridge: CFB00027E39F71D (CFB00027E39F71D)
Registration: Registered with Cisco CallManager NS7-CM1
IP Address: [10.12.16.34](#)

Status: Ready

Conference Bridge Type: Cisco Conference Bridge Hardware

MAC Address*:

Description:

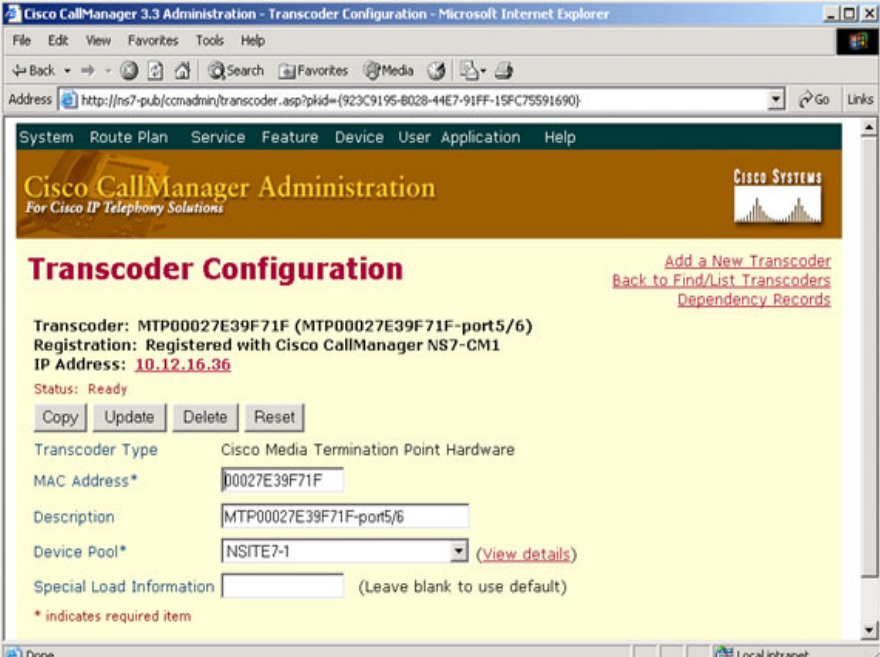
Device Pool*:

Location:

Special Load Information: (Leave blank to use default)

* indicates required item

NS7 HFTRX Config



The screenshot shows the Cisco CallManager Administration interface in a Microsoft Internet Explorer browser window. The browser's address bar displays the URL: `http://ns7-pub/ccadmin/transcoder.asp?pkid={923C9195-8028-44E7-91FF-15FC75591690}`. The page title is "Cisco CallManager Administration - Transcoder Configuration".

The main content area has a navigation menu with the following items: System, Route Plan, Service, Feature, Device, User, Application, and Help. Below the menu is a header banner for "Cisco CallManager Administration For Cisco IP Telephony Solutions" with the Cisco Systems logo.

Transcoder Configuration

[Add a New Transcoder](#)
[Back to Find/List Transcoders](#)
[Dependency Records](#)

Transcoder: MTP00027E39F71F (MTP00027E39F71F-port5/6)
Registration: Registered with Cisco CallManager NS7-CM1
IP Address: [10.12.16.36](#)

Status: Ready

Transcoder Type: Cisco Media Termination Point Hardware

MAC Address*:

Description:

Device Pool*: [\(View details\)](#)

Special Load Information: (Leave blank to use default)

* indicates required item

NS7 MediaResourceGroup CFB

The screenshot displays the Cisco CallManager 3.3 Administration interface for configuring a Media Resource Group. The browser window title is "Cisco CallManager 3.3 Administration - Media Resource Group Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns7-pub/ccmadmin/mediaresourcegroup.asp?pkid={0EF28294-DF77-41FA-AC48-AE75B8393A05}&status=uc`.

The main heading is "Media Resource Group Configuration". In the top right corner, there are links: [Add a New Media Resource Group](#), [Back to Find/List Media Resource Groups](#), and [Dependency Records](#).

The configuration details for the "Media Resource Group: Conference-GRP (used by 542 devices)" are as follows:

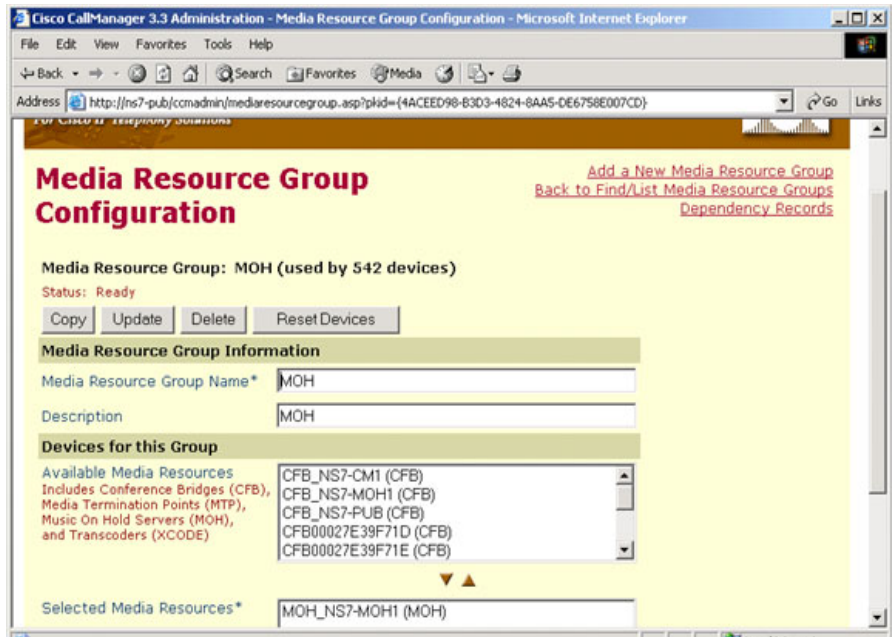
- Status: Update completed
- Buttons: Copy, Update, Delete, Reset Devices
- Media Resource Group Information**
 - Media Resource Group Name*: Conference-GRP
 - Description: Conference-GRP
- Devices for this Group**
 - Available Media Resources (Includes Conference Bridges (CFB), Media Termination Points (MTP), Music On Hold Servers (MOH), and Transcoders (XCODE)):

CFB_NS7-CM1 (CFB)
CFB_NS7-MOH1 (CFB)
CFB_NS7-PUB (CFB)
MOH_NS7-MOH1 (MOH)
MTP_NS7-CM1 (MTP)
 - Selected Media Resources*:

CFB00027E39F71D (CFB)
CFB00027E39F71E (CFB)
CFB00027E39F720 (CFB)

The bottom right corner of the browser window shows "Local intranet".

NS7 MediaResourceGroup MOH



NS7 MediaResourceGroup TRX

The screenshot shows the Cisco CallManager 3.3 Administration interface for Media Resource Group Configuration. The browser window title is "Cisco CallManager 3.3 Administration - Media Resource Group Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns7-pub/ccadmin/mediaresourcegroup.asp?pkid={1FFF9EFB-A383-4122-AD7F-19E574489659}`.

Media Resource Group Configuration

[Add a New Media Resource Group](#)
[Back to Find/List Media Resource Groups](#)
[Dependency Records](#)

Media Resource Group: Transcoder-GRP (used by 542 devices)
Status: Ready

Copy Update Delete Reset Devices

Media Resource Group Information

Media Resource Group Name* Transcoder-GRP
Description Transcoder-GRP

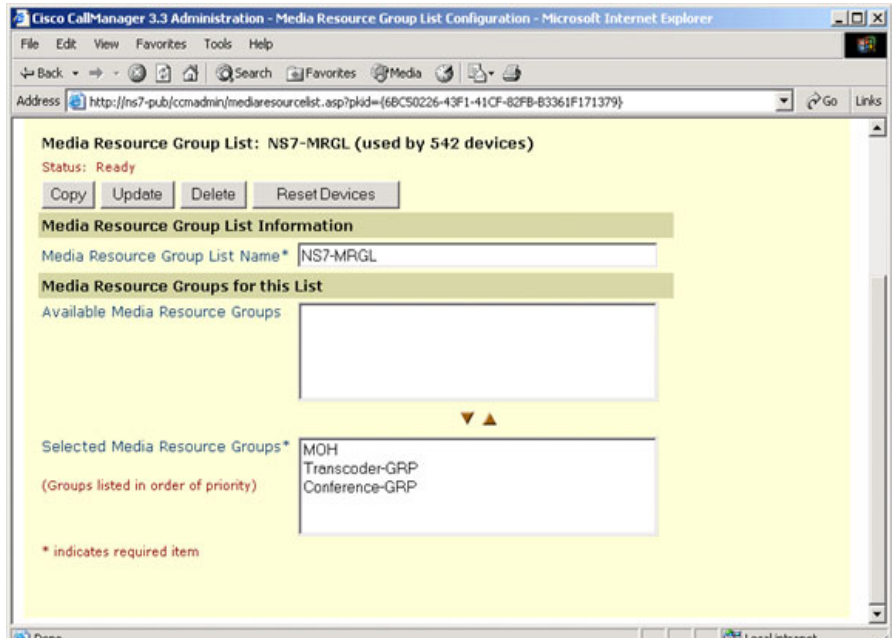
Devices for this Group

Available Media Resources
Includes Conference Bridges (CFB),
Media Termination Points (MTP),
Music On Hold Servers (MOH),
and Transcoders (XCODE)

CFB_NS7-CM1 (CFB)
CFB_NS7-MOH1 (CFB)
CFB_NS7-PUB (CFB)
CFB00027E39F71D (CFB)
CFB00027E39F71E (CFB)

Selected Media Resources* MTP00027E39F71F (XCODE)

NS7 MediaResourceGroupList



NS7 PG1User

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar displays the URL: `http://ns7-pub/ccmadmin/userprefsconfig.asp?pageType=Config&userID=PG1user`. The page title is "Cisco CallManager Administration" with the tagline "For Cisco IP Telephony Solutions" and the Cisco Systems logo. The navigation menu includes: System, Route Plan, Service, Feature, Device, User, Application, and Help. The main heading is "User Configuration" with links for "Add a New User" and "Back to User List".

On the left, under "Application Profiles of PG1user", there are links for: Device Association, Cisco IPMA, Extension Mobility, and SoftPhone.

The configuration fields for the user "PG1user" are as follows:

User ID	PG1user
User Password*	<input type="button" value="Change..."/>
PIN *	<input type="button" value="Change..."/>
Telephone Number	<input type="text"/>
Manager User ID	<input type="text"/>
Department	<input type="text"/>
User Locale	English United States
Enable CTI Application Use	<input checked="" type="checkbox"/>

NS7 PG1User AgentPhoneAssociation

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar displays the URL: `http://ns7-pub/ccmadmin/userpref/config.asp?pageType=Config&userID=PG1user&action=GoToPhones`. The page title is "Cisco CallManager Administration" with the subtitle "For Cisco IP Telephony Solutions". The navigation menu includes: System, Route Plan, Service, Feature, Device, User, Application, Help.

The main content area is titled "Device Association" and includes the following links: [User Configuration](#), [Add a New User](#), and [Back to User List](#).

Below the links is a section titled "Available Devices" with the following options: Check All on Page, Check All in Search, and No Primary Extension.

Type	Device Name	Description	Primary Ext.	Extension
<input checked="" type="checkbox"/> 7940	SEP000BBE837F1D	Auto 70003	<input type="radio"/>	70003
<input checked="" type="checkbox"/> 7940	SEP000BBEE3925E	Auto 70001	<input type="radio"/>	70001
<input checked="" type="checkbox"/> 7940	SEP000BBEE3997A	Auto 70000	<input type="radio"/>	70000
<input checked="" type="checkbox"/> 7940	SEP000BBEF85D35	Auto 70004	<input type="radio"/>	70004

The status bar at the bottom of the browser shows the JavaScript code: `javascript:toggleMenuState(4);` and the local intranet address.

NS7Agent Line

The screenshot displays the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser's address bar shows the URL: `http://ns7-pub/ccadmin/directorynumber.asp?NumPlanMapID={E999C674-B1AD-4533-8461-AE875C2EA2CA}`. The page title is "Cisco CallManager Administration - Directory Number Configuration".

The main content area is titled "Directory Number Configuration" and includes a "Configure Device (SEP000BBEB37F1D) Dependency Records" link. On the left, a sidebar lists "Devices using this Directory Number" with one entry: "SEP000BBEB37F1D (Line 1)".

The configuration details for the directory number are as follows:

- Directory Number:** 70003
- Status:** Ready
- Buttons:** Update, Delete, Reset Devices
- Directory Number Section:**
 - Directory Number*: 70003
 - Partition: <None>
- Directory Number Settings Section:**
 - Voice Mail Profile: <None> (Choose <None> to use default)
 - Calling Search Space: <None>
 - AAR Group: <None>
 - Hold Audio Source: <None>

NS7Agent Phone

The screenshot displays the Cisco CallManager 3.3 Administration interface for a phone configuration. The browser window title is "Cisco CallManager 3.3 Administration - Phone Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns7-pub/ccadmin/phoneconfig.asp?pkid=(A1B4F54E-824F-48C2-A979-4BA57E595635)`.

Phone Configuration

[Add a new phone](#)
[Add/Update Speed Dials](#)
[Subscribe/Unsubscribe Services](#)
[Dependency Records](#)
[Back to Find/List Phones](#)

Directory Numbers

Line 1 - 70003 (no Partition)

Phone: SEP000BBEB37F1D (Auto 70003)
Registration: Registered with Cisco CallManager NS7-CM1
IP Address: 10.12.11.20

Status: Ready

Copy Update Delete ResetPhone

Phone Configuration (Model = Cisco 7940)

Device Information

MAC Address*	000BBEB37F1D
Description	Auto 70003
Device Pool*	NSITE7-1 (View details)
Calling Search Space	< None >
AAR Calling Search Space	< None >
Media Resource Group List	NS7-MRGL

NS7AgentPhone DevicePool

Cisco CallManager 3.3 Administration - Device Pool Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Address http://ns7-pub/ccadmin/devicepoolconfig.asp?pkid={CDE66E9A-4CBC-4405-97CB-54F224D6C31D}

Status: Ready

Copy Update Delete Reset Devices

Device Pool Settings

Device Pool Name*	NSITE7-1
Cisco CallManager Group*	NS7-CM-1PUB
Date/Time Group*	CMLocal
Region*	NSITE7
Softkey Template*	Standard User
SRST Reference*	Disable
Calling Search Space for Auto-registration	< None >
Media Resource Group List	NS7-MRGL
Network Hold MOH Audio Source	1 - SampleAudioSource
User Hold MOH Audio Source	1 - SampleAudioSource
Network Locale	United States
User Locale	English United States

* indicates required item

** number of devices that have to be reset when this device pool gets updated. To see a detailed list of these devices, see...

NS7-GK1

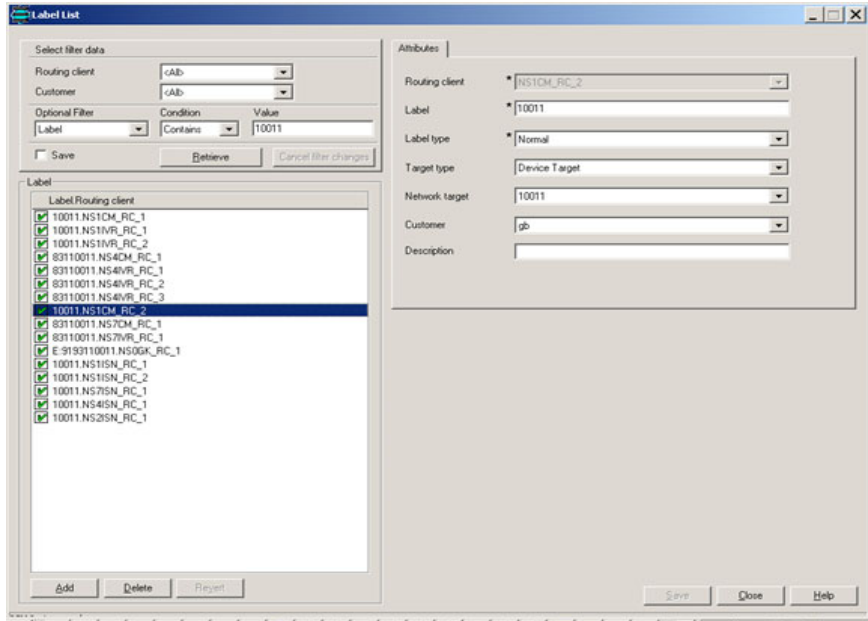
The screenshot shows the Cisco CallManager Administration web interface for Gatekeeper Configuration. The browser window title is "Cisco CallManager 3.3 Administration - Gatekeeper Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns7-pub/ccadmin/gatekeeperconfig.asp?pkid=(571E2CF3-56A1-40DD-A70E-23A930959A5E)`. The page header includes navigation tabs: System, Route Plan, Service, Feature, Device, User, Application, Help. The main content area has a brown header with "Cisco CallManager Administration For Cisco IP Telephony Solutions" and the Cisco Systems logo. The title "Gatekeeper Configuration" is displayed in large red font. To the right, there are links: "Add a New Gatekeeper", "Back to Find/List Gatekeepers", and "Dependency Records". The configuration details for Gatekeeper 10.12.4.138 are shown, with a status of "Ready". Below the status are buttons for "Update", "Delete", and "Reset Gatekeeper". A section titled "Gatekeeper Information" contains the following fields:

Host Name/IP Address*	10.12.4.138
Description	NS7-GK1
Registration Request Time To Live	60
Registration Retry Timeout	300
Enable Device	<input checked="" type="checkbox"/>

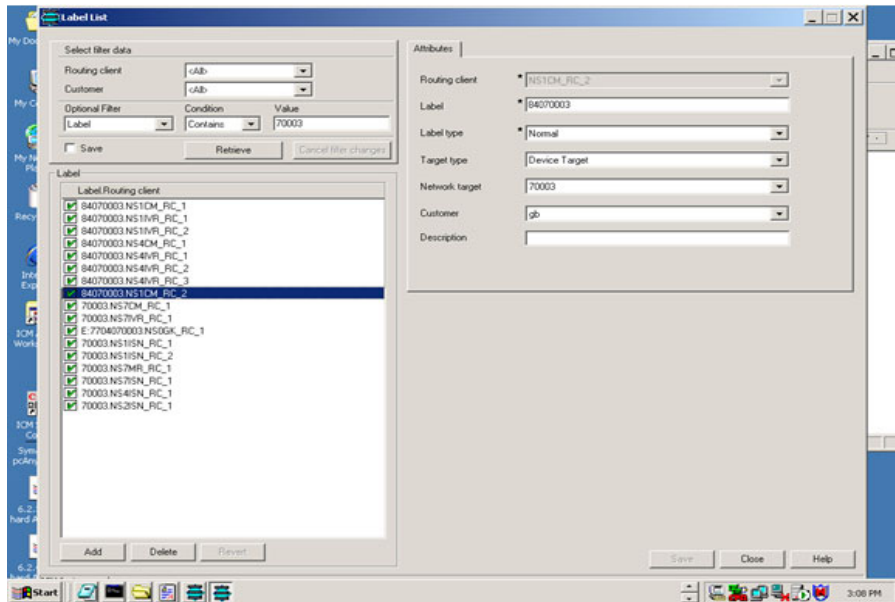
* indicates required item

Cisco ICM Software Configuration

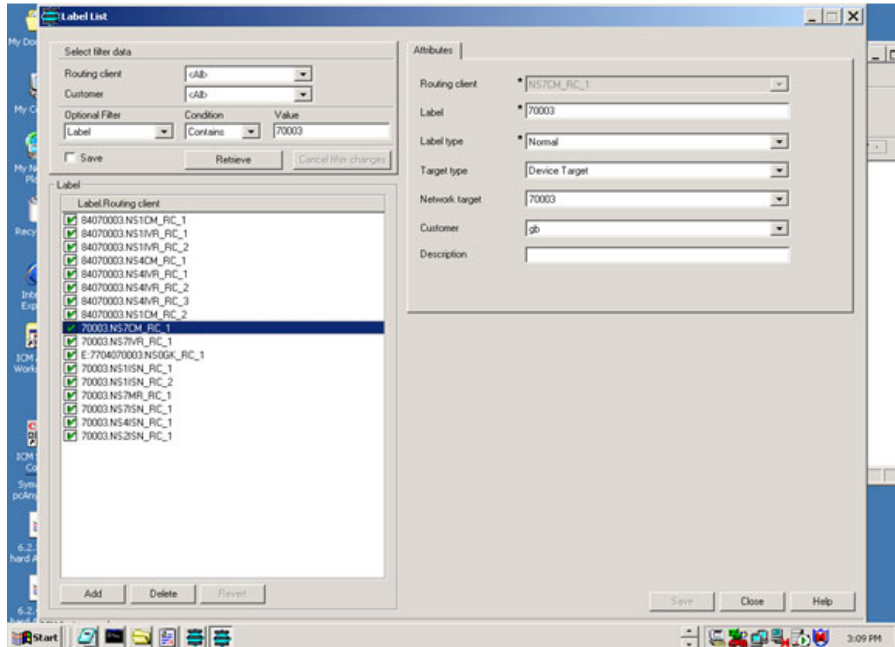
Label 10011 NS1CM RC 2



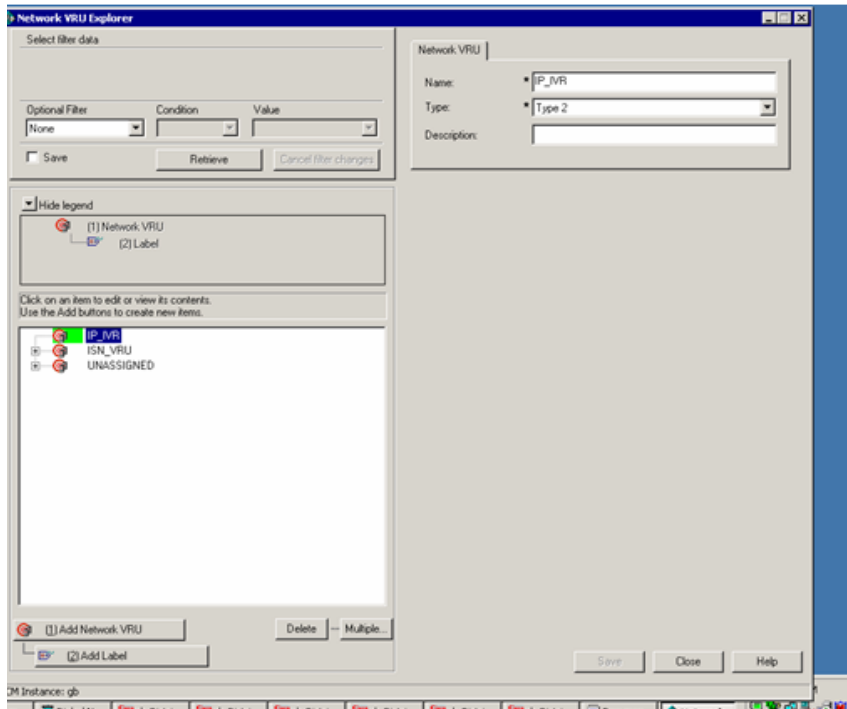
Label 70003 NS1CM RC 2



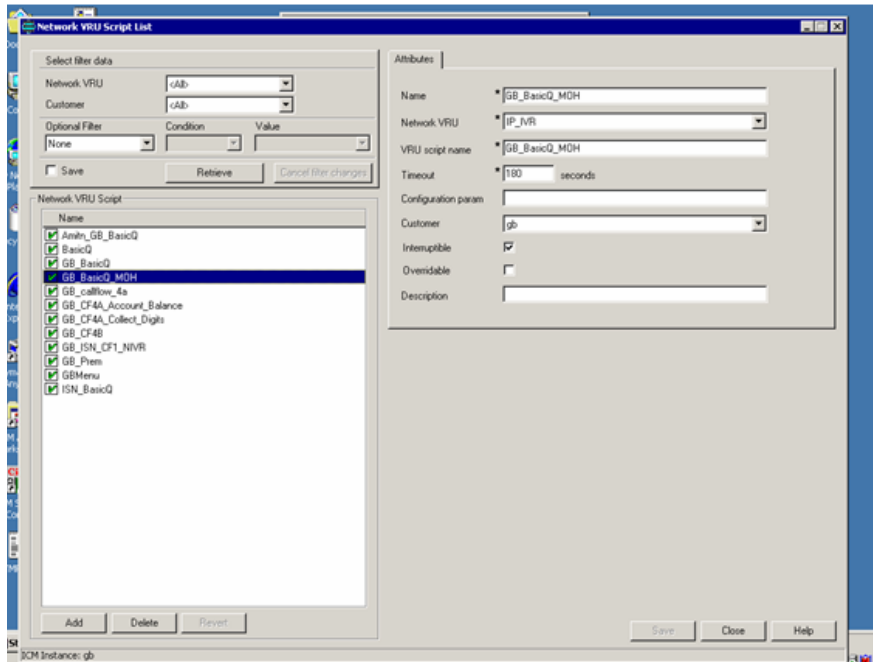
Label 70003 NS7CM RC 1



NetworkVRU



NetworkVRUScriptList



NS1 AgentDeskSettings

The screenshot displays the 'Agent Desk Settings List' window. The left pane shows a table with one entry, 'NS1_CF3B', selected. The right pane shows the configuration for this entry.

Optional Filter	Condition	Value
Name	Contains	NS1_CF3B

Agent Desk Settings:

Name
NS1_CF3B

Attributes:

- Name: NS1_CF3B
- Ring no answer time: 12 seconds (1 - 120)
- Ring no answer dialed number: NS1_CF3B_RDNA_DN
- Logout non-activity time: 7200 seconds (10 - 7200)
- Work mode on incoming: Required
- Work mode on outgoing: Required
- Wrap up time: 30 seconds (0 - 7200)
- Assist call method: Consult
- Emergency alert method: Consult
- Description:

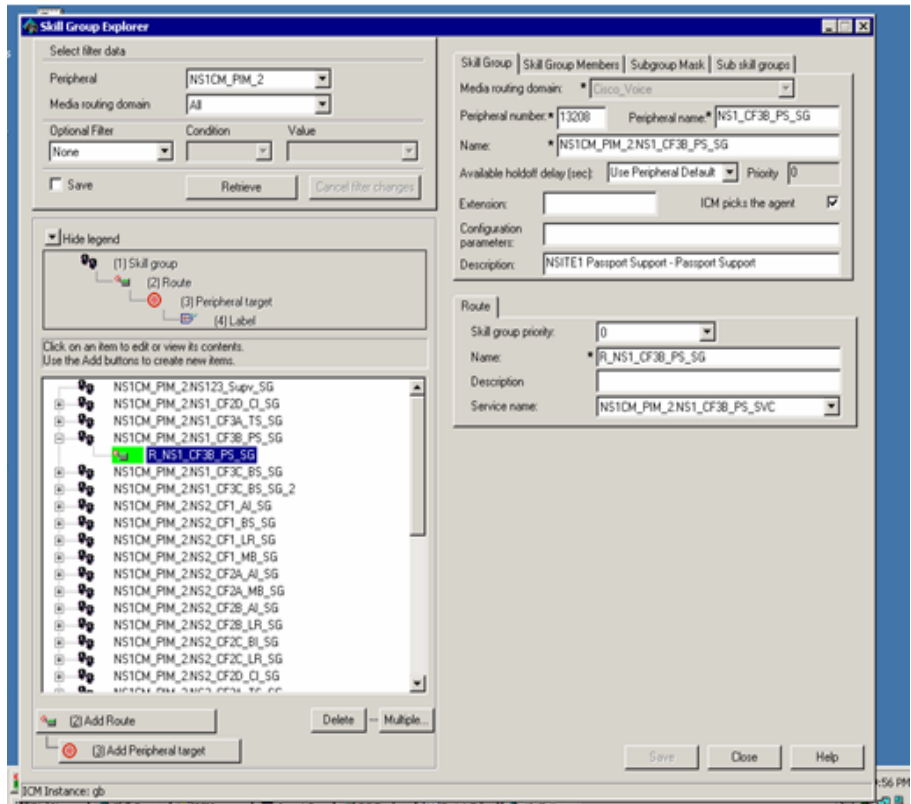
Miscellaneous:

- Auto answer
- Idle reason required
- Logout reason required
- Auto record on emergency

Outbound Access:

- International
- National
- Local private network
- Operator assisted
- PEX

NS1 CF3B PS SG SkillGroup

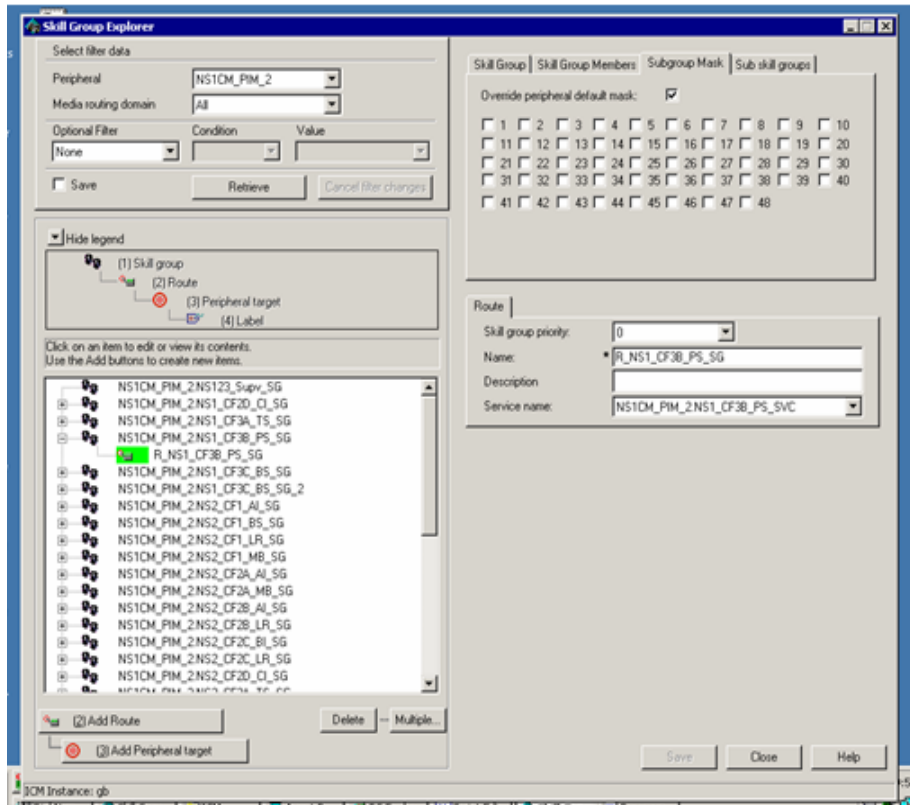


NS1 CF3B PS SG SkillGroupMembers

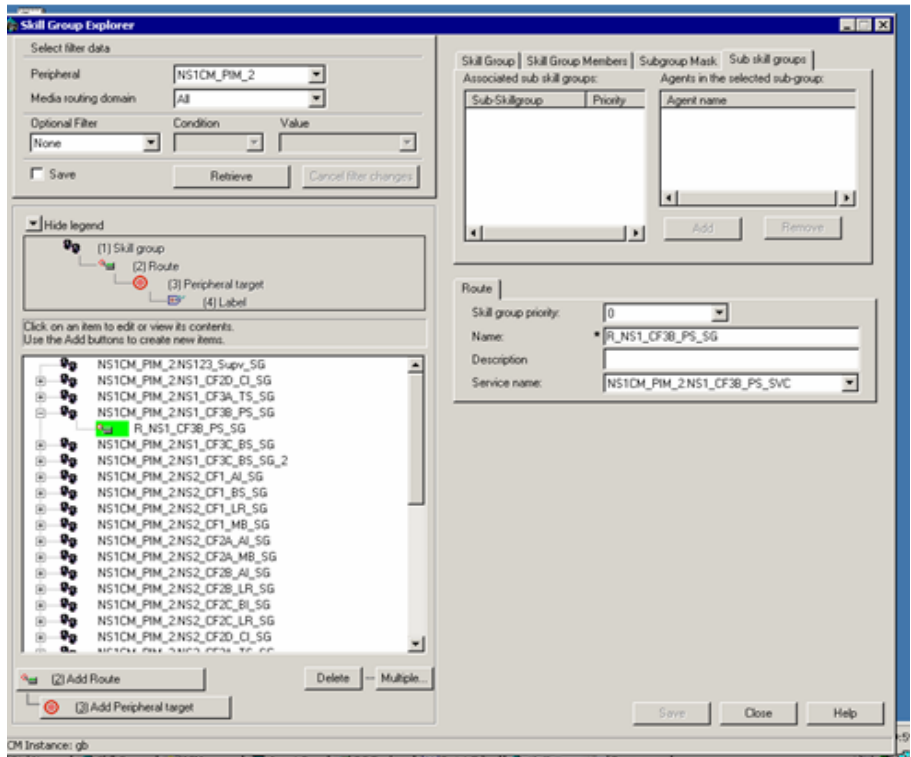
The screenshot displays the **Skill Group Explorer** window. The top section, **Select filter data**, includes fields for **Peripheral** (NS1CM_PIM_2), **Media routing domain** (All), and an **Optional Filter** section with **Condition** and **Value** dropdowns. Below this is a **Hide legend** section with a tree diagram showing the hierarchy: (1) Skill group, (2) Route, (3) Peripheral target, and (4) Label. A list of skill groups is shown below, with **R_NS1_CF3B_PS_SG** highlighted in green. At the bottom of this list are buttons for **Add Route**, **Add Peripheral target**, **Delete**, and **Multiple**.

The right-hand pane is divided into two sections. The top section, **Current skill group members**, has a list of agent names: NS1CM_PIM_2Agent_11295, NS1CM_PIM_2Agent_11296, NS1CM_PIM_2Agent_11297, NS1CM_PIM_2Agent_11298, and NS1CM_PIM_2Agent_11299. Below the list are **Add** and **Remove** buttons. The bottom section, **Route**, shows configuration for the selected route: **Skill group priority** is 0, **Name** is R_NS1_CF3B_PS_SG, **Description** is empty, and **Service name** is NS1CM_PIM_2NS1_CF3B_PS_SVC. At the bottom right are **Save**, **Close**, and **Help** buttons.

