



Avaya Integrated Management Release 5.0

Enterprise Network Management with
IP Office Manager
Quick Start

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<http://www.avaya.com/support>

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Chapter 1: Introduction

Purpose

This book describes how to install and configure the Avaya Integrated Management, Enterprise Network Management offer for users who have only Avaya IP Office devices.

Intended Audience

This book is written for system administrators who are responsible for

- installing software on Windows servers and clients
 - managing Avaya IP Office devices
-

Conventions Used in This Book

The following typographical conventions are used:

- **Bold** type is used to indicate information that you type, buttons in a window, and the **Enter** key on the keyboard. It is also used for emphasis.
 - `Courier` font is used for any information that the computer screen displays.
 - Arrows indicate options that you select from cascading menus; for example, “Select File > Open” means choose the “Open” option from the “File” menu.
-

Support Resources

Avaya provides a variety of planning, consulting, and technical services. The following sections describe the resources and services that are available.

Avaya Technology and Consulting (ATAC)

Avaya Technology and Consulting (ATAC) works with client teams to develop detailed solutions for connectivity to Avaya Communication Manager solutions. The ATAC also designs network configurations.

Communications, Solutions, and Integration (CSI) Group of Software Services

Avaya Communications, Solutions, and Integration (CSI) Group of Software Services offers customers the following services:

- Platform readiness verification
- Remote implementation and installation
- Network management server configuration
- Customer acceptance verification
- Custom on-site services

The CSI Group consists of the following two teams:

- **Converged Solutions Implementation Engineering**

The Converged Solutions Implementation Engineering (CSIE) team implements multi-site media gateway (G350/G450/G650/G700) deployment projects for both voice and data design. The overall direction of the CSIE team is to bring the correct methodology to these complex deployments that span various regions and to provide continuity to the overall project from the voice and data implementation standpoint.

- **Data Network Implementation Engineering (formerly RNIS)**

The Data Network Implementation Engineering team implements and/or upgrades existing or new data networks. This team analyzes the customer's network design requirements and performance expectations, and then creates the hardware and software installation specification used to implement data devices including Cajun, VPN, Wireless LAN, Secure Gateways, Extreme, and multi-vendor data equipment.

The CSI Group provides support on a contract basis. You can purchase various implementation offers from the CSI Group in Tampa, Florida. See [Table 1: Customer-Accessible Resources](#) on page 8 for contact information.

Avaya Global Services Delivery (GSD)

Avaya Global Services Delivery (GSD) provides support to the Avaya Integrated Management client teams, field technicians, and customers. GSD will bill customers for support on a time and materials basis if the following conditions exist:

- Customers do not provide remote access.
- Customers do not have a current maintenance agreement.
- Customers do not procure and install the required systems and software as defined in the Integrated Management Services Support Plan.
- Customers request support that is outside the purchase agreement.

GSD does not support hardware or software that customers purchase from third-party vendors.

Avaya Global Technical Services

Avaya Global Technical Services answers customer calls about products in Avaya Integrated Management. They will either answer your questions directly or connect you with an associate who can answer questions about the products.

Customized Management Solutions for Avaya Integrated Management

The Integrated Management Product Team understands customer's needs and is focused on customer satisfaction. See [Table 1: Customer-Accessible Resources](#) on page 8 for contact information. The Product Team will assist customers with Avaya Integrated Management projects and will provide:

- **Project Management** — An Integrated Management project person will work with the customer to access configuration and customization requirements for any or all applications within each Avaya Integrated Management offer. If custom work is required, the evaluation will include a proposed statement of work and price. Note that this offer is *not* intended to provide installation for customers that choose to implement Integrated Management applications using Avaya Services or third-party implementation services.
- **Training** — Basic training can be performed remotely using an interactive medium to display the applications and a conference bridge for audio. On-site training can be customized to meet the customer's needs. Customized training will focus on application functionality that is relevant to the customer and provide focused knowledge transfer to facilitate application-specific training.

Avaya Contact Information

[Table 1](#) and [Table 2](#) provide contact information that you may use if you need assistance during the process of installing and setting up Avaya Integrated Management. To access the links in [Table 2](#), you must be able to access the Avaya intranet.

Table 1: Customer-Accessible Resources

Resource	Contact Information
Avaya Support Center	http://www.avaya.com/support
Avaya Global Technical Services	+1 800 242-2121, extension 15921
Communications, Solutions, and Integration (CSI) Group of Software Services	+1 800 730-9108, prompt 3
Integrated Management Product Team	Send email to: AIMtraining@avaya.com
Toll Fraud Intervention	+1 800 643-2353, prompt 1

Table 2: Avaya Internal Resources

Resource	Contact Information
Avaya System Management Support	http://aem-support.dr.avaya.com
Avaya Technology and Consulting (ATAC)	+1 888 297-4700, prompt 2,6 http://forum.avaya.com (requires a password)
Communications, Solutions, and Integration (CSI) Group of Software Services	http://associate2.avaya.com/sales_market/products/data-implementation-services/
Integrated Management Services Support Plan	http://associate2.avaya.com/solution/support_plans/#Enterprise

Product Documentation

The latest version of Avaya Integrated Management product documentation, including this book, is available from the Avaya Support Web Site. To view or download these books from the Web, you must have access to the Internet, an Internet browser, and Adobe Reader. Adobe Reader 7.0 is provided on the Enterprise Network Management CD and is also available from <http://www.adobe.com>. See [How to Access Books on the Web](#) for instructions on how to view or download these books.

How to Access Books on the Web

To view or download books from the Avaya Support Web Site, follow these steps:

1. Access <http://www.avaya.com/support>.
2. Click **FIND DOCUMENTATION and TECHNICAL INFORMATION by PRODUCT NAME**.
3. Click the letter **I** in the alphabet listing.
4. Locate the Integrated Management product or offer name and click the corresponding link.
5. Click **View all documents** to display a list of available books for that product or offer.

Chapter 2: Overview

Enterprise Network Management with IP Office Manager

The Avaya Integrated Management Release 5.0 Enterprise Network Management offer allows you to administer and manage networks that contain Avaya IP Office systems, Avaya Communication Manager systems, and Avaya converged devices (such as gateways). This offer provides a complete converged solution that helps you manage your network through a common web-based user interface. The Network Management Console with System View provides the ability to see your whole voice system structure and hierarchy.

Note:

This document describes how to install and configure Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office Manager on networks that contain only Avaya IP Office devices. For instructions on how to install this offer on networks that also contain Avaya Communication Manager systems and Avaya converged devices, see the *Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office Manager Installation and Upgrade*, document number 14-601398.

The Enterprise Network Management CD contains the following applications that you will use to manage Avaya IP Office devices:

- Avaya Network Management Console with System View
- Avaya Secure Access Administration
- Avaya Software Update Manager
- Avaya IP Office Manager Release 6.1
- Avaya Provisioning and Installation Manager for IP Office
- COPSSH SCP Server (installed so that Avaya Software Update Manager can use this SCP server for secure file transfer)
- Avaya Integrated Management Launch Page (automatically installed when any Avaya Integrated Management application is installed)

Note:

Avaya Network Management applications do not support devices that use Network Address Translation (NAT) addresses. Although Avaya Network Management Console may detect devices that are configured using NAT, some Network Management framework features are not available. However, IP Office devices behind a NAT server will be supported if the IP Office device is the only device that can access the network and be reachable from the network.

For a full description of the applications provided in the Enterprise Network Management offer, see the *Avaya Integrated Management Release 5.0 Overview*, document number 14-601718.

