

HP OpenView Radia 4

Radia Essentials Guide

Version: 4.0i

for the Windows® operating system



Manufacturing Part Number: T3420-90005

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Technical Support

Please select Support & Services from the following web site:

<http://www.hp.com/managementsoftware/services>

There you will find contact information and details about the products, services, and support that HP OpenView offers.

The support site includes:

- Downloadable documentation
- Troubleshooting information
- Patches and updates
- Problem reporting
- Training information
- Support program information

Preface

About this Guide

Who this Guide is for

This book is for new and experienced users of Radia. It will guide you through products, components and processes.

What this Guide is about

The purpose of this guide is to describe essential Radia concepts and the benefits of the Radia products and components.

Conventions

You should be aware of the following conventions used in this book.

Table P.1 ~ Styles

Element	Style	Example
References	<i>Italic</i>	See the <i>Publishing Applications and Content</i> chapter in this book.
Dialog boxes	Bold	The Radia System Explorer Security Information dialog box opens.
Code	Andale Mono	radia_am.exe
Selections	Bold	Open the \Admin directory on the installation CD-ROM.

Table P.2 ~ Usage

Element	Style	Example
Drives (system, mapped, CD)	Italicized placeholder	<i>SystemDrive</i> :\Program Files\Novadigm might refer to C:\Program Files\Novadigm on your computer. <i>CDDrive</i> :\client\radia_am.exe might refer to D:\client\radia_am.exe on your computer.
Files (in the Radia Database)	All uppercase	PRIMARY
Domains (in the Radia Database)	All uppercase	PRIMARY.SOFTWARE May also be referred to as the SOFTWARE domain in the PRIMARY file.
Classes (in the Radia Database)	All uppercase	PRIMARY.SOFTWARE.ZSERVICE May also be referred to as the ZSERVICE class in the SOFTWARE domain in the PRIMARY file.

The table below describes terms that may be used interchangeably throughout this book.

Table P.3 ~ Terminology*

* Depends on the context. May not always be able to substitute.

Term	May also be called
Application	software, service
Client	Radia® Application Manager (RAM) and/or Radia® Software Manager (RSM)
Computer	workstation, server
NOVADIGM domain	PRDMAINT domain Note: As of the 4.0 release of the database, the NOVADIGM domain is being renamed the PRDMAINT domain. Therefore, if you are using an earlier version, you will see the NOVADIGM domain in the database.
Radia Configuration Server	Manager, Active Component Server
Radia Database	Radia Configuration Server Database

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Introduction

At the end of this chapter, you will:

- Know the scope and content of this book.
- Be familiar with terminology associated with Radia.
- Be familiar with the other Radia publications.

About Radia Technology

Enterprises have tried various software distribution methods to solve the challenge of distributing digital assets. These methods include:

- **Electronic CDs.**

Individual users can personalize their own software, but this method lacks the ability to standardize software, and does not allow for synchronized installation.

- **Electronic Software Distribution (ESD) tools.**

This method ensures synchronized delivery, but at the price of excessive standardization. Everyone in the organization is forced to get a one-size-fits-all copy of the software, even though each department in an organization may have different software needs.

- **Push Products.**

Some companies are attempting to deal with the software management challenge with Internet-based push technology. This method, similar to ESD, ensures synchronized delivery, but does not allow for customization.

Radia technology provides high levels of adaptability, flexibility, and automation. *Adaptability* comes from the embedded intelligence of platform-independent object-oriented technology. *Flexibility* is provided by the media-independence of Radia technology that enables content to be easily revised and customized. And Radia solutions *automate* digital asset management across virtually any kind of network. The following bullets describe each of these distinctive capabilities that are essential to Radia technology:

- **The Embedded Intelligence of Object-Oriented Technology.**

Object-oriented technology transforms software and content from file-based media into self-aware, platform-independent, intelligent objects that automatically assess the environment into which they are deployed, and personalize, install, update, and repair themselves accordingly. In other words, as intelligent objects, they know what they need for a particular device or user, where to get it, when they need to change, how to change themselves, and how to repair themselves.

- **Revisable Packaging for Revisable Content.**

Radia technology enables revision and customization of software and content at any midstream point in the publisher-to-subscriber deployment process. Because Radia technology transforms software and content into objects, these objects can be easily modified midstream – subtracted from, added to, or reconfigured – simply by packaging them with other objects or new configuration information. With revisable packaging, value-added service providers and IT administrators may customize standard published software offerings for the needs of their particular users without having to unpack and repackage everything.

- **Self-Managing Infrastructure.**

The object-oriented intelligence of Radia technology incorporates a self-managing infrastructure. This capability begins with network-independence. Radia technology supports any deployment environment, whether client/server, local, wide or virtual area network, intranet, extranet, or the Internet. Furthermore, Radia supports whatever distribution media make sense for the target audience and the provider (which might be a software publisher, application service provider (ASP), Internet service provider (ISP), provider of enterprise

application integration (EAI) services, e-business integrator, e-commerce component provider, or in-house IT administrator).

In the Internet age in which software is fundamental to the ability of businesses to compete, change is a constant state, and audience diversity has grown beyond the capacity of older technologies to manage. Radia technology provides the necessary automation, adaptability, and flexibility to solve the software management challenge.

Why use Radia?

Radia manages the distribution of digital assets based on your *distribution model* or *desired state*. A distribution model records the identities and intended configurations of the desktop computers or devices whose configurations are managed by Radia. The distribution model can be simple or complex.

At a minimum, a Radia distribution model includes the following five elements:

- **Users**
The identity of the devices or subscribers being managed.
- **Applications**
The software that is being managed.
- **Application Files**
The components that make up the applications.
- **Deployment Source**
The location where the application components are stored, such as on a Radia Proxy Server, Radia Staging Server, or Radia Configuration Server.
- **Deployment Destinations**
The locations to which the application and its files will be distributed such as desktop computers, PDAs, and laptops.

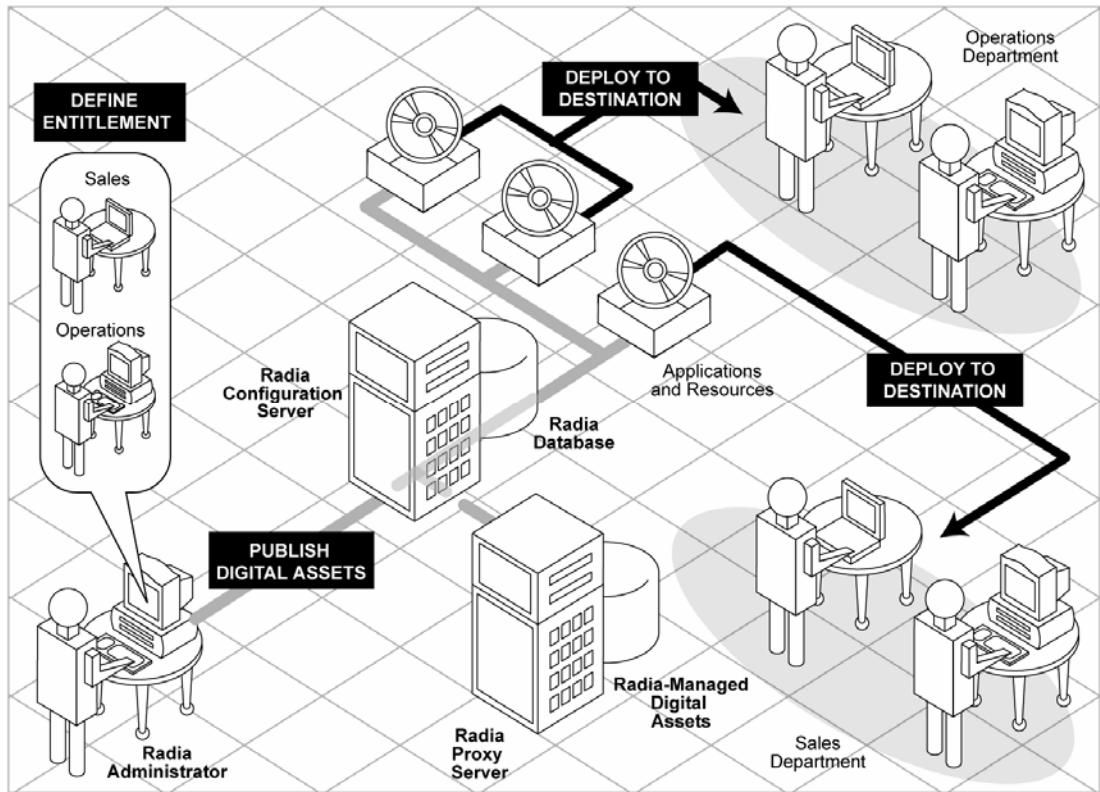


Figure 1.1 ~ Elements in a distribution model.

Use Radia to manage all of these components. You will publish *packages* of digital assets, determine entitlement policy, and define how the packages will be deployed.

Note

A package is a unit of distributable software or data.

Scope

The purpose of this guide is to describe essential Radia concepts and the benefits of the Radia components. For information regarding the installation and configuration of Radia products, consult the HP OpenView support web site or the appropriate Radia publication.

Terminology

The following terms are often used throughout this publication, and it may be helpful to become familiar with them before using this guide.

administrator

The person who uses the Radia Administrator Workstation tools to configure and maintain the Radia environment.

client

The Radia Client software (Radia Software Manager, Radia Application Manager, or Radia Inventory Manager) that runs on the client computer or device. It communicates with the Radia Configuration Server to receive information about the desired state of the client computer, and compares that information with the current state of the client computer. Then, the Radia Client makes any adjustments necessary to make the current state match the desired state.

client computer

A client computer is a computer (workstation or server) that has the Radia Client software installed. It may also be referred to as a device.

desired state

The desired state embodies the content that Radia manages for a specific client computer. The Radia Configuration Server, using the resolution process, dynamically creates the desired state. The desired state is also known as the distribution model.

device

A device is a computer, ATM, or other piece of hardware that can be managed by Radia.

distribution model

See **desired state**.

package

A package is data that is published as an individual unit.

policy

A policy defines what services a subscriber, a client computer, or a managed device is entitled to.

Radia Administrator Workstation

The Radia Administrator Workstation includes tools used to configure and maintain the Radia environment. The tools are Radia Client Explorer, Radia Packager, Radia Publisher, Radia System Explorer, and Radia Screen Painter.

Radia Configuration Server

The Radia Configuration Server dynamically calculates the desired state. It can also distribute applications to client computers. It maintains the Radia Database, which stores information that the Radia Configuration Server needs to manage digital assets for distribution to client computers.

Radia Database

The Radia Database stores all of the information necessary to manage digital assets on a client computer, including:

- The software and/or data that Radia distributes.
- The policies determining which subscribers or users can subscribe to which packages.
- Security and access rules for Radia administrators.

service

A service organizes a group of related packages (applications), methods, or behaviors into manageable units.

subscriber or user

A subscriber is the person who uses Radia-managed applications on a client computer.

About this Guide

The remaining chapters of this book cover the following topics:

- **Chapter 2: Radia Products and Benefits**
This chapter discusses Radia products, their benefits, and their place in relation to other Radia components.
- **Chapter 3: Essential Processes**
This chapter describes some of the essential Radia processes. It will help you gain an understanding of how Radia works.

Additions to this Guide

The following products and components have been added to this guide since the version 3.x Release.

Table 1.1 ~ Products and Components Added to this Guide

To read more about . . .	See the following sections.
Radia Patch Manager	For the client product, see page 25 For the sever product, see page 41
Radia OS Manager	For the client product, see page 26 For the sever product, see page 41
Radia Usage Manager	See page 46.
Radia Publisher	See page 29.
Radia Packager	See page 28.
Radia Messaging Server	See page 34.
Radia Reporting Server	See page 32.

Radia Publications

While this book provides an overview of Radia products and processes, it is merely a starting point. You can find more information on all of the Radia products from either the HP OpenView web site or from the Radia publications library. The publications cover a breadth of products on multiple platforms. These publications will guide you through the software management cycle to prepare your digital assets for management on your enterprise's computers. See *Appendix A: Radia Publications* on page 87.

Note

Be sure to check the HP OpenView Web site periodically for new and updated publications.

Summary

- This book introduces you to the various Radia products and how they fit into the Radia infrastructure.
- After reading this guide, you may want to examine other Radia publications that show you how to use the different Radia components.

Radia Products and Benefits

At the end of this chapter, you will:

- Know the Radia family of products.
- Understand the benefits of each product.

Radia Infrastructure

Use Radia Infrastructure components to take full advantage of their ability to manage your enterprise's computing environment. Depending on your enterprise's configuration, your infrastructure may be enhanced by any combination of these components. The Radia components can be divided into four categories.

- Radia Management Applications
- Radia Management Infrastructure
- Radia Extended Infrastructure
- Radia Management Extensions

Note

The terms defined in *Terminology* on page 17 will help you understand the capabilities of the Radia components described in this chapter.

Radia Management Applications

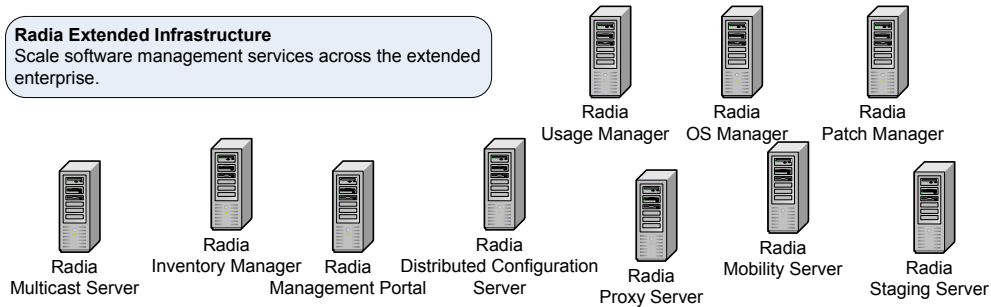
Automate deployment, updates, repairs, and deletion activities, and inspect hardware and software.

**Radia Management Infrastructure**

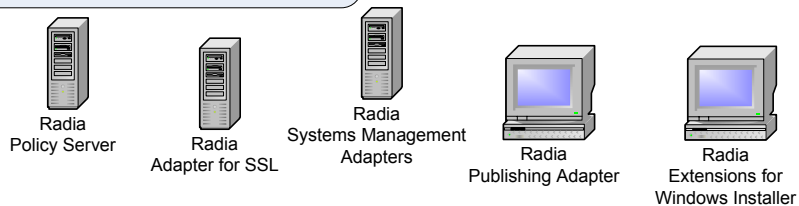
Maintain configuration information, store software and content packages, automate software management activities, and administer Radia environment.

**Radia Extended Infrastructure**

Scale software management services across the extended enterprise.

**Radia Management Extensions**

Provide integration and extended enterprise functionality, allowing Radia to interface with other technologies.



Note: Multiple products may be installed on multiple workstations or devices.

Figure 2.1 ~ Radia Infrastructure overview.

Radia Management Applications

Radia Management Applications allow you to automate deployment, updates, repairs, and deletion activities, and inspect hardware and software. The Radia Management Applications are installed on the client computer or device. Radia Management Applications can run across a wide variety of operating systems and architectures. There are five types of Radia Management Applications (clients) available for communicating with the Radia Configuration Server: the Radia Application Manager, the Radia Software Manager, the Radia Inventory Manager, the Radia OS Manager, and the Radia Patch Manager. You can install more than one management application to combine their features. Not all management applications are available for all operating systems and architectures. Consult the HP OpenView web site or your HP representative for the most current information on platform availability.

Radia Management Applications

Automate deployment, updates, repairs, and deletion activities, and inspect hardware and software.



Figure 2.2 ~ Radia Management Applications.

HP OpenView Application Manager Using Radia

The *administrator* controls the distribution of mandatory applications throughout the enterprise. The administrator is the person who uses the Radia Administrator Workstation tools to configure and maintain the Radia environment.

With the Radia Application Manager installed on the client device, the administrator can:

- Deploy mandatory (required) digital content to subscribers (employees, devices, affiliates, partners, and customers) over intranets, extranets, and the Internet to unattended devices.
- Select, install/uninstall, and update subscribers' software and content automatically on a scheduled or just-in-time basis transparently to subscribers.
- Restore broken applications on unattended devices automatically to a desired state.
- Control application versions.

For more information, see the *Radia Application Manager Guide*.

HP OpenView Inventory Manager Using Radia

This management application, in conjunction with the Radia Inventory Manager Server discussed on page 37, allows you to collect hardware and software information for reporting. You must use both the server and client component.

The Radia Inventory Manager:

- Gathers information about software and hardware configurations automatically, and consolidates the results into Web-based reports.
- Increases manageability of enterprise digital assets by maintaining current inventory information collected across LAN, Internet, and dial-up links, and across a wide array of heterogeneous devices and operating systems.

