

PathFinder Client

Version 7.0



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ABOUT THIS MANUAL

The [PathFinder Client User Guide](#) describes how to install, configure and use the RADVISION PathFinder Client.

RELATED DOCUMENTATION

The PathFinder documentation set is available on the RADVISION Utilities and Documentation CD-ROM supplied with the product and includes manuals and online helps. The manuals are in PDF format.

Note You require Adobe Reader version 5.0 or later to open the PDF files. You can download Acrobat Reader free of charge from www.adobe.com.

FEEDBACK

The team at RADVISION constantly endeavors to provide accurate and informative documentation. If you have comments or suggestions regarding improvements to future publications, we would value your feedback.

Please send your comments to doc_comments@radvision.com.

We thank you for your contribution.

1

INTRODUCING PATHFINDER™

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PATHFINDER SOLUTION OVERVIEW

Enterprises and Service Providers that want to secure network data and devices while taking advantage of H.323 communications across LANs, WANs and the public Internet must inevitably address the issue of firewall and Network Address Translation (NAT) device traversal.

Firewalls block unsolicited incoming communications from outside the local network. Most firewalls are not designed to allow video conferencing scenarios where everyone is allowed to connect to everyone.

Network Address Translation (NAT) is an Internet standard that enables a local-area network (LAN) to use one set of IP addresses for internal traffic and a second set of addresses for external traffic. A NAT box located where the LAN meets the Internet makes all necessary IP address translations. The NAT hides the internal native IP address and thus prevents incoming video calls to the devices on the private network.

The RADVISION PathFinder solution maintains the security and advantages of firewall and NAT, requires no costly upgrade to the firewall or NAT for protocol awareness, handles both near-end (local) and far end (remote destination) firewall traversal and is easy to implement and deploy.

The RADVISION PathFinder solution works with the PathFinder Client and H.323 endpoints which support the ITU H.460.18 and H.460.19 standards to enable traversal of firewalls. The PathFinder Client is necessary for the support of non-H.460 compliant endpoints.

For firewall traversal, PathFinder supports a proprietary RADVISION protocol and H.460.18/H.460.19. The proprietary RADVISION protocol has been supported since the first release of PathFinder and should be used in conjunction with the PathFinder Client for endpoints which do not support the H.460 standard, or in cases where the H.460 traversal does not work.

H.460.18 and H.460.19 are ITU standards which define protocols for the firewall traversal of signaling and media respectively.

Note Only H.460 traversal-enabled endpoints can register with a PathFinder Server. All other endpoints must use the PathFinder Client for registration requests.

PATHFINDER COMPONENTS

PathFinder contains two components—PathFinder Server and PathFinder Client.

- **PathFinder Server**—The core intelligent component of the solution. The PathFinder Server provides signaling and media processing for communications among private enterprise networks served by PathFinder Clients. When a PathFinder Client establishes an initial outbound connection with the PathFinder Server through a specific port of the firewall (the default port is 3089), the PathFinder Server is able to communicate with the PathFinder Client through that particular port.
- **PathFinder Client**—A light client application that is deployed at the different sites inside the protected network. PathFinder Client can be installed on any standalone computer with a Windows operating system. PathFinder Client supports non-H460 compliant endpoints. If all the deployed endpoints support the H.460 standard, there is no need for the PathFinder Client.

CONFIGURING YOUR FIREWALL TO WORK WITH PATHFINDER

Table 1-1 describes the port configuration required to enable your firewall to work with PathFinder.

Table 1-1 Firewall Port Configuration

| Port | Type | Use |
|------|---------|------------------------------------|
| 1719 | UDP | H.460.18 RAS |
| 2776 | TCP | H.460.18 Call Signaling |
| 2776 | UDP | H.460.19 Media (RTP) |
| 2777 | TCP | H.460.18 and H.460.19 Call Control |
| 2777 | UDP | H.460.19 Media Control (RTCP) |
| 3089 | TCP/UDP | Tunneling |

ENTERPRISE DEPLOYMENT

Figure 1-1 shows how all cross-enterprise calls pass between a PathFinder Client and the PathFinder Server. Firewalls allow connections between the PathFinder Server and each PathFinder Client while still offering uncompromised network security.

For information on configuring your firewall, see [Configuring Your Firewall to Work with PathFinder](#) on page 3.

An H.460-compliant endpoint should register with the PathFinder Server directly. If the H.460-compliant endpoint registers to a PathFinder Client or the main site gatekeeper, endpoint H.460 functionality is not used.

