HP ProLiant Essentials Rapid Deployment Pack Planning Guide

Release 1.00

Contents

About This Guide

This guide provides information on integrating the Rapid Deployment Pack into your existing environment. It covers:

- Network services and infrastructure

- Product architecture and installation options

- Examples of product implementation into existing environments

This version is intended for use with the Rapid Deployment Pack—Windows Edition 1.40 and the Rapid Deployment Pack—Linux Edition 1.00.

Audience Assumptions

This guide assumes that you have a general understanding of networking and the server deployment process.

Related Documents

After reading this guide, HP recommends reading the following documentation:

- The *HP ProLiant Essentials Rapid Deployment Pack—Windows Edition Support Matrix* details which servers and operating systems are supported for deployment.

- The *HP ProLiant Essentials Rapid Deployment Pack—Windows Edition User Guide* provides information on installing, configuring, and using the Rapid Deployment Pack as a server deployment solution.

- The *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition Support Matrix* details which servers and operating systems are supported for deployment.

- The *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition Installation Guide* provides information on installing and configuring the Rapid Deployment Pack—Linux Edition.

- The *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition User Guide* provides information on using the Rapid Deployment Pack as a server deployment solution.

All these documents can be found at http://www.hp.com/servers/rdp and on the respective product CDs.

Where to Go for Additional Help

Online Resources

- HP ProLiant Essentials Rapid Deployment Pack website at
  http://www.hp.com/servers/rdp

- HP ProLiant Essentials Rapid Deployment Pack Knowledge Base at
  http://www.hp.com/servers/rdp

- *ITRC User Forum "ProLiant Deployment, Provisioning (RDP, SmartStart)" at*
  http://forums.itrc.hp.com

- Altiris website at http://www.altiris.com

Telephone Numbers

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.

- In Canada, call 1-800-263-5868.

For HP technical support:

- In the United States and Canada, call 1-800-652-6672.

- Outside the United States and Canada, refer to http://www.hp.com.

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Network Services

The Rapid Deployment Pack is designed to perform optimally with Dynamic Host Configuration Protocol (DHCP) and Preboot eXecution Environment (PXE) incorporated within the network infrastructure. This chapter provides a basic overview of DHCP and PXE.

DHCP and PXE are not required to use the Rapid Deployment Pack. Other alternatives, such as boot diskettes, are available but are not discussed in this guide.

Background

This chapter assumes that you have a basic understanding of networking terminology including terms such as NIC, subnet, switch, client, and server.
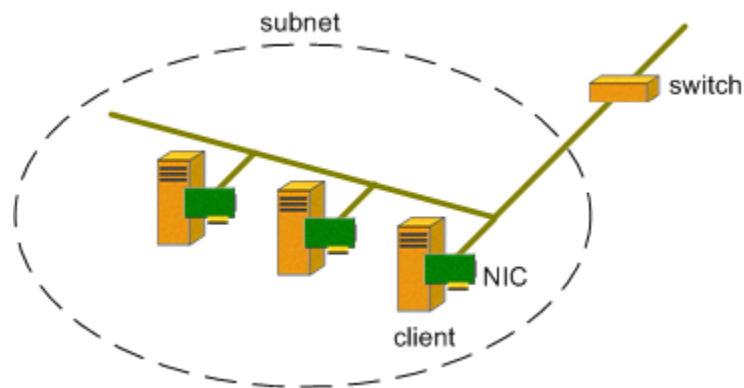
Client

A client is any computer that has a Network Interface Card (NIC) and is connected to a network. A PXE client is any computer with a NIC that contains PXE support in its firmware.

Newer ProLiant servers have PXE support in their NICs, while older servers support PXE through the addition of a stand-up NIC. For complete details on PXE support in ProLiant servers, refer to the *HP ProLiant Essentials Rapid Deployment Pack—Windows Edition Support Matrix* or *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition Support Matrix* at http://www.hp.com/servers/rdp.

DHCP

DHCP is a network service that allows clients to obtain an IP address from a pool of addresses (scope).

NOTE: If you are concerned about using dynamic addresses for servers, it is possible to use DHCP during the initial deployment phase and then assign a static address during the operating system installation phase.

PXE

PXE is a network service that enables PXE clients to download and execute a boot image. This is analogous to booting from a diskette.

The boot image, or network bootstrap program (NBP), uses the Universal Network Device Interface (UNDI) provided by the PXE client firmware to access the network. UNDI enables one boot image to work with different PXE-capable NICs, since the specifics for each NIC are handled by the PXE client firmware.

NOTE: A NIC-specific driver can be used instead of the UNDI driver. However, doing so causes the boot image to work only on clients with NICs supported by that driver.

The PXE client downloads the boot image using the Trivial File Transfer Protocol (TFTP) or on some PXE servers using Multicast TFTP (MTFTP). MTFTP allows a PXE server to simultaneously send a boot image to multiple clients.

PXE Boot Process

When a client performs a PXE boot, it starts a sequence of transactions (requests and responses) between itself and the DHCP and PXE services. Two sequences are possible, based on the physical locations of the DHCP service and the PXE service:

- **Sequence 1**—The DHCP and PXE services are provided by **different servers.**

- **Sequence 2**—The DHCP and PXE services are provided by a **single server,** which is known as Boot Information Negotiation Layer (BINL) proxy mode.

Sequence 1

The following figure conceptually illustrates the transactions between the PXE client and the DHCP and PXE services during the PXE boot process, when the DHCP and PXE services are provided by different servers.

		DHCP Server
1	**DHCP Request** The client broadcasts a request for an available IP address.	
2	**DHCP Reply** The nearest DHCP server responds with an address.	