See the *Radia Inventory Manager Guide* for details.

If you install both the Radia Software Manager and Radia Application Manager feature sets, you decide if an application is mandatory or optional, and specify who controls the installation of the application. By adding the Radia Inventory Manager, you can also find out the hardware and software configurations of the client computer.

HP OpenView Software Manager Using Radia

The *subscribers* install, remove, or update optional applications that the administrator makes available to them. A subscriber is the person who uses Radia-managed applications on a client computer.

The Radia Software Manager:

- Enables self-service software and content management for subscribers within the extended enterprise.
- Provides a user interface that the subscribers use to install, remove, verify, and update their *own* elective software and content. The administrator still decides which software and content the subscriber is entitled to.

For more information, see the *Radia Software Manager Guide*.

HP OpenView Patch Manager Using Radia

This management application is used with the Radia Patch Manager Server as described on page 41. It allows you to analyze, deploy and manage security patches on a client device.

The Radia Patch Manager agent:

- Gathers information about security patches installed on the client device.
- Manages the deployment of patches.
- Monitors vulnerabilities.

See the *Radia Patch Manager Guide* for details.

HP OpenView OS Manager Using Radia

The Radia OS Manager is comprised of both a client and a server. The Radia OS Manager Server is described on page 41. These two pieces allow you to provision operating systems on client devices.

The Radia OS Manager:

- Deploys operating systems based on policy assignments.
- Can prompt the user to choose an operating system based on a set of criteria.

See the *Radia OS Manager Guide* for details.

If you install both the Radia Software Manager and Radia Application Manager feature sets, you decide if an application is mandatory or optional, and specify who controls the installation of the application. By adding the Radia Inventory Manager, you can also find out the hardware and software configurations of the client computer. Radia Patch Manager will allow you to manage security patches for the operating system deployed through Radia OS Manager.

Radia Management Infrastructure

The Radia Management Infrastructure is the nerve center for all Radia activities. Use the Radia Management Infrastructure to maintain desired state information, store software and content packages, automate software management activities, and administer your Radia environment. The Radia Configuration Server and the Radia Administrator Workstation tools are the management core of your Radia infrastructure. Consult the HP OpenView web site or your HP representative for the most current information on platform availability.

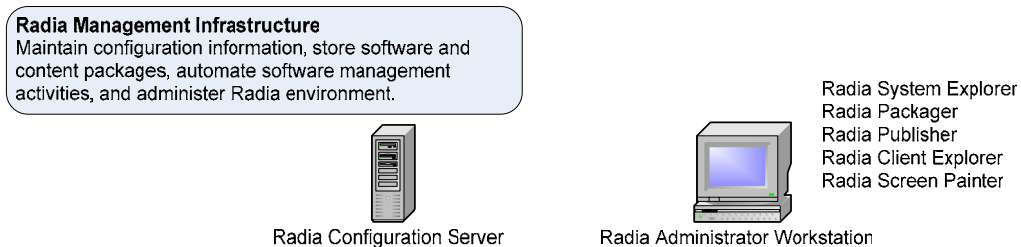


Figure 2.3 ~ Radia Management Infrastructure.

HP OpenView Configuration Server Using Radia

The Radia Configuration Server resides on a single server or multiple servers. Applications and information about the subscribers and client computers are stored in the Radia Database on the Radia Configuration Server. The Radia Configuration Server distributes application packages based on policies established by the Radia administrator. See the *Radia Configuration Server Guide* for details.

The Radia Configuration Server:

- Dynamically generates the desired-states based on situation-specific data creating a software environment that automatically adapts to changes in a user or machine environment.
- Synchronizes distributed objects, such as application components, packages, computer configurations and policy relationships across the network automatically managing the transfer of objects to and from other Radia components.
- Maintains enterprise policies in the Radia Database. When a device under Radia management connects to the Radia Configuration Server, current policy is automatically transmitted to and updated on the managed device.
- Contacts devices to have them initiate requests to the Radia Configuration Server according to a schedule, upon notification from a Radia administrator, and/or when invoked by the subscriber. Radia-managed devices do not poll over the network, conserving network bandwidth.

If you want to synchronize multiple Radia Configuration Servers, use the Radia Distributed Configuration Server. See *HP OpenView Distributed Configuration Server* on page 36 and the *Radia Distributed Configuration Server Guide* for more information.

Radia Database

Radia administrators maintain the enterprise's policies in the Radia Configuration Server Database. A policy defines which services subscribers, client computers, or managed devices are entitled to. Use the Radia System Explorer, one of the Radia Administrator Workstation tools, to administer the Radia Database. The Radia Database is stored on the Radia Configuration Server.

It includes the following information:

- The digital assets that Radia distributes.
- The policies showing which managed devices and subscribers are assigned to which packages.
- Security and access rules for Radia administrators.

For more information on the structure of the Radia Database, see *The Radia Database* on page 60.

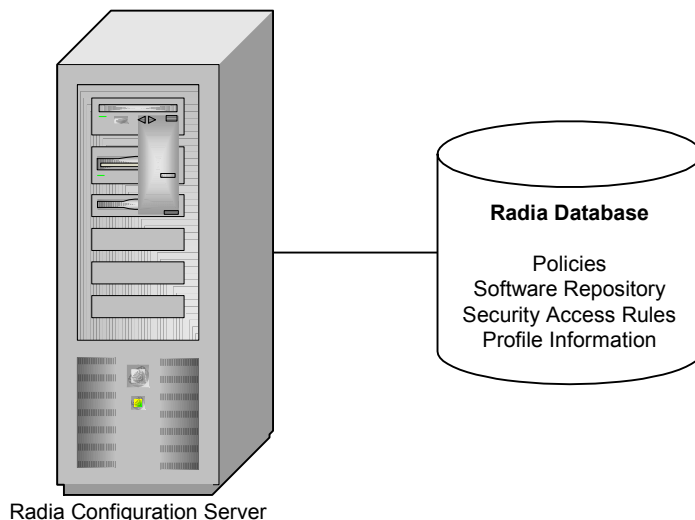


Figure 2.4 ~ Radia Configuration Server.

HP OpenView Administrator Workstation Using Radia

The Radia Administrator Workstation tools provide centralized control of Radia objects and entitlements. It provides a set of tools to carry out basic Radia functions. The administrator uses these tools to manage the Radia Database, prepare applications for management, view Radia Client objects, and customize your Radia environment. The Radia Administrator Workstation includes the following tools and capabilities:

Radia Packager

The Radia Packager provides a graphical interface for packaging all software components for distribution. The packages are promoted to the Radia Database. See *The Publishing and Packaging Process with Radia Packager* on page 64 for information on the publishing process.

Note

The Radia Publisher for Radia Version 3.x has been renamed the Radia Packager for Radia Version 4.x. The Radia Packager is similar to the Radia 3.x Publisher except that it only packages in component selection mode and installation monitor mode. Packaging for applications installed or maintained using Windows Installer is now handled by the Radia Publisher.

There are two publishing modes, Component Selection Mode and Installation Monitor Mode. Availability of the modes depends on your operating system and architecture. Consult the HP OpenView web site or your HP representative for the most current information on platform availability.

■ **Installation Monitor Mode**

In Installation Monitor Mode, the Radia Packager determines what to package by scanning the computer before and after installing the software. It *differences* the before and after scans to determine what changes were made to the computer. These differences make up the package that you promote to the Database.

■ **Component Selection Mode**

In Component Selection Mode, you select the individual components that make up the package, such as files, directories, registry entries, and links.

See the *Radia Application Manager Guide* or the *Radia Software Manager Guide* for more information.

Radia Publisher

The Radia Publisher is an administrative tool that facilitates publishing Windows Installer applications and operating system images to your Radia Database. In only four steps, you can have your files ready for deployment to your environment. Additionally, the Radia Publisher allows for the publication of files in batch mode. Install the Radia Publisher to the computer where your administrator will have access to the necessary files for publishing. See the *Radia Publisher Guide* for more information.

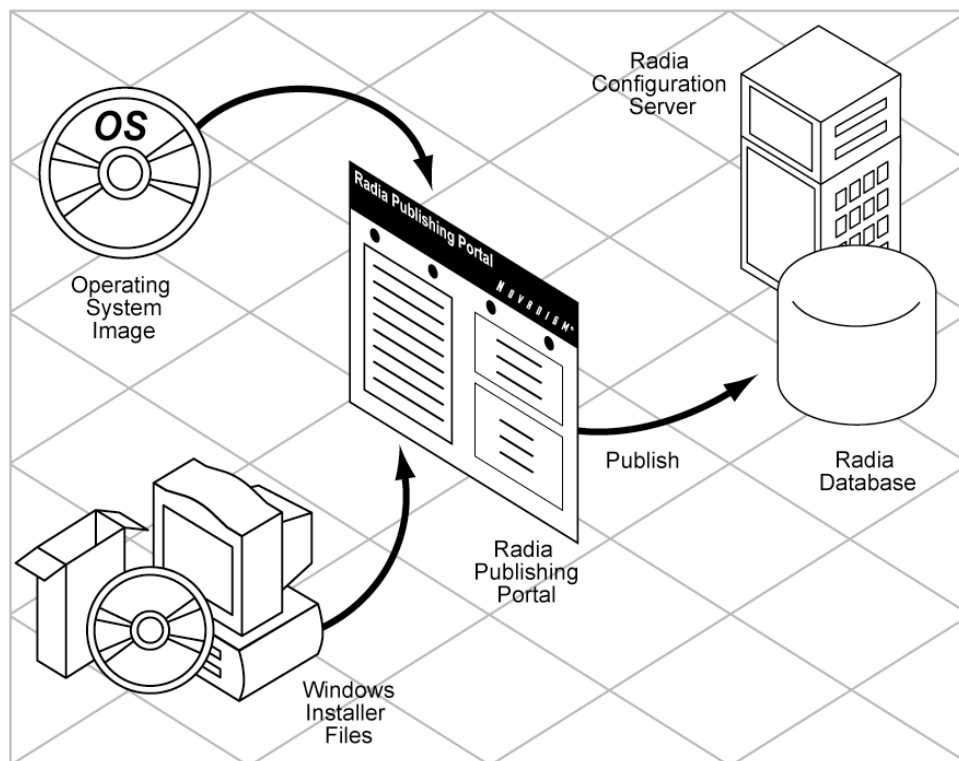


Figure 2.5 ~ Radia Publisher publishing to the Radia Database.

Radia System Explorer

The administrator uses the Radia System Explorer to view and configure policy and application services stored in the Radia Database. In addition, the Radia System Explorer allows administrators to perform the following tasks:

- Modify application packages after the initial publishing process.
- Establish reuse of application components between application services.
- Define application service prerequisites.
- Define policy for application entitlements.
- Control versions (active and inactive versions with control for timed-based activation and roll-back) of centralized application service management activities.
- Centralize control for unattended application service updates, install, and repairs.

For more information, see the *Radia System Explorer Guide*.

Radia Client Explorer

The administrator uses the Radia Client Explorer to manipulate desktop Radia objects. You can use the Radia Client Explorer to:

- View and edit existing objects.
- Create new objects.
- Diagnose issues by viewing error objects.

Radia Screen Painter

Use the Radia Screen Painter to create and design custom dialog boxes.

Radia Extended Infrastructure

Employ the Radia Extended Infrastructure to scale software management services across the extended enterprise. The Extended Infrastructure can be divided into two categories; components and products. Components are shared among two or more products. The software for the components is provided as needed with the products.

Note

Consult the HP OpenView web site or your HP representative for the most current information on platform availability.

Components

Radia products share some components to consolidate communications among products and to facilitate data flow. Shared components include the Radia Integration Server, Radia Messaging Server, and the Radia Reporting Server.

HP OpenView Integration Server Using Radia

The Radia Integration Server integrates independent modules giving them access to all the functions and resources under the control of the Radia Integration Server. The Radia Integration Server is *not* a separately licensed product. Many of the Radia Extended Infrastructure products use the Radia Integration Server, such as the Radia Management Portal, the Radia Mobility Server, the Radia Proxy Server, the Radia Policy Server, and the Radia Inventory Manager. Each product is composed of modules that reside in the Radia Integration Server's modules directory. These Radia components use the same core Radia Integration Server files, and run under the same process.

Benefits of the Radia Integration Server are:

- All the products using the Radia Integration Server for Windows can be loaded from a single Windows NT or Windows 2000 Service called "Radia Integration Server".
- When the Radia Integration Server starts, it will scan its configuration file and try to load all the products marked as loadable.
- Each product loaded from the Radia Integration Server is separately licensed.
- The Radia Integration Server provides Web services that are shared by all loaded modules, resulting in a single entry point for all HTTP (Web based) requests. This integration provides performance, efficiency, and ease of maintenance in an adaptable and cohesive (server) framework.

If you installed the Radia Management Portal:

- and if either Radia Inventory Manager or Radia Policy Server is loaded on the computer, there will be a button in the portal banner which points to **INVENTORY** or **POLICY**.

If you do not have the Radia Management Portal:

- and if you point your browser to your Radia Integration Server, you will open the Radia Integration Server main page.
- Click on the **Reporting** tab to access the Radia Inventory Manager reporting information.

The Radia Management Portal, Radia Inventory Manager, and Radia Proxy Server are described below since they are part of the extended infrastructure. More information on the Radia Policy Server is provided on page 50.

HP OpenView Reporting Server Using Radia

As part of the Radia extended infrastructure, the web-based Radia Reporting Server allows you to query the combined data in existing Radia Inventory Manager, Radia Patch Manager, and Radia Usage Manager databases and create detailed reports. In addition, you have the option of mounting an existing LDAP directory, which allows you to filter your data using your LDAP directory levels.

The Radia Reporting Server interface provides a dynamic and intuitive way to use Radia SQL data for reporting and overall environmental assessment.

A Radia Reporting environment is illustrated in *Figure 2.6 ~ Radia Reporting Environment* on page 33.

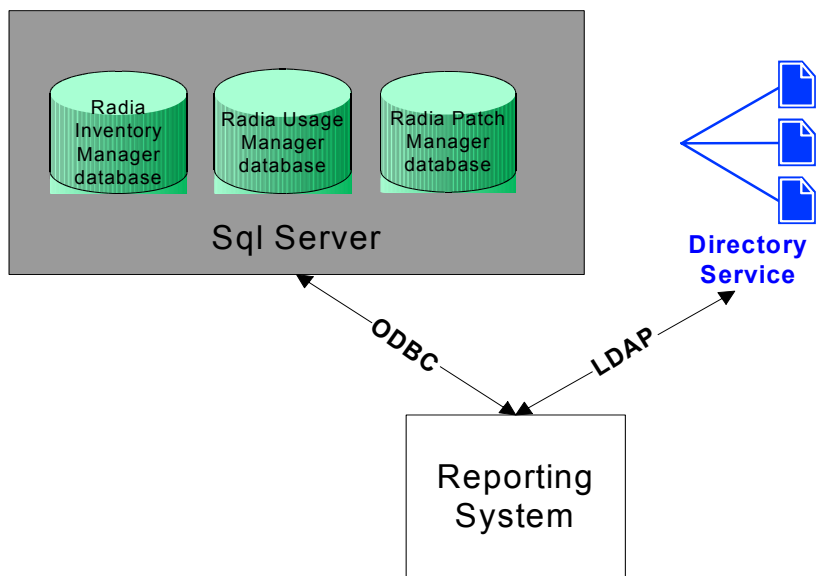


Figure 2.6 ~ Radia Reporting Environment.

The Radia Reporting environment includes the following required and optional components:

■ **Reporting System Modules**

The Reporting System modules do not require the Radia Management Portal. They can be installed on any Win32 machine, which includes the required Web server, discussed below.

Note

The Radia Management Portal is only required if you intend to use the Radia Reporting Server to notify devices.

■ **Web Server**

The Radia Reporting Server requires the Microsoft Internet Information Service (IIS) component for Web services, which is available as a component of all Win32 platforms and Windows Server 2003. For more information on IIS, refer to your Windows Operating System documentation.

■ **Connections to Radia SQL Databases**

Radia Reporting can access any Radia SQL database, such as those for Radia Inventory Manager, Radia Patch Manager, and Radia Usage Manager. *However, all SQL databases accessed by the Radia Reporting Server must exist on a single SQL Server.*

■ **Connections to LDAP Directory** (optional)

The Radia Reporting Server supports optional access to an existing LDAP directory in your enterprise. Access to an LDAP directory allows you to filter report data according to the directory entries.