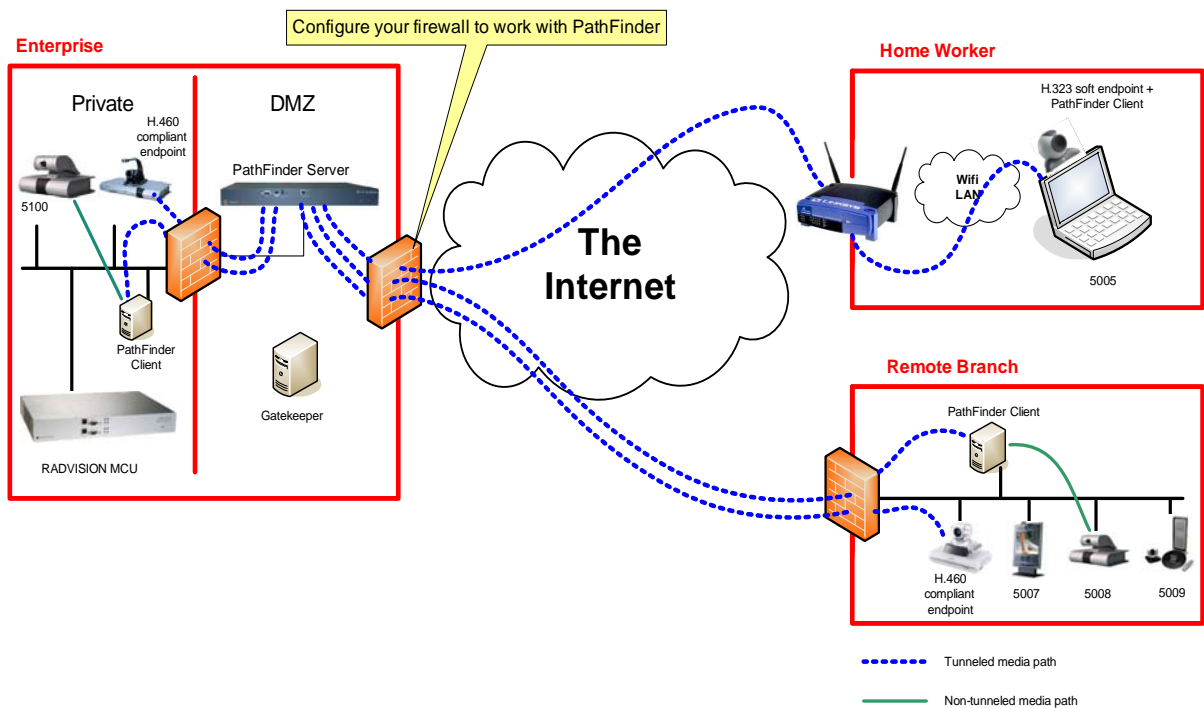


Figure 1-1 PathFinder Enterprise Deployment

SERVICE PROVIDER DEPLOYMENT

Figure 1-2 shows how each enterprise can use its own gatekeeper or use the Service Provider gatekeeper.

For information on configuring your firewall, see [Configuring Your Firewall to Work with PathFinder](#) on page 3.

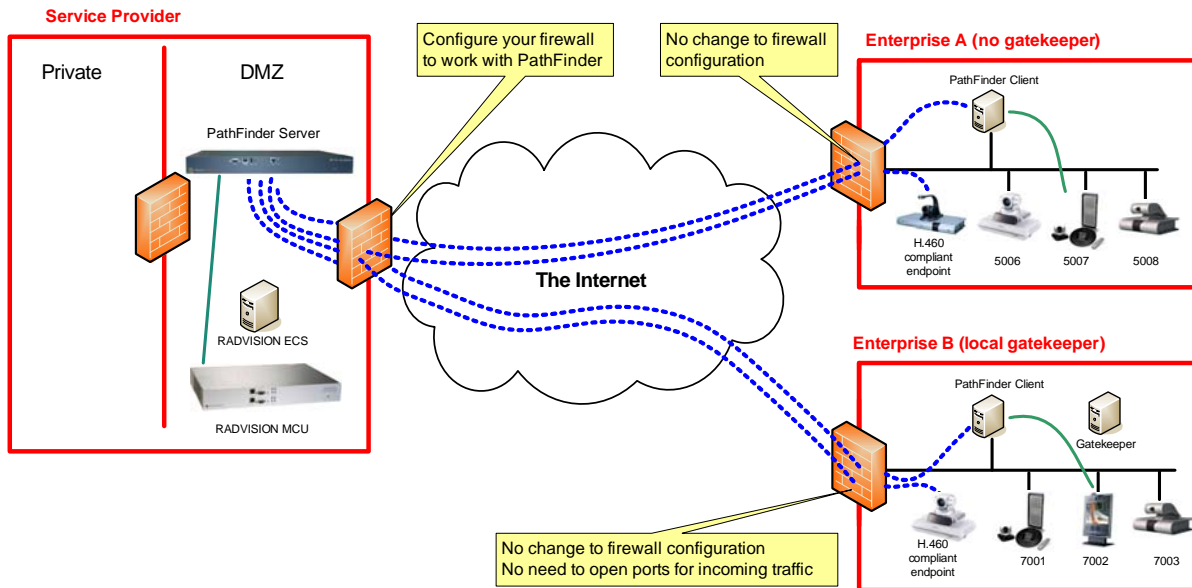


Figure 1-2 PathFinder Service Provider Deployment

ROLE OF THE PATHFINDER SERVER

The PathFinder Server provides signaling and media processing for communications among private enterprise networks served by PathFinder Clients. When a PathFinder Client establishes an initial outbound connection with the PathFinder Server through a specific port of the firewall (the default port is 3089), the PathFinder Server is able to communicate with the PathFinder Client through that particular port.

The PathFinder Server has in-depth knowledge of the communication protocols used by the system and is able to modify protocols and substitute the initiator's address with its own address, so that it acts as the call initiator to the receiving end. This eliminates the need to publish internal native enterprise IP addresses.

