Cisco Internet Service Node (ISN) Installation Guide

Internet Service Node (ISN) Release 2.0

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Cisco Internet Service Node (ISN) Installation Guide

About This Guide

Purpose

This manual describes how to install and configure the Cisco Internet Service Node (ISN) components.

Audience

This manual is intended for anyone installing ISN software.

Organization

The manual is divided into the following chapters.

Chapter	Description
Chapter 1, “Installation Overview”	Provides an introduction to the installation procedure.
Chapter 2, “Installing ISN Software”	Provides instructions for installing and setting up ISN software.

Conventions

This manual uses the following conventions:

Format	Example
Boldface type is used for user entries, keys, buttons, and folder and submenu names.	Choose **Script > Call Type Manager**.
Italic type indicates one of the following: • A newly introduced term • For emphasis • A generic syntax item that you must replace with a specific value • A title of a publication	• A *skill group* is a collection of agents who share similar skills. • *Do not* use the numerical naming convention that is used in the predefined templates (for example, **persvc01**). • IF (*condition*, *true-value*, *false-value*) • For more information, see the *Cisco ICM Software Database Schema Handbook*.
An arrow (>) indicates an item from a pull-down menu.	The Save command from the File menu is referenced as **File > Save**.

Obtaining Documentation

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Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

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Cisco.com

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We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://tools.cisco.com/RPF/register/register.do

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

http://www.cisco.com/en/US/support/index.html

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

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- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide,* and the *Internetworking Design Guide.* For current Cisco Press titles and other information, go to Cisco Press online at this URL:

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- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:

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- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:

  http://business.cisco.com/prod/tree.taf%3fasset_id=44699&public_view=true&kbns=1.html

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:

  http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

Installation Overview

This chapter provides:

- An introduction to the Cisco *Internet Service Node* (ISN) installation procedure, including an explanation of what is and is not within the scope of ISN installation.
- A list of tasks that need to be completed *before* installing the Cisco Internet Service Node (ISN) software.

Note For a complete description of ISN components and features, see the *Cisco Internet Service Node (ISN) Product Description*.

Introduction to ISN installation

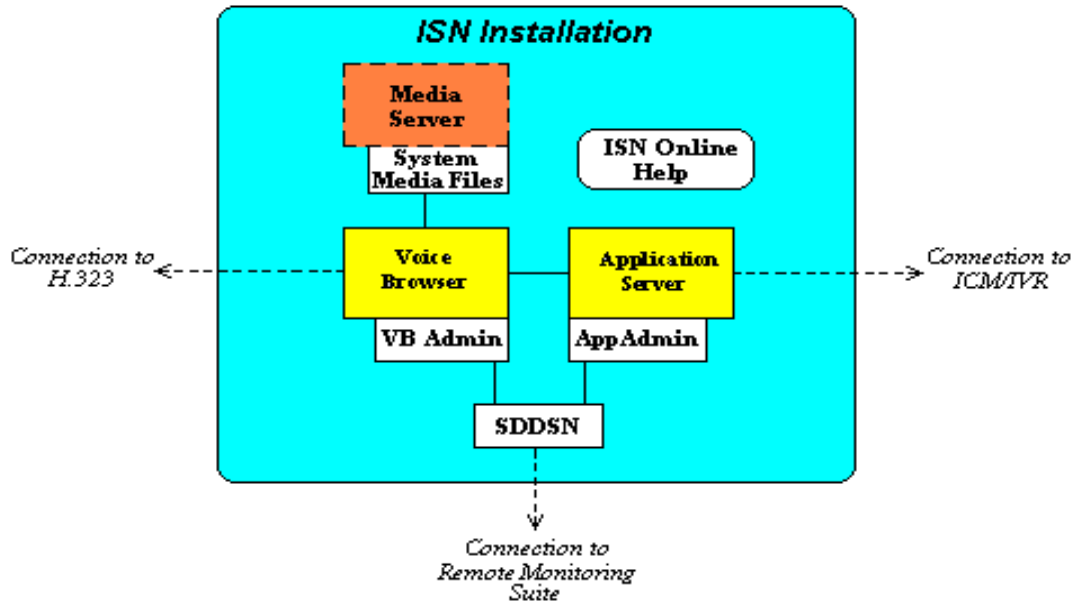
This sections includes descriptions of:

- What components **are** included in ISN installation.
- What components **are not** included in ISN installation.

What is Included in ISN installation?

Figure 1-1 displays the components involved in ISN installation and configuration procedures:

Figure 1-1 ISN Installation Components



The Internet Service Node (ISN) Version 2.0 Software CD consists of software for each of these components, with the exception of the Media Server.

Note The Media Server is shown in Figure 1-1 because—while Media Server installation **is not** part of the ISN installation process—copying the System Media Files **to** the Media Server **is** part of the process.

You choose the ISN components you want to install using the ISN Installation Wizard's **Select Components** screen, shown in Figure 1-2.

Figure 1-2 Select Components Screen

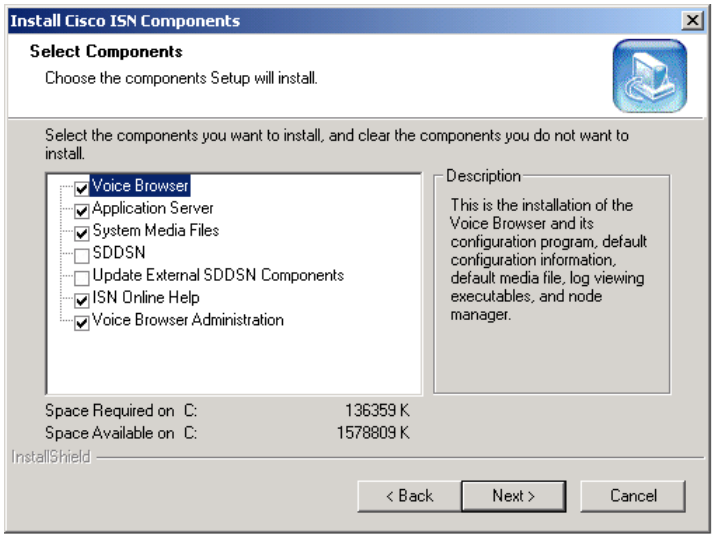


Table 1-1 describes what gets installed for each ISN component:

Table 1-1 ISN Installation Components

Option	What is installed
Voice Browser	The Voice Browser, VB Admin tool, default configuration information, default media file, log viewing executables, and Node Manager.
Application Server	The Application Server, web pages for Application Server administration, log viewing executables, Node Manager, and files to be copied to the Gateway.
System Media Files	A sample set of English system media files. (These files are in Mu-Law 8-bit .wav format.) **Note** These files consist of a library of media files/prompts for individual digits, months (referenced internally by ISN software for a Play Data script type request), and default error messages, etc. **Creation of a *full set of media/prompts for each locale* referenced by the ISN customer is the responsibility of the customer's Media Administrator.**
SDDSN	The Standalone Distributed Diagnostics and Service Network software, including Node Manager. **Note** SDDSN needs to be installed on its own machine—it cannot be co-resident with any other ISN or ICM product.
Update External SDDSN Components	Updates to components external to ISN to listen for ISN-based event messages. These external components are part of the Remote Monitoring Suite. **Note** Cisco Listener and AlarmTracker software needs to be updated with support files for SDDSN. This component must be installed on any machine that runs Listener or AlarmTracker.
ISN Online Help	Help files describing ISN features and how they interact with NAM/ICM software. **Note** In Version 2.0, ISN Online Help is "standalone," meaning that you access it through the Programs menu (**Start > Programs > Cisco Internet Service Node > ISN Online Help**).
Voice Browser Administration	The Voice Browser Administration programs that allow remote administration of the Voice Browser. You do not need to select this if you have selected Voice Browser, as it is included in Voice Browser.

After initial ISN software installation is complete, there are additional tasks you must perform to:

- Set up ISN components to communicate with each other and the VoIP components.
- Update Cisco Listener and AlarmTracker software to support SDDSN.

These steps are discussed in detail in Chapter 2, "Installing ISN Software."

What is not Included in ISN installation?