Pre-Installation Tasks

Before installing Avaya Integrated Management products on the server, you must complete the following pre-installation tasks.

Note:

It is important to perform these tasks in the order provided to ensure the correct version of each application is installed.

1. Check the minimum hardware and software requirements for the following.
 - Windows server (see [Windows Server Requirements](#) on page 17).
 - Windows client PC (see [Windows Client PC Requirements](#) on page 19).
2. For upgrade installations, check that all previous sequential upgrades and/or major releases of Avaya Integrated Management products were installed before installing this release. If the wizard detects a software upgrade that is not sequential, the wizard will stop and display a message to install the skipped releases. The wizard will then abort the installation.
3. Uninstall Release 3.2 or earlier of the IP Office Administration Suite from the Windows server. If the installation wizard detects that the IP Office Administration Suite Release 3.2 or earlier is installed on the server, the wizard will abort the installation.
4. Carefully review *Avaya Integrated Management Release 5.0 Implementation Guidelines*, document number 14-601823. This document is available from the Avaya Support Web Site. (See [How to Access Books on the Web](#) on page 9.) This document describes server configuration requirements and provides pre-installation forms that must be completed before you begin installing the Avaya Integrated Management products. The pre-installation forms contain information that you will need to install the products, such as IP addresses, server domain names, and port addresses.

5. If you want to access other applications from the Avaya Integrated Management Launch Page, you will need the IP addresses of the servers on which the following optional applications reside:

Note:

If there are only IP Office systems in your network, you do not need to know the IP addresses of these applications. These applications are relevant only if there are Avaya Communication Manager systems in your network.

- Avaya Fault and Performance Manager
 - Avaya MultiSite Administration
 - Avaya Integrated Management Database
 - Avaya VoIP Monitoring Manager
 - Avaya SIP Enablement Services
 - Motorola NSM
 - Avaya easy Management
 - Message Networking
 - Modular Messaging
 - Polycom GMS
 - Extreme EpiCenter
6. Carefully review this entire book before you start the installations on the servers and client PCs.

Note:

If you are installing the Network Management applications on a Windows 2003 server, ensure that the browser security settings are set to allow active scripting. See [Ensure Browser Settings Allow Active Scripting](#) on page 14.

Ensure Browser Settings Allow Active Scripting

If you are installing Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office Manager on a Windows 2003 server, be sure the server's browser security settings are set to allow active scripting. Active scripting must be enabled in order for all components in the Provisioning and Installation Manager for IP Office graphical user interface (GUI) to appear when you launch the application.

To ensure browser settings are set to allow active scripting, follow these steps:

1. From the toolbar In your browser window, select **Tools > Internet Options**.
2. Click the **Security** tab, and then click the **Custom Level** button.
3. Scroll down to **Scripting**, and ensure **Active Scripting** is enabled.

Chapter 3: Installing Enterprise Network Management

Overview

This chapter provides:

- the minimum hardware requirements for a Windows server
- the minimum hardware requirements for a Windows client PC (if you want to use Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office remotely instead of sitting at the Windows server)
- the procedure to install Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office onto a Windows server.

Windows Server Requirements

[Table 3](#) provides the minimum requirements for a Windows server.

Table 3: Microsoft Windows Server Minimum Requirements

Component	Required	Comments
Operating System	<p>Microsoft Windows 2000 server with Service Pack 4, Microsoft Windows XP Professional with Service Pack 2, Microsoft Windows 2003 Standard Edition server with Service Pack 2, Microsoft Windows 2003 Enterprise Edition server with Service Pack 2, Microsoft Windows Vista Business (32-bit and 64-bit editions), or Microsoft Windows Vista Enterprise (32-bit and 64-bit editions)</p> <p>NOTE: You can install Enterprise Network Management on VMWare running one of the supported operating systems.</p>	<p>Only English operating systems are supported.</p> <p>Enterprise Network Management cannot be installed on the same Windows server as VoIP Monitoring Manager.</p>
Processor	3.0 GHz Pentium® 4	A maximum of two processors is supported.
Hard Drive	40 GB	
Memory	2.0 GB RAM	
Network Connectivity	TCP/IP 100 Mbit Network Card	Only one network interface is supported. Dual network interface cards (NICs) or additional software network interfaces, such as a VPN interface, are not supported.
Modem	56K modem for remote access	
CD-ROM Drive		Required for installation.
Monitor	SVGA 1024 X 768 display	
		1 of 2

Table 3: Microsoft Windows Server Minimum Requirements (continued)

Component	Required	Comments
SNMP Agent	The Simple Network Management Protocol (SNMP) Agent is the Windows Service that runs on your computer. It is provided with the Windows operating system CD.	
Extra Software	Anti-virus software pcAnywhere	Required for Avaya support. pcAnywhere is required for remote access by Avaya Services.
Web Browser	Internet Explorer 6.0 with Service Pack 1 or Internet Explorer 7.0	Required for access to the Integrated Management Launch Page and web-based clients.
2 of 2		

Windows Client PC Requirements

Once Enterprise Network Management is installed on the Windows server, you can access the applications from either the Windows server or a Windows client (remote) PC using a web browser. [Table 4](#) provides the requirements for the client PC.

Table 4: Microsoft Windows Client PC Minimum Requirements

Component	Required	Comments
Operating system	Microsoft Windows 2000 Server with Service Pack 4, Microsoft Windows 2000 Professional with Service Pack 4 Microsoft Windows XP Professional with Service Pack 2, Microsoft Windows 2003 Standard Edition server with Service Pack 2, Microsoft Windows 2003 Enterprise Edition server with Service Pack 2, Microsoft Windows Vista Business (32-bit and 64-bit editions), or Microsoft Windows Vista Enterprise (32-bit and 64-bit editions)	
Processor	1.5 GHz Pentium	
Hard Drive	40 GB	Required to install all of the client components.
Memory	1 GB RAM For Microsoft Windows Vista Business or Vista Enterprise operating systems, the minimum memory requirement is 2 GB RAM.	
Monitor	SVGA 1024 X 768 display	
Network Connectivity	TCP/IP 10/100 Network Card	
Modem	56K Modem	May be required for remote access to the client PC.
CD-ROM Drive		Required for installation.
1 of 2		

Table 4: Microsoft Windows Client PC Minimum Requirements (continued)

Component	Required	Comments
Other Software	Internet Explorer 6.0 with Service Pack 1 or Internet Explorer 7.0 and Java Runtime Environment 1.5.0_11 (Java Runtime Environment 1.5.0_11 is provided.)	Required to access the Integrated Management Launch Page and web-based clients.
IP Office Manager	Release 6.1	Required to manage IP Office systems.
		2 of 2

Installing the Software

Use this procedure to install the Enterprise Network Management with IP Office applications on a Windows server. Review the [Pre-Installation Tasks](#) on page 12 before beginning the installation.

Note:

During the installation, COPSSH SCP server will be installed. If OpenSSH server is currently installed on the server, a dialog box will appear and prompt you to uninstall OpenSSH. If you click the **Yes** button in this dialog box, the installer will uninstall OpenSSH and then install COPSSH SCP server.

To install the software:

1. Ask all users to log off the system.
2. Close all open windows and applications.
3. Make sure that IP Office Administration Suite Release 3.2 or earlier is not installed on the server. If it is, uninstall it.
4. If you have IP Office Administration Suite Release 4.0, install it.
5. Insert the **Avaya Integrated Management Network Management 5.0** CD into the CD-ROM drive.

The Avaya Integrated Management Network Management window appears. It provides the main menu.

Note:

Install Acrobat Reader if it is not already installed on the computer.