ROLE OF THE PATHFINDER CLIENT

The PathFinder Client acts as the sole proxy through which internal devices behind an enterprise firewall communicate with external devices.

Figure 1-3 shows a deployment of the PathFinder Client at a remote enterprise site behind the corporate firewall.

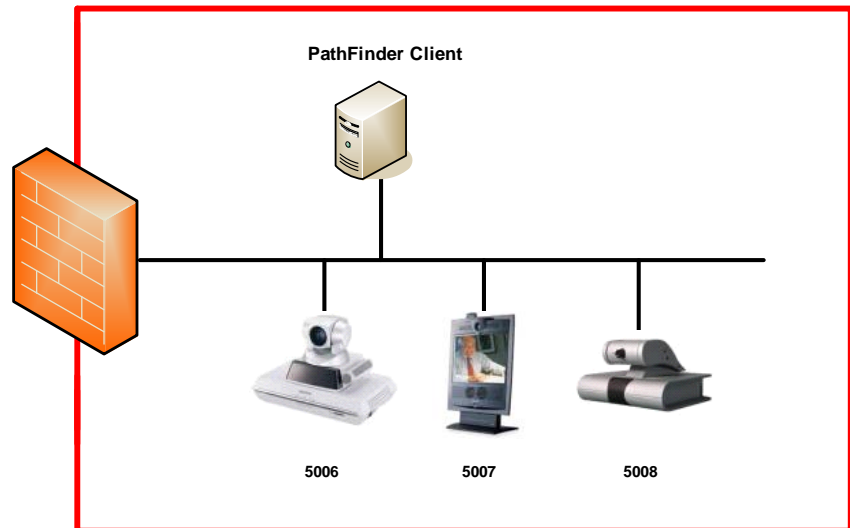


Figure 1-3 PathFinder Client Remote Site Deployment

DIRECT MEDIA CONNECTION

Direct media connection enables a direct media flow between endpoints without passing the PathFinder Server located at the main site.

Direct media connection supports the following two scenarios:

- Scenario 1: Direct media connection within an enterprise branch
- Scenario 2: Direct media connection between enterprise branches

Scenario 1: Direct media connection within an enterprise branch

In this scenario, several PathFinder Clients are deployed at the same enterprise branch. In calls between endpoints located at the same branch (but registered to different PathFinder Clients), the media goes directly between the endpoints without passing through the PathFinder Server located at the main site.

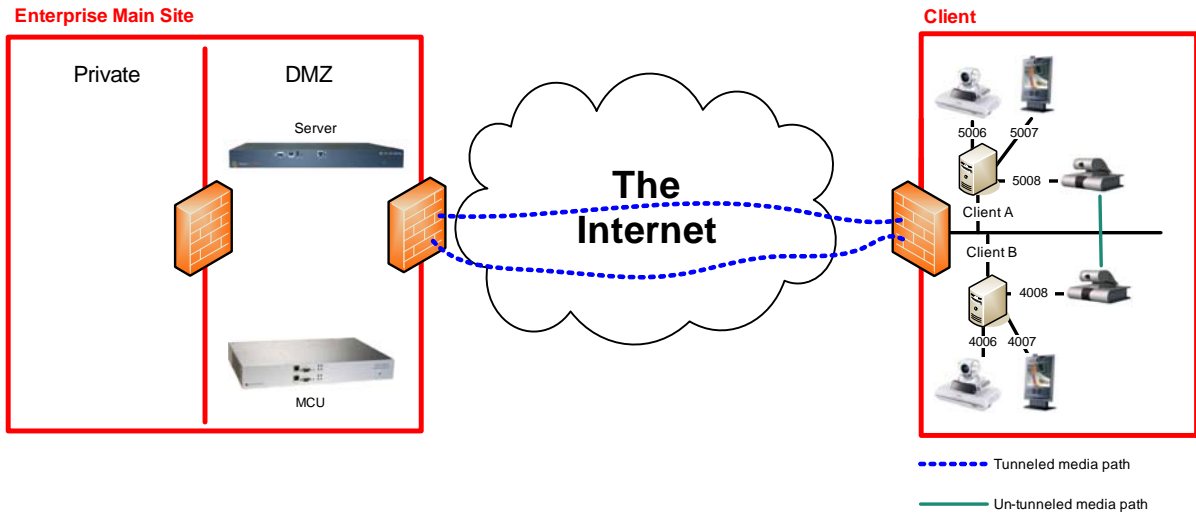


Figure 1-4 Direct Media Connection within an Enterprise Branch

In [Figure 1-4](#) two PathFinder Clients A and B are deployed at the remote branch. In a call between endpoint 5008 (registered to PathFinder Client A) and endpoint 4008 (registered to PathFinder Client B), the media goes directly between the endpoints without going through the PathFinder Server at the main site. Support for this scenario is automatic and requires no special settings on the PathFinder Server.

Scenario 2: Direct media connection between enterprise branches

In this scenario, PathFinder Clients are deployed at different branch sites. The sites are linked via a direct MPLS connection. When there is a call between the sites, the media is routed directly between the sites without passing through the PathFinder Server located at the main site.