PXE Client

		PXE Server
3	**PXE Request** The client broadcasts a request for the name of a boot image.	
4	**PXE Reply** The PXE server responds with a boot image filename.	
5	**TFTP Request** The client requests the boot image file.	
6	**TFTP Reply** The server sends the boot image file to the client.	
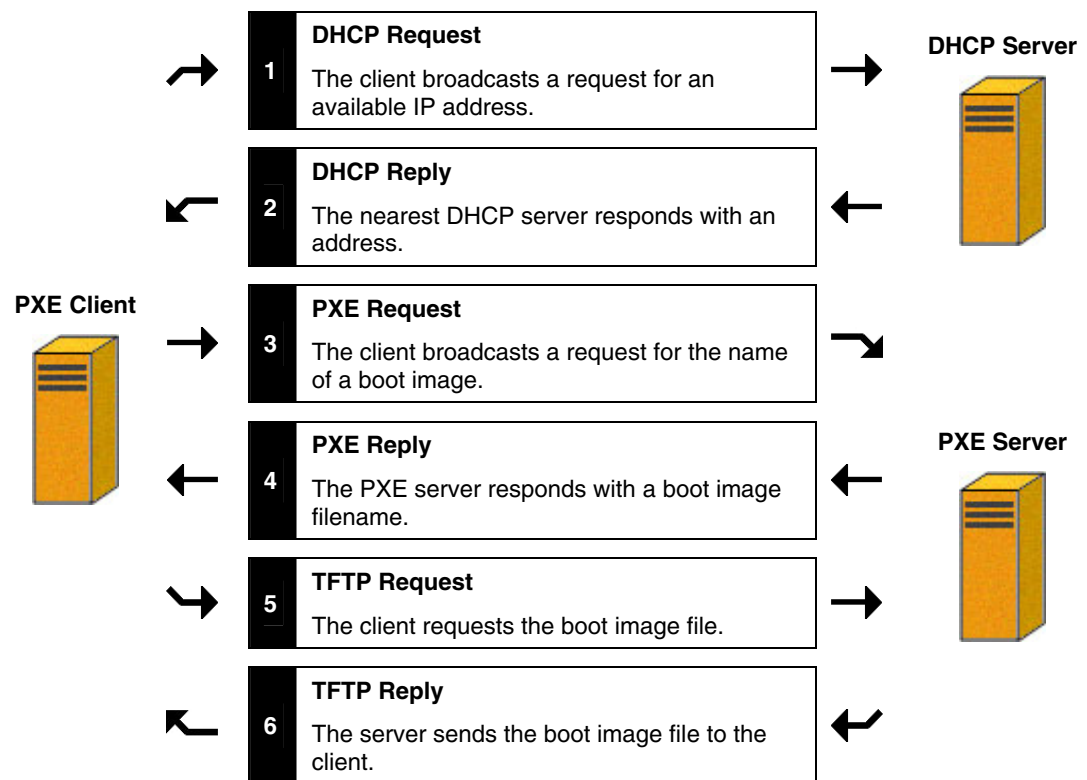
Sequence 2

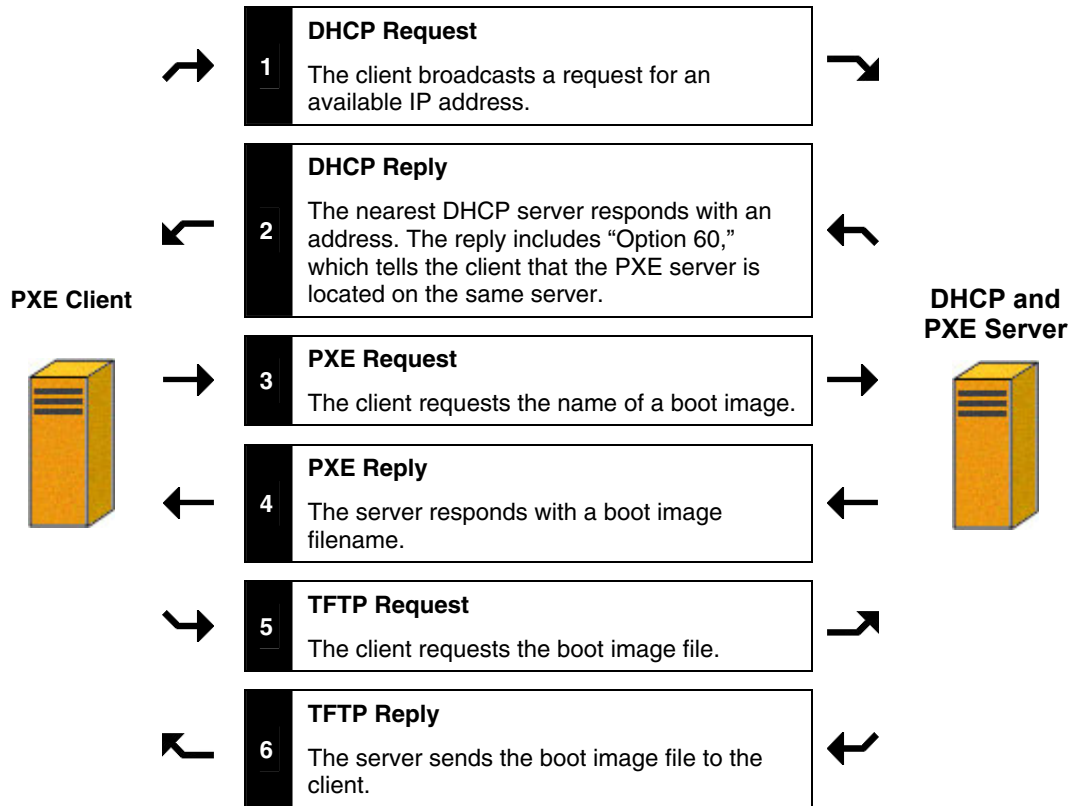The following figure conceptually illustrates the transactions between the PXE client and the DHCP and PXE services during the PXE boot process, when the DHCP and PXE services are provided by a single server. In BINL proxy mode, the DHCP server uses an extra field (Option 60) in the DHCP offer response to tell the client that the PXE service is located on the same server.

PXE Client

DHCP and PXE Server

1 DHCP Request

The client broadcasts a request for an available IP address.

2 DHCP Reply

The nearest DHCP server responds with an address. The reply includes "Option 60," which tells the client that the PXE server is located on the same server.

3 PXE Request

The client requests the name of a boot image.

4 PXE Reply

The server responds with a boot image filename.

5 TFTP Request

The client requests the boot image file.

6 TFTP Reply

The server sends the boot image file to the client.

DHCP and PXE Infrastructure

DHCP and PXE can be implemented in an enterprise environment as one of three basic scenarios. These scenarios are based on the physical locations of the DHCP service, the PXE service, and the PXE clients as follows:

- **Scenario 1—**The DHCP and PXE services are provided by **different servers** and are **on the same subnet** as the PXE clients.

- **Scenario 2—**The DHCP and PXE services are provided by a **single server** and are **on the same subnet** as the PXE clients.

- **Scenario 3—**The DHCP and PXE services are provided on a **different subnet** than the PXE clients.

NOTE: The terms "service" and "server" are used interchangeably depending on whether DHCP and PXE are located on the same server or on different servers, respectively.

Scenario 1

The first scenario consists of a simple network in which the DHCP service and PXE service are provided by different servers and are on the same subnet as the PXE clients:

Scenario 2

The second scenario consists of a simple environment in which the DHCP service and PXE service are provided by a single server and are on the same subnet as the PXE clients. This scenario is typical of labs, isolated networks, or loading areas.

Scenario 3

The third scenario consists of an enterprise environment in which the DHCP and PXE services are provided on a different subnet than the PXE clients.

When a PXE client attempts a network boot, it broadcasts a message to search for a DHCP service. However, switches are intended to constrain broadcast traffic to certain subnets so, by default, they do not forward these DHCP messages.

To forward DHCP requests and responses between the PXE client and a DHCP service on another subnet, a "DHCP relay agent" must be used. A computer (Proxy DHCP server), or a switch (configured to forward requests and responses) can act as a DHCP relay agent. The installation of DHCP relay agents allows the use of one centralized DHCP service for a large network.

