

# Cisco Unified CallManager 4.1-PBX Interoperability: Lucent/Avaya Definity G3si V10 and Octel 200 Voice Mail Server using a Cisco 3640 with T1 QSIG as MGCP Gateway for MWI Services

**October 30, 2007 Revision 3**

## Table of Contents

Introduction .....	1
Network Topology.....	2
Limitations.....	2
System Components .....	2
Hardware Requirements .....	2
Software Requirements .....	3
Features .....	3
Features Supported .....	3
Configuration.....	3
Configuring the Lucent/Avaya Definity G3si PBX.....	3
Configuring the Cisco Unified CallManager.....	35
Configuring the Cisco 3640 Router.....	37
Acronyms .....	39

## Introduction

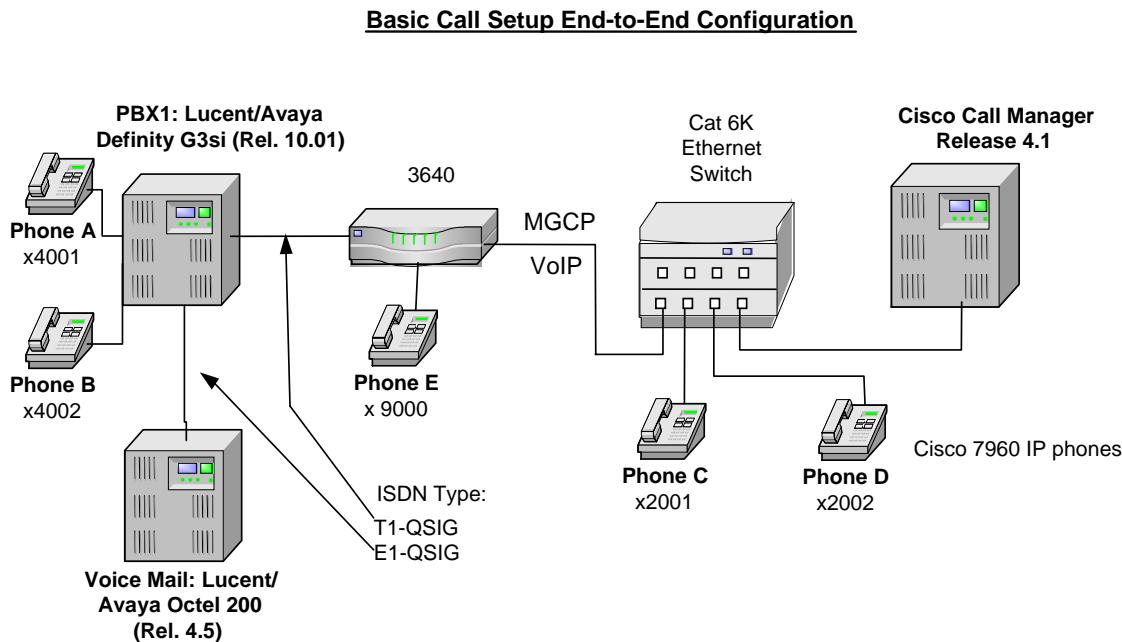
This is an Application Note for the connectivity of Lucent/Avaya Definity G3 Version 10 PBX and Octel 200 Voice Mail Server with Cisco Unified CallManager using a Cisco 3640-T1 QSIG interface as the MGCP Gateway.

The Network Topology diagram shows the test set-up for end-to-end interoperability between the Cisco Unified CallManager connected to the PBX via Cisco 3640-T1 link as the MGCP Gateway.

Connectivity is achieved by using the industry standard ISO QSIG protocol. The Lucent/Avaya Definity G3si can be configured as either Peer-master or Peer-slave.

## Network Topology

**Figure 1.** Basic Call Setup



## Limitations

The following section lists known limitations, caveats, or integration issues.

### QSIG Message Waiting Indicator

- Current software for the Definity PBX that uses Leave Word Calling (LWC) is not translated into QSIG MWI Activate and Deactivate commands. Therefore, the only way to get MWI to work with the Cisco Call Manager is if the Octel is integrated with the Definity via QSIG. It cannot be integrated via analog, digital or port emulation.

## System Components

### Hardware Requirements

The following hardware is required:

#### Cisco Hardware

- Cisco 3640 Gateway with 2MFT T1 Port
- Cisco Cat6K switch
- Cisco Unified CallManager 4.1

#### PBX Hardware including interface card

- Lucent/Avaya Definity G3si V10 PBX.



- Hardware: TN464F, DS1 INTFC 24/32
  - Avaya Octel 200 V4.5 Voice Mail Server
- Hardware: DTICE E1 QSIG Interface

## **Software Requirements**

The following software is required:

Cisco IOS software release 12.3

PBX Software Version 10.0.

Octel Software Version 4.5

Cisco Unified CallManager 4.1

## **Features**

This section lists new and changed features and features that are not supported.

### **Features Supported**

Calling/Called Number

Calling Name

Connected Name

Message Waiting Indicator (MWI) Activation and Deactivation

Forward into Voice Mail

Transfer out of Voice Mail

## **Configuration**

This section contains configuration menus and commands and describes configuration sequences and tasks.

### **Configuring the Lucent/Avaya Definity G3si PBX**

Configure in the following sequence:

Add the new circuit pack.

Add the new signaling group.

Add the new trunk group.

Add Uniform Dialing Plan.



## Avaya Trunk Connected to the Octel VM System

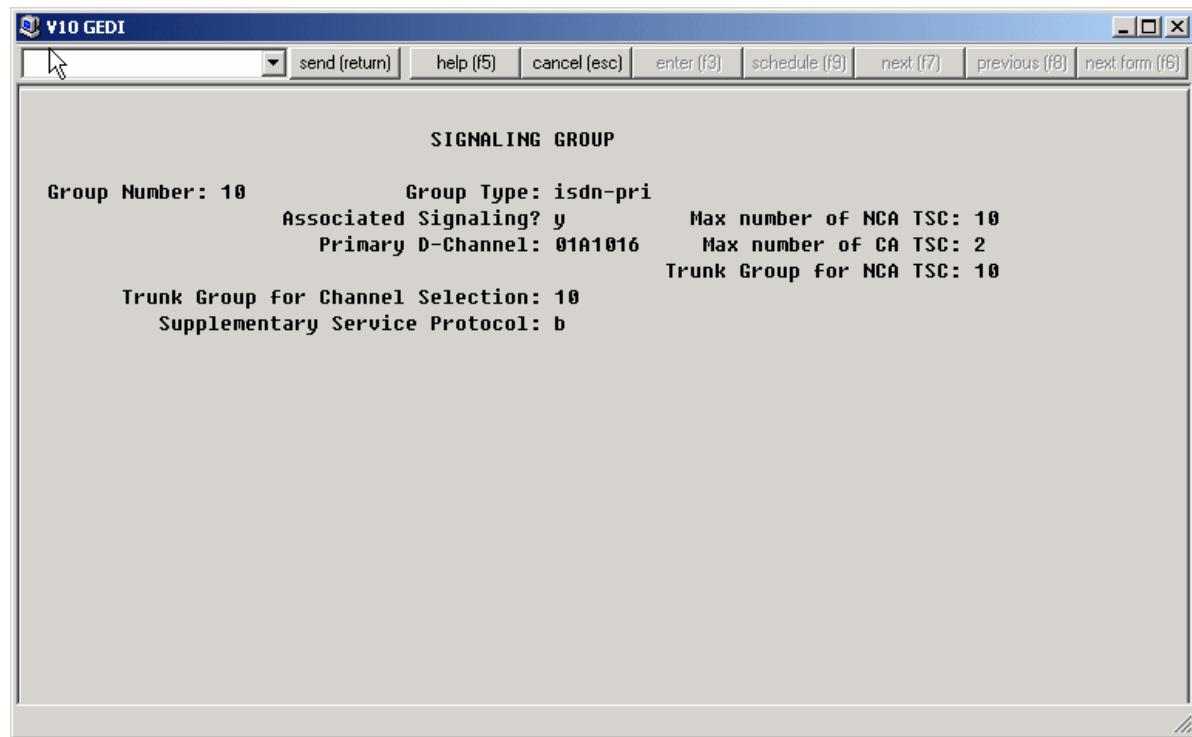
### DS1 Interface

The screenshot shows a window titled "V10 GEDI" with various menu options and toolbars. The main content area displays configuration parameters for a DS1 circuit pack:

Location: 01A10	Name: QSIG-OCTEL-E1
Bit Rate: 2.048	Line Coding: hdb3
Signaling Mode: isdn-pri	Interface: peer-master
Connect: pbx	Peer Protocol: Q-SIG
CentreVu Long Timers? n	Side: a
Interworking Message: PROGRESS	CRC? n
Interface Companding: alaw	Channel Numbering: timeslot
Idle Code: 11111111	DCP/Analog Bearer Capability: 3.1kHz
Slip Detection? n	Near-end CSU Type: other



## Signaling Group



Note: You must enable TSC's for the non channel associated messages (MWI activate and deactivate) to work correctly.