Direct Media Connection

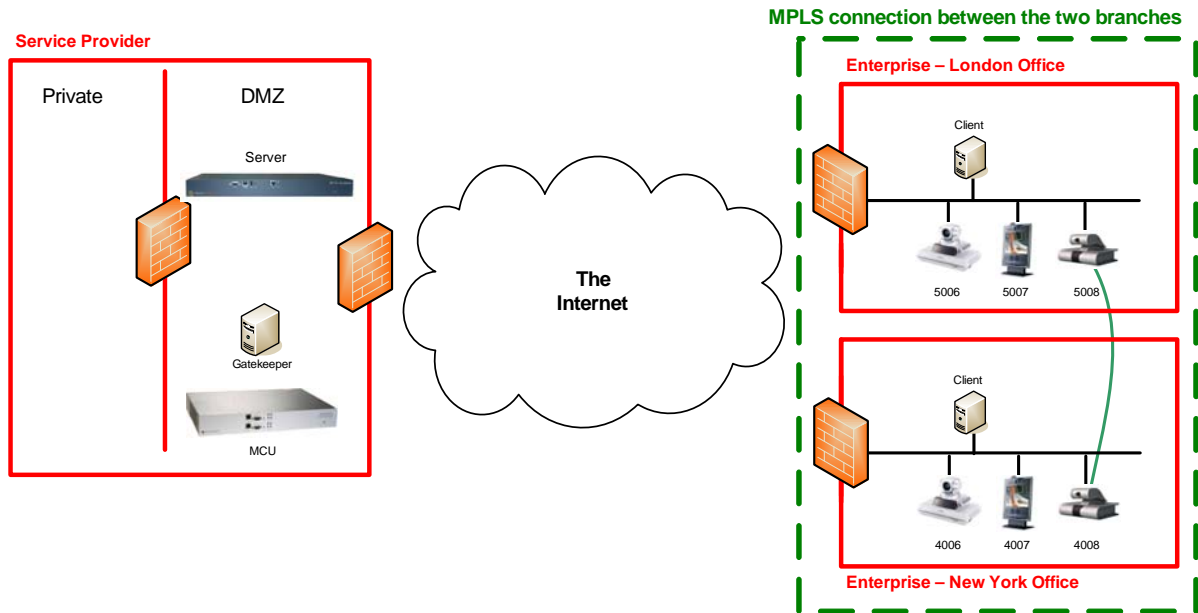


Figure 1-5 Direct Media Connection Between Enterprises

In [Figure 1-5](#) there is an MPLS connection between the London and New York branch offices. In a call between endpoint 5008 (registered to the PathFinder Client at the London office) and endpoint 4008 (registered to PathFinder Client at the New York office), the media goes directly between the endpoints without going through the PathFinder Server at the main site.

To use this scenario, you need to configure a topology island on the PathFinder Server. For more information, see [Managing Topology Islands](#) on page 48.

KEY BENEFITS OF THE PATHFINDER SOLUTION

The key benefits of the PathFinder solution include:

- Handles firewall and NAT problems without device upgrades or security compromises.
- Tunnels and transparently traverses firewalls and NAT devices, preserving security advantages.
- No costly upgrade to firewalls or NAT devices for protocol awareness.
- No publishing of enterprise IP addresses.
- Both near-end (local) and far-end (remote destination) firewall traversal.
- Thin PathFinder Client requires no knowledge of underlying communication protocols.
- PathFinder Client requires no upgrade to support additional protocols.
- PathFinder Client uses only one TCP or UDP port to connect to the PathFinder Server.
- Suitable for service providers and enterprises.
- Simplified Enterprise Gatekeeper configuration.
- Easy to implement and deploy.

FEATURES OF THE PATHFINDER SOLUTION

The key features of the PathFinder solution include:

- Status Check—The PathFinder Client checks the status of the connection to the PathFinder Server.
- Endpoint Calling—Support for calling endpoints far away from the PathFinder Client. Default extension for guest endpoint dialing into a private network.
- PathFinder Client can run on Microsoft Windows Vista Business (Service Pack 1), Microsoft Windows Vista Ultimate (Service Pack 1), and Windows 2008 Server.
- Concurrent Calls—Up to 80 2M concurrent calls.
- Registered Devices—Up to 480 registered devices.
- TCP or UDP—For media traversal.
- Web Server Timeout—Configurable web server timeout.
- Direct Media Connection—Between PathFinder Clients.
- ECS Integration—The PathFinder Client can be installed on the same machine as the ECS.

- Local Gatekeeper—Enterprise gatekeeper support allows deploying a local gatekeeper at the remote site.
- Interoperability—Based on the H.323 standard PathFinder provides a high degree of interoperability with other H.323-compliant gateways, gatekeepers, terminals and MCU products. Interoperability with the RADVISION ECS to support calling external endpoints by dialing to an IP address from Enterprise Gatekeeper-registered endpoints.
- Aliases—H.460 endpoint aliases are displayed as “Client Name” under Client Status > Connected Clients.
- Web-based Management—All aspects of the PathFinder Server configuration can be viewed and modified from a remote location using a standard web browser.
- T.120 Data Collaboration—PathFinder supports data transfers in calls, for legacy endpoints which are registered through the PathFinder Client, using the T.120 standard. There is no support for H.460 endpoints.
- H.239 Support—PathFinder supports H.239.
- H.460.18 and H.460.19 Support—Standard firewall/NAT traversal support.
- Quality Of Service (QoS)—Configurable coding of media packets to achieve QoS routing priority on the IP network. The TOS bits of the IP datagram header can be configured for priority level.
- Dial Plan—PathFinder provides full dial plan support.
- Direct Media Connection—Ensures that media is routed directly between clients when possible.
- Access Control—Access to the PathFinder user interface is password controlled.
- Authentication—PathFinder Server runs on a hardened Linux Operating System (RADVISION customized kernel). The PathFinder Client must be authenticated in order to connect the server.
- Security Solution—PathFinder Client contains an access control list (ACL) for the administrator to define which devices are accessible via the client.
- Role Based User Management—Enables the allocation of suggested roles and default rights profiles.
- AES Encryption—PathFinder supports encryption for all client-server traffic for call privacy. This includes signaling and media encryption.