**NOTE:** For Cisco switches, this is accomplished by using the "IP-helper address" command.

IMPORTANT: The switches must be configured to activate the ports for the PXE clients as soon as a link is detected. Certain negotiation protocols, such as Spanning Tree Protocol (STP), EtherChannel Protocol, and Port Aggregation Protocol (PAgP), delay the activation of switch ports after a link is detected. This delay can be longer than the standard PXE client timeout, in which case, the PXE boot fails.

For Cisco switches, the PortFast option must be enabled to cause the port to be activated immediately. For some Cisco 28xx series switches, the PortHost option must also be set.

If using EtherChannel or PAgP, set the port to manual mode to avoid longer delays associated with auto mode.

The following figure illustrates how a Proxy DHCP server can be used to forward requests and responses between the PXE clients and the DHCP and PXE services. A Proxy DHCP server is required in each subnet. If the DHCP and PXE services are running on different servers, then the Proxy DHCP server must be configured to forward all requests to both servers.

Proxy DHCP server software can be obtained for both Microsoft® Windows® and Linux®. For Windows, Microsoft provides the Microsoft DHCP Relay Agent. For Linux, the Internet Software Consortium provides the Internet Software Consortium DHCP Relay Agent.
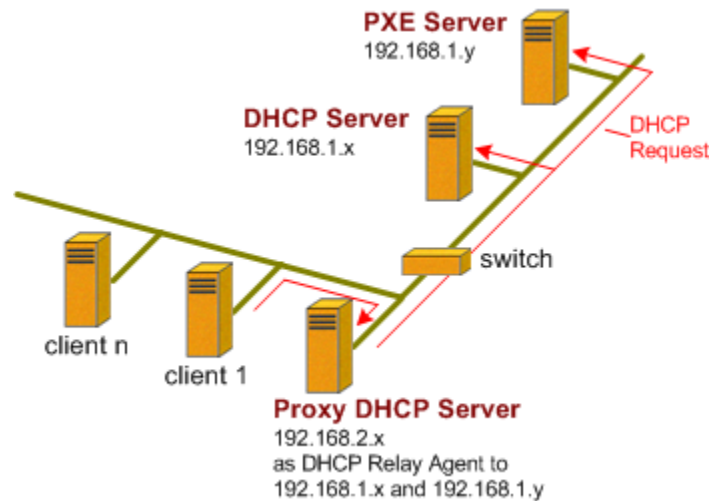
The following figure illustrates the use of a switch to forward requests and responses between the PXE clients and the DHCP and PXE services. The switch must be configured to forward messages to the IP address of the DHCP server. If the DHCP and PXE services are running on different servers, the switch must be configured to forward all requests to both of the servers.
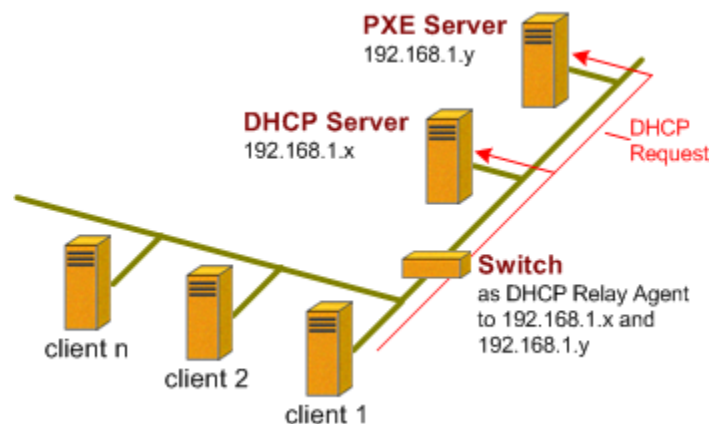
DHCP and PXE Security Considerations

Because PXE is a relatively new protocol to datacenter environments, there is a need to understand security considerations A list of typical security issues follows, along with ways to avoid or alleviate them.

- A poorly managed DHCP server allows unwanted clients to obtain valid IP addresses.

    — Set up DHCP to only contain a few addresses in the scope. Leases should be of a short duration and non-renewable.

    — Set up network switches and firewalls to block the dynamic addresses from external access.

    — After the operating system is installed, assign a static address to the client.

- There is no packet encryption of messages between the DHCP server, PXE server, and the client.

    — While the packets are not encrypted, most passwords are stored in encrypted files.

- There is no authentication of PXE server by PXE client, so the client is subject to server spoofing. Spoofing is when a rogue server pretends to be another server to allow it to capture valuable information, such as passwords, contained in network packets.

    — Spoofing the PXE server only has an effect within a single broadcast domain because the DHCP relay agents on the network are configured to point back to the correct PXE server.

    — On most ProLiant servers, PXE is last in the boot order by default, so ProLiant servers boot to PXE only when necessary or instructed. This setting minimizes the exposure to server spoofing.

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Deployment Infrastructure

There are two editions of the Rapid Deployment Pack:

- Rapid Deployment Pack—Windows Edition: Windows-hosted deployment for heterogeneous Windows and Linux environments

- Rapid Deployment Pack—Linux Edition: Linux-hosted deployment for Linux environments

Rapid Deployment Pack—Windows Edition Architecture

The architecture of the Rapid Deployment Pack—Windows Edition is a client-server design in which an agent runs on the client (the target or managed server) that enables the server (the Deployment Server) to gather inventory information and perform actions such as running scripts, changing the configuration, and rebooting.

The Deployment Server is a Windows-based server. The target servers can either be new servers, Windows-based servers, or Linux-based servers.
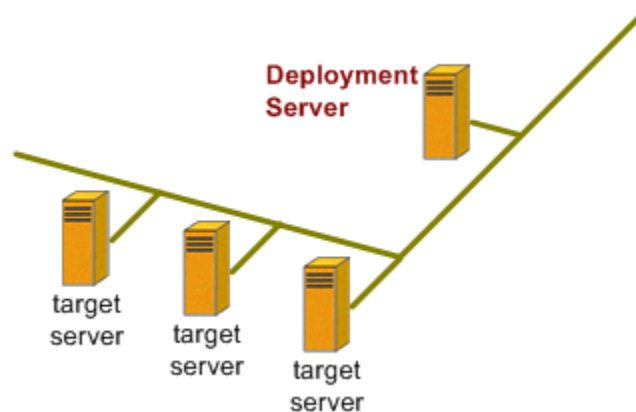
Server Components

The Rapid Deployment Pack—Windows Edition is a combination of the Altiris Deployment Solution and the HP ProLiant Integration Module. The Altiris Deployment Solution provides the foundation for deploying and managing supported servers. The HP ProLiant Integration Module provides ready-to-use ProLiant server deployment support.