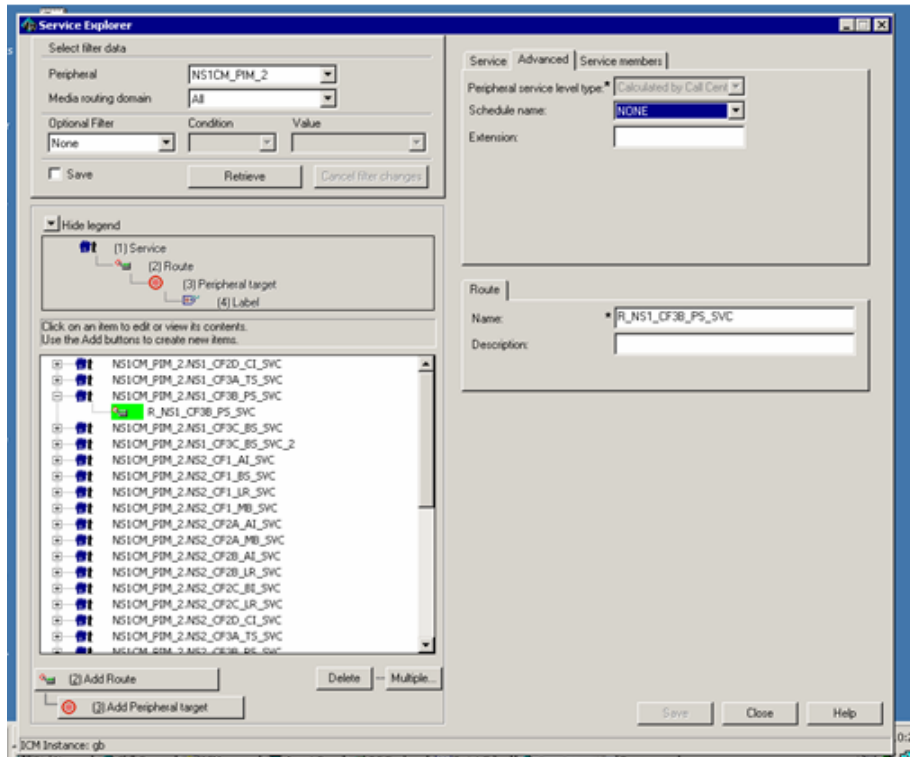
NS1 CF3B PS SG SubgroupMask



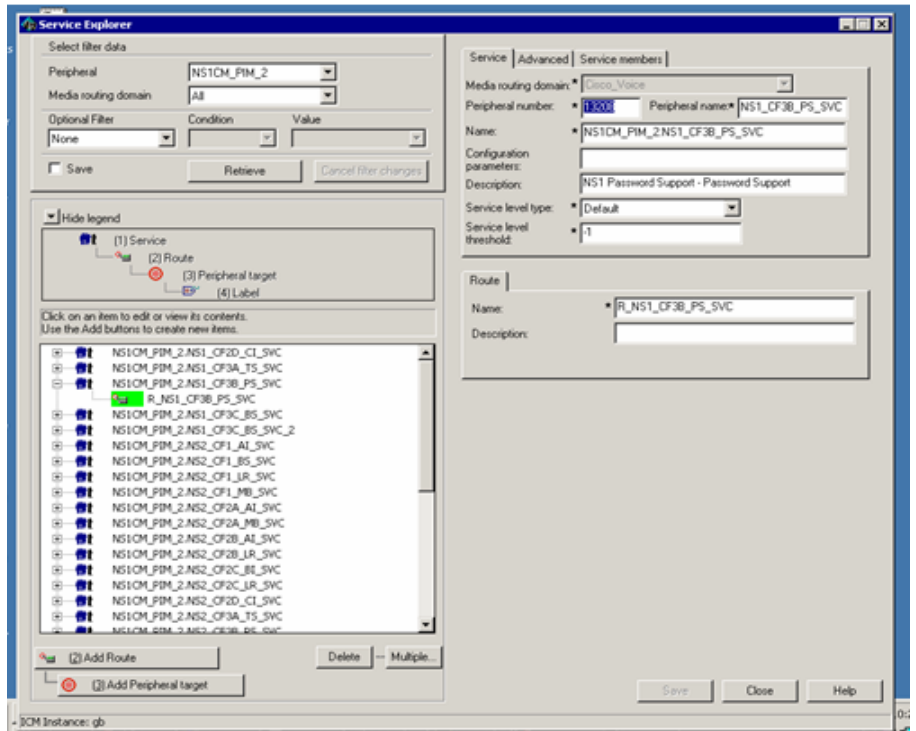
NS1 CF3B PS SG SubSkillGroups



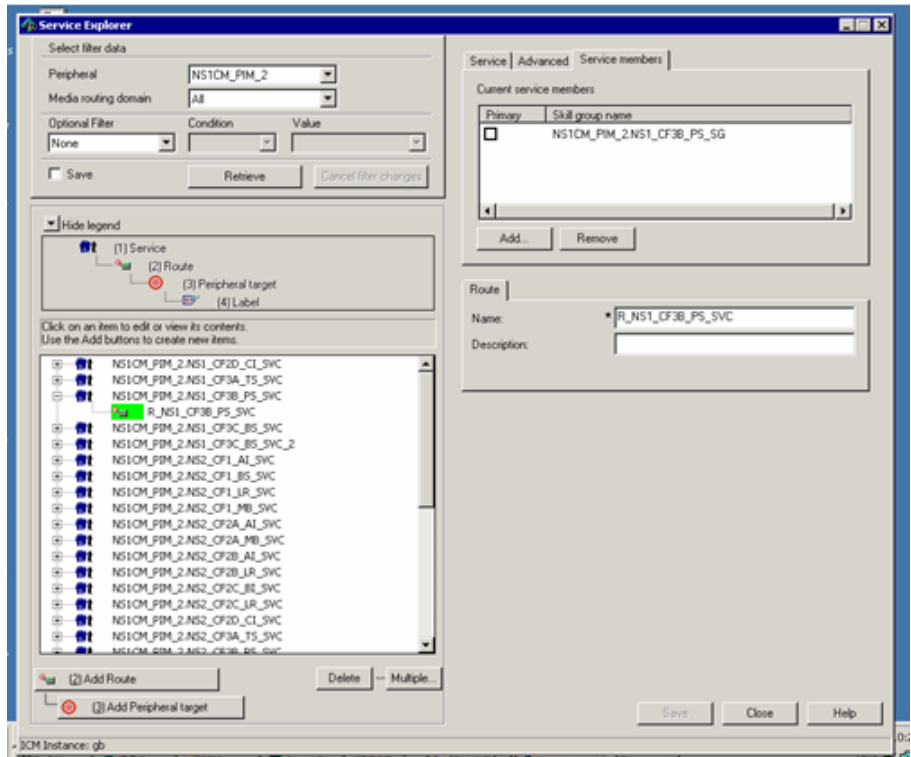
NS1 CF3B PS SVC Advanced



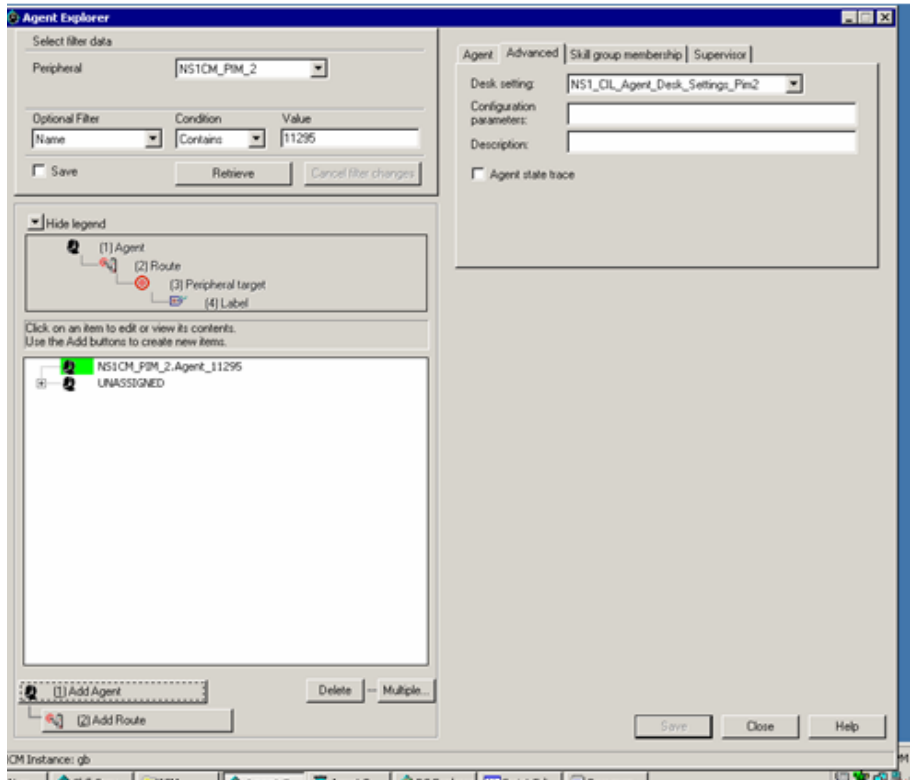
NS1 CF3B PS SVC Service



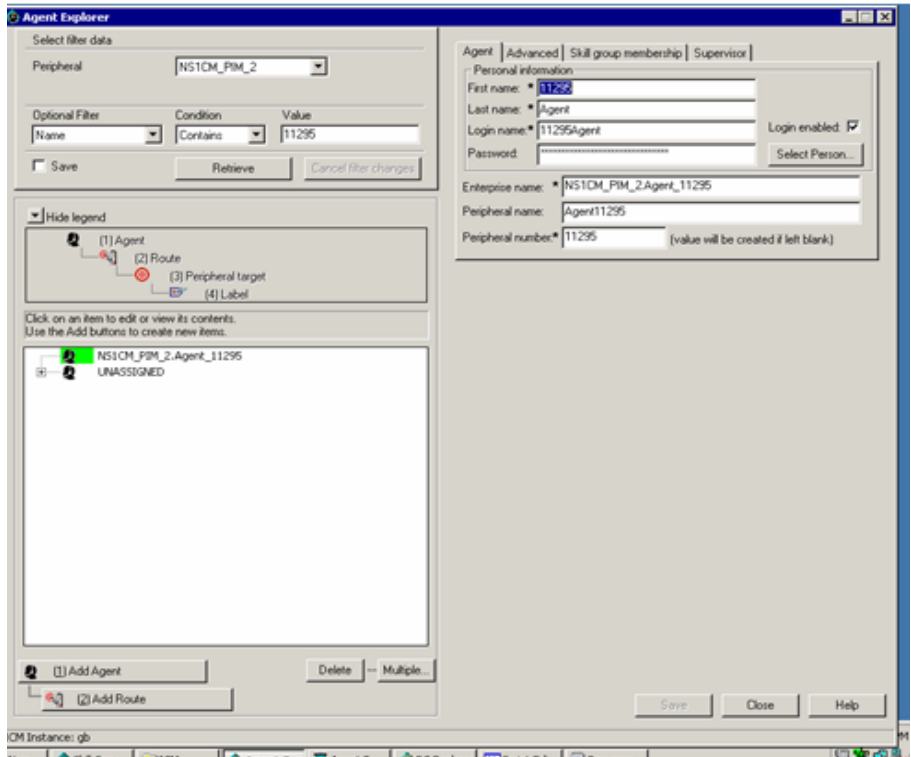
NS1 CF3B PS SVC ServiceMembers



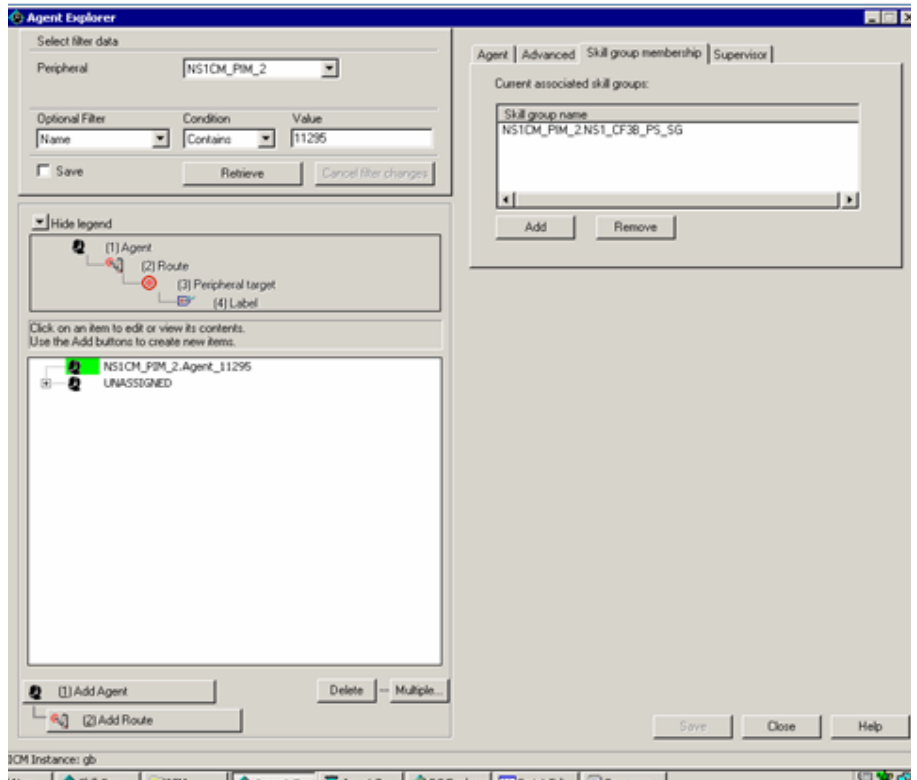
NS1Agent Advanced



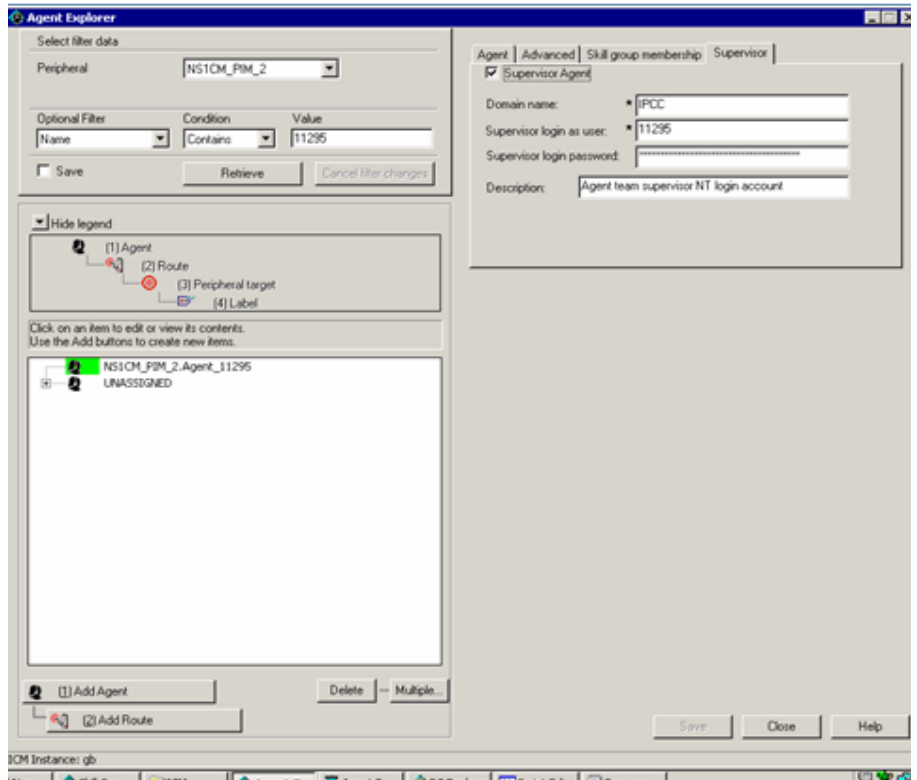
NS1Agent Agent



NS1Agent SkillGroupMembership



NS1Agent Supervisor



NS1CallType Attributes

The screenshot shows the 'Call Type List' window in Cisco CallManager. The 'Attributes' tab is selected, showing the configuration for the call type 'NS1_CF3B_Password_Support'. The 'Customer' is set to 'gb'. The 'Service level' section includes a 'Service level threshold' of 20 and a 'Service level type' of 'Ignore Abandoned Calls'. There are checkboxes for 'Override System Information Default' next to both the threshold and the service level type. The 'Description' field is empty. The 'Call Type' list on the left shows various call types, with 'NS1_CF3B_Password_Support' selected. The 'DM Instance: gb' is noted at the bottom left.

Call Type List

Select filter data

Customer: gb

Optional Filter: None Condition: Value

Save Retrieve Cancel filter changes

Call Type

Name	Selected
NS1_CF2B_Brokerage_Account	<input checked="" type="checkbox"/>
NS1_CF2B_RDNA	<input checked="" type="checkbox"/>
NS1_CF2C_Broker_HelpLine	<input checked="" type="checkbox"/>
NS1_CF2D_Inbound_Collections	<input checked="" type="checkbox"/>
NS1_CF3A_Tech_Support	<input checked="" type="checkbox"/>
NS1_CF3B_Password_Support	<input checked="" type="checkbox"/>
NS1_CF3C_Billing_Support	<input checked="" type="checkbox"/>
NS1_PSTN_PreRouted	<input checked="" type="checkbox"/>
NS1_Transfer_1	<input checked="" type="checkbox"/>
NS1_Transfer_2	<input checked="" type="checkbox"/>
NS2_CF1_ISN_EIVR	<input checked="" type="checkbox"/>
NS2_CF2A_Member_Banking	<input checked="" type="checkbox"/>
NS2_CF2B_Brokerage_Account	<input checked="" type="checkbox"/>
NS2_CF2B_RDNA	<input checked="" type="checkbox"/>
NS2_CF2C_Broker_HelpLine	<input checked="" type="checkbox"/>
NS2_CF3A_Tech_Support	<input checked="" type="checkbox"/>
NS2_CF3B_Password_Support	<input checked="" type="checkbox"/>
NS2_CF3C_Billing_Support	<input checked="" type="checkbox"/>
NS2_PSTN_PreRouted	<input checked="" type="checkbox"/>
NS3_CF2A_Member_Banking	<input checked="" type="checkbox"/>
NS3_CF2B_Brokerage_Account	<input checked="" type="checkbox"/>
NS3_CF2B_RDNA	<input checked="" type="checkbox"/>
NS3_CF2C_Broker_HelpLine	<input checked="" type="checkbox"/>
NS3_CF2D_Inbound_Collections	<input checked="" type="checkbox"/>
NS3_CF3A_Tech_Support	<input checked="" type="checkbox"/>
NS3_CF3B_Password_Support	<input checked="" type="checkbox"/>
NS3_CF3C_Billing_Support	<input checked="" type="checkbox"/>

Add Delete Revert

Attributes

Name: NS1_CF3B_Password_Support

Customer: gb

Service level

Service level threshold: 20 Override System Information Default

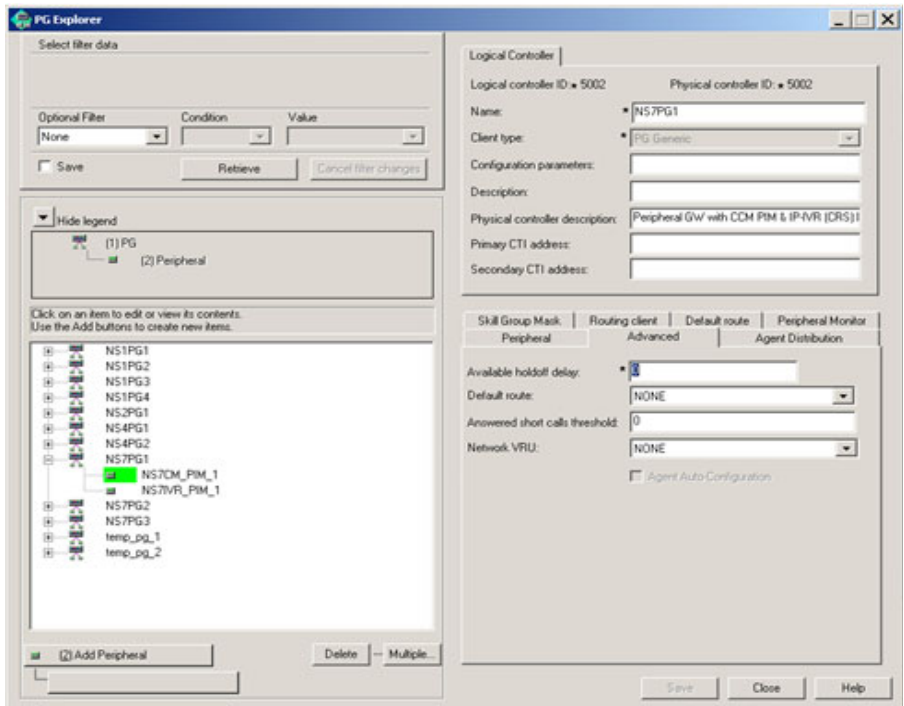
Service level type: Ignore Abandoned Calls Override System Information Default

Description:

Save Close Help

DM Instance: gb

NS1CM PIM 2 Advanced



NS1CM PIM 2 AgentDistribution

The screenshot shows the PG Explorer application window. The main configuration area is titled "Logical Controller" and displays the following information:

- Logical controller ID: 5002
- Physical controller ID: 5002
- Name: NS7PG1
- Client type: PG Generic
- Configuration parameters: (empty field)
- Description: (empty field)
- Physical controller description: Peripheral GW with CCM PIM & IP-IVR (CRS)1
- Primary CTI address: (empty field)
- Secondary CTI address: (empty field)

Below the configuration area, there are tabs for "Skill Group Mask", "Routing client", "Default route", and "Peripheral Monitor". The "Peripheral Monitor" tab is active, showing sub-tabs for "Peripheral", "Advanced", and "Agent Distribution".

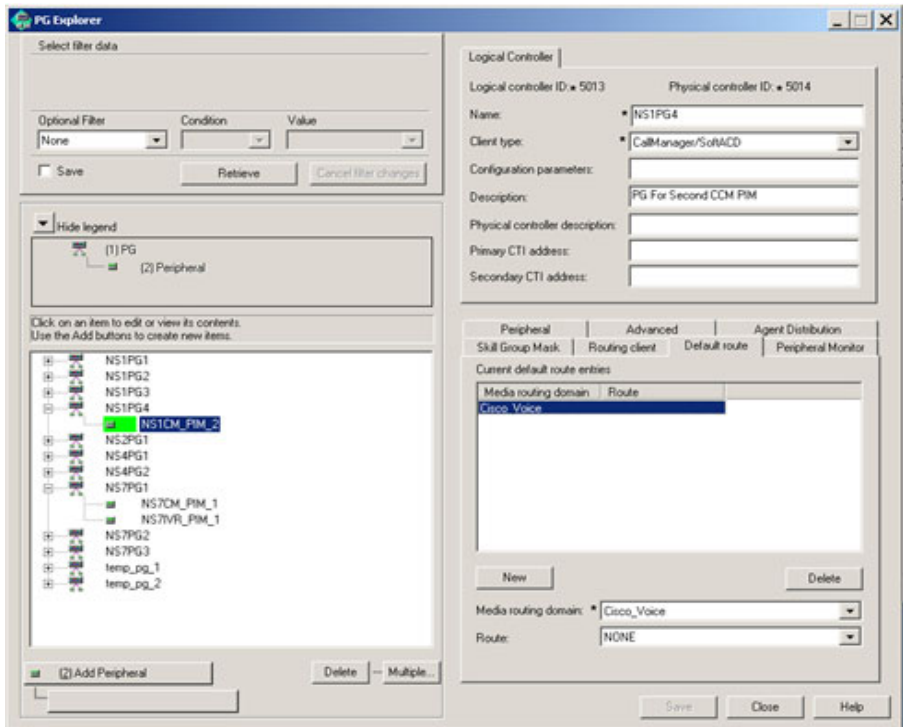
The "Agent Distribution" sub-tab is selected, showing the following settings:

- Enable agent reporting:
- Agent Distribution Entries table:

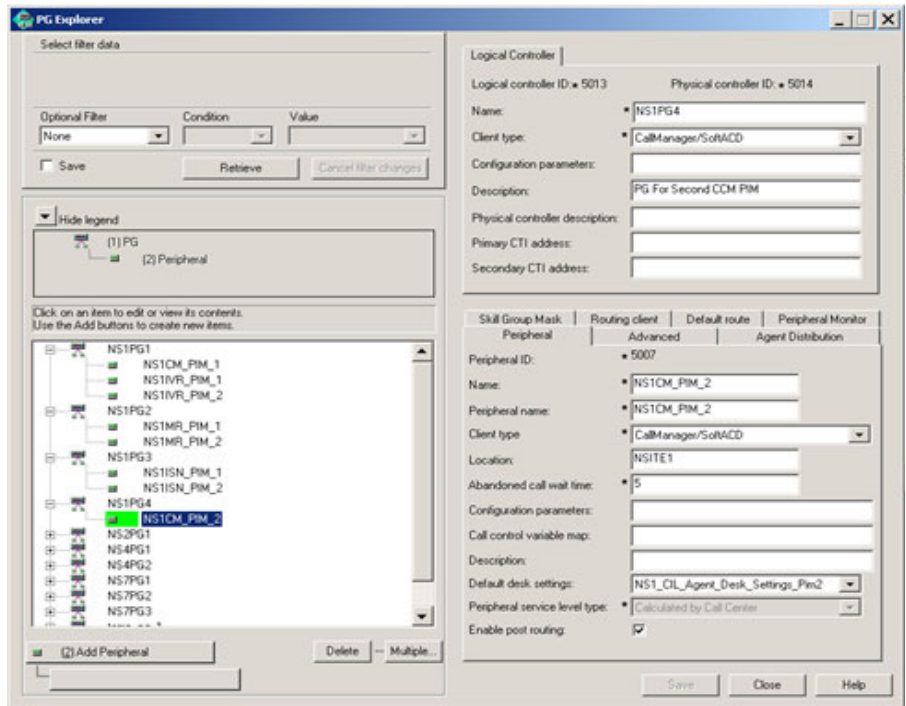
Distributor Site Name	Enabled
ns4-rtaw1	Y
ns7-rtaw1	Y
- Currently Selected Site: ns4-rtaw1
- Enabled:

The left pane shows a tree view of logical controllers. The selected controller, NS7PG1, is highlighted in green. Its sub-items are NS7CM_PIM_1 and NS7VR_PIM_1. Other controllers listed include NS1PG1 through NS7PG1, NS7PG2, NS7PG3, temp_pg_1, and temp_pg_2.

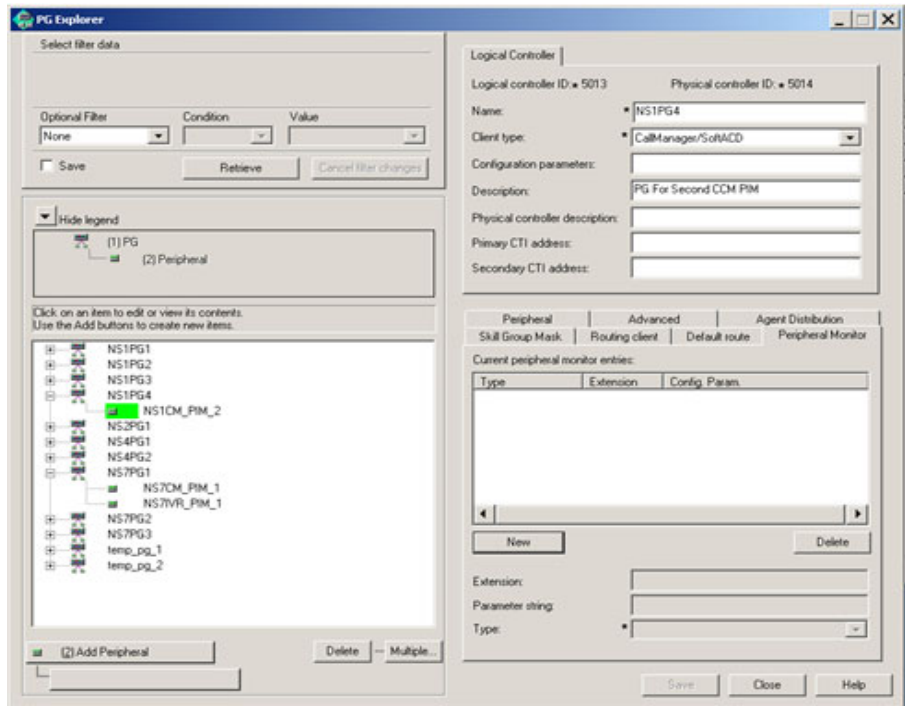
NS1CM PIM 2 DefaultRoute



NS1CM PIM 2 Peripheral



NS1CM PIM 2 PeripheralMonitor



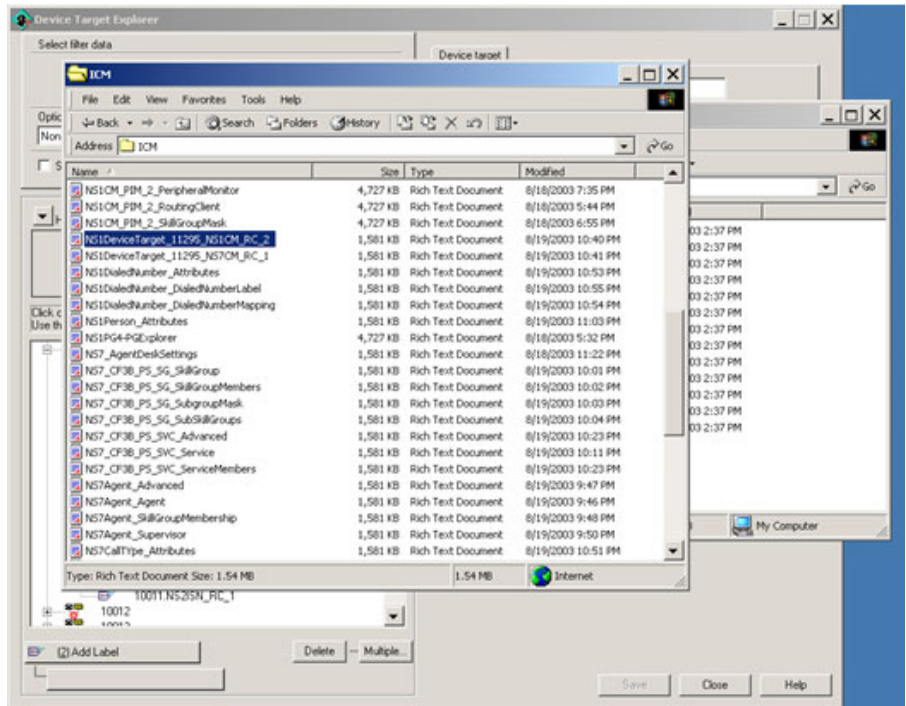
NS1CM PIM 2 RoutingClient

The screenshot shows the PG Explorer interface with the configuration for NS1CM PIM 2 RoutingClient. The interface is divided into several sections:

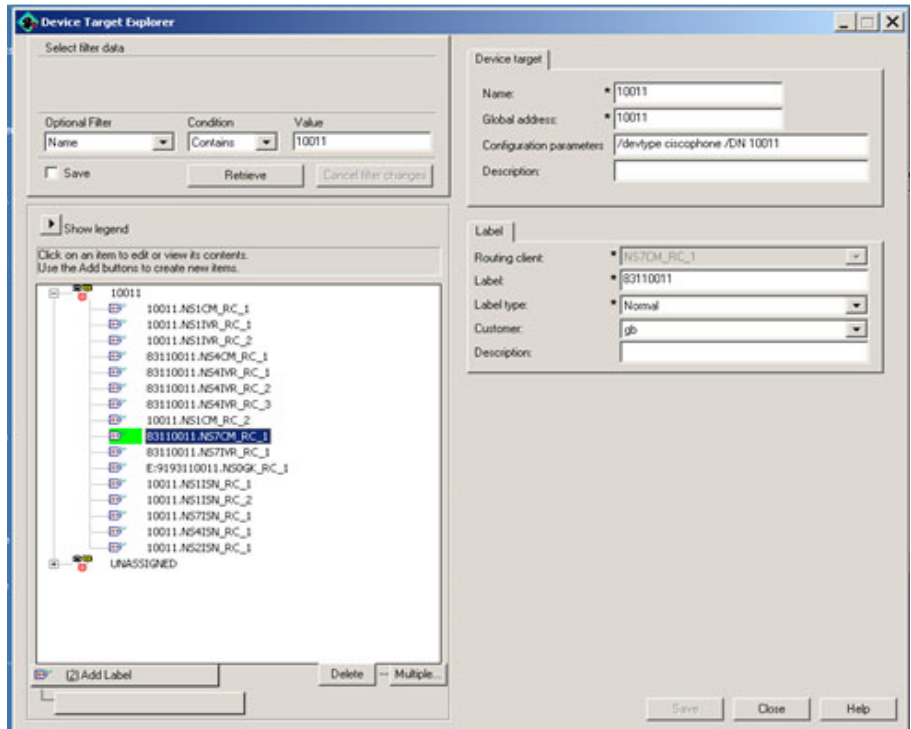
- Select filter data:** Includes fields for Optional Filter (set to None), Condition, and Value, along with Save, Retrieve, and Cancel filter changes buttons.
- Hide legend:** Shows a tree view with (1) PG and (2) Peripheral.
- Tree View:** A hierarchical list of PGs including NS1PG1 through NS1PG4, and NS1CM_PIM_1, NS1CM_PIM_2, NS1MR_PIM_1, NS1MR_PIM_2, NS1ISN_PIM_1, and NS1ISN_PIM_2. NS1CM_PIM_2 is highlighted in green.
- Logical Controller:**
 - Logical controller ID: 5013, Physical controller ID: 5014
 - Name: NS1PG4
 - Client type: CallManager/SoftACD
 - Configuration parameters: PG For Second CDM PIM
 - Description: PG For Second CDM PIM
 - Physical controller description:
 - Primary CTI address:
 - Secondary CTI address:
- Agent Distribution:**
 - Tabbed interface with Peripheral, Advanced, and Agent Distribution tabs.
 - Name: NS1CM_RC_2, ID: 5007
 - Timeout threshold: 1500
 - Late threshold: 500
 - Timeout limit: 10
 - Default media routing domain: Cisco_Voice
 - Default call type: NONE
 - Configuration parameters:
 - Use DN/Label map:
 - Client type: IPCC / Enterprise Agent
 - Description:
 - Network routing client:
 - Network transfer preferred:
- Buttons:** Add Peripheral, Delete, Multiple, Save, Close, Help.

Cisco CallManager Post-Routed Call Flow (Multi-Site Distributed)

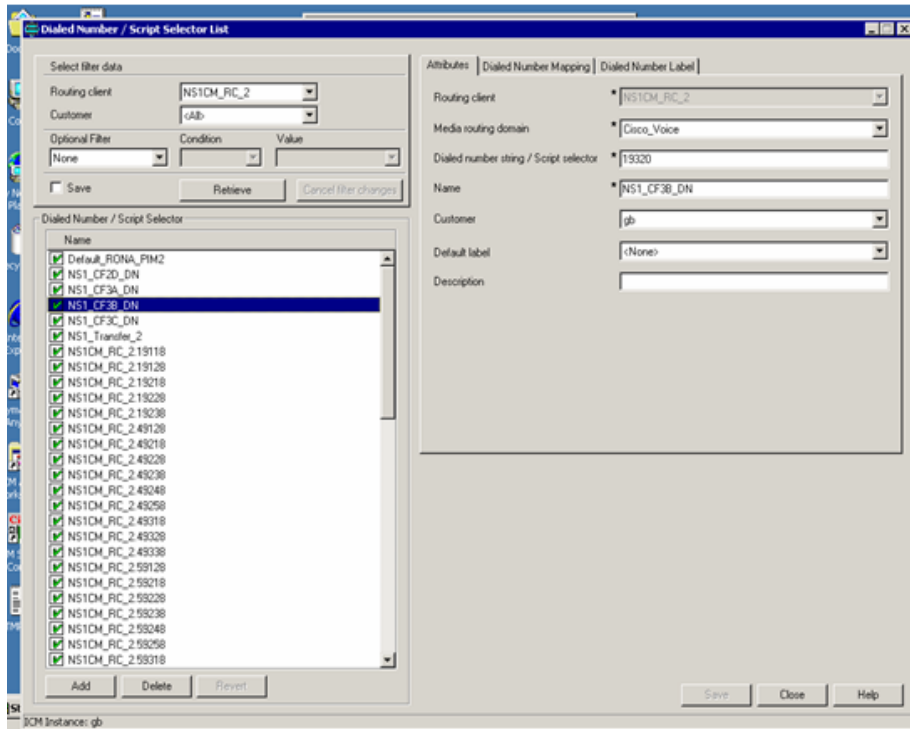
NS1DeviceTarget 10011 NS1CM RC 2



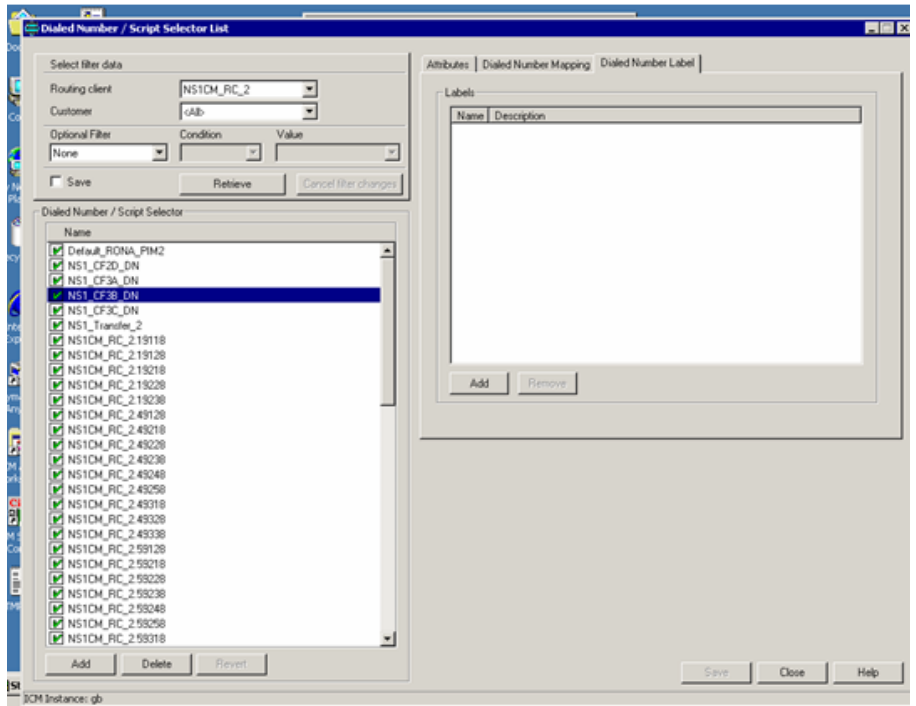
NS1DeviceTarget 10011 NS7CM RC 1



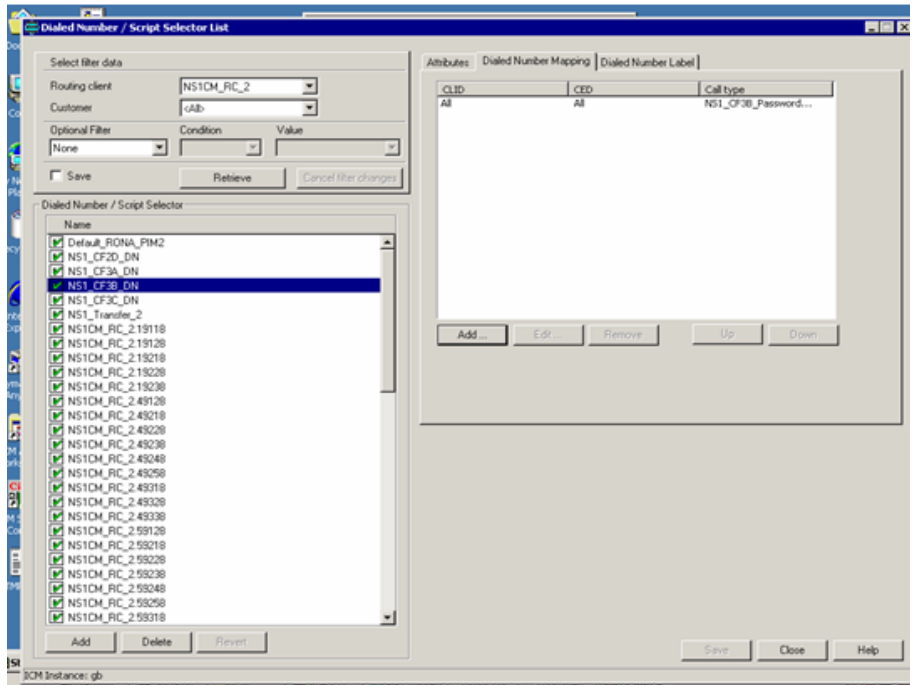
NS1DialedNumber Attributes



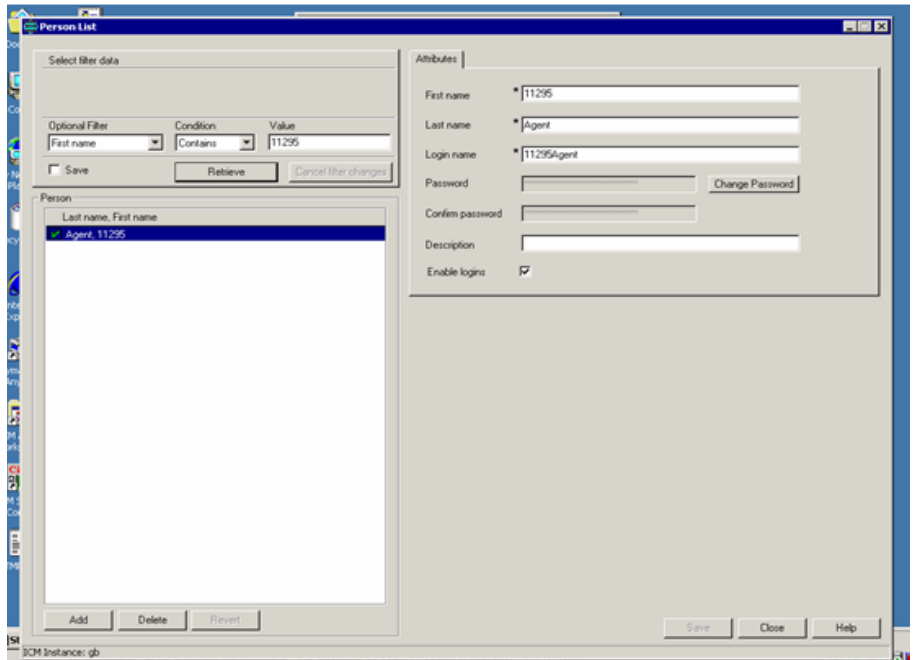
NS1DialNumber DialedNumberLabel



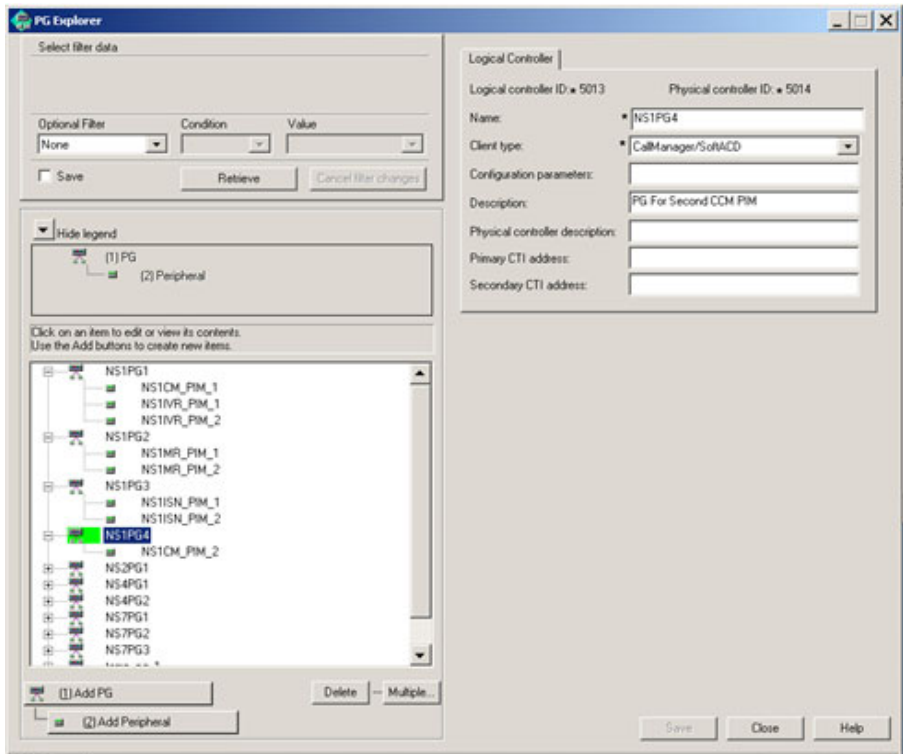
NS1DialedNumber DialedNumberMapping



NS1Person Attributes



NS1PG4-PGExplorer



NS7 AgentDeskSettings

The screenshot displays the 'Agent Desk Settings List' window. On the left, the 'Agent Desk Settings' list shows 'NS7_CF3B' selected. The 'Attributes' section on the right contains the following settings:

Attribute	Value
Name	NS7_CF3B
Ring no answer time	12 seconds (1 - 120)
Ring no answer dialed number	NS7_CF3B_RDNA_DN
Logout non-activity time	7200 seconds (10 - 7200)
Work mode on incoming	Required
Work mode on outgoing	Required
Wrap up time	90 seconds (0 - 7200)
Assist call method	Consult
Emergency alert method	Consult
Description	

Checkboxes for Miscellaneous and Outbound Access:

- Miscellaneous: Auto answer, Idle reason required, Logout reason required, Auto record on emergency
- Outbound Access: International, National, Local private network, Operator assisted, PBX

NS7 CF3B PS SG SkillGroup

Skill Group Explorer

Select filter data

Peripheral: NS7CM_PIM_1
Media routing domain: All
Optional Filter: None Condition: Value
Save Retrieve Cancel filter changes

Hide legend

(1) Skill group
(2) Route
(3) Peripheral target
(4) Label

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

- NS7CM_PIM_1_NS7_CF1_AI_SG
- NS7CM_PIM_1_NS7_CF1_BS_SG
- NS7CM_PIM_1_NS7_CF1_LR_SG
- NS7CM_PIM_1_NS7_CF1_MB_SG
- NS7CM_PIM_1_NS7_CF2A_AI_SG
- NS7CM_PIM_1_NS7_CF2A_MB_SG
- NS7CM_PIM_1_NS7_CF2B_AI_SG
- NS7CM_PIM_1_NS7_CF2B_LR_SG
- NS7CM_PIM_1_NS7_CF2C_BS_SG
- NS7CM_PIM_1_NS7_CF2C_LR_SG
- NS7CM_PIM_1_NS7_CF3A_TS_SG
- NS7CM_PIM_1_NS7_CF3B_PS_SG
- R_NS7_CF3B_PS_SG**
- NS7CM_PIM_1_NS7_CF3C_BS_SG
- NS7CM_PIM_1_NS7_CF6_OC_SG
- UNASSIGNED

(2) Add Route Delete Multiple...
(3) Add Peripheral target

ICM Instance: gb

Skill Group | Skill Group Members | Subgroup Mask | Sub skill groups

Media routing domain: Cisco_Voice

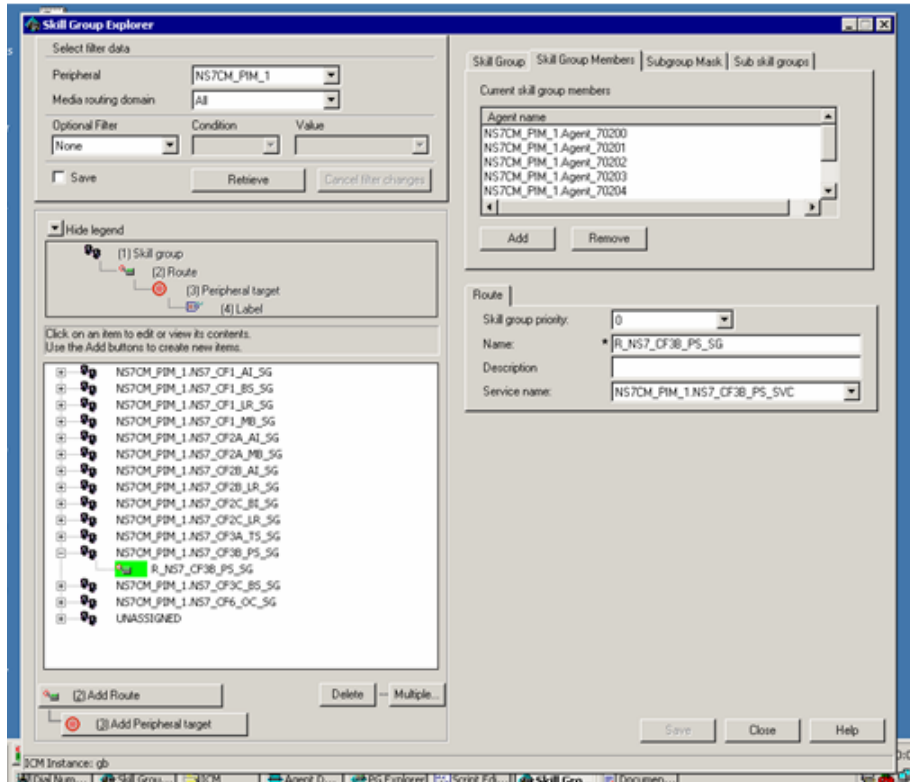
Peripheral number: 73208 Peripheral name: NS7_CF3B_PS_SG
Name: NS7CM_PIM_1_NS7_CF3B_PS_SG
Available holdoff delay (sec): Use Peripheral Default Priority: 0
Extension: ICM picks the agent
Configuration parameters:
Description: NSITE7 Password Support - Password Support

Route

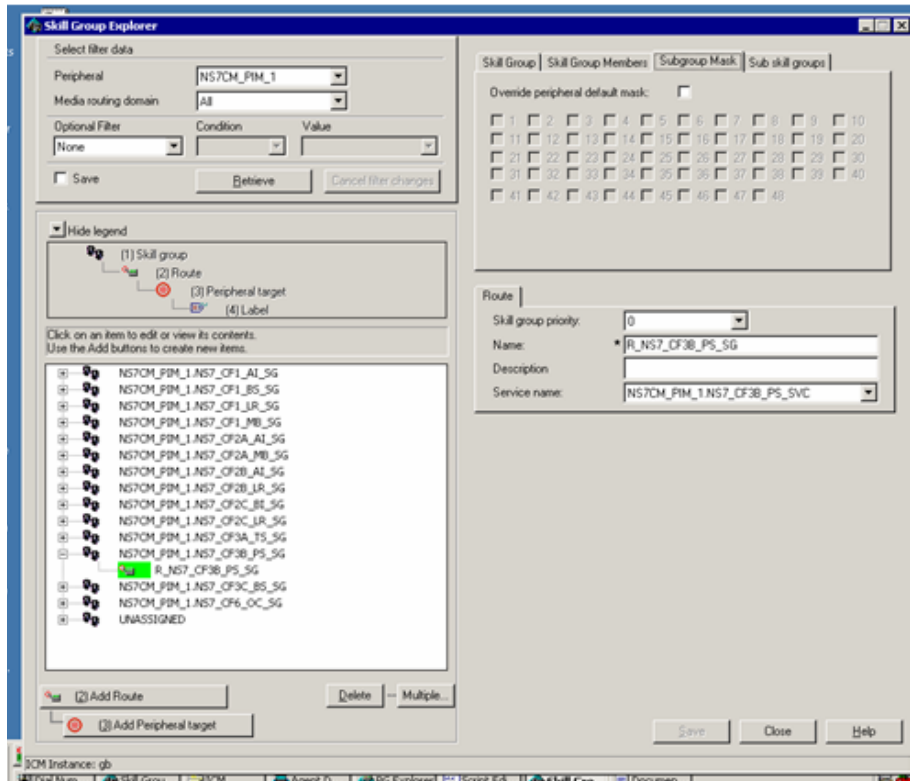
Skill group priority: 0
Name: R_NS7_CF3B_PS_SG
Description:
Service name: NS7CM_PIM_1_NS7_CF3B_PS_SVC

Save Close Help

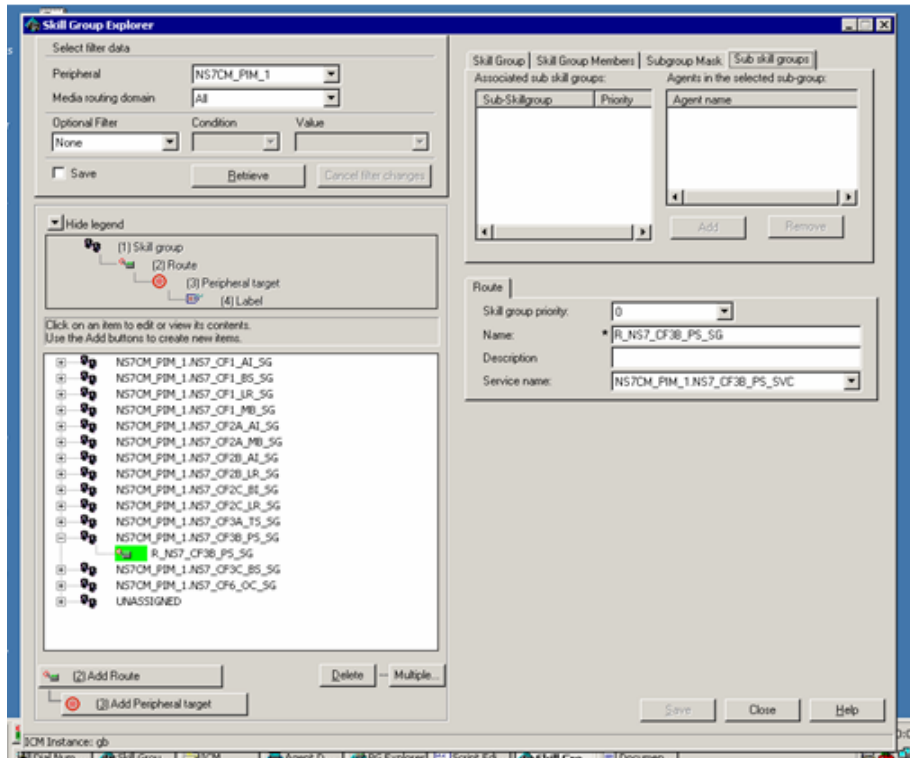
NS7 CF3B PS SG SkillGroupMembers



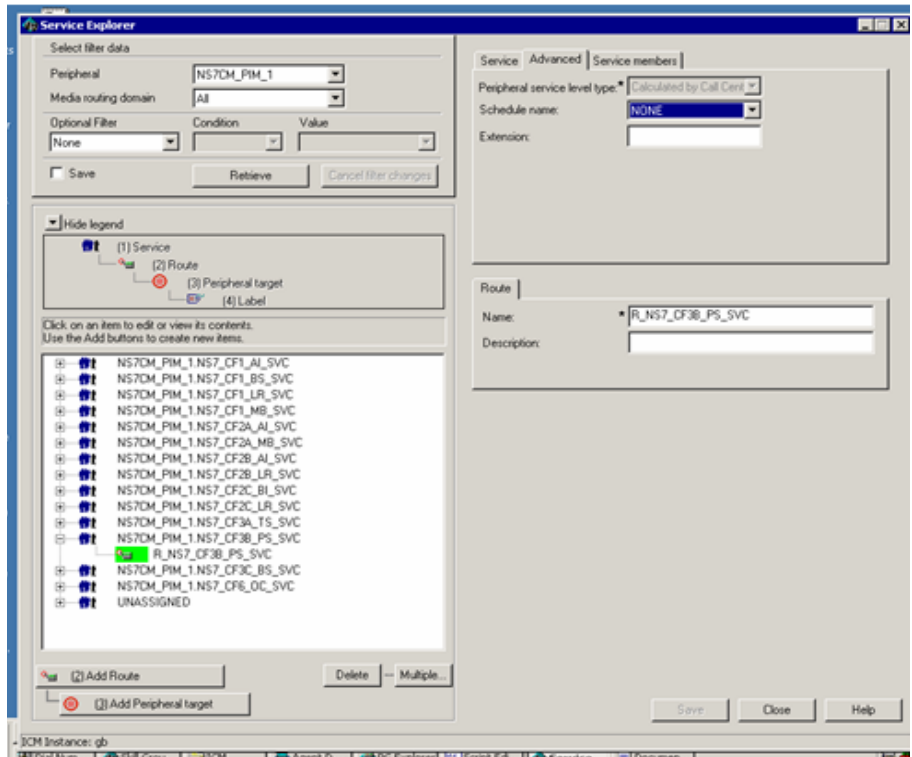
NS7 CF3B PS SG SubgroupMask



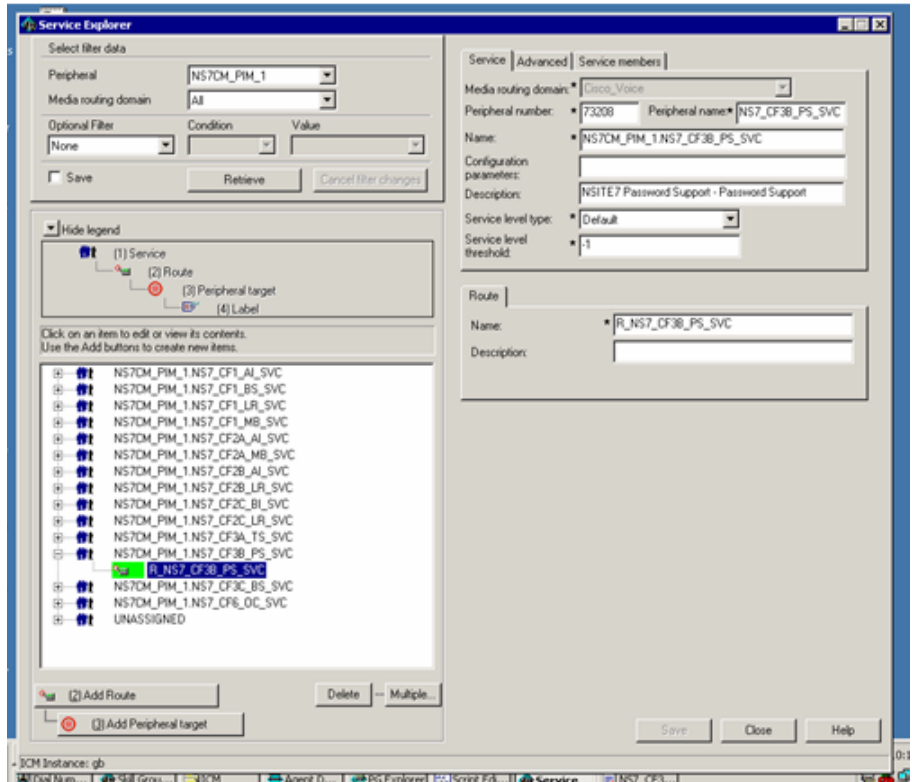
NS7 CF3B PS SG SubSkillGroups



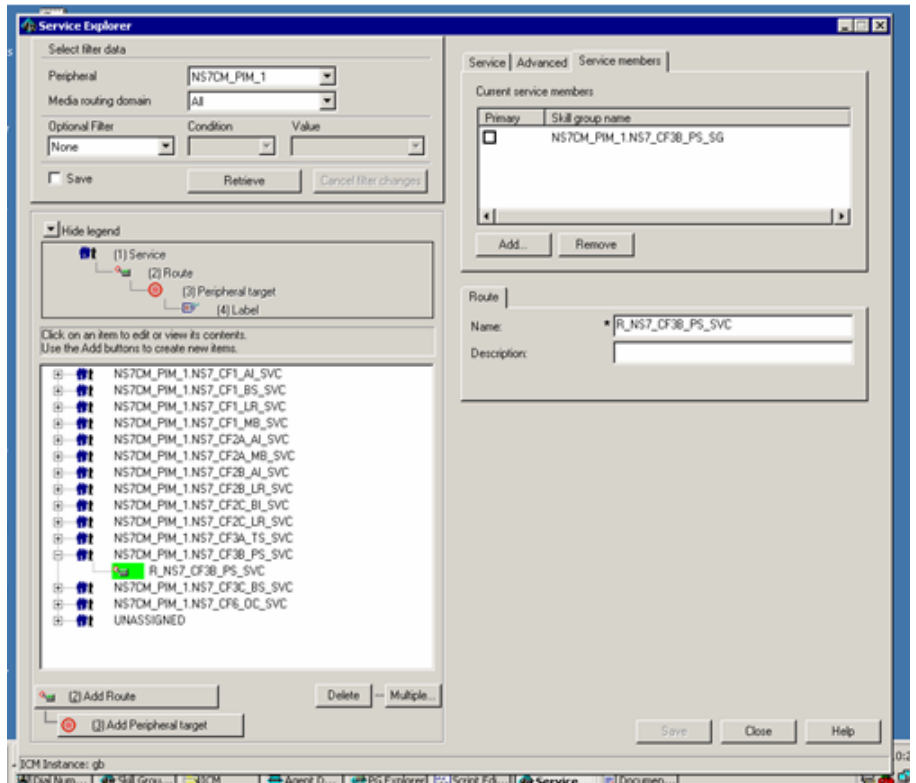
NS7 CF3B PS SVC Advanced



NS7 CF3B PS SVC Service



NS7 CF3B PS SVC ServiceMembers



NS7Agent Advanced

Agent Explorer

Select filter data

Peripheral: NS7CM_PIM_1

Optional Filter

Optional Filter	Condition	Value
Name	Contains	70000

Save Retrieve Cancel filter changes

Hide legend

```
graph TD
    A((1) Agent) --> B((2) Route)
    B --> C((3) Peripheral target)
    C --> D((4) Label)
```

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

(1)	NS7CM_PIM_1_Agent_70000
(2)	UNASSIGNED

(1) Add Agent Delete Multiple...
(2) Add Route

Agent: Advanced | Skill group membership | Supervisor |

Desk setting: NS7_OILTEST_Agent_Desk_Settings

Configuration parameters:

Description:

Agent state trace

Save Close

ICM Instance: gb

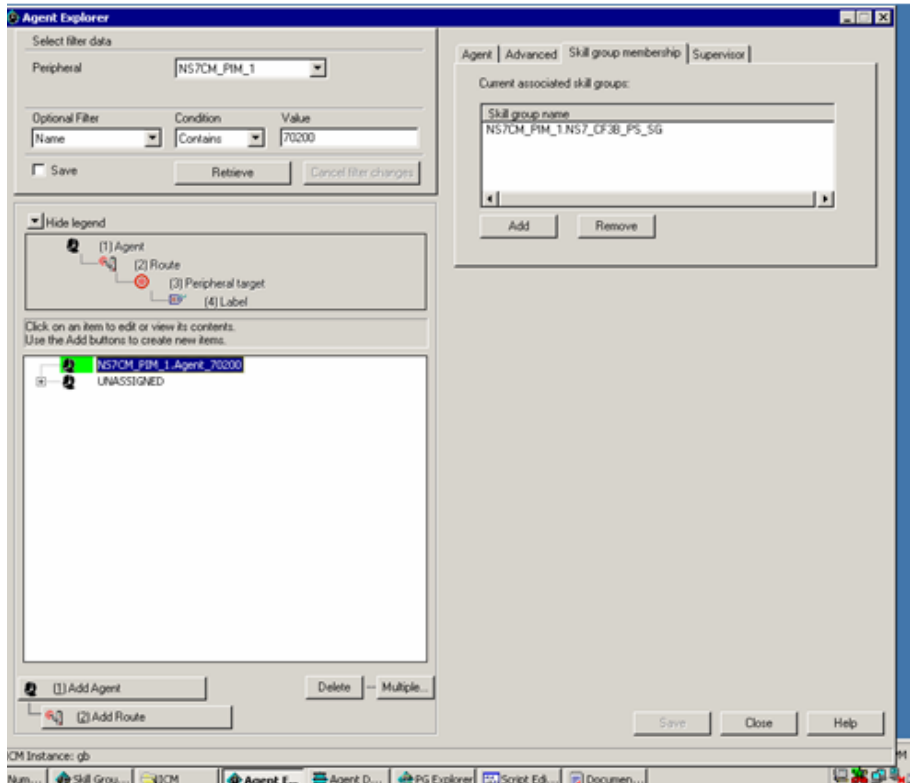
NS7Agent Agent

The screenshot displays the Agent Explorer application window. The interface is divided into several sections:

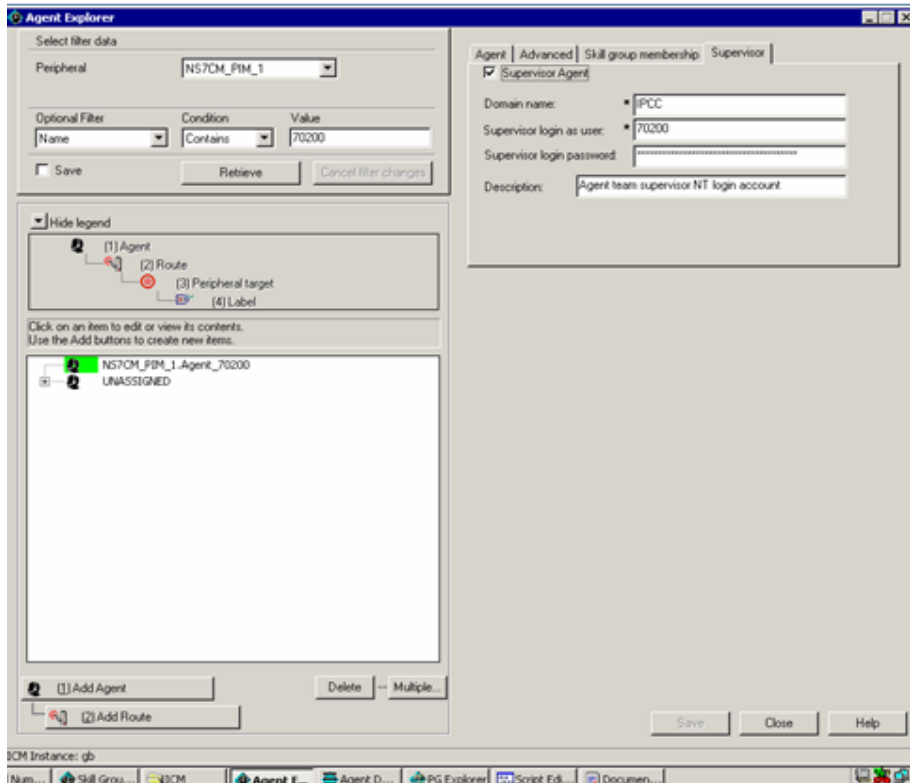
- Select filter data:** A dropdown menu for 'Peripheral' is set to 'NS7CM_PIM_1'. Below it, an 'Optional Filter' section has 'Name' selected, 'Contains' as the condition, and '70200' as the value. Buttons for 'Save', 'Retrieve', and 'Cancel filter changes' are present.
- Hide legend:** A diagram showing a flow from (1) Agent to (2) Route to (3) Peripheral target to (4) Label.
- Agent List:** A list of agents is shown, with 'NS7CM_PIM_1.Agent_70200' selected and highlighted in blue. Below it is an 'UNASSIGNED' agent.
- Buttons:** 'Add Agent' and 'Add Route' buttons are at the bottom left. 'Delete' and 'Multiple...' buttons are at the bottom right.
- Right Panel (Agent Configuration):**
 - Tabs: 'Agent', 'Advanced', 'Skill group membership', 'Supervisor'.
 - Section: 'Personal information'.
 - Fields: 'First name' (70200), 'Last name' (Agent), 'Login name' (70200Agent), 'Password' (masked), 'Login enabled' (checked).
 - Buttons: 'Select Person...'.
 - Fields: 'Enterprise name' (NS7CM_PIM_1.Agent_70200), 'Peripheral name' (Agent70200), 'Peripheral number' (70200) with a note '(value will be created if left blank)'.
 - Buttons: 'Save', 'Close', 'Help' at the bottom.

The taskbar at the bottom shows the 'ICM Instance: gb' and several open applications including 'Skill Group...', 'Agent Explorer', and 'Script Edit...'.

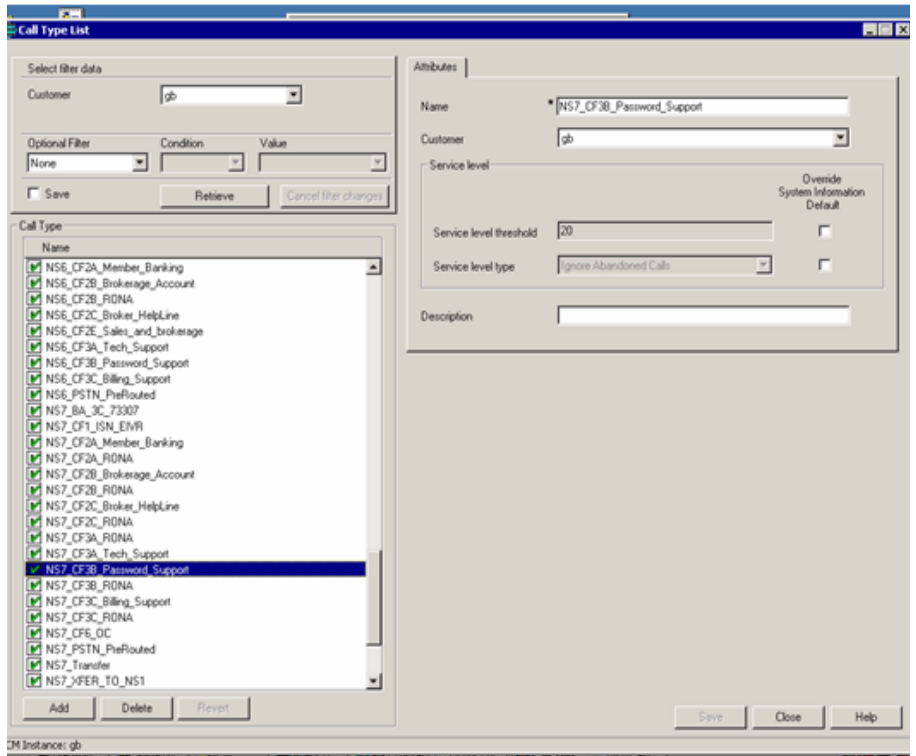
NS7Agent SkillGroupMembership



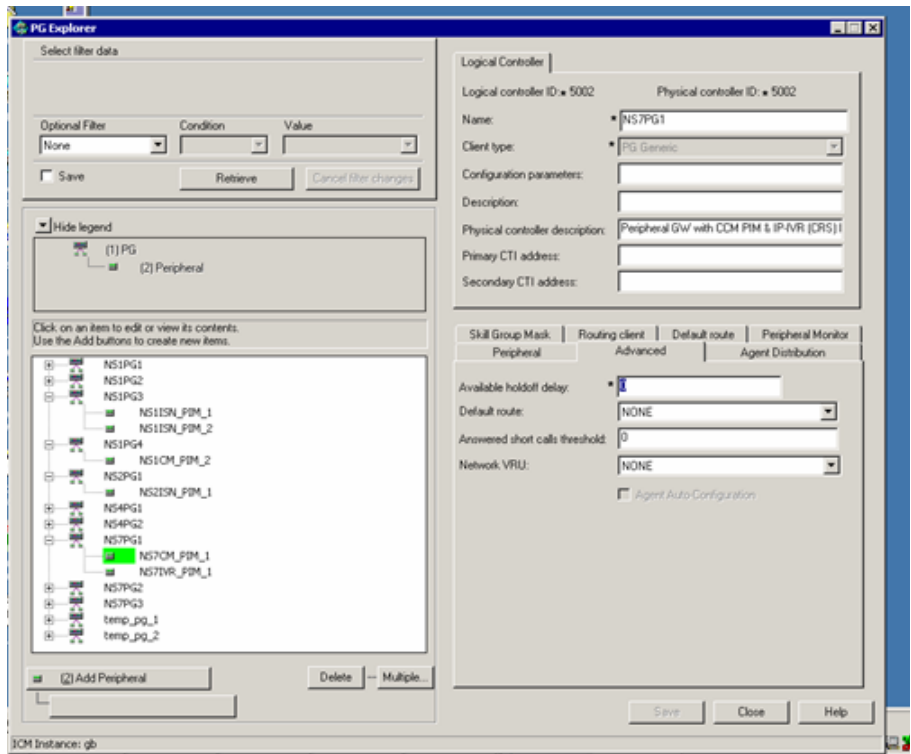
NS7Agent Supervisor



NS7CallType Attributes



NS7CM PIM 1 Advanced



NS7CM PIM 1 AgentDistribution

The screenshot shows the PG Explorer interface for configuring NS7CM PIM 1 Agent Distribution. The interface is divided into several sections:

- Select filter data:** Includes an Optional Filter dropdown (set to None), Condition and Value dropdowns, and buttons for Save, Retrieve, and Cancel filter changes.
- Hide legend:** Shows a legend with (1) PG and (2) Peripheral.
- Tree View:** A hierarchical tree of network elements. The selected element is NS7CM_PIM_1, which is highlighted in green. Other elements include NS1PG1 through NS7PG3, NS1ESN_PIM_1/2, NS2ESN_PIM_1, NS4PG1/2, and temp_pg_1/2.
- Logical Controller:**
 - Logical controller ID: 5002, Physical controller ID: 5002
 - Name: NS7PG1
 - Client type: PG Generic
 - Configuration parameters: (empty)
 - Description: (empty)
 - Physical controller description: Peripheral GW with CCM PIM & IP-IVR (CRS)
 - Primary CTI address: (empty)
 - Secondary CTI address: (empty)
- Agent Distribution:**
 - Enable agent reporting:
 - Agent Distribution Entries table:

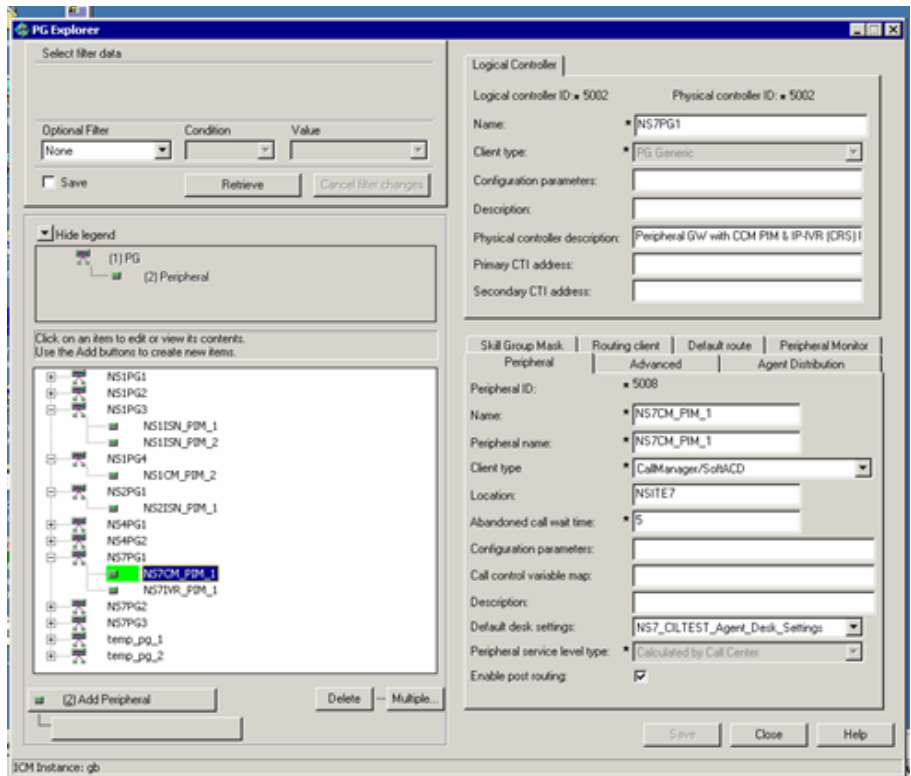
Distributor Site Name	Enabled
ns4-rtaw1	Y
ns7-rtaw1	Y
 - Buttons: New, Delete
 - Currently Selected Site: ns4-rtaw1
 - Enabled:
- Bottom Panel:** Includes buttons for Add Peripheral, Delete, and Multiple.

ICM Instance: qb

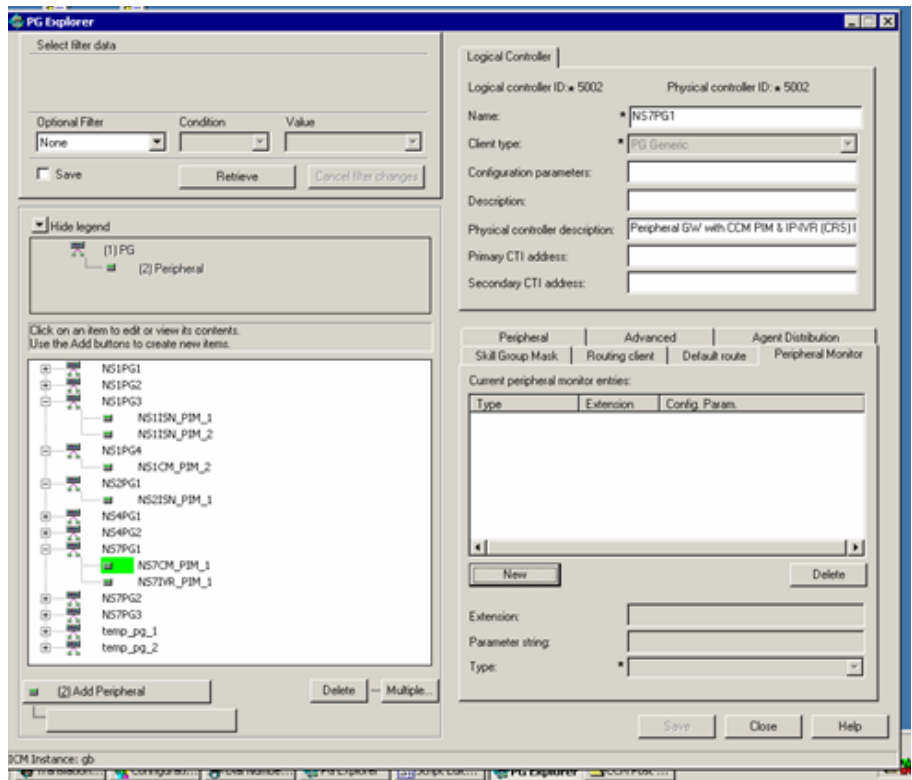
NS7CM PIM 1 DefaultRoute

The screenshot displays the PG Explorer application window. On the left, a tree view shows a hierarchy of logical controllers, with NS7CM_PIM_1 highlighted. The main area on the right is the configuration panel for Logical Controller NS7PG1. It includes fields for Name, Client type, and Physical controller ID. Below this, there are tabs for Peripheral, Advanced, and Agent Distribution. The Default route tab is selected, showing a table of current default route entries. The table has two columns: Media routing domain and Route. The entry 'Cisco_Voice' is selected in the Media routing domain column. Below the table, there are fields for Media routing domain (set to Cisco_Voice) and Route (set to NONE). At the bottom of the window, the text 'CCM Instance: gb' is visible.