## Trunk Group

```
V10 GEDI
display trunk-group 10 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) next form (f6)
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
TRUNK GROUP

Group Number: 10          Group Type: isdn          CDR Reports: y
Group Name: QSIG-OCTEL    COR: 1                 TN: 1           TAC: 610
Direction: two-way        Outgoing Display? y      Carrier Medium: PRI/BRI
Dial Access? y           Busy Threshold: 99       Night Service:
Queue Length: 0
Service Type: tie         Auth Code? n          TestCall ITC: rest
                           Far End Test Line No:
TestCall BCC: 4

TRUNK PARAMETERS
  Codeset to Send Display: 0      Codeset to Send National IEs: 6
  Max Message Size to Send: 260   Charge Advice: none
  Supplementary Service Protocol: b  Digit Handling (in/out): enbloc/enbloc

  Trunk Hunt: ascend            QSIG Value-Added? n
                                Digital Loss Group: 13
Calling Number - Delete:     Insert:             Numbering Format: lev2-put
  Bit Rate: 1200               Synchronization: async   Duplex: full
Disconnect Supervision - In? y  Out? n
Answer Supervision Timeout: 0
```

```
V10 GEDI
display trunk-group 10 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) next form (f6)
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
TRUNK FEATURES

  ACA Assignment? n          Measured: none          Wideband Support? n
  Internal Alert? n          Maintenance Tests? y
  Data Restriction? n        NCA-TSC Trunk Member: 3
  Send Name: y               Send Calling Number: y
  Used for DCS? n           Hop Dgt? y
  Suppress # Outpulsing? n   Numbering Format: unk-put
Outgoing Channel ID Encoding: preferred     UUI IE Treatment: service-provider

  Replace Restricted Numbers? n
  Replace Unavailable Numbers? n
  Send Connected Number: y

  Send UCID? n
Send Codeset 6/7 LAI IE? y          Ds1 Echo Cancellation? n

Path Replacement with Retention? n
Path Replacement Method: always
  Network (Japan) Needs Connect Before Disconnect? n
```

Note: NCA-TSC cannot be blank or 0 for the non channel associated messages (MWI activate and deactivate) to work correctly.



V10 GEDI

display trunk-group 10 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) next form (f6)

1	2	3	4	5	6	7	8	9	10
INCOMING CALL HANDLING TREATMENT									
Service/ Feature tie	Called Len	Called Number	Del	Insert	Per Call CPN/BN	Night Serv			
	7	555		3					

V10 GEDI

display trunk-group 10 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) next form (f6)

1	2	3	4	5	6	7	8	9	10
TRUNK GROUP									
Administered Members (min/max): 1/4									
GROUP MEMBER ASSIGNMENTS Total Administered Members: 4									
Port	Code	Sfx	Name	Night	Sig	Grp			
1: 01A1001	TN464	F			10				
2: 01A1002	TN464	F			10				
3: 01A1003	TN464	F			10				
4: 01A1004	TN464	F			10				
5:									
6:									
7:									
8:									
9:									
10:									
11:									
12:									
13:									
14:									
15:									



## Uniform Dialing Plan

```
V10 GEDI
display udp 4 send [return] help [f5] cancel [esc] enter [f3] schedule [f9] next [f7] previous [f8] next form [f6]
1 | 2 |
UNIFORM DIALING PLAN
Ext Codes: 4ddx

Ext Code: 4xxx Type: AARCode 222

dd  Type dd  Type dd  Type dd  Type dd  Type
0x:    1x:    2x:    3x:    4x:
00:    10:    20:    30:    40:
01:    11:    21:    31:    41:
02:    12:    22:    32:    42:
03:    13:    23:    33:    43:
04:    14:    24:    34:    44:
05:    15:    25:    35:    45:
06:    16:    26:    36:    46:
07:    17:    27:    37:    47:
08:    18:    28:    38:    48:
09:    19:    29:    39:    49:
```



**Route Pattern:**

The screenshot shows a window titled "V10 GEDI" with various menu options and function keys at the top. The main area displays a route pattern configuration for "Pattern Number: 10". The configuration includes several sections: "Grp. FRL NPA Pfx Hop Toll No. Inserted", "BCC VALUE TSC CA-TSC ITC BCIE Service/Feature BAND No. Numbering LAR", and "Subaddress". The "Grp. FRL NPA Pfx Hop Toll No. Inserted" section lists route steps from 1 to 6, each with "Dgtw" and "n user" entries. The "BCC VALUE TSC CA-TSC ITC BCIE Service/Feature BAND No. Numbering LAR" section lists route steps from 1 to 6, each with "Dgts Format" and "Subaddress" entries. The "Subaddress" entries include "lev0-pvt none" and "none".

Note: You must enable TSC's for the non channel associated messages (MWI activate and deactivate) to work correctly.



Hunt Group

V10 GEDI

display hunt-group 10 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8) next form (f6)

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

**HUNT GROUP**

Group Number: 10 ACD? n  
Group Name: VOICE-MAIL-OCTEL-QSIG Queue? n  
Group Extension: 5050 Vector? n  
Group Type: ucd-mia Coverage Path:  
TN: 1 Night Service Destination:  
COR: 1 MM Early Answer? n  
Security Code:  
ISDN Caller Display: grp-name

**GEDI**

display hunt-group 10 send [return] help (F5) cancel (esc) enter (F3) schedule (F9) next (F7) previous (F8) next form (F6)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

**HUNT GROUP**

Group Number: 10      Group Extension: 5050      Group Type: ucd-mia  
 Member Range Allowed: 1 - 200      Administered Members (min/max): 0 / 0  
 Total Administered Members: 0

**GROUP MEMBER ASSIGNMENTS**

Ext	Name	Ext	Name
1 :		14 :	
2 :		15 :	
3 :		16 :	
4 :		17 :	
5 :		18 :	
6 :		19 :	
7 :		20 :	
8 :		21 :	
9 :		22 :	
10 :		23 :	
11 :		24 :	
12 :		25 :	
13 :		26 :	

At End of Member List



### Avaya Trunk Connected to Call Manager MGCP QSIG Trunk

DS1 Interface

```
display ds1 1a12      send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)
1 | 2 |
DS1 CIRCUIT PACK

Location: 01A12          Name:
Bit Rate: 1.544          Line Coding: b8zs
Line Compensation: 1       Framing Mode: esf
Signaling Mode: isdn-pri
Connect: pbx
TN-C7 Long Timers? n
Interworking Message: PROGress
Interface Companding: mulaw
Idle Code: 11111111
DCP/Analog Bearer Capability: 3.1kHz

Slip Detection? n        Near-end CSU Type: other
```



Signaling Group

	send (return)	help (f5)	cancel (esc)	enter (f3)	schedule (f9)	next (f7)	previous (f8)
<b>SIGNALING GROUP</b>							
<b>Group Number:</b> 12	<b>Group Type:</b> isdn-pri						
<b>Associated Signaling?</b> y		<b>Max number of NCA TSC:</b> 10					
<b>Primary D-Channel:</b> 01A1224		<b>Max number of CA TSC:</b> 10					
<b>Trunk Group for Channel Selection:</b> 12		<b>Trunk Group for NCA TSC:</b> 12					
<b>Supplementary Service Protocol:</b> b		<b>X-Mobility/Wireless Type:</b> NONE					

Note: You must enable TSC's for the non channel associated messages (MWI activate and deactivate) to work correctly.



## Trunk Group

```
display trunk-group 12      send (return)  help (f5)  cancel (esc)  enter (f3)  schedule (f9)  next (f7)  previous (f8)
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
                                         TRUNK GROUP

Group Number: 12          Group Type: isdn          CDR Reports: y
Group Name: QSIG to CM-POLARIS    COR: 1           TN: 1           TAC: 612
Direction: two-way        Outgoing Display? n       Carrier Medium: PRI/BRI
Dial Access? y           Busy Threshold: 99       Night Service:
Queue Length: 0
Service Type: tie         Auth Code? n           TestCall ITC: rest
                           Far End Test Line No:
TestCall BCC: 4

TRUNK PARAMETERS
  Codeset to Send Display: 0      Codeset to Send National IEs: 6
  Max Message Size to Send: 260    Charge Advice: none
  Supplementary Service Protocol: b   Digit Handling (in/out): enbloc/enbloc

  Trunk Hunt: ascend            QSIG Value-Added? y
                                Digital Loss Group: 13
Calling Number - Delete:     Insert:           Numbering Format: unk-unk
  Bit Rate: 1200              Synchronization: async   Duplex: full
Disconnect Supervision - In? y  Out? y
Answer Supervision Timeout: 0
```



display trunk-group 12		send (return)	help (f5)	cancel (esc)	enter (f3)	schedule (f9)	next (f7)	previous (f8)	
1	2	3	4	5	6	7	8	9	10
<b>TRUNK FEATURES</b>									
<b>ACA Assignment? n</b> <b>Measured: none</b> <b>Wideband Support? n</b> <b>Internal Alert? n</b> <b>Maintenance Tests? y</b> <b>Data Restriction? n</b> <b>NCA-TSC Trunk Member: 3</b> <b>Send Name: y</b> <b>Send Calling Number: y</b> <b>Used for DCS? n</b> <b>Hop Dgt? y</b> <b>Suppress # Outpulsing? n</b> <b>Numbering Format: unknown</b> <b>Outgoing Channel ID Encoding: preferred</b> <b>UUI IE Treatment: service-provider</b>  <b>Replace Restricted Numbers? y</b> <b>Replace Unavailable Numbers? y</b> <b>Send Called/Busy/Connected Number: y</b>  <b>Send UUI IE? y</b> <b>Send UCID? y</b> <b>Send Codeset 6/7 LAI IE? y</b> <b>Ds1 Echo Cancellation? n</b>  <b>Path Replacement with Retention? y</b>  <b>SBS? n</b> <b>Network (Japan) Needs Connect Before Disconnect? n</b>									