The following server components must be installed on one or more Windows-based servers:

Deployment Server (Windows)

- Altiris Deployment Solution, which includes the following components:
    — Deployment Server
    — Deployment Server Database
    — Deployment Server Console
    — Client Access Point
    — PXE Server
- ProLiant Integration Module for Deployment Server

To support Linux scripted installs, the following server components must be installed on a Linux-based server that is running a Network File System (NFS) service:

NFS Server (Linux)

- ProLiant Integration Module for NFS Server

IMPORTANT: The DHCP Server component is required but is not supplied by the Rapid Deployment Pack.

Deployment Server

The Deployment Server controls the flow of the work and information between the managed servers and the other server components. The managed servers connect and communicate with the Deployment Server to register their information. This information is stored in the Deployment Server database.

Deployment Server Database

The Deployment Server database maintains all of the information about the managed servers, including hardware information, serial numbers, computer names, MAC and TCP/IP addresses, deployment history, and device information.

Deployment Server Console

The Deployment Server Console is a drag and drop graphical user interface (GUI) application that provides the main point of control. It enables you to:

- View newly discovered and managed servers

- Create and edit "jobs," sequences of tasks such as running scripts, changing configuration, and rebooting

- Execute jobs on selected servers

Client Access Point

The Client Access Point is a file share where the images, scripts, configuration files, tools, and software packages are stored. The space available on the Client Access Point must be large enough to accommodate all of the images and files.

PXE Server

The PXE server provides PXE clients with a boot image. The boot images use a Windows 9x DOS environment created from customer-supplied media. There are two boot images:

- The "New Computer" image is downloaded to a PXE client that is not listed in the database. This image runs the Deployment Agent for DOS program, which discovers information about the client, and places that information into the database. The client is displayed in the **New Computers** group of the Deployment Server Console and, by default, waits for an operator to initiate deployment from the console.

- The "Managed Computer" image is downloaded to a PXE client that is listed in the database and has been assigned a task to perform, or has a pending operation that requires booting to DOS.

The PXE server assigns the correct image to the client without user intervention.

DHCP Server

The DHCP server provides clients with an IP address. The Altiris PXE server is designed to work with most DHCP servers either located on the same server or on a different server. The Altiris PXE server has been optimized for use with the Microsoft DHCP server.

ProLiant Integration Module for Deployment Server

The ProLiant Integration Module for Deployment Server adds jobs, scripts, configuration files, the latest version of the ProLiant Support Packs for Windows, and the latest version of the SmartStart Scripting Toolkit to the Altiris Deployment Solution.

The provided deployment jobs deploy ProLiant servers by configuring the hardware and array controllers, installing the operating system either by scripting or imaging, and then installing the latest version of the ProLiant Support Pack.

ProLiant Integration Module for NFS Server

The ProLiant Integration Module for NFS server adds scripts, configuration files, and the latest version of the ProLiant Support Packs for Linux to an existing Linux-based NFS server. These files are required for the Linux scripted install jobs, which use an NFS-based installation mechanism.

Client Components

The Altiris Deployment Solution has three client programs:

- Deployment Agent for Windows (formerly known as AClient)

- Deployment Agent for Linux

- Deployment Agent for DOS (formerly known as BootWorks)
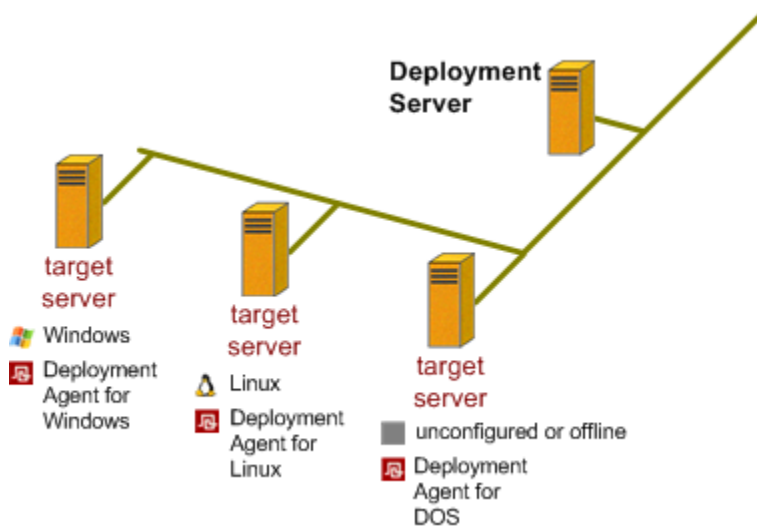
Deployment Agents for Windows and Linux

The Deployment Agents for Windows and Linux are installed on the production operating system.

The agents enable the Deployment Server to:

- Gather inventory and configuration data

- Execute operating system scripts or programs

- Change the operating system configuration

- Reboot, shut down, or wake up

Deployment Agent for DOS

The Deployment Agent for DOS is not installed on the production operating system. It is part of a specific DOS-based environment. This environment enables the Deployment Server to manage servers that do not have a production operating system installed or must be disconnected from the production operating system.

The agent enables the Deployment Server to:

- Gather inventory data

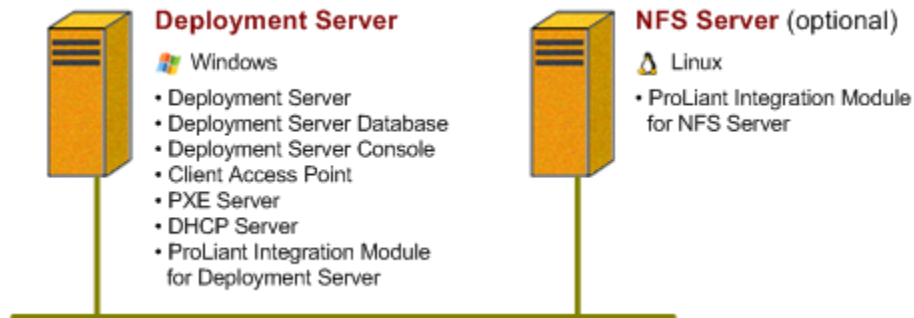- Execute scripts

- Capture and deploy images

- Reboot

Server Component Installation Options

IMPORTANT: Before installing the Altiris PXE server component, a DHCP server must be installed, running, and accessible on the network.
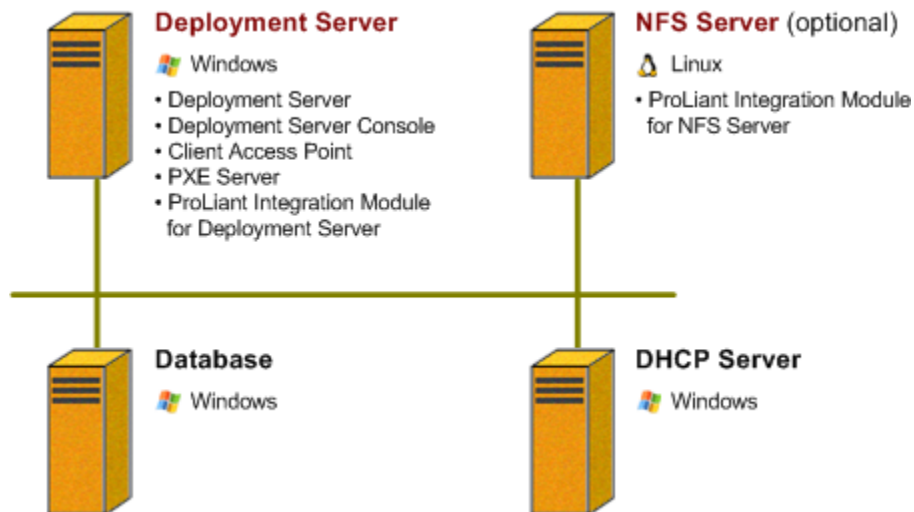
IMPORTANT: When the Altiris PXE server is installed on the same server with Microsoft DHCP server, Altiris automatically configures the Option 60 setting in the DHCP options. If the DHCP server is not Microsoft, Option 60 must be manually configured with the value of PXECLIENT.