NS7CM PIM 1 Peripheral



NS7CM PIM 1 PeripheralMonitor



NS7CM PIM 1 RoutingClient

The screenshot shows the PG Explorer application window. The main area displays a tree view of the network structure. The selected item is NS7CM_PIM_1, which is highlighted in green. The configuration panel on the right shows the following details:

Logical Controller

Logical controller ID: 5002 Physical controller ID: 5002

Name: NS7PG1

Client type: PG Generic

Configuration parameters:

Description:

Physical controller description: Peripheral GW/ with CCM PIM & IP/VR [CRS]1

Primary CTI address:

Secondary CTI address:

Peripheral **Advanced** **Agent Distribution**

Skill Group Mask	Routing client	Default route	Peripheral Monitor
	NS7CM_PIM_1		ID: 5008

Name: NS7CM_PIM_1

Timeout threshold: 1500

Late threshold: 500

Timeout limit: 10

Default media routing domain: Cisco_Voice

Default call type: NONE

Configuration parameters:

Use DN/Label map:

Client type: IPCC / Enterprise Agent

Description:

Network routing client:

Network transfer preferred:

Buttons: Save, Close, Help

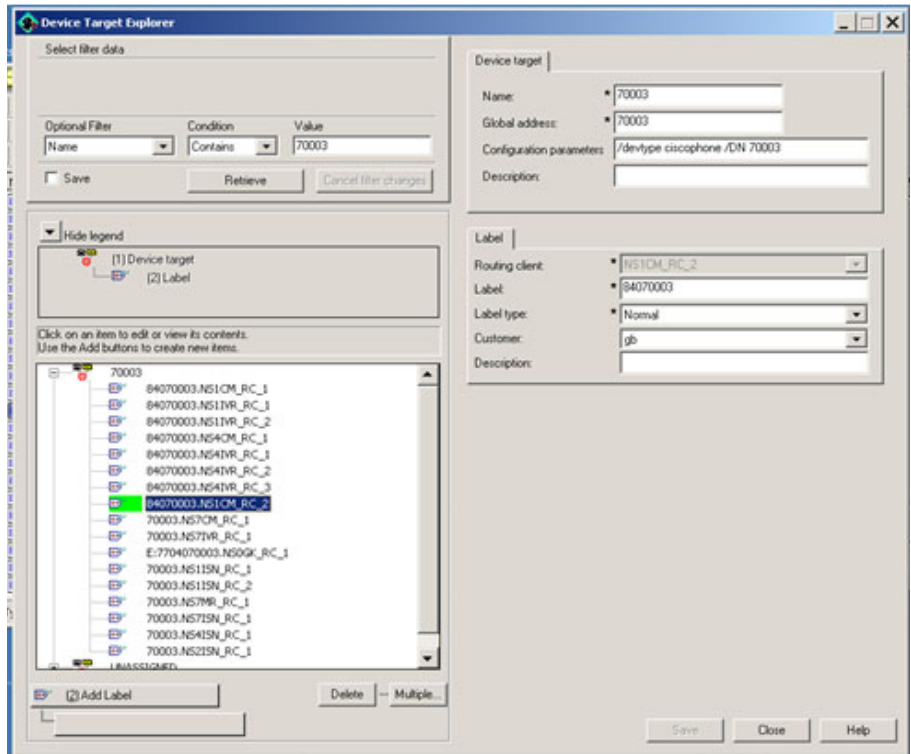
SCM Instance: rh

NS7CM PIM 1 SkillGroupMask

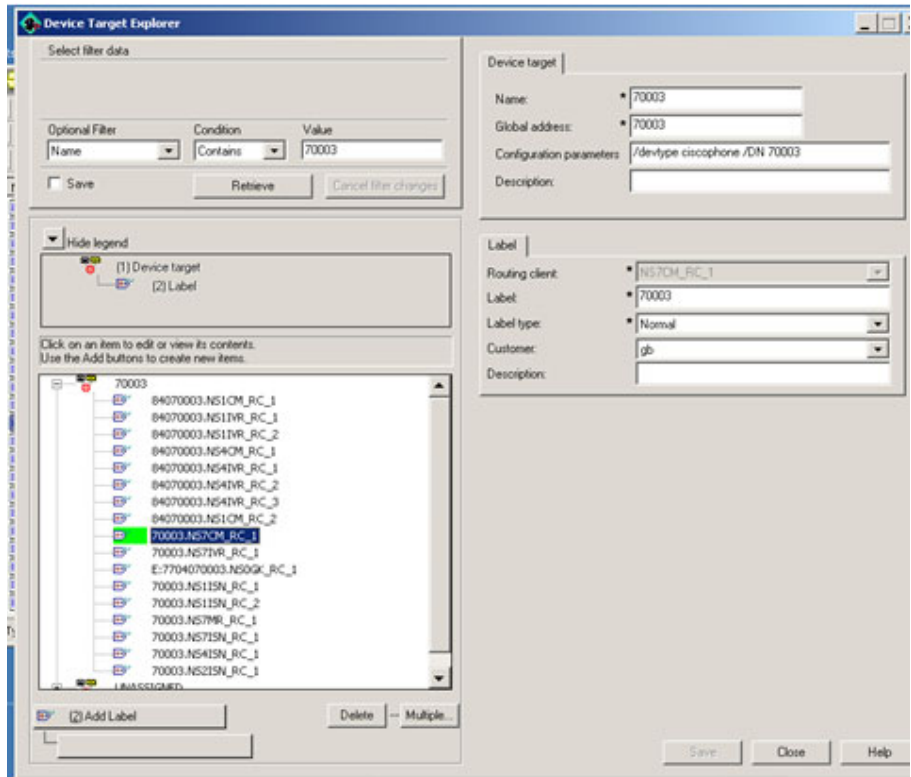
The screenshot shows the PG Explorer application window. The main area displays a tree view of the hierarchy, with NS7CM_PIM_1 highlighted. The right-hand panel shows the configuration for the selected item, including Logical Controller ID, Name (NS7PG1), Client type (PG Generic), and Physical controller description (Peripheral Glw' with CCM PIM & IP-IVR [CRS]). Below this is a grid for Skill Group Mask configuration.

Peripheral		Advanced				Agent Distribution			
Skill Group Mask	Routing client	Default route	Peripheral Monitor						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	8 <input type="checkbox"/>		
9 <input type="checkbox"/>	10 <input type="checkbox"/>	11 <input type="checkbox"/>	12 <input type="checkbox"/>	13 <input type="checkbox"/>	14 <input type="checkbox"/>	15 <input type="checkbox"/>	16 <input type="checkbox"/>		
17 <input type="checkbox"/>	18 <input type="checkbox"/>	19 <input type="checkbox"/>	20 <input type="checkbox"/>	21 <input type="checkbox"/>	22 <input type="checkbox"/>	23 <input type="checkbox"/>	24 <input type="checkbox"/>		
25 <input type="checkbox"/>	26 <input type="checkbox"/>	27 <input type="checkbox"/>	28 <input type="checkbox"/>	29 <input type="checkbox"/>	30 <input type="checkbox"/>	31 <input type="checkbox"/>	32 <input type="checkbox"/>		
33 <input type="checkbox"/>	34 <input type="checkbox"/>	35 <input type="checkbox"/>	36 <input type="checkbox"/>	37 <input type="checkbox"/>	38 <input type="checkbox"/>	39 <input type="checkbox"/>	40 <input type="checkbox"/>		
41 <input type="checkbox"/>	42 <input type="checkbox"/>	43 <input type="checkbox"/>	44 <input type="checkbox"/>	45 <input type="checkbox"/>	46 <input type="checkbox"/>	47 <input type="checkbox"/>	48 <input type="checkbox"/>		
49 <input type="checkbox"/>	50 <input type="checkbox"/>	51 <input type="checkbox"/>	52 <input type="checkbox"/>	53 <input type="checkbox"/>	54 <input type="checkbox"/>	55 <input type="checkbox"/>	56 <input type="checkbox"/>		
57 <input type="checkbox"/>	58 <input type="checkbox"/>	59 <input type="checkbox"/>	60 <input type="checkbox"/>	61 <input type="checkbox"/>	62 <input type="checkbox"/>	63 <input type="checkbox"/>	64 <input type="checkbox"/>		

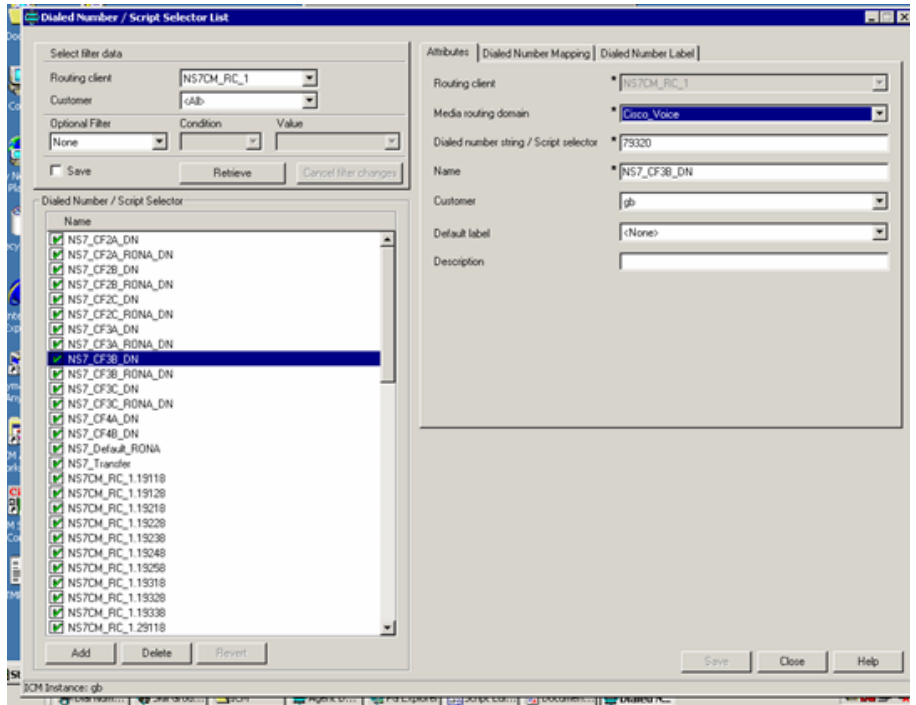
NS7DeviceTarget 70003 NS1CM RC 2



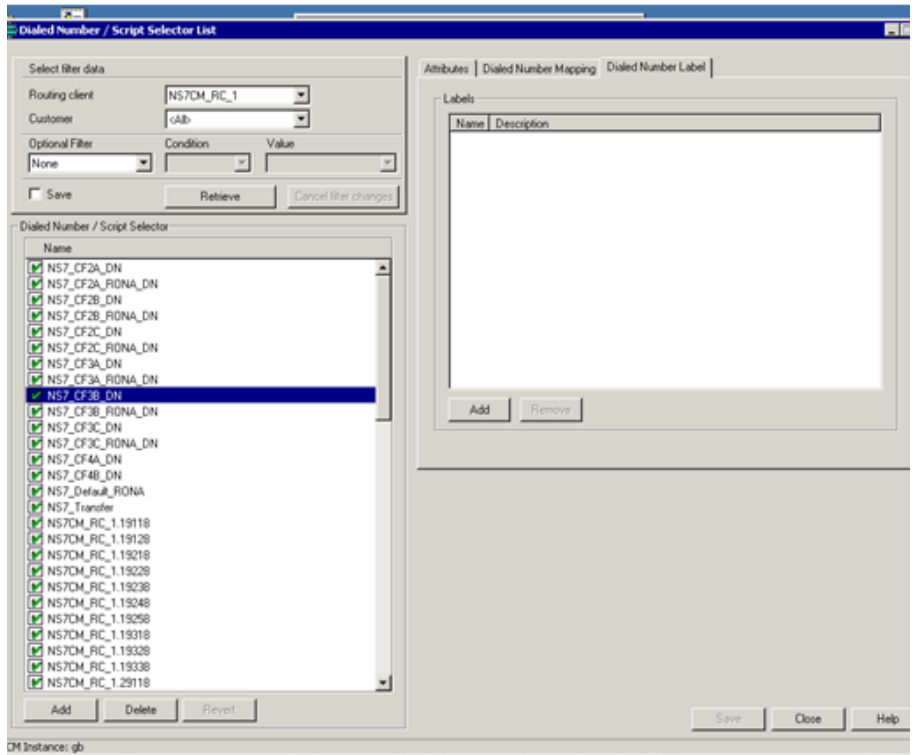
NS7DeviceTarget 70003 NS7CM RC 1



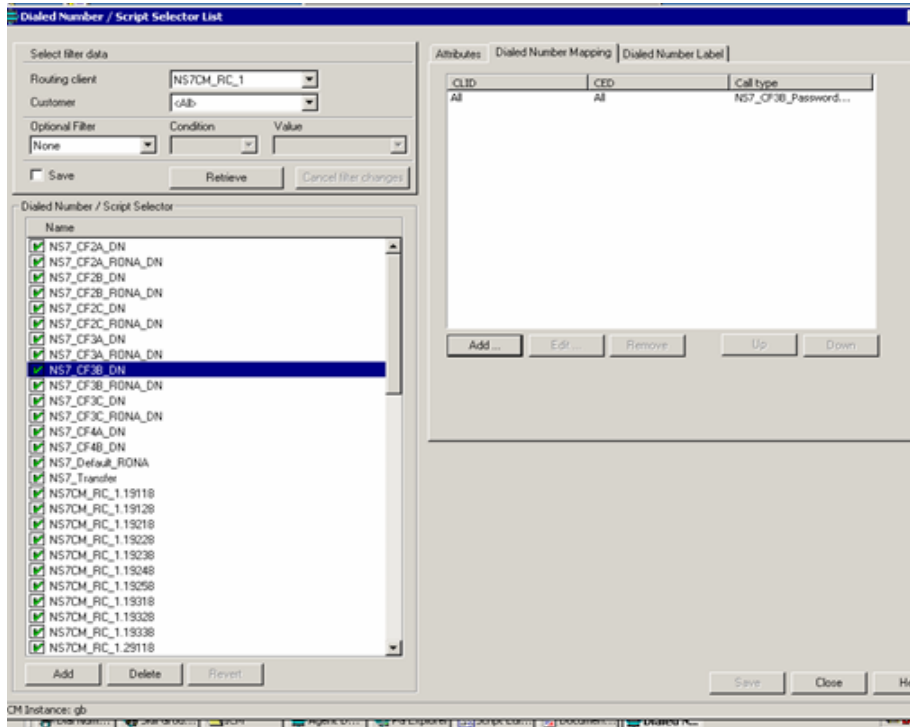
NS7DialNumber Attributes



NS7DialedNumber DialedNumberLabel



NS7DialedNumber DialedNumberMapping



NS7Person Attributes

Person List

Select filter data

Optional Filter	Condition	Value
First name	Contains	70200

Save Retrieve Cancel filter changes

Person

Last name, First name
✓ Agent, 70200

Add Delete Revert

Attributes

First name * 70200

Last name * Agent

Login name * 70200Agent

Password Change Password

Confirm password

Description

Enable logins

Save Close Help

CM Instance: gb

NS7PG1-PGExplorer

Select filter data

Optional Filter: None Condition: Value

Save Retrieve Cancel filter changes

Hide legend

(1) PG
(2) Peripheral

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

- NS1PG1
- NS1PG2
- NS1PG3
 - NS1ISNL_PIM_1
 - NS1ISNL_PIM_2
- NS1PG4
 - NS1CM_PIM_2
- NS2PG1
 - NS2ISNL_PIM_1
- NS4PG1
- NS4PG2
- NS7PG1**
 - NS7CM_PIM_1
 - NS7IVR_PIM_1
- NS7PG2
- NS7PG3
- temp_pg_1
- temp_pg_2

(1) Add PG Delete Multiple
(2) Add Peripheral

Logical Controller | Physical controller ID: 5002

Logical controller ID: 5002

Name: NS7PG1

Client type: PG Generic

Configuration parameters:

Description:

Physical controller description: Peripheral GW with CDM PIM & IP-IVR (CRS)

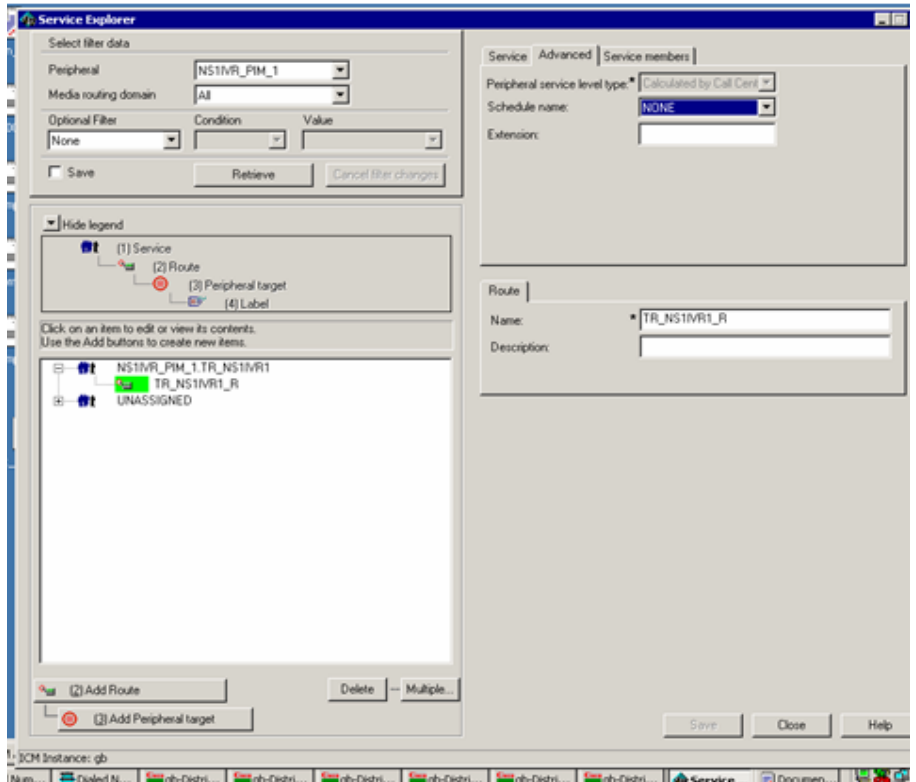
Primary CTI address:

Secondary CTI address:

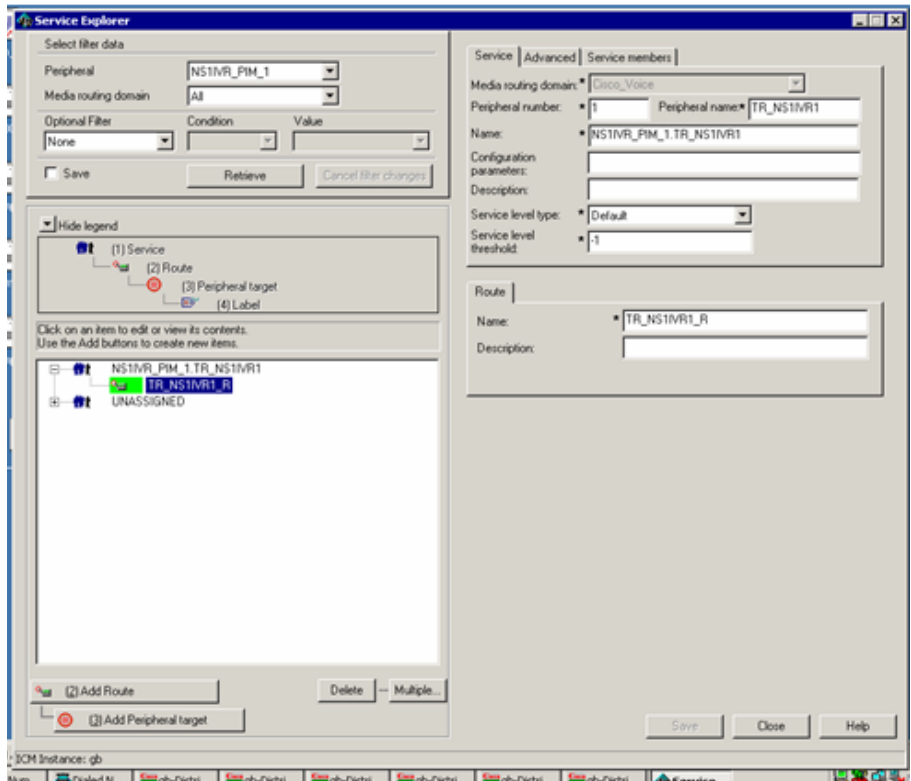
Save Close Help

ICM Instance: gb

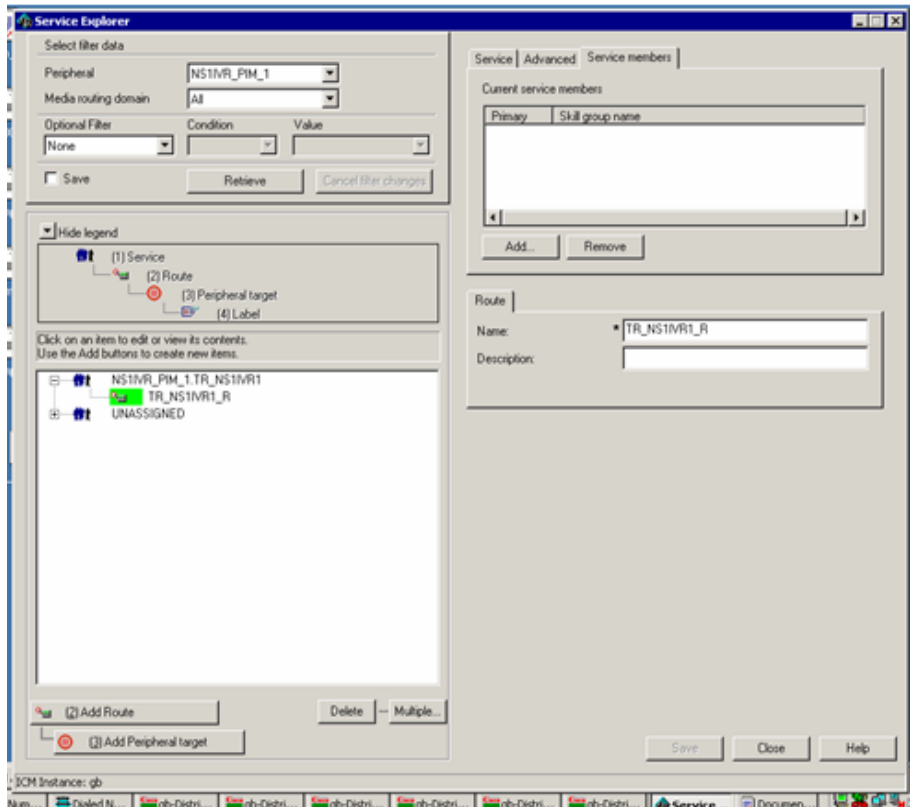
TR NS1VR1 Advanced



TR NS1VR1 Service



TR NS1VR1 ServiceMembers



TranslationRoute TRNS1VR1

The screenshot displays the Translation Route Explorer interface. The main window is titled "Translation Route Explorer" and contains several sections:

- Select filter data:** PG is set to NS1PG1. Optional Filter is set to None. Condition and Value are empty. Buttons for Save, Retrieve, and Cancel filter changes are present.
- Hide legend:** A legend showing a tree structure: (1) Translation route, (2) Route, (3) Peripheral target, (4) Label.
- Click on an item to edit or view its contents. Use the Add buttons to create new items.**
- Tree View:** A hierarchical tree showing the configuration. The root is TR_NS1VR1, which contains TR_NS1VR1.1. Under TR_NS1VR1.1, there are two Network Trunk Groups: NS1PG1_IVR1_NTG, DA. The first group contains 16000.NS1CM_RC_1 (highlighted in green), 16000.NS1CM_RC_2, 16000.NS1CM_RC_2, and 16000.NS2SM_RC_1. The second group contains 16000.NS1CM_RC_1. Below these are several TR_NS1VR1.100-107 entries.
- Translation Route Details:**
 - Name: TR_NS1VR1
 - Description: (empty)
 - Type: DNS
- Route Details:**
 - Name: TR_NS1VR1.1
 - Description: Translation route - TR_NS1VR1
 - Service name: NS1VR1_PIM_1.TR_NS1VR1
- Peripheral Target Details:**
 - DNIS: 16000
 - Description: Translation route - TR_NS1VR1
 - Network trunk group: NS1PG1_IVR1_NTG
- Label Details:**
 - Routing client: NS1CM_RC_1
 - Label: 16000
 - Label type: Normal
 - Customer: NONE
 - Description: Translation route - TR_NS1VR1
- Buttons:** Add Label, Delete, Multiple..., Save, Close, Help.

ICM Instance: gb

Cisco IP IVR Configuration

NS1IVR1 CiscoICMTranslationRouting

CRA Administration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://10.12.4.26/appadmin/App?request_type=configure&appname=IVR&appType=Cisco+ICM+Translation-Routing

System Applications Scripts Subsystems Tools Help

Customer Response Applications Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

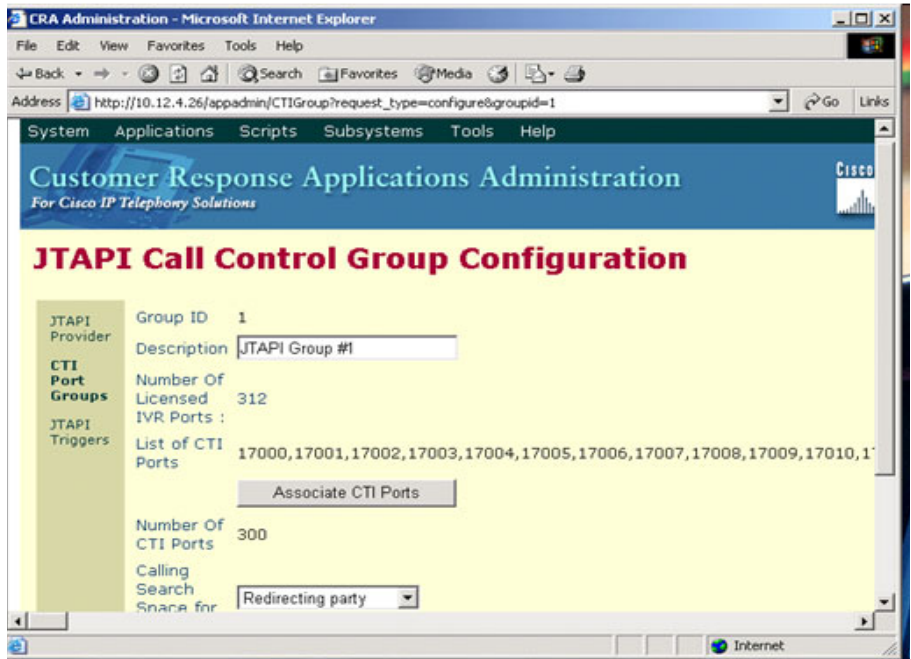
Cisco ICM Translation-Routing

[Back to Application List](#)

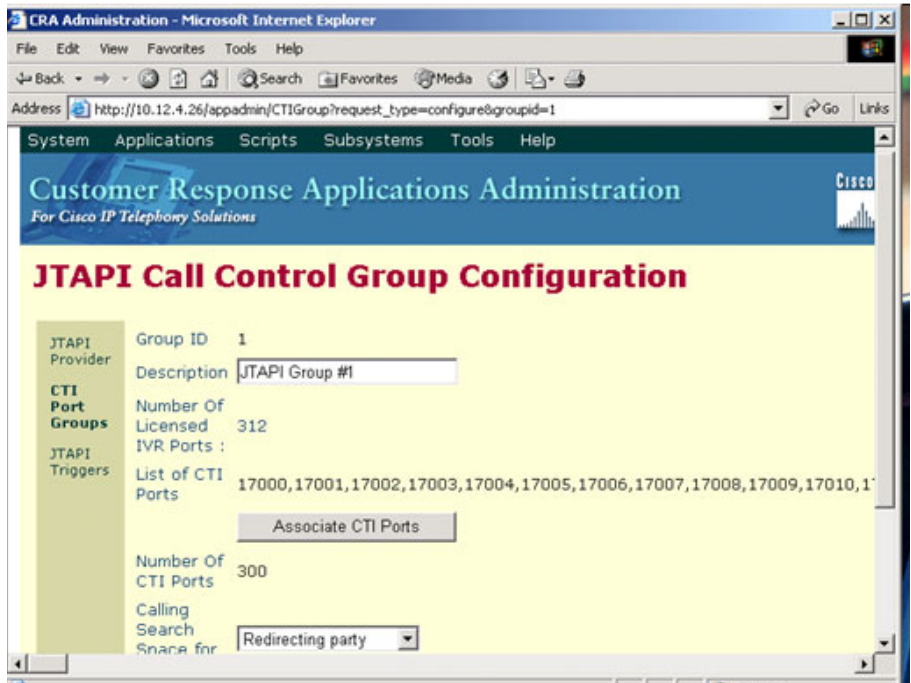
JTAPI: 16000	Name	IVR
JTAPI: 16001	Description	IVR
JTAPI: 16002	ID*	1
JTAPI: 16003	Maximum Number of Sessions*	300
JTAPI: 16004	Enabled*	<input checked="" type="radio"/> Yes <input type="radio"/> No
JTAPI: 16005	Timeout (in secs)*	4
JTAPI: 16006	Default Script	- System Default - <input type="button" value="Edit"/>

*indicates required item

NS1IVR1 CTIPortGroups



NS1IVR1 DirectorySetup



NS1IVR1 ICMConfiguration

ICM Configuration

General

ICM VRU Scripts

VRU Connection Port*

Service Control* Yes No

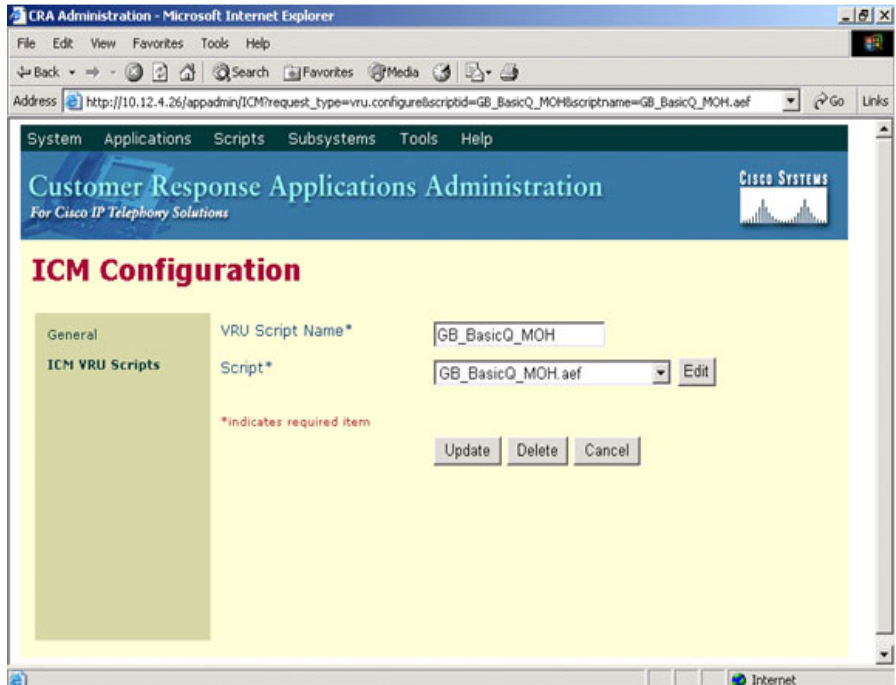
Parameter Separator*

**indicates required item*

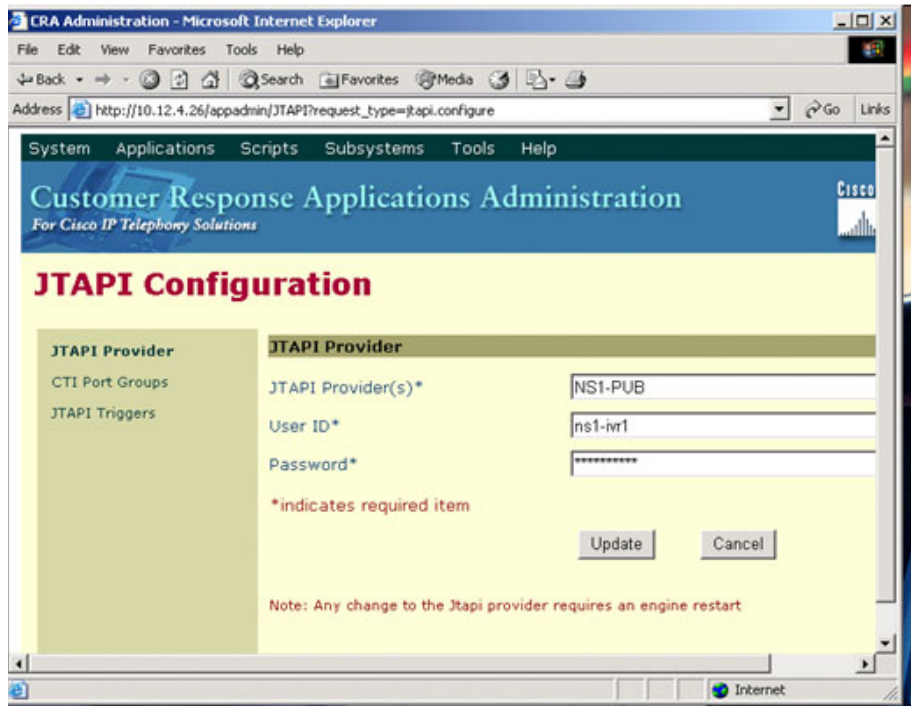
Additional VRU Call Information

Call Information	Expanded Call Variables
<input type="checkbox"/> Task ID	user.task.id
<input type="checkbox"/> Media ID	user.media.id
<input type="checkbox"/> Last Redirected Address	user.last.redirected.address
<input type="checkbox"/> Arrival Type	user.connect.type
<input type="checkbox"/> Session Handled	user.session.handled
<input type="checkbox"/> VRU Script Name	user.connect.script.name
<input type="checkbox"/> Config Param	user.connect.script.config

NS1IVR1 ICMVRUScripts



NS1IVR1 JTAPIProvider



NS1IVR1 JTAPI Triggers

The screenshot shows the 'JTAPI Trigger Configuration' page in the Cisco Customer Response Applications Administration interface. The page title is 'Customer Response Applications Administration For Cisco IP Telephony Solutions'. The main heading is 'JTAPI Trigger Configuration'. There is a link 'Add a New JTAPI Trigger' in the top right corner. On the left, there is a navigation menu with 'JTAPI Provider', 'CTI Port Groups', and 'JTAPI Triggers'. The main content area displays a table of configured triggers.

Route Point	Application	Sessions	Enabled	Copy	Delete	Rel
16000	IVR	300	true	[Copy]	[Delete]	[Rel]
16001	IVR	300	true	[Copy]	[Delete]	[Rel]
16002	IVR	300	true	[Copy]	[Delete]	[Rel]
16003	IVR	300	true	[Copy]	[Delete]	[Rel]
16004	IVR	300	true	[Copy]	[Delete]	[Rel]
16005	IVR	300	true	[Copy]	[Delete]	[Rel]
16006	IVR	300	true	[Copy]	[Delete]	[Rel]

NS1IVR1 ManageScripts

The screenshot shows the 'Manage Scripts' page in the CRA Administration interface. The page title is 'Customer Response Applications Administration' and it is for Cisco IP Telephony Solutions. The main heading is 'Manage Scripts' with a link to 'Add a Script'.

Name ▾ ▲	Last Modified	Created	Refresh	Restore in Repository	Upload to Repository	Delete
aa.aef	6/9/03 3:55 PM	4/2/03 2:29 PM				
GBMenu.aef	Not Available	6/26/03 10:52 AM				
GB_BasicQ.aef	Not Available	4/19/03 8:03 AM				
GB_BasicQ_MOH.aef	Not Available	5/12/03 11:58 AM				
GB_callflow_4a.aef	7/22/03 6:45 PM	5/7/03 5:51 PM				
GB_C54_Account_Balance.aef	7/22/03	7/22/03				

NS1IVR1 SystemParameterConfiguration

The screenshot shows a web browser window titled "CRA Administration - Microsoft Internet Explorer". The address bar displays "http://10.12.4.26/appadmin/SystemParams?request_type=sysparams.configure". The main content area is titled "System Parameters Configuration" and contains a table with the following parameters:

Parameter Name	Parameter Value
System Prompt Directory*	C:\Program Files\wfawid\Prompts\system
User Prompt Directory*	C:\Program Files\wfawid\Prompts\user
Codec*	G711
System Grammar Directory*	C:\Program Files\wfawid\Grammars\system
User Grammar Directory*	C:\Program Files\wfawid\Grammars\user
RTP Start Port*	16384
Default Language*	English (United States) [en_US] <input type="button" value="Edit"/>
Default Currency*	American Dollar [USD] <input type="button" value="Edit"/>
Default Session Timeout*	30 minutes

* indicates required item

ISN Post-Routed Call Flow

General Description of Call Flow

1. The call comes from the PSTN into an IOS H.323 GW (AS5xxx) which originates an H.323 admission request (ARQ) to its gatekeeper (GK). The GK responds with an Admission Confirm (ACF) if it knows how to route the call and the IP address of the ISN voice browser is provided in the ACF.
2. The GW routes the call using H.225 call setup procedures to the ISN voice browser (VB).
3. The ISN VB sends the details of the call to the ISN application server using HTTP.
4. The ISN application server sends a NEW_CALL event to ICM using the ICM/VRU Interface protocol via the ISN VRU PIM.
5. ICM, upon receipt of the NEW_CALL event, sends a CONNECT_TO_RESOURCE event back to the application server. The application server acks that with a RESOURCE_CONNECTED event, and then ICM executes the routing script enabled for that call.
6. Upon execution of the routing script by ICM, the application server gets a RUN_SCRIPT_REQ event from ICM.
7. The application server runs the script and sends instructions to the VB via HTTP (VXML) to play the media file. The VB sends HTTP requests to the media server to get the media file and then plays it out over the RTP channel to the originating IOS GW.
8. The DTMF buffer is cleared by the VB before playing the media file, and now it is ready to receive the DTMF digits from the caller.
9. After receiving the exact number of DTMF digits specified in the VXML request, the voice browser sends the digits to the application server via HTTP.
10. The application server, upon receiving the DTMF digits, sends a RUN_SCRIPT_RESULT event to the ICM.

11. Upon receiving the digits, ICM executes the rest of its script and tries to find an agent in a skill group based on the customer's DTMF entry. If an agent is not available, it queues the call to that skill group and sends a RUN_SCRIPT_REQ to the application server to play a hold announcement and music.
12. When an agent becomes available, ICM instructs the application server, with a CANCEL and a CONNECT event, to stop playing the media and start setting up the IP transfer to the agent.
13. The app server sends a VXML request to the voice browser to start call setup to the agent target.
14. The voice browser queries the gatekeeper via ARQ to find out where the agent is located. Upon receiving an ACF, it sends an H.225 SETUP to the CallManager where the agent is located.
15. The voice browser goes through several H.245 procedures to open and close the appropriate logical channels with the originating IOS GW, in order to transfer the call to the agent phone device in CallManager, and connect the call to the agent.

Specific Flow as per Given Configuration

Call comes to Site1 ISN1 voice browser from the PSTN. The number dialed by the customer is that of the Network IVR. ICM is notified of the call and ICM runs a script which instructs application server to run a script and collect DTMF digits. The collected digits are sent to ICM, and ICM then checks the caller entered digits (CED). Based on these it tries to find an agent for that particular skillgroup across all seven sites. As no agents are available at any site, the call gets queued to that skill group for all sites and the ISN is instructed to play media. ICM then finds an agent at Site1, and instructs the ISN to initiate an IP transfer to that particular agent.