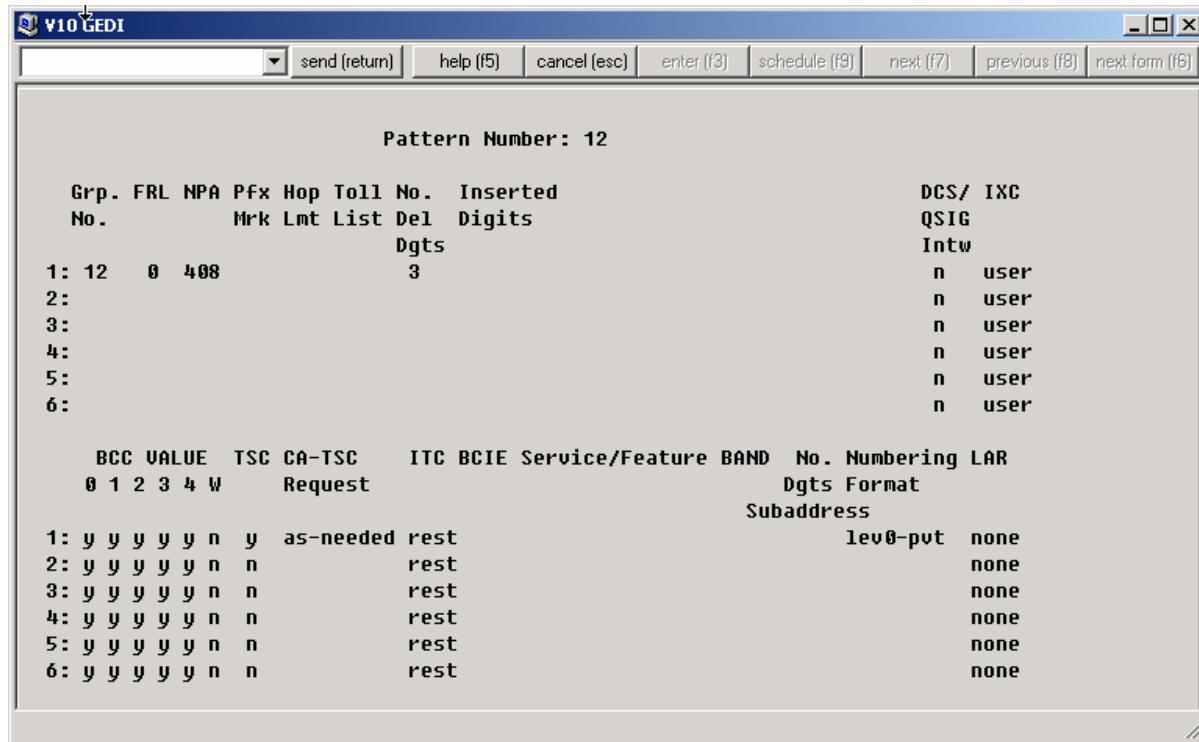
Note: NCA-TSC cannot be blank or 0 for the non channel associated messages (MWI activate and deactivate) to work correctly.



GROUP MEMBER ASSIGNMENTS				TRUNK GROUP			
				Administered Members (min/max): 1/10			
				Total Administered Members: 10			
Port	Code	Sfx	Name	Night	Sig	Grp	
1: 01A1201	TN464	F			12		
2: 01A1202	TN464	F			12		
3: 01A1203	TN464	F			12		
4: 01A1204	TN464	F			12		
5: 01A1205	TN464	F			12		
6: 01A1219	TN464	F			12		
7: 01A1220	TN464	F			12		
8: 01A1221	TN464	F			12		
9: 01A1222	TN464	F			12		
10: 01A1223	TN464	F			12		
11:							
12:							
13:							
14:							
15:							



## Route Pattern



Note: You must enable TSC's for the non channel associated messages (MWI activate and deactivate) to work correctly.

## Octel 200 Configuration

Note: The Octel is configured as it would be in a normal networked environment. All routing between the Octel and Call Manager is handled by the Avaya 'transit' PBX. Care should be taken to make sure call routing is correct in the Avaya 'transit' PBX.

list all

### SYSTEM PARAMETER TABLE:

TUE 08/31/2004 09:04:29 CISCO ID:220749 S/N:220749 PBX:23

INDEX	VALUE	(LST/MOD)	PARAMETER NAME:
1	CISCO	L/M	INSTALLATION NAME
2	220749	L/M	SYSTEM ID NUMBER
3	ATT	L/M	PBX TYPE
	SYSTEM-75		PBX MODEL
4	4	L	VOICE PORTS USED
	0		FAX PORTS USED
7	3	L	REPROMPT LIMIT
8	4	L/M	BACKUP/GO AHEAD TIME (BLOCKS)
9	750	L/M	FLASH TIME (MSEC.)



12	255	L	INSTALL QUESTION NUMBER
13	FE	L/M	TRANSFER INITIATE CODE
	FDF		RE-CONNECT CODE AFTER NO ANSWER
	FDF		RE-CONNECT CODE AFTER BUSY
	NONE		RE-CONNECT CODE AFTER FAST BUSY
	NONE		TRANSFER COMPLETE CODE
16	FE	L/M	ALTERNATE TRANSFER INITIATE CODE
	FDF		ALTERNATE RE-CONNECT CODE AFTER NO ANSWER
	FDF		ALTERNATE RE-CONNECT CODE AFTER BUSY
	NONE		ALTERNATE RE-CONNECT CODE AFTER FAST BUSY
	NONE		ALTERNATE TRANSFER COMPLETE CODE
19	NO	L/M	MAILBOX NUMBERS MATCH USER EXTENSIONS
22	8	L/M	DEFAULT MESSAGE WAITING START HOUR
23	18	L/M	DEFAULT MESSAGE WAITING END HOUR
25	15	L/M	DEF MSG WTG RETRY PERIOD (MINUTES)
26	NO	L/M	DOUBLE-INTERRUPTED RINGBACK
28	500	L/M	"D" CHAR DELAY TIME. (MSEC.)
31	NONE	L/M	ALARM NUMBER
32	5	L/M	MAXIMUM MESSAGE LENGTH (MINUTES)
33	NONE	L/M	PBX INITIALIZE CODE
43	1	L/M	PERSONAL GREETING 1=NOCALL 2=CALL FIRST
45	NONE	L/M	SYSTEM-RELOAD FORWARD STRING
46	NONE	L/M	SYSTEM-RELOAD CANCEL-FORWARD STRING
51	NO	L/M	RS-232 INTEGRATED WITH PBX
56	0	L/M	NUMBER OF TRANSFER RETRIES IF FLASH FAILS
58	NO	L/M	DEV: DEVICE SUPPORT MASTER SYSTEM
	NO		
59	NONE	L/M	DID: SYSTEM PILOT EXTENSION NUMBER
60	NONE	L/M	DID: ATTENDANT EXTENSION NUMBER
61	3	L/M	DID: NUMBER OF DIGITS EXPECTED FROM CO
62	18:00	L/M	NET: NIGHT DELIVERY START TIME
63	06:00	L/M	NET: NIGHT DELIVERY END TIME
64	30	L/M	NET: MAX BEEPS FOR MULTI-CABINET CONNECT
65	20	L/M	NET: MULTI-CABINET DELIVERY ATTEMPT LIMIT
66	3	L/M	NET: MULTI-CAB. DELAY BEFORE RETRY (MIN.)
67	30	L/M	NET: MAX BEEPS FOR REMOTE CONNECT
68	20	L/M	NET: REMOTE DELIVERY ATTEMPT LIMIT
69	10	L/M	NET: REMOTE DELAY BEFORE RETRY (MIN.)
70	IMMED	L/M	NET: MESSAGE DELIVERY MODE DEFAULT
71	0	L	TONE-DETECT THRESHOLD
72	55	L/M	LINES-PER-PAGE FOR REPORTS
73	4	L/M	MIN LENGTH FOR MSG TO BE SENT (BLOCKS)
74	5	L/M	INITIAL SILENCE MAX SEC. (QCK/SCRPTD)
75	4	L/M	SUBSEQUENT SILENCE MAX SEC. (QCK/SCRPTD)
76	3	L/M	NOVICE PROMPT KEYPAD-COMMAND USAGE LIMIT
77	NO	L/M	PBX PROVIDES MOMENTARY DISCONNECT
78	YES	L	PBX PROVIDES STUTTER DIAL TONE
79	NONE	L/M	LAMP MW: "ON" PRE-EXTENSION DIGITS
80	NONE	L/M	LAMP MW: "ON" POST-EXTENSION DIGITS
81	NONE	L/M	LAMP MW: "OFF" PRE-EXTENSION DIGITS
82	NONE	L/M	LAMP MW: "OFF" POST-EXTENSION DIGITS
83	NO	L/M	LAMP MW: LIGHT LAMP FOR EACH NEW MSG
84	NO	L/M	LAMP MW: CALL EXTN BEFORE LIGHTING LAMP
85	NONE	L/M	RECONNECT CODE AFTER 3RD PARTY HUNG-UP



