



# **Avaya™ VPNmanager 3.4 Installation Guide**

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Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

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An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

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The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

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- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

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This product complies with and conforms to the following international Product Safety standards as applicable:

- Safety of Information Technology Equipment, IEC 60950, 3rd Edition including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.
- Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition
- Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997
- One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998

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Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11
- Powerline Harmonics IEC 61000-3-2
- Voltage Fluctuations and Flicker IEC 61000-3-3

### **Federal Communications Commission Statement**

Part 15:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **Canadian Department of Communications (DOC) Interference Information**

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

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Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

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All Avaya media servers and media gateways are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at:

<http://www.part68.org/>

by conducting a search using “Avaya” as manufacturer.

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Avaya Inc. declares that the equipment specified in this document bearing the “CE” (*Conformité Européenne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC). This equipment has been certified to meet CTR3 Basic Rate Interface (BRI) and CTR4 Primary Rate Interface (PRI) and subsets thereof in CTR12 and CTR13, as applicable.

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site:

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

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This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

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**Documentation:** For the most current versions of documentation, go to <http://www.avaya.com/support/>

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*Appendix A*

*Installation Prerequisites for Microsoft Active Directory Server*

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# Installation

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This document provides information you need to install Avaya VPNmanager® 3.4. Use the VPNmanager CD to install or to upgrade the *VPNmanager Console* and the *directory server*.

The *VPNmanager 3.4 Administrator's Guide* with information about configuring VPNmanager can be downloaded from the Product Document page of the Avaya Support Web site at <http://support.avaya.com>.

## Avaya VPNmanager installation

The installation sequence detailed in this chapter is listed in [Table 1](#).

**Table 1 VPNmanager Installation Sequence**

Installation Task	See Page
<input type="checkbox"/> <a href="#">Security gateway prerequisite</a>	<a href="#">page 7</a>
<input type="checkbox"/> <a href="#">VPNmanager system requirements</a>	<a href="#">page 8</a>
<input type="checkbox"/> <a href="#">Installing Avaya VPNmanager</a>	<a href="#">page 11</a>
<input type="checkbox"/> <a href="#">Changing the user name and password</a>	<a href="#">page 31</a>
<input type="checkbox"/> <a href="#">Integrating HP Openview with VPNmanager</a>	<a href="#">page 33</a>

## Security gateway prerequisite

This chapter does not give details about installing new security gateways to your existing VPN or building a new VPN with new security gateways. See the user guide for your security gateway model for installation instructions. To install the VPNmanager console, the security gateways only need to be configured with an IP address. The VPNmanager console

can be used to perform the remaining configuration as described in the *Administrator Guide*.

For VPNmanager, you will need the security gateway's password. As a good practice, keep all the security gateway console passwords the same. The passwords will be needed when updating the security gateway from the VPNmanager console. If necessary, the security gateway console passwords can be changed from the VPNmanager console. After the security gateways are installed, review the system requirements for the VPNmanager software on [page 9](#), then install the VPNmanager using the instructions on [page 11](#).

## VPNmanager system requirements

The VPNmanager software includes the VPNmanager console software. The console is used for configuring and managing your VPN. The directory server, Sun ONE directory server or Microsoft Active Directory server, stores your VPN data.

**Note:** The iPlanet directory server is now called the Sun One directory server.

This section describes the system requirements that must be met before you install VPNmanager console and directory server.

### VPNmanager console system requirements

VPNmanager console can be installed on computers running the following operating systems:

- Windows 98
- Window NT 4.0 with Service Pack 6a (X86 only) or later
- Microsoft Windows 2000 Server; Advanced Server with Service Pack 2 (X86) or later
- Sun Solaris 8 or 9 for SPARC (32 x 64 bit)
  - The recommended Solaris patches and the J2SE patches should be installed.
  - The Sun recommended patch cluster can be obtained from your Sun support representative or from <http://sunsolve.sun.com>.

The minimum system requirements are listed in [Table 2](#).

**Table 2 VPNmanager console minimum system requirements**

<b>MS Windows</b>	<b>Solaris OS</b>
<ul style="list-style-type: none"> <li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li> <li>• CD-ROM drive</li> <li>• 120 MB of free hard disk space</li> <li>• VGA monitor</li> <li>• 16-bit color video controller</li> <li>• From the TCP/IP properties, the DNS and Host name must be properly configured</li> <li>• An IP address must be assigned to the computer</li> </ul>	<ul style="list-style-type: none"> <li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li> <li>• CD-ROM drive</li> <li>• 120 MB of free hard disk space</li> <li>• VGA monitor</li> <li>• 16-bit color video controller</li> <li>• The DNS and Host name for the computer must be properly configured</li> <li>• An IP address must be assigned to the computer</li> </ul>

### **Directory server system requirements**

The directory server can be installed on computers running the following operating systems:

- Microsoft Windows NT 4.0 with Service Pack 6a (X86 only) or later
- Microsoft Windows 2000 Server; Advanced Server with Service Pack 2 (X86) or later
- Sun Solaris 8 or 9 for SPARC (32 x 64bit)
  - The recommended Solaris patches and the J2SE patches should be installed. In addition, the recommended patch ID numbers, 108434 and 109147, are required.
  - The Sun recommended patch cluster can be obtained from your Sun support representative or from <http://sunsolve.sun.com>.

The minimum system requirements are listed in [Table 3](#).

**Table 3 Directory server minimum system requirements**

<b>Computers running MS Windows</b>	<b>Computers running Solaris OS</b>
<ul style="list-style-type: none"> <li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li> <li>• 200 MB of free hard disk space for small VPNs; 2 GB for large VPNs</li> <li>• CD-ROM drive</li> <li>• VGA monitor with resolution of 600x800 pixels</li> <li>• 256 or better color video controller</li> <li>• 100 Mbps ethernet connection</li> <li>• The hard disk must be formatted and primarily partitioned as Windows NTFS</li> <li>• From the TCP/IP properties, the DNS and Host name must be properly configured</li> <li>• A static IP address must be assigned to the computer</li> <li>• SNMP service must be stopped</li> </ul>	<ul style="list-style-type: none"> <li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li> <li>• 200 MB of free hard disk space for small VPNs; 2 GB for large VPNs</li> <li>• CD-ROM drive</li> <li>• VGA monitor with resolution of 600x800 pixels</li> <li>• The DNS and Host name for the computer must be properly configured</li> <li>• A static IP address must be assigned to the computer</li> </ul>

### **Policy server system requirements**

The policy server can be installed on computers running the following operating systems:

- Microsoft Windows NT 4.0 with Service Pack 6a (X86 only) or later
- Microsoft Windows 2000 Server; Advanced Server with Service Pack 2 (X86) or later
- Sun Solaris 8 or 9 for SPARC (32 x 64bit)

- The recommended Solaris patches and the J2SE patches should be installed. In addition, the recommended patch ID numbers, 108434 and 109147, are required.
- The Sun recommended patch cluster can be obtained from your Sun support representative or from <http://sunsolve.sun.com>.