HP OpenView Messaging Server Using Radia

The Radia Messaging Server (RMS) is a generic messaging service that can be used with many Radia Infrastructure modules. Its job is to continually monitor a predefined data queue and dynamically route data objects to one or more external destinations. The Radia Management Server provides retry, rerouting, and failover capabilities to ensure all data is transferred efficiently and reliably.

On a Radia Configuration Server, the Radia Messaging Server operates with the QMSGG executable to handle the transfer of reporting data obtained from clients to the appropriate external Radia Integration Server. From the external Radia Integration Server, the data is mapped to the appropriate reporting database.

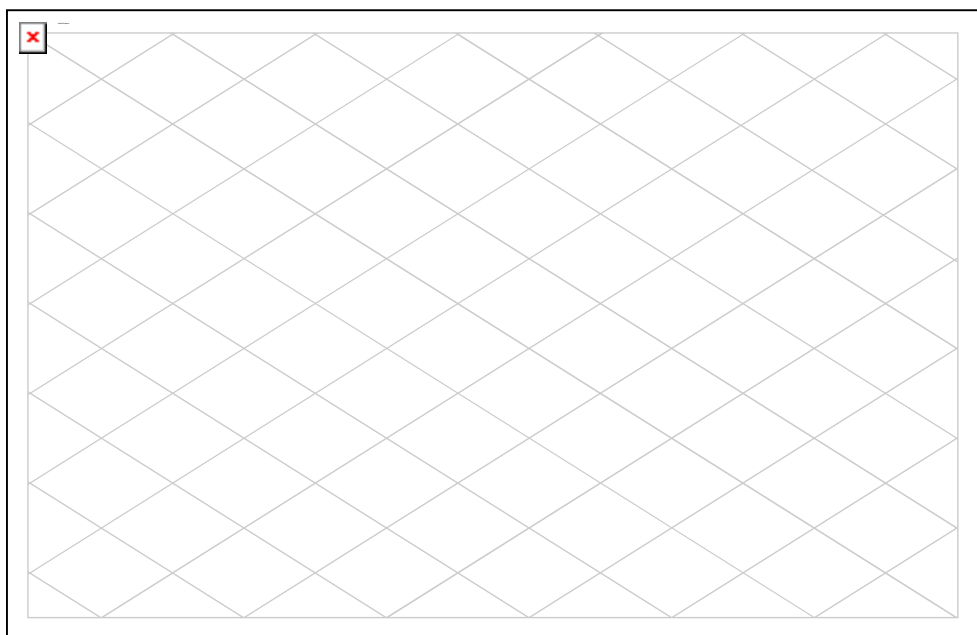


Figure 2.7 ~ Radia Messaging Server routes data.

The Radia Messaging Server runs on all Windows and UNIX platforms supported by the Radia Configuration Server. It communicates with the Radia Integration Server for delivering

Inventory, Management Portal, or Patch data using HTTP/XML. Benefits of the Radia Messaging Server include:

- Route a single message to multiple destinations.
- Automatically retry a delivery.
- Re-route messages to a new host after several unsuccessful delivery attempts.

Products

Through distributed administrative capabilities, replication services, and bandwidth conservation and metering, Radia Extended Infrastructure products provide an end-to-end management solution. The Radia extended infrastructure contains the following products:

- Radia Distributed Configuration Server
- Radia Multicast Server
- Radia Management Portal
- Radia Inventory Manager
- Radia OS Manager
- Radia Patch Manager
- Radia Usage Manager
- Radia Mobility Server
- Radia Proxy Server
- Radia Staging Server

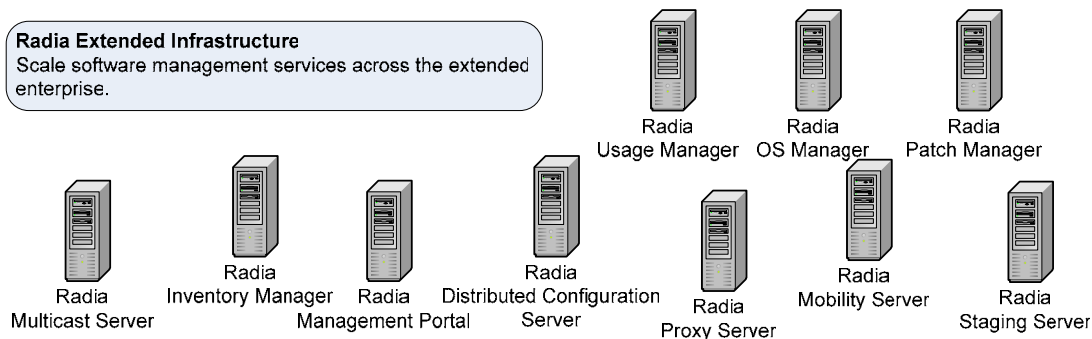


Figure 2.8 ~ Radia Extended Infrastructure.

HP OpenView Distributed Configuration Server Using Radia

The size or network environment of your enterprise may require more than one Radia Configuration Server. The Radia Distributed Configuration Server allows multiple Radia Configuration Servers to share information about policies and managed content. A Radia Distributed Configuration Server synchronization must be configured for at least two Radia Configuration Servers, a Source and a Destination. Planning, architecture, and configuration are all very important considerations when implementing Radia Distributed Configuration Servers into an enterprise environment.

The Radia Distributed Configuration Server is designed to synchronize Radia Databases that are running on separate Radia Distributed Configuration Server-enabled Radia Configuration Servers throughout a network of Radia Distributed Configuration Servers. The Radia Distributed Configuration Server must be able to communicate with each of the Radia Configuration Servers that it is synchronizing. The destination Radia Configuration Servers do not need to be able to contact each other nor do they need to share the same operating system.

The Radia Database is divided into functional domains. The Radia Distributed Configuration Server contacts the selected domains, and then provides the intermediate common facilities to make the source and destination domains identical. The destination domain is always a replica of the source domain. For more information on the Radia Database, see *The Radia Database* on page 60.

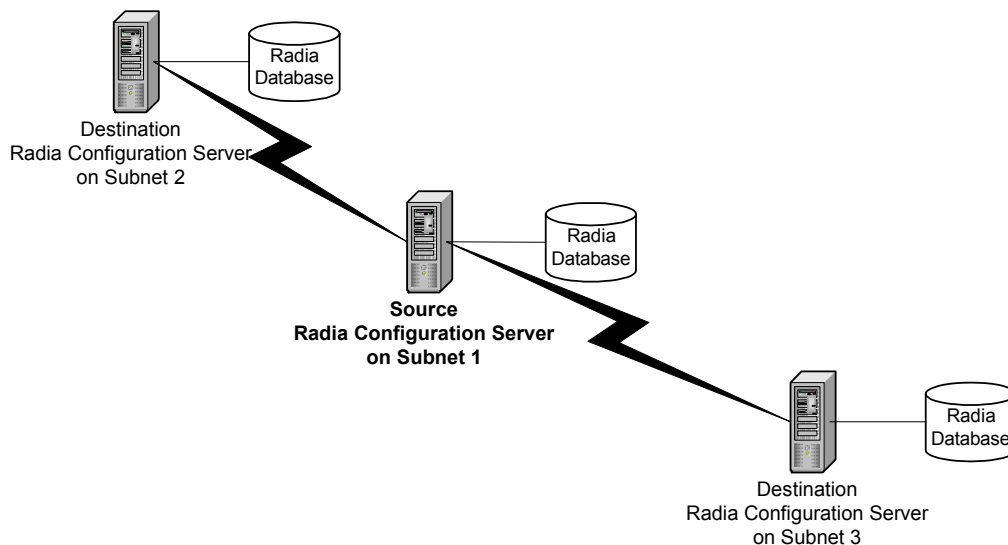


Figure 2.9 ~ Radia Distributed Configuration Servers communicate.

The benefits of the Radia Distributed Configuration Server are:

- Radia administrators can automatically synchronize distributed Radia Databases allowing managed applications and policy information to be shared across the enterprise.
- The Radia Distributed Configuration Server removes any logical limitations to the scale of the software management environment.
- Individual Radia Configuration Servers do not need to share a common network protocol or operating system.

For additional information, see the *Radia Distributed Configuration Server Guide*.

HP OpenView Inventory Manager Using Radia

The Radia Inventory Manager consists of two parts, the Radia Inventory Manager server and the Radia Inventory Manager client. The Radia Inventory Manager server enables centralized reporting and administration based upon the discovery results. The Radia Inventory Manager client discovers configuration information on the client device, and reports the results to the Radia Inventory Manager server. The results are sent to the Radia Configuration Server during connection activities, and forwarded by the Radia Messaging Server to the Radia Integration Server. Optionally, the data can be sent for insertion into an ODBC-compliant database. You can view the Radia Inventory Manager reports using the new Radia Reporting Server. In addition, Inventory reports can be viewed from the native Radia Integration Server or the Radia Management Portal.

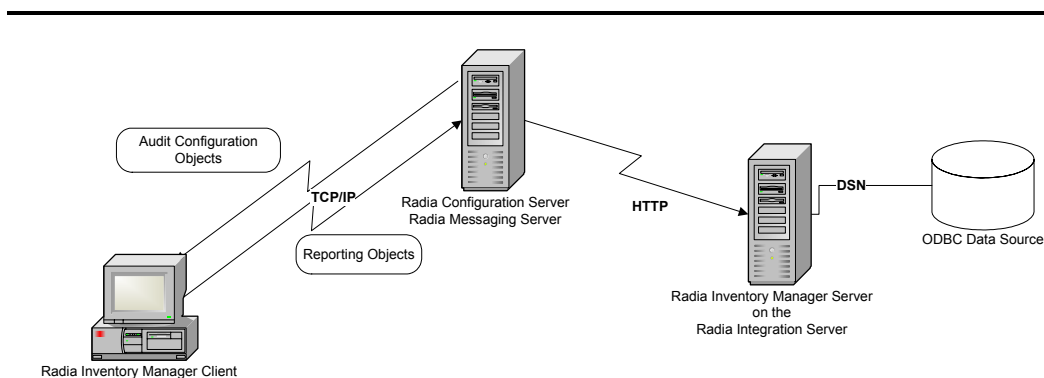


Figure 2.10 ~ The Radia Inventory Manager communicates with an ODBC source.

The Radia Inventory Manager provides the following benefits:

- Audits hardware information.
- Audits software, including the ability to audit specific files or classes file, such as .EXE files.
- Collects files from client devices.

- Generates reports on collected information through an ODBC-compliant database.
- Reports on Personal Digital Assistants (PDAs).

For more information, see the *Radia Inventory Manager Guide*.

HP OpenView Management Portal Using Radia

The Radia Management Portal provides a single access point from which Radia administrators can deploy Radia Client components, detect the current status of some Radia components, manage the Radia Database, and track the completion status of all Radia Management Portal tasks. The Radia Management Portal is web-based and provides Radia administrators with the ability to manage their entire Radia environment regardless of location or computing platform. Administrative tasks can easily be distributed to administrators in remote locations based on roles and policies.

The Radia Management Portal is made up of the following:

- The **Portal Run-time** is the run-time technology that integrates the Radia infrastructure services. This is made up of the Radia Integration Server and the Radia Management Portal module.
- The **Portal Directory** contains configuration and entitlement information for the Radia Management Portal, infrastructure information, and status information. A sample directory is distributed with the Portal.
- The **Radia Management Agent (RMA)**, installed on the remote device, performs tasks on behalf of the Radia Management Portal.

You can use the Radia Management Portal to perform operational and administrative tasks on the Radia Infrastructure; however, the Radia Management Portal cannot always perform these tasks remotely. Therefore, the Radia Management Agent, which is installed on a remote device, performs these tasks on behalf of the Radia Management Portal. Install the Radia Management Agent using the Radia Management Portal.

The Radia Management Portal allows you to:

- Access the Radia Publications Library.
- View your Radia infrastructure.
- Administer the Radia Policy Server.
- View the Radia Inventory Manager.
- Remotely start and stop Radia services.
- Remotely install the Radia Management Applications (Radia Clients), the Radia Management Agent, and the Radia Proxy Server.
- Synchronize (or preload) the Radia Proxy Server.
- Use Notify, a Radia notification utility, to perform an action on a selected audience.
- Query the Radia Management Portal logs.
- Backup and restore the Portal Directory.
- Notify an audience based on information reported to the Radia Inventory Manager.

For more information, see the *Radia Management Portal Guide*.

HP OpenView Management Suite for PDAs Using Radia Mobility Server

The Radia Mobility Server, a component of the Radia Integration Server, acts as the server for mobile device distribution activities. Radia components that support mobile devices include the Radia Configuration Server, the Radia Proxy Server, and the Radia Inventory Manager. The Radia Mobility Server is the interface between the mobile device and the Radia Configuration Server. The Radia Mobility Server drives resolution on the Radia Configuration Server for mobile devices.

The Radia Mobility Server provides the following services:

- Performs resolution and administers requests to the Radia Configuration Server.
- Reformats policy information from the mobile device into XML and delivers it in response to the original PDA GET request.
- If a connection is unsuccessful, returns error information to the Radia Configuration Server.
- Serves file requests from the mobile device using standard Radia Proxy Server functionality.
- Posts inventory data to the Radia Inventory Manager.

For more information on the Radia Mobility Server, see the *Radia Mobile Management Guide*.

HP OpenView Multicast Server Using Radia

The Radia Multicast Server enhances and simplifies data-transmission technology by reducing the number of transmissions necessary, maximizing use of network bandwidth. Multicasting allows the transmission of the same data stream to many receivers, simultaneously. This method of information transmission differs from the usual method of transmission, where a server has to transmit the same information to each of its clients individually.

Most multicast utilities are designed to provide the simplest delivery of a payload that has been statically composed of all files and components for all possible recipients. In this model, every receiver is forced to take all resources bundled into that payload. The Radia Multicast Server allows the collection of the sets of resources that are needed by only those receivers that are eligible to participate in a specific multicast transmission. Only data required by the participants is sent, and the participants retrieve only the data that they have requested.

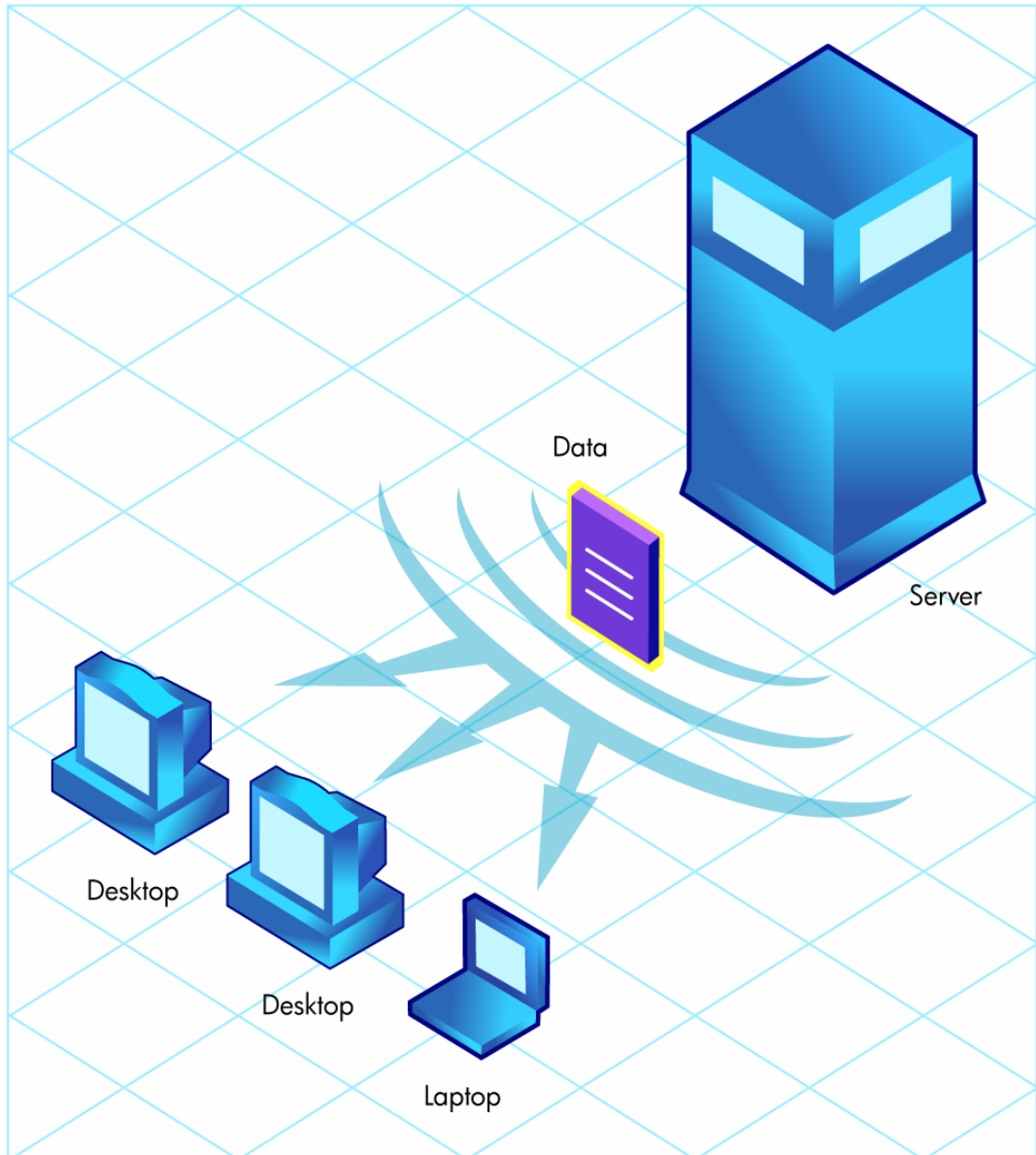


Figure 2.11 ~ Multicast and Unicast transmissions.