There are two common installation options:

- **Option 1—**Installing **all** of the server components onto an existing DHCP server

Deployment Server

Windows

- Deployment Server
- Deployment Server Database
- Deployment Server Console
- Client Access Point
- PXE Server
- DHCP Server
- ProLiant Integration Module for Deployment Server

NFS Server (optional)

Linux

- ProLiant Integration Module for NFS Server

- **Option 2—**Installing **some** of the server components and using an existing, separate DHCP server and/or database

Deployment Server

Windows

- Deployment Server
- Deployment Server Console
- Client Access Point
- PXE Server
- ProLiant Integration Module for Deployment Server

NFS Server (optional)

Linux

- ProLiant Integration Module for NFS Server

Database

Windows

DHCP Server

Windows

For complete installation requirements and directions, refer to the *HP ProLiant Essentials Rapid Deployment Pack—Windows Edition User Guide* at http://www.hp.com/servers/rdp.

Client Component Installation Options

Existing Servers

For Windows-based servers, the Deployment Agent for Windows can be installed either by any of the following methods:

- In the Deployment Server Console, use the Remote Agent Installer to push the agent to the target server

- On the target server, manually install the agent from the Client Access Point

For Linux-based servers, the Deployment Agent for Linux can be installed by manually installing the RPM on the target server.

For complete directions, refer to the *Altiris Deployment Solution Product Guide* at http://www.altiris.com.

New or Unconfigured Servers

The Deployment Agent for DOS is not installed, but the agent and DOS-based environment can be executed by any of the following methods:

- Performing a PXE boot and receiving a boot image from the Altiris PXE server

- Booting an Altiris boot diskette in the physical diskette drive

- Booting an image of an Altiris boot diskette through the Virtual Floppy feature of the Remote Insight Lights-Out Edition (RILOE) board or Integrated Lights-Out (iLO)

Rapid Deployment Pack—Linux Edition Architecture

The architecture of the Rapid Deployment Pack—Linux Edition is a client-server design in which an agent runs on the "client" (the target or managed server) which enables the "server" (the Deployment Server) to gather inventory information and perform actions such as running scripts, changing the configuration, and rebooting.

The Deployment Server is a Linux-based server. The target servers can either be new servers or Linux-based servers.
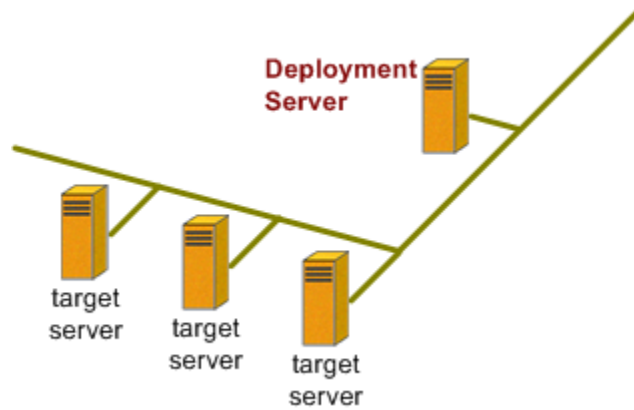
Server Components

The Rapid Deployment Pack—Linux Edition is a combination of the Altiris Deployment Server for Linux and the HP ProLiant Integration Module. The Altiris Deployment Server for Linux provides the foundation for deploying and managing supported servers. The HP ProLiant Integration Module provides ready-to-use ProLiant server deployment support.

The following server components must be installed on a Linux-based server:

Deployment Server (🐧 Linux)

- Altiris Deployment Server for Linux, which includes the following components:
  — Deployment Server
  — Deployment Server Database
  — Deployment Server Web Console
  — Client Access Point
  — PXE Server
  — DHCP Server
- ProLiant Integration Module for Linux Deployment Server

To support Linux scripted installs, the following server components must be installed on a Linux-based NFS server (which could be the same server used by the server components previously):

NFS Server (🐧 Linux)

- ProLiant Integration Module for NFS Server

Deployment Server

The Deployment Server controls the flow of the work and information between the managed servers and the other server components. The managed servers connect and communicate with the Deployment Server to register their information. This information is stored in the Deployment Server database.

Deployment Server Database

The Deployment Server database maintains all of the information about the managed servers, including hardware information, serial numbers, computer names, MAC and TCP/IP addresses, deployment history, and device information.

Deployment Server Web Console

The Deployment Server Web Console is a Web-based application providing the main point of control. It enables you to:

- View newly discovered and managed servers

- Create and edit "jobs," a sequence of tasks such as running scripts, changing configuration, and rebooting

- Execute jobs on selected servers

Client Access Point

The Client Access Point is a file share where the images, scripts, configuration files, tools, and software packages are stored. The space available on the Client Access Point must be large enough to accommodate all of the images and files.

PXE Server

The PXE server provides PXE clients with a boot image. The boot images use a DR-DOS environment. There are two boot images:

- The "New Computer" image is downloaded to a PXE client that is not listed in the database. This image runs the Deployment Agent for DOS program to discover information about the client, and places that information into the database. The client is displayed in the New Computers group of the Deployment Server Web Console and, by default, waits for an operator to initiate deployment from the console.

- The "Managed Computer" image is downloaded to a PXE client that is listed in the database and has been assigned a task to perform, or has a pending operation that requires booting to DOS.

The PXE server assigns the correct image to the client without user intervention.

DHCP Server

The DHCP server provides clients with an IP address. The Rapid Deployment Pack includes a copy of the Internet Software Consortium DHCP server.

ProLiant Integration Module for Linux Deployment Server

The ProLiant Integration Module for Linux Deployment Server adds jobs, scripts, configuration files, and the latest version of the SmartStart Scripting Toolkit to the Altiris Deployment Server.

The provided deployment jobs deploy ProLiant servers by configuring the hardware and array controllers, installing the operating system either by scripting or imaging, and then installing the latest version of the ProLiant Support Pack.