86	NO	L/M	CALLERS GET MUSIC-ON-HOLD
88	NO	L/M	NET: INITIAL-DIGITS INCLUDE MBOX 1ST DIG
89	NO	L/M	NET: USE TRUNK RECONNECT CODES
90	NONE	L/M	NET: RECONNECT CODE AFTER TRUNK ACCESS
91	NONE	L/M	NET: RECONNECT CODE AFTER 3RD PARTY HANG
92	NONE	L/M	NET: COMPLETE TRANSFER TO TRUNK
95	NO	L/M	PBX ACCEPTS DTMF DIGITS ON DID TRUNKS
96	60	L/M	MOVE BACKWARD DURING GREETING (BLOCKS)
97	120	L/M	MOVE FORWARD DURING GREETING (BLOCKS)
98	ENGL US--V	L/M	DEFAULT LANGUAGE
99	0	L/M	RINGBACKS BEFORE ANSWERING CX PORT
100	0	L/M	RINGBACKS BEFORE ANSWERING MX PORT
101	0	L	DELAY BEFORE TURN ON DTMF REPORTING (MSEC)
102	NONE	L/M	PAGER ACCESS DIGITS
103	3	L/M	NET: REMOTE DELAY BEFORE DTMF SIGNALING
104	0	L/M	NET: MULTI-CAB DELAY BEFORE DTMF SIGNALING
105	1234	L/M	DEFAULT SECURITY CODE FOR MAILBOX LOGON
106	0	L/M	LAMP MW: PORT FOR LAMP MESSAGE WAITING
107	NO	L	PBX NEVER GIVES PARTIAL RINGBACK OR BUSY
108	100	L/M	DISK USAGE THRESHOLD BEFORE ALARM NOTIF.
111	NO	L/M	DIAL EXTENSION AFTER RECONNECT CODE
112	NO	L/M	SEND DTMF A ON CX/MX PORTS
113	120	L/M	MAX SIL. FOR SPECIAL PURPOSE GREETINGS (SEC)
114	NO	L/M	DEV: DELAY BEFORE INTERCEPTING CALLS
115	YES	L/M	SYSTEM SAYS ON-THE-PHONE INSTEAD OF IS-BUSY
116	YES	L/M	INTEGRATION ACTIVE
117	0	L/M	RINGBACKS BEFORE ANSWERING AX PORT
118	0	L/M	E&M: LENGTH OF RECORD (NETWORK)
119	0	L/M	E&M: NUM OF EXTN DIGITS EXPECTED (DIRECT)
120	0	L/M	E&M: NUM OF EXTN DIGITS EXPECTED (NETWORK)
121	NONE	L/M	E&M: SYSTEM PILOT EXTENSION NUMBER (DIRECT)
122	NONE	L/M	E&M: SYSTEM PILOT EXTENSION NUMBER (NETWORK)
123	NONE	L/M	E&M: ATTENDANT EXTENSION NUMBER (DIRECT)
124	NONE	L/M	E&M: ATTENDANT EXTENSION NUMBER (NETWORK)
125	0	L/M	E&M: NUM OF DIGITS BEFORE EXTN (NETWORK)
126	0	L/M	E&M: NUM OF DIGS BEFORE LOC. CODE (NETWORK)
127	NONE	L/M	E&M: LOCATION CODE
128	NO	L/M	SEND MBX TO PBX RATHER THAN EXTENSION
129	32	L/M	NET: LIMIT ON LINE QUALITY TEST
130	NO	L/M	SEND DTMF A FOR FORWARDED CALLS
131	NO	L/M	SPEAK "DIAL ZERO FOR ASSISTANCE"
133	NONE	L/M	INTEGRATION CARD EXTENSION
134	NO	L/M	IGNORE DTMFS AFTER ENTERING EXTENSION NUMBER
140	2	L/M	MAXIMUM FORWARDING DEPTH
141	NO	L/M	CAN USE 0 AS WILDCARD IN NAME
142	3	L/M	MINIMUM LETTERS REQUIRED FOR NAME
143	1	L/M	5000UI: GROUP CODE (GRP LST) FIRST DIGIT
144	4	L/M	MINIMUM LENGTH FOR SECURITY CODES
147	NONE	L/M	NAMES DIRECTORY MAILBOX
149	NO	L/M	ALLOW BLIND TRANSFER TO PERSONAL ASSISTANCE
150	NO	L/M	REMOVE "CONNECT" FOR ANNOUNCE TO INTERCEPT
151	NO	L/M	REMOVE "STATUS" FOR ANNOUNCE TO INTERCEPT
152	NO	L/M	NET: REMOVE NETWORK PROMPT FOR QUICK LOGON
153	NO	L/M	DELAY ON CX PORT BEFORE PLAYING GREETING



154	NO	L/M	REMOVE "STATUS" AFTER CALL FIRST GREETING
155	0	L/M	IGNORE LINE DROP AFTER CALL START (SECS/10)
157	YES	L/M	SPEAK DISCRETE VERSIONS OF NUMBERS 21-59
158	NO	L/M	OFFSITE MW CALL LIMIT ABSOLUTE NOT DAILY
159	NO	L/M	DETECT CALL PROGRESS ON EXTERNAL CALLS
160	NO	L/M	QUICK BUSY DETECT
161	0	L/M	MODEM ACCESS PORT (0 = ALL PORTS OK)
162	40	L/M	VOICE SECTORS TO DELETE ON BUSY DETECT
163	24	L/M	VOICE SECTORS TO DELETE ON FAST BUSY DETECT
164	NO	L/M	USE 24-HOUR CLOCK FOR REPORTS
166	NO	L/M	LAMP MW: TURN OFF ONLY IF NO NEW MESSAGES
167	YES	L/M	SPEAK AUTO COPIED(FOLLOW-ME-FORWARD) MESSAGE PROMPT
168	0	L	TALK-DETECT THRESHOLD
169	LINEAR	L/M	OUTCALL PORT SELECTION METHOD
170	NO	L/M	INTEGRATION LAMP ON/OFF LINKS MUST MATCH
176	0	L/M	FIXED LENGTH FOR DTMFINT SOURCE FIELDS
177	0	L/M	FIXED LENGTH FOR DTMFINT DEST FIELDS
178	0	L/M	FIXED LENGTH FOR DTMFINT TRUNK FIELDS
179	0	L/M	FIXED LENGTH FOR DTMFINT UNUSED FIELDS
180	7 BITS E/P	L/M	RS-232 INTEGRATED WITH PBX
181	225	L/M	NET2: MAX PROTOCOL 2 MSG LENGTH (BLOCKS)
182	0	L/M	APRG: DEF THRESHOLD (DAYS) FOR SAVED MSGS
183	0	L/M	APRG: DEF THRESHOLD (DAYS) FOR NEW MSGS
184	0	L/M	APRG: DEF THRESHOLD (DAYS) FOR NET NAMES
185	NO	L/M	MANDATORY MAILBOX SECURITY CODE
187	1	L/M	NET: MAXIMUM SIMULTANEOUS NETWORK OUTCALLS
188	NO	L/M	DISABLE SILENCE SUPPRESSION
189	0	L	MIN. DTMF DETECT ACCEPTANCE DURATION (MSEC)
190	NO	L/M	USE VOICE MAIL FIELD ON NEC PHONE
191	NONE	L/M	HOUR TO REACTIVATE MSG WTG INDICATORS
192	10	L/M	NET4: DELAY BEFORE STARTING TO SEND DTMF-C
193	7	L/M	NET4: MAXIMUM NUMBER OF BEEPS FOR CONNECTION
194	20	L/M	NET4: REMOTE DELIVERY ATTEMPT LIMIT
195	10	L/M	NET4: REMOTE DELAY BETWEEN RETRIES
196	YES	L/M	NET4: ACCEPT MSGS FROM SYSTEMS NOT CONFIG'D
198	1	L/M	PCM ENCODING FOR SYSTEM (0=MU-LAW, 1=A-LAW)
199	NONE	L/M	NET: CREATOR MBX FOR RETURNED MESSAGES
200	NO	L/M	NET: PLAY PROMPT DURING NETWORK OUTCALL
201	NO	L/M	GIVE RECORD MESSAGE LIMIT WARNING
202	2	L/M	FAX: NUM FREE FAX CHANNELS TO MAKE FAX CALLS
203	10	L/M	FAX: NUMBER OF MINUTES FOR FAX CALL RETRIES
204	NO	L/M	FAX: ENABLE CALL-PROGRESS-TONE DETECTION
205	0	L/M	COUNTRY CODE FOR LSP PARAMETERS
206	NO	L/M	HANGUP ON GLARE DETECTION
207	NO	L/M	NO TONE DETECT MEANS BAD LINE INSTEAD OF ANS
208		L/M	FAX SYSTEM ID
209	6	L/M	FAX: DEFAULT MAX NUM OF FAX DELIV ATTEMPTS
212	0	L/M	USER I.D. LENGTH
215	OFF	L/M	DEFAULT NAMESCAN TOGGLE
219	NO	L/M	GIVE CALLERS "MORE OPTIONS" PROMPT
220	NO	L/M	ENABLE DOUBLE STAR TO DROP CALL
222	NONE	L/M	DEFAULT SECURITY CODE FOR USER I.D. LOGON
223	NO	L/M	DISABLE ##5 ACCESS TO THE MODEM
224	NO	L/M	PBX USES NEC LONG EXTENSION FORMAT



225	NO	L/M	DNET: DIGITAL NETWORKING ENABLED
226	0	L	RESERVED
227	0	L	RESERVED
228	0	L	RESERVED
229	NO	L/M	USE EXTENSION FOR INTEGRATED CALLS
230	NO	L/M	USE EXTENSION FOR AUTO-ATTENDANT CALLS
231	NO	L	LAN: RESTART FLAG
232	UNLIMITED	L	RESERVED
233	NONE	L/M	LAN: NAME SERVER IP ADDRESS
234	NONE	L/M	LAN: GATEWAY IP ADDRESS
235	NONE	L/M	LAN: SNMP MANAGER IP ADDRESS
236	NONE	L/M	LAN: SNMP MANAGER HOST ASCII NAME
237	NONE	L/M	LAN: SNMP LOCATION OF VOICE MAIL CABINET
238	NONE	L/M	LAN: SNMP NAME OF SYSTEM CONTACT
239	NONE	L/M	LAN: SNMP READ COMMUNITY
240	NONE	L/M	LAN: SNMP READ WRITE COMMUNITY
241	5	L	DNET: MSG TANDEM LIMIT BETWEEN SYSTEMS
242	NO	L/M	LAN: SEND TRAP TO THE SNMP MANAGER ON ALARM
243	NONE	L/M	INTEGRATION: ROLM 9006 PICKUP CODE
244	NO	L/M	FLASH MEANS EARTH-RECALL
245	NO	L/M	BLOCK DEFAULT TO ASSIST. ON FORWARDED CALLS
246	NO	L	Delete "EXTENSION" prompt from user status
247	NO	L/M	OCTEL NETWORKING: ALLOW CASUAL MESSAGE RECEIVE
248	NONE	L/M	OCTEL NETWORKING: SYSTEM MAILBOX
249	10	L/M	OCTEL NETWORKING: WAKEUP ATTEMPT LIMIT
250	NO	L/M	OCTEL NETWORKING: RETRIEVE NAMES ONLY AT NIGHT
251	YES	L/M	OCTEL NETWORKING: ENABLE ASCII NAME VERIFICATION
252	60	L/M	OCTEL NETWORKING: MAX FAX TRANSMIT TIME
253	NO	L/M	DNET: SWITCH TO ANALOG STANDBY
254	NONE	L/M	DIGITAL TRANSFER INITIATE CODE
	NONE		DIGITAL RE-CONNECT CODE
	NONE		DIGITAL TRANSFER COMPLETE CODE
255	NO	L/M	USE ACI FOR CALL ANSWERING INTERFACE
256	0	L/M	ACI: EASY ACCESS LOGON DIGIT
257	NO	L/M	DNET: ENABLE ASCII NAME VERIFICATION
258	NO	L/M	ENABLE POUND KEY TO OVERRIDE GREETING
259	NONE	L/M	DIGIT STRING AT END OF OFFSITE/PAGER DIGITS
260	0	L	TONE DETECTORS MASK
261	10	L/M	DNET: ANALOG STANDBY MESSAGE TRANSFER LIMIT
262	YES	L/M	ENABLE SPEAKING FAX ID STRING TO CALLER
264	NO	L/M	DNET: HIGH SPEED LINK MONITOR ENABLED
265	9	L/M	DNET: HIGH SPEED LINK MONITOR START HOUR
266	9	L/M	DNET: HIGH SPEED LINK MONITOR END HOUR
267	10	L/M	DNET: MAXIMUM CONTINUOUS DOWNTIME
268	60	L/M	DNET: MAXIMUM CUMULATIVE DOWNTIME
269	5	L/M	DNET: MAXIMUM LINK FAILURE COUNT
270	0	L	MINIMUM NUMBER OF FREE PORTS FOR OUTCALL/NETWORK
IN-CALL			
271	1200	L/M	RS232 INTEGRATION BAUD RATE
272	NO	L/M	IS INITIAL DIALTONE EXPECTED STUTTERED
274	NO	L/M	NET: SPEAK RECORDED LOCATION NAME
275	YES	L/M	ENABLE UNINTERRUPTIBLE SDL/PDL NAME PLAY
276	OFF	L/M	NAMESEND: DELIVERY MODE
277	10	L/M	NAMESEND: MAXIMUM NAMES TO SEND IN A SESSION