ISN installation and configuration pertains **only** to the **ISN components** and their **connections** to other VoIP system components. It **does not** address initial installation and configuration of VoIP system components such as:

- Media Server
- Gateway
- Gatekeeper
- Call Manager
- CTI Server
- IPCC
- NAM/ICM
- Content Switch
- ASR/TTS Server

Before you Install ISN Software

Table 1-2 describes tasks you need to complete *before* installing the ISN software.

Note The model and version numbers in this table were up-to-date at the time ISN 2.0 was released. For more recent updates, see the Cisco Internet Service Node (ISN) Data Sheet on Cisco Connect Online (CCO) at http://www.cisco.com.

Table 1-2 Pre-Installation Tasks

Task Category	Task Description
General	Login names, passwords, and documentation should be available for all machines affected by ISN installation.
	A resource (on-site) should be available for resolving general issues during ISN installation/integration (for example, general networking, hardware trouble, missing parts or software, etc.)
	A resource (on-site or Cisco) should be available for resolving Gateway/Gatekeeper configuration issues.
	A resource (on-site) should be available for configuring Cisco NAM/ICM and Peripheral Gateways and to write Cisco NAM/ICM scripts.
Gatekeeper (*required for IP Transfers*)	**IOS 12.2 (13) T3** or equivalent should be pre-installed on the Gatekeeper.
	Voice-over-IP routing should be set up in accordance with examples contained in the "VoIP Configuration" chapter in the *Cisco Internet Service Node (ISN) Configuration and Administration Guide*.

Table 1-2 Pre-Installation Tasks (continued)

Task Category	Task Description
Gateways	**IOS 12.2 (13) T3** should be pre-installed on any of the Gateways: • 3640A Router • 3660 Router • AS5300 • AS5350 • AS5400 • AS5400HPX AS5300 needs VCWARE version 10.21x or greater. On the 5300, dsp firmware is installed separately from the IOS. Do a "show vfc <slot#> ver vcware" to see what version you have.
	Voice-over-IP routing should be set up in accordance with examples contained in the "VoIP Configuration" chapter in the *Cisco Internet Service Node (ISN) Configuration and Administration Guide*.
IP Call Center (optional)	If IP Call Center will be part of the configuration, then Cisco Call Manager **CCM 3.2 (2c) Service Pack H** should be pre-installed and running, with IPCC Agent Desktop (ICM Version 4.6.2). **Note** Cisco recommends **Cisco IP Phone Model 7960**.

Table 1-2 Pre-Installation Tasks (continued)

Task Category	Task Description
ISN PC Machines (Voice Browsers and Application Servers)	Minimum configurations are as follows: **Operational** machines require a minimum Dual 1400 Mz Pentium III, with 1.0 GB RAM and 18 GB hard disk space.
	The following **Windows 2000** software should be pre-installed on all Voice Browser and Application Server machines: • Windows 2000 Server (US English version) • Windows 2000 Service Pack #3 **Note** Application Server machines also require the Windows 2000 Internet Information Admin Service (IIS) and WWWPublishing Services.
	Any vendor-specific hardware setup programs (for example, Compaq Smart Start) should be run before ISN installation. On larger systems this may include configuring raid arrays. **Note** Cisco has no specific criteria or recommendations regarding raid arrays.
	VNC or **PC Anywhere** should be pre-installed for future possible technical assistance. **Note** Using VNC will slow ISN performance.
	Space requirements for ISN processes and log files are as follows: • Voice Browser: 75 MB • VB Admin (only): 15 MB • Application Server: 250 MB • SDDSN: 205 MB • System Media Files: 10 MB • Update External SDDSN Components: 5 MB • ISN Online Help Updates: 5 MB
Cisco NAM/ICM and Peripheral Gateway (PG) PC Machines	Operating System and ICM/PG software should be pre-installed.
Media Server Machines	Machines should have the Operating System pre-installed and be set up as Web servers.
	A minimum of 10MB should be available for ISN System Media Files (Cisco-provided .wav files of numbers, days, months, currency types, etc.). **Note** Customer media files will require additional disk space.
	To maximize Voice Browser and Application Server performance, the Media Server **should not** be installed on the same machine as the Voice Browser or Application Server.

Table 1-2 Pre-Installation Tasks (continued)

Task Category	Task Description
SDDSN Machines	Machines should have **Windows 2000** pre-installed. They must have the SNMP service, which is no longer loaded by default with SP 3.
PC Ancillary equipment	Any additional processors, memory, video cards, Ethernet cards, etc. must be installed and associated drivers loaded and working without error. For better performance under load, it is recommended that network cards be set to Full Duplex, rather than AutoDetect.
	All hard drives must be installed. Any Raid arrays must be configured.
Communications and Power	Sufficient power outlets available for all machines to be simultaneously connected and turned on.
	Modems and phone lines should be available for remote access. **Note** There should be at least one phone line for testing of dialup modem access and for remote support.
	IP addresses should be assigned and inter-machine communications should be verified.
LAN	Cisco NAM/ICM and Peripheral Gateway components should be installed on customer subnets following existing Cisco NAM/ICM checklists
	A visible lab LAN (subnet) and a Voice-over-IP (VoIP) lab LAN should be available. Separate hubs are recommended (but not required), and must include a sufficient number of connection ports for all machines to be integrated to have simultaneous connections.
	The Gateways, Gatekeeper, and Voice Browsers should be connected to the VoIP LAN. The Voice Browsers, Media Servers, Application Servers, and PGs should be connected to the visible LAN. The customer can decide whether to put the various machines in the same domain for ease of administration. **Note** During initial ISN installation and configuration, machines **must** be connected to the LAN.
Content Switch	**Version 5.1** should be installed on the Content Switch, if CCS is to be used for balancing and failover of Application Servers, HTTP Media Servers, and ASR/TTS Servers.
ASR/TTS Server	Nuance (Recognizer 8.0 and Synthesizer 1.0 and 2.0) or Speech Recognizer OSR 1.1.1 with patch plus OpenSpeech MRCP Server 1.0.1 OSS with patch) software should be installed on vendor-recommended hardware.

Note For installation and configuration instructions for these products, see Chapter 2, "Installing ISN Software" and/or the user manuals for each of the individual products. For information about the ISN's interaction with these components in a VoIP system, see the *Internet Service Node (ISN) Configuration and Administration Guide*.

Installing ISN Software

This chapter provides information about the:

- Procedures for installing and configuring the ISN software.
- Tasks that need to be performed on non-ISN software components after the ISN software is installed.
- Procedures for upgrading ISN components.
- Procedures for removing ISN components.
- Troubleshooting.

Note You must complete the tasks in Table 1-2, "Pre-Installation Tasks" in Chapter 1, "Installation Overview," *before* you begin ISN installation.

ISN Installation and Configuration Procedures

This section walks you through the ISN software installation procedure.

Caution To prevent sharing violations with other software, close down the following *before* you begin ISN installation:

– Programs running Windows 2000 Internet Information Services (IIS) or/and wwwPublishing Services.

– Programs that access directories or files, such as Microsoft Word or Windows Explorer.

Note Uninstallation of ISN 1.0.1 SDDSN is not supported. If you are installing SDDSN and previously had SDDSN version 1.0, you need to re-install the operating system on the computer you plan to install SDDSN version 2.0 on. If you are upgrading the Application Server and Voice Browser to 2.0, and have SDDSN version 1.0 on the same machine, you need to set SDDSN version 1.0 to "disabled" in the ICM Services window.

How to install Cisco Internet Service Node (ISN)

Step 1 From the Install folder on the ISN installation CD, run **setup.exe**.

Step 2 On the **Welcome** screen, click **Next**.

Note If you click the **Cancel** button here or on any of the following dialog screens prior to the "Start Copying Files" dialog screen, no part of the installation will occur and the Exit Setup dialog box will appear.

Step 3 On the **Copyrights** screen, click **Next**.

Step 4 On the **License Agreement** screen, click **Yes**. (Use the scroll bar or the **Page Up** and **Page Down** keys to view the entire license agreement.)