6. Click **Install Network Management**.

The Welcome dialog box appears.

7. Click the **Next** button.

The License Agreement dialog box appears.

8. Read the license agreement.

Note:

You must accept the terms of the license agreement in order to continue with the installation.

9. If you accept the license agreement, click the **I accept the terms of the license agreement** option button, and then click the **Next** button.

The Choose Destination Location dialog box appears. By default, the files will be installed in **c:\Program Files\Avaya**.

10. If you installed the IP Office Administration Suite, click the **Change** button, specify the folder where you installed the IP Office Administration Suite, and then click the **OK** button.

Note:

It is important that the destination folder specified here be the same as the destination folder specified for the IP Office Administration Suite installation (if installed).

11. Click the **Next** button.

The Setup Type dialog box appears.

12. Click the **Avaya IP Office Only** option button, and then click the **Next** button.

Depending on your configuration, one of the following dialog boxes appears:

- If IIS (Microsoft's Web Server) is detected on the server, the IIS Installation Detected dialog box appears. Enter the new port number on which IIS should run, and then click the **Next** button. By default, the new port is 8989. The Apache Server Information dialog box appears. Go to Step 13.
- If IIS is not detected on the server, the Apache Server Information dialog box appears. Go to Step 13.

13. In the Domain box, enter the domain,

14. In the Server box, enter the name of the server on which you are installing this software.

15. In the Admin box, enter the email address of the person to whom the system will send email messages if problems occur during the Apache installation.

16. Click the **Next** button.

The Enter IP Addresses dialog box appears.

17. Click the **Next** button.

The Enter IP Addresses dialog box appears.

18. Click the **Next** button.

The Enter IP Addresses dialog box appears.

19. Click the **Next** button.

The Enter IP Addresses dialog box appears.

20. Click the **Next** button.

The Enter IP Address dialog box appears.

21. Click the **Next** button.

The WebLM Port Information dialog box appears.

Installing Enterprise Network Management

22. Enter the port number that you want WebLM to use, and then click the **Next** button.

The SCP Server User Creation dialog box appears. You will use this dialog box to create a Windows user on the SCP server. Avaya Software Update Manager will use this Windows user to exchange files with devices in your network. This information is not used for IP Office devices.

By default, the installer generates a user name and password automatically. You can change the user name and password.

Note:

Be sure to write down the user name and password.

23. If you want to change the automatically generated user name for SCP, enter the new user name in the Username box.
24. If you want to change the automatically generated password for SCP, enter the new password in the Password box. The password must consist of 8 to 16 alphanumeric characters and must contain at least one uppercase character, one lowercase character, and one numeric character.
25. Click the **Next** button.

A message box appears prompting you to write down the SCP username and password.

26. Click the **OK** button.

The Administrator Password dialog box appears.

27. In the Password box, enter the password for the Administrator login. You will use this password to log into the Avaya Integrated Management applications (such as Avaya Network Management Console, Avaya Software Update Manager, and Avaya Secure Access Administration).

This password must consist of at least 8 characters and must meet three of the following criteria:

- Contain at least one uppercase letter.
- Contain at least one lowercase letter.
- Contain at least one number.
- Contain at least one non-alphanumeric character (for example, #, %, or ^).

28. Re-enter the password in the Confirm Password box, and then click the **Next** button.

One of the following appears:

- The Start Copying Files dialog box appears. Go to step [30](#).
- If the Windows firewall is activated, the Modifying Firewall dialog box appears. Go to step [29](#).

29. Perform one of the following steps:

- If you want the installation program to modify the your firewall settings, click **Let Setup modify the Firewall's settings**, and then click the **Next** button.
- If you do not want to make any changes to your firewall settings, click **Do not make any changes**, and then click the **Next** button.

The Start Copying Files dialog box appears.

30. Review the setup summary, and then click the **Next** button.

A message box appears showing the status of the installation. When the installation is complete, the welcome dialog box for the Avaya Enterprise Network Management Configuration Wizard appears.

31. Click the **Next** button.

The Configure CM Servers dialog box appears.

32. Click the **Next** button.

The Configure Global SNMP Parameters dialog box appears.

33. Click the **Next** button.

The Configure Network Subnet to Discover dialog box appears.

34. Click the **Next** button.

The Configuration Complete dialog box appears.

35. Click the **Finish** button.

The InstallShield Wizard Complete dialog box appears.

36. Remove the CD from the CD-ROM drive.

37. Click the **Yes, I want to restart my computer now** option button, and then click the **Finish** button.

The computer reboots, and the network discovery begins automatically when the computer restarts. A dialog box appears stating that network discovery completed.

38. Ignore this dialog box and click the **Close** button.

Note:

Regularly check the Avaya Support Web Site for software updates.

Go to [Chapter 5: Preparing Your IP Office Network for Use with Enterprise Network Management](#) on page 31 to configure the software.

Opening the Firewall Between the Network Management Console Server and a Remote Client PC

You are able to access the Network Management Console server from a remote client PC using an Internet browser. When there is a firewall between the Network Management Console server and the remote client PC, you must ensure that the ports required for the remote session are open.

The client and server software communicate using Java Remote Method Invocation (RMI). For initial access to the server, the remote client PC must open an HTTP session on port 80 of the server. After the HTTP session is established, the client and server open bi-directional RMI sessions to enable interaction between Java applets running on the client and server.

The ports that must be open for the bi-directional RMI sessions are listed in the **cv.prop** file, which is located in the installation directory. The default installation directory is **C:\Program Files\Avaya\Network Management\private\gen** on the server.

A sample **cv.prop** file is shown below. Note that the contents of the sample file may be different than that on your system. Review the **cv.prop** file on your server to determine the exact list of ports for your installation. RMI sessions work over TCP connections and the ports should be open for bi-directional traffic.

Figure 1: Sample cv.prop File

```
#web.server.protocol=http
#web.server.port=80

cv.jum.rmi.port=2843
nm.web.protocol=http
windows.snmptrap.port=162
.rmiport.min=2900
.rmiport.max=2950
CMutil.socket.port=1980
CMutil.process.max=2

//cv.trap.port=2400
cv.launcher.port=2401
llm.clients.port=2402
fileaccess.rmi.port=2403
userver.rmi.port=2404
llm.servers.port=2405
userver.socket.port=2406
service.smuserdb.port=2407
service.snmpinfo.port=2408
smon.rmi.port=2409
nmlogin.local.port=2410
nmlogin.remote.port=2411
nmlogin.rmi.port=2412
llm.fileaccess.port=2413
cv.jre = ..\\jre\\
proxy.host=
proxy.port=
cv.jum.rmi.ip=149.49.138.142
fileaccess.rmi.ip=149.49.138.142
smServer.rmi.port=2500

amServer.rmi.port=2330

amProcess.rmi.port=2331

llm.amClient.port=2332

trapManipServer.rmi.port=6169
```

Note:

In order for changes to the **cv.prop** file to take effect, you must restart Avaya Services.

Uninstalling the Server Software

Use this procedure to uninstall the Network Management applications and device managers from the Windows server.

1. Select **Start > Control Panel**.
The Control Panel window appears.
2. Click on **Add or Remove Programs**.
The Add or Remove Programs window appears.
3. Click on **Avaya Integrated Management Network Management**.
4. Click the **Remove** button.
A dialog box appears prompting you to confirm that you want to remove the applications.
5. Click the **Yes** button.
The Modifying Firewall dialog box appears.
6. Select the appropriate option button, and then click the **Next** button.
You are prompted to uninstall Apache.
7. Click the **Yes** button.
If IIS is installed, you are prompted to set IIS back to port 80. Click the **Yes** button.
You are prompted to uninstall PostgreSQL.
8. Click the **Yes** button.
The status bar appears while files are uninstalled. When finished, the Uninstall Complete dialog box appears.
9. Click the **Yes, I want to restart my computer now** option button, and then click the **Finish** button.