The Radia Multicast Server provides the following benefits:

- The same data stream is transmitted to many receivers at the same time.

- Only data required by the participants is sent.
- Participants who are part of the receive group only retrieve the data that they need.
- Maximizes the utilization of network bandwidth by transmitting a single data-stream to multiple clients.
- Saves resources of the server by not having to set up separate client sessions, and then repetitively transmit data to each client individually.

The Radia Configuration Server takes part in the multicast process during the Client Connect, and as the repository for the database files. The Radia Multicast Server accesses the resources needed for transmission during the multicast from the Radia Database.

Additionally, the Radia Database contains the information required to:

- Determine whether a client computer is eligible.
- Assign the client computer to a multicast group.
- Inform the client computer of the files it needs in order to match the desired state.

For additional information, see the *Radia Multicast Server Guide*.

HP OpenView OS Manager Using Radia

The Radia OS Manager provides you with the ability to use Radia's policy-driven, real-time, state-based management to control operating systems. Use Radia's OS Manager to build machines from a bare-metal state or to replace existing operating systems, while applying service packs, patches, hot fixes, applications and other Radia-managed content. Benefits of the Radia OS Manager include:

- Fully integrated component of the Radia Management Suite, which reduces the learning curve for your administrators.
- Improved speed and reliability of operating system deployment with automated policy-based management.
- Increased service levels by maintaining operating systems in the right configuration through desired-state automation.
- Reduced IT costs by simplifying and streamlining the OS management process across multiple platforms.

HP OpenView Patch Manager Using Radia

Radia Patch Manager provides value for business continuity and security initiatives, server provisioning and repurposing, and OS and application migration. Radia Patch Manager is offered as a complete stand-alone solution and can be used as a fully integrated component of the Radia Management Suite, which provides automated and ongoing configuration management for all software across the enterprise, ensuring that the entire software infrastructure is always in its desired state—up-to-date, reliable, and secure.

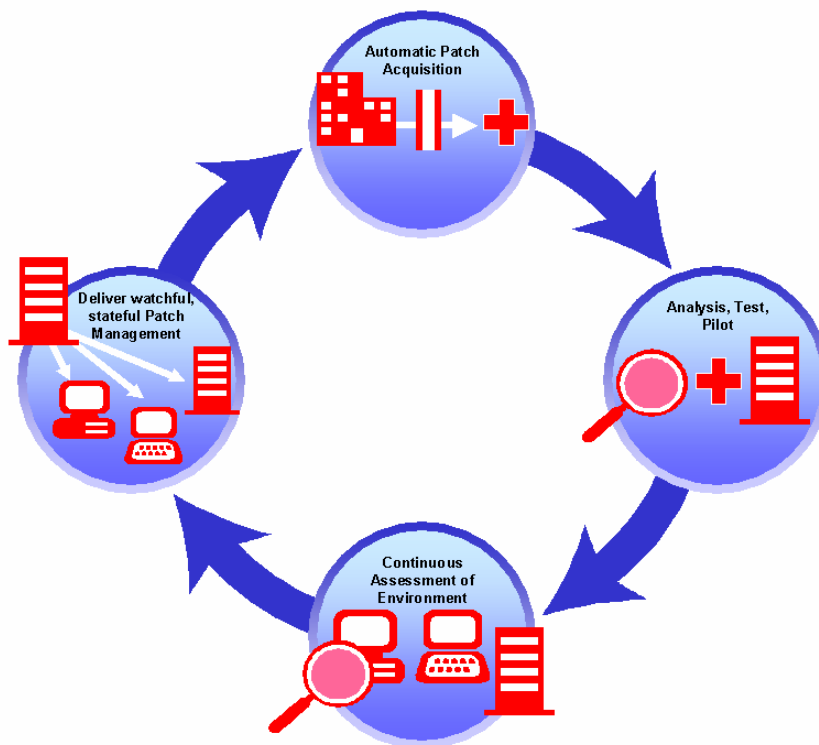


Figure 2.12 ~ Patch Management life cycle.

Key capabilities for security patch management activities include:

- Configurable acquisition tools to enable automatic collection of new security patches directly from a vendor's web-based depository for security patches.
- Ability to perform impact analysis and pilot testing to identify affected applications and devices.
- Automatic and continuous discovery of devices on the network, software products that are installed on each device, the collected security patches that are already applied to each software product, and identification of software products that the device actually executes.
- Policy-based management capabilities that interface directly with a variety of existing policy sources such as Active Directory, LDAP or SQL databases to enable automatic, rapid, and precise targeting of patches for deployment to servers, desktops and laptops.
- Devices and users are monitored and checked against policy and, if found to be out of compliance, are automatically adjusted to appropriate patch levels.

HP OpenView Proxy Server Using Radia

The Radia Proxy Server localizes digital content enabling Radia-managed devices to receive application data over the Local Area Network (LAN) instead of across a Wide Area Network (WAN). Radia Proxy Servers increase scalability while dramatically reducing traffic over the network. Radia Proxy Servers used in your environment are beneficial if you have many client computers requesting the same resources from the same location. When data is cached on the Radia Proxy Server, the demand placed on the Radia Configuration Server is decreased, allowing the Radia Configuration Server to allocate more resources to other tasks.

Placing Radia Proxy Servers at strategic points in your network increases the efficiency at which data is transferred. The connection between subscribers and the Radia Proxy Server may be more efficient than the connection between the subscribers and the Radia Configuration Server. The factors that determine the efficiency of a connection between a server and a client computer include hardware capability, network bandwidth, workload on the servers, network traffic patterns, and the volume of software to be distributed.

Note

The Radia Proxy Server is not a generic proxy, but rather a proxy specifically designed to manage and distribute Radia resources.

The Radia Proxy Server can be installed and software can be preloaded using the Radia Management Portal. Use the Radia System Explorer to configure subscribers to use the Radia Proxy Server in the Radia Database. If the Radia Integration Server is not already installed, the Radia Proxy Server installation will install the Radia Integration Server.

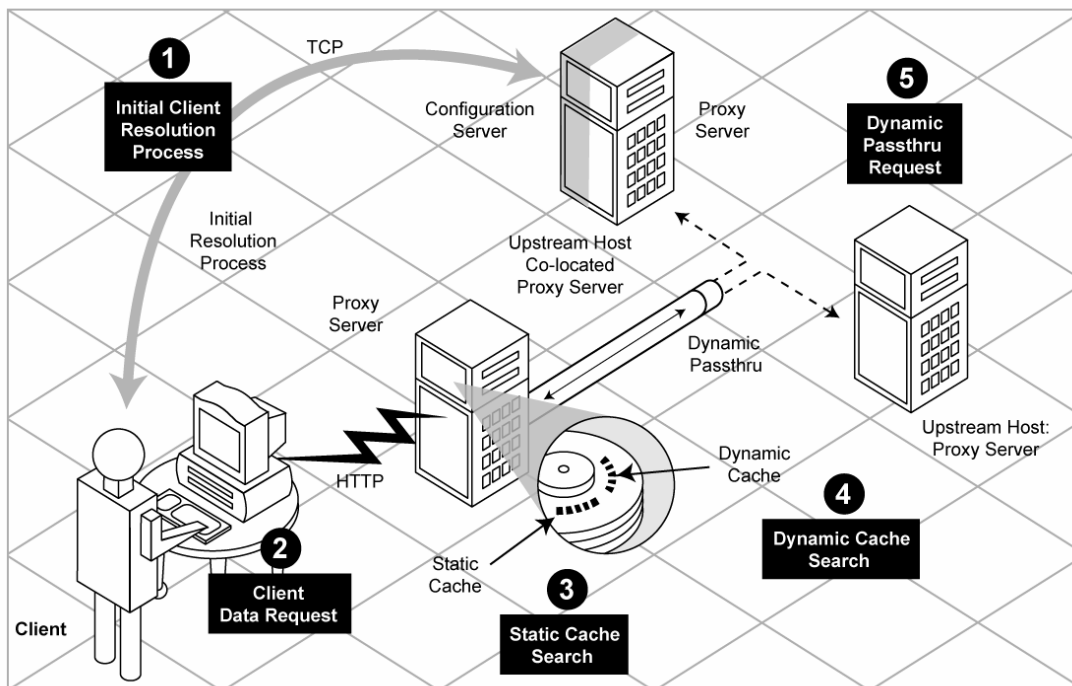


Figure 2.13 ~ Radia Proxy Server caching.

The Radia Proxy Server, when used, is the primary repository for Radia Client data. Once the Radia Client determines the resources needed for its desired state, it can request those resources from the Radia Proxy Server. It provides the following benefits:

- Requests are made using either HTTP (recommended for all new installations) or TCP/IP.
- The ability to service multiple, concurrent client requests from either protocol source.
- You can preload applications for deployment by using the synchronize task from the Radia Management Portal.
- If an application is not already on the Radia Proxy Server, when the first client requests the application from the Radia Configuration Server, and it is not loaded, the application data is directly loaded onto the Radia Proxy Server for distribution.
- If the Radia Proxy Server cannot service an application request, it automatically sends the request to the Radia Configuration Server for processing.

For more information see the *Radia Proxy Server Guide*.

HP OpenView Staging Server Using Radia

Server staging is a method of loading a portion of the work required to deliver application software from the Radia Configuration Server to another server located closer to the client computer. It is similar in usage to the Radia Proxy Server, but it cannot use HTTP, and does not use dynamic caching like the Radia Proxy Server.

As configured at installation, the first client to connect to the Radia Configuration Server will retrieve a copy of the application software from the Radia Configuration Server, and then send a copy to the Radia Staging Server. See Figure 2.14 below. The next client computer that connects to the Radia Configuration Server is directed to obtain its application software from the Radia Staging Server. It is possible to preload the Radia Staging Server so that the first client to connect will immediately receive the data from the Radia Staging Server. Users are assigned to Radia Staging Servers by modifying the Radia Database using the Radia System Explorer.

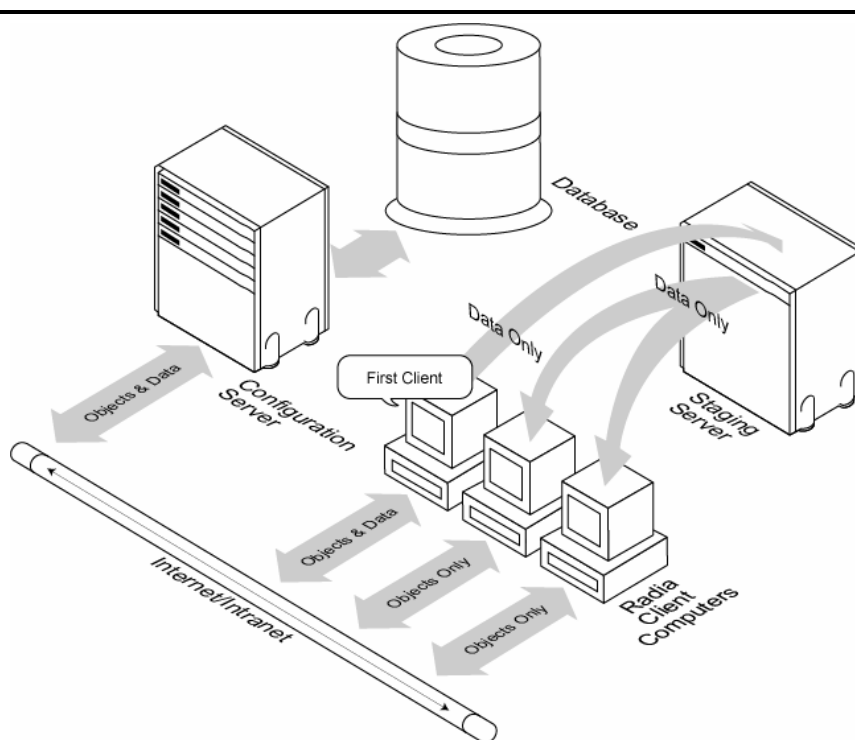


Figure 2.14 ~ Default staging server processing.

Server staging is beneficial to a subscriber when these conditions are present:

- The Radia Staging Server has available disk space to store the application software to be distributed.

- The users subscribe to a *common* set of applications.
- The amount of application software to be distributed must be sufficiently large or complex enough to make it beneficial to store a copy on the server. If the distribution involves a small amount of data, the benefit of staging will be correspondingly small, and may not justify the disk utilization.

See the *Radia Staging Server Guide* for more information.

HP OpenView Usage Manager Using Radia

As an IT administrator you can use the Radia Usage Manager to assess patterns of application usage in your environment. This allows you to facilitate adherence to license agreements, re-provision licenses if needed, and monitor user productivity.

The Radia Usage Manager monitors the use of every application on all of your servers, desktops, and laptops. This enables you to:

- Enforce corporate standards by identifying non-standard software and software versions in use within your enterprise.
- Implement license tracking, giving you the ability to purchase and maintain only those licenses that are needed.
- Enable OS migration support by prioritizing software distribution based on actual usage.
- Use reporting to view the actual use of application resources.

The Radia Usage Manager can be used in your existing environment whether or not you are currently using Radia for software distribution. For more information, see the *Radia Usage Manager Guide*.

Radia Management Extensions

Radia Management Extensions provide integration and extended enterprise functionality. They allow Radia to interface with other technologies such as LDAP and SSL. The Radia Policy Server, the Radia Adapter for SSL, the Radia Publishing Adapter, and the Radia Systems Management Adapters are Management Extensions.

Radia Management Extensions

Provide integration and extended enterprise functionality, allowing Radia to interface with other technologies.

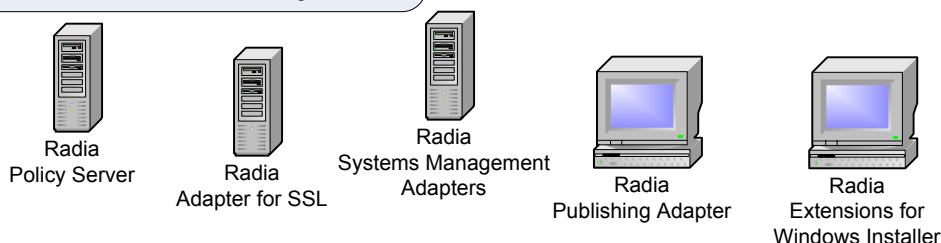


Figure 2.15 ~ Radia Management Extensions.

HP OpenView Adapter for SSL Using Radia

The Radia Adapter for SSL (Secure Sockets Layer) utilizes encryption and security protocols to maintain the safety and confidentiality of information transmitted over intranets and extranets, allowing organizations to provide secure software management services to extended audiences. The Radia Adapter for SSL supports SSL and HTTPS communications between Radia Servers and the Radia Client to secure information transmitted over networks. The installation copies the necessary files to support SSL communications and generates a server certificate request and private key file. The server certificate request must be signed by a public certificate authority. The Radia Adapter for SSL must be installed on each Radia Server that is to be configured for SSL communications. For more information, see the *Radia SSL Adapter Guide*.

HP OpenView Extensions for Windows Installer Using Radia

The Radia Extensions for Windows Installer is a management system designed to automate and simplify the enterprise application integration laboratory process. Use this product to build, test, maintain, deploy, and troubleshoot Windows Installer applications and installation packages.

The **Radia Packager for Windows Installer** gives you complete control over the resource gathering, analysis, a creation of a Windows Installer packaging. Complete packaging of an application typically takes less than an hour. Several interfaces allow you to choose the session granularity that you require:

- Use the **Radia Packager Menu** to run a typical, unified packaging session or to use one of the custom options for creating a modified package.
- Alternatively, use the Radia Packager **Process Menu** to access a comprehensive flowchart of all package creation components that are part of the Radia Extensions for Windows Installer suite.