Step 5 On the **Choose Destination Location** screen, specify the drive and directory where the software will be installed:

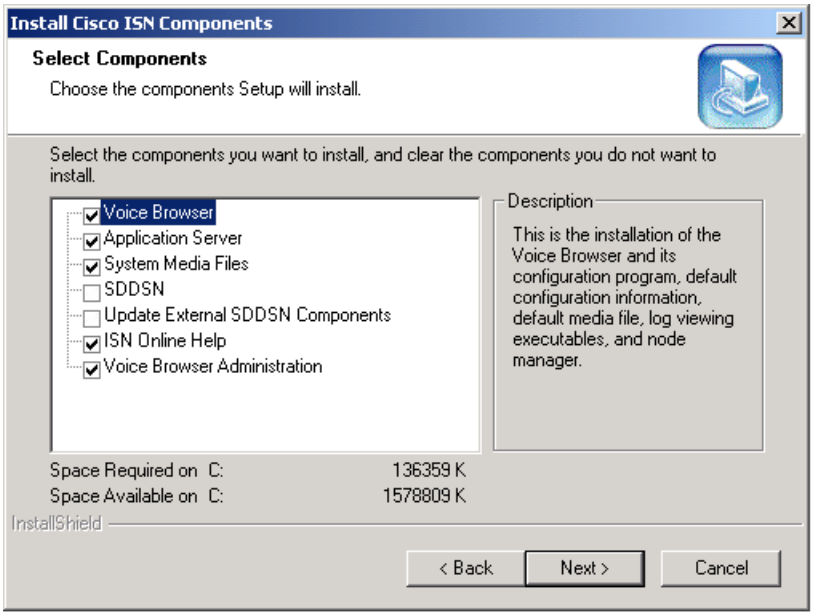
- Click **Next** to accept the default location (C:\Cisco\ISN).
- Click the **Browse** button, select an alternate location, and then click **Next**.

Note All ISN components you select will be installed to subfolders under the destination location with a few exceptions, which are listed in the Application Server and SDDSN sections.

Step 6 Use the checkboxes on the **Select Components** screen to choose the ISN components to install on the local machine and click **Next**.

Note SDDSN needs to be installed on its own machine—it cannot be co-resident with any other ISN or ICM product.

Note If you plan to install multiple components on one machine, such as you might in a Lab environment, you must install **all** the components you require at the same time. If you do not, and then later decide to add a component, you will need to uninstall the existing ISN software and perform a complete re-install.



The choices are:

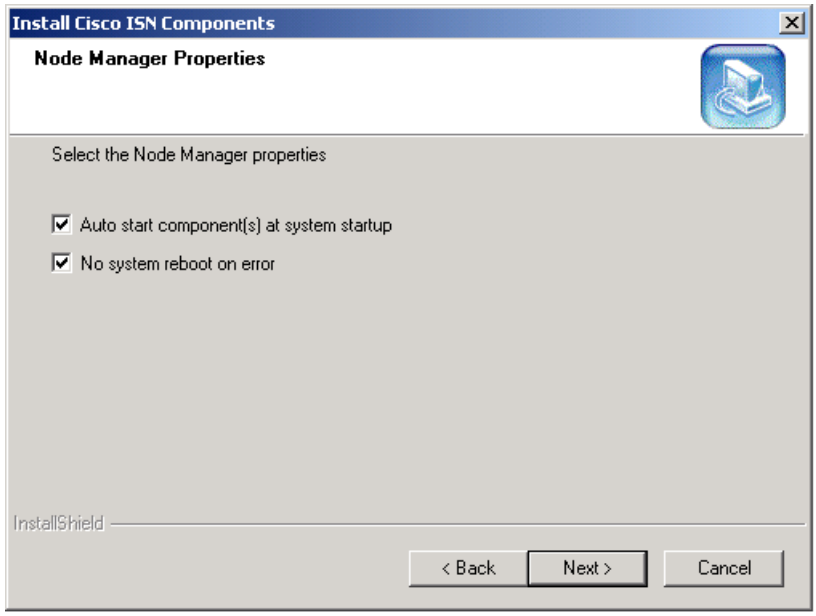
- **Voice Browser**. Select to install the Voice Browser, VB Admin tool, default configuration information, default media file, log viewing executables, and Node Manager.
- **Application Server**. Select to install the Application Server, web pages for Application Server administration, log viewing executables, and Node Manager. In addition, Gateway files—which need to be manually copied to the Gateway—will be placed in a folder named **Downloads**.
- **System Media Files**. Select to install a sample set of US English system media files. (These files are in Mu-Law 8-bit .wav format.)
- **SDDSN**. Select to install the Standalone Distributed Diagnostics and Service Network software, including Node Manager.
- **Update External SDDSN Components**. Select to install updates to components external to ISN (components of the Remote Monitoring Suite), such as Cisco's Listener and AlarmTracker, to listen for ISN based event messages.
- **ISN Online Help**. Select to install ISN online help files.
- **Voice Browser Administration**. Select to install the Voice Browser Administration programs that allow remote administration of the Voice Browser. You don't need to select this if you selected the Voice Browser component.

Note The Space Required on *<Drive Name>* shows a running total of the memory required for the components selected. Some components, such as the Application Server, have sub-installs that the running total memory requirements does not take into account.

Step 7 On the **Select Program Folder** screen, select what Program Folder the ISN program icons should display under and click **Next**.

Step 8 On the **Node Manager Properties** screen, select startup and reboot options.

Note This screen appears only if you selected to install Voice Browser or Application Server.



The choices are:

- **Auto start component(s) at system startup**. Default: On ("checked"). The default setting enables auto start of the node-managed Voice Browser upon a reboot.

Note If you are installing an Application Server—with or without the Voice Browser—auto start will not go into effect until the *second* reboot of the system. The second reboot is necessary to accommodate Application Administrator configuration.

- **No system reboot on error**. Default: On ("checked"). The system will not reboot in the event of a system process failure.

Step 9 Click **Next**. One of the following happens:

- If you *did* choose to install Application Server, the **Choose Destination Location** screen appears. Continue the installation procedure at 10.

Note Some files have hard coded destinations. For example, the DC Directory associated with the Application Server is hard coded to C:\dcdsrvr.

- If you *did not* choose to install Application Server, the **Start Copying Files** screen appears. Continue the installation procedure at 12.

Step 10 On the **Choose Destination Location** screen, specify the drive and directory where the Web-based Application Administrator tool will be installed:

- Click **Next** to accept the default location (C:\inetpub\wwwroot\AppAdmin).
- Click the **Browse** button, select an alternate location, and then click **Next**.

Note This must be configured as the default directory of Microsoft Internet Information Services (IIS).

Step 11 On the **Username and Password** screen, enter your Windows 2000 password, confirm it, and click **Next**.

You must enter a valid Windows 2000 user account with administrator privileges and password to run the ISN. By default, the Username field contains the current username and the Password fields are blank.

Note If your Windows 2000 configuration is set up to accommodate a "local Administrator" user and a "<DOMAIN_NAME>\Administrator" user, enter the "<DOMAIN_NAME>\Administrator" username and password.

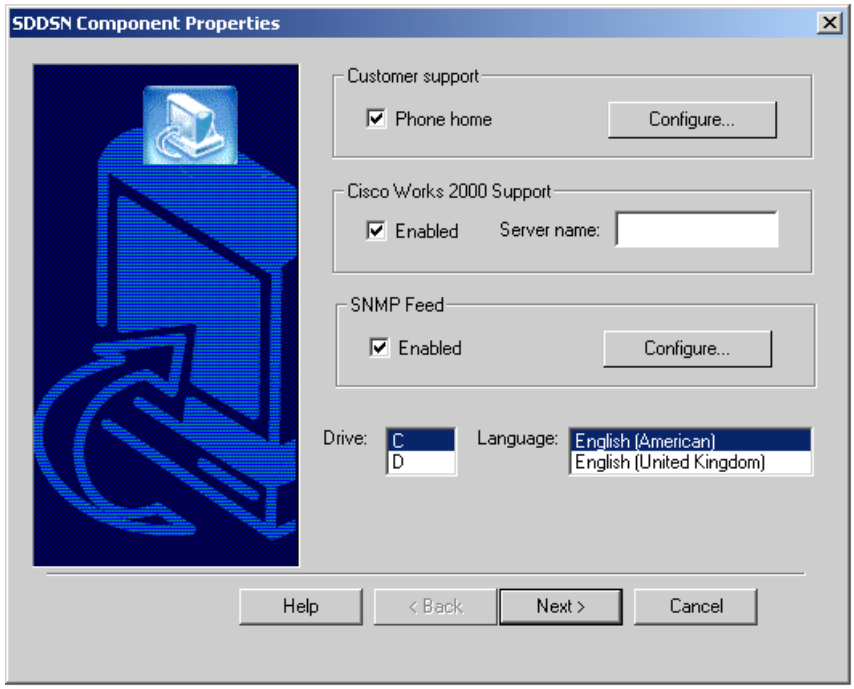
Step 12 On the **Start Copying files** screen, click **Next**. The **Setup Status** screen tracks installation process and then the following happens:

- If you chose to install Application Server, an MS DOS window appears asking permission to stop IIS Admin Services. Enter **Y**.