Chapter 4: Installing IP Office Manager Release 6.1

Overview

When Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office is installed onto a Windows server, Avaya IP Office Manager is installed automatically on that server. When you are working on the server, you can manage IP Office systems. However, if you want to manage IP Office systems remotely from a client PC, you must install IP Office Manager on that PC. This chapter provides the procedure to install Avaya IP Office Manager Release 6.1 onto a client PC.

Note:

You must use the version of IP Office Manager Release 6.1 that is provided on the Avaya Integrated Management Launch page.

PC Requirements

[Table 5](#) provides the requirements for a PC.

Table 5: PC Requirements

Component	Required	Comments
Operating system	Microsoft Windows 2000 Server, Microsoft Windows 2000 Professional, Microsoft Windows XP Professional, or Microsoft Windows 2003 Server	
Processor	1.5 GHz Pentium [®] 4 or equivalent	
Hard Drive	40 GB	Required to install all of the components.
Memory	512 MB RAM	
Monitor	SVGA 1024 X 768 display	
Network Connectivity	TCP/IP 10/100 Network Card	
Web Browser	Internet Explorer 6.0	Required to access the Integrated Management Launch Page and web-based clients.

Installing the Software

Use this procedure to install Avaya IP Office Manager Release 6.1 onto a client PC.

1. Close all open windows and applications.
2. Make sure that IP Office Administration Suite Release 3.2 or earlier is not installed on the PC. If it is, uninstall it.
3. Open your web browser and go to the Avaya Integrated Management Launch Products page.
4. Click on **Avaya IP Office Manager 6.1**.
5. Click the **Save** button.
6. Save the file **IPOfficeManager.exe** to your PC.
7. After the installer is downloaded to your PC, double-click on the file **IPOfficeManager.exe**.

The Welcome dialog box appears.

Note:

If Microsoft .NET Framework 2.0 is not installed on the PC, the Microsoft .NET Framework 2.0 Setup dialog box appears. Follow the prompts to install this software. After Microsoft .NET Framework 2.0 is installed, click the **Finish** button. The Welcome dialog box appears. Go to Step 8.

8. Click the **Next** button.
9. In the User Name box, enter the name of the person who will be using this software.
10. In the Organization box, enter the appropriate information.
11. Perform one of the following steps:
 - If you want any user of this PC to be able to use Avaya IP Office Manager, click the **Anyone who uses this computer (all users)** option button.
 - If you only want the user specified in the User Name box to use Avaya IP Office Manager, click the **Only for me** option button.
12. Click the **Next** button.

The Destination Folder dialog box appears. By default, the files will be installed in **c:\Program Files\Avaya\IP Office**.

13. If you want to change the default folder, click the **Change** button, specify the folder where you want to install the software, and then click the **OK** button.

Installing IP Office Manager Release 6.1

14. Click the **Next** button.

The Custom Setup dialog box appears.

15. Click the **Next** button.

The Ready to Install the Program dialog box appears.

16. Click the **Install** button.

The software is installed. When the installation is complete, the InstallShield Wizard Completed message box appears.

17. If you want IP Office Manager to start automatically, click the **Launch IP Office Manager** check box.

18. Click the **Finish** button.

Chapter 5: Preparing Your IP Office Network for Use with Enterprise Network Management

Overview

This chapter describes the tasks you should perform after installing Avaya Enterprise Network Management with IP Office. Initial configuration consists of the following steps:

1. Enable SNMP for each IP Office device.
2. Add IP Office devices to Avaya Network Management Console.
3. Configure access parameters for IP Office devices.
4. Upgrade the IP Office devices using Avaya Software Update Manager.

Step 1: Enable SNMP on the IP Office Devices

Before you can use Avaya Network Management Console to discover the IP Office devices automatically in your network, you must configure the community string in IP Office Manager for each IP Office device in your network.

Note:

If you have IP Office Release 2.1 or earlier, go to Step 2. SNMP is not supported in these releases.

Using IP Office Manager, perform the following steps for each IP Office device:

- Configure the SNMP community string and set the port to 161.
- Enable trap destinations. Enter the IP address of the Windows server where Avaya Enterprise Network Management is installed, select all of the trap check boxes, set the port to 162, and configure the SNMP community string.

Step 2: Add IP Office Devices to Avaya Network Management Console

Use this procedure to populate all of the IP Office devices in your network in Avaya Network Management Console.

You can populate Avaya Network Management Console using the following methods:

- discover devices automatically
Use this method if your IP Office devices are accessible through the web and answer to SNMP.
- add devices manually
Use this method if you want to enter each IP Office device one at a time.
- import a CSV file
Use this method if your IP Office devices are accessible through the web, but do not answer to SNMP. (You can ping or access these devices via IP Office Manager.)

Discover Devices Automatically

Use this procedure if your IP Office devices are accessible through the web and answer to SNMP.

To discover IP Office devices automatically, perform the following steps:

1. Log into Network Management Console. See [Logging into Avaya Network Management Console](#) on page 43.
2. Select **Actions>IP Discovery**.
The Discovery window appears.
Note:
If **IP Discovery** is disabled, select **Actions>Get Write Permission**. After the Write Permission Request dialog box closes, repeat Step 2.
3. Select **Edit>Add**.
The Add New Subnet dialog box appears.
4. In the Subnet IP box, enter the IP address of the subnet you want to add.
5. In the Subnet Mask box, enter the subnet mask.
6. Click **Apply**.
7. Click **Close**.
8. Repeat Steps 3 through 7 to add more subnets. When finished, go to Step 9.

9. Select **Actions>Start Network Discovery**.

A progress bar appears displaying the progress of the discovery process. When the process is complete, the devices appear in the left panel.

Add Devices Manually

If your IP Office devices answer to SNMP and you want to discover them manually, perform the following steps:

1. Log into Network Management Console. See [Logging into Avaya Network Management Console](#) on page 43.
2. Select **File>New>Device**.
The Add Device dialog box appears. The Basic Information tab is selected.
3. Enter the parameters for the IP Office device.
4. Click the **SNMP Access** tab.
5. Enter the SNMP parameters for the IP Office device.
6. When finished, click **Apply**.
The device is added to the Network Map.
7. Click **Close**.
8. Repeat Steps 2 through 7 for each IP Office device you want to add.

Import a CSV File

If your IP Office devices are accessible through the web, but do not answer to SNMP, you must import a CSV file into Avaya Network Management Console. This CSV file must contain the following information for each IP Office device in your network:

- type
- IP address
- subnet mask
- MAC address
- name
- read community string
- write community string
- timeout interval
- retry interval

[Table 6](#) describes the fields in each record of the CSV file.

Table 6: CSV Import File Fields

Field	Description
Type	The sysObjectID of the IP Office device. Table 7 shows the sysObjectIDs of the supported IP Office devices.
IP	The IP address of the IP Office device.
Mask	The IP subnet mask of the IP Office device.
MAC	The MAC address of the IP Office device.
Name	The name of the IP Office device.
Read Community	The read community string of the IP Office device.
Write Community	The write community string of the IP Office device.
Timeout	The number of milliseconds an application will poll the IP Office device without receiving a response before timing out. The recommended value is 5000 ms.
Retry	The number of times an application will poll the IP Office device without receiving a response before timing out. The recommended value is 2.