The minimum system requirements are listed in [Table 4](#).

**Table 4 VPNmanager policy server minimum system requirements**

<b>Computers running MS Windows</b>	<b>Computers running Solaris OS</b>
<ul style="list-style-type: none"><li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li><li>• 20 MB of free hard disk space for small VPNs</li><li>• CD-ROM drive</li><li>• VGA monitor with resolution of 600x800 pixels</li><li>• 100 Mbps ethernet connection</li><li>• From the TCP/IP properties, the DNS and Host name must be properly configured</li><li>• A static IP address must be assigned to the computer</li></ul>	<ul style="list-style-type: none"><li>• 256 MB RAM (up to 1 GB for best performance on large VPNs)</li><li>• 20 MB of free hard disk space for small VPNs</li><li>• CD-ROM drive</li><li>• VGA monitor with resolution of 600x800 pixels</li><li>• The DNS and Host name for the computer must be properly configured</li><li>• A static IP address must be assigned to the computer</li></ul>

## Avaya VPNmanager components

The VPNmanager CD-ROM includes all the files necessary to install VPNmanager console, directory server, policy server, and to update the directory server schema.

- **VPNmanager console** — The VPNmanager console is a client that is used for configuring, managing, and monitoring one or more VPNs. The console is a Java application that can be run anywhere and is used as a front-end to the policy server and directory server.

- **Directory server** — The directory server is a database used to store configuration data. The configuration includes VPNs, security gateways, and the security gateway security policy.
- **Directory server schema** — The directory server schema defines the structure and the type of configuration data.
- **Policy server** — The policy server distributes configuration and security policies. The VPNmanager console is a client that communicates with the policy server to retrieve security policies. The policy server then communicates with the directory server.

## Installing Avaya VPNmanager

To install all of the VPNmanager components on the same machine, select the **Typical** option in the Setup Type dialog. To install the VPNmanager components on different machines select the **Custom** option from the Setup Type dialog.

***Note:** It is suggested that the directory server and the policy server be installed on the same machine.*

Choose the appropriate installation procedure listed below to guide you through your installation. It is important to follow the installation procedure in the sequence presented in this document.

***Note:** Windows NT users, install the directory server prior to installing the other components of the VPNmanager software.*

If your directory server is Microsoft Active Directory, go to [To update the directory server schema: on page page 18](#)

Installation for Windows:

- [Installing the VPNmanager console for Windows — page 13](#)
- [Installing the directory server for Windows — page 14](#)
  - [Installing the directory server for Windows NT 4.0 — page 14](#)
  - [Installing the VPNmanager console for Windows — page 13](#)
- [Updating the directory server schema for Windows — page 18](#)
  - [Updating the directory schema for Sun One directory server — page 18](#)

- [Updating the directory schema for Active Directory server — page 19](#)
- [Installing the policy server for Windows — page 20](#)

Installation for Solaris:

- [Installing VPNmanager console for Solaris — page 22](#)
- [Installing the directory server for Solaris — page 23](#)
- [Updating the directory server schema for Solaris — page 26](#)
- [Updating the directory server schema for Solaris — page 26](#)

## Installing the VPNmanager console for Windows

This procedure describes how to install VPNmanager console on computers running Windows 98, Windows 2000, or Windows NT 4.0 operating systems. Use this procedure, if you plan to install the console and servers on different computers or at different times.

To install the VPNmanager console:

1. Insert the *VPNmanager CD* into the computer where VPNmanager will be installed. When the Overview page opens, click **Installation** to go to the installation page.

**Note:** *If autorun does not happen, from **Start>Run** click **Browse** to navigate to the install program  
\\VPNmanager\disk1\windows\setup.exe.*

2. Click **Next**.
3. When the *Welcome* dialog box appears, click **Next** to proceed.
4. The *License Agreement* dialog box appears. Select the button that suits your license needs. Click **Next**.
5. Choose the folder location where VPNmanager should be installed. Click **Next**.
6. The *Setup Type* dialog box appears. Select the **Console Only** option. Click **Next**.

7. Review the information on the Setup Type Summary. Verify that there is sufficient disk space to install the software. Click **Next** to begin installing VPNmanager console.

*If the information is not correct, click **Previous** and make the necessary corrections.*

## Installing the directory server for Windows

This procedure describes how to install the directory server on Windows NT 4.0 or Windows 2000.

During this portion of the installation procedure, you will see *Sun ONE Directory Server Installation* screens.

**Note:** The iPlanet directory server is now called the Sun One directory server.

If your directory server is Microsoft Active Directory, go to [To update the directory server schema](#): on page [page 18](#)

### Installing the directory server for Windows NT 4.0

Before you begin, verify the following:

- The hard disk is partitioned for Windows NTFS.
- The SNMP services are shut down. This can be restarted after the installation.
- WINZIP is installed.
- All programs should be closed.

To install the directory server:

1. Move to the computer where the server will be installed.
2. In the root directory of the computer's hard disk, create a directory named *installfiles* where the server's zip file will be pasted.
3. Insert the *VPNmanager CD* into the computer where the server must be installed.

The *File Manager* window appears and displays the root directory of the *VPNmanager CD*.

4. Navigate to the server zip file.  
    \iPlanet\windows\d51diu.zip
5. Copy the file to the *installfiles* directory, created in Step 2.
6. Move to the *installfiles* directory.
7. Unzip the d51diu.zip file and enter **installfiles** as the destination folder.
8. From the *installfiles* directory, double click the **Setup** program to open the Sun ONE directory server setup wizard.
9. When the setup wizard begins, click **Next** to proceed through the setup process.
10. When the *Components to Install* dialog box appears, accept the default components and verify that your system has available space. Click **Next** to proceed with the setup process.
11. When the *Directory Server 5.x Install Settings* dialog box appears, enter the admin password and confirm the password. Click **Next** to proceed with the setup process.
12. When the *Configuration Summary* dialog box appears, examine the information displayed in the *Configuration Summary* dialog box to determine if it is correct. Choose **Back** if you need to make changes.
13. Click **Install** to begin installing the directory server.