- Scalable Solution—One client serves many endpoints, PathFinder Servers can be neighbored. Clients hunt backup servers if a primary server is unavailable.
- Neighboring Server—The PathFinder Server can be neighbored thereby supporting large enterprises or firewall/NAT traversal between organizations.
- URI Dialing—Enables endpoints registered with different gatekeepers or PathFinder Servers to easily call each other. Without URI dialing, all systems must be neighbored to each other.
- Failover mechanism (Client Redundancy)—is activated upon system failures (Windows)

Features of the PathFinder Solution

2

SYSTEM REQUIREMENTS

- [Minimum Hardware Requirements](#) on page 13
- [Software Environment Options](#) on page 13

MINIMUM HARDWARE REQUIREMENTS

The minimum hardware requirements for installing and running the PathFinder Client on Windows or Linux:

- Intel® Pentium® III 1 GHz processor
- 256 MB RAM
- 50 MB of hard disk space
- Mouse

SOFTWARE ENVIRONMENT OPTIONS

- Microsoft Windows 2000 Professional
- Microsoft Windows XP
- Microsoft Windows Vista Business (Service Pack 1)
- Microsoft Windows Vista Ultimate (Service Pack 1)
- Microsoft Windows 2008 Server
- Linux (RedHat 9.0 is recommended)

Software Environment Options

3

HOW TO INSTALL THE PATHFINDER CLIENT

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- [Launching the PathFinder Client Configuration Tool](#) on page 17
- [Upgrading PathFinder Client](#) on page 18

INSTALLING THE PATHFINDER CLIENT ON A WINDOWS PLATFORM

You install the PathFinder Client by running the PathFinder Client installation wizard.



Procedure

- 1 Locate and double click the **PathFinder_Client_7_w_x_y_z.exe** file (where 7_w_x_y_z represents the version number).
The Introduction screen displays.

Note If you try to instal the PathFinder Client on the operating system it does not support, the error message is displayed.

Installing the PathFinder Client on a Windows Platform

2 Click **Next**.

The License Agreement screen displays.

3 Click **I accept the terms of the License Agreement**.

4 Click **Next**.

The Choose Install Folder screen displays.

5 Select the location where you would like to install an instance of the PathFinder Client:

- To keep the default setting, click **Next**.
- To assign a different location, click **Choose** to browse for a location, then click **Next**.

The Install **PathFinder Client** as a Windows Service screen displays.

6 Click **Install PathFinder Client as a Windows Service** to automatically run the PathFinder Client on Windows startup.

7 Click **Next**.

If you perform installation on Windows 2003 operating system, the Windows Clustering screen displays. Click **Support Clustering** to support PathFinder Client redundancy on a Windows server cluster setup.

8 Click **Next**.

The Pre-Installation Summary screen displays.

9 Review the information and confirm disk space availability. If you wish to change any of the information displayed, click **Previous** to return to the required installation screen. Otherwise, click **Install** to start the installation process.

When installation is complete, the Install Complete screen displays.

10 Click **Done** to exit the installation wizard.

INSTALLING THE PATHFINDER CLIENT ON A LINUX PLATFORM



RADVISION recommends to use RedHat 9.0 for installation on a Linux platform.

Procedure

- 1 Copy the **Linux** PathFinder Client **pfc-7.0.x.y.z-rv.i586.rpm** installer file from the RADVISION Utilities and Documentation CD-ROM supplied with the product to a folder on your computer.
- 2 Log in as the “root” user of the Linux computer.
- 3 Execute **rpm -i pfc-7.0.x.y.z-rv.i586.rpm** from the folder that you copied the installer to.

The client installs. Instructions of where and how to configure the client and the configuration file name display.

Note Configuration files contain detailed descriptions for all items. You can refer to these descriptions for Linux Client configuration. You can configure the Linux Client only by manually editing these files.

LAUNCHING THE PATHFINDER CLIENT CONFIGURATION TOOL



For information about configuring the PathFinder Client, see [Configuring the PathFinder Client](#).

Procedure

- 1 Click **Start > All Programs > RADVISION PathFinder Client > PathFinder Client**.

The PathFinder Client Configuration Tool starts up and the Connection tab displays.

UPGRADING PATHFINDER CLIENT

You upgrade a PathFinder Client by installing the new version. During PathFinder Client upgrade, you can only install the newer version of the client at the same location where the previous version was installed.

If the old client is running during the upgrade, the PathFinder Client installation wizard prompts you to reboot.