Table 7: sysObjectIDs of Supported IP Office Devices

Device	Symbol ID	SysObjectID
IP406-V2	IPOFFICE_406V2	1.3.6.1.4.1.6889.1.2.1.7.3
Small Office 2T+4A	SMALL_OFFICE_4A	1.3.6.1.4.1.6889.1.2.1.5.1
Small Office 4T+8A	SMALL_OFFICE_8A	1.3.6.1.4.1.6889.1.2.1.5.2
Small Office 4T+4A+8DS	SMALL_OFFICE_8D	1.3.6.1.4.1.6889.1.2.1.5.4
IP412	IPOFFICE_412	1.3.6.1.4.1.6889.1.2.1.4.1

[Figure 2](#) shows a sample CSV file that contains 15 IP Office devices.

Figure 2: Sample CSV File

```
#####  
# Avaya Map Export File  
# Map name: default.nrf  
# Created: Mar 7 2007 6:05:35 PM  
# Copyright 2007 Avaya Inc. All Rights Reserved.  
#####  
# Type,IP,Mask,MAC,Name,Read Community,Write Community,Timeout,Retry  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.101,255.255.255.0,00:e0:07:02:1e:f1,ITC_IPO_UNIT101,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.99,255.255.255.0,00:e0:07:02:1e:f2,ITC_IPO_UNIT99,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.5.4,149.49.78.97,255.255.255.0,00:e0:07:02:61:ba,ETC_IPO_UNIT97,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.5.4,149.49.78.93,255.255.255.0,00:e0:07:01:fc:2e,ITC_IPO_UNIT93,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.4.1,149.49.78.92,255.255.255.0,00:e0:07:02:60:df,ETC_IPO_UNIT92,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.5.4,149.49.78.91,255.255.255.0,00:e0:07:02:68:0b,ETC_IPO_UNIT91,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.4.1,149.49.78.130,255.255.255.0,00:e0:07:02:60:d4,ITC_IPO_UNIT130,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.224,255.255.255.0,00:e0:07:02:32:38,ITC_IPO_UNIT224,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.223,255.255.255.0,00:e0:07:02:1e:ef,ETC_IPO_UNIT223,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.222,255.255.255.0,00:e0:07:02:2b:69,ITC_IPO_UNIT222,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.124,255.255.255.0,00:e0:07:02:33:35,ITC_IPO_UNIT124,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.122,255.255.255.0,00:e0:07:02:2b:b4,ETC_IPO_UNIT122,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.13,255.255.255.0,00:e0:07:02:33:41,ITC_IPO_UNIT13,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.114,255.255.255.0,00:e0:07:02:33:39,ITC_IPO_UNIT114,public,public,5000,2  
.1.3.6.1.4.1.6889.1.2.1.7.3,149.49.78.112,255.255.255.0,00:e0:07:02:32:3a,ITC_IPO_UNIT112,public,public,5000,2
```

To import a CSV file, perform the following steps:

1. Log into Network Management Console. See [Logging into Avaya Network Management Console](#) on page 43.
2. Select **File>Import map**.
The Import Map dialog box appears.
3. Select the CSV file you want to import, and then click **Open**.

The devices in the CSV file are imported into the current Network Map. The devices appear in the Device Type View and the Subnet View.

Step 3: Configure the Access Parameters for IP Office Devices

You must provide user names and passwords to the Avaya Enterprise Network Management server to access IP Office devices. These user names and passwords must match the security administrator name and password in the IP Office device.

In this section, you will:

1. Create a new IP Office User in Avaya Secure Access Administration.

This IP Office user and password must match the IP Office security administrator name and password. There can be only one IP Office user per IP Office device in Avaya Secure Access Administration. For more information about IP Office security administration, see the IP Office documentation.

Once you assign an Avaya Secure Access Administration IP Office User, Avaya Secure Access Administration will create a user (AIMAdmin) who has complete administration capabilities.

2. Assign the IP Office User to IP Office devices.

The steps you perform depend on the firmware release of the IP Office device.

IP Office Devices Running Firmware Earlier Than 4.0.307

If any of the IP Office devices are running firmware earlier than 4.0.307, perform the procedures in this section.

Step 1: Create Users

Perform the following steps:

1. From the Avaya Network Management Console window, select **Actions>Avaya Secure Access Administration**.

The Avaya Secure Access Administration window appears.

2. Select **Action>New>New IP Office User**.

The New IP Office User dialog box appears.

3. In the Name box, enter the name for the IP Office User. This user and password will be used only after you upgrade the IP Office device to version 4.0.307 or later.
4. In the Password box, enter the password for this user. This password must match the password of the Security Administrator as currently configured in the IP Office system. This password will only be used after you upgrade.

Step 3: Configure the Access Parameters for IP Office Devices

5. In the Confirm Password box, reenter the password for this user.
6. In the TFTP Password box, enter the TFTP password for the IP Office device being administered. This password must match the system password for the IP Office device. This password will be used to upgrade the IP Office device.
7. In the Confirm TFTP Password box, reenter the TFTP password.
8. Click **Apply**.
The Secure Access Administration IP Office User is added.
9. Click **Close**.

Step 2: Assign Users

In this section, you will use Avaya Secure Access Administration to map the IP Office system password to the IP Office devices.

Perform the following steps:

1. Select **Action>Assign Users to IP Office Devices**.

The Assign IP Office Security Administration dialog box appears.

2. Select all of the IP Office devices running firmware earlier than 4.0.307.
3. From the User Name box, select the user you just created in the previous section.
4. From the Select Action Type box, select **Don't synchronize with devices**.



Important:

You must select **Don't synchronize with devices**.

5. Click **Apply**.
6. Click **Close**.
7. At this point, you must use Avaya Software Update Manager to upgrade your IP Office devices. Go to [Step 4: Upgrade the IP Office Devices Using Avaya Software Update Manager](#) on page 40. Avaya Software Update Manager will use the TFTP password for each IP Office device. After you upgrade your IP Office devices, go to [Step 8](#).
8. After you upgrade the IP Office devices with Avaya Software Update Manager, open Avaya Secure Access Administration.
9. Select **Action>Assign Users to IP Office Devices**.
The Assign IP Office Security Administration dialog box appears.
10. Select all of the IP Office devices that were running firmware earlier than 4.0.307.
11. From the User Name box, select the user you created in the previous section.
12. From the Select Action Type box, select **Apply All**.

13. Click **Apply**.

Avaya Secure Access Administration will try to contact the IP Office devices, change the TFTP password on each device, and define a service user called **AIMAdmin**.

Note:

The AIMAdmin password is common to all IP Office devices. You can change this password using **File>Options** in Avaya Secure Access Administration.

14. Click **Close**.
15. Close Avaya Secure Access Administration.

IP Office Devices Running Firmware 4.0.307 or Later

If any of the IP Office devices are running firmware 4.0.307 or later, perform the procedures in this section.

Step 1: Create Users

Perform the following steps:

1. From the Network Management Console window, select **Actions>Avaya Secure Access Administration**.
The Avaya Secure Access Administration window appears.
2. Select **Action>New>New IP Office User**.
The New IP Office User dialog box appears.
3. In the Name box, enter the name for the IP Office User. This name must match the name of the Security Administrator of the IP Office device to which this user will be assigned.
4. In the Password box, enter the password for this user. This password must match the password of the Security Administrator as currently configured in the IP Office system.
5. In the Confirm Password box, reenter the password for this user.
6. In the TFTP Password box, enter the TFTP password for the IP Office devices being administered. After the user is assigned to the IP Office device, Avaya Secure Access Administration will change the TFTP password. (The TFTP password is referred to as the System password in the IP Office device.)
7. In the Confirm TFTP Password box, reenter the TFTP password.
8. Click **Apply**.
The Secure Access Administration IP Office User is added.
9. Click **Close**.