### Confirming the installation

1. To confirm that the *directory server* is successfully installed, do the following:
  - Windows NT 4.0 — go to *Start\Settings\Control Panel\Services*
2. Scroll down the Service menu to Sun ONE Directory Server 5.1 (directory server).
3. Confirm that iPlant Directory Server is started. If the *Status* does not say Started, select the Server and click **Start**.

The VPNmanager console can now be started from the Windows Start menu. When the VPNmanager login dialog box appears, use the VPNmanager login information configured in the *Installing the policy server for Windows* procedure to login to the directory through the policy server from the VPNmanager console.

### Installing the directory server for Windows 2000

This procedure describes how to install the directory server on computers running Windows 2000 operating system. Use this procedure if you plan to install the console and server on different computers or at different times.

Before you begin, verify the following:

- The hard disk is partitioned for Windows NTFS.
- The SNMP services are shut down. This can be restarted after the installation.
- All programs should be closed.

To install the directory server:

1. Click **Next** to begin directory server installation.
2. Confirm that the computer meets the directory server installation requirements. Click **Next**.
3. In the General Settings dialog box, complete the following information then click **Next**.
  - Accept the default location or browse to another location to install the directory server.
  - **Server Port:** Accept 389 as the port that the VPNmanager console will use to communicate with the directory server.
  - **DNS Domain:** Type in the domain name assigned to the computer on which the server is going to be installed.

Windows 2000 — The domain name can be verified by right clicking on *My Computer*>*Properties*>*Network Identification*. Click **Properties** to see the domain name.

4. In the *Server Administrator* dialog box complete the following information then click **Next**.
  - **Administrator ID:** Type in the administrator ID. This is the login information used to log into the directory server console.
  - **Password:** Type in a password that will be used with administrator ID. To confirm the password, retype it in the **Confirm** field.
  - **Administration Port:** accept 20095.
5. In the *Directory Server Login* dialog box enter the login information used to log in to the directory server through the policy server from the VPNmanager console. Click **Next**.
  - **Directory Server DN:** Enter the DN (Distinguished Name). This is also called the Root DN and has the rights to access and modify the contents of the directory server.
  - **Password:** Type in a password that will be used with the *DN name* to access the directory server. This password must be at least eight characters in length. To confirm the password, retype it in the **Confirm Password** field.

*Note: The password can only be changed from the directory server console.*
6. Examine the information displayed in the *Configuration Summary* dialog box to determine if it is correct. Choose **Back** if you need to make changes.
7. Click **Install** to begin installing the directory server.
8. When the directory server installation is complete, click **Finish**.

### Confirming the installation

1. To confirm that the *directory server* is successfully installed, do the following:
  - Windows 2000 — go to *Start\Settings\Control Panel\Administrative Tools\Services*
2. Scroll down the Service menu to iPlanet Directory Server 5.1.
3. Confirm that iPlanet Directory Server is started. If the *Status* does not say Started, right click the Server and click **Start**.

4. Confirm that iPlanet Administration Server is started. If the *Status* does not say Started, right click the Server and click **Start**.
5. To confirm the ability to logon to the directory server console, do the following:
  - Go to *Start\Programs\iPlanet Server Products\iPlanet Console 5.x*

The VPNmanager console can now be started from the Windows Start menu. When the VPNmanager login dialog box appears, use the VPNmanager login information configured in the [Installing the policy server for Windows](#) procedure to login to the directory server through the policy server from the VPNmanager console.

## Updating the directory server schema for Windows

This procedure describes how to update the directory server schema.

During this portion of the installation procedure, you will see *Directory Server Schema Update Program* screens.

### Updating the directory schema for Sun One directory server

To update the directory server schema:

1. The schema update wizard appears. This updates the schema of the directory server. Click **Next**.
2. Schema Update Input dialog can be pre-populated with information that was entered during the directory server installation.

**Note:** *During the schema update input, fields are pre-populated only when the directory server and policy server are installed on the same computer.*

- **Type:** Enter the type of directory server schema to be updated.
- **IP Address:** Enter the IP address of the machine on which the directory server resides.
- **Port:** Enter the port number for the directory server.
- **Login ID:** Enter the login ID the directory server. This is also called the directory server DN and begins with cn=. For example, cn=Directory Manager.

- **Password:** Enter the password the policy server that will access the directory server data.
  - **Directory Tree:** Enter the domain name assigned to the computer on which the directory server is installed.
  - **Fetch:** Displays the contexts that are available in the directory server. You can choose to install any of the contexts. You can create a branch and install the selected context into this branch.
3. Click **Update Schema**.
  4. When the schema is updated, a *Schema Update Complete* dialog box appears. Click **Finish**.

### Updating the directory schema for Active Directory server

Before you begin, verify the following:

- Installation of Active Directory
- Configuration of an administrator with the privileges to update the schema and data

It is important that you verify that the administrator ID you are using has permissions to extend the schema. If the administrator id does not have these permissions, you must **add** the administrator to the Schema Admins Group.

- Enable the computer to extend the schema

The configuration fields are as follows:

- **Type:** Enter the type of directory server schema to be updated.
- **IP Address:** Enter the IP address of the machine on which the directory server resides.
- **Port:** Enter the port number for the directory server.
- **Login ID:** Enter the login ID the directory server. This is also called the directory server DN and begins with cn=. For example, cn=Directory Manager.
- **Password:** Enter the password the policy server that will access the directory server data.

- **Schema Tree:** Enter the credentials and click Fetch to retrieve the schema tree.
- **Fetch:** Displays the contexts that are available in the directory server. You can choose to install any of the contexts. You can create a branch and install the selected context into this branch.
- **Directory Tree:** Upon fetching the schema tree, the directory tree will be prepopulated. If your domain name is xxx.com, your directory tree will be ou=VPNmanager, dc=xxx, dc=com. Accept the directory tree.

## Installing the policy server for Windows

This procedure describes how to install the policy server.

During this portion of the installation procedure, you will see *Policy Server Configuration Setup* screens.

To install the policy server:

1. The *Policy Server Wizard* dialog box appears. This installs and configures the policy server. Click **Next**.

**Note:** *During the directory server input, fields are pre-populated only when the policy server and directory server are installed on the same computer.*

- **Type:** Enter the type of directory server that the policy server will communicate with.
- **IP Address:** Enter the IP address of the machine on which the directory server resides.