ProLiant Integration Module for NFS Server

The ProLiant Integration Module for NFS server adds scripts, configuration files, and the latest version of the ProLiant Support Packs for Linux to an existing Linux-based NFS server. These files are required for the Linux scripted install jobs, which use an NFS-based installation mechanism.

Client Components

The Altiris Deployment Server has two client programs:

- Deployment Agent for Linux
- Deployment Agent for DOS (formerly known as BootWorks)
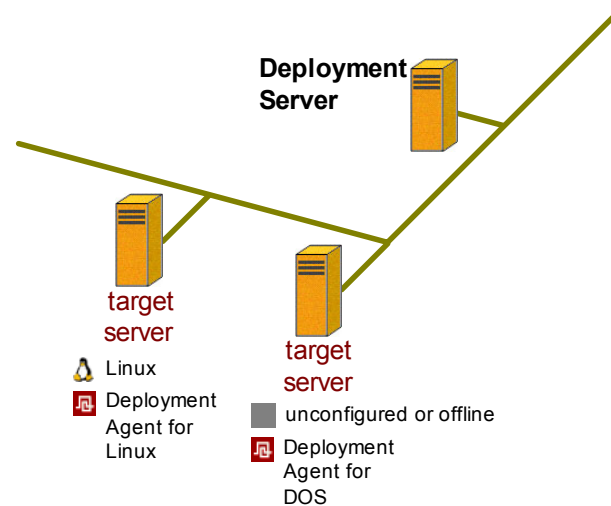
Deployment Agent for Linux

The Deployment Agent for Linux is installed on the production operating system.

The agent enables the Deployment Server to:

- Gather inventory and configuration data

- Execute operating system scripts or programs

- Change the operating system configuration

- Reboot, shut down, or wake up

Deployment Agent for DOS

The Deployment Agent for DOS is not installed on the production operating system. It is part of a specific DOS-based environment. This environment enables the Deployment Server to manage servers that do not have a production operating system installed or must be disconnected from the production operating system.

The agent enables the Deployment Server to:

- Gather inventory data

- Execute scripts

- Capture and deploy images

- Reboot

Server Component Installation Options

> **IMPORTANT:** If you plan on installing DHCP and PXE on same server, you must use the DHCP server provided with the Rapid Deployment Pack.
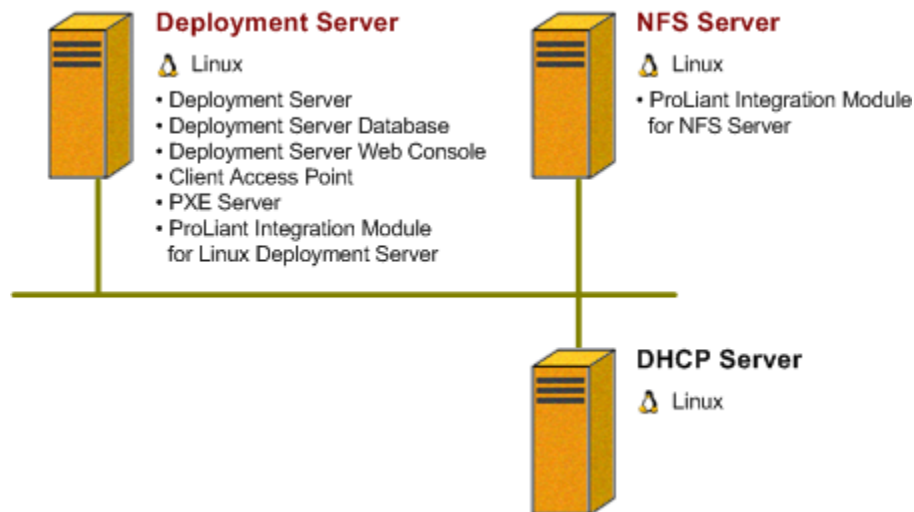
> **IMPORTANT:** If you plan on using an existing DHCP server, it must be located on a different server than where the PXE server will be installed, and it must support the client classing and conditional behaviors required for PXE.

There are two basic installation options:

- **Option 1—**Installing **all** of the server components onto the same server
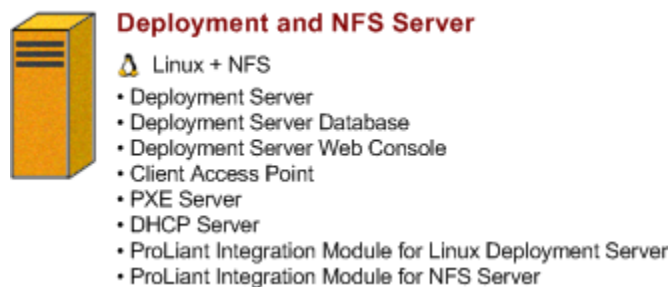
Deployment and NFS Server

Linux + NFS
- Deployment Server
- Deployment Server Database
- Deployment Server Web Console
- Client Access Point
- PXE Server
- DHCP Server
- ProLiant Integration Module for Linux Deployment Server
- ProLiant Integration Module for NFS Server

- **Option 2**—Installing **some** of the server components and using an existing, separate DHCP server and/or NFS server

Deployment Server

Linux
- Deployment Server
- Deployment Server Database
- Deployment Server Web Console
- Client Access Point
- PXE Server
- ProLiant Integration Module for Linux Deployment Server

NFS Server

Linux
- ProLiant Integration Module for NFS Server

DHCP Server

Linux

For complete installation requirements and directions, refer to the *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition Installation Guide* at http://www.hp.com/servers/rdp.

Client Component Installation Options

Existing Servers

For Linux-based servers, the Deployment Agent for Linux can be installed by manually installing the RPM on the target server.

For complete directions, refer to the *HP ProLiant Essentials Rapid Deployment Pack—Linux Edition User Guide* at http://www.hp.com/servers/rdp.

New or Unconfigured Servers

The Deployment Agent for DOS is not installed, but the agent and DOS-based environment can be executed by any of the following methods:

- Performing a PXE boot and receiving a boot image from the Altiris PXE server

- Booting an Altiris boot diskette in the physical diskette drive

- Booting an image of an Altiris boot diskette through the Virtual Floppy feature of the RILOE board or iLO

3

Implementation Examples

This chapter discusses methods for implementing Rapid Deployment Pack in various enterprise network environments. The following examples are considered:

- Simple networks

- Enterprise networks

- Virtual LAN-based networks (VLANs)

- Geographically dispersed networks (WANs)

Simple Networks

This example illustrates how to incorporate the Rapid Deployment Pack into a simple, isolated network environment, such as a lab or test area, which does not have an existing DHCP server.
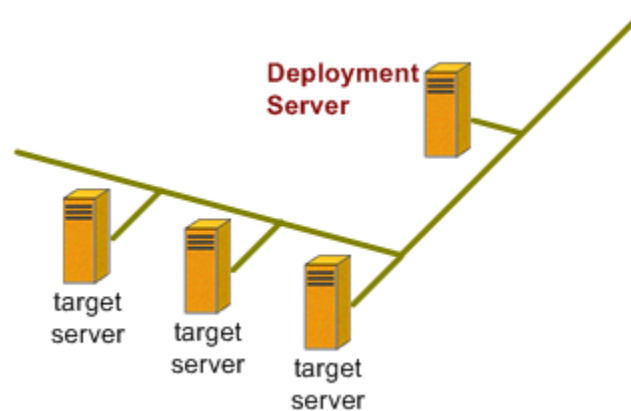
To incorporate the Rapid Deployment Pack—Windows Edition:

1. In a simple network environment, it makes sense to designate a single Windows-based server, running a DHCP service, as the Deployment Server. This creates a configuration similar to that presented in "Option 1" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution and the ProLiant Integration Module for Deployment Server on the designated Deployment Server.