4

CONFIGURING THE PATHFINDER CLIENT

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CONFIGURING A CONNECTION TO A PATHFINDER SERVER

You can configure a connection to a PathFinder Server, to configure additional PathFinder Servers and to define the name and location of the PathFinder Client. During this configuration you can define this client to be located in a private network in these cases:

- If the PathFinder Client is located at an enterprise remote branch
- Or
- If the enterprise video conferencing services are supplied by a Service Provider who owns the PathFinder Server.

Configuring a Connection to a PathFinder Server

In some cases, the PathFinder Client can be located on the public internet in order to allow guest users or endpoints which are not part of the enterprise to connect to your video conferencing network.

Before You Begin

Ensure you have the PathFinder Server password provided by the PathFinder Server administrator.



Procedure

- 1 Click the **Connection** tab.
- 2 Enter the IP address of the default PathFinder Server.
The PathFinder Client connects to the server you enter in this field.
- 3 Enter the port of the default PathFinder Server.
- 4 Click **Standby Servers** to configure additional PathFinder servers. See [Configuring Additional PathFinder Servers](#) on page 23.
- 5 Enter the PathFinder Server password for connecting the PathFinder Client to the PathFinder Server.
- 6 Enter a unique name to identify your PathFinder Client. By default this field includes the name of the computer on which the PathFinder Client is installed.

Note The values in the Server Password and Client Name fields should match the values in the Password and Login ID fields defined for the corresponding Client User in the Users tab of the PathFinder Server. If no Client User role is defined on the PathFinder Server, the value in the Client Name field can be any string which is unique on the PathFinder Server connected clients list. The Server Password field must be empty in this case.

- 7 Click the **This client is located on private network** check box if the PathFinder Client is located on the enterprise LAN. [Figure 4-1](#) shows a PathFinder Client installed on the main enterprise LAN.

Enterprise

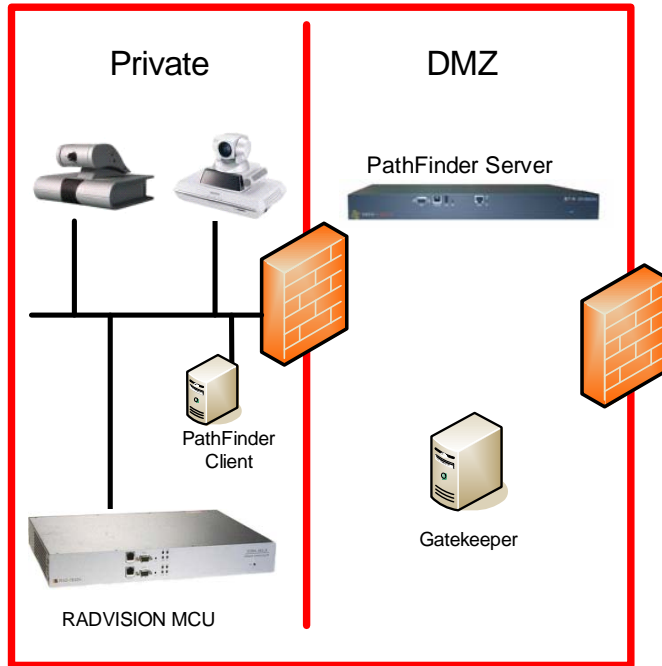


Figure 4-1 PathFinder Client Corporate LAN Deployment

- 8 Click **Start Client** to save all modified configuration data and to connect the PathFinder Client to the PathFinder Server.
-

CONFIGURING A PATHFINDER CLIENT DEPLOYED ON A WAN



Procedure

- 1 Click the **Connection** tab.
 - 2 Clear the **This client is located on private network** check box.
The **Enable extension dialing using this client's public IP address** and **Default extension** options are available on the Advanced tab.
-

CONFIGURING A PATHFINDER CLIENT DEPLOYED ON A LAN



Procedure

- 1 Click the **Connection** tab.
 - 2 Click the **This client is located on private network** check box for clients which have to serve an Enterprise Gatekeeper on their site for dialing to external IP addresses.
 - 3 Click the **Advanced** tab.
 - 4 Verify that the **Enable Enterprise Gatekeeper using this client to route IP calls** and **IP calls proxy port** options are selected.
The IP calls proxy port option has a range of 1-65534 and the default port is 1720.
-

CONFIGURING ADDITIONAL PATHFINDER SERVERS

The Standby Servers option in the Connection tab enables you to configure up to three additional PathFinder Servers on your network. If the default PathFinder Server is unreachable, the PathFinder Client attempts to connect to each of the PathFinder Servers configured here in turn until a connection is established with one of them.



Procedure

- 1 Click the **Connection** tab.
 - 2 Click **Standby Servers**.
The Standby servers dialog box opens.
 - 3 Configure additional servers:
 - a Click the relevant check box.
 - b Enter the server IP address.
 - c Enter the server port number.
 - d Click **OK**.
 - 4 Click **Start Client** to connect the PathFinder Client to the PathFinder Server.
-

CONFIGURING GATEWAY AND MCU DETAILS

This procedure describes how to configure a new Gateway or MCU for the PathFinder Client.