Step 2: Assign Users to IP Office Devices

Perform the following steps:

1. Select **Action>Assign Users to IP Office Devices**.

The Assign IP Office Security Administration dialog box appears.

2. Select all of the IP Office devices running firmware 4.0.307 or later that you want to assign to an IP Office user.
3. From the User Name box, select the user you just created in the previous section.
4. From the Select Action Type box, select **Apply changes**.
5. Click **Apply**.

Avaya Secure Access Administration will try to contact the IP Office devices and change the TFTP password on each device and define a service user called **AIMAdmin**.

Note:

The AIMAdmin password is common to all IP Office devices. You can change this password from **File>Options** in Avaya Secure Access Administration.

6. Click **Close**.
7. Close Avaya Secure Access Administration.

Step 4: Upgrade the IP Office Devices Using Avaya Software Update Manager

In this section, you will start Avaya Software Update Manager and update all of the IP Office devices.



Important:

For Avaya Software Update Manager to update IP Office devices, the IP Office devices must be assigned to an IP Office user in Avaya Secure Access Administration.

Perform the following steps to upgrade the IP Office devices:

1. From the Avaya Network Management Console window, select **Tools>Avaya Software Update Manager**.

Avaya Software Update Manager automatically attempts to connect to the Avaya Support web site. If Avaya Software Update Manager connects to the Avaya Support web site, the Avaya Software Update Manager window appears and displays the Targets table in the Download View tab. The Targets Table displays a status icon for each managed device to indicate the status of the software currently running on the associated device. This status icon also indicates whether an upgrade or update is available. Go to Step [2](#).

If Avaya Software Update Manager does not connect to the Avaya Support web site, an error message box appears stating that the web site is unreachable. Click the **OK** button. You must configure the proxy server. Perform the following steps:

- a. Close Avaya Software Update Manager.
- b. Exit Avaya Network Management Console.
- c. Using Windows Explorer, right click on the file **cv.prop**, which is located in **C:\Program Files\Avaya\Network Management\private\gen**. Note that **C:\Program Files\Avaya\Network Management** is the default installation directory for Avaya Network Management.
cv.prop is the properties file that contains the Internet proxy server settings for Avaya Software Update Manager. By default, these settings are blank.
- d. Select **Open with Notepad**.
The Notepad window appears and displays the contents of the selected file.
- e. At the end of the line containing **proxy.host=**, enter the IP address or DNS name for the web proxy server.
- f. At the end of the line containing **proxy.port=**, enter the TCP listening port used by the web proxy server.
- g. Select **File>Save**.

Step 4: Upgrade the IP Office Devices Using Avaya Software Update Manager

h. Select **File>Exit**.

At this point, you must stop and restart the Avaya Network Management Server application for the changes to the properties file to take effect.

i. From the Start menu on the server, select **All Programs>Avaya>Network Management>Stop Avaya Network Management Server**.

j. From the Start menu on the server, select **All Programs>Avaya>Network>Start Avaya Network Management Server**.

k. Log into Avaya Network Management Console, and then go to Step [1](#).

2. Select **Actions>Download Targets Detection**.

The Download Targets Detection dialog box appears.

3. Select the **Detect using filter** option button.

4. In the Product Filter area, select the IP Office devices you want to update.

5. Click **OK**.

A warning dialog box appears.

6. Click **Continue**.

A message box appears stating that Avaya Software Update Manager will update the Download View table.

7. Click **OK**.

All of the current information (software version and firmware version) for the discovered devices in Avaya Network Management Console is displayed.

8. Select **Tools>Image Analyzer**.

Avaya Software Update Manager connects to the Avaya Support web site and compares the firmware on your IP Office devices with the current IP Office firmware available on the web site. Avaya Software Update Manager then displays a status icon in front of each IP Office device:

- If the icon is red, the device does not have the latest version of the firmware, and you do not have the latest version on your server.
- If the icon is yellow, the device does not have the latest version of the firmware, but you have the latest version on your server.
- If the icon is green, the device has the latest version of the firmware.
- If the icon is purple, the associated device is an expansion module that has the latest version of the firmware.

9. Select the IP Office devices that have red status icons.

10. Select **Tools>Retrieve From the Web**.

A dialog box appears.

Preparing Your IP Office Network for Use with Enterprise Network Management

11. Click **OK**.

The files are downloaded to your server.

12. Select **Tools>Image Analyzer**.

All of the red status icons will turn yellow, indicating that the latest firmware versions are now on your server.

13. Select the devices you want to update.

14. Select **Actions>Download Now**.

The selected IP Office devices are updated.

15. After all of the devices have been updated successfully (see the Current Version column), select **Tools>Image Analyzer**.

All of the status icons should be green or purple.

Go to [Chapter 6: Managing IP Office Devices](#) on page 45 to start managing the IP Office devices from Avaya Network Management Console.

Logging into Avaya Network Management Console

You can log into Avaya Network Management Console locally on the Windows server or remotely on a client PC using a web browser.

Note:

If you use a client PC, that PC must be able to access the Windows server and have Avaya IP Office Manager Release 6.1 installed if you want to administer IP Office devices. See the *Avaya Integrated Management Release 5.0 Enterprise Network Management with IP Office Manager Installation and Upgrade*, document number 14-601398, to install Avaya IP Office Manager Release 6.1 on a client PC.

To log into Avaya Network Management Console, perform one of the following steps:

- If you are logged into the server where the Avaya Integrated Management applications are installed, perform the following steps:
 - a. Double-click the Windows desktop shortcut to the Avaya Integrated Management Launch Products page.

The Avaya Integrated Management Launch Products page appears.

- b. Click the link for **Network Management Console**.

The Login dialog box appears. It prompts you for the user name and password you specified during installation.

- c. In the User Name box, enter your user name.
- d. In the Password box, enter your password, and click the **Login** button.

The Avaya Network Management Console window appears.

- If you are at a remote PC, perform the following steps:
 - a. Open Internet Explorer.
 - b. Enter the IP address of the server where the Avaya Integrated Management applications are installed, and then press **Enter**.

The Avaya Integrated Management Launch Products page appears.

- c. Click the link for **Network Management Console**.

The Login dialog box appears. It prompts you for the user name and password you specified during installation.

- d. In the User Name box, enter your user name.
- e. In the Password box, enter your password, and click the **Login** button.

The Avaya Network Management Console window appears.

Chapter 6: Managing IP Office Devices

Overview

This chapter provides procedures for managing your IP Office devices from Avaya Network Management Console.

Accessing IP Office Systems

Avaya Network Management Console shows the connected and registered endpoints associated with each of your IP Office devices. From the Avaya Network Management Console window, you can:

- view all ports in the network
- quickly locate a station by user name, extension, or IP address
- view the status of each device on your network.
- use Event Manager to view a historical log of all traps received from the devices on your network. You can also configure Event Manager to send you an email message, run a script, or play a WAV file when certain events occur.
- use Avaya Software Update Manager to retrieve the latest firmware versions from the Avaya Support web site and update the following devices in your network:
 - control units
 - expansion units
 - VCM and slide-in modules
 - license dongles

Using the Job Scheduler, you can set

- the devices for which you want Avaya Software Update Manager to retrieve the latest firmware version
- when you want Avaya Software Update Manager to retrieve the latest firmware version for the selected devices

You can launch IP Office Manager for a specific IP Office device by double-clicking on the associated IP Office icon on the map in the Avaya Network Management Console window.