278	NO	L/M	NAMESEND: ENABLE BY DEFAULT FOR NEW USERS
279	10	L/M	NAMESEND: PURGE THRESHOLD
280	NO	L/M	NAMESEND: ENABLE AUTOMATIC NAME PROPAGATION
281	NO	L/M	GWL: GATEWAY LINK INSTALLED
282	NONE	L/M	GWL: EXTENDED MAILBOX LIST FOR MESSAGE POOL
283	NO	L/M	GWL: BK/FW/PS DURING SPEAK
284	NONE	L/M	GWL: GENERIC ERROR MAILBOX
285	NONE	L/M	GWL: GATEWAY DOWN ERROR MAILBOX
286	0	L/M	TERMINAL INACTIVITY LOGOUT TIMER (MINUTES)
287	NO	L/M	ACTIVATE RANDOM SECURITY CODE GENERATION
288	#####	L/M	ISDN/DPNSS: DELIMITER STRING FOR PAGER OUTCALLS
289	A6 A6 A2 A5	L/M	DTMF CPT DIGITS FOR INTERNAL BUSY DTMF CPT DIGITS FOR INTERNAL FASTBUSY DTMF CPT DIGITS FOR INTERNAL RING DTMF CPT DIGITS FOR INTERNAL ANS
290	A6 A2 A5	L/M	DTMF CPT DIGITS FOR EXTERNAL BUSY DTMF CPT DIGITS FOR EXTERNAL RING DTMF CPT DIGITS FOR EXTERNAL ANS
291	A1	L/M	DTMF CPT DIGITS FOR DIAL TONE INDICATION
292	A6	L/M	DTMF CPT DIGITS FOR HANG-UP NOTIFICATION
294	0	L/M	MIN. PRIORITY LEVEL FOR NAMES PROPAGATION
295	NO	L/M	BLOCK MWI/MWN ON BROADCAST MESSAGES
296	NO	L/M	ACD login enabled for Call Processing Ports.
297	NO	L/M	TELNET: ENABLE TELNET SERVER
298	YES	L	Enable patching at Maintenance level
300	0	L/M	TELNET: TELNET SERVER PORT NUMBER
304	NONE	L/M	DPNSS: MESSAGE WAITING INDICATION ON STRING
305	NONE	L/M	DPNSS: MESSAGE WAITING INDICATION OFF STRING
306	9000	L/M	DPNSS/QSIG: VOICE MAIL ORIGINATING LINE ID
307	NONE	L/M	ISDN: MWI CONTROL EXTENSION
309	NONE	L/M	ENHANCED LAMP MWI: "ON" PRE-EXTN DIGITS
310	NONE	L/M	ENHANCED LAMP MWI: "ON" POST-EXTN DIGITS
311	NONE	L/M	ENHANCED LAMP MWI: "OFF" PRE-EXTN DIGITS
312	NONE	L/M	ENHANCED LAMP MWI: "OFF" POST-EXTN DIGITS
313	5555050	L/M	DPNSS/QSIG: VOICE MAIL DESTINATION ADDRESS
314	NO	L/M	DPNSS: ALLOW NON IVM USERS TO SET DIVERT TO
VOICEMAIL			
315	NO	L/M	DPNSS: ALLOW NON IVM USERS TO FORWARD TO VOICEMAIL
316	NONE	L/M	DIAL BY NAME HELP MAILBOX
317	75	L/M	% of MAX NUMBER of MSGS for ALMOST FULL MBX Cond
318	NO	L	TELNET: Enable Telnet client access through MODEM
319	NONE	L/M	Aria TUI: System Broadcast Mailbox
320	YES	L/M	Aria TUI: Play initial entry tutorial
321	AUTO	L	Ethernet Controller Speed Select

#### USERS TABLE:

MAILBOX	EXTENSION	COS	SECURITY	NAME
3333001	3001	20	N	
4001	4001	20	N	
5003	5003	20	N	



7001	7777001	20	N
8000	8000	20	N
8001		1	N
8002		1	N

Currently 7 out of 5000 USER MAILBOXES are used.

#### SLOTS TABLE:

SLOT	CARD	TYPE	PORT	EXTENSION#	COS	MODE	OUTCALL	TEST	A/B	SYS
1	DTC17-QSIG		1		254	AX	YES	NO	B	1
			2		254	AX	YES	NO	B	2
			3		254	AX	YES	NO	B	3
			4		254	AX	YES	NO	B	4

LSP table: QSIG\_SLV  
PRIMARY SYNC RECEIVER OF CLOCK

SLOT	CARD	TYPE
-----	-----	-----
5	LAN	

NETWORK ROUTES:  
ROUTE TABLE EMPTY

#### NETWORK LOCATIONS:

LOCATION TABLE is EMPTY.

#### NETWORK NUMBERING PLAN:

#### SYSTEM DISTRIBUTION LISTS:

Currently 0 out of 500 LISTS are used.  
Currently 0 out of 20000 LIST MEMBERS are used.

#### EXTENDED MAILBOX LISTS:

Currently 0 out of 500 LISTS are used.  
Currently 0 out of 20000 LIST MEMBERS are used.

#### COS PROFILE:

-----

COS 1 (MAILBOX COS)

#### ATTRIBUTE

1	NO MESSAGES may be recorded for this mailbox.
15	Transfer to a RINGING EXTENSION.



20 May use GREETING INSERT/SWAP (Scripted or Co. greeting set up).  
24 NEVER play NOVICE prompts.

COS 1 (MAILBOX COS)

1	PDL/GRP LST	INDEX VALUE	NONE
3	PURGE SAVED(ARCHIVED) msgs	older than (days)	0
4	PURGE NEW msgs	older than (days)	0
5	SECURITY CODE change interval (days)		NONE
6	CALL FORWARD PROMPT LANGUAGES:		NONE
8	NETWORK PREFIX		NONE
9	ACI: Caller Prompting LEVEL		FULL

SCHEDULE TABLES:

SCHEDULE FOR COS 1 (MAILBOX COS)

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	.	.	.	1

INFORMATION TABLES:

TABLE 1 (MAILBOX INFO)

1.	INTERCEPT MAILBOX	8000
4.	MAX DIGIT FOR MENU	NONE
5.	PREFIX DIGS FOR MENU	NONE
6.	PRE EXTENSION DIGITS	NONE
7.	RINGS BEFORE NO ANS	4
8.	MSG WAITING RINGS	4
9.	TIMES TO RETRY ON BUSY	NONE
10.	USE ALT TRANSFER CODES	NO
11.	DIVERT MSGS TO MAILBOX	NONE
12.	MSG WAITING NOTIF	YES
13.	AUTO GREETING ACTIV	NO
14.	OFFSITE ATTEMPT TIMES	NONE
15.	OFFSITE SPEAK TIMES	3
16.	OFFSITE SPEAK DELAY	5
17.	OFFSITE PREFIX DIGITS	NONE
18.	NEXT MAILBOX	NONE
19.	OFFSITE DIAL SYSP DIGS	NO
20.	OFFSITE END SYSP DIGS	NO
22.	MAXIMUM MSG LENGTH	6
23.	MAX NUMBER OF MSGS	32
24.	PERSONAL ASSISTANCE	NO
25.	QUICK GREETING ACTIV	NO
26.	AUTOTRANSFER TO ASSIST	NO
27.	MSG WITH AUTO TRANSFER	NO
28.	ANNOUNCE CALLS TO INT	NO
29.	LANGUAGE	NONE
30.	GROUP FAX NUMBER	NONE
31.	OFFSITE ONLY IF URGENT	NO
32.	MAX FAX DELIV ATTEMPTS	SYSP 209
35.	OVERRIDE TRUNK GRP. #	NONE
36.	DEFAULT GREETING MBOX	NONE



-----

COS 2 (MAILBOX COS) INTERCEPT MAILBOX

ATTRIBUTE

1 NO MESSAGES may be recorded for this mailbox.  
15 Transfer to a RINGING EXTENSION.  
20 May use GREETING INSERT/SWAP (Scripted or Co. greeting set up).  
24 NEVER play NOVICE prompts.