Procedure

- 1 Click the **Devices** tab.
 - 2 Click **Add**.
The Rich Media Device dialog box opens.
 - 3 Enter the IP address of the Gateway or MCU.
 - 4 Enter a description of the device.
 - 5 Click **OK**.
The new network device displays in the Devices tab.
 - 6 Click **Start Client** to connect the PathFinder Client to the PathFinder Server.
-

HOW TO DEFINE ACCESS PERMISSION TO THE PATHFINDER SERVER

DEFINING IP ADDRESSES WHICH MAY COMMUNICATE WITH THE PATHFINDER SERVER VIA THE PATHFINDER CLIENT

You can add another level of security to a conferencing system by specifying which IP addresses may or may not communicate with the PathFinder Server via the PathFinder Client.

- [Defining IP Addresses Which May Communicate with the PathFinder Server via the PathFinder Client](#)
- [Defining IP Addresses Which May Not Communicate with the PathFinder Server via the PathFinder Client](#)

Before You Begin

Before you define the IP addresses which may communicate with the PathFinder Server via the PathFinder Client, note the following:

- Select **All registered devices** to allow all network devices listed in the Devices tab and all other H.323 endpoints which use this PathFinder Client as their gatekeeper to communicate with the PathFinder Server via the PathFinder Client. For more information about the Devices tab, see [Configuring Gateway and MCU Details](#) on page 23.
- There are certain scenarios in which a local gatekeeper is required at a remote branch. In such cases, the gatekeeper deployed at the remote site manages the endpoints at the remote site, while the PathFinder Client is used for out-of-zone calls (incoming or outgoing calls) only, as shown in [Figure 4-2](#).

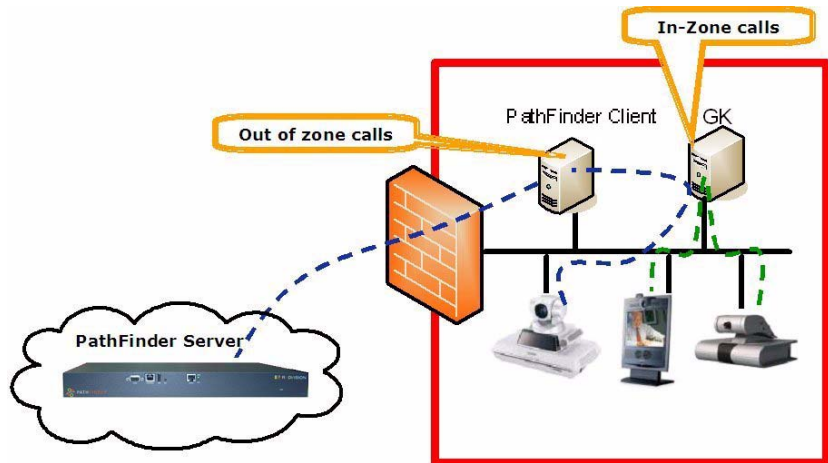


Figure 4-2 Local Gatekeeper at a Remote Branch

In such cases, you must add the IP address of the enterprise gatekeeper and all endpoints to the Allow list, otherwise the media to the endpoints registered to the enterprise gatekeeper will be discarded by the PathFinder Client. If you do not add the enterprise gatekeeper IP address to the Allow list, you may not be able to establish calls from the PathFinder Server to the enterprise gatekeeper.

- When the MCU works with a media processing card (such as the MVP), you must add the IP address of the media processing card to the Allow list.



Procedure

- 1 Click the **Security** tab.
- 2 Click **Add** in the Allow area.
The Security Group dialog box opens.
- 3 To define a single device:
 - a Click **Single IP**.
 - b Enter the IP address of the device.

- 4 To define a range of IP addresses:
 - a Click **From**.
 - b Enter the IP address which opens the range.
 - c Enter the IP address which closes the range.
 - 5 Click **OK**.

The defined IP addresses are displayed in the Allow area of the Security tab.
 - 6 Click **Start Client** to connect the PathFinder Client to the PathFinder Server.
-

DEFINING IP ADDRESSES WHICH MAY NOT COMMUNICATE WITH THE PATHFINDER SERVER VIA THE PATHFINDER CLIENT



Procedure

- 1 Click the **Security** tab.
- 2 Click **Add** in the Deny area.

The Security Group dialog box opens.
- 3 To define a single device:
 - a Click **Single IP**.
 - b Enter the IP address of the device.
- 4 To define a range of IP addresses:
 - a Click **From**.
 - b Enter the IP address which opens the range.
 - c Enter the IP address which closes the range.

5 Click **OK**.

The defined IP addresses are displayed in the Deny area of the Security tab.

6 Click **Start Client** to connect the PathFinder Client to the PathFinder Server.

CONFIGURING STARTUP PREFERENCES

The procedure in this section describes how to configure the basic behavior of the PathFinder Client after startup or reboot.

You can configure these options:

- Auto start on Windows logon—The PathFinder Client starts automatically the first time a user logs on to Windows after system reboot. This option is disabled when the PathFinder Client is installed as a Windows service; it is enabled when the Client is installed as an application or as a Support Clustering service.
- Connect to server on startup—The PathFinder Client connects to its PathFinder Server automatically at startup. If the Client is installed as Support Clustering and it is running on the inactive host of the Cluster, the Windows Cluster will disable this option automatically.
- Minimize after connecting to server—The PathFinder Client runs in the system tray once it connects to its PathFinder Server.
- Language—PathFinder changes its user interface to the specified language after restart.