Backing Up the Configurations of all the IP Office Devices

You should back up the configurations of all your IP Office devices before making any configuration changes.

To back up the configurations of all the IP Office devices, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click the **Device Profiles** folder in the left panel.

The Device Profiles page appears.

3. Click **Backup**.

The General dialog box appears. The Job Name box displays a default name for this back up job. You can change this name.

4. In the Notes box, enter any notes about this backup job.

5. Click **Next**.

The Device Filter dialog box appears. From this dialog box, you can specify whether you want to back up all devices or a subset of devices.

6. Select the **All devices** option button.

7. Click **Next**.

The Devices dialog box appears. The Available Devices list box shows all of the available devices.

8. Click **>>** to back up all the devices.

The selected devices appear in the Selected Devices box.

9. Click **Next**.

The Schedule dialog box appears. From this dialog box, you can set the back up to be performed now or at a later time.

10. Select the **Run now** option button, and then click **Next**.

The Summary dialog box appears.

11. Click **Next** to start the back up.

A progress dialog box appears. When the back up is complete, the Finish Up dialog box appears.

12. Click the **Finish** button.

13. Click the **Jobs** folder in the left panel to determine whether the back up was successful.

Working with Templates

You can create and use templates to manage and maintain branches that have similar configurations. With templates, you can make your changes in one file and then propagate this file to a group of branches.

Note:

To create templates, IP Office Manager must be installed on the PC you are using.

When you create a template, you can specify configuration parameters manually. You can create the following templates:

- **General**

General templates contain the following information:

- account codes
- time profiles
- firewall profiles
- directories
- automatic route selection (ARS)

- **Hardware**

Hardware templates contain the following information:

- hardware configuration (control unit and expansion modules)
- short codes
- system parameters (LAN/WAN IP addresses, SNMP configuration, alarm notifications, and basic telephony parameters)
- line/trunk settings
- E911
- extensions
- wireless parameters (Small Office only)

- **Auto Attendant**

Auto Attendant templates contain the following information:

- time profiles
- short codes
- incoming call routes

Managing IP Office Devices

- associations of WAV files from the Voice Files library to time profiles. Avaya Provisioning and Installation Manager for IP Office enables you to upload WAV files from PCs to the Voice Files library. (You manage the Voice Files library from Avaya Provisioning and Installation Manager for IP Office.)

- **Users**

Users templates contain the following information:

- users and extensions
- hunt groups
- time profiles
- firewall profiles
- incoming call routes
- user rights. User rights is a template within a template. With user rights, you can define classes of users and associate defaults for the following settings in each class:
 - short codes
 - basic telephony parameters
 - button programming
 - Phone Manager

Create a General Template

To create a General template, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **Templates** at the top of the window.

The Select Template Type wizard appears.

3. From the IPO Templates box, select the **IPO-General** option button, and then click **Next**.

The General dialog box appears.

4. In the Name box, enter the name for this template.

5. in the Notes box, enter any notes.

6. Click **Next**.

IPO Manager dialog box appears, and IP Office Manager starts in template mode. The IP Office Manager window appears.

7. Using IP Office Manager, complete the General template. Use the online help for more information about the General template.
8. When you are finished creating the General template in IP Office Manager, select **File>Save Template and Exit**.
The IP Office Manager window closes, and the Summary dialog box appears.
9. Click **Next**.
The Finish Up dialog box appears.
10. Click **Finish**.

Create a Hardware Template

To create a Hardware template, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.
The Provisioning and Installation Manager window appears.
2. Click **Templates** at the top of the window.
The Select Template Type wizard appears.
3. From the IPO Templates box, select the **IPO-Hardware** option button, and then click **Next**.
The General dialog box appears.
4. In the Name box, enter the name for this template.
5. in the Notes box, enter any notes.
6. Click **Next**.
The IPO Manager dialog box appears, and IP Office Manager starts in template mode. The Create Offline Configuration Wizard dialog box appears.
7. Complete each dialog box in the wizard. Click the Help button for information about the dialog box.
After you complete the Create Offline Configuration Wizard, the IP Office Manager window appears.
8. Using IP Office Manager, complete the Hardware template. Use the online help for more information about the Hardware template.
9. When you are finished creating the Hardware template in IP Office Manager, select **File>Save Template and Exit**.
The IP Office Manager window closes, and the Summary dialog box appears.

10. Click **Next**.

The Finish Up dialog box appears.

11. Click **Finish**.

Create an Auto Attendant Template

Before creating an Auto Attendant template, you must upload the Auto Attendant voice files (WAV files) to Provisioning and Installation Manager for IP Office. To upload voice files, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **+** in front of the **Administration** folder in the left panel of the window.

The Administration options appear.

3. Click **Voice Files**.

The Voice Files List page appears and lists all of the WAV files in Provisioning and Installation Manager for IP Office.

4. Click **Add**.

The PIM - Upload Voice File dialog box appears.

5. Using the **Browse** button, select the WAV file you want to upload to Provisioning and Installation Manager for IP Office.

6. Click **Upload file**.

7. Repeat Steps 2 through 6 for any other WAV files you want to upload to Provisioning and Installation Manager for IP Office.

To create an Auto Attendant template, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **Templates** at the top of the window.

The Select Template Type wizard appears.

3. From the IPO Templates box, select the **IPO-Auto Attendants** option button, and then click **Next**.

The General dialog box appears.

4. In the Name box, enter the name for this template.

5. In the Notes box, enter any notes.

6. Click **Next**.

The IPO Manager dialog box appears, and IP Office Manager starts in template mode. The IP Office Manager window appears.

7. Using IP Office Manager, complete the Auto Attendant template. Use the online help for more information about the Auto Attendant template.

8. When you are finished creating the Auto Attendant template in IP Office Manager, select **File>Save Template and Exit**.

The IP Office Manager window closes, and the Summary dialog box appears.

9. Click **Next**.

The Finish Up dialog box appears.

10. Click **Finish**.

Create a Users Template

To create a Users template, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **Templates** at the top of the window.

The Select Template Type wizard appears.

3. From the IPO Templates box, select the **IPO-Users** option button, and then click **Next**.

The General dialog box appears.

4. In the Name box, enter the name for this template.

5. In the Notes box, enter any notes.

6. Click **Next**.

The IPO Manager dialog box appears, and IP Office Manager starts in template mode. The IP Office Manager window appears.

7. Using IP Office Manager, complete the Users template. Use the online help for more information about the Users template.

8. When you are finished creating the Users template in IP Office Manager, select **File>Save Template and Exit**.

The IP Office Manager window closes, and the Summary dialog box appears.

9. Click **Next**.

The Finish Up dialog box appears.

10. Click **Finish**.

Distribute Templates

To distribute templates, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click the **Templates** folder in the left panel of the window.

The Templates page appears and displays the existing templates.

3. Click the option button of the template you want to distribute.

4. Click **Job** at the top of the window.

The General dialog box appears. A default name is provided for this job. You can change the job name.

5. Enter any notes.

6. Click the **Save The Job** check box if you want to save this job so you can use it at a later time.

7. Click **Next**.

The Device Filter dialog box appears.

8. Select the devices you want to configure with the selected template, and then click **Next**.

The Devices dialog box appears.

9. From the Available list box, select the device(s) you want to configure with the selected template, and then click **>**. The selected devices appear in the Selected list box.