COS 2 (MAILBOX COS) INTERCEPT MAILBOX

1 PDL/GRP LST	INDEX VALUE	NONE
3 PURGE SAVED(ARCHIVED) msgs	older than (days)	0
4 PURGE NEW msgs	older than (days)	0
5 SECURITY CODE change interval (days)		NONE
6 CALL FORWARD PROMPT LANGUAGES:		NONE
8 NETWORK PREFIX		NONE
9 ACI: Caller Prompting LEVEL		FULL

SCHEDULE FOR COS 2 (MAILBOX COS) INTERCEPT MAILBOX

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	.	.	.	2

INFORMATION TABLES:

TABLE 2 (MAILBOX INFO)

1. INTERCEPT MAILBOX	8000
4. MAX DIGIT FOR MENU	NONE
5. PREFIX DIGS FOR MENU	NONE
6. PRE EXTENSION DIGITS	NONE
7. RINGS BEFORE NO ANS	4
8. MSG WAITING RINGS	4
9. TIMES TO RETRY ON BUSY	NONE
10. USE ALT TRANSFER CODES	NO
11. DIVERT MSGS TO MAILBOX	NONE
12. MSG WAITING NOTIF	YES
13. AUTO GREETING ACTIV	NO
14. OFFSITE ATTEMPT TIMES	NONE
15. OFFSITE SPEAK TIMES	3
16. OFFSITE SPEAK DELAY	5
17. OFFSITE PREFIX DIGITS	NONE
18. NEXT MAILBOX	NONE
19. OFFSITE DIAL SYSP DIGS	NO
20. OFFSITE END SYSP DIGS	NO
22. MAXIMUM MSG LENGTH	6
23. MAX NUMBER OF MSGS	32
24. PERSONAL ASSISTANCE	NO
25. QUICK GREETING ACTIV	NO
26. AUTOTRANSFER TO ASSIST	NO
27. MSG WITH AUTO TRANSFER	NO



28. ANNOUNCE CALLS TO INT NO  
29. LANGUAGE NONE  
30. GROUP FAX NUMBER NONE  
31. OFFSITE ONLY IF URGENT NO  
32. MAX FAX DELIV ATTEMPTS SYSP 209  
35. OVERRIDE TRUNK GRP. # NONE  
36. DEFAULT GREETING MBOX NONE

-----

COS 20 (MAILBOX COS) STANDARD  
ATTRIBUTE  
6 Call EXTENSION first BEFORE playing GREETING.  
7 This user may send a PRIVATE message.  
9 LAMP or DISPLAY PHONE message waiting.  
12 This user may REPLY to ADDITIONAL addresses.  
15 Transfer to a RINGING EXTENSION.  
19 May request a RETURN RECEIPT message.  
43 May RE-RECORD message after a busy or unanswered call.  
61 This mailbox may send FUTURE DELIVERY messages.  
64 This user may ERASE a message during ADDRESSING OPTIONS.  
69 SPEAK DIGITS entered to CONFIRM message address.  
74 FORCE recording of MAILBOX GREETING.  
76 Use NEW and SAVED/ARCHIVED MESSAGE queues.  
77 ALLOW user to record PERSONAL NAME.  
78 FORCE recording of PERSONAL NAME.  
79 ALLOW address entry before record.  
114 Enable extended absence greeting.  
126 DO NOT speak "Greeting is on" prompt after LOGIN.  
132 FORCED LOGON to Busy Mailbox.

COS 20 (MAILBOX COS) STANDARD  
1 PDL/GRP LST INDEX VALUE NONE  
3 PURGE SAVED(ARCHIVED) msgs older than (days) 0  
4 PURGE NEW msgs older than (days) 0  
5 SECURITY CODE change interval (days) NONE  
6 CALL FORWARD PROMPT LANGUAGES: NONE  
8 NETWORK PREFIX NONE  
9 ACI: Caller Prompting LEVEL FULL

#### SCHEDULE FOR COS 20 (MAILBOX COS) STANDARD

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	.	.	.	20

#### INFORMATION TABLES:

TABLE 20 (MAILBOX INFO)  
1. INTERCEPT MAILBOX 8000  
4. MAX DIGIT FOR MENU NONE  
5. PREFIX DIGS FOR MENU NONE



6.	PRE EXTENSION DIGITS	NONE
7.	RINGS BEFORE NO ANS	4
8.	MSG WAITING RINGS	4
9.	TIMES TO RETRY ON BUSY	NONE
10.	USE ALT TRANSFER CODES	NO
11.	DIVERT MSGS TO MAILBOX	NONE
12.	MSG WAITING NOTIF	YES
13.	AUTO GREETING ACTIV	NO
14.	OFFSITE ATTEMPT TIMES	NONE
15.	OFFSITE SPEAK TIMES	3
16.	OFFSITE SPEAK DELAY	5
17.	OFFSITE PREFIX DIGITS	NONE
18.	NEXT MAILBOX	NONE
19.	OFFSITE DIAL SYSP DIGS	NO
20.	OFFSITE END SYSP DIGS	NO
22.	MAXIMUM MSG LENGTH	6
23.	MAX NUMBER OF MSGS	32
24.	PERSONAL ASSISTANCE	NO
25.	QUICK GREETING ACTIV	NO
26.	AUTOTRANSFER TO ASSIST	NO
27.	MSG WITH AUTO TRANSFER	NO
28.	ANNOUNCE CALLS TO INT	NO
29.	LANGUAGE	NONE
30.	GROUP FAX NUMBER	NONE
31.	OFFSITE ONLY IF URGENT	NO
32.	MAX FAX DELIV ATTEMPTS	SYSP 209
35.	OVERRIDE TRUNK GRP. #	NONE
36.	DEFAULT GREETING MBOX	NONE

-----

COS 25	(MAILBOX COS)	TDD/TTY
ATTRIBUTE		
6	Call EXTENSION first BEFORE playing GREETING.	
7	This user may send a PRIVATE message.	
9	LAMP or DISPLAY PHONE message waiting.	
12	This user may REPLY to ADDITIONAL addresses.	
15	Transfer to a RINGING EXTENSION.	
19	May request a RETURN RECEIPT message.	
43	May RE-RECORD message after a busy or unanswered call.	
61	This mailbox may send FUTURE DELIVERY messages.	
64	This user may ERASE a message during ADDRESSING OPTIONS.	
69	SPEAK DIGITS entered to CONFIRM message address.	
73	This MAILBOX has LANGUAGE OVERRIDE.	
74	FORCE recording of MAILBOX GREETING.	
76	Use NEW and SAVED/ARCHIVED MESSAGE queues.	
77	ALLOW user to record PERSONAL NAME.	
78	FORCE recording of PERSONAL NAME.	
79	ALLOW address entry before record.	
114	Enable extended absence greeting.	
126	DO NOT speak "Greeting is on" prompt after LOGIN.	
132	FORCED LOGON to Busy Mailbox.	
134	Allow TDD/TTY Support.	



```
COS 25      (MAILBOX COS)      TDD/TTY
1  PDL/GRP LST      INDEX VALUE      NONE
3  PURGE SAVED(ARCHIVED) msgs older than (days) 0
4  PURGE NEW msgs older than (days)      0
5  SECURITY CODE change interval (days)      NONE
6  CALL FORWARD PROMPT LANGUAGES:
      1=ENGL US--V      VERSION 4F'
8  NETWORK PREFIX      NONE
9  ACI: Caller Prompting LEVEL      FULL
```

SCHEDULE FOR COS 25 (MAILBOX COS) TDD/TTY

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	. . . . .			25

INFORMATION TABLES:

TABLE 25 (MAILBOX INFO)

1.	INTERCEPT MAILBOX	8000
4.	MAX DIGIT FOR MENU	NONE
5.	PREFIX DIGS FOR MENU	NONE
6.	PRE EXTENSION DIGITS	NONE
7.	RINGS BEFORE NO ANS	4
8.	MSG WAITING RINGS	4
9.	TIMES TO RETRY ON BUSY	NONE
10.	USE ALT TRANSFER CODES	NO
11.	DIVERT MSGS TO MAILBOX	NONE
12.	MSG WAITING NOTIF	YES
13.	AUTO GREETING ACTIV	NO
14.	OFFSITE ATTEMPT TIMES	NONE
15.	OFFSITE SPEAK TIMES	3
16.	OFFSITE SPEAK DELAY	5
17.	OFFSITE PREFIX DIGITS	NONE
18.	NEXT MAILBOX	NONE
19.	OFFSITE DIAL SYSP DIGS	NO
20.	OFFSITE END SYSP DIGS	NO
22.	MAXIMUM MSG LENGTH	6
23.	MAX NUMBER OF MSGS	32
24.	PERSONAL ASSISTANCE	NO
25.	QUICK GREETING ACTIV	NO
26.	AUTOTRANSFER TO ASSIST	NO
27.	MSG WITH AUTO TRANSFER	NO
28.	ANNOUNCE CALLS TO INT	NO
29.	LANGUAGE	ENGL USTTV
30.	GROUP FAX NUMBER	NONE
31.	OFFSITE ONLY IF URGENT	NO
32.	MAX FAX DELIV ATTEMPTS	SYSP 209
35.	OVERRIDE TRUNK GRP. #	NONE
36.	DEFAULT GREETING MBOX	NONE



COS 30 (MAILBOX COS) ENG PRIMARY/TTY SEC  
ATTRIBUTE

6 Call EXTENSION first BEFORE playing GREETING.  
7 This user may send a PRIVATE message.  
9 LAMP or DISPLAY PHONE message waiting.  
11 NO system PROMPT after GREETING, go straight to recording.  
12 This user may REPLY to ADDITIONAL addresses.  
15 Transfer to a RINGING EXTENSION.  
19 May request a RETURN RECEIPT message.  
43 May RE-RECORD message after a busy or unanswered call.  
61 This mailbox may send FUTURE DELIVERY messages.  
64 This user may ERASE a message during ADDRESSING OPTIONS.  
69 SPEAK DIGITS entered to CONFIRM message address.  
73 This MAILBOX has LANGUAGE OVERRIDE.  
74 FORCE recording of MAILBOX GREETING.  
76 Use NEW and SAVED/ARCHIVED MESSAGE queues.  
77 ALLOW user to record PERSONAL NAME.  
78 FORCE recording of PERSONAL NAME.  
79 ALLOW address entry before record.  
114 Enable extended absence greeting.  
126 DO NOT speak "Greeting is on" prompt after LOGIN.  
132 FORCED LOGON to Busy Mailbox.  
134 Allow TDD/TTY Support.