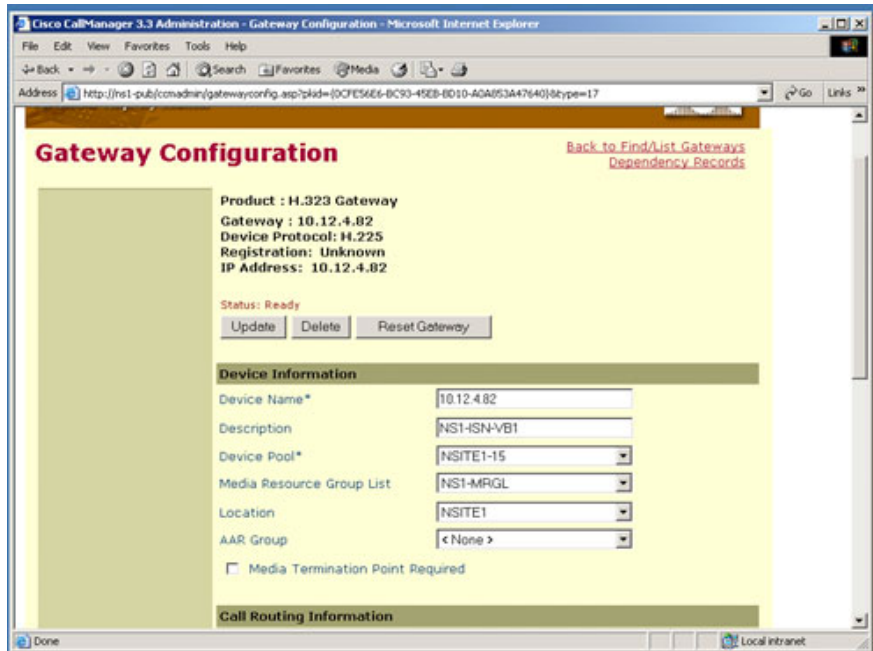
Configuration

The following screen shots provide the configuration used in this call flow for:

- Cisco CallManager

- Cisco ICM Software
- Cisco ISN

Cisco CallManager Configuration



Cisco ICM Software Configuration

Agent-1

The screenshot shows the 'Agent Explorer' configuration window. The 'Peripheral' is set to 'NS1CM_PIM_1'. The 'Optional Filter' is set to 'Name' with the condition 'Contains' and the value '10100'. The 'Hide legend' section shows a flow diagram with four steps: (1) Agent, (2) Route, (3) Peripheral target, and (4) Label. The 'Add Agent' list contains two entries: 'NS1CM_PIM_1.Agent_10100' and 'UNASSIGNED'. The right-hand pane shows the configuration for 'Agent_1' with the following details:

Agent | Advanced | Skill group membership | Supervisor

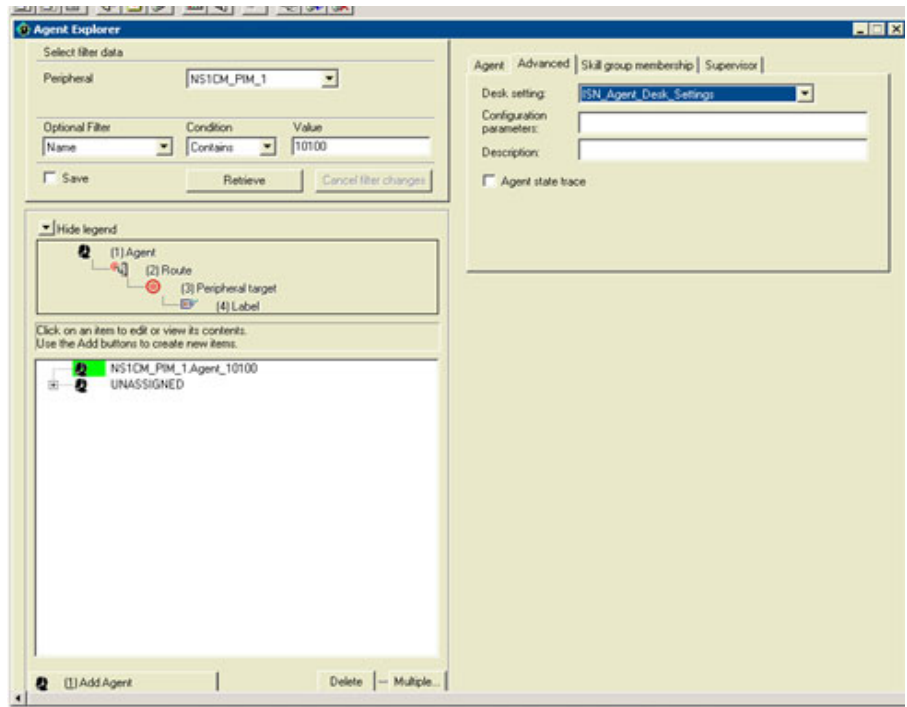
Personal information:

First name: 10100
 Last name: Agent
 Login name: 10100Agent (Login enabled:)
 Password: [Redacted] (Select Person...)

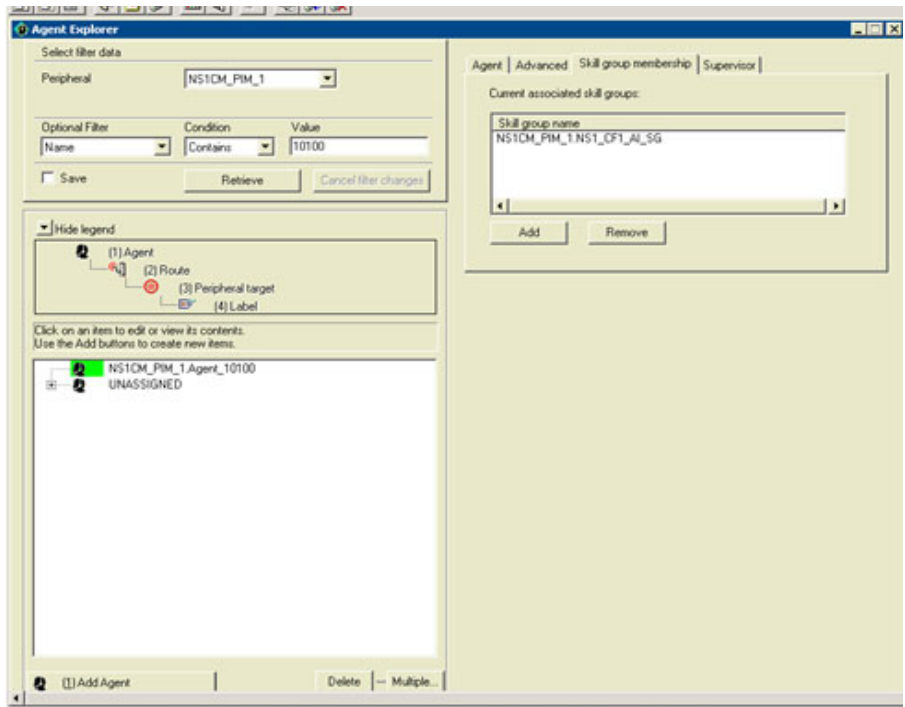
Enterprise name: NS1CM_PIM_1.Agent_10100
 Peripheral name: Agent10100
 Peripheral number: 10100 (value will be created if left blank)

Buttons: [Add Agent] [Delete] [Multiple...]

Agent-2



Agent-3



Agent Desk Settings

The screenshot displays the 'Agent Desk Settings List' window. On the left, there is a filter section with a table for optional filters. The table has three columns: 'Optional Filter', 'Condition', and 'Value'. The first row contains 'Name', 'Contains', and 'ISN_Agent'. Below the table are buttons for 'Save', 'Retrieve', and 'Cancel filter changes'. The main list area shows a single entry: 'ISN_Agent_Desk_Settings' with a checkmark in the selection column.

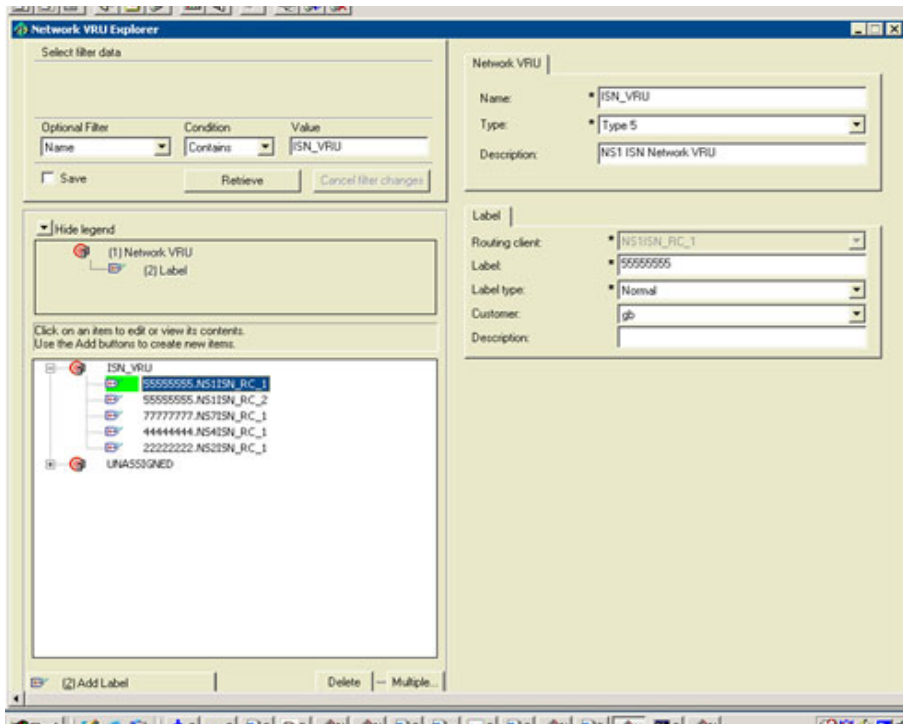
On the right, the 'Attributes' section is expanded to show configuration for the selected entry. The attributes are as follows:

- Name: ISN_Agent_Desk_Settings
- Ring no answer time: 20 seconds (1 - 120)
- Ring no answer dialed number: <None>
- Logout non-activity time: seconds (10 - 7200)
- Work mode on incoming: Required
- Work mode on outgoing: Optional
- Wrap up time: 90 seconds (0 - 7200)
- Assist call method: Consult
- Emergency alert method: Consult
- Description: (empty text box)

At the bottom, there are two groups of checkboxes:

- Miscellaneous:**
 - Auto answer
 - Idle reason required
 - Logout reason required
 - Auto record on emergency
- Outbound Access:**
 - International
 - National
 - Local private network
 - Operator assisted
 - PSX

Network VRU



Network VRU Script

The screenshot shows the 'Network VRU Script List' configuration window. It is divided into several sections:

- Select filter data:** Includes dropdowns for 'Network VRU' (set to 'ISN_VRU') and 'Customer' (set to '<Ab>'). Below these are fields for 'Optional Filter', 'Condition', and 'Value', all currently set to 'None'. Buttons for 'Save', 'Retrieve', and 'Cancel filter changes' are present.
- Filter for currently selected records:** Shows 'Network VRU : <Ab>' and 'Customer : <Ab>'.
- Script List:** A list of scripts with checkboxes: 'GB_CF48', 'GB_ISN_CF1_NVR' (selected), 'GB_Prem', 'GBMenu', and 'ISN_BasicQ'.
- Attributes:** A detailed configuration panel for the selected script, including:
 - Name: GB_ISN_CF1_NVR
 - Network VRU: ISN_VRU
 - VRU script name: M.GB_ISN_CF1_NVR
 - Timeout: 180 seconds
 - Configuration param: 1-4,10,5,5
 - Customer: gb
 - Interruptible:
 - Overridable:
 - Description: Play the CF1 prompt and get the caller entered option

NIVR Dialed Number-1

Select filter data

Routing client: NS11SN_RC_1

Customer: cAb

Optional Filter: Condition Value

None - - -

Save

Dialled Number / Script Selector

Name
NS11SN_RC_1.9193119110
<input checked="" type="checkbox"/> NS11SN_RC_1.9193119120

Attributes | Dialled Number Mapping | Dialled Number Label

Routing client: NS11SN_RC_1

Media routing domain: Cisco_Voice

Dialed number string / Script selector: 9193119110

Name: NS11SN_RC_1.9193119110

Customer: gb

Default label: <None>

Description: NS1 ISN NIVR

NIVR Dialed Number-2

Select filter data

Routing client: NS1ISN_RC_1

Customer: cAb

Optional Filter: None

Condition: Value

Save Retrieve Cancel filter changes

Dial Number / Script Selector

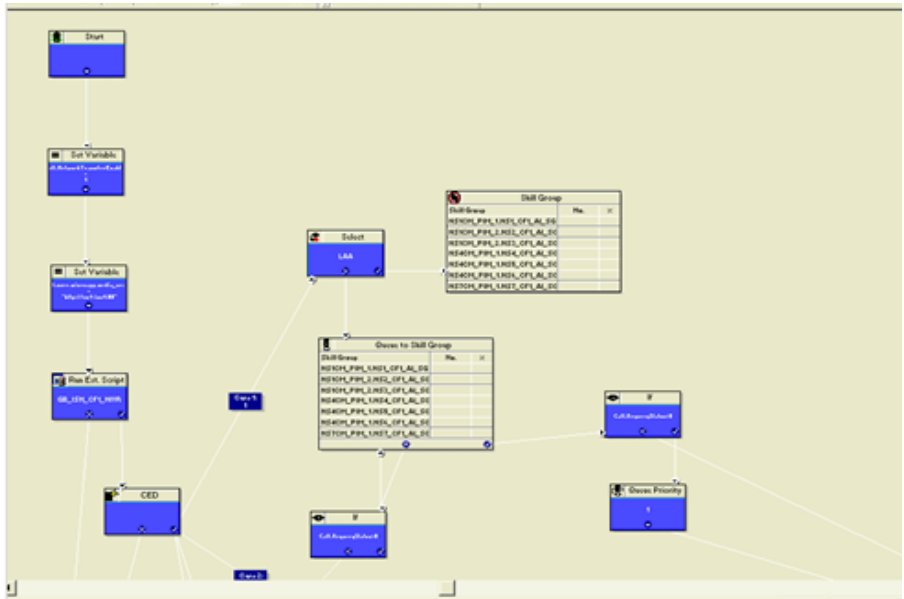
Name
NS1ISN_RC_1.9193119110
NS1ISN_RC_1.9193119120

Attributes: Dial Number Mapping | Dial Number Label

CLID	CED	Call type
Ab	Ab	NS1_CF1_ISN_NIVR

Add... Edit... Remove Up Down

NIVR Script Snip



NS1-PG3-1

Select filter data		
Optional Filter	Condition	Value
Name	Contains	NS1PG3
<input type="checkbox"/> Save	Retrieve	Cancel filter changes

Hide legend	
(1) PG	(2) Peripheral

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

NS1PG3	NS1ISN_PG_1	NS1ISN_PG_2
--------	-------------	-------------

Logical Controller	
Logical controller ID: * 5004	Physical controller ID: * 5005
Name:	* NS1PG3
Client type:	* VRU
Configuration parameters:	
Description:	NS1 ISN PG
Physical controller description:	
Primary CTI address:	
Secondary CTI address:	

Skill Group Mask	Routing client	Default route	Peripheral Monitor
Peripheral	Advanced		Agent Distribution
Peripheral ID:	* 5010		
Name:	* NS1ISN_PG_1		
Peripheral name:	* NS1ISN_PG_1		
Client type:	* VRU		
Location:			
Abandoned call wait time:	* 0		
Configuration parameters:			
Call control variable map:			
Description:			
Default desk settings:	* NONE		
Peripheral service level type:	* Calculated by Call Center		
Enable post routing:	<input checked="" type="checkbox"/>		

NS1-PG3-2

Optional Filter	Condition	Value
Name	Contains	NS1PG3

Save

Hide legend

```

graph TD
    PG3[NS1PG3] --> PG1[1] PG
    PG3 --> PG2[2] Peripheral
  
```

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

```

graph TD
    NS1PG3[NS1PG3] --> NS1ISN_P3M_1[NS1ISN_P3M_1]
    NS1PG3 --> NS1ISN_P3M_2[NS1ISN_P3M_2]
  
```


Name:	NS1PG3
Client type:	VRU
Configuration parameters:	
Description:	NS1 ISN PG
Physical controller description:	
Primary CTI address:	
Secondary CTI address:	

Peripheral	Advanced	Agent Distribution
Skill Group Mask	Routing client	Default route
		Peripheral Monitor
Name:	NS1ISN_RC_1	ID: 5012
Timeout threshold:	2000	
Late threshold:	1000	
Timeout limit:	10	
Default media routing domain:	Cisco_Voice	
Default call type:	NONE	
Configuration parameters:		
Use DN/Label map:	<input type="checkbox"/>	
Client type:	VRU	
Description:		
Network routing client:		
Network transfer preferred:	<input type="checkbox"/>	

NS1-PG3-3

Select filter data

Optional Filter	Condition	Value
Name	Contains	NS1PG3

Save

Hide legend

```

graph TD
    PG["(1) PG"] --- P1["(2) Peripheral"]
    PG --- P2["(2) Peripheral"]
  
```

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

```

graph TD
    NS1PG3["NS1PG3"] --- NS1ISN_P3M_1["NS1ISN_P3M_1"]
    NS1PG3 --- NS1ISN_P3M_2["NS1ISN_P3M_2"]
  
```

(2) Add Peripheral -- Multiple

Logical Controller

Logical controller ID: 5004 Physical controller ID: 5005

Name: NS1PG3

Client type: VRU

Configuration parameters:

Description: NS1 ISN PG

Physical controller description:

Primary CTI address:

Secondary CTI address:

Skill Group Mask: Peripheral Routing client: Advanced Default route: Peripheral Monitor: Agent Distribution

Available holdoff delay: 4

Default route: NONE

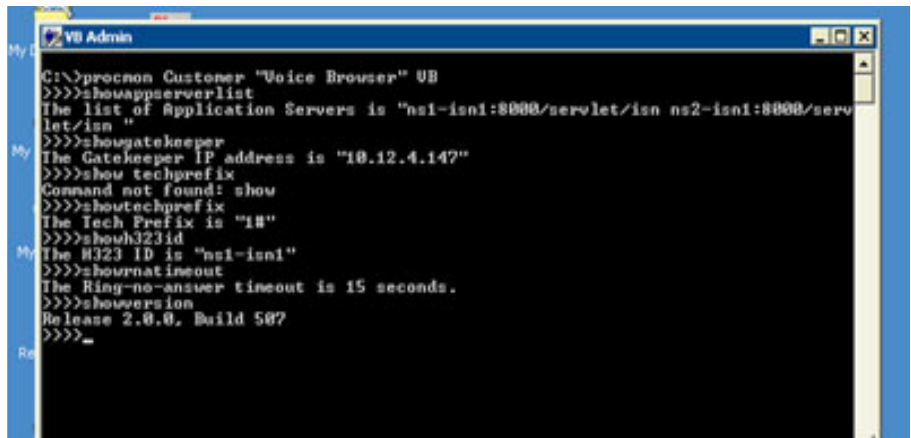
Answered short calls threshold: 0

Network VRU: ISN_VRU

Agent Auto-Configuration

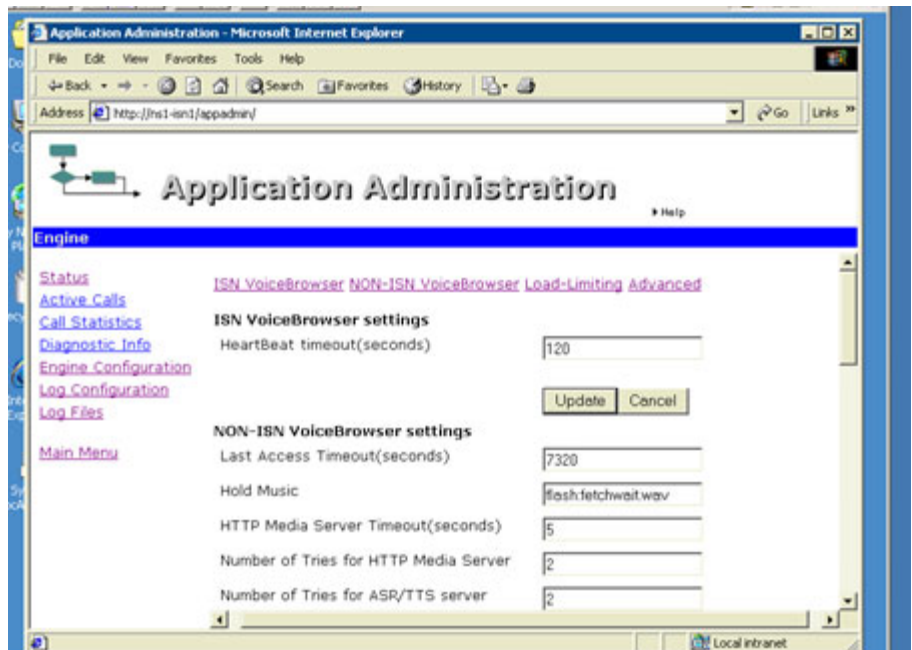
Cisco ISN Configuration

NS1-ISN1-VB



```
C:\>procmon Customer "Voice Browser" VB
>>>>showappserverlist
The list of Application Servers is "ns1-isn1:8000/servlet/isn ns2-isn1:8000/serv
let/isn "
>>>>showgatekeeper
The Gatekeeper IP address is "10.12.4.14?"
>>>>show techprefix
Command not found: show
>>>>showtechprefix
The Tech Prefix is "i#"
>>>>showh323id
The H323 ID is "ns1-isn1"
>>>>showrnatimeout
The Ring-no-answer timeout is 15 seconds.
>>>>showversion
Release 2.0.0, Build 50?
>>>>_
```

NS1-ISN1-AppAdmin



Outbound Call Flow (Blended Agent)

General Description of Call Flow

Mode: Predictive /Progressive

1. BA Dialer requests skill group statistics from CTI Server.
2. CTI Server returns skill statistics from the ACD/Cisco CallManager.
3. BA Dialer uses predictive logic to calculate the number of lines to dial and requests customer records from the Campaign Manager. Campaign Manager retrieves the required customers from its database and sends those customers to BA Dialer.
4. BA Dialer makes reservation calls to agents via the MR PG interface. Once agents are reserved, BA Dialer makes customer calls via Cisco Gateway. Call classification (that is, the result of the call: busy, answering machine, etc.) is handled on BA Dialer. In addition, BA Dialer sends reservation calls to an agent queue.
5. If a customer is contacted, they are transferred to an available agent within that skill group.
6. (Optional functionality provided by Cisco Client Services or BA customer) When agents receive customer calls, they get an HTML-based script popup on their desktops, originating from Microsoft Active Server Pages.
7. After customer call ends, a wrap-up code is sent to Campaign Manager to save in the Logger database

Specific Flow as per Given Configuration

Customer records are imported at the Site1 Logger dynamically. A Dialing List is created. During an active Campaign, the Blended Agent (BA) Dialer at Site1 makes a reservation call to a BA agent at Site1 via the MR PG of Site1. Agents are set to reserved state. The BA Dialer dials out a customer from the Dialing List via a Cisco Gateway. If the customer is contacted, the dialer transfers the customer call to the reserved agent within the BA skill group. After the customer call ends, a wrap-up code is sent to the Campaign Manager and saved in the Logger database.

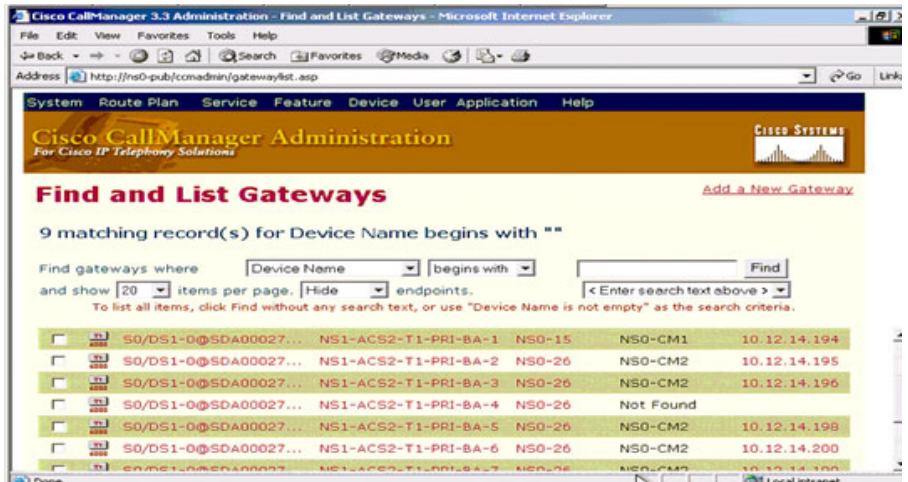
Configuration

The following screen shots provide the configuration used in this call flow for:

- Cisco CallManager
- Cisco ICM Software

Cisco CallManager Configuration

BA_Gateway_NS0_1



BA_Gateway_NS0_2

Cisco CallManager 3.3 Administration - Gateway Configuration - Microsoft Internet Explorer

Address: http://ns0-pub/ccmadmin/gatewayconfig.asp?pkid={72B9D6FF-4E43-4784-8280-B0A0C9790164}&stype=1

Product : Cisco Catalyst 6000 T1 VoIP Gateway
Gateway : 9B/DS1-0@SDA00027E394E7E
Device Protocol: Digital Access PRI
Registration: Registered with Cisco CallManager NS0-CM1
IP Address: 10.12.14.194

Status: Ready

Update Delete Reset Gateway

Device Information

MAC Address*	00027E394E7E
Description	NS1-ACS2-T1-PRI-BA-1
Device Pool*	NS0-15
Network Locale	United States
Media Resource Group List	< None >
Location	NS0
AAR Group	< None >
Load Information	

BA_Gateway_NS1_1

The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The page title is "Gateway Configuration". The browser address bar shows the URL: [http://ns1-pub/CCMAdmin/gatewayconfig.asp?pkid=\(DOE38AFB-6609-4996-8DE6-BF1D46A0A7C8\)&type=1](http://ns1-pub/CCMAdmin/gatewayconfig.asp?pkid=(DOE38AFB-6609-4996-8DE6-BF1D46A0A7C8)&type=1). The page content includes:

- Assigned to Route Group:** Blended_Agent_Route_Group
- Product:** Cisco Catalyst 6000 T1 VoIP Gateway
- Gateway:** S0/DS1-0@SDA00027E394E69
- Device Protocol:** Digital Access PRI
- Registration:** Registered with Cisco CallManager NS1-CM1
- IP Address:** 10.12.14.183
- Status:** Ready
- Buttons:** Update, Delete, Reset Gateway
- Device Information:**
 - MAC Address*: 00027E394E69
 - Description: NS1-ACS1-T1-PRI-BA4
 - Device Pool*: NSITE1-15
 - Network Locale: United States
 - Media Resource Group List: NS1-MRGL
 - Location: NSITE1
 - AAR Group: < None >

■ Outbound Call Flow (Blended Agent)

BA_Gateway_NS1_2

The screenshot displays the Cisco CallManager 3.3 Administration Gateway Configuration page in a Microsoft Internet Explorer browser. The address bar shows the URL: <http://hs1-pub/CCMAdmin/gatewayconfig.asp?pkid={DOE38AFB-6609-4966-8DE6-BF1D46A0A7C8}&type=1>. The page is divided into two main sections: Interface Information and Call Routing Information.

Interface Information

PRI Protocol Type*	PRI NI2
Protocol Side*	User
Channel Selection Order*	Bottom Up
Channel IE Type*	Use Number when IB
PCM Type*	p-low
Delay for first restart (1/8 sec ticks)	32
Delay between restarts (1/8 sec ticks)	4

Inhibit restarts at PRI initialization
 Enable status poll

Call Routing Information

Inbound Calls

Significant Digits*	All
Calling Search Space	< None >
AAR Calling Search Space	< None >

Device_Pool

Device Pool: NSITE1-37 (559 members)**
Status: Ready

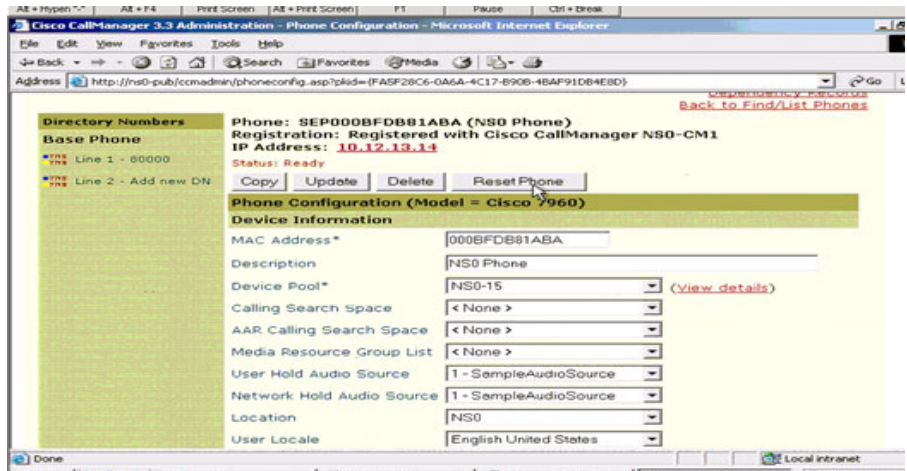
Copy Update Delete Reset Devices

Device Pool Settings

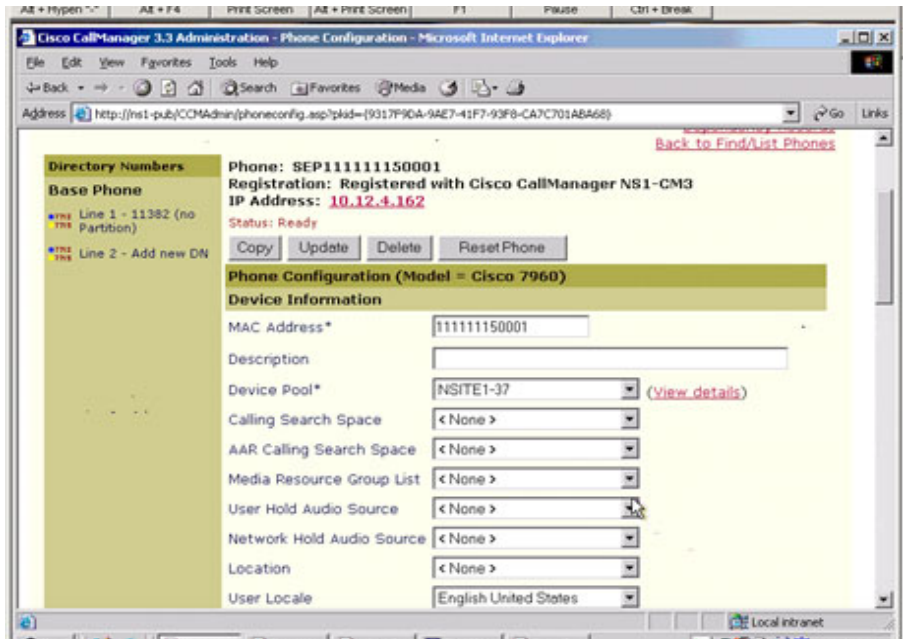
Device Pool Name*	NSITE1-37
Cisco CallManager Group*	NS1-CM-37
Date/Time Group*	CMLocal
Region*	NSITE1
Softkey Template*	Standard User
SRST Reference*	Disable
Calling Search Space for Auto-registration	< None >
Media Resource Group List	NS1-MRGL
Network Hold MOH Audio Source	1 - SampleAudioSource
User Hold MOH Audio Source	1 - SampleAudioSource
Network Locale	United States
User Locale	English United States

* indicates required item

NSO_Phone



NS1_Phone_1



Outbound Call Flow (Blended Agent)

NS1_Phone_2

The screenshot shows the Cisco CallManager 3.3 Administration interface in Microsoft Internet Explorer. The page title is "Directory Number Configuration" and the URL is "http://ns1-pub/CCMAdmin/directorynumber.asp?numPlanMapID={E40822CC-6ECD-4439-BFEA-D373B4B42E61}".

Directory Number Configuration

[Configure Device \(SEP111111150001\)](#)
[Dependency Records](#)

Devices using this Directory Number

- SEP111111150001 (Line 1)

Directory Number: 11382
 Status: Ready

Update Delete **Reset Devices**

Directory Number

Directory Number* 11382
 Partition <None >

Directory Number Settings

Voice Mail Profile <None > (Choose <None> to use default)
 Calling Search Space <None >
 AAR Group <None >
 User Hold Audio Source <None >
 Network Hold Audio Source <None >
 Call Waiting Default
 Auto Answer Auto Answer Off

Call Forward and Pickup Settings

PG2User_Dialer

The screenshot shows the Cisco CallManager 3.3 Administration web interface in Microsoft Internet Explorer. The browser address bar shows the URL: `http://rs1-pub/CCMAdmin/userpref/config.asp?pageType=Config&userID=PG2user&action=GoToPhones`. The page title is "Cisco CallManager Administration" and the main heading is "Device Association".

On the right side of the page, there are links for "User Configuration", "Add a New User", and "Back to User List".

Device ID	Port Description	Port Number
SEPDA005000F000	Port: 0 for ICM BAdiale...	15000
SEPDA005000F001	Port: 1 for ICM BAdiale...	15001
SEPDA005000F002	Port: 2 for ICM BAdiale...	15002
SEPDA005000F003	Port: 3 for ICM BAdiale...	15003
SEPDA005000F004	Port: 4 for ICM BAdiale...	15004
SEPDA005000F005	Port: 5 for ICM BAdiale...	15005
SEPDA005000F006	Port: 6 for ICM BAdiale...	15006

PG2User_Phone_1

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar shows the URL: `http://rns1-pub/CCMAdmin/userpref/config.asp?pageType=Config&userID=PG2user`. The page title is "Cisco CallManager Administration" with the subtitle "For Cisco IP Telephony Solutions". The navigation menu includes: System, Route Plan, Service, Feature, Device, User, Application, Help.

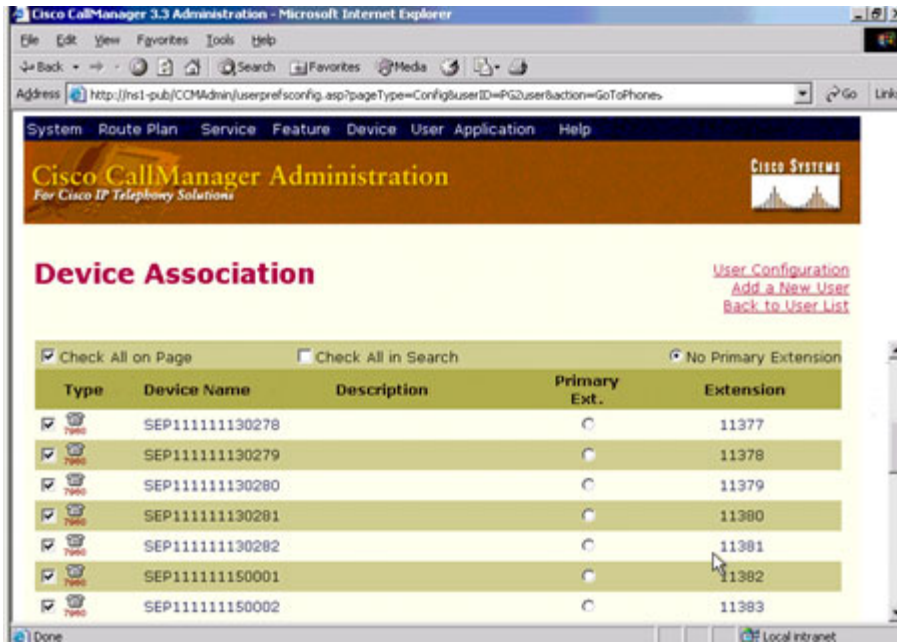
User Configuration

[Add a New User](#)
[Back to User List](#)

Application Profiles of	First Name	<input type="text"/>
Device_Association	Last Name*	PG2user
Cisco_IPMA	User ID	PG2user
Extension_Mobility	User Password*	<input type="button" value="Change..."/>
SoftPhone	PIN *	<input type="button" value="Change..."/>
	Telephone Number	<input type="text"/>
	Manager User ID	<input type="text"/>
	Department	<input type="text"/>
	User Locale	< None >

The status bar at the bottom shows "Done" and "Local intranet".

PG2User_Phone_2



The screenshot shows the Cisco CallManager Administration interface in Microsoft Internet Explorer. The page title is "Cisco CallManager Administration" and the sub-page is "Device Association". The address bar shows the URL: `http://rns1-pub/CCMAdmin/userpref/config.asp?pageType=Config&userID=PG2user&action=GoToPhones`. The page has a navigation menu with items: System, Route Plan, Service, Feature, Device, User, Application, Help. Below the navigation is the Cisco CallManager Administration logo and the Cisco Systems logo. On the right side, there are links: [User Configuration](#), [Add a New User](#), and [Back to User List](#). The main content area contains a table with the following data:

Type	Device Name	Description	Primary Ext.	Extension
<input checked="" type="checkbox"/>	SEP111111130278		<input type="radio"/>	11377
<input checked="" type="checkbox"/>	SEP111111130279		<input type="radio"/>	11378
<input checked="" type="checkbox"/>	SEP111111130280		<input type="radio"/>	11379
<input checked="" type="checkbox"/>	SEP111111130281		<input type="radio"/>	11380
<input checked="" type="checkbox"/>	SEP111111130282		<input type="radio"/>	11381
<input checked="" type="checkbox"/>	SEP111111150001		<input type="radio"/>	11382
<input checked="" type="checkbox"/>	SEP111111150002		<input type="radio"/>	11383

At the top of the table, there are checkboxes for "Check All on Page" (checked), "Check All in Search" (unchecked), and "No Primary Extension" (selected). The status bar at the bottom shows "Done" and "Local intranet".

Outbound Call Flow (Blended Agent)

Route_Group_1

The screenshot displays the Cisco CallManager 3.3 Administration interface for configuring a Route Group. The browser window title is "Cisco CallManager 3.3 Administration - Route Group Configuration - Microsoft Internet Explorer". The address bar shows the URL: `http://ns1.../admin/routegroupconfig.asp?Action=Update&PKID={3B407C2-068D-422F-9D03-79D63F44B483}`.