If you want to select all of the devices from the Available list box, click **>>**.

10. Click **Next**.

The Schedule dialog box appears.

11. Specify when you want to run this job, and then click **Next**.

The Job Options dialog box appears.

12. Specify how you want to run this job, and then click **Next**.

The Summary dialog box appears.

13. Click **Next**.

The job is created, and the Finish Up dialog box appears.

14. Click **Finish**.

The job runs at the time you specified.

Working with Device Profiles

When Avaya Network Management Console discovers an IP Office device, it automatically creates a device profile. The device profile contains the following information:

- the name of the device
- the IP address of the device
- the type of device
- any notes entered about the device
- the Feature License Key data of the device

You may associate a device profile with existing templates (that is, General, Hardware, Auto Attendant, and Users).

Create a Device Profile

When you create a device profile, you can enter the IP address manually or select it from the Avaya Network Management Console. You can create a profile for the following devices:

- IP406-V2
- IP412
- Small Office 2T+4A
- Small Office 4T+8A
- Small Office 4T+4A+8DS

To create a device profile, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **Profiles** at the top of the window.

The Device Profile Wizard dialog box appears.

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3. Make sure the **IPO device** option button is selected, and then click **Next**.

The Device Profile Wizard dialog box appears.

4. Perform one of the following steps:

- If you want to enter the IP address manually:

- a. Click the **Enter manually** option button, and then click **Next**.

The Device Type dialog box appears.

- b. Select the device type for which you want to create a profile, and then click **Next**.

The Profile Details dialog box appears.

- c. Enter the appropriate information for the selected device, and then click **Next**.

The Template Associations dialog box appears.

- d. Go to Step 5.

- If you want to select a device from Avaya Network Management Console:

- a. Click the **Select a device from NMC** option button, and then click **Next**.

The IP Address Filter dialog box appears.

- b. Enter the IP address of the device for which you want to create a profile or specify the filter criteria from which you want to select the IP address.

- c. Click **Next**.

The IP Address dialog box appears.

4. Select the IP address of the device, and then click **Next**.

The Device Details dialog box appears and shows the name, type, and IP address of the selected device.

- e. Click **Next**.

The Template Associations dialog box appears.

- f. Go to Step 5.

5. If you want to associate a template type with this device profile, click the check box for the appropriate template type, and then select the appropriate template from the template selection drop-down list box.

6. Repeat Step [5](#) for each template type you want to associate with this device profile.

7. When finished associating templates, click **Next**.

The Licenses dialog box appears.

8. Enter the licenses for the device, and then click **Next**.

The Summary dialog box appears.

9. Click **Next**.

The device profile is created, and the Finish Up dialog box appears.

10. Click **Finish**.

Working with Groups

A group is a collection of devices and is used in conjunction with templates to make it easy for you to change multiple devices at a time. There are two types of groups:

- **Static group**

A static group enables you to manage your branch offices logically. You can create static groups according to arbitrary criteria such as geographic location, device type, and type and/or size of the branch office.

- **Dynamic group**

A dynamic group enables you to select specific branch offices by building a query. You build a logical expression combining static groups that are manually administered. For example, if you choose AND, only the devices that are in both groups will be selected for the dynamic group. If you choose OR, all of the devices in both groups will be selected for the dynamic group.

Create a Static Group

To create a static group, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **Groups** at the top of the window.

The Select Group Type dialog box appears.

3. Select the **Static Group** option button, and then click **Next**.

The General Information page appears.

4. In the Name box, enter the name for this group.

5. In the Notes box, enter any notes for this group.

6. Click **Next**.

The Filter dialog box appears.

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7. Select the criteria you want to use to filter the eligible devices for this group. For example, if you are only interested in IP Office devices on a specific subnet, select that subnet from the Subnet box.
8. Click **Next**.
The Select Devices dialog box appears.
9. From the Available list box, select the device(s) you want to add to the group, and then click **>**. The selected devices appear in the Selected list box.
If you want to select all of the devices from the Available list box, click **>>**.
10. Click **Next**.
The Summary dialog box appears.
11. Click **Next**.
The static group is created, and the Finish Up dialog box appears.
12. Click **Finish**.

Create a Dynamic Group

Before you can create a dynamic group, you must have already created static groups.

To create a dynamic group, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.
The Provisioning and Installation Manager window appears.
2. Click **Groups** at the top of the window.
The Select Group Type dialog box appears.
3. Select the **Dynamic Group** option button, and then click **Next**.
The General Information page appears.
4. In the Name box, enter the name for this group.
5. In the Notes box, enter any notes for this group.
6. Click **Next**.
The Query builder dialog box appears.
7. From the Group Name box in the first row, select the static group you want to use.

8. From the Condition box in the next row, select the condition you want to use to build the dynamic group. Choices are:

- AND
- AND_NOT
- OR

9. From the Group Name box in the row, select the static group you want to use.

10. If you want to add another condition, click **Add Row**.

A new row appears.

11. From the Condition box in the new row, select the condition you want to use.

12. From the Group Name box in the new row, select the static group you want to use.

13. If you want to include parentheses around two or more groups, click (and) on the appropriate rows.

The text box at the bottom of the dialog box shows the query you have built so far.

14. Repeat Steps 10 through 13 to add more conditions to this query.

15. When finished, click **Next**.

The Summary dialog box appears.

16. Click **Next**.

The dynamic group is created, and the Finish Up dialog box appears.

17. Click **Finish**.

Importing Licenses

You can import a CSV file that contains the license information for IP Office devices. Each record in the CSV file must contain the following information for each device:

- IP address
- the list of license keys for the device

To import licenses, perform the following steps:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click the **Import Licenses**.

The General dialog box appears. The Job Name box displays a default name for this import job. You can change this name.

3. In the Notes box, enter any notes about this job.

4. Click **Next**.

The Import Licenses Wizard dialog box appears.

5. Use the **Browse** button to select the CSV file that contains the licenses you want to import.

6. Click **Next**.

The Add Templates dialog box appears.

7. If you want to distribute templates with the licenses, select the appropriate template types. The last template of the selected type that was sent to this device will be resent with the licenses. (The IP addresses in this license file will be matched to the existing IP Office devices in Avaya Network Management Console.)

8. Click **Next**.

The Schedule dialog box appears.

9. Specify when you want to run this job, and then click **Next**.

The Job Options dialog box appears.

10. Specify how you want to run this job, and then click **Next**.

The Summary dialog box appears.

11. Click **Next** to start the import.

A progress dialog box appears. When the job is complete, the Finish Up dialog box appears.

12. Click the **Finish** button.

Backing up Provisioning and Installation Manager Files

During a backup session, files are archived in a zip file. The following Provisioning and Installation Manager for IP Office application files are included in a backup session:

- Profiles
- Templates
- Groups
- Jobs in the job queue or log— except running jobs
- System settings such as job queue, log retention, and system log file size

The backup session also provides a list of files and the Provisioning and Installation Manager for IP Office version.

To perform a backup:

1. From the Avaya Network Management Console window, select **Tools>Avaya Provisioning and Installation Manager For IPO Devices**.

The Provisioning and Installation Manager window appears.

2. Click **+** in front of the **Administration** folder in the left panel.

3. Click **Backup/Restore**.

The Backup/Restore page appears.

4. Click **Backup Now**.

The File Download dialog box appears.

5. Click **Save**.

The Save As dialog box appears.

6. Select the folder and filename for the backup file, and click **Save**.

The Download complete dialog box appears.

7. Click **Close**.

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