COS 30 (MAILBOX COS) ENG PRIMARY/TTY SEC  
1 PDL/GRP LST INDEX VALUE NONE  
3 PURGE SAVED(ARCHIVED) msgs older than (days) 0  
4 PURGE NEW msgs older than (days) 0  
5 SECURITY CODE change interval (days) NONE  
6 CALL FORWARD PROMPT LANGUAGES:  
    1=ENGL US--V VERSION 4F'  
    2=ENGL USTTV VERSION 4C'  
8 NETWORK PREFIX NONE  
9 ACI: Caller Prompting LEVEL FULL

SCHEDULE FOR COS 30 (MAILBOX COS) ENG PRIMARY/TTY SEC

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	. . . . .	. . . . .	. . . . .	30

INFORMATION TABLES:

TABLE 30 (MAILBOX INFO)

1.	INTERCEPT MAILBOX	8000
4.	MAX DIGIT FOR MENU	NONE
5.	PREFIX DIGS FOR MENU	NONE
6.	PRE EXTENSION DIGITS	NONE
7.	RINGS BEFORE NO ANS	4
8.	MSG WAITING RINGS	4
9.	TIMES TO RETRY ON BUSY	NONE



10. USE ALT TRANSFER CODES NO  
11. DIVERT MSGS TO MAILBOX NONE  
12. MSG WAITING NOTIF YES  
13. AUTO GREETING ACTIV NO  
14. OFFSITE ATTEMPT TIMES NONE  
15. OFFSITE SPEAK TIMES 3  
16. OFFSITE SPEAK DELAY 5  
17. OFFSITE PREFIX DIGITS NONE  
18. NEXT MAILBOX NONE  
19. OFFSITE DIAL SYSP DIGS NO  
20. OFFSITE END SYSP DIGS NO  
22. MAXIMUM MSG LENGTH 6  
23. MAX NUMBER OF MSGS 32  
24. PERSONAL ASSISTANCE NO  
25. QUICK GREETING ACTIV NO  
26. AUTOTRANSFER TO ASSIST NO  
27. MSG WITH AUTO TRANSFER NO  
28. ANNOUNCE CALLS TO INT NO  
29. LANGUAGE ENGL US--V  
30. GROUP FAX NUMBER NONE  
31. OFFSITE ONLY IF URGENT NO  
32. MAX FAX DELIV ATTEMPTS SYSP 209  
35. OVERRIDE TRUNK GRP. # NONE  
36. DEFAULT GREETING MBOX NONE

-----

COS 254 (PORT/TRUNK COS)  
1 PDL/GRP LST INDEX VALUE NONE  
3 PURGE SAVED(ARCHIVED) msgs older than (days) 0  
4 PURGE NEW msgs older than (days) 0  
5 SECURITY CODE change interval (days) NONE  
6 CALL FORWARD PROMPT LANGUAGES: NONE  
8 NETWORK PREFIX NONE  
9 ACI: Caller Prompting LEVEL FULL

SCHEDULE FOR COS 254 (PORT/TRUNK COS)

PERIOD	DAYS	START	STOP	INFO TABLE#
DEFAULT	. . . . .	. . . . .	. . . . .	254

INFORMATION TABLES:

TABLE 254 (PORT/TRUNK INFO)

1.	INTERCEPT MAILBOX	8000
2.	COMPANY GREETING MBX	8001
4.	MAX DIGIT FOR MENU	NONE
5.	PREFIX DIGS FOR MENU	NONE
6.	PRE EXTENSION DIGITS	NONE
*7.	RINGS BEFORE NO ANS	4
*9.	TIMES TO RETRY ON BUSY	NONE



\*10. USE ALT TRANSFER CODES NO  
18. NEXT MAILBOX NONE  
26. AUTOTRANSFER TO ASSIST NO  
27. MSG WITH AUTO TRANSFER NO  
29. LANGUAGE NONE  
34. LOGIN FAILURE XFER MBX NONE

\* Used ONLY when MAILBOX is UNDEFINED

HOLIDAYS:

FIRST DIGIT TABLE:

FIRST	MAILBOX
DIGIT	LENGTH
-----	-----
0	
1	
2	
3	7
4	4
5	4
6	
7	4
8	4
9	

TRANSLATION TABLE:

BUS-INFORMATION TABLES:

CUSTOM PROMPT TABLE:

ENGL US--V

FIRST	NON-EXISTENT
DIGIT	EXTENSION
ENTERED	MAILBOX
-----	-----
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

Message waiting mailbox:

Tutorial mailbox:

AP Notification mailbox:

Logon Access mailbox:



ENGL USTTV  
FIRST      NON-EXISTENT  
DIGIT      EXTENSION  
ENTERED    MAILBOX

-----  
0  
1  
2  
3  
4  
5  
6  
7  
8  
9

Message waiting mailbox:

Tutorial mailbox:

AP Notification mailbox:

Logon Access mailbox:

PREFIX TABLE:

PREFIX	DIGIT(S)	DIGIT(S)
TYPE	ABSORBED	INSERTED

-----

TRUNK GROUP TABLE:

MAILBOX NAMES:

MAILBOX	NAME
8000	N

Currently 1 out of 30100 NAMES are used.

DAYLIGHT-SAVING-TIME CHANGE DATES:

DTMF TABLE:

LSP TABLE:

DEFAULT	INDEX DESCRIPTION	VALUE
1	LCI min. length (10 msec units)	21
2	LPR min. length (10 msec units)	21
3	Loop Current det. initial timeout (10 msec units)	0
4	DTMF send ON time (10 msec units)	10
5	DTMF send OFF time (10 msec units)	11
6	Ring det. min. period (1 msec units)	17
7	Ring det. max. period (1 msec units)	68
8	DTMF det. min. ON time (10 msec units)	5
9	DTMF det. min. OFF time (10 msec units)	5



10	DTMF det. min. power lever (dBm)	-35
11	DTMF det. pos. twist (dB)	6
12	DTMF det. neg. twist (dB)	-6
13	DTMF det. for sure count	6
14	Tone det. threshold (dBm)	-34
15	Long tone det. ON period (10 msec units)	12
16	Long tone det. OFF period (10 msec units)	5
17	Short tone det. ON period (10 msec units)	6
18	Short tone det. OFF period (10 msec units)	11
19	Precision Filter Frequency (LIC4I - Hz units)	2550
20	Reserved        0        0        80        60        184        1        216        0        200        0	
30	Reserved        0        0        200        0        0        0        0        2        0        0	
40	Reserved        76        4        216        0        42        0        24        1        54        0	
50	Reserved        144        1        2        4        0        0        0        0        0        0	
60	Reserved        0        0        0        0        0        0        0        0        0        0	
70	Reserved        0        0        0        0        0        0        0        0        0        0	
80	Reserved        0        0        0        0        0        0        0        0        0        0	
90	Reserved        0        0        0        0        0        0        0        0        0        0	
100	Reserved        0        0        0        0        0        0        0        0        0        0	
110	Reserved        0        0        0        0        0        0        0        0        0        0	
120	Reserved        0        0        0        0        0        0        0        0        0        0	
130	Reserved        0        0        0        0        0        0        0        0        0        0	
140	Reserved        0        0        0        0        0        0        0        0        0        0	
150	Reserved        0        0        0        0        0        0        0        0        0        0	
160	Reserved        0        0        0        0        0        0        0        0        4        4	
170	Reserved        0        0        0        0        0        0        0        0        0        0	
180	Reserved        0        0        0        255        171        237        20        38        0	
190	Reserved        0        0        0        0        0        0        0        0        0        0	
200	Reserved        0        0        0        0        0        0        0        0        0        0	
210	Reserved        0        0        0        0        0        0        0        0        0        0	
220	Reserved        0        0        0        0        0        0        0        0        0        0	
230	Reserved        0        0        0        0        0        0        0        0        0        0	
240	Reserved        0        0        0        0        0        0        0        0        0        0	
250	Reserved        0        0        0        0        0        0        0        0        0        0	

QSIG_SLV		VALUE
INDEX	DESCRIPTION	
1	LCI min. length (10 msec units)	5
2	LPR min. length (10 msec units)	21
3	Loop Current det. initial timeout (10 msec units)	0
4	DTMF send ON time (10 msec units)	10
5	DTMF send OFF time (10 msec units)	11
6	Ring det. min. period (1 msec units)	17
7	Ring det. max. period (1 msec units)	68
8	DTMF det. min. ON time (10 msec units)	5
9	DTMF det. min. OFF time (10 msec units)	5
10	DTMF det. min. power lever (dBm)	-35
11	DTMF det. pos. twist (dB)	6
12	DTMF det. neg. twist (dB)	-6
13	DTMF det. for sure count	6
14	Tone det. threshold (dBm)	-34
15	Long tone det. ON period (10 msec units)	12
16	Long tone det. OFF period (10 msec units)	5