Route Group Name: Blended_Agent_Route_Group
Route Group QSIG Types: NON-QSIG
Status: Ready

Buttons: Update, Delete

Route Group Name:

Buttons: Add Device, Remove Device

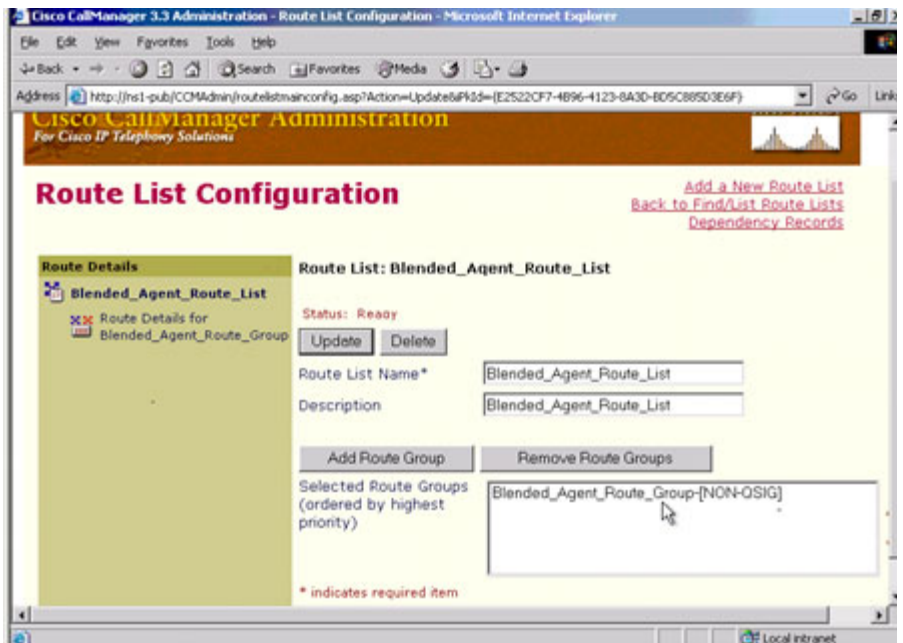
Route Group Members

Select	Device	Port	Order
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E69	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E6C	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E6A	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E66	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E6B	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E6D	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E67	All	1
<input type="checkbox"/>	S0/DS1-0@SDA00027E394E68	All	1

Left sidebar (Devices):

- S0/DS1-0@SDA00027E394E69 on all ports
- S0/DS1-0@SDA00027E394E6C on all ports
- S0/DS1-0@SDA00027E394E6A on all ports
- S0/DS1-0@SDA00027E394E66 on all ports
- S0/DS1-0@SDA00027E394E6B on all ports
- S0/DS1-0@SDA00027E394E6D on all ports
- S0/DS1-0@SDA00027E394E67 on all ports
- S0/DS1-0@SDA00027E394E68 on all ports

Route_List_1



Route_List_2

Cisco CallManager 3.3 Administration - Route Details Configuration - Microsoft Internet Explorer

Address: http://ns1-pub/CCMAdmin/routelistconfig.asp?Action=Update&RgName=Blended%SFAgent%SFRoute%SFGroup&RgID={3EAB0...}

Route List: Blended_Agent_Route_List
Route Group: Blended_Agent_Route_Group

Status: Ready

Calling Party Transformations
 These settings will override that of Route Pattern Configuration.

Use Calling Party's External Phone Number Mask*

Calling Party Transform Mask

Prefix Digits (Outgoing Calls)

Called Party Transformations
 These settings will override that of Route Pattern Configuration.

Discard Digits
 Using North American Numbering Plan

Called Party Transform Mask

Prefix Digits (Outgoing Calls)

* indicates required item

Route_Pattern_1

The screenshot shows the Cisco CallManager 3.3 Administration interface for configuring a route pattern. The browser window title is "Cisco CallManager 3.3 Administration - Route Pattern Configuration - Microsoft Internet Explorer". The address bar shows the URL: <http://ns1-pub/CCMAdmin/routepatternconfig.asp?plid={8DFC6123-CABF-4122-AB91-SCE24A521685}>.

Pattern Definition

Route Pattern*	8.8XXXX
Partition	< None >
Description	Blended Agent Route pattern
Numbering Plan*	North American Numbering Plan
Route Filter	< None >
Gateway/Route List*	Blended_Agent_Route_List (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern
	<input type="checkbox"/> Provide Outside Dial Tone <input type="checkbox"/> Urgent Priority

Calling Party Transformations

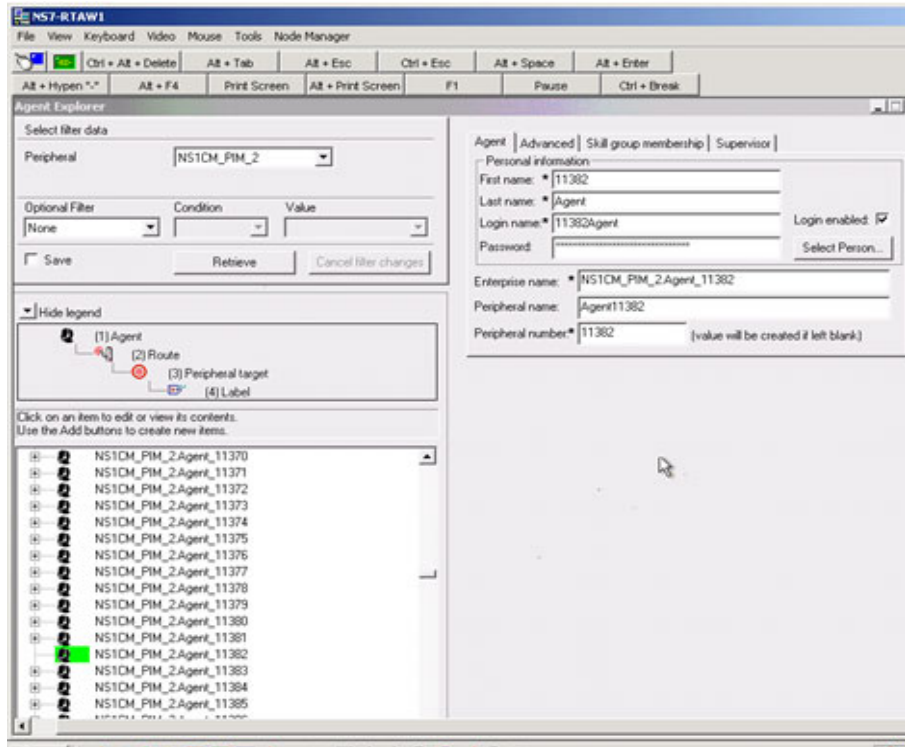
<input type="checkbox"/> Use Calling Party's External Phone Number Mask	
Calling Party Transform Mask	
Prefix Digits (Outgoing Calls)	
Calling Party Presentation	Default

Called Party Transformations

Discard Digits	PreDot
Called Party Transform Mask	

Cisco ICM Software Configuration

Agent_1



Agent_2

The screenshot displays the 'Agent Explorer' window. At the top, there is a 'Select filter data' section with a 'Peripheral' dropdown set to 'NS1CM_PIM_2'. Below this is an 'Optional Filter' section with 'None' selected for the filter, and empty fields for 'Condition' and 'Value'. There are 'Save', 'Retrieve', and 'Cancel filter changes' buttons. A 'Hide legend' section contains a diagram with four nodes: (1) Agent, (2) Route, (3) Peripheral target, and (4) Label. Below the legend, there is a list of agents with expand/collapse icons and their IDs. The agent 'NS1CM_PIM_2,Agent_11362' is highlighted in green. To the right of the list is a detailed view for the selected agent, showing 'Agent: Advanced', 'Skill group membership: Supervisor', 'Desk setting: NS1 CF3C', and 'Agent state trace' checkbox.

Agent ID
NS1CM_PIM_2,Agent_11370
NS1CM_PIM_2,Agent_11371
NS1CM_PIM_2,Agent_11372
NS1CM_PIM_2,Agent_11373
NS1CM_PIM_2,Agent_11374
NS1CM_PIM_2,Agent_11375
NS1CM_PIM_2,Agent_11376
NS1CM_PIM_2,Agent_11377
NS1CM_PIM_2,Agent_11378
NS1CM_PIM_2,Agent_11379
NS1CM_PIM_2,Agent_11380
NS1CM_PIM_2,Agent_11381
NS1CM_PIM_2,Agent_11362
NS1CM_PIM_2,Agent_11363
NS1CM_PIM_2,Agent_11364
NS1CM_PIM_2,Agent_11365

Outbound Call Flow (Blended Agent)

Agent_3

The screenshot displays the 'Agent Explorer' application window. The interface is divided into several sections:

- Filter Section:**
 - 'Select filter data' with 'Peripheral' set to 'NS1CM_PIM_2'.
 - 'Optional Filter' set to 'None'.
 - 'Condition' and 'Value' dropdowns.
 - Buttons: 'Save', 'Retrieve', and 'Cancel filter changes'.
- Legend Section:**
 - 'Hide legend' dropdown.
 - A flow diagram showing: (1) Agent → (2) Route → (3) Peripheral target → (4) Label.
 - Instructions: 'Click on an item to edit or view its contents. Use the Add buttons to create new items.'
- Agent List Section:**
 - A scrollable list of agents with IDs: NS1CM_PIM_2.Agent_11370 through NS1CM_PIM_2.Agent_11385.
 - The entry 'NS1CM_PIM_2.Agent_11382' is highlighted in green.
- Right Panel (Skill Group Management):**
 - Tabs: 'Agent', 'Advanced', 'Skill group membership', 'Supervisor'.
 - 'Current associated skill group:' section with a list box containing 'NS1CM_PIM_2.NS1_CFS3C_B5_5G'.
 - 'Add' and 'Remove' buttons.

Agent_4

The screenshot displays the 'Agent Explorer' window. At the top, there is a 'Select filter data' section with a dropdown menu set to 'Peripheral' and a value of 'NS1CM_PIM_2'. Below this is an 'Optional Filter' section with a dropdown set to 'None' and buttons for 'Save', 'Retrieve', and 'Cancel filter changes'. A legend section shows a tree structure with four items: (1) Agent, (2) Route, (3) Peripheral target, and (4) Label. Below the legend is a list of agents, each with a small icon and a name. The agent 'NS1CM_PIM_2,Agent_11382' is highlighted in green. On the right side of the window, there is a 'Supervisor Agent' section with fields for 'Domain name' (IPCC), 'Supervisor login as user' (11382), 'Supervisor login password', and 'Description' (Agent team supervisor NT login account).

Agent Explorer

Select filter data
Peripheral: NS1CM_PIM_2

Optional Filter: None
Condition: [] Value: []

Save Retrieve Cancel filter changes

Hide legend

(1) Agent
(2) Route
(3) Peripheral target
(4) Label

Click on an item to edit or view its contents.
Use the Add buttons to create new items.

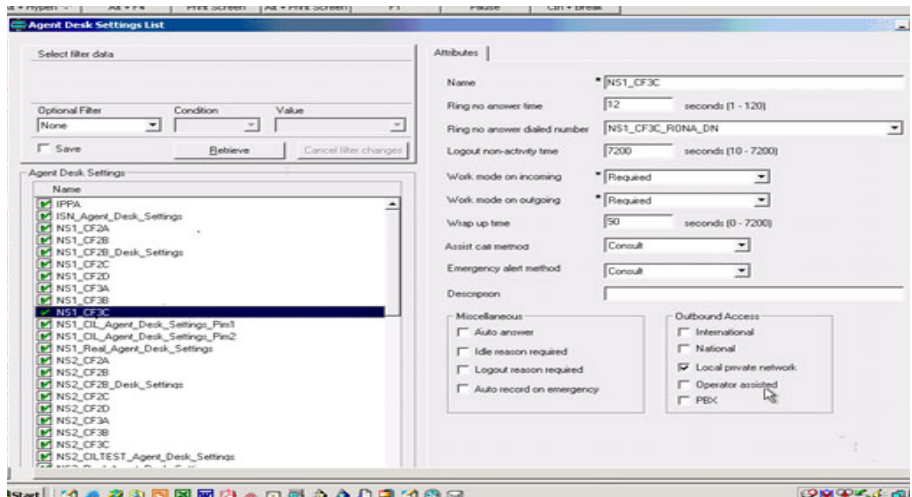
- NS1CM_PIM_2,Agent_11370
- NS1CM_PIM_2,Agent_11371
- NS1CM_PIM_2,Agent_11372
- NS1CM_PIM_2,Agent_11373
- NS1CM_PIM_2,Agent_11374
- NS1CM_PIM_2,Agent_11375
- NS1CM_PIM_2,Agent_11376
- NS1CM_PIM_2,Agent_11377
- NS1CM_PIM_2,Agent_11378
- NS1CM_PIM_2,Agent_11379
- NS1CM_PIM_2,Agent_11380
- NS1CM_PIM_2,Agent_11381
- NS1CM_PIM_2,Agent_11382
- NS1CM_PIM_2,Agent_11383
- NS1CM_PIM_2,Agent_11384
- NS1CM_PIM_2,Agent_11385

Agent | Advanced | Skill group membership | Supervisor |
 Supervisor Agent

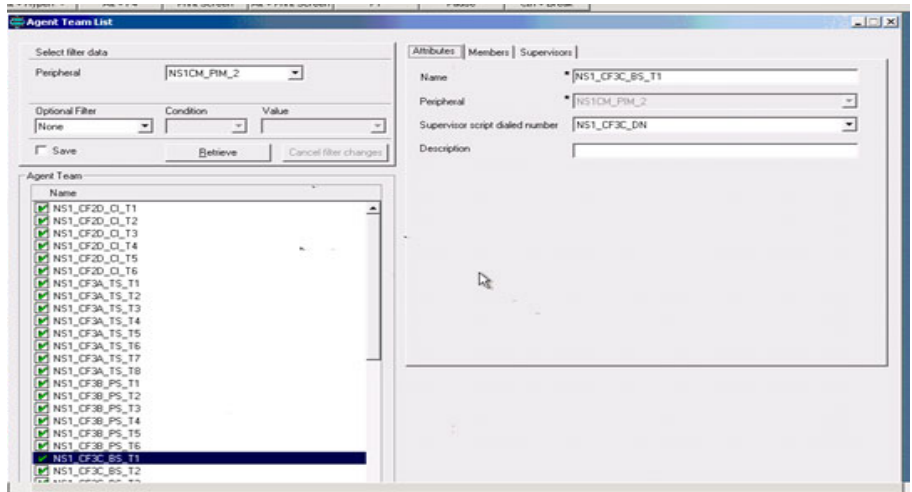
Domain name: IPCC
 Supervisor login as user: 11382
 Supervisor login password: []
 Description: Agent team supervisor NT login account

Outbound Call Flow (Blended Agent)

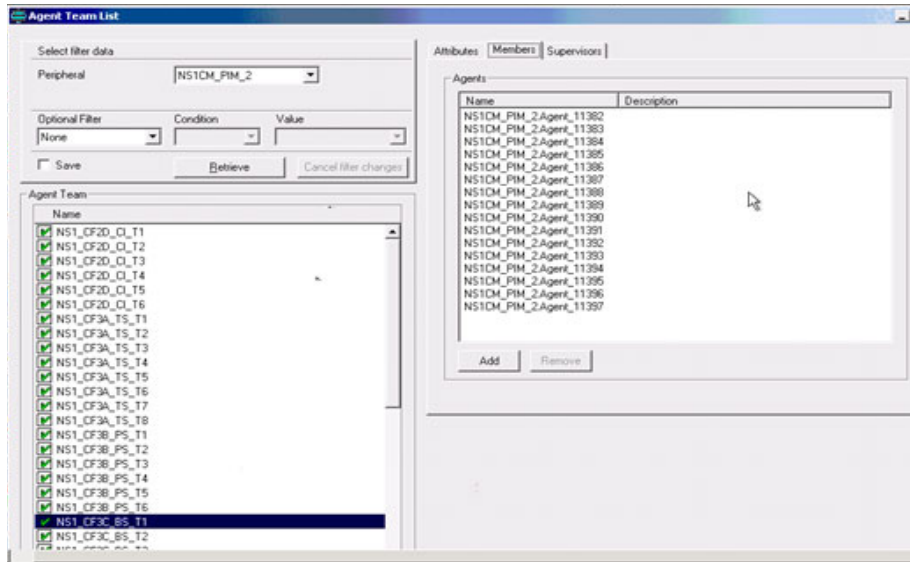
Agent_Desk



Agent_Team_1

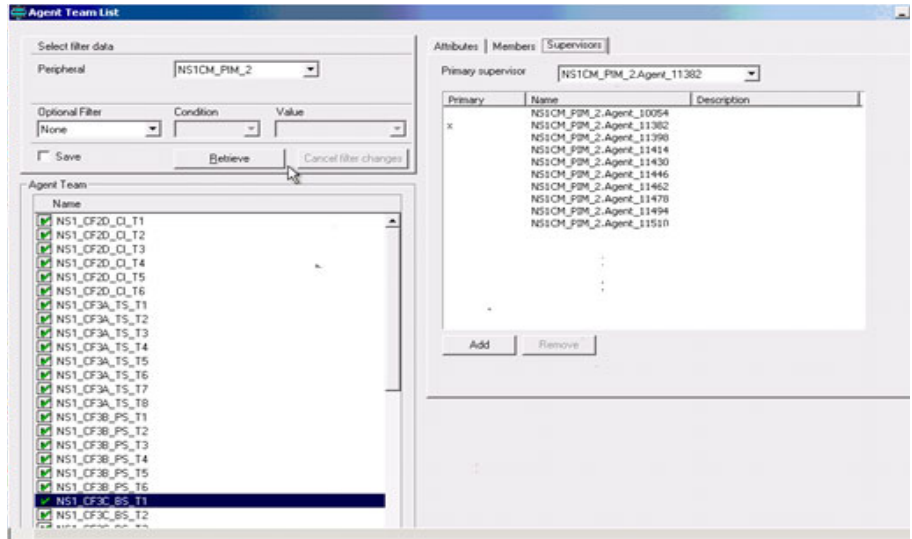


Agent_Team_2

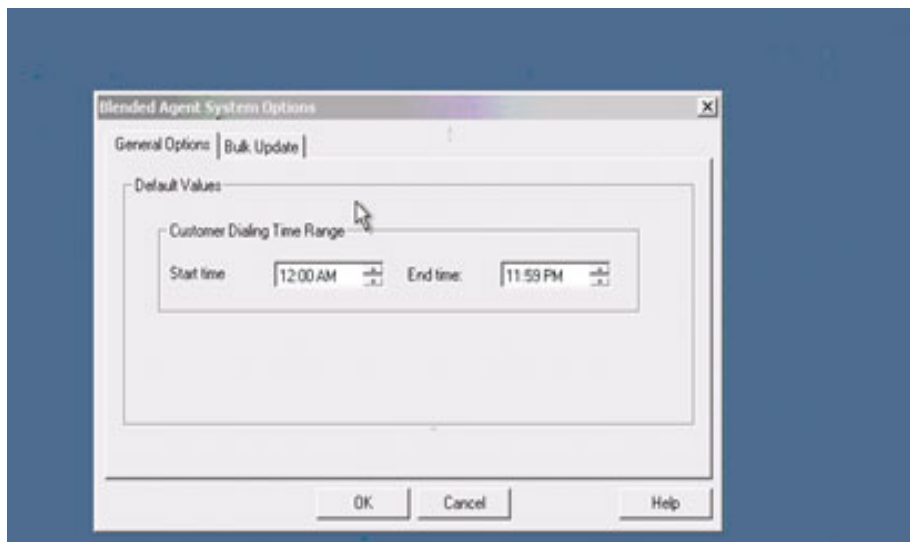


Outbound Call Flow (Blended Agent)

Agent_Team_3



BA_System



Call_Type

The screenshot displays the 'Call Type List' application window. It is divided into several sections:

- Select filter data:** A dropdown menu for 'Customer' is set to 'gb'. Below it, an 'Optional Filter' section has 'None' selected for the filter, and empty fields for 'Condition' and 'Value'. 'Save' and 'Retrieve' buttons are present, along with a 'Cancel filter changes' link.
- Call Type List:** A list of call types with checkboxes. The selected item is 'NS1_BA_3C_13307'. Other items include 800_CF2A through 800_CF2E, 800_CF2E_Premium, 800_CF4A, 800_CF4B, Busy_18000, CF2A_Member_Banking, CF2B_Brokerage_Account, CF2C_Broker_HelpLine, CF2D_Inbound_Collections, CF2E_Sales_Brokerage, CF4A_Account_Balance, CF4B_CreditCard_Payment, Default_RONA, Emergency_Assist, MR_CT, NS1_BA_3C_25001, and NS1_CF1_JSN_ENVR.
- Attributes:** A form for the selected call type. The 'Name' field contains 'NS1_BA_3C_13307'. The 'Customer' dropdown is set to 'gb'. The 'Service level' section includes a 'Service level threshold' of '20' and a 'Service level type' dropdown set to 'Ignore Abandoned Calls'. There are checkboxes for 'Override System Information Default' next to the threshold and service level type fields. A 'Description' field is also present but empty.

Outbound Call Flow (Blended Agent)

Campaign_1

Blended Agent Campaign

Select filter data

Query Rule: Any

Optional Filter: NONE Condition: Value:

Save

Campaign

Name
<input checked="" type="checkbox"/> NS1_CMP1
<input checked="" type="checkbox"/> NS7_CMP_DIALER

Campaign General Query Rule Selection Skill Group Selection Call Target

Campaign name: NS1_CMP1 Enable

Description: Campaign for Dialer 1 & 2

Dialing algorithm

Lines per agent (1-10): 1.00

Dialing Options

Maximum lines per agent (1-100): 1.00

Abandon calls limit (0-20): 2%

Dial settings

No answer callback delay: 1 Minute(s)

Busy signal callback delay: 1 Second(s)

No answer ring limit (2-10): 4

Maximum attempt (1-100): 3

Abandoned call wait time (1-10): 1 Second(s)

General telephony

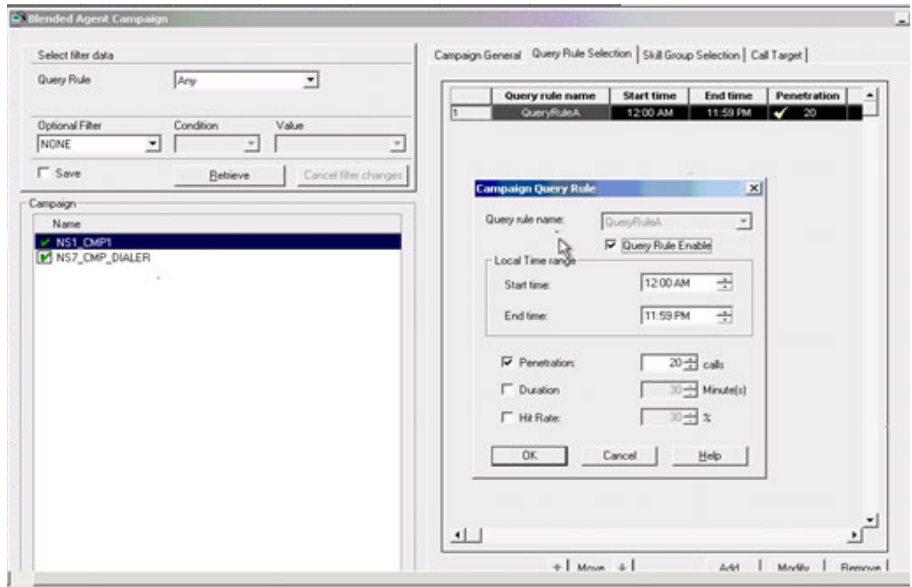
Fast voice detection

Answering machine detection

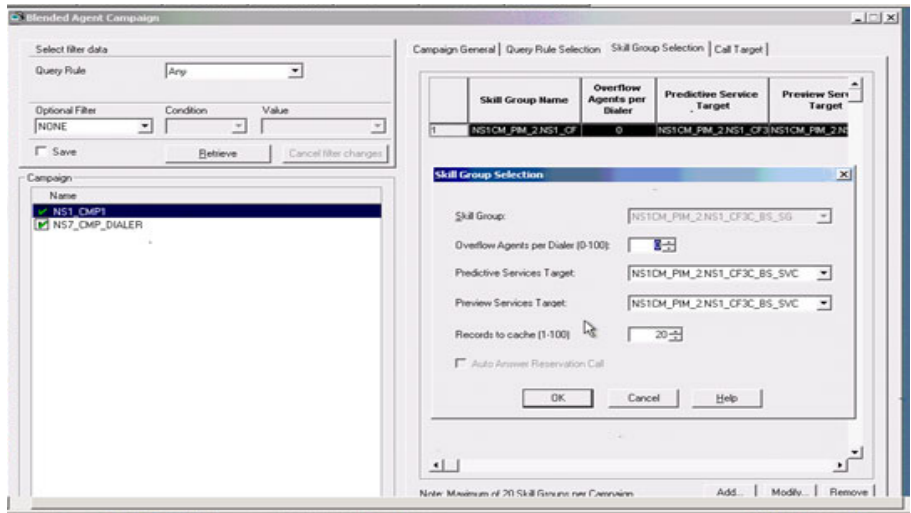
Quick answering machine detection

Callback Settings

Campaign_2



Campaign_3



Campaign_4

The screenshot displays the 'Blended Agent Campaign' configuration window. The interface is divided into several sections:

- Select filter data:** Includes a 'Query Rule' dropdown set to 'Any', an 'Optional Filter' dropdown set to 'NONE', and a table for 'Condition' and 'Value'.
- Buttons:** 'Save', 'Believe', and 'Cancel filter changes'.
- Campaign List:** A table with columns for 'Name' and checkboxes. Two entries are visible: 'NS1_CMP1' and 'NS7_CMP_DIALER', both with checked boxes.
- Call Target:** A section with tabs for 'Campaign General', 'Query Rule Selection', 'Skill Group Selection', and 'Call Target'. It contains two target groups: 'Business' (Start: 9:00 AM, End: 11:30 PM) and 'Home' (Start: 12:00 AM, End: 11:59 PM).

Optional Filter	Condition	Value
NONE		

Name	Checkbox
NS1_CMP1	<input checked="" type="checkbox"/>
NS7_CMP_DIALER	<input checked="" type="checkbox"/>

Call Target	Start	End
Business	9:00 AM	11:30 PM
Home	12:00 AM	11:59 PM

Outbound Call Flow (Blended Agent)

Dialed_DN_1

Select filter data

Routing client: NS1CM_RC_2
 Customer: cAb

Optional Filter	Condition	Value
None		

Save | Believe | Cancel filter changes

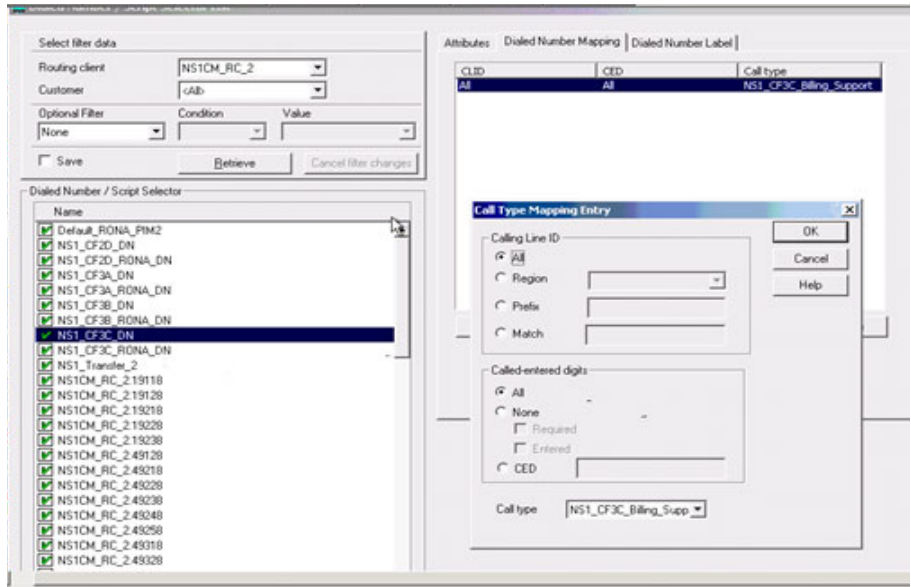
Dialed Number / Script Selector

Name
<input checked="" type="checkbox"/> Default_RONA_FIM2
<input checked="" type="checkbox"/> NS1_CF2D_DN
<input checked="" type="checkbox"/> NS1_CF2D_RONA_DN
<input checked="" type="checkbox"/> NS1_CF3A_DN
<input checked="" type="checkbox"/> NS1_CF3A_RONA_DN
<input checked="" type="checkbox"/> NS1_CF3B_DN
<input checked="" type="checkbox"/> NS1_CF3B_RONA_DN
<input checked="" type="checkbox"/> NS1_CF3C_DN
<input checked="" type="checkbox"/> NS1_CF3C_RONA_DN
<input checked="" type="checkbox"/> NS1_Transfer_2
<input checked="" type="checkbox"/> NS1CM_RC_219118
<input checked="" type="checkbox"/> NS1CM_RC_219126
<input checked="" type="checkbox"/> NS1CM_RC_219218
<input checked="" type="checkbox"/> NS1CM_RC_219226
<input checked="" type="checkbox"/> NS1CM_RC_219238
<input checked="" type="checkbox"/> NS1CM_RC_249126
<input checked="" type="checkbox"/> NS1CM_RC_249218
<input checked="" type="checkbox"/> NS1CM_RC_249226
<input checked="" type="checkbox"/> NS1CM_RC_249238
<input checked="" type="checkbox"/> NS1CM_RC_249248
<input checked="" type="checkbox"/> NS1CM_RC_249258
<input checked="" type="checkbox"/> NS1CM_RC_249318
<input checked="" type="checkbox"/> NS1CM_RC_249326

Attributes | Dialed Number Mapping | Dialed Number Label

Routing client: NS1CM_RC_2
 Media routing domain: Cisco_Voice
 Dialed number string / Script selector: 19330
 Name: NS1_CF3C_DN
 Customer: cAb
 Default label: <None>
 Description:

Dialed_DN_2



Outbound Call Flow (Blended Agent)

Dialed_DN_MR_1

The screenshot shows the configuration window for a dialed number. The left pane shows filter data and a list of dialed numbers. The right pane shows attributes for the selected dialed number.

Select filter data

Routing client: NS1MR_RC_1
 Customer: <All>
 Optional Filter: None
 Condition: [] Value: []

Dialed Number / Script Selector

Name
NS1MR_RC_1.13307

Attributes | Dialed Number Mapping | Dialed Number Label

Routing client: NS1MR_RC_1
 Media routing domain: Cisco_Voice
 Dialed number string / Script selector: 13307
 Name: NS1MR_RC_1.13307
 Customer: gb
 Default label: <None>
 Description: []

Dialed_DN_MR_2

The screenshot shows the configuration window for a dialed number with a table of call types. The left pane shows filter data and a list of dialed numbers. The right pane shows attributes and a table of call types.

Select filter data

Routing client: NS1MR_RC_1
 Customer: <All>
 Optional Filter: None
 Condition: [] Value: []

Dialed Number / Script Selector

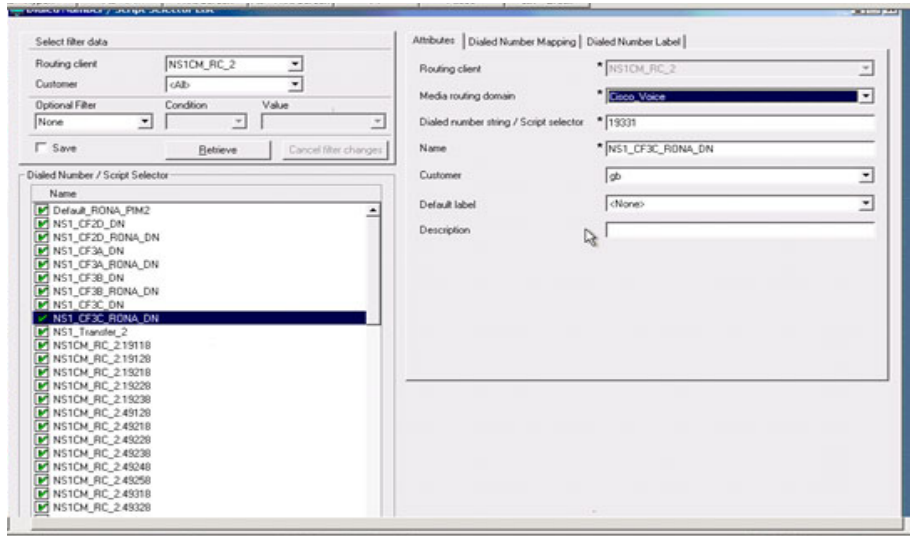
Name
NS1MR_RC_1.13307

Attributes | Dialed Number Mapping | Dialed Number Label

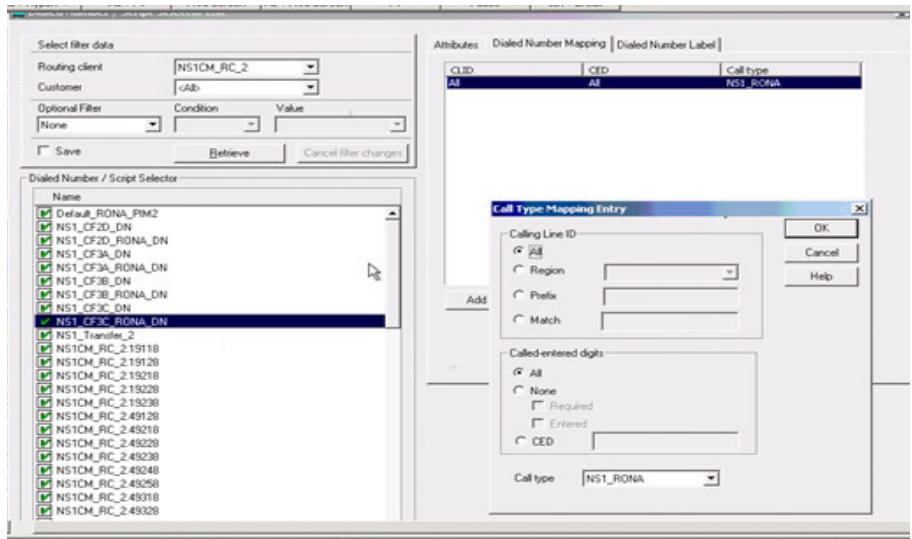
CLID	CED	Call type
All	All	NS1_BA_3C_13307

Buttons: Add ... Edit ... Remove Up Down

Dialed_DN_RONA_1



Dialed_DN_RONA_2

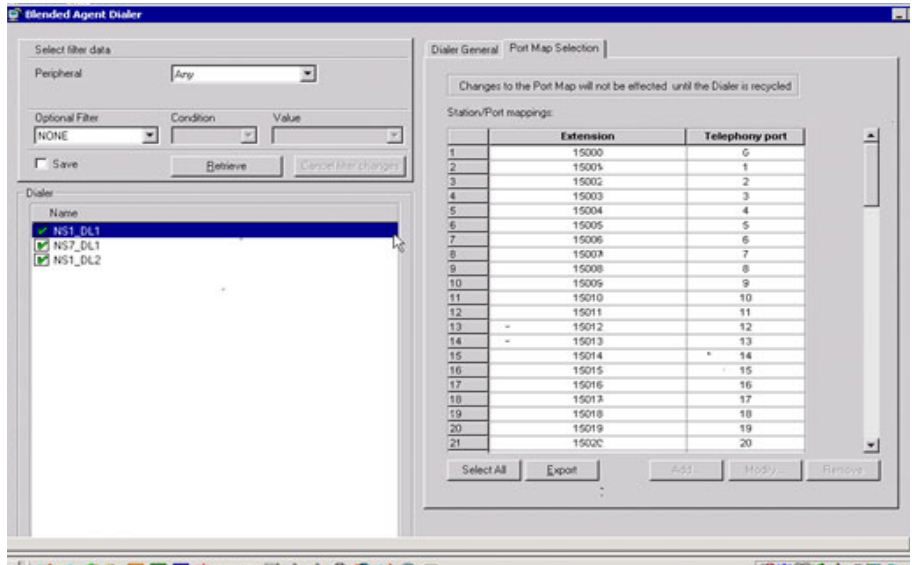


Dialer_1

The screenshot shows the 'Blended Agent Dialer' configuration window. The window is divided into several sections:

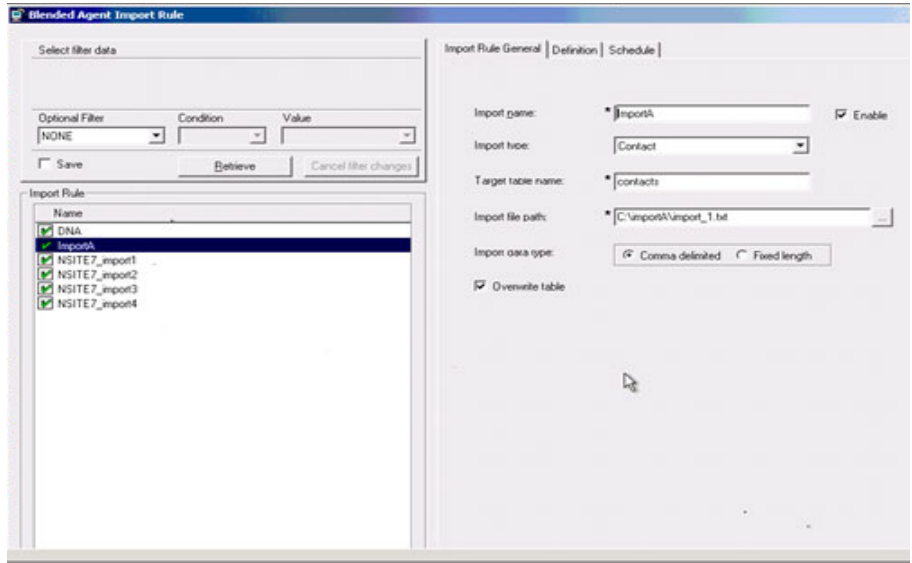
- Select filter data:** Includes a 'Peripheral' dropdown menu set to 'Any', an 'Optional Filter' dropdown set to 'NONE', and 'Condition' and 'Value' dropdown menus. There are 'Save', 'Retrieve', and 'Cancel filter changes' buttons.
- Dialer:** A list box containing three entries: 'NS1_DL1', 'NS7_DL1', and 'NS1_DL2'. Each entry has a checkmark to its left.
- Dialer General | Port Map Selection:** This section contains the following fields:
 - Dialer Name:** 'NS1_DL1' with an 'Enable' checkbox checked.
 - Computer name:** 'NS1-DL1'.
 - ICM peripheral name:** 'NSTCM_PIM_2'.
 - Description:** 'NS1-DL1'.
 - General telephony:** Includes checkboxes for 'Dial tone detection' and 'Include Area Code when Dialing'. Below these are fields for 'Dial prefix', 'Local area code' (set to '919'), and 'Hangup Delay (1-10)' (set to '1' seconds).