  Note This step is necessary to successfully install the Application Server.

  Several more MS DOS windows appear reporting the status of IIS Admin Services install.
- If you chose to install Application Server, during the DC Directory sub-install, a window appears saying: "This will take between 5 and 30 minutes. Please be patient." The range in time is due to differences in system speed, virus scan settings, network traffic, etc. During this time nothing changes on the computer screen. Please wait patiently.
- If you chose to install SDDSN, the **SDDSN Component Properties** screen appears. Continue the installation procedure at 13.
- If you *did not* choose to install SDDSN, the final **Cisco ISN Setup** screen appears. Continue the installation procedure at 15.

Step 13 On the **SDDSN Component Properties** screen, specify how the ISN will convey events to SDDSN.



Do the following:

- To enable the ICM to send diagnostic messages directly to the Cisco TAC:
  - Select the Phone Home checkbox and click **Configure**. The **Phone Home Configuration** screen appears.
  - Specify a Phone Home setting and click **OK**. The **SDDSN Component Properties** screen reappears.

Note For detailed information about Phone Home Configuration settings, *see the Cisco ICM Software Installation Guide*.

- To enable the optional Cisco Works 2000 feed, select the Enabled checkbox and enter the name of a CiscoWorks server in the Server Name field.

Note Cisco Discovery Protocol (CDP) is required for Cisco Works 2000. CDP is automatically installed during ICM setup. However, if CDP is disabled, CiscoWorks 2000 will not run.

- To enable the optional SNMP Feed:
  - Select the Enabled checkbox and click **Configure**. The **SNMP Feed Configuration** screen appears.
  - Use the checkboxes to specify the SNMP Configuration information and click **OK**. The **SDDSN Component Properties** screen reappears.

Note You may need to install the SNMP Windows 2000 component.

Note For information on the SNMP event feed, see the Cisco *ICM Software Alarm MIB User Guide*.

Step 14 Click **Next**. The S**DDSN Setup: SDDSN Server Check Setup** screen appears.

Note Some files have hard coded destinations. For example, for SDDSN, C:\ICR\bin is hard coded.

Step 15 Click **Next**. SDDSN installs and the final **Cisco ISN Setup** screen appears. Do the following:

- If applicable, select the “Restart my computer” option.

Note These options only appear on the **ISN Setup Complete** screen if you are installing a component that requires reboot. Cisco recommends that you select the “Yes” option.

- Click **Finish**. One of the following happens:
  - If you **did not choose** to install the Application Server, setup is complete and the ISN Installation Wizard closes.
  - If you **chose** to install the Application Server, a “Setup not complete” screen displays. See the “Application Server Configuration” for further instructions.

– If you **chose** to install the Application Server **and** you **chose** the "Restart my computer" option, the machine reboots. After reboot, login; an MS-DOS window appears showing the status of the DC Directory Schema update. **Check the information in this window carefully for error messages!**

Note If errors **do** appear in the MS-DOS window, press a key to complete the setup process, and then turn to the "Troubleshooting ISN Install / Upgrade / Uninstall" section on page 2-20.

When the prompt "Press any key to continue…" appears, press a key. Several pop-up windows appear and the Application Server Configuration box disappears to indicate installation completion.

During the Application Server installation, there is a new message window that says "This will take between 5 and 30 minutes. Please be patient." This is informing the user that depending on their system speed, virus scan settings, network traffic, etc., the DC Directory sub-install will take a while. Don't worry that nothing is changing on the computer screen. After you install the ISN software, you must configure the Application Server and Voice Browser.

Caution If you chose the "Restart my computer" option be **very careful** logging in! If the information is not **exactly** the same as you entered in Step 11 on page 5, the Application Server will not configure properly. Also, it is highly recommended that your system be connected to a **physical** LAN, rather than a wireless LAN.

Application Server Configuration

This section contains the **minimum** steps required to configure the Application Server (AS) after initial ISN installation.

Note For more information about Application Server administration, see the *Internet Service Node (ISN) Configuration and Administration Guide*.

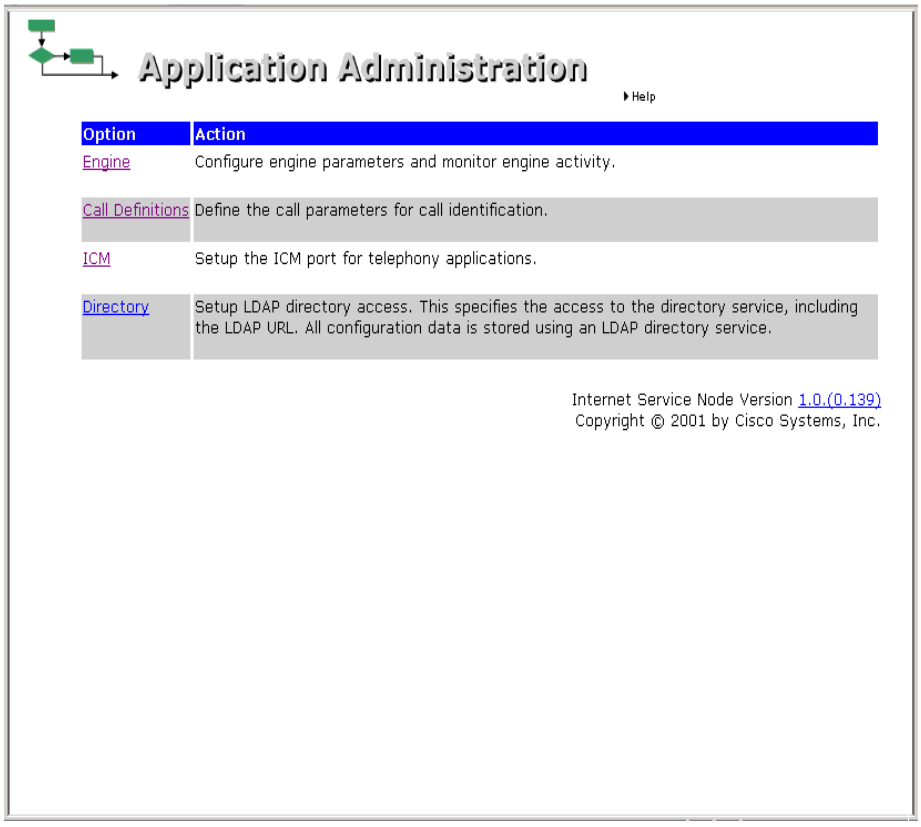
How to configure the Application Server

Step 1 Select **Start > Programs > Cisco Internet Service Node > Application Server > Application Administrator**. The Enter Network Password dialog box appears.

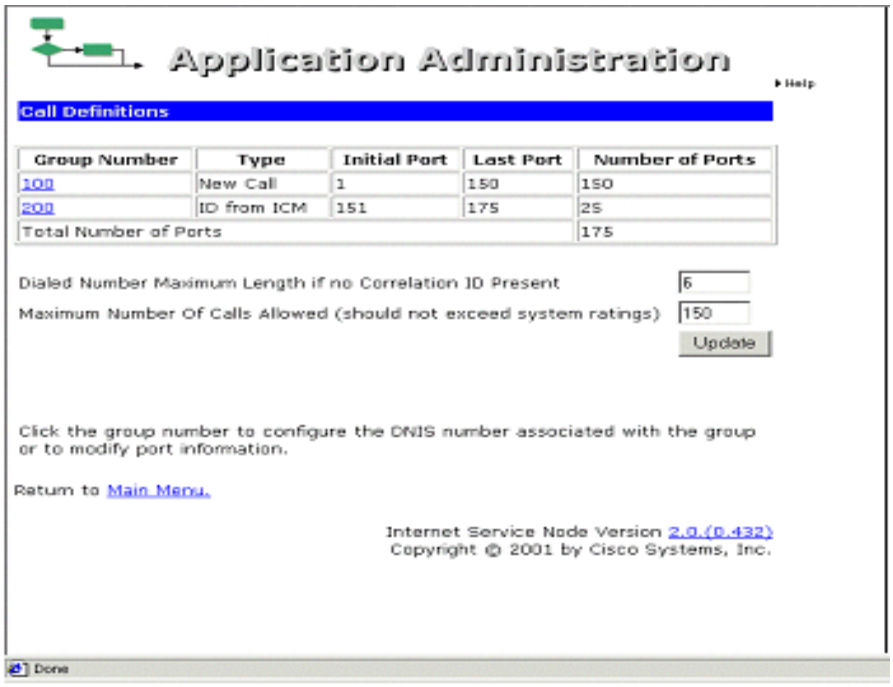
Step 2 Login as the Windows 2000 Administrator.