17	Short tone det. ON period (10 msec units)										6
18	Short tone det. OFF period (10 msec units)										11
19	Precision Filter Frequency (LIC4I - Hz units)										0
20	Reserved	0	0	80	60	184	1	216	0	200	0
30	Reserved	0	0	200	0	0	0	0	2	0	0
40	Reserved	76	4	216	0	42	0	24	1	54	0
50	Reserved	144	1	2	4	0	0	0	0	0	0
60	Reserved	0	0	0	0	0	0	0	0	0	0
70	Reserved	0	0	0	0	0	0	0	0	0	0
80	Reserved	0	0	0	0	0	0	0	0	0	0
90	Reserved	0	0	0	0	0	0	0	0	0	0
100	Reserved	0	0	0	0	0	0	0	0	0	0
110	Reserved	0	0	0	0	0	0	0	0	0	0
120	Reserved	0	0	0	0	0	0	0	0	0	0
130	Reserved	0	0	0	0	0	0	0	0	0	0
140	Reserved	0	0	0	0	0	0	0	0	0	0
150	Reserved	0	0	0	0	0	0	0	0	0	0
160	Reserved	0	0	0	0	0	0	0	0	4	4
170	Reserved	8	0	0	0	0	0	0	0	0	0
180	Reserved	0	0	0	0	0	0	0	0	85	0
190	Reserved	0	0	0	0	0	0	0	0	0	0
200	Reserved	0	3	4	1	3	7	1	1	0	2
210	Reserved	0	10	0	180	15	4	30	30	4	90
220	Reserved	50	4	4	120	20	4	4	4	15	0
230	Reserved	0	0	0	0	0	0	0	0	0	0
240	Reserved	0	0	0	0	0	0	0	0	0	0
250	Reserved	0	0	0	0	0	0	0	0	0	0

## NETWORK SCHEDULE TABLE:

## NETWORK SCHEDULE TABLE:

NET SCHEDULE NAME	WINDOW#	START TIME	STOP TIME	INTERVAL (MINUTES)	PRIORITY LEVEL
----------------------	---------	---------------	--------------	-----------------------	-------------------

-----  
LAN HOST TABLE

## ALARM TABLE

HARDWARE ERROR	FAILURE LIMIT	ALARM SCHEDEULE	PRIORITY LEVEL
1	50	NONE	1
2	25	NONE	2
3	25	NONE	2
4	25	NONE	2
5	25	NONE	2
6	50	NONE	1
7	DISABLED	NONE	0
8	1	NONE	3
9	DISABLED	NONE	0
10	1	NONE	3
11	1	NONE	3
12	1	NONE	3
13	DISABLED	NONE	0
14	1	NONE	3



15	1	NONE	3
16	1	NONE	3
17	DISABLED	NONE	0
18	1	NONE	3
19	DISABLED	NONE	0
20	25	NONE	2
21	25	NONE	2
22	25	NONE	2
23	25	NONE	2
24	25	NONE	2
25	1	NONE	3
26	DISABLED	NONE	0
27	1	NONE	3
28	1	NONE	3
29	1	NONE	3
30	1	NONE	3
31	1	NONE	3
32	25	NONE	2
33	1	NONE	3
34	25	NONE	2
35	DISABLED	NONE	0
36	1	NONE	3
37	25	NONE	2
38	1	NONE	3
39	1	NONE	3
40	1	NONE	3
41	1	NONE	3
42	50	NONE	1
43	1	NONE	3
44	1	NONE	3
45	1	NONE	3
46	50	NONE	1
47	DISABLED	NONE	0
48	DISABLED	NONE	0
49	DISABLED	NONE	0
50	DISABLED	NONE	0
51	DISABLED	NONE	0
52	DISABLED	NONE	0
53	DISABLED	NONE	0
54	DISABLED	NONE	0
55	DISABLED	NONE	0
56	DISABLED	NONE	0
57	DISABLED	NONE	0
58	DISABLED	NONE	0
59	DISABLED	NONE	0
60	DISABLED	NONE	0
61	1	NONE	3
62	1	NONE	3
63	25	NONE	2
64	1	NONE	3
65	25	NONE	2
66	1	NONE	3
67	1	NONE	3
68	25	NONE	2



69	1	NONE	3
70	1	NONE	3
71	1	NONE	3
72	50	NONE	1
73	1	NONE	3
74	1	NONE	3
75	25	NONE	2
76	DISABLED	NONE	0
78	50	NONE	1
79	1	NONE	3
80	1	NONE	3
81	3	NONE	3
88	DISABLED	NONE	3
89	DISABLED	NONE	3

#### ALARM SCHEDULE TABLE

### Configuring the Cisco Unified CallManager

#### MGCP (Cisco 3640) Gateway Configuration

**MGCP Configuration** [Back to Find>List Gateways](#)

Product: Cisco 364X  
MGCP : MGCP\_3640

Status: Ready

Update Delete Reset Gateway Cancel Changes

MGCP Domain Name\* MGCP\_3640

Description MGCP Gateway

Cisco CallManager Group\* Default

**Installed Voice Interface Cards**

Module in Slot 0	< None >
Module in Slot 1	< None >
Module in Slot 2	NM-2V

**Endpoint Identifiers**

Sub-Unit 0	VIC-2FXS	(2/0/0) POTS	(2/0/1)
Sub-Unit 1	VIC-2FXO	(2/1/0)	(2/1/1)



Module in Slot 1	<None >		
Module in Slot 2	NM-2V		
Sub-Unit 0	VIC-2FXS	(2/0/0)	(2/0/1)
Sub-Unit 1	VIC-2FXO	(2/1/0)	(2/1/1)
Module in Slot 3	NM-HDV		
Sub-Unit 0	VVIC-2MFT-T1	(3/0)	(3/1)

**Product Specific Configuration**

Global ISDN Switch Type	NI2
Switchback Timing*	Graceful
Switchback uptime-delay (min)	10
Switchback schedule (hh:mm)	12:00

\* indicates required item

[Back to Find/List Gateways](#)

## ISDN PRI Configuration

### Gateway Configuration

Back to MGCP Configuration  
Back to Find/List Gateways

Product : Cisco 364X  
Gateway : S3/DS1-0@MGCP\_3640  
Device Protocol: Digital Access PRI  
Registration: Registered with Cisco CallManager 10.1.1.2  
IP Address: 10.1.1.200

Status: Ready

[Update](#) [Delete](#) [Reset Gateway](#) [Cancel Changes](#)

End-Point Name*	S3/DS1-0@MGCP_3640
Description	S3/DS1-0@MGCP_3640
Device Pool*	Default
Media Resource Group List	<None >
Network Hold Audio Source	<None >
User Hold Audio Source	<None >
Calling Search Space	<None >
Location	<None >



Load Information	
Channel Selection Order*	Top Down
Protocol Side*	User
Caller ID DN	
Calling Party Selection*	Originator
Channel IE Type*	Use Number when 1B
MCDN Channel Number Extension Bit Set to Zero**	<input type="checkbox"/>
Interface Identifier Present**	<input type="checkbox"/>
Interface Identifier Value**	0
Display IE Delivery	<input checked="" type="checkbox"/>
Redirecting Number IE Delivery - Outbound	<input checked="" type="checkbox"/>
Redirecting Number IE Delivery - Inbound	<input type="checkbox"/>
Delay for first restart (1/8 sec ticks)	32
Delay between restarts (1/8 sec ticks)	4
Num Digits*	23

### Configuring the Cisco 3640 Router

```
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 172.20.250.2
!
boot-start-marker
boot-end-marker
!
enable password ocsic
!
no network-clock-participate slot 1
no network-clock-participate wic 0
voice-card 1
!
no aaa new-model
ip subnet-zero
!
!
ip cef
!
isdn switch-type primary-qsig
!
!
voice service voip
!
!
ccm-manager mgcp
!
```



```
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 service mgcp
!
interface FastEthernet0/0
ip address 172.20.250.2 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 172.20.20.156 255.255.255.0
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
no cdp enable
!
interface Serial1/1:23
no ip address
no logging event link-status
isdn switch-type primary-qsig
isdn incoming-voice voice
isdn bind-13 ccm-manager
no cdp enable
!
ip default-gateway 172.20.250.1
ip http server
ip classless
!
!
control-plane
!
voice-port 1/0:23
!
voice-port 1/1:23
!
mgcp
mgcp call-agent 172.20.250.254 service-type mgcp version 0.1
!
mgcp profile default
!
dial-peer cor custom
!
```



```
dial-peer voice 2 pots
destination-pattern 4...
direct-inward-dial
port 1/0:23
prefix 4
!
dial-peer voice 3 voip
preference 1
destination-pattern 1...
session target ipv4:172.20.250.254
dtmf-relay h245-alphanumeric
!
dial-peer voice 8 pots
application mgcp
port 1/1:23
!
!
gatekeeper
shutdown
!
!
line con 0
line aux 0
line vty 0 4
password cisco
login
!
end
```

## Acronyms

Acronym	Definitions
ANF-PR	Additional Network Feature Path Replacement
AOC	Advice-of-charge. Information element is sent with the connection setup information for incoming Euro-ISDN connections. The AOC IE is used for call charge calculation.
CCM	Cisco Unified CallManager
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line (Number) Identification Presentation
CLIR	Calling Line (Number) Identification Restriction
CMM	Communication Media Module (CMM) is a Cisco Catalyst® 6500 Series and Cisco 7600 Series line card that provides flexible and high-density T1/E1 gateways
CNIP	Calling Name Identification Presentation
COLP	Connected Line (Number) Identification Presentation



## Important Information

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.



Corporate Headquarters	European Headquarters	Americas Headquarters	Asia Pacific Headquarters
Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA <a href="http://www.cisco.com">www.cisco.com</a> Tel: 408 526-4000 800 553-NETS (6387) Fax: 408 526-4100	Cisco Systems International BV Haarlerbergpark Haarlerbergweg 13-19 1101 CH Amsterdam The Netherlands <a href="http://www-europe.cisco.com">www-europe.cisco.com</a> Tel: 31 0 20 357 1000 Fax: 31 0 20 357 1100	Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA <a href="http://www.cisco.com">www.cisco.com</a> Tel: 408 526-7660 Fax: 408 527-0883	Cisco Systems, Inc. Capital Tower 168 Robinson Road #22-01 to #29-01 Singapore 068912 <a href="http://www.cisco.com">www.cisco.com</a> Tel: +65 317 7777 Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

© 2007 Cisco Systems, Inc. All rights reserved.

CCVP, the Cisco logo, and Welcome to the Human Network are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networkers, Networking Academy, Network Registrar, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0710R)

Printed in the USA