Dialer_2

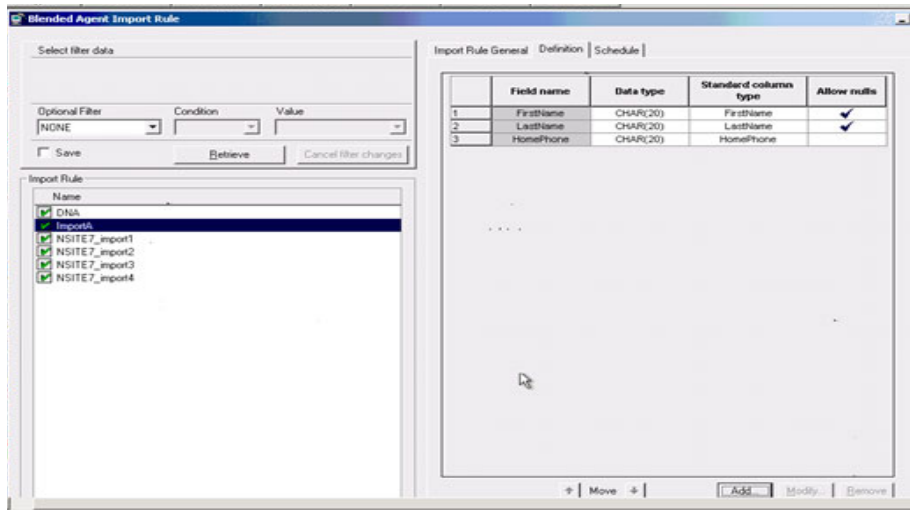


Outbound Call Flow (Blended Agent)

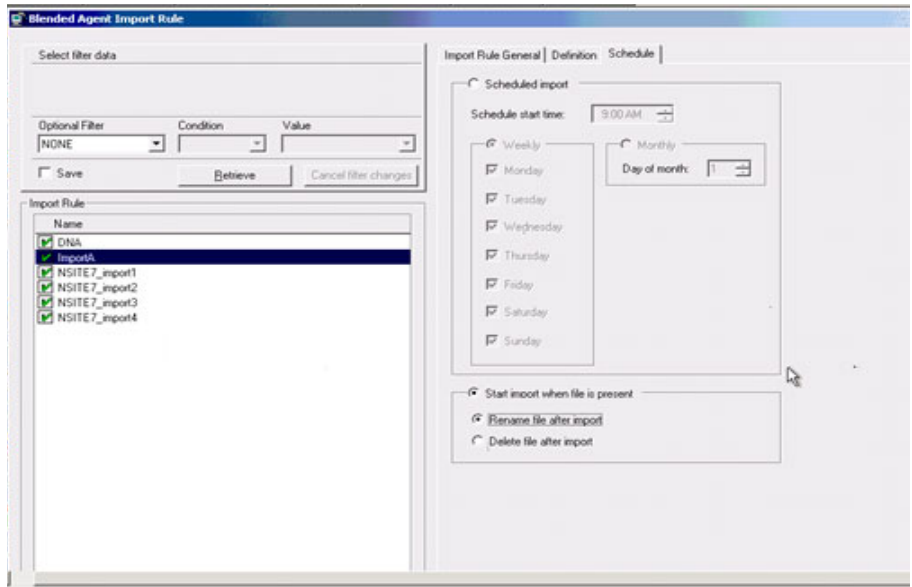
Import_1



Import_2



Import_3



Outbound Call Flow (Blended Agent)

Label

Label List

Select filter data

Routing client: NS1DM_RC_2

Customer: <All>

Optional Filter: None

Condition: Value

Save Retrieve Cancel filter changes

Label

Label	Routing client
<input checked="" type="checkbox"/>	11379.NS1DM_RC_2
<input checked="" type="checkbox"/>	11380.NS1DM_RC_2
<input checked="" type="checkbox"/>	11381.NS1DM_RC_2
<input checked="" type="checkbox"/>	11382.NS1DM_RC_2
<input checked="" type="checkbox"/>	11383.NS1DM_RC_2
<input checked="" type="checkbox"/>	11384.NS1DM_RC_2
<input checked="" type="checkbox"/>	11385.NS1DM_RC_2
<input checked="" type="checkbox"/>	11386.NS1DM_RC_2
<input checked="" type="checkbox"/>	11387.NS1DM_RC_2
<input checked="" type="checkbox"/>	11388.NS1DM_RC_2
<input checked="" type="checkbox"/>	11389.NS1DM_RC_2
<input checked="" type="checkbox"/>	11390.NS1DM_RC_2
<input checked="" type="checkbox"/>	11391.NS1DM_RC_2
<input checked="" type="checkbox"/>	11392.NS1DM_RC_2
<input checked="" type="checkbox"/>	11393.NS1DM_RC_2
<input checked="" type="checkbox"/>	11394.NS1DM_RC_2
<input checked="" type="checkbox"/>	11395.NS1DM_RC_2
<input checked="" type="checkbox"/>	11396.NS1DM_RC_2
<input checked="" type="checkbox"/>	11397.NS1DM_RC_2
<input checked="" type="checkbox"/>	11398.NS1DM_RC_2
<input checked="" type="checkbox"/>	11399.NS1DM_RC_2
<input checked="" type="checkbox"/>	11400.NS1DM_RC_2

Attributes

Routing client: NS1DM_RC_2

Label: 11382

Label type: Normal

Target type: Device Target

Network target: 11382

Customer: gb

Description:

MR_PG_1

The screenshot displays a configuration window for a peripheral controller. The interface is organized as follows:

- Filter Section:** Located at the top left, it includes an 'Optional Filter' dropdown set to 'None', and 'Condition' and 'Value' dropdowns. Below these are 'Save', 'Retrieve', and 'Cancel filter changes' buttons.
- Legend:** A section titled 'Hide legend' showing a tree structure with '(1) PG' and '(2) Peripheral' nodes.
- Tree View:** A list of call flow items on the left side, including NS1PG1, NS1PG2, NS1MR_PIM_1 (highlighted in green), NS1MR_PIM_2, NS1PG3, NS1PG4, NS2PG1, NS4PG1, NS4PG2, NS7PG1, NS7PG2, NS7PG3, temp_pg_1, and temp_pg_2.
- Configuration Panel:** The right side of the window, titled 'Logical Controller', contains the following fields:
 - Logical controller ID: 5005
 - Physical controller ID: 5006
 - Name: NS1PG2
 - Client type: MR PG
 - Configuration parameters: (empty field)
 - Description: Media Routing PG
 - Physical controller description: (empty field)
 - Primary CTI address: (empty field)
 - Secondary CTI address: (empty field)
- Advanced Settings:** A section with a table header:

Skill Group Mask	Routing client	Default route	Peripheral Monitor
Peripheral	Advanced		Agent Distribution
Peripheral ID: 5012			
Name: NS1MR_PIM_1			
Peripheral name: NS1MR_PIM_1			
Client type: MR PG			
Location: (empty field)			
Abandoned call wait time: 5			
Configuration parameters: (empty field)			
Call control variable map: (empty field)			
Description: (empty field)			
Default desk settings: NONE			
Peripheral service level type: Calculated by Call Center			
Enable root menu: <input checked="" type="checkbox"/>			

Outbound Call Flow (Blended Agent)

MR_PG_2

The screenshot displays the PG Explorer application window, which is used for configuring and managing Peripheral Groups (PGs). The interface is divided into several sections:

- Select filter data:** Includes an "Optional Filter" section with dropdowns for "None", "Condition", and "Value". Below this are buttons for "Save", "Retrieve", and "Cancel filter changes".
- Hide legend:** Shows a tree view with "(1) PG" and "(2) Peripheral".
- Tree View:** A list of PGs and peripherals. The selected item is "NS1MR_PIM_1", which is highlighted in green. Other items include NS1PG1, NS1PG2, NS1MR_PIM_2, NS1PG3, NS1PG4, NS2PG1, NS4PG1, NS4PG2, NS7PG1, NS7PG2, NS7PG3, temp_pg_1, and temp_pg_2.
- Logical Controller Details:**
 - Logical controller ID: 5005
 - Physical controller ID: 5006
 - Name: NS1PG2
 - Client type: MR PG
 - Configuration parameters: (empty field)
 - Description: Media Routing PG
 - Physical controller description: (empty field)
 - Primary CTI address: (empty field)
 - Secondary CTI address: (empty field)
- Skill Group Mask:** Includes tabs for "Peripheral", "Advanced", "Default route", and "Peripheral Monitor". The "Peripheral" tab is active, showing "Agent Distribution".
- Configuration Parameters:**
 - Available holdoff delay: 0
 - Default route: NONE
 - Answered short calls threshold: 0
 - Network VRL: IP_IVR
 - Agent Auto-Configuration

MR_PG_3

The screenshot displays the PIV Explorer application interface, divided into several sections:

- Filter Section:** Includes a "Select filter data" field, an "Optional Filter" dropdown set to "None", and "Condition" and "Value" dropdowns. Buttons for "Save", "Retrieve", and "Cancel filter changes" are present.
- Legend Section:** A "Hide legend" checkbox and a tree view showing "(1) PG" and "(2) Peripheral".
- Tree View:** A list of call flow items including NS1PG1, NS1PG2, NS1MR_P3M_1 (highlighted in green), NS1MR_P3M_2, NS1PG3, NS1PG4, NS2PG1, NS4PG1, NS4PG2, NS7PG1, NS7PG2, NS7PG3, temp_pg_1, and temp_pg_2.
- Configuration Panel (Logical Controller):**
 - Logical controller ID: 5005, Physical controller ID: 5006
 - Name: NS1PG2
 - Client type: MR PG
 - Description: Media Routing PG
 - Physical controller description: (empty)
 - Primary CTI address: (empty)
 - Secondary CTI address: (empty)
- Agent Distribution Section:**
 - Enable agent reporting:
 - Agent Distribution Entries table:

Distributor Site Name	Enabled
 - Buttons: New, Delete
 - Currently Selected Site: Distributor site name *

MR_PG_4

PG Explorer

Select filter data

Optional Filter: Condition Value

None - -

Save Retrieve Cancel filter changes

Hide legend

(1) PG (2) Peripheral

Click on an item to edit or view its contents. Use the Add buttons to create new items.

- NS1PG1
- NS1PG2
- NS1MR_PIM_1
- NS1MR_PIM_2
- NS1PG3
- NS1PG4
- NS2PG1
- NS4PG1
- NS4PG2
- NS7PG1
- NS7PG2
- NS7PG3
- temp_pg_1
- temp_pg_2

Logical Controller

Logical controller ID: 5005 Physical controller ID: 5006

Name: NS1PG2

Client type: MR PG

Configuration parameters:

Description: Media Routing PG

Physical controller description:

Primary CTI address:

Secondary CTI address:

Peripheral		Advanced				Agent Distribution			
Skill Group Mask	Routing client	Default route		Peripheral Monitor		Default route		Peripheral Monitor	
1: <input type="checkbox"/>	2: <input type="checkbox"/>	3: <input type="checkbox"/>	4: <input type="checkbox"/>	5: <input type="checkbox"/>	6: <input type="checkbox"/>	7: <input type="checkbox"/>	8: <input type="checkbox"/>	9: <input type="checkbox"/>	10: <input type="checkbox"/>
11: <input type="checkbox"/>	12: <input type="checkbox"/>	13: <input type="checkbox"/>	14: <input type="checkbox"/>	15: <input type="checkbox"/>	16: <input type="checkbox"/>	17: <input type="checkbox"/>	18: <input type="checkbox"/>	19: <input type="checkbox"/>	20: <input type="checkbox"/>
21: <input type="checkbox"/>	22: <input type="checkbox"/>	23: <input type="checkbox"/>	24: <input type="checkbox"/>	25: <input type="checkbox"/>	26: <input type="checkbox"/>	27: <input type="checkbox"/>	28: <input type="checkbox"/>	29: <input type="checkbox"/>	30: <input type="checkbox"/>
31: <input type="checkbox"/>	32: <input type="checkbox"/>	33: <input type="checkbox"/>	34: <input type="checkbox"/>	35: <input type="checkbox"/>	36: <input type="checkbox"/>	37: <input type="checkbox"/>	38: <input type="checkbox"/>	39: <input type="checkbox"/>	40: <input type="checkbox"/>
41: <input type="checkbox"/>	42: <input type="checkbox"/>	43: <input type="checkbox"/>	44: <input type="checkbox"/>	45: <input type="checkbox"/>	46: <input type="checkbox"/>	47: <input type="checkbox"/>	48: <input type="checkbox"/>	49: <input type="checkbox"/>	50: <input type="checkbox"/>
51: <input type="checkbox"/>	52: <input type="checkbox"/>	53: <input type="checkbox"/>	54: <input type="checkbox"/>	55: <input type="checkbox"/>	56: <input type="checkbox"/>	57: <input type="checkbox"/>	58: <input type="checkbox"/>	59: <input type="checkbox"/>	60: <input type="checkbox"/>
61: <input type="checkbox"/>	62: <input type="checkbox"/>	63: <input type="checkbox"/>	64: <input type="checkbox"/>						

MR_PG_5

The screenshot displays the NS7-RTAW1 configuration window. The main configuration area is divided into several sections:

- Optional Filter:** A section with fields for 'Optional Filter', 'Condition', and 'Value', and buttons for 'Save', 'Retrieve', and 'Cancel filter changes'.
- Hide legend:** A section with a 'Hide legend' button and a legend showing '(1) PG' and '(2) Peripheral'.
- Tree View:** A tree view showing a hierarchy of nodes including NS1PG1 through NS7PG3, temp_pg_1, and temp_pg_2. The node NS1MR_PIM_1 is highlighted in green.
- Configuration Panel:**
 - Logical controller ID:** 5005
 - Physical controller ID:** 5006
 - Name:** NS1PG2
 - Client type:** MR PG
 - Configuration parameters:** (empty field)
 - Description:** Media Routing PG
 - Physical controller description:** (empty field)
 - Primary CTI address:** (empty field)
 - Secondary CTI address:** (empty field)
- Advanced Configuration Panel:**
 - Peripheral Skill Group Mask:** NS1MR_RC_1
 - Advanced Routing client:** (selected)
 - Agent Distribution Default route:** (selected)
 - Peripheral Monitor:** (selected)
 - Name:** NS1MR_RC_1
 - ID:** 5013
 - Timeout threshold:** 2000
 - Late threshold:** 1000
 - Timeout limit:** 10
 - Default media routing domain:** Cisco_Voice
 - Default call type:** NONE
 - Configuration parameters:** (empty field)
 - Use DNLabel map:** (checkbox, unchecked)
 - Client type:** MR PG
 - Description:** (empty field)
 - Network routing client:** (checkbox, unchecked)
 - Network transfer preferred:** (checkbox, unchecked)

MR_PG_6

Outbound Call Flow (Blended Agent)

Optional Filter None Condition Value <input type="button" value="Save"/> <input type="button" value="Retrieve"/> <input type="button" value="Cancel filter changes"/>	Logical controller ID: 5005 Physical controller ID: 5006 Name: NS1PG2 Client type: MR PG Configuration parameters: Description: Media Routing PG Physical controller description: Primary CTI address: Secondary CTI address:				
Hide legend (1) PG (2) Peripheral	Peripheral Advanced Agent Distribution Skill Group Mask Routing client Default route Peripheral Monitor Current default route entries <table border="1"> <thead> <tr> <th>Media routing domain</th> <th>Route</th> </tr> </thead> <tbody> <tr> <td>Cisco_Voice</td> <td></td> </tr> </tbody> </table>	Media routing domain	Route	Cisco_Voice	
Media routing domain	Route				
Cisco_Voice					
Click on an item to edit or view its contents. Use the Add buttons to create new items. NS1PG1 NS1PG2 NS1MR_PIM_1 NS1MR_PIM_2 NS1PG3 NS1PG4 NS2PG1 NS4PG1 NS4PG2 NS7PG1 NS7PG2 NS7PG3 temp_pg_1 temp_pg_2	<input type="button" value="New"/> <input type="button" value="Delete"/> Media routing domain: Cisco_Voice Route: NONE				

Person_List

The screenshot displays the 'Person List' application window. It is divided into two main sections: a list of agents on the left and a form for editing attributes on the right.

Select filter data

Optional Filter: None | Condition: | Value: |

Save

Person

Last name, First name
<input checked="" type="checkbox"/> Agent, 11363
<input checked="" type="checkbox"/> Agent, 11364
<input checked="" type="checkbox"/> Agent, 11365
<input checked="" type="checkbox"/> Agent, 11366
<input checked="" type="checkbox"/> Agent, 11367
<input checked="" type="checkbox"/> Agent, 11368
<input checked="" type="checkbox"/> Agent, 11368
<input checked="" type="checkbox"/> Agent, 11370
<input checked="" type="checkbox"/> Agent, 11371
<input checked="" type="checkbox"/> Agent, 11372
<input checked="" type="checkbox"/> Agent, 11373
<input checked="" type="checkbox"/> Agent, 11374
<input checked="" type="checkbox"/> Agent, 11375
<input checked="" type="checkbox"/> Agent, 11376
<input checked="" type="checkbox"/> Agent, 11377
<input checked="" type="checkbox"/> Agent, 11378
<input checked="" type="checkbox"/> Agent, 11378
<input checked="" type="checkbox"/> Agent, 11379
<input checked="" type="checkbox"/> Agent, 11380
<input checked="" type="checkbox"/> Agent, 11381
<input checked="" type="checkbox"/> Agent, 11382
<input checked="" type="checkbox"/> Agent, 11383
<input checked="" type="checkbox"/> Agent, 11384

Attributes

First name: * 11382

Last name: * Agent

Login name: * 11382Agent

Password:

Confirm password:

Description:

Enable logins:

Outbound Call Flow (Blended Agent)

Query

Blended Agent Query Rule

Select filter data

Input Rule:

Optional Filter: Condition: Value:

Save

Query Rule

Name
<input checked="" type="checkbox"/> QueryRuleA
<input checked="" type="checkbox"/> QueryRuleB
<input checked="" type="checkbox"/> QueryRuleC
<input checked="" type="checkbox"/> QueryRuleD
<input checked="" type="checkbox"/> QueryRuleE

Query Rule General

Query rule name: Enable

Input Rule:

Description:

Rule Clause:

Column Name	Operators	SQL Functions
FirstName	<	ASCII
HomePhone	<=	CHAR
LastName	<>	CHARINDEX
	=	CONVERT
	>	DATEADD
	>=	DATEDIFF
	AND	DATEPART
	IN	DATEPART
	IS NULL	DIFFERENCE
	Like	GETDATE
	NOT	LOWER
	OR	LTRIM

Service_1

The screenshot displays the Service Explorer application window, which is used for configuring services in a call center environment. The interface is divided into several sections:

- Select filter data:** This section allows for filtering services. The 'Peripheral' is set to 'NS1CM_PIM_2' and the 'Media routing domain' is set to 'All'. There are also fields for 'Optional Filter', 'Condition', and 'Value', all currently set to 'None'. Buttons for 'Save', 'Retrieve', and 'Cancel filter changes' are present.
- Hide legend:** A legend showing the hierarchy of items: (1) Service, (2) Route, (3) Peripheral target, and (4) Label.
- Service List:** A list of services is shown, with 'R_NS1_CF3C_BS_SVC' highlighted in green. Other services include NS1CM_PIM_2NS1_CF2D_CI_SVC, NS1CM_PIM_2NS1_CF3A_TS_SVC, NS1CM_PIM_2NS1_CF3B_PS_SVC, NS1CM_PIM_2NS1_CF3C_BS_SVC, NS1CM_PIM_2NS1_CF3C_BS_SVC_2, NS1CM_PIM_2NS2_CF1_AI_SVC, NS1CM_PIM_2NS2_CF1_BS_SVC, NS1CM_PIM_2NS2_CF1_LR_SVC, NS1CM_PIM_2NS2_CF1_MB_SVC, NS1CM_PIM_2NS2_CF3A_AI_SVC, NS1CM_PIM_2NS2_CF3A_MB_SVC, NS1CM_PIM_2NS2_CF3B_AI_SVC, NS1CM_PIM_2NS2_CF3B_LR_SVC, NS1CM_PIM_2NS2_CF3C_BI_SVC, and NS1CM_PIM_2NS2_CF3C_LR_SVC.
- Service Configuration (Right Panel):** This panel shows the configuration for the selected service 'R_NS1_CF3C_BS_SVC'.
 - Service | Advanced | Service members |**
 - Media routing domain: Cisco_Voice
 - Peripheral number: 1300
 - Peripheral name: NS1_CF3C_BS_SVC
 - Name: NS1CM_PIM_2NS1_CF3C_BS_SVC
 - Configuration parameters:
 - Description: NS1 Billing Support - Billing Support
 - Service level type: Default
 - Service level threshold: 1
 - Route |**
 - Name: R_NS1_CF3C_BS_SVC
 - Description: (empty field)

Outbound Call Flow (Blended Agent)

Service_2

The screenshot displays the Service Explorer application window. The interface is divided into several sections:

- Select filter data:**
 - Peripheral: NS1DM_PIM_2
 - Media routing domain: All
 - Optional Filter: None
 - Condition: (empty)
 - Value: (empty)
 - Buttons: Save, Retrieve, Cancel filter changes
- Hide legend:**
 - (1) Service
 - (2) Route
 - (3) Peripheral target
 - (4) Label
- Click on an item to edit or view its contents. Use the Add buttons to create new items.**
- Service List:**
 - NS1DM_PIM_2NS1_CF2D_CI_SVC
 - NS1DM_PIM_2NS1_CF3A_TS_SVC
 - NS1DM_PIM_2NS1_CF3B_PS_SVC
 - NS1DM_PIM_2NS1_CF3C_BS_SVC
 - NS1DM_PIM_2NS1_CF3C_BS_SVC** (highlighted)
 - NS1DM_PIM_2NS1_CF3C_BS_SVC_2
 - NS1DM_PIM_2NS2_CF1_AI_SVC
 - NS1DM_PIM_2NS2_CF1_BS_SVC
 - NS1DM_PIM_2NS2_CF1_LR_SVC
 - NS1DM_PIM_2NS2_CF1_MB_SVC
 - NS1DM_PIM_2NS2_CF3A_AI_SVC
 - NS1DM_PIM_2NS2_CF3A_MB_SVC
 - NS1DM_PIM_2NS2_CF3B_AI_SVC
 - NS1DM_PIM_2NS2_CF3B_LR_SVC
 - NS1DM_PIM_2NS2_CF3C_BI_SVC
 - NS1DM_PIM_2NS2_CF3C_LR_SVC
- Service Details (Right Panel):**
 - Service: Advanced | Service members
 - Peripheral service level type: Calculated by Call Cent
 - Schedule name: NONE
 - Extension: 13307
 - Route:
 - Name: R_NS1_CF3C_BS_SVC
 - Description: (empty)

Service_3

The screenshot displays the Service Explorer application window, which is used for configuring services and routes. The interface is divided into several sections:

- Select filter data:** This section includes dropdown menus for 'Peripheral' (set to NS1CM_PIM_2) and 'Media routing domain' (set to All). Below these are fields for 'Optional Filter', 'Condition', and 'Value', all currently set to 'None'. There are buttons for 'Save', 'Retrieve', and 'Cancel filter changes'.
- Hide legend:** A tree view showing the hierarchy: (1) Service -> (2) Route -> (3) Peripheral target -> (4) Label.
- Service list:** A list of services with expand/collapse icons. The service 'R_NS1_CF3C_BS_SVC' is highlighted in green. Other services include NS1CM_PIM_2_NS1_CF2D_CI_SVC, NS1CM_PIM_2_NS1_CF3A_TS_SVC, NS1CM_PIM_2_NS1_CF3B_PS_SVC, NS1CM_PIM_2_NS1_CF3C_BS_SVC, NS1CM_PIM_2_NS1_CF3C_BS_SVC_2, NS1CM_PIM_2_NS2_CF1_AI_SVC, NS1CM_PIM_2_NS2_CF1_BS_SVC, NS1CM_PIM_2_NS2_CF1_LR_SVC, NS1CM_PIM_2_NS2_CF1_MB_SVC, NS1CM_PIM_2_NS2_CF3A_AI_SVC, NS1CM_PIM_2_NS2_CF3A_MB_SVC, NS1CM_PIM_2_NS2_CF3B_AI_SVC, NS1CM_PIM_2_NS2_CF3B_LR_SVC, NS1CM_PIM_2_NS2_CF3C_BI_SVC, and NS1CM_PIM_2_NS2_CF3C_LR_SVC.
- Service | Advanced | Service members:** This section shows 'Current service members' in a table:

Primary	Skill group name
<input checked="" type="checkbox"/>	NS1CM_PIM_2_NS1_CF3C_BS_SG

 Below the table are 'Add...' and 'Remove' buttons.
- Route |:** This section shows the configuration for a selected route:
 - Name:** R_NS1_CF3C_BS_SVC
 - Description:** (Empty field)

Service_Threshold

Service Level Threshold List

Select filter data

Peripheral: NS1CM_PIM_2

Media routing domain: C&B

Optional Filter: None | Condition: | Value: |

Save

Service Level Threshold

Peripheral - Media routing domain
NS1CM_PIM_2 - Cisco_Voice

Attributes

Peripheral: NS1CM_PIM_2

Media routing domain: Cisco_Voice

Service Level

Service level threshold: 0 Override MISD default

Service level type: Ignore Abandoned Calls

Skill_Group_1

The screenshot displays the Skill Group Explorer interface, which is used for configuring skill groups. The interface is divided into several sections:

- Select filter data:**
 - Peripheral: NS1CM_PIM_2
 - Media routing domain: All
 - Optional Filter: None
 - Condition: [Empty]
 - Value: [Empty]
 - Buttons: Save, Retrieve, Cancel filter changes
- Hide legend:**
 - (1) Skill group
 - (2) Route
 - (3) Peripheral target
 - (4) Label
- Item List:**
 - NS1CM_PIM_2_NS123_Supv_SG
 - NS1CM_PIM_2_NS1_CF2D_CI_SG
 - NS1CM_PIM_2_NS1_CF3A_TS_SG
 - NS1CM_PIM_2_NS1_CF3B_PS_SG
 - NS1CM_PIM_2_NS1_CF3C_BS_SG
 - R_NS1_CF3C_BS_SG** (Selected)
 - NS1CM_PIM_2_NS1_CF3C_BS_SG_2
 - NS1CM_PIM_2_NS2_CF1_AI_SG
 - NS1CM_PIM_2_NS2_CF1_BS_SG
 - NS1CM_PIM_2_NS2_CF1_LR_SG
 - NS1CM_PIM_2_NS2_CF1_MB_SG
 - NS1CM_PIM_2_NS2_CF2A_AI_SG
 - NS1CM_PIM_2_NS2_CF2A_MB_SG
 - NS1CM_PIM_2_NS2_CF2B_AI_SG
 - NS1CM_PIM_2_NS2_CF2B_LR_SG
 - NS1CM_PIM_2_NS2_CF2C_BE_SG
- Configuration Parameters:**
 - Skill Group: [Empty]
 - Skill Group Members: [Empty]
 - Subgroup Mask: [Empty]
 - Sub skill groups: [Empty]
 - Media routing domain: Cisco_Voice
 - Peripheral number: 13307
 - Peripheral name: NS1_CF3C_BS_SG
 - Name: NS1CM_PIM_2_NS1_CF3C_BS_SG
 - Available holdoff delay (sec): Use Peripheral Default
 - Priority: 0
 - Extension: [Empty] ICM picks the agent
 - Configuration parameters: [Empty]
 - Description: NS1TE1 Billing Support - Billing Support
- Route Configuration:**
 - Skill group priority: 0
 - Name: R_NS1_CF3C_BS_SG
 - Description: [Empty]
 - Service name: NS1CM_PIM_2_NS1_CF3C_BS_SVC

Outbound Call Flow (Blended Agent)

Skill_Group_2

The screenshot displays the Skill Group Explorer interface, which is used for managing call flow skill groups. The interface is divided into several sections:

- Select filter data:** This section allows filtering by Peripheral (set to NS1CM_PIM_2), Media routing domain (set to All), and Optional Filter (set to None). It includes buttons for Save, Retrieve, and Cancel filter changes.
- Hide legend:** A legend showing the hierarchy: (1) Skill group, (2) Route, (3) Peripheral target, and (4) Label.
- Item List:** A list of skill groups under the NS1CM_PIM_2 hierarchy. The selected item is R_NS1_CF3C_BS_SG.
- Current skill group members:** A list of agents associated with the selected skill group: NS1CM_PIM_2.Agent_11382, NS1CM_PIM_2.Agent_11383, NS1CM_PIM_2.Agent_11384, NS1CM_PIM_2.Agent_11385, and NS1CM_PIM_2.Agent_11386. Buttons for Add and Remove are present.
- Route details:**
 - Route:** The selected route.
 - Skill group priority:** 0
 - Name:** R_NS1_CF3C_BS_SG
 - Description:** (Empty field)
 - Service name:** NS1CM_PIM_2_NS1_CF3C_BS_SVC

Supervisor_List

Select filter data

Peripheral:

Optional Filter: Condition: Value:

Save

Supervisor

Name
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_10051
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_10052
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_10053
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_10054
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11083
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11099
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11115
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11131
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11147
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11163
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11175
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11191
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11207
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11223
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11239
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11255
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11271
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11287
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11295
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11311
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11327
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11343
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11359
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11375
<input checked="" type="checkbox"/> NSTCM_FIM_2Agent_11382

Agent Teams

Primary	Name	Description
A	N51_CF3C_BS_11	
	N51_CF3C_BS_12	
	N51_CF3C_BS_13	
	N51_CF3C_BS_14	
	N51_CF3C_BS_15	
	N51_CF3C_BS_16	
	N51_CF3C_BS_17	
	N51_CF3C_BS_18	
	N51_CF3C_BS_19	



Troubleshooting and Tips

Troubleshooting

The troubleshooting items contained in this section are derived from IP Communications Systems Test Release 2.0 for IPCC. Additional troubleshooting advice may be found in the user documentation for the various components that make up the systems tested—see [Additional Troubleshooting Resources](#), page 4-4.

ICM Configuration Change Made but Update Does Not Occur

Symptom: The value of a field is changed, but the change is not reflected in the system.

Possible Solution: Nearly all configuration changes made to ICM/CTI OS are dynamically updated in the system. However, there are the following exceptions, where cycling, or some other kind of manual intervention, is necessary in order to update the system:

- If a "Supervisor Script Dialed Number" under "Agent Team List" is changed, issue `exit_opc` for OPC to implement the change.
- If the following Agent desk settings are changed:
 - NotReady reason code
 - Logout reason code
 - Incoming wrapup mode

- Outgoing wrapup mode
- then the Agent needs to log out and then log back in to implement the changes.
- If the following changes are made:
 - Adding agents to a skillgroup
 - Removing agents from a skillgroup
- then the Supervisor needs to log out and then log back in to implement the changes.
- If you add, delete, or update the connection profile in the CTI OS Server registry, recycle both CTI OS Server and CTI OS Client (Agent/Supervisor desktops).

ECC Variables for Blended Agent

Symptom: BACampaign and BATimeZone are not visible on the Blended Agent Desktop.

Possible Solution: Remove the ".txt" extension from the following file and execute it. After it is executed, CTI OS Server must be cycled as well as all CTI OS Desktops.

C:\icm\

Call Peripheral Variables Overwritten by Blended Agent ECC Variables

Symptom: A CTI OS Server is used by both Blended Agent agents and inbound-only agents. Blended Agent reg file was run on this server, and the peripheral call variables 1 to 10 were replaced by the ECC variables of Blended Agent desktop—this was true for all agents, not just Blended Agent agents.

Possible Solution: CTI OS ECC variable configuration is global. Therefore, the variables configured in the registry will be seen by all CTI OS clients. Refer to the following file:

C:\icm\

Remove the ".txt" extension from this file and execute it. You then get all the call variables. In addition, you can merge the Blended Agent reg file with the default reg file to get all variables sent to the desktop. Remember, these are only sample registry files. You should select the variables you are interested in (which of course includes all Blended Agent variables), and enter them in the registry.

WebView Blended Agent Real-Time Reports

Symptom: WebView Blended Agent real-time report template contains no information.

Possible Solution: Some Dialer reports require the following Dialer registry entry to be set:

RTPortFeedDisable = 0

By default the Dialer disables call status reporting to the Logger. By setting the above registry entry, the reporting will be enabled. (Keep in mind that real-time reports are about 15 seconds old.)

Blended Agent Callback Scheduling

Symptom: Cannot set a callback time to be less than an hour from the current time.

Possible Solution: The control does not allow you to set the callback time at or before the current time. For example:

Current time: 11:00

Desired Callback time: 11:30

If you try to set the callback time to 11:30, you probably first try to set the hour to 11. The control thinks you are trying to set the time to 11:00, which is not a valid callback time, so it sets the hour to 12. The workaround is to set the minutes to 30 then set the hour to 11.

Additional Troubleshooting Resources

There are many Cisco manuals that provide troubleshooting information at the solutions level, and for various hardware and software components. The following table lists some of these documents. Additional troubleshooting information is available in other product-specific documentation.

Table 4-1 Troubleshooting References

Troubleshooting Topic	Document	URL
Cisco CallManager	<ul style="list-style-type: none"> • <i>Troubleshooting Guide for Cisco CallManager</i> • <i>System Error Messages for Cisco CallManager</i> 	http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/index.htm
Cisco IP Contact Center	<i>IPCC Troubleshooting Guide</i>	http://www.cisco.com/en/US/products/sw/custcosw/ps1844/products_tech_note09186a00800b6a82.shtml
Cisco ICM Blended Agent	<i>Cisco ICM Software Blended Agent User Guide</i> , “Troubleshooting” appendix	http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/icmout/bausergd.pdf
Cisco IP IVR	<i>Troubleshooting Cisco Customer Response Applications</i>	http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/apps_3_1/english/admn_app/trouble/index.htm
Cisco Internet Service Node (ISN)	<i>Cisco Internet Service Node (ISN) Configuration and Administration Guide</i> , “Troubleshooting” chapter	http://www.cisco.com/univercd/cc/td/doc/product/icm/isn/isn20/isn_conf.pdf
Cisco Agent Desktop (CAD)	<i>Service Information: Cisco Desktop Product Suite (IPCC)</i> , “Troubleshooting” chapter	http://www.cisco.com/application/pdf/en/us/guest/products/ps1844/c1682/cemigration_09186a0080100c99.pdf

Table 4-1 Troubleshooting References (continued)

Troubleshooting Topic	Document	URL
Cisco CTI Object Server (CTI OS)	<i>Cisco ICM Software CTI OS Troubleshooting Guide</i>	http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/icmcti/ctios/cti_tbst.pdf

Tips

Tips are items to be aware of, ways to avoid problems, and related general information. The tips contained in this section are derived from IP Communications Systems Test Release 2.0 for IPCC. Additional tips may be found in the user documentation for the various components that make up the systems tested. Also see the section [Recommendations for High Availability/Call Rates, page 4-8](#).

Ring Back Tone when CallManager Performs Blind Transfer

If a CTI OS Agent initiates a blind transfer (also known as *single-step transfer*) to another available agent (for example, in another skill group), and if Cisco CallManager performs the transfer, rather than ISN, the "Send H225 User Info Message" in Cluster Wide Parameter (H323) under CallManager Service Parameters should be set to "H225 Info for Ring Back" so that the customer will hear a ring-back tone when the targeted agent is alerted.

After changing the settings, CallManager services (all relevant CallManagers) has to be recycled. In some instances, the Gatekeeper Controller InterCluster trunk has to be reset as well.

Enterprise Manager and SQL Server

Enterprise Manager needs a few seconds to determine if SQL Server is up. If you try to open a database branch prior to Enterprise Manager connecting to the database, it will give you a spurious error.

ICM Process Restarts

If a process fails in the ICM, it is restarted immediately. However, if it fails again, there is a delay before the process is restarted.

EMT Library

In order to get information from the EMT library, the trace bits must be set for the process as part of its EMS trace mask. For instance, setting 0x06 trace bit for RouterA\EMS\CurrentVersion\Library\Processes\ccag at the router enables all EMT tracing on the CCAgent process.

Scheduling Callbacks in Blended Agent

The Blended Agent desktop does not receive information about configured dialing times. Therefore, you can schedule a callback at any time. When the call ends, the Campaign Manager checks if the callback time is valid. If it is not valid, the Campaign Manager sets the callback time to the earliest valid time. Note that there is a registry value in the Campaign Manager which controls whether callbacks on Saturday and Sunday are allowed.

Call Information for Blended Agent Desktop

Blended Agent overrides the ANI variable and uses it to pass the customer's phone number. The DNIS and Dialed Number values are the Agent extension.

Blended Agent Personal Callback Registry Updates

During the CallbackTimeLimit, many attempts may be made to dial the customer. During each attempt the callback time is rescheduled using the PersonalCallbackTimetoRetryNoAnswer and PersonalCallbackTimetoRetryBusy registry entries. If a customer is not reached during the CallbackTimeLimit dialing window, then the customer record is sent back to the campaign manager and the attempts count (initially set by PersonalCallbackMaxAttemptsDefault) gets decremented by one.

Rescheduling of Blended Agent Outbound Calls

In Preview mode, if an agent cancels, rejects, or skips a call, the call is rescheduled using the busy retry time. This time is usually a minute or two. The reason for using the busy timeout is because the call was never made to a customer so the call can be rescheduled for a quick retry.

In Predictive/Progressive mode, the customer may have heard a ring so the callback is rescheduled using the no-answer timeout value, which is usually an hour, to minimize annoying customers.

Skill Groups and Multiple Blended Agent Campaigns

You cannot assign the same skill group to multiple campaigns.

Generally this means that you need to create a separate skill group for each campaign.

However, if two campaigns are taking place at different time periods, you can accomplish the required task by assigning two query rules for the two campaigns. Schedule the query rules based on time. So a skill group will dial query rule 1 for one time period and query rule 2 for the other time period.

Blended Agent Dialing List and Disabled Query Rules

When you disable a query rule, you are only telling the Campaign Manager not to retrieve records from that query rule. The query rule still stays in the dialing list. Disabling a campaign disables dialing for all skills in that campaign. The campaign/query rule combination still stays in the dialing list.

Disabling Blended Agent Callback for Busy or No Answer

To disable callback for a busy or no answer, set the retries value in the campaign configuration window to 1. This means the dialer will only try to call a customer once.

Blended Agent Dialing Order is Not Guaranteed within a Query Rule

For example, if you have an import file with multiple entries, there is no expectation that the first customer in the dialing list will be the first customer dialed.

Maximum Lines per Agent in Blended Agent

“Max lines per agent” is only necessary in Predictive mode. The Dialer will not exceed this number when calculating how many lines to dial per agent. It does not affect reservation calls, only customer calls.