**Note:** *Enter the IP address even when the policy server and directory server reside on the same machine. Enter the IP address through which the VPNmanager console can access the directory server.*

- **Port:** Enter the port number that the policy server will use to communicate with the directory server.
- **Login ID:** Enter the login ID the policy server will use to access the directory server data. This is also called the directory server DN and typically starts with cn=.
- **Password:** Enter the password the policy server will use to access the directory server data.

- **Directory Tree:** Enter the directory tree that was used during the schema update.
- **Advanced:** The advanced button is used to secure the communication with the directory server using SSL.

**Note:** *The directory server must be enabled for SSL before this can be configured. Refer to the VPNmanager Administrator's Guide for directions on configuring SSL.*

2. Enter the directory server password. Click **Next**.

The policy server stores the directory server configuration and uses the configuration to connect to the directory server.

3. The *Policy Server Configuration Setup* dialog appears.

Enter a **new login ID and password**. This login ID is used to configure an administrator ID that can be used to login using the VPNmanager console. This ID can also be used to create another administrator.

- **Administrator ID:** Enter the administrator ID. This is the login information used to log into the VPNmanager console.
- **Password:** Enter the password that will be used with the administrator ID. To confirm the password, retype it in the **Confirm Password** field.
- **Policy Server Port:** Accept port 443.

4. Click **Install**.

5. When the Policy Server Configuration Setup is complete, the *Policy Server Configuration Complete* dialog appears. Click **Finish** to exit the installation wizard.

Upon completion of the policy server installation, the directory server and policy server are able to communicate. If the directory server configuration changes, the changes must be reflected in the policy server. If correct configuration is not maintained, you may need to reconfigure the policy server to reflect the changes made in the directory server.

## Confirming the Installation

To confirm that Active Directory server schema update was successful, start the VPNmanager console from the Windows Start menu. When the VPNmanager login dialog box appears, use the super user ID and password configured during the policy server setup to login to the directory server through the policy server from the VPNmanager console.

1. To confirm that the policy server is successfully installed, do the following:
  - Windows NT — go to *Start\Settings\Control Panel\Services*
  - Windows 2000 — go to *Start\Settings\Control Panel\Administrative Tools\Services*
2. Scroll down the Service menu to Sun ONE Directory Server 5.1.
3. Confirm that Sun ONE Directory server is started. If the *Status* does not say **Started**, select the Server and click **Start**.

The VPNmanager console can now be started from the Windows Start menu. When the VPNmanager login dialog box appears, use the VPNmanager login information to login to the directory server through the policy server from the VPNmanager console.

The Windows Start menu also provides the option to start, stop, and reconfigure the policy server.

## Installing VPNmanager console for Solaris

This procedure describes how to install the VPNmanager console on computers running Sun Solaris. It can be performed before or after the server is installed.

**Note:** *This procedure is performed from the Common Desktop Environment.*

To install VPNmanager console:

1. Insert the *VPNmanager CD* into the computer where VPNmanager will be installed. When the Overview page opens, click **Installation** to go to the installation page.
2. Click **VPNmanager Install**. A security warning dialog box appears. Click **Yes**.

3. When the *Introduction* dialog box appears, click **Next** to proceed.  
  
**Note:** *If the autorun does not start, navigate to the install program \\disk1\solarisdisk1\install.bin. Double-click **install.bin** to open the Action - Run dialog box*
4. Choose the folder location where VPNmanager console should be installed. Click **Next**.
5. When the *Setup Type* dialog box appears, choose the **Console only** option. Click **Next**.
6. Review the information on the *Pre-Installation Summary*. Verify that there is sufficient disk space to install the software. Click **Next** to begin installing the VPNmanager console.
7. When the *Install Complete* dialog box appears, click **Finish** to return to the Solaris desktop.

## Installing the directory server for Solaris

This procedure describes how to install the directory server on computers running Sun Solaris Sparc. The directory server is also known as the *Sun ONE Directory Server*. The entire installation involves three procedures: server installation, schema update, and creating an Sun ONE restart script.

**Note:** *The following procedures are performed from the Solaris Common Desktop Environment.*

Step 21 involves a decision to register the server with other servers. If you plan on registering your server, see the Sun ONE Directory Server documentation about what that process involves.

To install the directory server on Solaris:

1. Move to the computer where the server will be installed.
2. In the root directory of the computer's hard disk, create a directory named *installfiles* where the server's tar file will be pasted.
3. Insert the *VPNmanager CD* into the computer where the server must be installed.

The *File Manager* window appears and displays the root directory of the *VPNmanager CD*.

4. Navigate to the server tar file.

`\\Planet\Solaris\directory-5.1-us.sparc-sun-solaris2.8.tar`

**Note:** When the VPNmanager Installation CD is viewed on a Solaris workstation, the server tar file appears as **//Solaris/direct~1.tar**.

5. Copy the tar file to the *installfiles* directory, created in Step 2.
6. From the VPNmanager console, move to the *installfiles* directory.
7. Use the following command to untar the server file.  
`tar -xvf directory-5.1-us.sparc-sun-solaris2.8.tar`
8. From the *installfiles* directory, start the **Setup** program to open the *Action - Run* dialog box.
9. When asked “...to continue with installation?,” enter **Y**.
10. When asked to “...agree to the license terms?,” enter **Y**.
11. When asked to “...select the component you want to install...,” enter **1**.
12. When asked to “...choose an installation type...,” enter **2**.
13. When asked to “...choose an installation location...,” accept the default location, or enter a different location.

**Note:** Record the new location because the path is needed during the migration procedure. If you are upgrading, do not choose the same location as the previous server location.

14. When asked “...which Sun ONE Server Products Core Components...” to install, press **Return** to select all core components.
15. When asked which specific “...Sun ONE Directory Subcomponents...” to install, press **Return** to select all core components.
16. When asked which “...Sun ONE Directory Suite Components...” to install, press **Return** to select all core components.
17. When asked “...Select Administration Service Components...” to install, press **Return** to select all — Sun ONE Admin Server and Admin Server Console.

18. When asked to enter a “...Fully Qualified Domain Name...” use the name configured for the computer that will run the server, for example, *hostname.domainname*, then press **Return**.
19. When asked to enter a *System User* name, press **Return** to accept the default, or type in a name, then press **Return**.
20. When asked to enter a *System Group* name, press **Return** to accept the default, or type in a name, then press **Return**.
21. When asked to “...register the server...” with other Sun ONE Directory Servers, enter **Y** or **N**.