3. Optionally, designate a server as a Linux NFS server, and install the ProLiant Integration Module for NFS Server.

4. Use the Remote Agent Installer, available from the Deployment Server Console, to install the Deployment Agent for Windows on existing Windows-based servers so that they appear in the Deployment Server Console.

5. Manually install the Deployment Agent for Linux on existing Linux-based servers so that they appear in the Deployment Server Console.

6. Power on any unconfigured servers and allow them to PXE boot so that they appear in the Deployment Server Console.

To incorporate the Rapid Deployment Pack—Linux Edition:

1. In a simple network environment, it makes sense to designate a single Linux-based server as the Deployment Server and NFS server and use the provided DHCP server. This creates a configuration similar to that presented in "Option 1" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution, the ProLiant Integration Module for Linux Deployment Server, and the ProLiant Integration Module for NFS Server on the designated Deployment Server.

3. Manually install the Deployment Agent for Linux on existing Linux-based servers so that they appear in the Deployment Server Web Console.

4. Power on any unconfigured servers and allow them to PXE boot so that they appear in the Deployment Server Web Console.
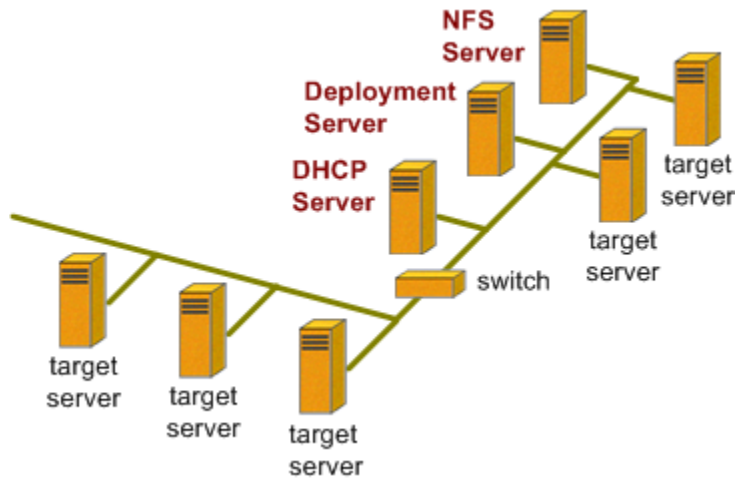
Enterprise Networks

This example illustrates how to incorporate the Rapid Deployment Pack into a network with multiple subnets.

To incorporate the Rapid Deployment Pack—Windows Edition:
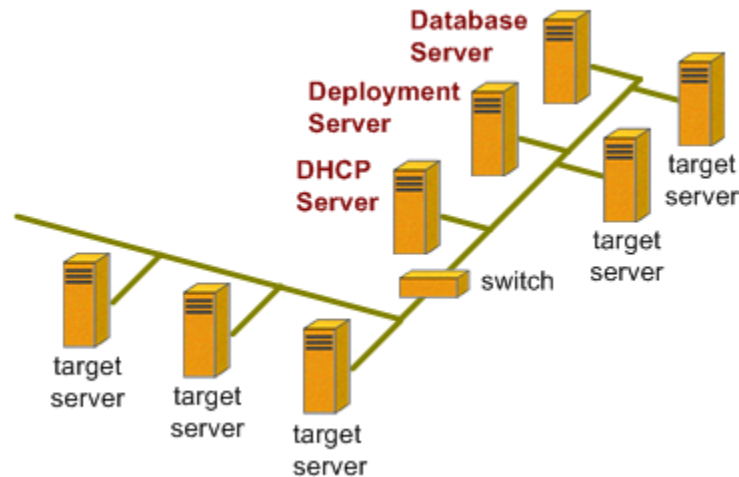
1. Most enterprise networks have an existing DHCP server and a database server, so it makes sense to utilize them. Designate a single Windows-based server as the Deployment Server to create a configuration similar to "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution and the ProLiant Integration Module for Deployment Server on the designated Deployment Server. During the installation, use the existing database server instead of installing the database component.

3. Optionally, designate a server as a Linux NFS server, and install the ProLiant Integration Module for NFS Server.

4. In each additional subnet, install a proxy DHCP server or configure each switch to be a DHCP relay agent. Be sure that the DHCP relay agents route requests to both the DHCP server and the Deployment/PXE server.

5. Use the Remote Agent Installer, available from the Deployment Server Console, to install the Deployment Agent for Windows on existing Windows-based servers so that they appear in the Deployment Server Console.

6. Manually install the Deployment Agent for Linux on existing Linux-based servers so that they appear in the Deployment Server Console.

7. Power on any unconfigured servers and allow them to PXE boot so that they appear in the Deployment Server Console.
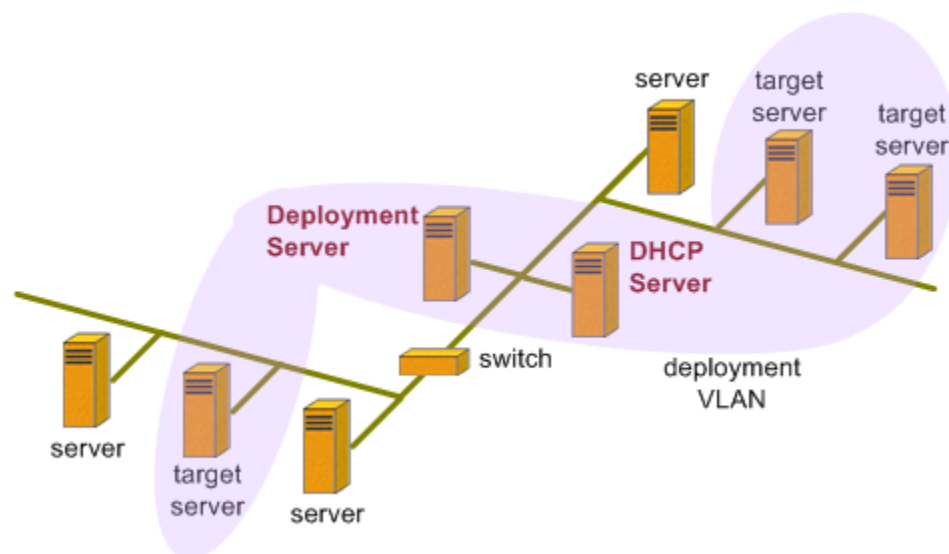
To incorporate the Rapid Deployment Pack—Linux Edition:

1. Most enterprise networks have an existing DHCP server and a NFS server, so it makes sense to utilize them. Designate a single Linux-based server as the Deployment Server to create a configuration similar to "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution and the ProLiant Integration Module for Linux Deployment Server on the designated Deployment Server. During the installation, do not install the provided DHCP server.