Procedure

- 1** Click the **Preferences** tab.
- 2** Click the check boxes to configure options as required.
- 3** Select the language from the list.
- 4** Click **Start Client** to connect the PathFinder Client to the PathFinder Server.

Note When the client is installed as Support Clustering, the Start Client button is disabled. The service should only be started by Windows Cluster.

CONFIGURING ADVANCED NETWORK SETTINGS

During this configuration you can enable guest users to dial in and set the default extension for dialing in.

A guest user is a user with a terminal which is not registered to the organization gatekeeper. When the client is private, this title is changed to Enable Enterprise Gatekeeper using this client to route IP calls and Default extension is changed to IP calls proxy port.

The default extension is usually configured to the operator extension or to the MCU IVR. PathFinder redirects a call to the default extension when the user dials only the IP address of the public PathFinder Client without any extension.

By default, the public PathFinder Client denies all incoming calls. To accept all incoming calls by default, add an entry 0.0.0.0 to the Allow list in the Security tab. See [How to Define Access Permission to the PathFinder Server](#) on page 24.

Note The endpoint does not need to have its own gatekeeper, or to use this client as its gatekeeper.

Available only when the PathFinder Client is located on the public network (in such cases the This client is located on private network option in the Connection tab is unchecked).

When the PathFinder Client is private, the name of this field changes to IP Calls Proxy Port. The PathFinder Client listens on this port for external IP dialing setup messages.

The value of this port will match the Route IP Calls to field of the ECS used as the Enterprise Gatekeeper for this Client.

When dialing an external IP address from Enterprise Gatekeeper-registered endpoints (when the PathFinder Client is private), the Security > Allow configuration for Enterprise Gatekeeper settings is used.

You also configure the interval at which the PathFinder Client sends keep alive requests to the PathFinder Server when there is no traffic. The keep alive mechanism prevents the firewall dropping the connection between the PathFinder Client and the PathFinder Server. Set to Server default by default to indicate that the PathFinder Client uses the value set by the PathFinder Server on the initialization connection time (10 minutes).



Procedure

- 1 Click the **Advanced** tab.
- 2 Click **Enable extension dialing using the client's public IP address** check box to enable guest users to dial in.
- 3 Enter the required default extension.
The dialing string format is actually used for dialing internal endpoints other than the endpoint defined as the default extension.

Note To dial to the default extension, a user needs only IP address.

- 4 Select a UDP or TCP connection for media traversal between the PathFinder Client and the PathFinder Server.

Note Using a TCP connection reduces media quality and server capacity.

- 5 Configure the QoS option:
 - a Click the **QoS support** check box to enable Quality of Service (QoS) support.

Note QoS support requires Windows 2000 or higher and an update to your Windows Registry.

- b Select the TOS bits of the IP datagram header for Quality of Service priority level:
 - ❖ Low delay—Sets the value of the DSCP field of the IP header to 0x10 inform the network to minimize packet flow delay.
 - ❖ Throughput—Sets the value of the DSCP field of the IP header to 0x08 to inform the network to maximize the packet flow throughput.
 - ❖ Reliability—Sets the value of the DSCP field of the IP header to 0x04 to inform the network to maximize packet flow reliability.

- ❖ Low cost—Sets the value of the DSCP field of the IP header to 0x02 to inform the network to minimize packet flow monetary cost.

Note For more detailed information about QoS based on TOS, refer to RFC-1349.

- c After modifying the QoS support option, restart your Windows operating system to allow changes to take effect.
- 6 If the computer contains more than one IP address, select the required IP address from the Local IP list.

Note When the Client is installed as Support Clustering, the Cluster IP can be entered manually here. This provides a convenient way to configure the Client on an inactive host of the Cluster.

- 7 For Polycom PVX version 8.0.2 endpoints or later, enter the RAS port in the field.
Enter the PathFinder Client RAS port when a Polycom PVX 8.0.2 is installed on the same machine as the Client. The PVX can set its gatekeeper port to this RAS port, enabling both the PVX and the Client to operate on the same machine.
- 8 Select the required option from the Keep alive interval list.
- 9 Click **Start Client** to connect the PathFinder Client to the PathFinder Server.
Or
- 10 Click **Apply**.

Note The Start Client option is not active when the Client is installed as Support Clustering.

**VIEWING
PATHFINDER
VERSION
INFORMATION**

The **About** tab displays information about the version of the PathFinder Client currently in use is displayed.

**ENDPOINT
REGISTRATION**

Once the PathFinder system is running and operational, you can configure enterprise endpoints to register to a PathFinder Client by setting the PathFinder Client IP address as the endpoint gatekeeper. For more information on endpoint registration, consult your endpoint model documentation.



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About RADVISION

RADVISION (NASDAQ: RVSN) is the industry's leading provider of market-proven products and technologies for unified visual communications over IP and 3G networks. With its complete set of standards based video networking infrastructure and developer toolkits for voice, video, data and wireless communications, RADVISION is driving the unified communications evolution by combining the power of video, voice, data and wireless – for high definition video conferencing systems, innovative converged mobile services, and highly scalable video-enabled desktop platforms on IP, 3G and emerging next generation networks. For more information about RADVISION, visit www.radvision.com

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