After configuring the registration parameters, go to the next step.

22. When asked to choose a *different directory* to install the server, press **Return** to select no.
23. When asked which *directory server port number* to use, press **Return** to accept number 389. This number can be changed later from the Sun ONE Directory Console.

The server will supply this port to *VPNmanager console* for communications.

24. When asked to configure the *Directory Server Identifier*, accept the default, or type in a unique value, then press **Return**.

This value is used as part of the Directory Instance that is installed. For example, if the computer's host name is *vpn*, then the instance is labeled *slsap-vpn*.

25. When asked for an *Administrator ID*, accept the default, or type in a different string, then press **Return**.

**Note:** Use this ID as the User Name when logging into the Sun ONE console.

26. When asked for a *Password*, type in a string then press **Return**. Repeat to confirm.

**Note:** Use this password as the password when logging into the Sun ONE console.

27. When asked for *directory suffix*, type in the suffix of the system's domain name, for example, if the domain is *abc.com*, the suffix would be *dc=abc,dc=com*.

28. When asked for a *directory manager DN*, type in a string, then press **Return**.

**Note:** Use the *directory manager DN* string as the user name when logging into the server using the VPNmanager console.

29. When asked for a *password*, type in a string then press **Return**. Repeat to confirm.

**Note:** Use this password when logging into the server from the VPNmanager console.

30. When asked for an *Administrative Domain*, type in the DNS Domain of the computer that will run the server, then press **Return**.

31. When asked to accept the *Default Administrative Port*, record the number for future reference, then press **Return**.

32. When asked to “...run the Administrative Server as Root,” press **Return** to accept.

When finished, the installation program tells you which directory to move to and what command line to enter to run the Sun ONE console. Running the console is not necessary. However, the default directory is */usr/iPlanet/servers* and the command line is *startconsole*.

## Updating the directory server schema for Solaris

This procedure describes how to update schema for the directory server.

**Note:** This procedure is performed from the common Desktop environment.

1. Insert the VPNmanager CD into computer. When the *Overview* page opens, click **Installation** to go to the installation page.
2. Click **VPNmanager install**. A security warning dialog box appears, click **yes**.
3. When the *Introduction* dialog box appears, click **Next** to proceed.

**Note:** If the autorun does not start, navigate to the install program `\\vpnmanager\disk1\solaris\install.bin`. Double-click **install.bin** to open the *Action - Run* dialog box

4. Choose the folder location. Click **Next**.

5. When the *Setup Type* dialog box appears, select the **Custom** option and select **Schema Update**.
6. Review the information on the Pre-Installation Summary. Verify that there is sufficient disk space to install the software. Click **Install**, to begin the Schema update.
7. The *Schema Update* wizard appears. Click **Next**.
8. In the *Schema Update Input* dialog box, complete the following information and click **Update Schema**.
  - **Type:** Enter the type of directory server schema to be updated.
  - **IP Address:** Enter the IP address of the machine on which the directory server resides.
  - **Port:** Enter the port number for the directory server.
  - **Login ID:** Enter the login ID the directory server. This is also called the directory server DN and begins with cn=. For example, cn=Directory Manager.
  - **Password:** Enter the password the policy server that will access the directory server data.
  - **Directory Tree:** Enter the domain name assigned to the computer on which the directory server is installed.
  - **Fetch:** Displays the contexts that are available in the directory server. You can choose to install any of the contexts. You can create a branch and install the selected context into this branch.
9. When the schema is updated, a *Schema Update Complete* dialog box appears. Click **Finish**.
10. When the *Install Complete* dialog appears, click **Finish** to return to the Solaris desktop.

### Installing the policy server for Solaris

1. Insert the VPNmanager CD into computer. When the *Overview* page opens, click **Installation** to go to the installation page.
2. Click **VPNmanager install**. A security warning dialog box appears, click **yes**.

3. When the *Introduction* dialog box appears, click **Next** to proceed.

**Note:** *If the autorun does not start, navigate to the install program \\disk1\solaris\install.bin. Double-click **install.bin** to open the Action - Run dialog box*

4. Choose the folder location. Click **Next**.
5. When the *Setup Type* dialog box appears, select the **Custom** option and select **Policy Server**.

**Note:** *During the directory server input, fields are pre-populated only when the policy server and directory server are installed on the same computer.*

- **Type:** Enter the type of directory server that the policy server will communicate with.
- **IP Address:** Enter the IP address of the machine on which the directory server resides.

**Note:** *Enter the IP address even when the policy server and directory server reside on the same machine. Enter the IP address through which the VPNmanager console can access the directory server.*

- **Port:** Enter the port number that the policy server will use to communicate with the directory server.
  - **Login ID:** Enter the login ID the policy server will use to access the directory server data. This is also called the directory server DN and typically starts with cn=.
  - **Password:** Enter the password the policy server will use to access the directory server data.
  - **Directory Tree:** Enter the directory tree that was used during the schema update.
  - **Advanced:** The advanced button is used to secure the communication with the directory server using SSL.
6. Enter the directory server password. Click **Next**.

The policy server stores the directory server configuration and uses the configuration to connect to the directory server.

7. The *Policy Server Configuration Setup* dialog appears.

Enter a **new administrator ID and password**. This administrator ID is used to configure an administrator ID that can be used to login using the VPNmanager console. This ID can also be used to create another administrator.

- **Administrator ID:** Enter the administrator ID. This is the login information used to log into the VPNmanager console.
  - **Password:** Enter the password that will be used with the administrator ID. To confirm the password, retype it in the **Confirm Password** field.
  - **Policy Server Port:** Accept port 443.
8. Click **Install** to begin installing the policy server.
  9. When the Policy Server Configuration Setup is complete, the *Policy Server Configuration Complete* dialog appears. Click **Finish** to exit the installation wizard.

### Creating a Sun ONE restart script

The Sun ONE Directory Server will not automatically start if your Sun Solaris Sparc computer is restarted. The solution is to create a restart script file.

To create a restart script:

1. From a common text editor, create a file named *S##IDSrestart*, where *##* is some number from 00 to 99.
2. Type the following script into the file, where *ServerRoot* is the path configured in Step 13 on page 24, and *Host* is the FQDN configured in Step 18 on page 25.

```
//ServerRoot/slaped-Host/start-slaped  
sleep 2  
//ServerRoot/start-admin
```

3. Save the script file to the */etc/rc2.d* directory.
4. Use Table 5 to configure the access modes (permissions) for the script file.