The underlying components of the Radia Packager for Windows Installer include a set of Wizards and an editor. These can be launched individually or are automatically launched from one of the menu options.

- **Radia State Wizard**
Create and modify state files.
- **Radia Library Wizard**
Create and modify library files.
- **Radia Package Wizard**
Build and modify the Windows Installer packages.
- **Radia Install Wizard**
Publish packages into a non-Radia distribution point, or modify packages using transforms. For publishing Windows Installer packages to the Radia Database, see the **Radia Publisher**.
- **Radia Insulation Wizard**
Use application specific resources that are isolated from other applications.
- **Radia Configuration Analyzer**
View, store, and compare application data. See *HP OpenView Configuration Analyzer* in the section below and the *Radia Configuration Analyzer Guide* for more information.
- **Radia Knowledge Base Manager**
Populates the Radia Knowledge Base with data in the form of state files.
- **Radia MSI Editor - Radia MSIEdit**
Allows you direct access to the Windows Installer database tables through an easy to use interface.

See the *Radia Extensions for Windows Installer Getting Started Guide* and the *Radia Extensions for Windows Installer Guide* for information on how to use the Radia Extensions for Windows Installer.

HP OpenView Configuration Analyzer Using Radia

The Radia Configuration Analyzer administrator console simplifies your view of application management. Backed by a database, imported state files keep a detailed history of all of the resources needed by an application to run successfully. With a click of the mouse, powerful features of the console identify conflicts between two or more applications. With this historical and complete set of information at your fingertips, you can easily determine the impact on your environment of:

- Deploying a new application.
- Upgrading an existing application.
- Adding or modifying modules, registry keys, and data files.

The Radia Configuration Analyzer performs integration and management analysis functions. Administrators can profile applications, initiate application comparisons or views, analyze applications, populate the Radia Knowledge Base, and establish and manage Radia Knowledge Base Permissions.

To analyze data with the Radia Configuration Analyzer, data must be in the form of a state file. State files are generated by different Radia Products, including the Radia Packager for Windows Installer, Radia Usage Manager, Radia Patch Manager and the Radia System Explorer. Refer to the product specific guides for more information about how to create state files with that product.

HP OpenView Knowledge Base Manager Using Radia

The Radia Knowledge Base Manager is a component used with the Radia Configuration Analyzer. It populates the Radia Knowledge Base with data in the form of state files. State files consist of data that represent the current state of an application. This data is acquired by the Radia Knowledge Base Manager from a continuously monitored user-specified directory, or collection point. When data is detected in this collection point, it is automatically transferred to the Radia Knowledge Base.

The collection point is populated by one or more Radia products including the Radia Patch Manager, Radia Usage Manager, and Radia Packager for Windows Installer.

The endpoint for this data, the Radia Knowledge Base database, may be either a SQL Server or an Oracle database configured in your environment. From here, data analysis can take place.

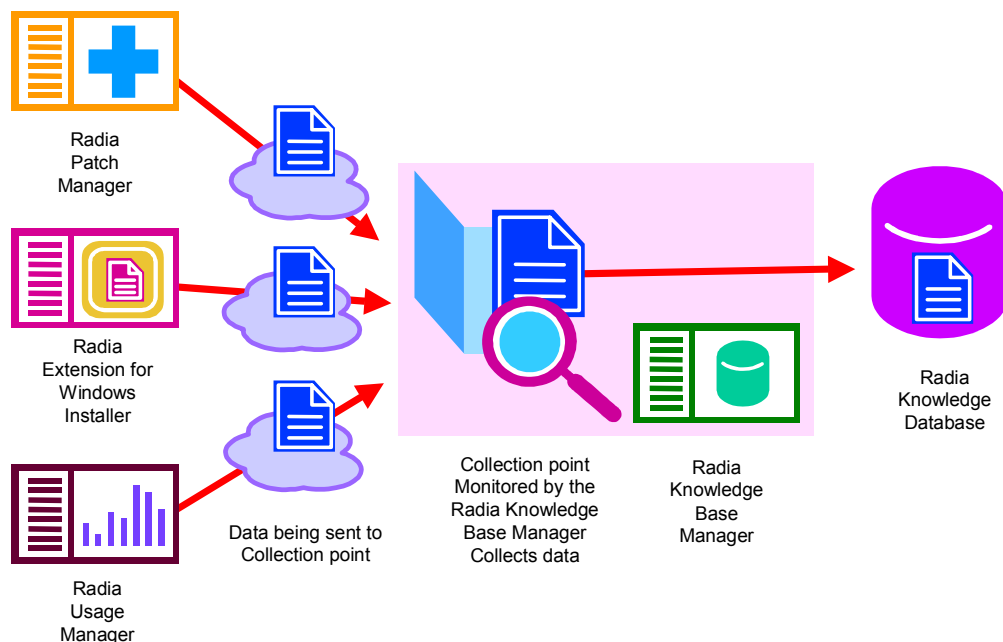


Figure 2.16 ~ Radia Knowledge Base Manager process.

For more information, see the *Radia Knowledge Base Manager Guide*.

HP OpenView Policy Server Using Radia

The Radia Policy Server is a Web server used for administration purposes such as mapping services to users in the directory tree. It is one of the Management Extensions in the Radia Infrastructure providing integration and extended enterprise functionality with your directory services. Policy method connections in the Radia Configuration Server Database are used to determine what services should be distributed and managed for the user that is currently logged on by querying the Radia Policy Server.

The Radia Policy Server integrates with Lightweight Directory Access Protocol (LDAP) directory servers and SQL databases to enable single source points of control for user authentication, access policies, and subscriber entitlement. These LDAP directory servers include Microsoft Active Directory, Novell NDS, and other vendor's LDAP servers, as well as Oracle, Sybase and Microsoft SQL-based databases.

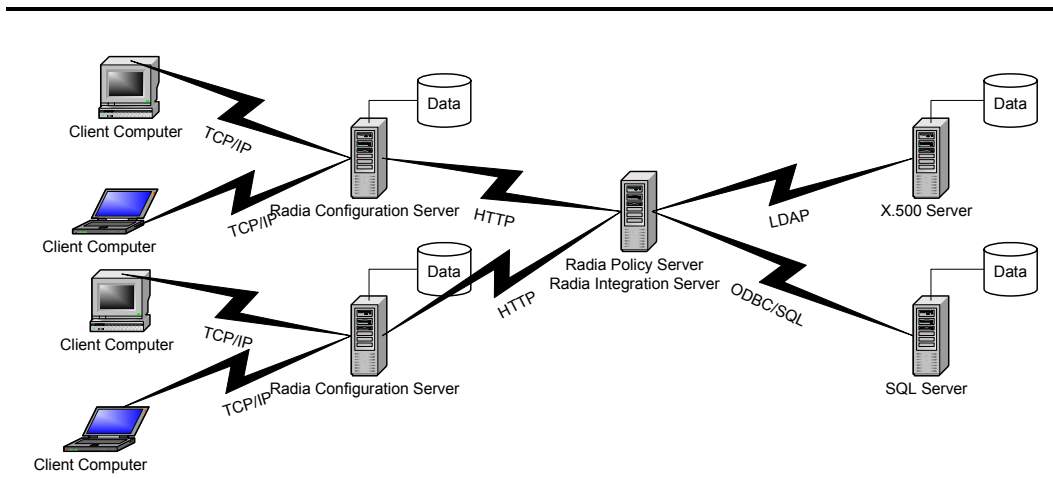


Figure 2.17 ~ Radia Policy Server integrates with LDAP and SQL.

For more information, see the HP OpenView web site and the *Radia Policy Server Guide*.

HP OpenView Publishing Adapter Using Radia

The Radia Publishing Adapter is a command line driven publishing tool that can easily be integrated with third-party configuration management and packaging products for fully automated, unattended updates to application packages. The Radia Publishing Adapter provides an alternative to the Component Selection Mode of the Radia Packager. The Radia Publishing Adapter offers an automated, repeatable command-line process, while the Radia Publisher must be monitored from start to finish.

The Radia Publishing Adapter identifies a set of files and components, and publishes them, in a controlled, automated, repeatable manner, to the Radia Database where they are stored as objects. Its focus is distributing updates to content, data, and applications rather than initial application packaging. Digital content, such as file sets, graphics, price lists, and interest rates, are types of managed lists that might require an automated update process such that Radia Publishing Adapter can provide.

The Radia Publishing Adapter can:

- Scan for files on multiple drives or file systems.
- Scan and publish files from any mapped drive or file system.
- Be configured to limit the subdirectories that are scanned.
- Include or exclude files at the file level.
- Select files by type.

Additionally, the Radia Publishing Adapter can accommodate frequent patching of internal applications, as well as publish build versions, and output from HP legacy (PVCS or ClearCase) adapters. Its capacity to revise content material is reliable, and can execute continuously, at designated times, and in pre-determined intervals. It can easily be run from within any script or code capable of calling a command prompt. See the *Radia Publishing Adapter Guide* for more information.

HP OpenView Systems Management Adapters Using Radia

You can integrate the Radia Infrastructure with event, security, and performance management, and help desk environments of other vendors' products. The Radia Systems Management Adapters allow Radia and third-party products to exchange information. There are adapters available for HP OpenView, IBM Tivoli Management Framework and the Tivoli Enterprise Console, Computer Associates Unicenter, Remedy Help Desk, Microsoft SMS and Microsoft Operations Manager, or any SNMP-compliant system. Contact your HP representative for information on available adapters.

Essential Functions

Table 2.1 below summarizes the essential functions for each Radia product. For more information on each product, review the product's section in this chapter and the associated publications.

Table 2.1 ~ Radia Products and Essential Functions	
Use the	If you want to . . .
Radia Management Applications	
Radia Application Manager	Deploy mandatory packages to unattended devices.
Radia Inventory Manager	Track and report on hardware and software on client devices. Used with the Radia Inventory Manager Server. Note: The Radia Inventory Manager has both a client and server component.
Radia OS Manager	Provision and manage operating systems on client devices. Used with the Radia OS Manager Server. Note: The Radia OS Manager has both a client and server component.
Radia Patch Manager	Deploy and analyzer vendor's security patches and bulletins. Used with the Radia Patch Manager Server. Note: The Radia Patch Manager has both a client and server component.
Radia Software Manager	Have subscribers decide when to install the packages that they are entitled to.
Radia Management Infrastructure	
Radia Configuration Server	Configure and maintain a distribution model for your enterprise devices and client computers.
Radia Administrator Workstation	Configure or maintain your Radia environment.
Radia Extended Infrastructure	
Radia Distributed Configuration Server	Replicate part or all of your Radia Databases across a network of Radia Configuration Servers.
Radia Inventory Manager	Track and report on hardware and software on client devices. Used with the Radia Inventory Manager client. Note: The Radia Inventory Manager has both a client and server component.
Radia Management Portal	Manage your Radia infrastructure through a Web browser.
Radia Mobility Server	Manage hand-held and wireless devices.
Radia Multicast Server	Send the same resources in one data stream to multiple clients at the same time.
Radia OS Manager	Provision and manage operating systems on client devices. Used with the Radia OS Manager Server. Note: The Radia OS Manager has both a client and server component.

Table 2.1 ~ Radia Products and Essential Functions

Use the	If you want to . . .
Radia Patch Manager	Deploy and analyzer vendor's security patches and bulletins. Used with the Radia Patch Manager Server. Note: The Radia Patch Manager has both a client and server component.
Radia Proxy Server	Use cache management over HTTP or TCP/IP to store and transmit application data dynamically, freeing resources on the Radia Configuration Server.
Radia Staging Server	Store and transmit application data over TCP/IP or IPX/SPX, freeing resources on the Radia Configuration Server.
Radia Usage Manager	Assess patterns of application usage in your environment.
Radia Management Extensions	
Radia Adapter for SSL	Maintain the safety and confidence of transmitted information.
Radia Extensions for Windows Installer	Publish and manage Windows Installer applications.
Radia Policy Server	Use directory services to implement Radia policy.
Radia Publishing Adapter	Create fully automated, unattended updates to application packages.
Radia Systems Management Adapters	Exchange data with other vendors' products.

Example 1: Radia Inventory Manager

Suppose you wanted to be able to do the following in your enterprise:

- Manage mandatory digital content.
- Use your existing directory services to create entitlements.
- Place servers with your digital content closer to your client devices.
- Distribute management across your enterprise.
- Report on hardware and software assets.

You would then want to combine the functions of the Radia Application Manager, the Radia Configuration Server, the Radia Policy Server, the Radia Proxy Server, the Radia Distributed Configuration Server, and the Radia Inventory Manager. A diagram of your network might be similar to Figure 2.18 on page 54.

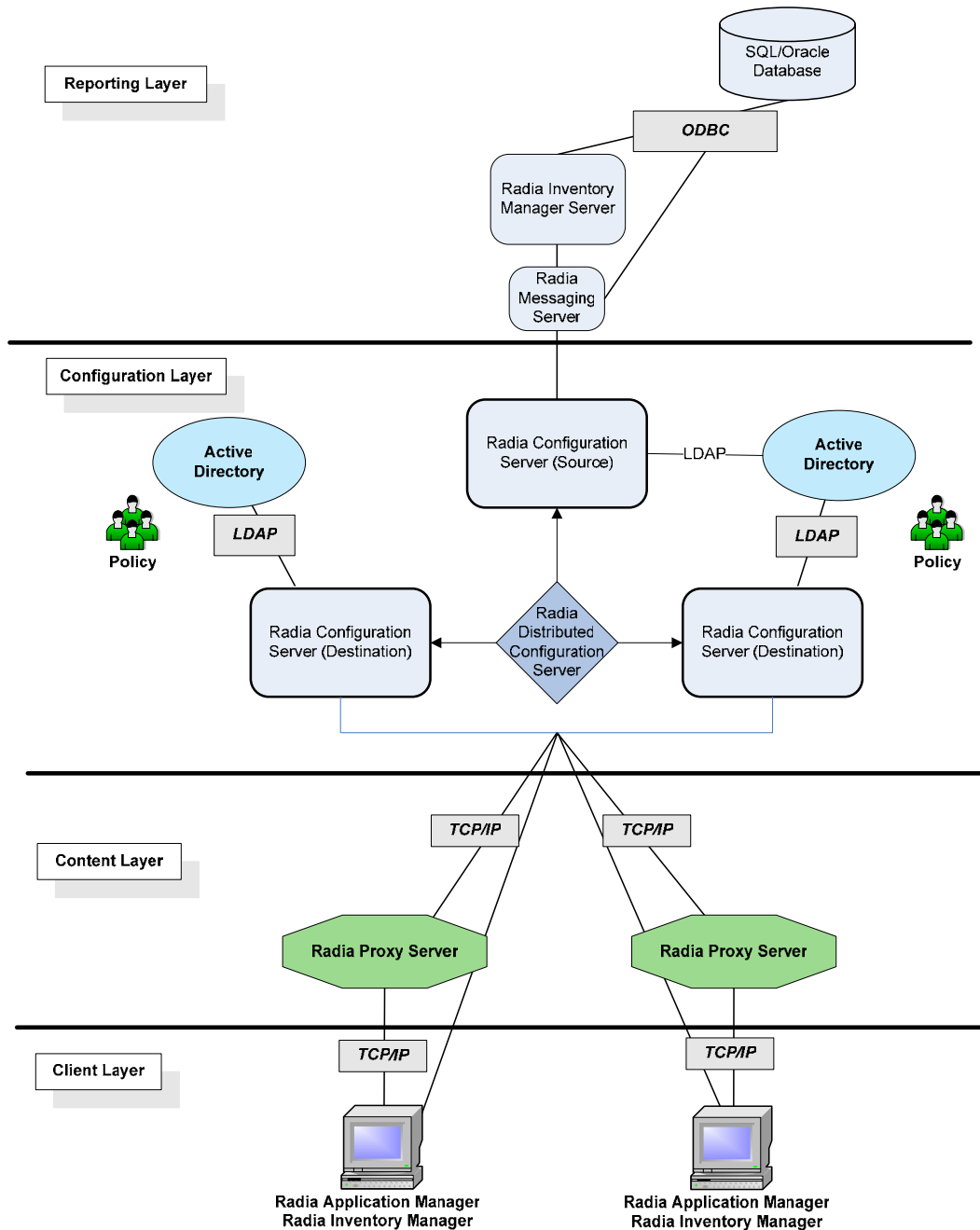


Figure 2.18 ~ Create a Radia Inventory Manager environment.

Example 2: Radia Patch Manager

Suppose you wanted to be able to do the following in your enterprise:

- Manage mandatory digital content.
- Analyze and manage security vulnerabilities.
- Use your existing directory services to create entitlements.
- Place servers with your digital content closer to your client devices.
- Distribute management across your enterprise.