Caution Again, be **very careful** logging in! If the information is not **exactly** the same as you entered in Step 11 on page 5, the Application Server will not configure properly.

The Application Administration Main Menu appears.



Step 3 Click the **Call Definition** link. The Call Definition page appears.

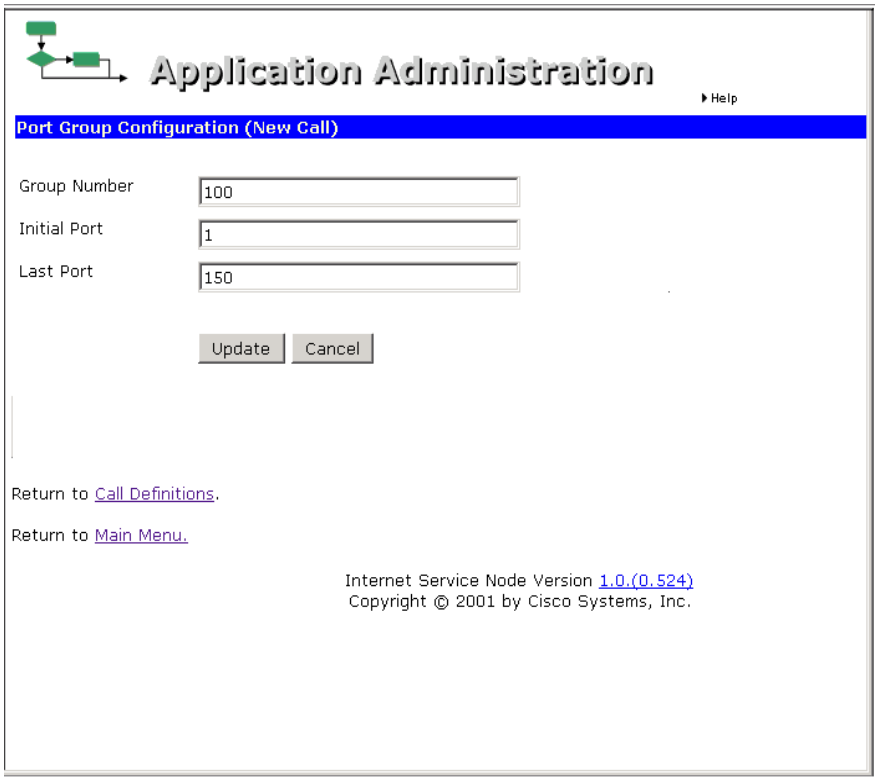


Step 4 Click one of the **Group Number** links:

- Group Number 100 / New Call (the first row in the table) if you want to define call parameters for post-routing calls.
- Group Number 200 / ID from ICM (the second row in the table) if you want to define call parameters for translation routing.

The Port Group Configuration (ID from ICM / New Call) page appears.

Note For information about setting the **Dialed Number Maximum Length if noCorrelation ID is Present** and **Maximum Number of Calls Allowed** fields, see the *Cisco Internet Service Node (ISN) Configuration and Administration Guide*.



Step 5 Use the Initial Port and Last Port fields to specify a range of virtual ports for the Group Number.

Caution The Application Server will not start up if you do not define any ports. Also, the number of ports you define determines the number of calls that can be processed *simultaneously*. Setting a large number of ports *will* impact system performance, even if the number of actual calls is not large.

Step 6 Click **Update**. The changes take effect immediately.

Step 7 Click the **Return to Main Menu** link.

Step 8 Optionally, do the following:

- Click the **ICM** link. The ICM Subsystem Configuration page appears

Note This step is only necessary if you need to change the default VRU port setting.

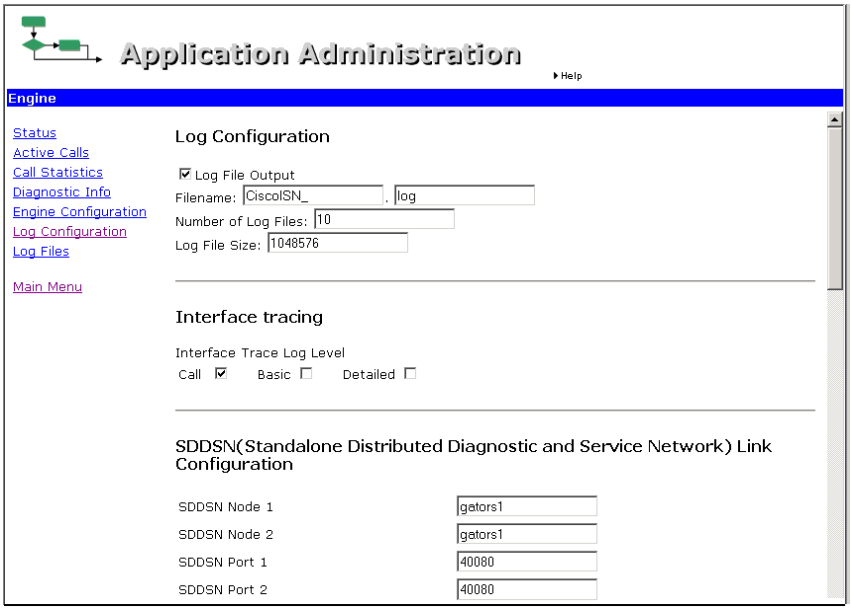
- Specify a VRU Connection Port value. This is the TCP/IP socket number the Application Server will use to receive messages from the Cisco ICM's PG (PIM). (Default: 5000.)

Note The VRU port setting needs to match the ICM PG (PIM) setting. For more information on setting up the ICM PG, see the *Cisco ICM Software Configuration Manager* documentation.

- Click the **Update** link, then **Return to Main Menu**.

Step 9 Click the **Engine** link. The Engine Status page appears.

Step 10 Click the **Log Configuration** link. The Log Configuration page appears.



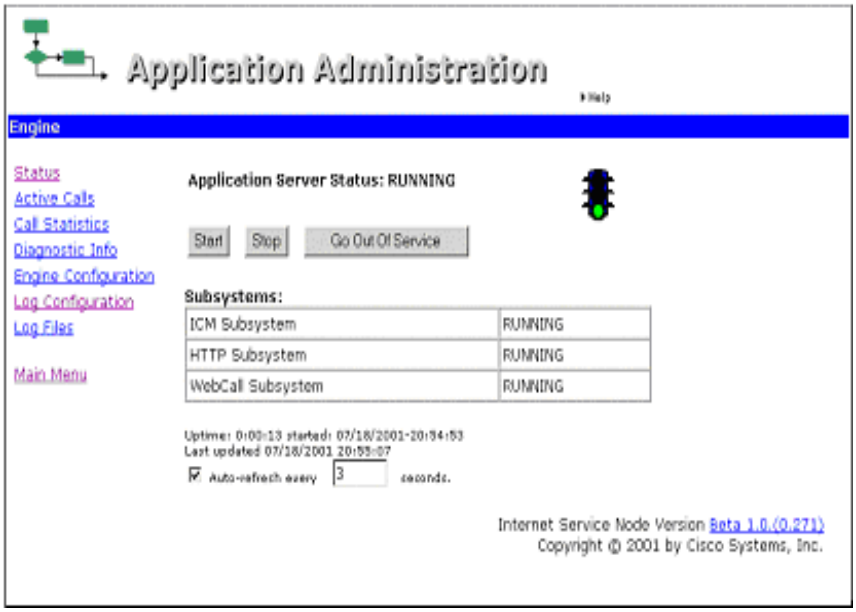
Step 11 Use the **SDDSN** section to specify settings to be used by the Alarm Forwarder process:

- **SDDSN Node 1**. (Default: <none>.) The host name or IP address of the first SDDSN instance.
- **SDDSN Node 2**. (Default: <none>.) The host name or IP address of the second SDDSN instance.
- **SDDSN Port 1**. (Default: 40080.) The listening port number for the first SDDSN instance.
- **SDDSN Port 2**. (Default: 40080.) The listening port number for the second SDDSN instance.
- **SDDSN Ascending Retries**. (Default: 5.) The upper limit of geometric growth for the time between retries when both SDDSN instances are having problems.