**Table 5 Script file access modes for Sun ONE**

User	Read	Write	Execute
Owner	yes	yes	yes
Group	yes	no	no
Other	yes	no	no

- Restart the computer to verify the restart script.

After creating a restart script file, you can start the VPNmanager console at any time. Refer to the *Avaya VPNmanager 3.4 Quick Installation Guide* for information about configuring VPNmanager.

### Creating a policy server restart script

The Policy Server will not automatically start if your Sun Solaris Sparc computer is restarted. The solution is to create a restart script file. The Policy Server should be started after you start the directory server

To create a restart script:

- From a common text editor, create a file named S##PSstart, where ## is some number from 00 to 99.
- Type the following script into the file, where InstallDir is the location where the Policy Server is installed  

```
/InstallDir/VPNmanager/PolicyServer/Tomcat/bin/startps.sh
```

```
/opt/Avaya/VPNmanager/PolicyServer/Tomcat/bin/startps.sh
```
- Save the script file to the /etc/rc2.d directory.
- Use [Table 6](#) to configure the access modes (permissions) for the script file.

**Table 6 Script File Access Modes the policy server**

User	Read	Write	Execute
Owner	yes	yes	yes
Group	yes	no	no
Other	yes	no	no

5. Restart the computer to verify the restart script.

After creating a restart script file, you can start the VPNmanager console at any time. Refer to the *Avaya VPNmanager 3.4 Quick Installation Guide* for information about configuring VPNmanager.

## Changing the user name and password

The Sun ONE Console allows access to two servers. One is the Administrative Server, and the other is the Directory Server. Both use their own ID and password pair for access. During the VPNmanager installation procedure, the Administrative ID and password you configured is used to log into the administrative server and the VPNmanager DN and password configured is used to log into the directory server.

If you change the VPNmanager Console login, all VSU's must be updated from the VPNmanager Console.

Changing the VPNmanager Server Administrator login pair has no effect on VPNmanager login nor its access to the directory server, but you may find it convenient to keep both login pairs the same.

To change the VPNmanager console login pair:

1. Move to the computer running the Sun ONE Directory Server.
2. Do one of the following to open the *Sun ONE Console Login* dialog box:
  - Solaris OS: In the server root, enter **.startconsole**.
  - Windows NT and Windows 2000: From the windows Taskbar, click **Start>Programs>iPlanet Server Products**. Select **iPlanet Console 5.1**.
3. In the **User ID** text box, type in the *Administrative ID* string used during the installation procedure.
4. In the **Password** text box, type in the *Password* string used during the installation procedure.
5. Click **OK** to open the *Console* window.
6. From the *Navigation Tree*, double-click the directory server containing your VPN data to open the console window for that server.

7. Click on the **Configuration** tab, to bring it to the front.
8. From the Configuration tab, Click the **Manager** tab to bring it to the front.
9. If you want to change the VPNmanager console user name, in the **Root DN** text box, append the *cn=* characters with a new string.
10. If you want to change the VPNmanager console password, in the **Password** text box, type in a new string, then retype the string into the confirmation text box.
11. From the lower right-hand corner of the window, click **Save** to apply your changes.

## Removing the anonymous login

After installing VPNmanager console and directory server on Windows or on Solaris, a user can start to log into VPNmanager console with any name and no password. This anonymous login lets a user view all the VPN configuration information, but does not give them the right to change, add, or delete any parameters. For added security, you should remove this anonymous login.

To remove the anonymous login:

1. Move to the computer running Sun ONE Directory Server.
2. Do one of the following to open the *Sun ONE Console Login* dialog box:
  - Solaris OS: In the server root, enter **.startconsole**.
  - Windows NT and Windows 2000: From the windows Taskbar, click **Start>Programs>iPlanet Server Products**. Select **iPlanet Console 5.1**.
3. In the **User ID** text box, type in the *Administrative ID* string used during the installation procedure.
4. In the **Password** text box, type in the *Password* string used during the installation procedure.
5. Click **OK** to open the *Console* window.

6. From the *Navigation Tree*, select the directory server containing your VPN data.
7. Click **Open** to open the console window for that server.
8. Click the **Directory** tab to bring it to the front.
9. From the left pane, select your VPN domain.
10. From the **Object** menu, select **Select Access Permissions** to open the *Multi-value ACI Selector* dialog box.
11. From the list box, double-click **Anonymous Access** to open the *Set Access Permissions* dialog box.
12. From the table, select the access rule that allows any user/group the rights to compare, read, and search.
13. Click **Delete Rule** to remove the rule from the table.
14. Click **OK** to confirm the deletion.

## Integrating HP Openview with VPNmanager

HP Openview is a tool developed by Hewlet Packard for network management. This tool has an integrated set of network and system management applications for controlling and administering heterogeneous networks.

### Integrating HP Openview using Windows

*To integrate HP Openview using Windows:*

1. Confirm that HP Openview is installed on the same system as the VPNmanager console.
2. From the **Start** menu, open the following file:  
**Start/VPNmanager/Openview Integration**
3. Point to a file under **<HPOpenview>/conf/oid\_to\_sym**.
4. Open the file **<HPOpenview>/conf/oid\_to\_sym**.
5. Once the **<HPOpenview>/conf/oid\_to\_sym** file is open, the integration will happen automatically.

## Integrating HP Openview using Solaris

*To integrate HP Openview using Solaris:*

1. From the Desktop Manager, open the **Hosts** menu, then select **Console** to open the *Console* window.
2. At the command prompt, type **cd AvayaVPN**, then press **Return** to change directories.
3. Type **vpn3ovw.bat**, then press **Return** to open the Openview Integration dialog box.
4. Point to a file under **<HPOpenview>/conf/oid\_to\_sym**.
5. Open the file **<HPOpenview>/conf/oid\_to\_sym**.
6. Once the **<HPOpenview>/conf/oid\_to\_sym** file is open, the integration will happen automatically.

The results of the integration are as follows:

- HP Openview will discover Avaya devices automatically by showing VSU icons located in the network.
- VPNmanager can be launched from HP Openview's Network Manager console.
- Avaya MIB can be loaded by the customer from the network node.