You would then want to combine the functions of the Radia Application Manager, the Radia Configuration Server, the Radia Policy Server, the Radia Proxy Server, the Radia Distributed Configuration Server, and the Radia Patch Manager. A diagram of your network might be similar to Figure 2.19 on page 56.

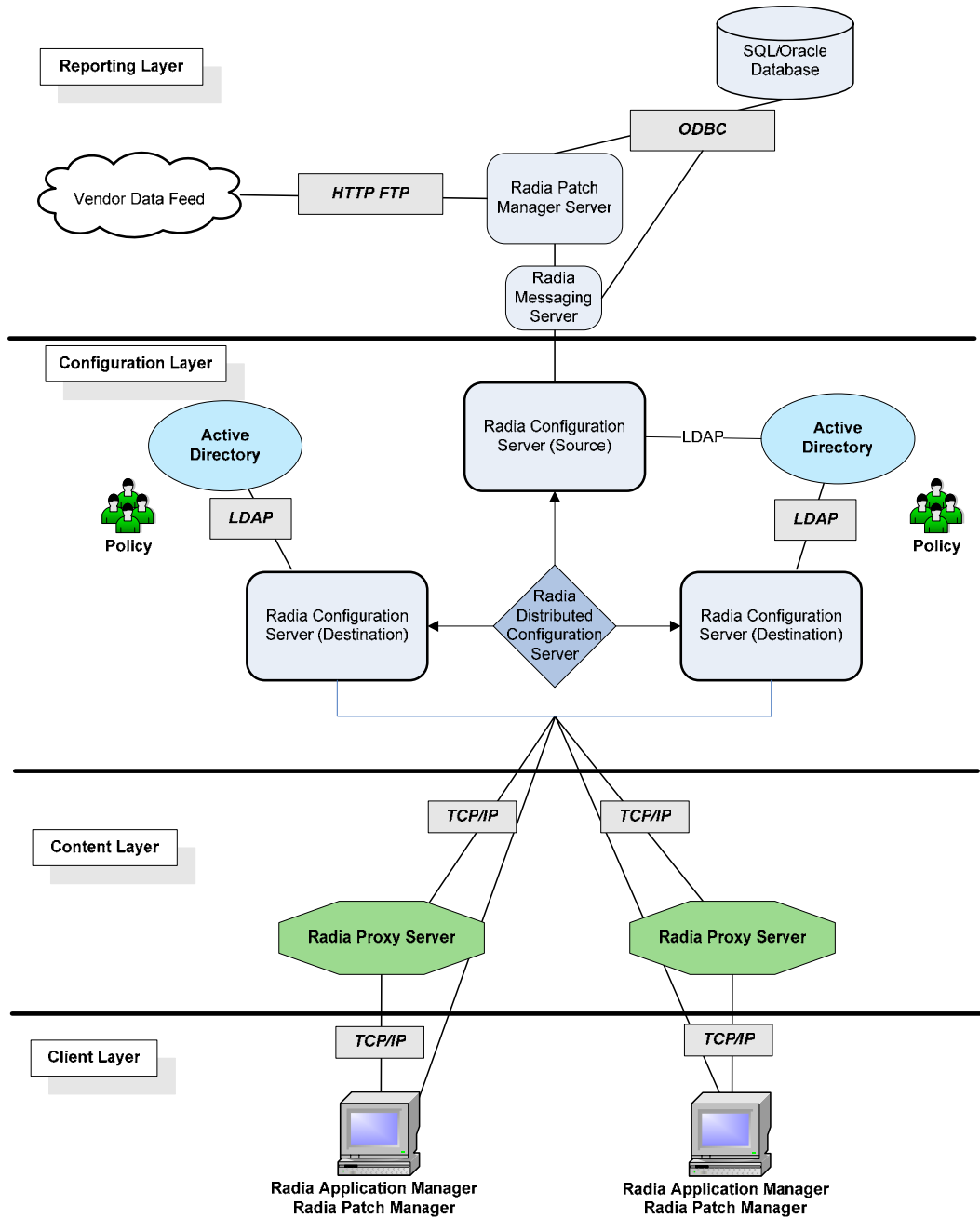


Figure 2.19 ~ Create a Radia Patch Manager environment.

Summary

- Radia products can be divided into four categories: Management Infrastructure, Extended Infrastructure, Management Extensions, and Management Applications.
- Install the Radia Management Applications on your client computers and devices to manage and track digital assets.
- The Radia Management Infrastructure represents the core of Radia activities.
- Use the Radia Extended Infrastructure to increase scalability of the Radia Management Infrastructure.
- Radia Management Extensions are available to allow you to exchange information between Radia and other systems management software.

Essential Processes

At the end of this chapter, you will:

- Be familiar with the structure of the Radia Database and Radia objects.
- Know the dynamics of a service.
- Be familiar with the Packaging process.
- Understand the Client Connect process.
- Understand the Resolution process.
- Understand the Inventory Collection process.
- Know the basics of Radia Proxy Server processing.
- See the Radia OS Manager image deployment architecture.
- Know how the Radia Patch Manager acquires security patches.

In order to understand the discussions of essential Radia processes in this chapter, you must have an understanding of the Radia Database and Radia objects. You should also be familiar with the terms described in *Terminology* on page 17.

The Radia Database

The Radia Database, stored on the Radia Configuration Server, records your distribution model. This includes all of the information that Radia uses to manage applications on a client computer, including:

- The software or data that Radia distributes.
- The distribution model for each client.
- The policies determining which subscribers are assigned to which packages.
- Security and access rules for Radia administrators.

Use the Radia System Explorer to view and manipulate the Database. The Radia Database is hierarchically structured, and its components consist of files, domains, classes, instances, and attributes.

Table 3.1 ~ Radia Database Structure

Term	Description
File	Highest level in the hierarchy of the Radia Database. Groups similar domains together. Example: The PRIMARY file is used to define and maintain the distribution model. This is one of the pre-configured files distributed with Radia.
Domain	Logically partitions a Radia file. Groups similar classes together. Example: The POLICY domain contains the classes needed to create users and groups.
Class	A category of the distribution model. The class is a template for the attributes needed to create an instance of the class. Refer to the <i>Radia Database Reference</i> Manual for information on the structure and usage of Radia classes. Example: The USER class of the POLICY domain defines subscribers of Radia-managed applications. It defines all of the attributes necessary to identify the client computer to be managed by Radia.
Class Instance or Instance	An object containing a specific occurrence of a class. This is analogous to a row in a relational data table, or a record in a traditional flat file. The attributes of a class instance object contain data describing one specific entity of that class. Example: A USER instance is an object created from the USER class, containing the information needed to identify a subscriber's client computer.
Attribute Attribute Value	An attribute is a data element of a class. The class contains the definition (e.g., the name, data type, description, and length) for each attribute comprising the class. Each class instance created from the class contains a value for each of the attributes defined in the class. Example: The NAME attribute of a USER class contains the name of the subscriber, and the USERID attribute contains the user ID, as specified by the Radia administrator.

When you install the Radia Configuration Server, LICENSE and PRIMARY are the only two files available. As you use Radia, your Database may change. Some of the Management Infrastructure products add other domains. For example, Radia Patch Manager adds the PATCHMGR Domain, and Radia Usage Manager adds the USAGE Domain. Radia OS Manager used the OS and MACHINE Domains.

- The **LICENSE** file is read-only and used for Radia Configuration Server processing. This file is for HP use, and should not be modified.
- The **PRIMARY** file is where you will find most information regarding software management. Within the PRIMARY file, there are seven default domains.
 - Use the **ADMIN** domain to define administrative rights and rules for connecting classes.
 - Use the **AUDIT** domain to configure tasks that will inventory client computers' assets.
 - Use the **CLIENT** domain to configure Client Operations Profiles. This includes defining which Radia Configuration Servers, Radia Proxy Servers, and Radia Staging Servers the client computer can use.
 - Use the **POLICY** domain to create users and groups, and to assign users to groups.
 - Use the **PRDMAINT** domain to store packages for self-maintenance.
 - The **SOFTWARE** domain contains information about the software being managed and the methods used to deploy the software.
 - The **SYSTEM** domain contains administrative and process control definitions.

As you begin to use Radia, the **PROFILE** file appears. This file contains information that is collected from client computers and devices. The file appears after the first client has registered with the Radia Configuration Server. This information is used to connect to computers and devices to deploy software managed by Radia, and to see the configuration of the client computer.

The **NOTIFY** file contains information about attempts by the Notify function to update, remove or e-mail subscribers. This file appears after the first attempted Notify.

In this chapter, you will find the different parts of the Radia Database defined in the following ways:

Table 3.2 ~ Radia Database Usage

Element	Style	Example
Files (in the Radia Database)	All uppercase	PRIMARY
Domains (in the Radia Database)	All uppercase	PRIMARY.SOFTWARE May also be referred to as the SOFTWARE domain in the PRIMARY file.
Classes (in the Radia Database)	All uppercase	PRIMARY.SOFTWARE.ZSERVICE May also be referred to as the ZSERVICE class in the SOFTWARE domain in the PRIMARY file.

See the *Radia Database Reference Guide* for more information.

Radia Objects

An object is a storage structure, that is, a record or record set. It contains variables, including both the definition (variable name and length), and the value (for example, the LOCALUID variable contains the user ID) for each variable. An object consists of *instances* (also called *heaps*). An instance is an occurrence of a set of variables. It is analogous to a record in a flat file, a row in a relational database table, or a row in an array. Objects can consist of a single instance (for example, the ZMASTER object), or multiple instances (for example, the FILE object).

Service Dynamics

Within your enterprise, you have groups (packages) of data or applications that you want to control. A *package* is a data set that is published as an individual entity that includes the files, desktop shortcuts, and registry entries needed for a particular application, such as Microsoft Word. Once you have identified these packages, you can categorize them into services. A *service* allows you to organize a group of related packages, methods, or behaviors into manageable units. One package could be a manageable unit.

For example, you may want to manage an anti-virus application. Usually, you will need the anti-virus software and a data file that holds virus information. Since you would have no use for the data file without the software, you might group these two packages into one service. If for whatever reason you want to manage them separately, you would associate each of these packages with a separate service.

If you are creating a service for the purpose of managing an application, the service might evolve as follows:

1. Use the Radia Packager or Radia Publisher to create a package. See *The Publishing and Packaging Process* with Radia Packager on page 64.
2. Use the Radia System Explorer to create and edit the properties of a service associated with packages.
3. Create your distribution model by setting *policy* for a user or group by using the Radia System Explorer. A policy defines which of the applications subscribers and client computers are entitled to.
4. The client and the Radia Configuration Server use the Client Connect process and the Resolution process, respectively, to create the distribution model. See *The Client Connect Process* on page 68 and *The Resolution Process* on page 73.
5. The client completes the updates, removals, installations, and verifications needed to achieve its desired state.

About Packaging and Publishing with Radia

Packaging is the process of identifying resources, editing those resources' installation attributes, defining how they are to be installed, and saving the resources and installation instructions in a

machine-readable file format. A package typically contains one or more files and configuration settings.

Publishing is the process of importing a package and its imbedded information to the Radia Database (AKA the Radia Configuration Server Database). A package must be published before its content can be distributed and deployed into your environment.

Radia offers many different packaging and publishing options through multiple tools. Make note of the different types of resource packages you will create and publish, then choose your Radia packaging and publishing products as required.

- If you're **packaging** Windows Installer files, use the **Radia Packager for Windows Installer**. (See the *Radia Extensions for Windows Installer Guide*).
- If you're **publishing** Windows Installer files, use the **Radia Publisher**. (See the *Radia Publisher Guide*).
- To **package** and **publish** all other types of files and applications, use the **Radia Packager**. (See the *Radia Application Manager Guide* or the *Radia Software Manager Guide*).

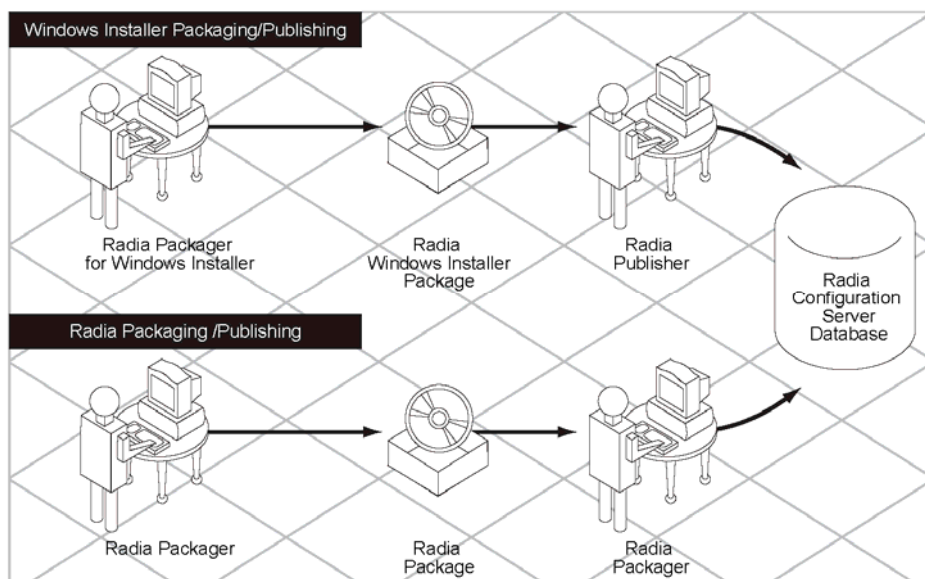


Figure 3.1 ~ Radia Packaging/Publishing options.

Radia Publisher

The Radia Publisher consists of four main steps for publishing files to the Radia Database. These are:

1. **Select** – Select the file or image to be published to the Radia Database.
2. **Edit** – Create the Administrative Installation Point, simulate the application's user interface, edit MSI features and properties, select any transforms, and enable Machine/User parameters (Windows Installer files only).
3. **Configure** – Provide the information for creating a Radia package or service that will be published to the database.
4. **Publish** – Publish to the Radia Database.

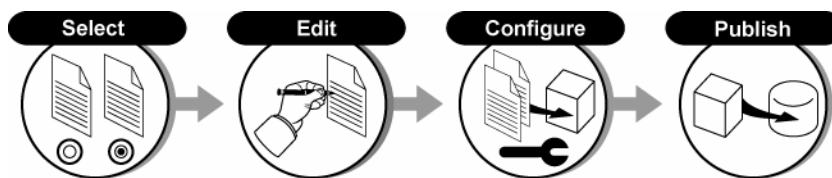


Figure 3.2 ~ Publishing steps for the Radia Publisher.

During each step you will select, edit, and configure the package to be published by providing the information requested at each window. See the *Radia Publisher Guide* for details.

The Publishing and Packaging Process with Radia Packager

The Packaging Process identifies the components of the software (files, shortcuts, registry entries) and organizes them into Radia packages. Radia packages are compressed for speedier delivery over limited bandwidth, and can be stored on the Radia Configuration Server, a Radia Proxy Server, or on a Radia Staging Server closer to the subscribers.

The Radia Packager is used to create the packages. To *publish* is to bundle a set of related data into a single unit that can be managed by Radia. Two packaging modes are available in the Radia Packager: Installation Monitor Mode and Component Selection Mode.

■ Installation Monitor Mode (Radia Packager)

In Installation Monitor Mode, the Radia Packager determines what to package by scanning the Radia Packager computer before and after installing the software. It *differences* the before and after scans to determine what changes were made to the computer. These differences make up the package that you promote to the Database.

■ Component Selection Mode (Radia Packager)

In Component Selection Mode, you select the individual components that make up the application, such as files, directories, registry entries, and links.

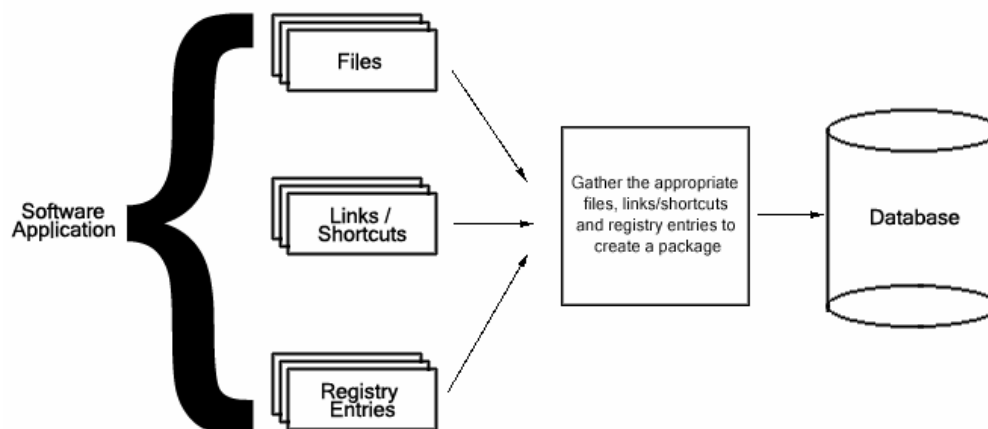


Figure 3.3 ~ Overview of the packaging process.