Step 12 Scroll down until you see the **Update** button and click it. Changes to SDDSN link configuration take effect immediately.

Step 13 Click the **Status** link. The Engine Status page appears. Do the following:

- To enable the auto-refresh feature on this page, click the checkbox and specify how often the page should refresh.
- Click the **Start** button, then click **Yes** in the confirmation message box that appears.The Application Server status changes to RUNNING and a green light appears, indicating that all subsystems are running and the Application Server is ready to accept calls.



Step 14 When finished using the Application Administration tool, select **File > Close**. The Application Administrator window closes, however, the Application Server remains running under ICM Service Control.

Voice Browser Configuration

This section contains the **minimum** steps required to configure the Voice Browser (VB) after initial ISN installation.

Note In order for the VB Admin tool to function, the Voice Browser must be running.

Note For more information about Voice Browser administration, see the *Internet Service Node (ISN) Configuration and Administration Guide*.

How to configure the Voice Browser

Step 1 Select **Start > Programs > Cisco Internet Service Node >Voice Browser > VB Admin**. A window containing a command line prompt (>>>>) appears.

Step 2 Enter **setASList <NewValue>**, where **<***NewValue***>** is the base URL of Application Servers for the Voice Browser).

The syntax for the base URL is: **<AppServer>:8000/servlet/isn**, where:

- <*AppServer*> is the hostname or IP address of the machine that is running the Application Server. (Default: localhost.)
- *:8000/servlet/isn* is a fixed string that you must append to each name in the AppServerList. (The string must begin with a colon [:].)

Examples:

setASList localhost:8000/servlet/isn

setASList "machine1:8000/servlet/isn machine2:8000/servlet/isn"

Note The command **setASList** contains no spaces. However, the use of double quotes is required when defining multiple Application Servers.

Step 3 If you want a call restarted from the beginning if there is a NAM/ICM or Application Server problem during the course of the call, enter **SetNewCallOnly on**.

Note Do not set this value to "on" if you expect any pre-routed calls to come to this Voice Browser. The ISN cannot restart pre-routed calls.

Step 4 If IP transfers will be part of your call configuration, enter the following:

- **setGateKeeper<*NewValue*>**, where **<*NewValue*>** is the IP address for the Gatekeeper serving the Voice Browser.

Note You must shut down and restart the Voice Browser for this setting to take effect.

Step 5 If you chose to install SDDSN, and need to change the default settings, enter the following:

- **setSDDSN1 <*NewValue*>** (where **<*NewValue*>** is the host name or IP address of the *first* SDDSN instance. (Default: <none>)
- **setSDDSN2 <name>** (where **<*NewValue*>** is the host name or IP address of the *second* SDDSN instance. (Default: <none>)

Note If there is only one SDDSN in service, SDDSN2Node should be set to the same node as SDDSN1Node.

Step 6 Enter **q** to exit VB Admin.

After you Install ISN Software

After you install the ISN software and configure the Application Server and Voice Browser, there are tasks you need to perform on some *non-ISN* Cisco software components before you can use ISN features in your call center. These include:

- Setting up Cisco Gateways/Gatekeepers to interact with ISN
- Updating Cisco Listener and AlarmTracker software to support SDDSN.
- Setting up Cisco NAM/ICM software to interact with ISN.

The sections that follow provide more information.

Setting up Gateways/Gatekeepers to Interact with ISN

You must configure Gateway(s) and Gatekeeper(s) in order to properly route inbound calls (calls originating from the caller into ISN) and outbound calls (calls being transferred to an agent through ISN).

Depending on the ISN configuration being used, certain folders of files need to be copied from the ISN Application Server machine to the Gateway(s). Use Table 2-1 to determine which folder you need to copy for your system.The first three columns of the table define a possible combination of features in an ISN configuration:

- **Voice Browser**. Your ISN configuration would include an ISN Voice Browser when the ISN needs to queue calls or provide call transfer after an agent has answered the call.
- **CSS**. If your ISN configuration includes one or more Cisco Content Services Switches to provide enhanced failover and load-balancing capabilities between the Voice Gateways and the ASR/TTS Servers, HTTP Media Servers, and the ISN Application Servers.

  Note When a CSS exists in the configuration, it must be used with **all** the Servers in the configuration.

- **Call Restart**. Your ISN configuration would include the Call Restart feature to restart a call in the event of an ISN Application Server failure in mid-call. The restarted call will appear to the ICM as just another new call.

  Note The Call Restart feature can only be used when the ISN is a Type 5 or Type 6 Network VRU or when the ISN is the main routing client for the call. In configurations where a call is pre-routed by a NIC to an ISN (that is, the ISN is a VRU Type 2, 3, 7 or 8), the restart feature cannot be used.

Once you have determined the feature combination of your ISN configuration, open the folder and copy all files specified in the fourth column of Table 2-1 from the ISN Application Server machine to flash memory on the Gateway(s).

Note For complete instructions for copying files to the Gateways, see the **copy** CLI command in the Gateway documentation.

Table 2-1 Application Server Files to Copy to the Gateway/Gatekeeper

ISN Feature Combinations			
Voice Browser?	**CSS ?**	**Call Restart?**	**Folder To Copy**
Yes	Yes	Yes	<*basedir*>/ApplicationServer/Downloads/VB-CSS-CallRestart
Yes	Yes	No	<*basedir*>/ApplicationServer/Downloads/VB-CSS-noCallRestart
Yes	No	Yes	<*basedir*>/ApplicationServer/Downloads/VB-noCSS-CallRestart
Yes	No	No	<*basedir*>/ApplicationServer/Downloads/VB-noCSS-noCallRestart
No	Yes	Yes	<*basedir*>/ApplicationServer/Downloads/noVB-CSS-CallRestart
No	Yes	No	<*basedir*>/ApplicationServer/Downloads/noVB-CSS-noCallRestart
No	No	Yes	<*basedir*>/ApplicationServer/Downloads/noVB-noCSS-CallRestart
No	No	No	<*basedir*>/ApplicationServer/Downloads/noVB-noCSS-noCallRestart
Note If your ISN configuration includes a CSS, you also need to copy the **askeepalive.txt** file from the root of the **Downloads** directory to the **Scripts** directory of the CSS switch.			

Caution When copying the files, **do not** rename the destination files on the Gateway.

A further note on copying files to the Gateway/Gatekeeper

After you enter a **copy** command, the Gateway/Gatekeeper's IOS software will prompt you to confirm:

- The destination file name; in response, press **Enter**.
- That you want it to erase all files in the flash memory; in response, type **n** and press **Enter**.

The IOS dialog does not reflect that **n** was typed, or respond for several seconds. This is normal behavior; IOS copies files to the flash memory without overwriting and eventually indicates that the file has been loaded. Example 2-1 shows a sample Gateway IOS dialog:

Example 2-1 Gateway copy boostrap.vxml command

```
gateway#copy ftp://10.1.1.10/isn20files/bootstrap.vxml flash:
Destination filename [bootstrap.vxml]?                    */ Press <Enter>
Accessing ftp://10.1.1.10/isn20files/bootstrap.vxml...
Erase flash: before copying? [confirm]                    */ Type n and press <Enter>
Loading isn20files/bootstrap.vxml !
[OK - 2895/4096 bytes]

Verifying checksum... OK (0x8FD9)
2895 bytes copied in 6.564 secs (441 bytes/sec)"
```

Updating Cisco NAM/ICM Components to Support SDDSN

Cisco Listener and AlarmTracker software (part of the Remote Monitoring Suite) needs to be updated with support files for SDDSN. You do this by installing the ISN component called "Update External SDDSN Components" on any machine that runs Listener or AlarmTracker.