3. Install the ProLiant Integration Module for NFS Server on the existing NFS server.

4. In each additional subnet, install a proxy DHCP server or configure each switch to be a DHCP relay agent. Be sure that the DHCP relay agents route requests to both the DHCP server and the Deployment/PXE server.

5. Manually install the Deployment Agent for Linux on existing Linux-based servers so that they appear in the Deployment Server Web Console.

6. Power on any unconfigured servers and allow them to PXE boot so that they appear in the Deployment Server Web Console.

Virtual LANs

This example illustrates how to incorporate the Rapid Deployment Pack into a Virtual LAN (VLAN) network. In this example, the server components can be installed several ways (illustrated in "Option 1" and "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide for the Windows edition, and "Option 1" and "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide for the Linux edition). The main differences between this example and the previous example are: the DHCP, PXE, and deployment network traffic are isolated from normal production network traffic and no DHPC relay agents are required.

To incorporate the Rapid Deployment Pack—Windows Edition:

1. Designate a Windows-based server as the Deployment Server to create a configuration similar to that presented in "Option 1" and "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution and the ProLiant Integration Module for Deployment Server.

3. Optionally, designate a server as a Linux NFS server, and install the ProLiant Integration Module for NFS Server.

4. For each infrastructure server (DHCP, Deployment, database, NFS, etc.), configure the server's switch port with the deployment VLAN ID.

To deploy a new server:

1. Configure the new server's switch port with the deployment VLAN ID.

2. Power on the new server and allow it to PXE boot so it appears in the Deployment Server Console.

To redeploy or manage an existing server:

1. Reconfigure the server's switch port with the deployment VLAN ID.

2. Install the appropriate Deployment Agent so that the server appears in the Deployment Server Console.

To incorporate the Rapid Deployment Pack—Linux Edition:

1. Designate a Linux-based server as the Deployment Server to create a configuration similar to that presented in "Option 1" and "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide.

2. Install the Altiris Deployment Solution, the ProLiant Integration Module for Linux Deployment Server, and the ProLiant Integration Module for NFS Server.

3. For each infrastructure server (DHCP, Deployment, NFS, etc.), configure the server's switch port with the deployment VLAN ID.

To deploy a new server:

1. Configure the new server's switch port with the deployment VLAN ID.

2. Power on the new server and allow it to PXE boot so it appears in the Deployment Server Web Console.

To redeploy or manage an existing server:

1. Reconfigure the server's switch port with the deployment VLAN ID.

2. Install the appropriate Deployment Agent so that the server appears in the Deployment Server Web Console.

WANs

This example illustrates how to incorporate the Rapid Deployment Pack into a geographically dispersed network.
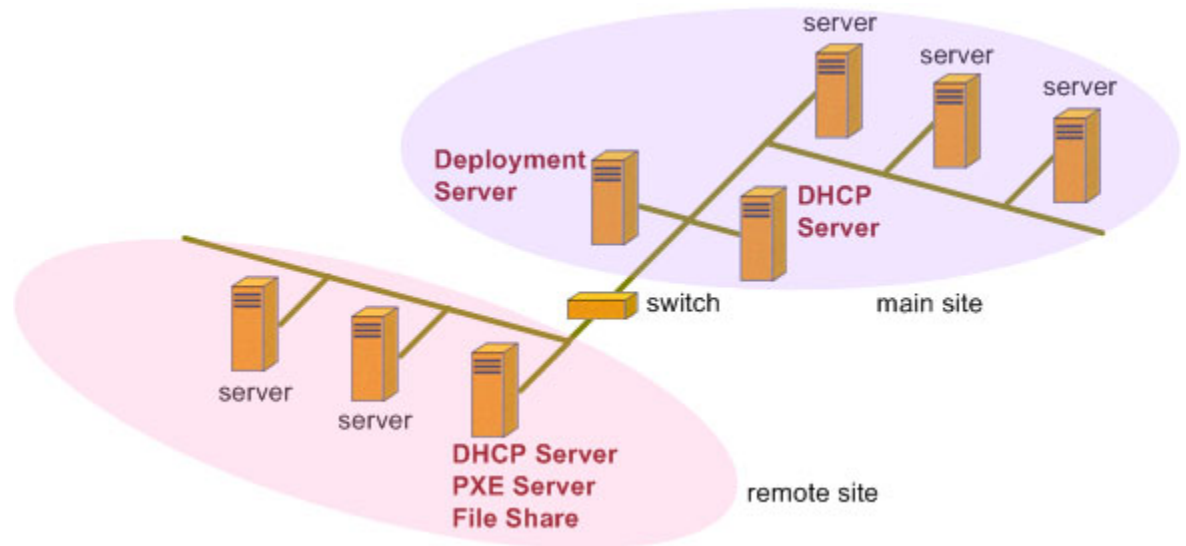
To incorporate the Rapid Deployment Pack—Windows Edition:

1. At the main site, designate a Windows-based server as the Deployment Server to create a configuration similar to that presented in "Option 1" and "Option 2" under "Server Component Installation Options" in Chapter 2 of this guide.

2. At each remote site, install a DHCP server, Altiris PXE server, and Windows file share. Share the Windows file share as "eXpress," and set the permissions for "Everyone" with Full Control.

3. At the main site and each remote site, recreate the two default PXE boot images to add an additional file mapping. For the main site, map "G:" to the same location as "F:." For each remote site, map "G:" to the local file share. Mapping is performed on the Network Drive Mappings page of the Altiris Boot Disk Creator wizard.

4. At the main site, in the Altiris Configuration Utility, under the Drive Mapping tab, create an additional drive mapping. Map "G:" to the same location as "F:".

5. At the main site, in the Deployment Server Console, modify the jobs to use the local file share.

   a. For the supplied scripted install jobs, in the tasks and associated batch files, replace all references to "F:" with "G:."

   b. For the supplied image capture and deployment jobs, select the **Local image store** option in the Create and Deploy Image tasks, and then browse to the desired image file on "G:."

   NOTE: Upgrading to a new version of the Rapid Deployment Pack overwrites the batch files and possibly the jobs. Be sure to back up your files before upgrading.

6. From the main site, copy the .\images and .\deploy directories from the Deployment Server Client Access Point to the file share of each remote site.

   NOTE: Be sure to keep the remote file shares in sync with the main site.

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