From HP Openview, the results are as follows:

- An Avaya button will be added to HP Openview's menu bar. The Avaya button will open the Avaya home page and the VPNmanager console.
- The VPNmanager console can be started from the tool bar.
- VSUs connected to the network will be visible on the Network Node Manager window. The color of the icon will also indicate if the VSU is up and running.

## Upgrading Avaya VPNmanager

Table 7 list the Upgrade steps that should be performed.

**Table 7 Avaya VPN solutions upgrade checklist**

Upgrade Task	See Page
<input type="checkbox"/> <a href="#">VPNmanager system requirements</a>	<a href="#">page 8</a>
<input type="checkbox"/> <a href="#">Backing up all databases from the server console</a>	<a href="#">page 35</a>
<input type="checkbox"/> <a href="#">Upgrading Avaya VPNmanager for Windows</a>	<a href="#">page 35</a>
<input type="checkbox"/> <a href="#">Upgrading Avaya VPNmanager for Solaris</a>	<a href="#">page 37</a>

### Backing up all databases from the server console

When you backup your databases from the directory server console, the server copies all of the database contents and associated index files to a backup location. You can perform a backup while the server is running.

#### To back up your databases from the directory server console:

1. Open the Sun ONE console login dialog box.
  - Solaris: In the server root, enter **./startconsole**.
  - Windows NT and Windows 2000: From the windows Taskbar, click **Start>Programs>iPlanet Server Products**. Select **iPlanet Console 5.1**.
2. In the *Login* dialog box enter the user ID (Administrative ID) and password.
3. From the navigation tree, double click the directory server containing your VPN data, to open the console window for that server.
4. On the Directory Server Console, select the Tasks tab.
5. Click **Back Up Directory Server**. The *Backup Directory* dialog box is displayed.
6. In the *Directory* text box, enter the full path of the directory where you want to store the backup.

## Upgrading Avaya VPNmanager for Windows

To upgrade the VPNmanager on a computer running Windows NT or Windows 2000, use the following procedures.

**Note:** For systems running Windows NT, upgrade to VPNmanager 3.3 before upgrading to VPNmanager 3.4.

### Upgrading from VPNmanager 3.2 to VPNmanager 3.4

To upgrade the VPNmanager from 3.2 to 3.4 select the **Typical** option from the *Setup Type* dialog box in the install wizard and follow the procedure in [“Installing the VPNmanager console for Windows” on page 13](#). The procedure installs the new VPNmanager console, the new directory server, updates the schema, and installs the policy server.

Before beginning, verify that the system requirements, including the updated service packs are installed. See [“VPNmanager system requirements” on page 8](#).

**Note:** When you upgrade from 3.0 or 3.1, the older versions of the VPNmanager console have to be uninstalled. Go to the Start menu, VPNware3 and uninstall the Console.

Upon completing the upgrade, the previous version of VPNmanager can be uninstalled.

### Upgrading from VPNmanager 3.3 to VPNmanager 3.4

To upgrade the VPNmanager from 3.3 to 3.4 select the **Upgrade** option from the *Setup Type* dialog box in the install wizard. The wizard upgrades the VPNmanager console, updates the directory server schema, and installs the policy server.

Before beginning, verify that the system requirements, including the updated service packs are installed. See [“VPNmanager system requirements” on page 8](#).

**Note:** When you upgrade from 3.0 or 3.1, the older versions of the VPNmanager console have to be uninstalled. Go to the Start menu, VPNware3 and uninstall the Console.

Upon completing the upgrade, the previous version of VPNmanager can be uninstalled.

## Upgrading Avaya VPNmanager for Solaris

VPNmanager 3.4 uses the Sun ONE directory server 5.1 or the Microsoft Active Directory server. Previous versions of the VPNmanager used the Netscape Directory Server 4.1. You must upgrade and migrate to either the Sun ONE directory server 5.1. or the Microsoft Active Directory server.

Before beginning, verify that the system requirements, including updated service packs are installed. See [“VPNmanager system requirements” on page 8.](#)

### Upgrading from VPNmanager 3.2 to VPNmanager 3.4

1. Install the VPNmanager 3.4 console using the procedure in section [“Installing VPNmanager console for Solaris” on page 22.](#)
2. Install the directory server using the procedure in section [“Installing the directory server for Solaris” on page 23.](#)
3. Copy the file *migrateTo5* that is in the **iPlanet/Solaris** folder on the CD-ROM to the **/Installdirectory/iplanet/servers/bin/slapd/admin/bin** folder on your system.

**Note:** The file, *migrateTo5*, might appears as *migrat~1*. Copy the file and change the file name to *migrateTo5*, to overwrite the existing file.

4. Migrate the database using the Sun ONE migration procedures. For more information on migrating from your previous server to the new one, go to <http://docs.sun.com/source/816-5610-10/upgrade.htm>.
5. Update Schema using the procedure in [“Updating the directory server schema for Solaris” on page 26.](#)
6. Create an Sun ONE restart script using the procedure in [“Creating a Sun ONE restart script” on page 29.](#)
7. After you have successfully upgraded, delete the old restart script file.

**Note:** Users who are upgrading from VPNmanager 3.0 or 3.1, the older versions of the VPNmanager console has to be uninstalled.

### Confirming migration and choosing contexts

To confirm that the migration of database from your legacy server to VPNmanager 3.4 was successful and to choose the right context follow the steps below:

1. Launch the VPNmanager console.
2. Just before the console opens, you will see the *Select from Multiple Context List* following dialog.
3. Select the suffix that starts with "o=". For example, if your domain is abc.com, than you would select suffix o=abc.com.

To make this context permanent do the following:

1. Go to **MainConsole>File>Logoff** and logoff the current policy server.
2. Choose the directory server and click **Edit**.
3. This opens the *Configure Server* dialog box. Click **Advanced**.
4. Click on **Add More Contexts**.
5. Add the context that you selected before, from the list of contexts.
6. Click **Close**. This context is now available in the Initial Context list.
7. Choose this context from the list and click **OK**.
8. Enter the password and connect to the directory server.

### Upgrading from VPNmanager 3.3 to VPNmanager 3.4

1. Insert the VPNmanager CD into computer. When the *Overview* page opens, click **Installation** to go to the installation page.
2. When the *Introduction* dialog box appears, click **Next** to proceed.

**Note:** *If the autorun does not start, navigate to the install program \\disk1\solaris\install.bin. Double-click **install.bin** to open the Action - Run dialog box.*

3. Choose the folder location. Click **Next**.

4. When the *Setup Type* dialog box appears, select the **Upgrade** option. Click **Next**.

The installation wizard upgrades the VPNmanager console, updates the directory server schema, and installs the policy server.