You should take into account that if you have many agents available, the Dialer may not be able to keep them all busy if you do not have enough customers answering calls.

Recommendations for High Availability/Call Rates

The following lists a number of design/configuration recommendations that should be considered for all IPCC implementations that require high availability and/or high call completion rates.

JTAPI Client Parameter Tuning

In order to speed up the detection of a CTI Manager failure on either the PG or the IP IVR, it is recommended that the JTAPI Server Heartbeat Interval be reduced from the default 30 seconds to 5 seconds.

Rationale

Under normal operations, JTAPI client either waits for 2 * ServerHeartbeatInterval before closing the connection to the CTI Manager, or closes it when socket closed is detected. Therefore, for a 30sec Heartbeat value, JTAPI closes sockets either after 2 * 30 = 60sec or whenever socket closed is

detected. For a 5sec Heartbeat value, JTAPI closes sockets either after $2 * 5 = 10$ sec or whenever socket closed is detected. (In testing it was determined that the change in time for detection of the failure condition improved 35-45 seconds).

Minimum safe heartbeat timer value is 5sec. If it is less than this, CTI will default to a 30sec value. Heartbeat values become important only when the system is idle. If call activity is present, CTI/JTAPI will not handshake using heartbeats, but will rely on each other's messages. When the system is idle, heartbeat handshaking goes into effect. So, in essence, a low timer value causes some traffic in the system during idle state, and high timer value causes less traffic during idle state. Since this occurs only when the system is idle, a low timer value is not problematic.

In order to speed up the fail-over of the IP IVR from primary CTI Manager to backup CTI Manager, it is recommended that the Provide Retry Interval be reduced from the default 30 seconds to 5 seconds. (This is in addition to the Server Heartbeat Interval setting).

Rationale

Tuning both Server Heartbeat Interval and Provider Retry Interval parameters improves CTI Manager failure detection (Server Heartbeat Interval Parameter) and connecting to backup CTI Manager (Provider Retry Interval Parameter).

Considerations

Decreasing the JTAPI client parameters is recommended for IPCC servers only and not regular JTAPI client applications.

1. Decreasing the timers exposes the application to the effect of network congestion.
2. For server applications, lowering these parameters is not problematic, but for client applications, like Softphone, decreasing retry interval means that all softphones will try to connect to CTI Manager around the same time.

It is assumed that an IPCC deployment will not suffer from either of these considerations in that all communication between PG or IP IVR and CTI Manager will be over a local high capacity network or protected via QoS over any WAN links. Additionally, the current recommendations for a standalone CallManager cluster result in the total number of JTAPI connections to each CTI Manager being less than 5—thus avoiding the connection startup overload problem

Configure /LOAD 0 Parameter for PG

In deployments using ICM 5.0 and CTI OS, it is highly recommended that the "Configuration parameters" field on the "Peripheral" tab of the PG in the PG Explorer, left blank by default, be changed to /LOAD 0 to avoid extended failover downtime and state issues upon recovery—particularly for contact centers with more than 50 agents.

Rationale

In the PG Explorer there is a field for “Configuration Parameters” for each peripheral. One parameter defines PIM behavior for failover whenever there is a CTI failure that could include closing the agent desktop without logging out, CTI OS failover, or CTI Server failure. This configuration parameter can be set to “/LOAD 0” or “/LOAD 1”. The PIM will default to using “/LOAD 1” behavior if no /LOAD parameter is configured.

/LOAD 1 will log out the agent on any CTI failure. /LOAD 0 will attempt to set the agent to “NotReady” on any CTI failure.

In essence, the PIM wants to prevent calls being routed to agents who were in the “Available” State before the client disconnected. The two approaches used are setting agents to either “NotReady” (/LOAD 0) or forcing agents to be logged out (/LOAD 1). In both cases a special reason code (50002) is passed as an Event Reason Code with the AgentState event and will be captured in the Agent_Logout table and reports.

In a CTI OS failover case, each CTI OS client attempts to restore state to its last known state after the agents have failed over to the alternate CTI OS server.

LOAD 0 Characterization

Advantages

1. Faster failover time than /LOAD 1 because agents are not fully logged out after disconnect. Instead, they are forced to the NotReady state so calls will not be routed to them.
2. Generally a better state for the transition during failover for reporting purposes because agents are not reported as logged out during the outage period.

3. More call context is maintained (i.e., peripheral and ECC variables, PeripheralCallType indicating whether it is a conference call, transfer call, etc.).

Disadvantages

1. In some circumstances (rarely), when the CallManager provides an unexpected CTI event stream, the agent state can be out of step with the actual hard phone state. Normally the agent is left in a held or talking state but there is no call on the phone. The default method to recover the agent state used to be to close the agent desktop and log back in. This method of recovery does not work with the /LOAD 0 option. Other options include:
 - a. Press keys on the hard phone in the following five-character sequence: `**#**`. This resets the phone.
 - b. An administrator can reset the phone from the CCMAdmin web page.
2. In hot-seating scenarios, LOAD 0 may lead to a condition where agent login is rejected. This can happen because the previous agent who used a phone simply closed their desktop as a means to end their session. Possible remedies for this situation include:
 - a. Set inactivity timer in agent desk settings on the ICM configuration so agent is logged out after the defined inactivity time.
 - b. Use Supervisor phone to force agent to logout.
 - c. Use CTI OS AllAgents tool to force agent to logout.
 - d. Reset the instrument by pressing keys on the phone in the following five-character sequence: `**#**`
 - e. Reset the instrument from the CallManager Administration program.

Caveats

1. Customers must configure the Ring No Answer timeout and associated ring no answer dialed number in the ICM Agent Desk Settings. This is in the event that an agent is recovered to available after a failover, but that agent has stepped away—the call is then redirected to another available agent.
2. Customers must set the Agent No Activity timer in the ICM agent desk settings to log agents out after a period of inactivity while in the “NotReady” state. This reduces the occurrence of hot-seating agents not being logged into the same instrument at a later time.

LOAD 1 Characterization

Advantages

1. If an agent disconnects without logging out, the next hot-seating agent will have no problem logging in with the same instrument because the previous agent was forcibly logged out.

Disadvantages

1. Can take a long time for failover (possibly several minutes) because it takes a while to log out and re-log in a lot of agents. The amount of time will vary with the number of agents and other factors such as heavy call load and number of skill groups per agent.
2. Softphone may appear to recover quickly but then logs out because it fails over to the alternate server before the PIM has forcibly logged out the agent. The automatic login that occurs after this may take a long time as described in the item above.
3. Has a negative impact on reporting because agents are reported as having logged out during the outage period.
4. Some call context may be lost when the call is recovered, e.g., peripheral call variables, ECC variables, and PeripheralCallType (particularly barge in, supervisor assist, and emergency assist PeripheralCallTypes).

Recommendations

1. For CTI OS with more than 50 agents, and with the caveats above, /LOAD 0 is recommended.
2. For CTI OS with less than 50 agents, /LOAD 1 should be acceptable.

Implement Agent Busy and Ring No Answer (RNA/RONA) call logic for agent ACD lines



Note

The following applies to a call flow involving IP IVR. For a call flow involving ISN, see the Cisco Internet Service Node (ISN) Configuration and Administration Guide.

Implement a Route Point(s) and associated ICM routing scripts to recover calls normally lost due to line busy condition. Configure the Call Forward Busy (CFB) CallManager parameter on the agent ACD line pointing to this Route Point.

Rationale

In traditional ICM ACD implementations, the RONA (Roll Over No Answer) logic implemented by the ICM CallRouter appears to be sufficient to handle call recovery in cases where call state failures occur (e.g., agent does not answer the ringing extension). In an IPCC environment this event corresponds to a Ring No Answer (RNA) event. In both of these cases the call is correctly routed to an on-hook extension and the error event is the failure to answer.

A new problem exists in the more distributed IPCC implementation that is similar to RNA but not identical. It is possible due to various race conditions in the end-to-end call signaling, to have inconsistent line state in the ICM CallRouter and the CallManager. While in most cases this is a transitory effect, it is possible to encounter scenarios where the ICM CallRouter will direct a call to a line that is currently busy. This is an uncommon problem in low call volume environments but is experienced in high volume scenarios and/or system error conditions. [Higher call volume scenarios currently may experience end-to-end call state signaling latencies in the 1-3 second range.]

In order to provide call recovery for this situation, it is highly recommended that another Route Point and associated ICM routing script be used that is distinct from, but implements similar logic to, the RNA call recovery logic. A distinct Route Point provides a mechanism to track the occurrences of this specific error and allow for proactive actions to be taken if the event is seen occurring on a regular basis.

[Please note that it is highly recommended to implement RNA call recovery in addition to line busy recovery. System overload and error conditions may produce both failure events. RNA logic provides protection against system errors as well as failure of agents to answer.]

Avoid Conference and Consultative Transfers Involving IP IVR ports

Do not implement business logic that may invoke a consultative transfer or conference involving an IP IVR port.

Rationale

Currently the JTAPI messaging between CallManager and ICM does not provide a mechanism to handle all the potential call state events involved in this process and may fail under certain scenarios.

In high touch service scenarios it is often required that an agent attempt a warm transfer of a customer to a specialized agent group. If the environment requires that this customer be re-queued to an IVR if no agent is available, then this needs to be implemented as a manual two-step process.

1. Attempt a consultative transfer to specific skill group via Route Point.
2. If no agents are available (need to build logic into the first routing script to indicate this to agent) then the agent terminates the attempted conference/transfer event.
3. Agent then initiates a blind transfer of the customer call to a second queuing route point for the required skill group.

Currently this requires two route points and two routing scripts breaking up the business logic, but it is not possible to direct an attempted conference or consultative transfer to an IP IVR port and guarantee successful transfer.

Implement Call Recovery Logic for IP IVR Route Points and CTI Ports

Configure CFB, CFF, CFNA on all IP IVR Route Points and CTI Ports directing the call to an ICM call recovery Route Point(s) and associated routing script(s).

Rationale

System/Server resource and call state information may be delayed between the various IPCC components resulting in call loss if error recovery mechanisms are not implemented. During various timing windows it is possible for ICM to direct CallManager to send a call to an IP IVR which is unable to process that call (e.g., IP IVR failover, IP IVR is out of service or is in partial service and only has one of 60 configured CTI ports operational). Implementing a mechanism that provides a way to recover from failure of the IP IVR to respond or process a call also allows the entire solution to provide a level of redundancy and availability beyond that possible using only a standard configuration.

To maximize call processing success rates, it is recommended that you implement a layered call recovery design as described in these recommendations.

Implement Call Recovery Logic for ICM Route Points

Configure CFB, CFF, CFNA on all ICM Route Points (Post and Translation routes) directing the call to an independent call-processing component (e.g., Cisco Unity or standalone Cisco IP IVR).

Rationale

The interface between CallManager and ICM is a single threaded JTAPI client connection. This connection has a redundant configuration but with the following limitations:

1. Failure of CTI Manager or PG results in 60 second Contact Center outage
2. JTAPI messaging congestion or failure results in lost calls

To minimize both of these limitations, it is recommended that CallManager be configured to forward calls to a third party application for processing. In failure tests it was possible to successfully answer > 95% of all calls arriving during the failure event window.



Note

These calls are not handled by ICM and thus do not appear in any ICM reports.

Disable Call Waiting

Set CallManager Cluster Call Waiting Flag to False.

Rationale

Inconsistency of device/line state between CallManager and ICM due to system error, race condition, or messaging latency can result in ICM directing calls to agent lines which are already off-hook. In order for the RNA/Agent Busy call recovery mechanisms to detect and recover this call, it is necessary to disable Call Waiting for the Contact Center agents. This enables CallManager to immediately detect failure of the agent to handle the call and invoke the ICM recovery scripts. [The assumption is made that these scripts have been implemented, see Section 4.2.3 above.]

Call Waiting Enable Flag

This parameter enables or disables call waiting for the Cisco CallManager System.

This is a required field.

Default: True. Change to: False

**Note**

Call Waiting can be a "global" setting on CallManager and, if so, needs to be removed there as well.

Disk Drive Recommendations for High Traffic Systems

Add additional disk drive for logfiles if sustained high traffic levels are anticipated

In cases where long periods of traffic at or above the system's engineered capacity are expected, directing logfiles to a disk drive that does not contain the OS or operating software is recommended.

Rationale

During the course of system load and stress testing, it was observed that long periods of traffic at or above the system's engineered capacity ran with lower CallManager CPU rates if system logfiles were directed to a disk drive that did not contain the OS and operating software. This was especially true when log levels were set higher than normal (more data being logged simulating a troubleshooting activity). If the conditions described above are anticipated, it is highly recommended that a second disk drive be added to all nodes in a CallManager cluster, including any IP IVR servers.



Failure, Failover, and Recovery

The ICM/IPCC environment as a whole is intended to be redundant and self-healing. In many cases this makes the failover and recovery from a failure nearly invisible.

This subject is discussed in the relevant documents, for example, see:

- the “Fault Tolerance” chapter in the *Cisco ICM Software Administration Guide*
<http://www.cisco.com/univercd/cc/td/doc/product/icm/icm50/icmfam/entered/core/admingd.pdf>
- discussions in the *Cisco CallManager System Guide*
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/sys_ad/3_3_3/ccmsys/index.htm
- the *Cisco CallManager Features and Services Guide*
http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_3/sys_ad/3_3_3/ccmfeat/index.htm

What follows is a description of specific test cases that were part of IP Communications System Test Release 2.0—both what was done and the results.



Note

Much of the testing was done with specific test tools, simulated phones, and simulated agent desktops. In an actual customer setting, real agents with real phones might attempt to shut down their desktops, force logins, etc. Such events are not generally factored into the testing with simulation tools.

Failover

Cisco CallManager Failure with CTI Manager Failure

Pre-test Conditions:

Approximately four hundred phones are registered with CM2. Backup is CM6.

CTI Manager for PG2A is CM2.

CTI Manager for PG2B is CM6.

The phones are divided among three skill groups. Calls were generated for one skill group at about two thousand calls per hour. A manual call was made to a second skill group and terminated to a simulated IP phone.

Test:

Fast Ethernet port was disabled to CM 2 on Cat switch.

Order of events after failure:

1. Once the port was disabled, all new calls, and calls being transferred, failed.
2. After the failure was detected, the simulated IP phones started registering with CM6.
3. The JTAPI GW on PG 2A did not fail until after the port failure.
4. After this failure was detected, the JTAPI GW on the backup PG went active.
5. When JTAPI failed over to PGB, all agents were logged out.
6. Ultimately all agents that were idle were automatically logged back in. Not all agents were logged back in for skill groups that were handling calls. Possibly agents in Wrap-up or Talking state were not logged back in.
7. Once the interface was restored, simulated IP phones re-homed back to primary CallManager. This caused all the agents to get logged out and they were not automatically logged back in.

Calls were generated at about two thousand calls per hour. During the failure there were nearly a hundred failed call attempts. The manual call was cleared from the agent's desktop during the failure but the call was still established to the simulated IP phone.

Note that agent status was monitored using WebView, which has about a twenty second update interval.

It appears that when a simulated IP phone switches to the backup CM, the JTAPI GW is not notified of an instrument OOS condition because CTI Manager is also down. This is why the agents do not get logged out for the first switchover. When the IP phones re-home back to the primary CM, ICM does receive the notification because the JTAPI GW is still connected to the backup CTI Manager. In this case the agents do get logged out.

Cisco CallManager Failure without CTI Manager Failure

Pre-test Conditions:

Approximately four hundred agents are logged in. All agent instruments are registered to CM3 primary and CM7 backup. CTI Manager is CM2.

Test calls were generated at approximately twenty-six hundred calls per hour.

Test:

FastEthernet port to CM3 was disabled from Cat switch.

ICM received Out of service information for all phones that were registered to CM3. Agents that were not on an active call were logged out. Agents that were on active calls were logged out at the completion of the call. Simulated IP phones successfully registered with backup CM.

The CM failure requires all agents to log back in after failing over to the backup CM.

CTI Manager Failure without Cisco CallManager Failure

Pre-test Conditions:

Approximately one thousand simulated agents, as well as a few CTI OS desktop agents are logged in. One simulated agent is in Talking state and the rest are in Ready state. JTAPI GW and CM PIM are active on PG1A and idle on PG1B. All the other processes are also active on PG1A

Test:

First Scenario - Stopped the CTI Manager Process at CallManager.

JTAPI GW and CM PIM were switched to PG1B immediately. Agent states were maintained for all the agents. New calls were established successfully. Login of new agents was successful.

Second Scenario - Disabled the LAN on CallManager where CTI Manager is running.

JTAPI GW and CM PIM were switched to PG1B after this failure was detected. Agent states were maintained for all the agents. New calls and new agent login failed during the period it took to detect the failure.

Failure reason: Service requires a resource that is OOS. Once the Processes switched over successfully, the agents that failed login were logged in automatically.

CTI Manager Failover under Load

Pre-test Conditions:

Approximately three hundred and fifty agents were logged in and distributed across two CTI OS servers. Call load was about twenty-seven hundred calls per hour.

Active JTAPI GW and CM PIM on Side A. Side B idle.

Test:

Network port to CTI Manager was disabled at Cat switch.

When port was disabled, the active JTAPI gateway and CM PIM did not immediately failover to Side B. After detection of the failure, the Side B JTAPI GW and CM PIM went from idle to active.

During failover there were about a hundred call setups that failed.

CTI OS Server Failure

Pre-test Conditions:

Both CTI OS 1 and CTI OS 2 are active. Several real agents and over two hundred simulated agents are logged in on each CTI OS Server. Some real agents were in Talking, Not Ready and Ready states. All simulated agents were in Ready state.

Test:

Performed a power cycle on CTI OS 1 Server. All CTI OS 1 agents were switched to CTI OS 2 without any service degradation. New agents were logged in on CTI OS 2 and there were no problems changing agent state.

Upon restoration of CTI OS 1, new agents were logged in through CTI OS 1 and all existing logged in agents remained in CTI OS 2.

CTI OS Server Failover under Load

Pre-test Conditions:

CTI OS 5: about forty agents logged in (several real agent desktops)

CTI OS 6: about two hundred agents logged in (several real agent desktops)

Test Calls running: approximately thirteen hundred calls per hour

Test:

Disabled network interface port on CTI OS 5 (via Cat switch). All agents that were connected to CTI OS 5 failed over to CTI OS 6. Agents that were previously connected to CTI OS 5 in active state were forced to Not Ready shortly after failing over to CTI OS 6. Agents on CTI OS 5 that were in Talking state remained in Talking state. After the completion of the call these agents went to Wrap-up and then back to Ready. These agents were not forced to Not Ready.

Test was run a second time with full load (about two hundred agents per CTI OS server). There were no call failures seen during the failover.

CTI OS Agent Desktop Failure

Pre-test Conditions:

Post-Route call was established through a CTI OS agent desktop.

Test:

Shut down the agent desktop. Call was still active. Logged in the same agent. Window with CTI warning popped up: Agent already logged in to that instrument. The call appearance was showing agent in Talking state. Entered call variable. Shut down the agent desktop again. Call was still active. Logged in the same agent

again. CTI warning popped up. Call appearance showed the call variable and the agent in Talking state. Cleared the call. Agent went into Wrap-up and the call appearance was cleared after the Wrap-up time expired.

CTI OS Supervisor Desktop Failure

Pre-test Conditions:

Three scenarios were tested:

- 1) Post-Route call was established through a CTI OS Supervisor desktop
- 2) Supervisor Barged-In to a call
- 3) Supervisor Intercepted a call

Test:

Shut down the Supervisor desktop during the above three scenarios. Call was still active. Logged in the same supervisor. Window with CTI warning popped up: Agent already logged into that instrument. The call appearance was showing supervisor in Talking state with Conference calltype for Barge-In and Supervisor Intercept calltype for an intercepted call. Cleared the calls and Supervisor went into Wrap-up and the call appearance was cleared after the Wrap-up time expired.

IP IVR CTI Manager Failure

Pre-test Conditions:

NS1-IVR configured with CTI Managers on CM3 and CM7. IP IVR is using CM3 as its active CTI Manager.

The IVR call script used for the test alternates IVR calls between IVR1 and IVR2. The script only considers sending calls to an IVR that is online by checking the Peripheral.NS1IVR_PIM_1.Online variable.

Test:

A call was connected to IVR 1 and then the CTI Manager on CM 3 was shut down. (The CTI Manager was stopped using the CM Control Center).

Observations:

When the CTI Manager is stopped, the JTAPI subsystem on the IVR immediately goes `OUT_OF_SERVICE`. The call that is connected to the CTI port on the IVR is disconnected.

When the JTAPI subsystem is OOS the `Peripheral.NS1IVR1_PIM_1.Online` value is 0. This prevents calls from being routed to this IVR. When the JTAPI subsystem changes to `PARTIAL` service, the `Peripheral.NS1IVR1_PIM_1.Online` variable is then set to 1. This allows calls to be routed to this IVR but the calls that are routed to this IVR fail.

This test was also executed by disconnecting the LAN interface on the active CTI Manager. During the time it took for the IVR to detect the CTI failure, the active call was still connected to the CTI port but any calls that were routed to this IVR would fail. Once the failure was detected the active call was released.

Any CTI Manager failure results in the failure of all active calls to that IVR. New calls also fail during the time it takes for the IVR to detect the loss of the CTI Manager and to recover to the alternate CallManager.

IP IVR CTI Manager Failure under Load

Pre-test Conditions:

Site configured with two IVRs to queue calls. Each IVR is configured with approximately three hundred CTI ports. Each IVR has two CTI Managers configured.

ICM script is configured to load share between the two IVRs. Before sending a call to the IVR the ICM script checks the IVR online state and status. If the IVR is offline or in `JTAPI PARTIAL`, the call is not queued to that IVR.

IVR1 was configured with CM3 as its active CTI Manager. The alternate CTI Manager was CM7. Test calls were generated at approximately one call per second. A manual call was also connected to IVR1.

Test:

To simulate the CM failure the network connection to CM3 was disabled.

After the failure was detected, the JTAPI subsystem on IVR1 went OOS. This was detected by ICM, and the IVR online status was updated to 0 (OOS). No new calls were routed to this IVR.

IVR1 established a CTI connection to CM7. The JTAPI subsystem went to PARTIAL status. (Note: ICM will still not route calls to this IVR until JTAPI Subsystem is IN SERVICE). After the connection was detected, the JTAPI subsystem was moved to IN SERVICE and ICM started routing new calls to this IVR.

Call failures measured during CTI failure:
approximately seventy transient (new and transferring) call failures
approximately fifty stable (connected) call failures.

IP IVR Failure

Pre-test Conditions:

PG A

IVR PIM: active

PG B

IVR PIM: configured

A manual call is queued to IVR. (IVR script uses MOH for music source.)

Test:

Failure is simulated by disabling the IVR network connection.

After the network connection was disabled, the IVR PIM recognized the failure, and then the established call received reorder.

IVR PIM states transitioned through different states after the failure.

Initial state Failure occurred after failure.

PG A: Active-->CONFIGURED-->ACTIVATING-->IDLE

PG B: CONFIGURED-->ACTIVATING-->SHUTDOWN-->CONFIGURED

The Side A and Side B PIMs alternate between ACTIVATING and CONFIGURED while the connection is down.

IP IVR Failure under Load

Pre-test Conditions:

PGA: All PIMs idle

PGB: All PIMs active

Call load: Well over three thousand calls per hour to agents. About fifteen hundred calls per hour queued to IP IVR.

Test script was configured to load balance IVR calls between IVR1 and IVR2. The online state of each IVR was checked before a call was routed to the IVR. A manual test call was connected to the IVR that failed. The IVR script that was running would queue calls to the MOH server.

Test:

The IVR failure was simulated by disabling the network connection to the IVR.

After ICM recognized the IVR failure, the `Peripheral.NS1IVR_PIM_1.Offline` was set to 0, and then the active call that was connected to the IVR received reorder. All new calls were routed to the alternate IVR.

While the IVR connection is disabled, the IVR PIM on the PG shows either `ACTIVATING` or `CONFIGURING`. This alternates between the Side A and Side B PGs.

Callgen reported a few failures of new and transferring calls, and about twenty abnormal disconnects during the failure.

Note that when the IVR is restored, the JTAPI subsystem is in partial state for some time but the `Peripheral.NS1IVR_PIM_1.Online` state shows the IVR as being online. Calls are routed to this IVR even though it is not fully functional. For this test there were about fifteen additional failures of new and transferring calls when the IVR connection was re-established. There were more failures when the IVR connection was re-established than when the failure occurred.

The ICM script was modified to not send calls to the IVR when JTAPI is in partial state. The script was updated to also check the IVR Status.

Formula used:

```
Peripheral.NS1IVR_PIM_1.Online && Peripheral.NS1IVR_PIM_1.Status<32
```

A status value of 32-63 indicates a degraded condition. When the JTAPI Subsystem is in `PARTIAL_SERVICE` state this variable has been either 34 or 35.

By modifying the script with the above formula, new calls were not routed to the IVR while JTAPI was `PARTIAL_SERVICE`.

No failures of new and transferring calls were seen when the test was re-executed.

MR PG Failover when Public Network Connection Fails

Pre-test Conditions:

The active MR PG (PG2A) has a couple of active calls and a large file import.

Test:

Failed the public network connection by disabling the Cat Switch port of the active MR PG (PG2A).

PG2B became the active PG.

Stable calls were still In-Progress.

New calls were established successfully.

Import was successful.

Upon restoration of the public network link, both PG2A processes were in Configured state; the VRU PIM was in Configuring state.

MR PG Failover when Private Network Connection Fails

Pre-test Conditions:

The active MR PG (PG2A) has a couple of active calls and a large file import.

Test:

Failed the private network connection by disabling the Cat Switch port of the active MR PG (PG2A).

All the processes in PG2A stayed active.

Stable calls were still In-Progress.

VRU and MR PIMs on the standby PG (PG2B) restarted.

New calls were established successfully.

Import was successful.

Upon restoration of the private network link, PG2A and PG2B processes were active and idle, respectively.

MR PG Failover when MR PG PIM Fails

Pre-test Conditions:

The active MR PG PIM on PG2A has active calls and a large file import.

Test:

Failed the active MR PG PIM on PG2A.

MR PIM on PG2B changed from idle to active.

Stable calls were still In-Progress.

New calls were handled by MR PIM in PG2B.

Import was successful.

MR PIM in PG2A became idle upon restoration.

Dialer Failure

Pre-test Conditions:

Dialer1 has active calls and a large file import.

Test:

Failed Dialer1.

Stable calls were still In-Progress.

Import was successful.

Dialer2 was initiating all customer and agent calls.

Upon restoration of Dialer1, calls were distributed between Dialer1 and Dialer2.

Campaign Manager Failure during an Import

Pre-test Conditions:

Campaign Manager is doing an import. Calls are in progress.

Test:

Failed Campaign Manager Process in the Logger during an import.

Stable calls were still In-Progress.

Failed Campaign Manager once, it restarted automatically.

Import process was successful.

Failed Campaign Manager multiple times. Campaign Manager started automatically after about one second.

Campaign Manager Failure while Not doing an Import

Pre-test Conditions:

Campaign Manager is not doing an import, but calls are in progress.

Test:

Failed Campaign Manager Process in the Logger.

Stable calls were still In-Progress.

Failed Campaign Manager once, it restarted automatically.

Failed Campaign Manager multiple times. Campaign Manager started automatically after about one second.

Rogger Failover when Public Network Switch Port Fails

Pre-test Conditions:

Both Side A and Side B Roggers are active. The Side A Rogger is the enabled synchronizer.

CTI OS and IP Phone agents are logged in. Active calls were placed to CTI OS and IP Phone agents.

Test:

Side A Rogger public network switch port was disabled. None of the processes in RGR A were affected. PGs showed that they were disconnected from RGR A. CCAgent process reported that it was disconnected from all its PGs. Active calls were not affected and agent states remained the same as prior to failure. RGR B processes were not affected.

Upon restoration of the public network on RGR A, the PGs were showing RGR A as idle and CCAgent was not reporting any disconnect messages to any of its PGs. New calls were established successfully to CTI OS and IP agents.

Rogger Failover when Private Network Switch Port Fails

Pre-test Conditions:

Both Side A and Side B Roggers are active. The Side A Rogger is the enabled synchronizer.

CTI OS and IP Phone agents are logged in. Active calls were placed to CTI OS and IP Phone agents.

Test:

Side A Rogger private network switch port was disabled. Both CCAgent and mdsproc were OOS on RGR B. Active calls were not affected and agent states remained the same as prior to failure.

Upon restoration of the private network on RGR A, both CCAgent and mdsproc were In-Service. New calls were established successfully to CTI OS and IP agents.

Rogger Failover when Rogger Fails

Pre-test Conditions:

Both Side A and Side B Roggers are active. The Side A Rogger is the enabled synchronizer.

CAD, CTI OS, and IP Phone agents are logged in. Active calls were placed to CAD, CTI OS, and IP Phone agents.

Test:

Side A Rogger was powered down. The Side B Rogger took over. Active calls were not affected and agent states remained the same as prior to the failover.

Rogger Failover under Load

Pre-test Conditions:

Side A Rogger: enabled Clock

Side B Rogger: disabled Clock

Load test of 26,700 calls per hour (20,000 pre-route, 6,700 post-route)

Test:

Failed Rogger A by disconnecting both visible and private interfaces at the Cat switch. Rogger B MDS went from PR-DSB-CLK to IS-ENB-CLK.

During failover there were 20-40 failed calls.

Note: Pre-route calls are using GKTMP NIC. When the Side A router fails the GKTMP NIC on Side B also restarts. This results in both NICs being out of service for a short period of time. There can be several hundred call failures when both of the NICs are out of service.

Rogger Public Failure under Load

Pre-test Conditions:

Side A Rogger: MDS ENB-PR-CLK CCAgent 10 PGs active

Side B Rogger: MDS DSB-PR-CLK CCAgent 10 PGs active

PGagents show active to the Side A Rogger.

Load test of 26,700 calls per hour

Test:

Rogger A visible interface was disconnected at the Cat switch. When the interface was disconnected, the CCAgent showed all PGs disconnected.

PGagent on the PG showed Side A disconnected and Side B active.

There were less than 20 call failures during the failover (10 post-route failures, 5 pre-route failures).

PG Failover when PG Fails

Pre-test Conditions:

PG1A

PIM1: ACT
PIM3: ACT
PIM4: ACT
CTISVR: ACT
JGW1: ACT
MDS: PR-ENB-CLK
PGAG: INSV

PG1B

PIM1: IDLE
PIM3: IDLE
PIM4: IDLE
CTISVR: IDLE
JGW1: IDLE
MDS: PR-DSB-CLK
PGAG: Not ACT

two agents Available
two agents Not Ready
one agent Talking (CallManager Post-Route call)

Test:

PG1A was configured to automatically restart processes after a reboot. PG1A failure was caused by power cycling the PG. When the PG was powered down all of the processes became active on PG1B. Established call was maintained and agent states were maintained. After PG1A rebooted all of the processes automatically restarted and went into IDLE state. MDS went into PR-ENB-CLK.

It was observed that the agent with the active call does not go into Wrap-up. This problem occurs whenever there is a failover of the CM PIM and JGW for active calls.

PG Failover when PG Fails under Load

Pre-test Conditions:

PG2A

JTAPI: ACT
CM PIM: ACT
VRU PIM3: ACT
VRU PIM4: ACT
CTISVR: ACT
MDS: PR_ENB_CLK

PG2B

JTAPI: IDLE
CMPIM: IDLE
VRU PIM3: IDLE
VRU PIM4: IDLE
MDS: PR-DSB-CLK

PG load: over four thousand calls per hour
Active calls: approximately two hundred

Test:

PG failure was caused by disconnecting both the visible and private interfaces simultaneously. When the active PG failed the standby PG (Side B) took over. Idle processes went active.

Call failure during failover:
less than ten connected calls
about ten failures of new and transferring calls

The test was run once, and after the failover, most of the agents were placed in the Not Ready state.

The test was repeated, and the second time only one agent was placed in the Not Ready state.

PG Failover when Private Network Fails

Test 1 Pre-test Conditions:

All processes are active on Side A.

PG1A

PIM1: ACT

PIM3: ACT

PIM4: ACT

CTISVR: ACT

JGW1: ACT

MDS: PR-ENB-CLK

PGAG: INSV

PG1B

PIM1: IDLE

PIM3: IDLE

PIM4: IDLE

CTISVR: IDLE

JGW1: IDLE

MDS: PR-DSB-CLK

PGAG: Not ACT

two agents Available

two agents Not Ready

one agent Talking (CM Post-Route call)

Test1:

Side A private LAN port was disabled on Cat switch. All processes remained active on Side A. The MDS process changed from PR-ENB-CLK to IS-ENB-CLK. The Side B MDS changed from PR-DSB-CLK to OOS IS-DSB-CLK. No agents or calls were affected. Calls were successfully routed to ICM agents after the failure.

Test 2 Pre-test Conditions:

Greater than 50% of the PIMS are active on Side B.

PG1A

PIM1: IDLE
PIM3: IDLE
PIM4: ACT
JGW1: IDLE
CTISVR: ACT
MDS: PR-ENB-CLK
PGAG: IN SVC

PG1B

PIM1: ACT
PIM3: ACT
PIM4: IDLE
JGW1: ACT
CTISVR: IDLE
MDS: PR-DSB-CLK
PGAG: Not ACT

two agents Available
two agents Not Ready
one agent Talking (CM Post-Route call)

Test2:

When the PG1A private LAN port is disabled all of the processes on the Side A PG become active. Any processes that were active on Side B become idle.

Issue 1: All of the logged in agent desktops are grayed out during the switchover of the processes from Side B to Side A. All buttons, status, and any call information disappear from the desktop during this period and then reappear.

Issue 2: When the active call is disconnected after the failover, the agent that was handling the call immediately goes to the Ready state. The agent does not go into the Wrap-up state.

Test 3 Pre-test Conditions:

All processes active on PG1B except PGAG active on PG1A.

PG1A

PIM1: IDLE

PIM3: IDLE

PIM4: IDLE

JGW1: IDLE

CTISVR: IDLE

MDS: PR-ENB-CLK

PGAG: INSVC

PG1B

PIM1: ACT

PIM3: ACT

PIM4: ACT

JGW1: ACT

CTISVR: ACT

MDS: PR-DSB-CLK

PGAG: Not ACT

two agents Available

two agents Not Ready

one agent Talking (CM Post-Route call)

Test3:

When the private LAN connection on PG1B is disabled, all of the processes on PG1A become active and all of the processes on PG1B become idle.

Issues: When the CTI Server fails over from Side B to Side A, the following error message is displayed for logged in agents:

Failed to service request, the CTI Server is offline.

The agents stay logged in and the agent states are correctly maintained. This error message is not displayed for the agent with the active call.

PG Failover when Private Network Fails under Load

Test 1 Pre-test Conditions:

PGA
All processes active
MDS PR-ENB-CLK

PGB
All processes idle
MDS PR-DSB-CLK

Call load: over four thousand calls per hour; approximately two hundred active calls

Test1:

Failed private interface on PGA. All processes remained active. MDS went to IS-ENB-CLK.

PGB processes went OOS and restarted. Then PGB processes went into the idle state.

No call failures were seen.

Test 2 Pre-test Conditions:

PGA

JGW1: ACT
CM PIM1: ACT
VRU PIM3: IDLE
VRU PIM4: IDLE
CTISVR: IDLE

PGB

JGW1: IDLE
CM PIM1: IDLE
VRU PIM3: ACT
VRU PIM4: ACT
CTISVR: ACT

Call load: over three thousand calls per hour; approximately two hundred active calls

Test2:

PGA private network was disconnected. All of the active processes on PGB failed over to PGA. The MDS on PGA then went OOS but recovered after the failover was detected.

During the failover approximately a hundred calls failed, about ninety of them were failures of new and transferring calls.

After the failover there were a couple of agents placed in Not Ready state.

Test 3 Pre-test Conditions:

PGA

JGW1: IDLE
CM PIM: IDLE
VRU PIM: ACT
VRU PIM: ACT
CTISVR: ACT

PGB

JGW1: ACT
CM PIM: ACT
VRU PIM: IDLE
VRU PIM: IDLE
CTISVR: IDLE

Test3:

When the PGA private network connection was disabled, the active processes on PGB failed over to PGA. With the JGW and CM PIM failing over to PGB there were less call failures than when the CTI Server failed over.

Call failures: approximately twenty failures of new and transferring calls.

PG Failover when Public Network Fails

Pre-test Conditions:

two agents in Ready state.
two agents in Not Ready state
one agent in Talking state

PG1A state

PGAG: INSV
MDS: IS-PR-EN
CM PIM: ACT
IVR PIM3: ACT
IVR PIM4: ACT
CTISVR: ACT
JGW1: ACT

PG1B state
PGAG: Not ACT
MDS: IS-PR-DSB
CM PIM: IDLE
IVR PIM3: IDLE
IVR PIM4: IDLE
CTISVR: IDLE
JGW1: IDLE

No debug or EMS traces were enabled on either server.

Test:

The PG1A public network failure was caused by disabling the Cat switch port connecting to the public interface of the PG. After the failure was detected, all of the processes on PG1B were in active state.

After the failure, all of the agent states were the same as before the failure:
two agents logged in Ready
two agents logged in Not Ready
one agent logged in Talking

The following IPCC error was displayed:

IPCC Error [10135] You have entered an invalid Agent ID. Login denied.

This did not appear to affect the state of any of the agents or the active call.

PG Failover when Public Network Fails under Load

Pre-test Conditions:

PG A: all processes active

PG B: all processes idle/not active

Call load: nearly three thousand calls per hour; approximately fifteen per cent calls queued.

Test:

Private network was disconnected during load test. Well over a hundred calls were active and about fifteen calls were queued.

After the private network failure was detected, the CTI Server became active. After detecting the CTI Server, the JTAPI gateway became active.

All of the processes did not remain active on PGB after the failover.

There were approximately seventy failures of new and transferring calls, and ten failures of connected calls.

Failure without Failover

CAD Enterprise Server Failure

Test:

CAD Enterprise Server fails.

CAD agents cannot change Enterprise data. An error is displayed.

IP Phone Agents and Supervisor are not affected.

CAD TAI Server Failure

Test:

CAD TAI Server fails.

IP Phone Agents cannot change state.

CAD agents are not affected.

If IP Phone Agent logs out and does not log back in when server is online, voice path is still established.

CAD Sync Server Failure

Test:

CAD Sync Server fails.

If Sync Server fails, it cannot connect to Logger SQL Server, so it cannot sync.

During this time, if any new agents are added to the ICM system, these new agents are unable to login.

An exception to this was IP Phone Agents: even if Sync Server is down, the newly added agent on the ICM can be logged in using IPPA.



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