How to update external SDDSN components

Step 1 From the installation CD, run **SETUP.EXE**.

Step 2 On the **Welcome** screen, click **Next**.

Step 3 On the **Copyrights** screen, click **Next**.

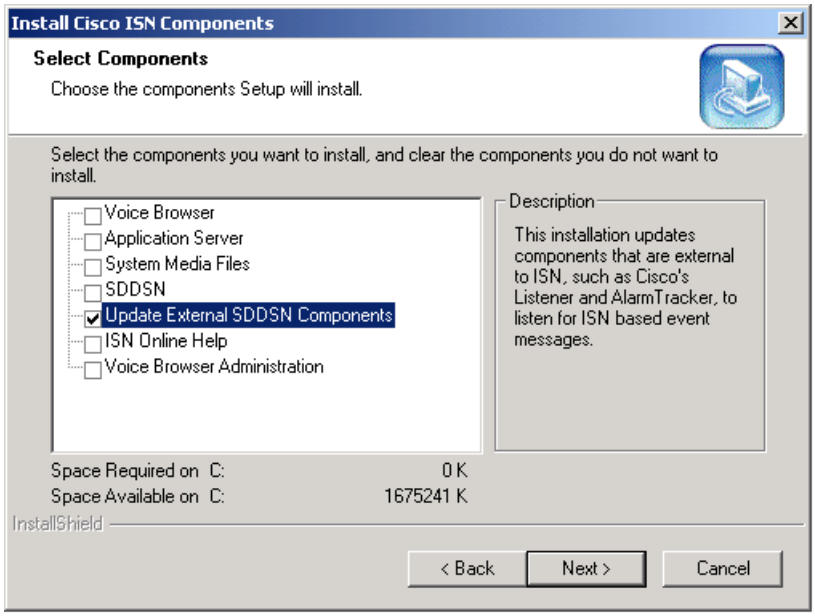
Step 4 On the **ISN License Agreement** screen, click **Yes**.

Step 5 On the **Choose Destination Location** screen, specify the drive and directory where the software will be installed:

- Click **Next** to accept the default location (C:\Cisco\ISN).
- Click the **Browse** button, select an alternate location, and then click **Next**.

Note All ISN components you select will be installed to subfolders under the destination location.

Step 6 On the **Install Cisco ISN Components** screen, select the **Update External SDDSN Components** option to install updates to components external to ISN, such as Cisco's Listener and AlarmTracker. These updates make it possible for the components to process ISN-based event messages.



Step 7 Click **Next**.

Step 8 On the **Start Copying** files screen, click **Next**.

Step 9 On the **ISN Setup Complete** screen and click **Finish**.

Setting up Cisco NAM/ICM Software to Interact with ISN

There are several "one time only" steps you need to take to enable interaction between NAM/ICM and ISN software:

- Determine what ISN Network VRU types you need to define
- Define an ISN Network VRU
- Set the Enable Expanded Call Context option
- Define expanded call context (ECC) variables for ISN
- Define the default Network VRU
- Configure the Peripheral Gateway (PG) for the ISN

Note For more information, see the "ISN Deployment Options" appendix in the *Cisco Internet Service Node (ISN) Configuration and Administration Guide.*

Upgrading ISN Software

This section walks you though the ISN software upgrade procedure.

Caution To prevent sharing violations with other software, close down the following *before* you begin ISN installation:

– Programs running Windows 2000 Internet Information Services (IIS) or/and wwwPublishing Services.

– Programs that accesses directories or files, such as MS Word or Windows Explorer.

How to upgrade Cisco Internet Service Node (ISN)

Only components currently installed on the system will be upgraded. During the Upgrade procedure, a message box appears confirming what components are available.

Note If you click the **Cancel** button on any of the dialog screens prior to the **Start Copying files** screen, no part of the installation will occur and the **Exit Setup** dialog box will appear.

Step 1 From the Upgrade folder on the ISN installation CD, run **setup.exe**.

Step 2 On the **Welcome** screen, click **Next**.

Note If the system detemines that the ISN upgrade version is older than the version currently installed or an unsupported upgrade is attempted, an informational message appears and the system exits Setup without performing the upgrade.

Step 3 On the **Copyrights** screen, click **Next**.

Step 4 On the **License Agreement** screen, click **Yes**. (Use the scroll bar or the **Page Up** and **Page Down** keys to view the entire license agreement.)

Step 5 On the **Start Copying files** screen, click **Next**.

Note Since this is an upgrade procedure, you will not be able to set a destination location; The location where the components were initially installed is where the upgrade will take place.

Step 6 Click **Yes** in response to all the confirmation message boxes that appear regarding the list of ISN components to be upgraded, services to be stopped, read-only files to be deleted, etc.

Note If services are running at the time of upgrade, MS-DOS windows will appear reporting the status of their shutdown.

Step 7 If an MS-DOS window appears requesting permission to stop IIS Admin Services, enter **Y**.

Step 8 If a window appears asking if you want the upgrade to start the Application Server or Voice Browser upon reboot, click **Yes**.

Note MS-DOS windows appear reporting the status of the service start-ups.

Step 9 Click **Finish**.

Step 10 Reboot the computer.

Note The ISN will not run the same-versioned upgrade twice. For example, if ISN Version 2.0.0 is already installed and you try to run upgrade to that same version, the following message appears: “ISN Version 2.0.0 has already been installed. An upgrade from 2.0.0 to 2.0.0 is not supported. Aborting upgrade.” The ISN upgrade process then ends with no changes made to the software.

Uninstalling ISN Components

This section describes the procedure for removing ISN components.

Caution To prevent sharing violations with other software, close down the following *before* you begin ISN uninstallation:

– Programs running Windows 2000 Internet Information Services (IIS) or/and wwwPublishing Services.

– Programs that accesses directories or files, such as MS Word or Windows Explorer.

How to remove ISN software

Step 1 Close all open applications.

Step 2 Select **Start > Settings > Control Panel > Add/Remove Programs**.

Step 3 Select the Cisco Internet Service Node (ISN) entry and click the **Change/Remove** button.

Caution It is ***very*** important to choose the **Cisco Internet Service Node (ISN)** entry to ensure a clean uninstall. Selecting this entry removes all other ISN components in the Installed Program list, except upgrades or hotfixes. For more information, see "How to remove ISN software after an upgrade to a higher version number" section on page 2-19.

Step 4 In the Welcome to the Cisco ISN Setup Maintenance Setup dialog box, select **Remove** and click **Next**.

Step 5 In the Confirm File Deletion dialog box, click **OK**.

Step 6 If a DOS pop-up box appears asking permission to stop IIS Admin Services, enter **Y**.

Step 7 Continue clicking **Yes** in all other confirmation boxes, as appropriate.

Caution A pop-up box will appear for all Shared or Read-Only files. If other ICM products are sharing files, you must be *extremely* careful *not* to remove the files. Possible shared files include:

<Targetdir>\bin\cat2.dll
<Targetdir>\bin\msgs2.dll
<Targetdir>\bin\MESS2.HLP
<Targetdir>\Filters\appl2.flt
<Targetdir>\Filters\custvis2.flt
<Targetdir>\Filters\object2.flt
<Targetdir>\Filters\primpos2.flt

The Cisco ISN Maintenance Complete dialog box appears.

Step 8 Click **Finish**.

Step 9 Do one of the following:

- If the "Restart my computer" prompt appears, select **Yes**.
- If the "Restart my computer" prompt **does not** appear:
  - Close the Add/Remove Programs dialog box.
  - Reboot the machine manually.

How to remove ISN software after an upgrade to a higher version number

Caution The order in which you remove the ISN software is very important: you **must** remove the software in reverse order to how it was installed. In other words, if you installed the ISN software first, HotFix1 software second, and Upgrade software third, you need to remove the Upgrade first, HotFix1 second, and ISN third.

Step 1 Stop ISN services so calls will not be processed through the machine as you remove files.

- To bring the Voice Browser out of service, in VB Admin, enter **setservicemode out**.
- To bring the Application Server out of service, on the Engine page in Application Administration, click the **Go Out Of Service** button.