Another tool that you can use for packaging is the Radia Publishing Adapter that can automate publishing for users who want to incorporate publishing into an automated framework. For more information, see *HP OpenView Publishing Adapter* on page 50.

Installation Monitor Mode

In Installation Monitor Mode, the Radia Packager determines what to package by scanning the computer before and after installing the software on the Radia Packager computer. It *differences* the before and after scans to determine what changes were made to the computer. These differences make up the package that you promote to the Database. We recommend this mode for packaging when you do not know all of the components that make up the application.

1. Identify the package properties such as package name, description, and version number. A local object is created with this information. An instance is created in the Package class of the Radia Database with this information. A ZSTOP expression is inserted in the database that prevents the application from being deployed before the package creation is complete.
2. Select the requirements for operating system, memory, processor speed and availability.
3. Specify the location of files to scan, and whether or not to scan registry and desktop items as well.
4. Local objects are created on the Radia Packager computer that include information on the package requirements, system, and initialization files to check for differences.
5. The Radia Packager does a pre-installation scan of the Radia Packager computer.

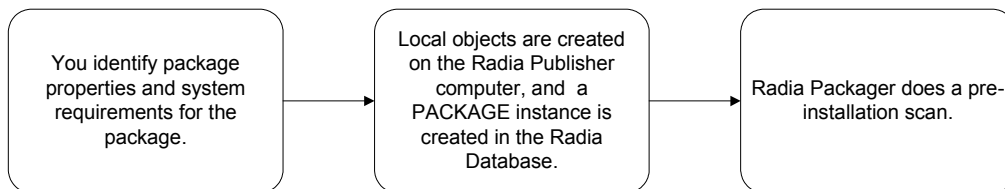


Figure 3.4 ~ Installation Monitor Mode pre-installation steps.

6. Install the application that you want to monitor.
7. Upon completion of the installation, Radia Packager restarts and performs a post-installation scan. The local Radia objects are updated to reflect what Radia the Publisher records as the differences between the pre-installation and post-installation scan.
8. Change file, registry, and desktop properties, if needed.
9. The Radia Packager promotes the data needed to install the application to the Radia Database in a compressed format. The Package instance in the Radia Database is updated with all of the path, registry, file, and desktop instances as described below:
 - One **File Resources (FILE)** instance for each file in the package.
 - One **Desktop (DESKTOP)** instance for each program group, link, and shortcut in the package.
 - One **Path (PATH)** instance for each unique path to one or more components on the computer where the software is installed.
 - One **Registry Resources (REGISTRY)** instance for each hive in the package.

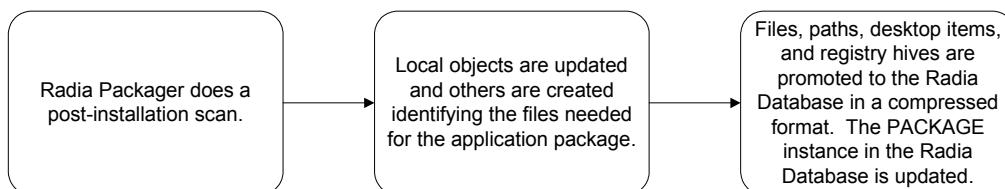


Figure 3.5 ~ Installation Monitor Mode post-installation steps.

In the tree view of Figure 3.6 on page 67, you see the Stratus Pad package for Windows 2000 and Windows XP with all four types of instances.

1. Identify the package properties such as package name, description, and version number. A local object is created with this information. An instance is created in the Package class of the Radia Database with this information. A ZSTOP expression is inserted in the database that prevents the application from being deployed before the package creation is complete.
2. You also choose the requirements for operating system, memory, processor speed, and availability. Local objects are created on the Radia Packager computer that include information on the package requirements.
3. Select the files that you want to include in the package including exported registry hives and desktop shortcuts. The file formats of the registry and desktop files are transformed so that they are promoted as registry and desktop items rather than as file instances.
4. Change file, registry, and desktop properties, if needed.

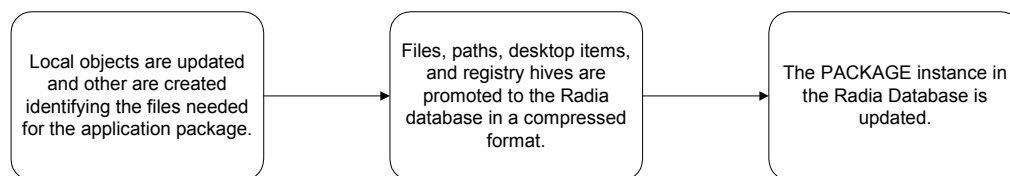


Figure 3.8 ~ Selected components are promoted to the Radia Database.

5. The Radia Packager promotes the data you identified for the application to the Radia Database in a compressed format. The Package instance in the Radia Database is updated with all of the path, registry, file, and desktop instances as described below:
 - One **File Resources (FILE)** instance for each file in the package.
 - One **Desktop (DESKTOP)** instance for each program group, link, and shortcut in the package.
 - One **Path (PATH)** instance for each unique path to one or more components on the computer where the software is installed.
 - One **Registry Resources (REGISTRY)** instance for each hive in the package.

The Client Connect Process

The purpose of the Client Connect process is to insure that the subscriber's client computer matches its distribution model. A *subscriber* is the person who uses Radia-managed applications on a client computer. A *client computer* is a subscriber's computer that has the Radia Client software installed on it. The *distribution model*, also called the desired state, embodies the content that Radia manages for the subscriber's computer. A model representing the desired state for each subscriber's computer is stored in the Radia Database; it is created and managed using the Radia System Explorer.

The Client Connect process is initiated when a client sends an object, such as ZMASTER, to the Radia Configuration Server. The ZMASTER object contains information about the client computer necessary to run Radia, such as the identity of the subscriber and the IP address of the client computer.

The ZMASTER object can be sent to the Radia Configuration Server as a result of the following events:

- A scheduled **Timer** event.
Timers are usually associated with a particular service and can be triggered periodically or randomly within a certain time period.
- A **Notify** sent by the Radia Configuration Server to the Radia Client.
Notify requests, in general, are used to update or remove a specific service.
- A refresh of the **Service List** on the client in the Radia Software Manager.
To manage Radia services, the subscriber uses the Service List. The Service List is only available with the Radia Software Manager, and can be used to install, remove, verify, and update a service.
- The subscriber invokes an application that is under Radia **Just-in-Time** management.
Just-In-Time causes a Radia Client Connect to verify the application before the application executes on the client. This feature is available for the Radia Application Manager only. See the *Radia Application Manager Guide* for more information.

The connect process involves the following three stages.

1. **Tree Differencing** to download the new objects from the Radia Configuration Server, create the *difference objects* (delta objects), and identify any data that needs to be retrieved.
2. **Data Transfer** in which data is downloaded to a temporary location (IDMDATA).
3. **State Machine** processing to install files from the temporary location to the live location, and create the new desired state objects to manage Radia services.

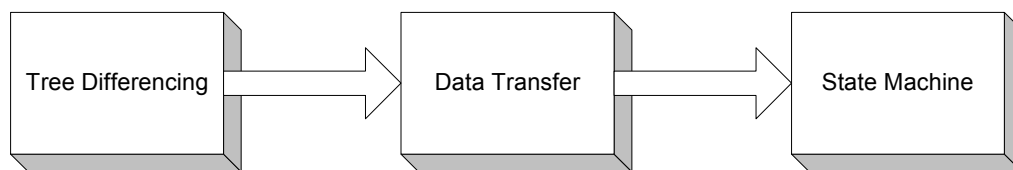


Figure 3.9 ~ Three phases of the Client Connect process.

Tree Differencing

During the Tree Differencing phase of the Client Connect, the client identifies which files it needs to bring the client computer to the desired state. The client differentiates the data between the

configuration information on the client and the Radia Configuration Server. First, the client sends the ZMASTER object to the Radia Configuration Server. Then, the Radia Configuration Server builds the distribution model based on the rules for the user designated in the ZMASTER object. The distribution model is sent back to the client as a new object, where the client synchronizes the old and new objects between the server and the client. See Figure 3.10 below for more detail.

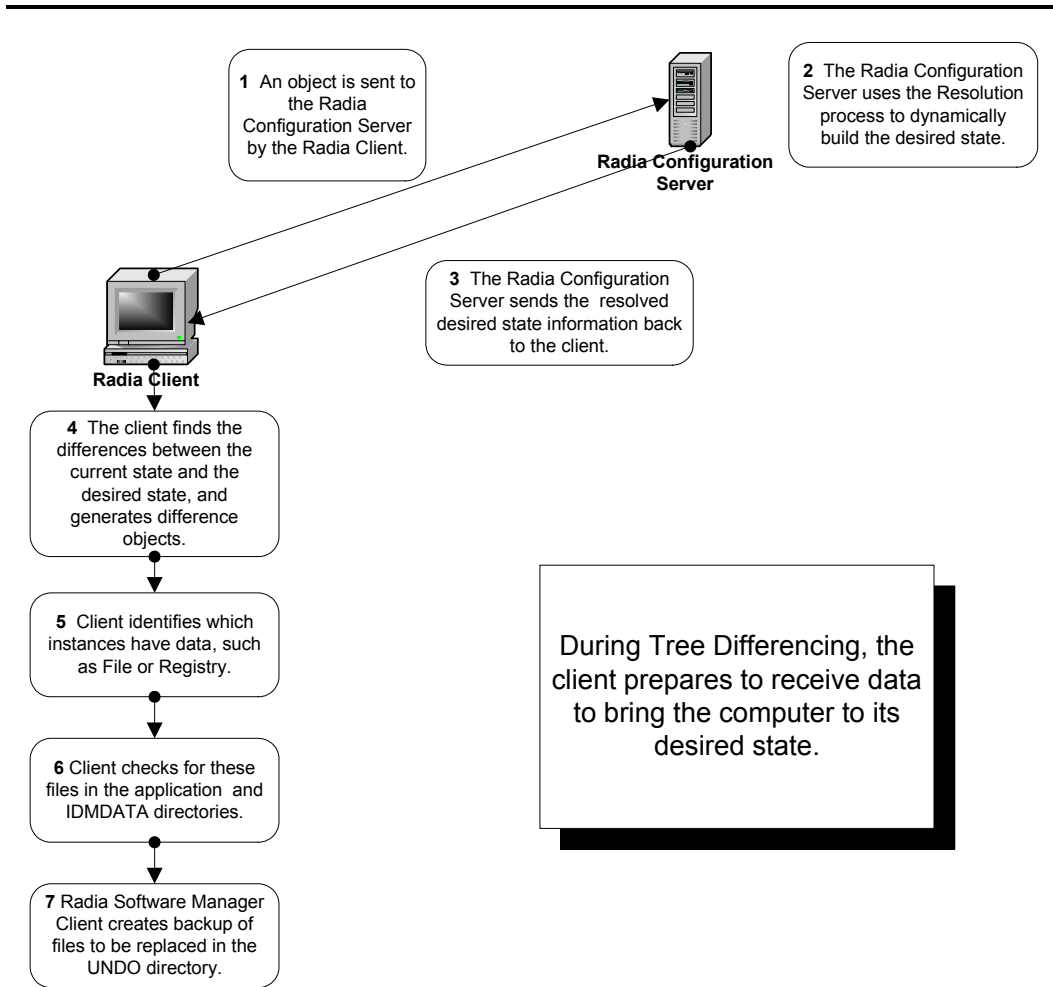


Figure 3.10 ~ The client completes the Tree Differencing process.

Tree differencing works by using a *reference list*, which is like an object dictionary; it stores the different names for a particular class. The reference list is updated whenever a change is detected within the tree, in the "branches" or "leaves". The differencing algorithm relies on a name

algorithm to generate predictable names for the difference object, the downloaded object, and the branch object.

After generating the difference object, the client identifies if it needs to get any data files or install applications to bring the client computer to its desired state. The client requests and downloads these files from the Radia Configuration Server, a Radia Proxy Server, or a Radia Staging Server during the Data Transfer stage of the Client Connect process.

Data Transfer

The Data Transfer phase of the Client Connect begins when the client sends a request for these files to the Radia Configuration Server. If the client is configured to retrieve files from the Radia Proxy Server or the Radia Staging Server, the client checks those servers for the files it needs. If the files are present, the client downloads them. If any of the files cannot be retrieved from the Radia Proxy Server or the Radia Staging Server, the client retrieves the files from the Radia Configuration Server. If the client is not configured to use the Radia Proxy Server or the Radia Staging Server, the files are retrieved directly from the Radia Configuration Server.

The Radia Configuration Server, the Radia Proxy Server, or the Radia Staging Server sends the data to the client computer in a compressed form, and copies it to the IDMDATA directory. The IDMDATA directory is used as a temporary storage location on the client computer for these compressed files. Once the files are decompressed and installed on the subscriber's computer, the compressed files are erased automatically if configured.

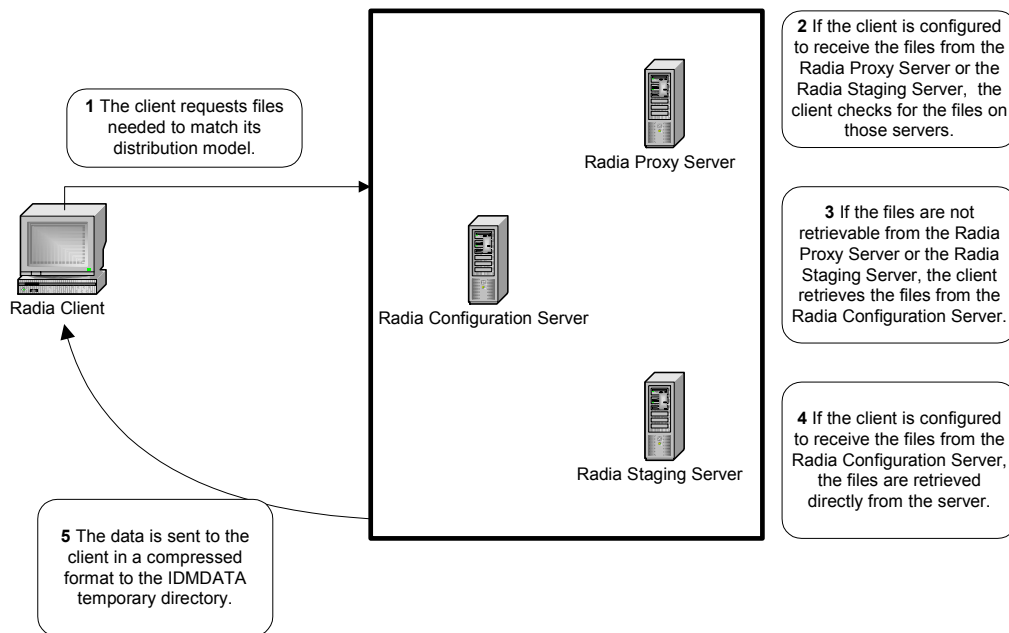


Figure 3.11 ~ The client receives application data.

Note

Use Radia Client Operations Profiles to prioritize and set criteria for where the client devices should obtain their digital content from. See the *Radia Application Manager Guide* or the *Radia Software Manager Guide* for details.

State Machine

After the client downloads the files needed to bring the machine to its desired state during the Data Transfer phase, the client installs these files from the IDMDATA directory. The client erases the compressed files after they have been installed on the client computer. Then, the client merges the original object from the client with the differenced object created during the Tree Differencing Process.