5. When the *Install Complete* dialog appears, click **Finish** to return to the Solaris desktop.
6. Create an Sun ONE restart script using the procedure in [“Creating a Sun ONE restart script” on page 29](#).
7. After you have successfully upgraded, delete the old restart script file and the previous version of the VPNmanager.

**Note:** *Users who are upgrading from VPNmanager 3.0 or 3.1, the older versions of the VPNmanager console has to be uninstalled.*

### Confirming migration and choosing contexts

To confirm that the migration of database from your legacy server to VPNmanager 3.4 was successful and to choose the right context follow the steps below:

1. Launch the VPNmanager console.
2. Just before the console opens, you will see the *Select from Multiple Context List* following dialog.
3. Select the suffix that starts with “o=”. For example, if your domain is abc.com, than you would select suffix o=abc.com.

To make this context permanent do the following:

1. Go to **MainConsole>VPN Domain>Logoff** and logout of the VPNmanager console.
2. Choose the directory server and click **Edit**.
3. This opens the *Configure Server* dialog box. Click **Advanced**.
4. Click on **Add More Contexts**.
5. Add the context that you selected before, from the list of contexts.
6. Click **Close**. This context is now available in the Initial Context list.

7. Choose this context from the list and click **OK**.
8. Enter the password and connect to the directory server.

### **What next**

After installing or upgrading Avaya VPNmanager, you can begin using the latest version of the VPNmanager. Refer to the Avaya VPNmanager 3.4 Quick Installation Guide or the VPNmanager 3.4 Administrator's Guide.

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# Appendix A Installation Prerequisites for Microsoft Active Directory Server

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## Installing the Active Directory server snap-in

To install the Active Directory server snap-in:

1. Log in to the directory server as the administrator.
2. Insert the Windows 2000 Server compact disc into the CD-ROM drive. Click **Browse this CD**.
3. Double-click the **I386** folder.
4. Double-click **Adminpak** and follow the instructions that appear in the Windows 2000 Administration Tools Setup wizard.
5. Select **Install all of the Administrative Tools** option.

***Note:** If you do not have the Windows Server 2000 compact disc or if you run into problems using the CD, you can use a local version of Adminpak*

Based on your Windows 2000 installation, the Adminpak could be present in C:\WINNT\System32

6. Double-click **Adminpak** to continue with the installation of all the administrative tools
7. Click **Start>Run**.
8. Enter **mmc /a** in the Open field. Click **OK**.
9. In the menu, select **Console** and click **Add/Remove Snap-in**. Click **Add**.
10. From Snap-in, double-click **Active Directory Schema**. Click **Close**.

11. When all snap-ins are added to the console, click **OK**.
12. From the Console menu, click **Save** and give the name as Active Directory Schema snap-in.

## Extending the Active Directory schema

To extend the Active Directory schema:

1. Open Active Directory schema.
2. In the console tree, click the **plus sign (+)** to expand the hive.
3. Right-click Active Directory Schema, and click **Operations Master**.
4. Check to see if the schema can be modified in this domain controller. Click **OK**.

### Troubleshooting for extending the Active Directory schema

- If you attempt to view or change the Operations Master, you may receive the following error message: “The server is currently offline.”  
**Solution:** To resolve this problem, first click the plus sign (+) to expand the hive, then connect the snap-in to the Operations Master. After the hive has expanded, you can connect to the Operations Master.

- Sometimes the Active Directory Schema Manager snap-in does not connect to the Operations Master and gives the following error: “Could not connect to the current schema master server. The server may not be available, or you may have insufficient privileges to manage the schema.”

It's likely that the userid that you used to log on to the computer does not have the permissions to enable schema modification.

**Solution:** Log on as the administrator and try the schema update procedure. Add the administrator to the schema admins group as detailed below.

## Adding a member to the schema admins group

To add a member to the schema admins group:

1. Open **Active Directory Users and Computers**.
2. In the console tree, double-click the appropriate domain node then click **Users**. Or click the folder that contains the desired user.
3. In the details pane, right-click the user account that you want to add, and click **Properties**.
4. Click the **Member Of** tab, and click **Add**.
5. In the Select Groups dialog box, click **Schema Admins**.
6. Click **Add**.

**Note:** To open Active Directory Users and Computers, click Start, point to Programs, point to Administrative Tools, and then click Active Directory Users and Computers.

## Increasing the number of entries returned by Active Directory

By default Active Directory returns only 1000 entries when a search is initiated by a third party. If you have more than 1000 entries, increase the result size to 5000.

To increase the number entries returned by Active Directory:

1. Install ADSI Edit. To use ADSI Edit, install the Support Tools that are located in the Support\Tools folder on the Windows 2000 Server operating system CD. To install the tools, double-click the Setup icon in that folder.
2. On the Start menu, point to Programs, Windows 2000 Support Tools, Tools, and then click ADSI Edit

3. This should display a tree with the Configuration Container and other branches

If the Configuration Container is not displayed, right-click the ADSI Edit icon. Click **Connect to**.

Under Connection Point, select Naming Context, select Configuration Container.

Click **Advanced**. Check Specify Credentials and enter the Administrator userid and password.

4. Select **Configuration** container and navigate to the following:

CN=Configuration, <dc=domainname>

CN=Services

CN=Windows NT

CN=Directory Service

CN=Query-Policies

CN=Default Query Policy

5. Right click CN=Default Query Policy. Select **Properties**.
6. From *Select a property to view*, select **IDAPAdminLimits**.
7. From *Values*, select **MaxPageSize=1000**. Click **Remove**.
8. From **Edit Attribute type**, select **MaxPageSize=5000**. Click **Add**.
9. Click **OK** to exit the properties dialog.

## Enabling Secure Socket Layer (SSL)

Before you begin, verify the following:

- Installation of Windows 2000 High encryption pack from <http://www.microsoft.com/windows2000/downloads/recommended/encryption/>
- Configuration of Certificate Services using Start>Settings>Control Panel>Add/Remove Programs>Add/Remove Windows Components

To enable SSL:

1. Go to Start>Programs>Administrative Tools. Select **Domain Security Policy**.
2. Navigate to Security Settings>Public Key Policies.
3. Right click Automatic Certificate Request Settings. Select New>Automatic Certificate Request.
4. Select Domain Controller from the list of certificate templates.
5. Select the Certificate Authority that you have configured.