Step 2 Verify that all the calls have completed before continuing with the uninstall.

Step 3 Stop all Windows programs.

Step 4 Select **Start > Settings > Control Panel > Add/Remove Programs**.

Step 5 Select the most recent install—either a hotfix (ISNHF*x,* where *x* is the hotfix number) or an upgrade (ISNUpgrade*x.y.z* where *x.y.z* is the version number) and click the **Change/Remove** button.

Step 6 In the Welcome to the Cisco ISN Setup Maintenance Setup dialog box, select **Remove** and click **Next**.

Step 7 In the Confirm File Deletion dialog box, click **OK**.

Step 8 Click OK in response to all the confirmation message boxes.

Step 9 If a DOS pop-up box appears asking permission to stop IIS Admin Services, enter **Y**.

Step 10 Continue clicking **Yes** in all other confirmation boxes, as appropriate.

Step 11 If any read-only files are detected, select the "Don't display this message again" checkbox and click **Yes**.

Step 12 Click **Finish** in the Maintenance Complete dialog box.

Note At this point, your ISN system is incomplete. Many required files are no longer available. You can either continue to uninstall the rest of ISN, or—if you uninstalled an upgrade—run the same or another ISN upgrade again to reinstall the files that have been removed.

Step 13 Reboot the computer.

Step 14 Repeat the procedure described in Step 5 through Step 13 to uninstall any other obsolete ISN hotfixes and upgrades—in ***reverse order*** of installation.

Step 15 Remove the ISN software. From **Start > Settings > Control Panel > Add/Remove Programs**, select Cisco Internet Service Node (ISN) and click the **Change/Remove** button. Follow the procedure described in Step 5 through Step 13.

Troubleshooting ISN Install / Upgrade / Uninstall

Table 2-2 describes how to resolve problems you may encounter while:

- Installing ISN software and performing the initial configuration.
- Upgrading ISN software.
- Uninstalling ISN software.

Table 2-2 Troubleshooting

Symptom	Possible Cause and Solution	
When installing or uninstalling the ISN Application Server software, an SNMP.exe application error message appears.	*Possible Cause:*	The SNMP service is being used by a third-party program (such as the HP Net Server Agents program) or a previously-installed version of the ISN Application Server. A step in the ISN installation and uninstallation process is to stop the SNMP service; if the service is in use, an error is generated.
	Possible Solution:	Click **OK** in the error message pop-up to stop the SNMP service in order to successfully install or uninstall the Application Server. Upon reboot, SNMP will start up automatically. **Note** This action causes a temporary SNMP service interruption.
During ISN installation, the following error message appears: "The InstallShield Engine(iKernel.exe) could not be installed. Ikernel.exe could not be copied to C:\Program Files\Common Files\InstallShield\Engine\6\Intel 32."	*Possible Cause:*	Multiple instances of the Install Program are being run. **Note** InstallShield (the install program for the ISN) allows only one ikernel.exe to be running at a time.
	Possible Solution:	Stop all install programs and run the ISN installation program.

Table 2-2 Troubleshooting (continued)

Symptom	Possible Cause and Solution	
When accessing the Application Administrator page, one of the following error messages appears: "You are not authorized to view this page" or a "Permissions Denied."	*Possible Cause:*	You are logged into the Application Administrator Page as the "wrong" administrator. On Windows 2000, it is common for there to be two Administrator users defined: • A local Administrator user. • A <DOMAIN_NAME>\Administrator user. These Administrators can have different passwords and privileges.
	Possible Solution:	Either administrator can be the "right" one as long as that user is a member of the local Administrators group *and* has the proper file permissions. **Note** Adding the user to the Administrators group will probably fix file permissions, too.
During installation, a "Provider unavailable exception" error appears after the Application Server has been installed and immediately after the reboot. (This might also happen if there is a change in Network Service.) Also, you might see the following error appear during installation or when you try to access Application Administration: "com.cisco.wfframework.repository.ProviderUnavail-ableException: (80004005)"	*Possible Cause:*	The Application Server machine is not connected to the VoIP LAN. This machine must be connected to the network prior to installation. To verify that the Application Server is not connected to the VoIP LAN, try pinging another machine that this Application Server should communicate with, such as the ICM. Do the following: 1. From a command line window, enter: **ping <***ip address of the other machine***>**
	Possible Solution:	Connect the Application Server to the LAN. If this problem occurred during installation, you may be required to uninstall the ISN (using add/remove programs) and reinstall the Application Server (along with any other components that you want).
	Possible Cause:	The DC Directory Service might not be running. To verify this, do the following: 1. Select **Start > Program Files > Cisco Internet Service Node > Service Control.** 2. Select the All checkbox on the dialog box. All Windows 2000 services installed on the machine display. 3. Verify that the DC Directory Service is running.
	Possible Solution:	Do the following: 1. If the DC Directory Server service exists but its State is not RUNNING, click **Start**. 2. If the DC Directory Server service does not exist, then the Application Server was either not installed properly or a portion or ISN program was removed. Uninstall the Internet Service Node using Add/Remove programs and reinstall ISN. Please refer to the Uninstalling ISN Components section of this guide.

Table 2-2 Troubleshooting (continued)

Symptom	Possible Cause and Solution	
The DC Directory Service will not start.	*Possible Cause:*	If you change the password of the Windows user account that was specified in the ISN installation, you also need to change the password for the DC Directory.
	Possible Solution:	Do the following: 1. From Windows Services, double-click **DC Directory Server**. 2. Select the **Log On** Properties tab. 3. Specify the name and password to use when starting the DC Directory Service. 4. Click *OK*.
After installation, as you open the Application Server, the following error message appears in Application Server logs: "javax.naming. CommunicationException: nabu11:8404 [Root Exception is java.net.Connect Exception:Connection Refused]"	*Possible Cause:*	The DC Directory Service was not installed properly.
	Possible Solution:	Uninstall the ISN and try the installation again.
During Application Server configuration setup or on Application Server startup the following error message appears: "javax.naming. CommunicationException: computer_name:8404 [Root Exception is java.net. ConnectException:ConnectionRefused]" error message.	*Possible Cause:*	DC Directory is running on an account other than LocalSystem.
	Possible Solution:	Reinstall the ISN using the proper Windows 2000 administrator account. (For more information, see the ISN Installation and Configuration section at the beginning of this chapter.)
	Possible Cause:	Files are missing under c:\dcdsrvr due to an incomplete install or uninstall.
	Possible Solution:	Reinstall the ISN using the proper Windows 2000 administrator account. If necessary, contact the Cisco Technical Assistance Center to clean up the machine before reinstalling ISN.
While trying to uninstall ISN, a dialog box appears saying that a file is in use and the software cannot be uninstalled.	*Possible Cause:*	Voice Browser, Alarm Forwarder, SDDSN, and dumplog use the files msgs2.dll, Icrmsgs.dll, cat2.dll, Icrcat.dll, and sometimes, the filter files appl2.flt, custvis2.flt, object2.flt, and primpos2.flt. If you try to uninstall VB, AS, or SDDSN while one of the other processes is using these files, the Uninstall procedure will not be able to remove them.
	Possible Solution:	Before running Uninstall, make sure that: • All ISN services are stopped (this eliminates Voice Browser and Alarm Forwarder as possible sources). • Close ICM Service Control • dumplog is not running. • If you are uninstalling ISN from an SDDSN machine, the SDDSN services are stopped. • You close all file accessing programs (such as Microsoft Word or Windows Explorer).

Table 2-2 Troubleshooting (continued)

Symptom	Possible Cause and Solution	
An "Inspect" error occurs during SDDSN installation.	*Possible Cause:*	The SDDSN installation failed.
	Possible Solution:	Do the following: 1. Reboot the system. 2. Uninstall the ISN software. 3. Reboot the system. 4. Install the ISN software with SDDSN again. 5. Reboot the system. **Note** If the ISN software still did not install correctly, contact Cisco Customer Support.
After an Application Server install and reboot, you see the following error: "There was an error. Error Description: ActiveX component can't create object."	*Possible Cause:*	The previous Application Server was uninstalled, and then the computer was not rebooted before the next AS install.
	Possible Solution:	You must reboot the computer after each AS install and uninstall.

Symbols

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