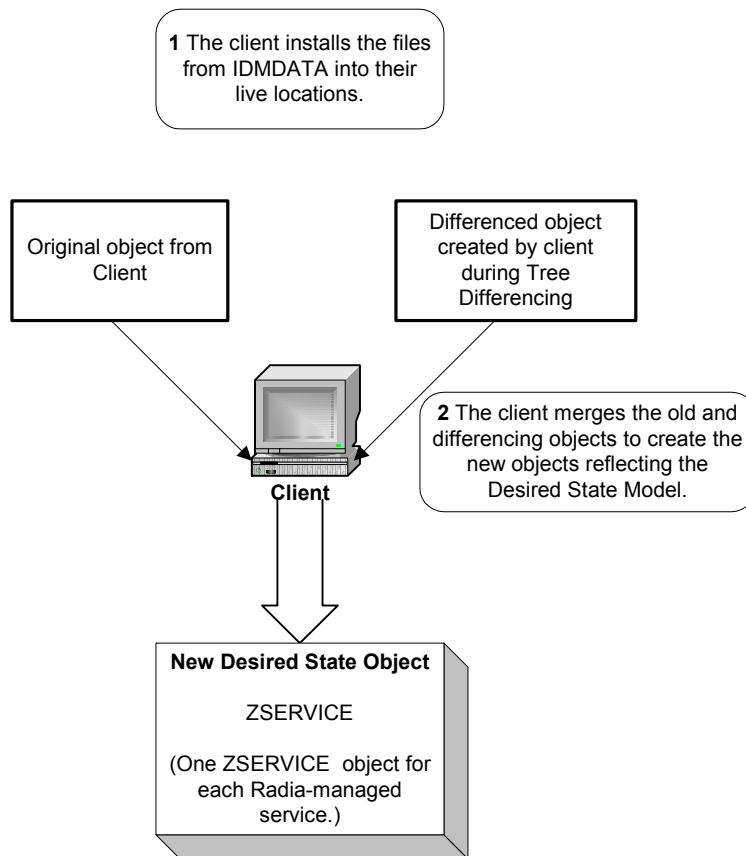


Figure 3.12 ~ State Machine processing.

At the end of the Client Connect process the client computer's configuration should match its distribution model in the Radia Database.

The Resolution Process

The Radia Configuration Server uses the *resolution process* to accomplish a unit of work in response to a service request. The unit of work is defined by the contents of the Radia Database, and parameters included in the request. In other words, what Radia does depends upon what information is stored in its Database, and what information accompanies the request for Radia to perform some action. For example, the Radia Client Connect submits service requests to the Radia Configuration Server, and the Radia Configuration Server performs a *resolution process* in response to each request.

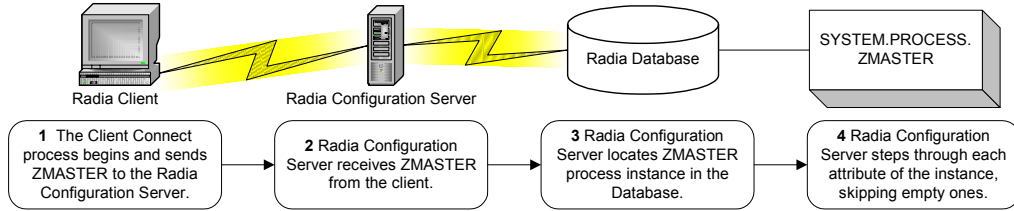


Figure 3.13 ~ The Radia Configuration Server performs resolution.

The ZMASTER object is sent to the Radia Configuration Server during the Client Connect. The ZMASTER object contains information about the client computer necessary to run Radia, such as the identity of the subscriber and the IP address of the client computer.

The Radia Configuration Server stores the ZMASTER object in *global memory*. Global memory is a temporary storage area in the Radia Configuration Server. The Radia Configuration Server maintains global memory's contents for the duration of the resolution process.

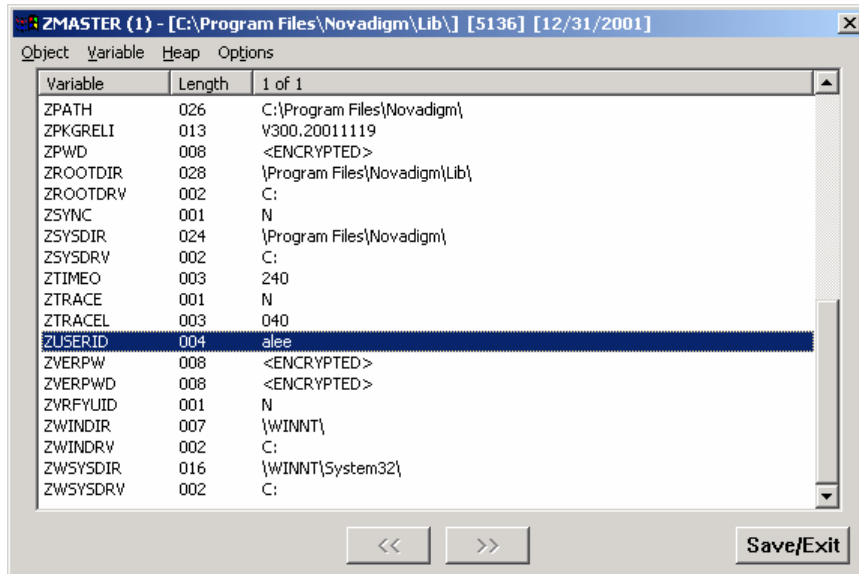


Figure 3.14 ~ The subscriber's local ZMASTER object.

After storing ZMASTER in global memory, the Radia Configuration Server finds the Process instance for the ZMASTER. This is the *process entry point*. Its location is SYSTEM.PROCESS.ZMASTER.

The Radia Configuration Server reads each attribute of `SYSTEM.PROCESS.ZMASTER`. As a result of an attribute, the Radia Configuration Server may:

- Set variable values.
- Evaluate an expression.
- Execute a method.
- Connect to other instances.

If there is a connection to another instance, the Radia Configuration Server processes the connected instance. Then, the resolution process resumes in the referring instance at the next attribute after the connection attribute. For example, in Figure 3.15 below, the first connection instance links to `POLICY.USER.&(ZMASTER.ZUSERID)`. After processing `POLICY.USER.&(ZMASTER.ZUSERID)`, the resolution process will return to `PRIMARY.SYSTEM.PROCESS.ZMASTER`, and will process the next attribute which is a connection instance to `SYSTEM.ZMETHOD.PUTPROF_ZMASTER`.
















Radia Processes class ZMASTER Instance Attributes:		
Name	Attribute Description	Value
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Connect To	
 _ALWAYS_	Connect To	POLICY.USER.&(ZMASTER.ZUSERID)
 _ALWAYS_	Method	SYSTEM.ZMETHOD.PUTPROF_ZMASTER
 _ALWAYS_	Method	SYSTEM.ZMETHOD.PUTPROF_ZCONFIG
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 _ALWAYS_	Method	
 DESCRIPT	Process Description	Processing Client Request for &ZCUIROBJ
 ZMAXDKRC	Max acceptable method Return Code	008

Figure 3.15 ~ The `PRIMARY.SYSTEM.PROCESS.ZMASTER` instance.

During resolution the Radia Configuration Server, performs *symbolic substitution* to set values and connect to other instances. For example, in `SYSTEM.PROCESS.ZMASTER` there is a connection to `POLICY.USER.&(ZMASTER.ZUSERID)`. The Radia Configuration Server substitutes the value of the `ZUSERID` from the `ZMASTER` object that is in global memory. In Figure 3.14 on page 74, the value of `ZUSERID` is `alee`. Therefore, the resolution process will connect to `POLICY.USER.ALEE`, and resolve that instance.

Database Tree View:

- Database
 - LICENSE
 - PRIMARY
 - ADMIN
 - AUDIT
 - NOVADIGM
 - PATCH
 - POLICY
 - Countries (COUNTRY)
 - Departments (DEPT)
 - Server Stagers (STAGER)
 - Users (USER)
 - _BASE_INSTANCE_
 - _NULL_INSTANCE_
 - Administrator
 - ALEE**
 - CDROM
 - WILLIAM
 - Workgroups (WORKGRP)
 - SOFTWARE
 - SYSTEM

Users class ALEE Instance Attributes:

Name	Attribute Description	Value
UNAME	Name	
ZCONFIG	Collect Hardware Info [Y/N]	Y
ZSETMSG	Send Message to Audit Resource	DAILY
ZDLIMIT	Maximum Disk Space	0
USERID	Enterprise User Id	
ZTIMED	Client Timeout (Seconds)	240
ZTRACEL	Trace Log Level [0-999]	040
ZTRACE	Trace On or Off [Y/N]	N
ZPRIORIT	Exec. Priority	000
ZSHOW	Display Status Indicator [Y/N]	N
ALWAYS	Utility Method	
ALWAYS	Member of	SOFTWARE.ZSERVICE.AMORTIZE
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	
ALWAYS	Member of	NOVADIGM.ZSERVICE.CLIENT
NAME	Friendly name	ALEE
ZVERDT	Verify Desktop [Y/D/R/I]	Y
SELPIND	Self Maintenance Display [Y/N]	N
SLFINTVL	Self Maintenance Interval (hours)	0
TYPESSEL	Type Selection - Calc. Pack Sizes	Typical
EMAIL	E-mail Address	
ZOBJPFUE	Free Unused Pool Elements	Y
MSITRACE	activates MSI verbose Trace~vpath	
ZGRPINF0	Gather Group membership info[Y/N]	N
ZOBJPTCH	Perform Patching [Y/N]	N

31 Users CLASS ALEE attribute(s) displayed | 12/17/2001 | 11:35 AM

Figure 3.16 ~ The POLICY.USER.ALEE instance.

In Figure 3.16 above, after setting a number of variables, the first connection attribute is to SOFTWARE.ZSERVICE.AMORTIZE. In your implementation, the POLICY instance may connect to a workgroup that connects to a service.

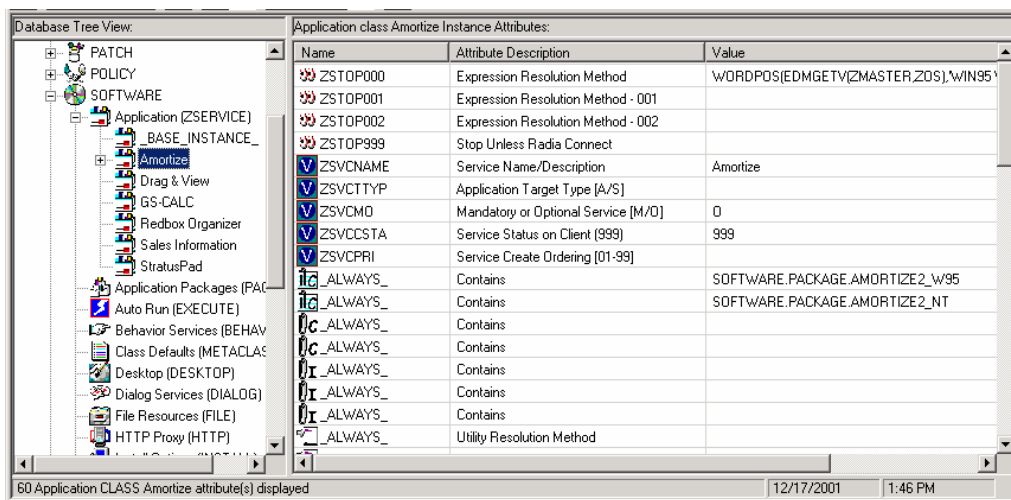


Figure 3.17 ~ The ZSERVICE.AMORTIZE instance.

A Service instance links to packages. Figure 3.17 above begins with a ZSTOP expression variable. An expression variable contains statements that, if evaluated to "true", stop the resolution of the current instance. For information on Radia REXX, see the *Radia REXX Programming Guide*. An expression allows alternative paths to be taken in a given resolution, based upon variable data. In this case, the expression checks to be sure that the operating system of the client computer is allowed for the Amortize software.

A service instance connects to package instances. In our example, the first connection is to SOFTWARE.PACKAGE.AMORTIZE2_W95. The Radia Configuration Server looks at the instance. After setting some variable, there is a ZSTOP expression. If the client computer's operating system is either Windows 95 or Windows 98, the Resolution process continues with this instance, connecting the file instances, registry entries, path instances, and shortcuts. If the client has another operating system, resolution returns to SOFTWARE.ZSERVICE.AMORTIZE, to the next connection instance.

Eventually, the resolution process will return to the User instance, finish resolving it, and will return to the process entry point, SYSTEM.ZPROCESS.ZMASTER. Referring back to Figure 3.15 on page 75, the next attribute connects to the PUTPROF_ZMASTER method. A *method* is a program that performs functions based on certain parameters.

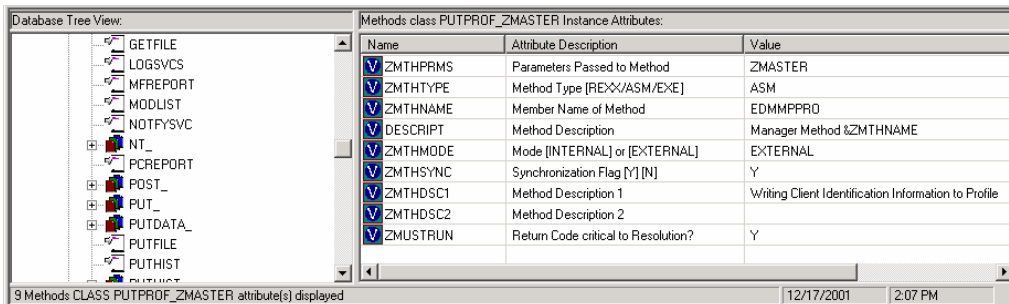


Figure 3.18 ~ The ZMETHOD.PUTPROF_ZMASTER instance.

The Radia Configuration Server executes the EDMMPPRO method, passing ZMASTER as a parameter. This causes the contents of the ZMASTER object in global memory to be written to the PROFILE file of the Radia Database.

After processing all attributes in the SYSTEM.PROCESS.ZMASTER instance, resolution terminates.

Inventory Collection

The Radia Inventory Manager has a client and a server component. The Radia Inventory Manager Server enables centralized reporting and administration based upon the discovery results. The Radia Inventory Manager client discovers configuration information on the client device, and reports the results to the Radia Inventory Manager Server. Web-Based Enterprise Management (WBEM) enables information such as the amount of RAM in a computer, hard disk capacity, process type, and versions of operating systems to be extracted from computers, routers, switches, and other networked devices. Windows Management Instrumentation (WMI) is Microsoft's implementation of WBEM for Microsoft Windows platforms.

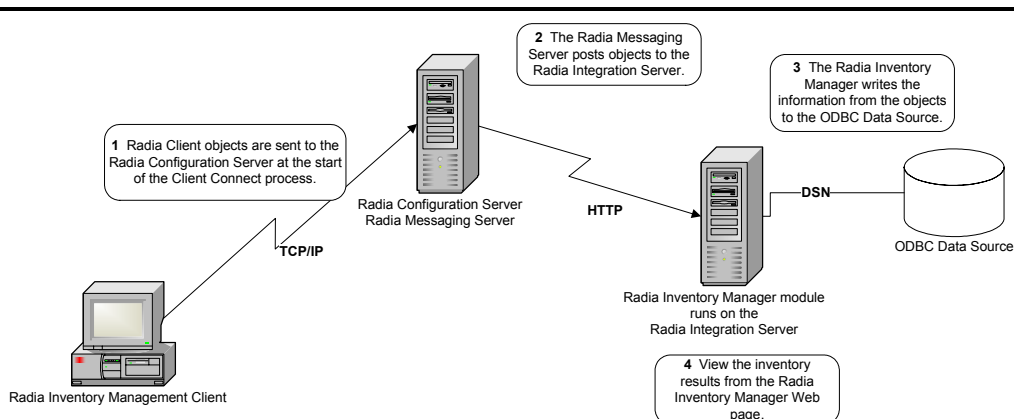


Figure 3.19 ~ Inventory results report to an ODBC source.

1. During the Client Connect, Radia objects are sent to the Radia Configuration Server. Some objects are always sent and others are sent as a result of an Audit Service being performed. The following information may be sent:
 - The APPEVENT object that describes the most recent service events.
 - The ZCONFIG object that contains information on the device's hardware configuration.
 - If a WBEM audit is performed and the client is a WBEM consumer, then WBEM objects will be sent.
2. The Radia Messaging Server forwards the information to the Radia Integration Server.
3. The Radia Inventory Manager transforms the information into inserts and updates for an ODBC data source.

You can view pre-configured reports through the Radia Inventory Manager page on the Radia Integration Server, the Radia Reporting Server, or the Radia Management Portal. You can create your own reports to be placed there as well.

Radia Proxy Server Processing

If the client has been configured to use a Radia Proxy Server, then the client will attempt to retrieve files from the Radia Proxy Server when resolving a service. The logical flow for a typical client request to a Radia Proxy Server is as follows (assuming all components are enabled):

1. The client sends a request to the Radia Proxy Server.
2. The Radia Proxy Server protocol front end receives the request.
3. This request is validated, and passed to the main cache manager.
4. The local static cache is searched, and if found, the request is satisfied.
5. If the file is not in the static cache, the dynamic cache is then searched.
6. If the file does not reside in the dynamic cache, Dynamic PassThru requests the file from the defined upstream host (typically, the Radia Configuration Server). The original request is satisfied, and the file is stored in the dynamic cache for future requests.

Figure 3.20 below is a simple overview of the flow, as described above.

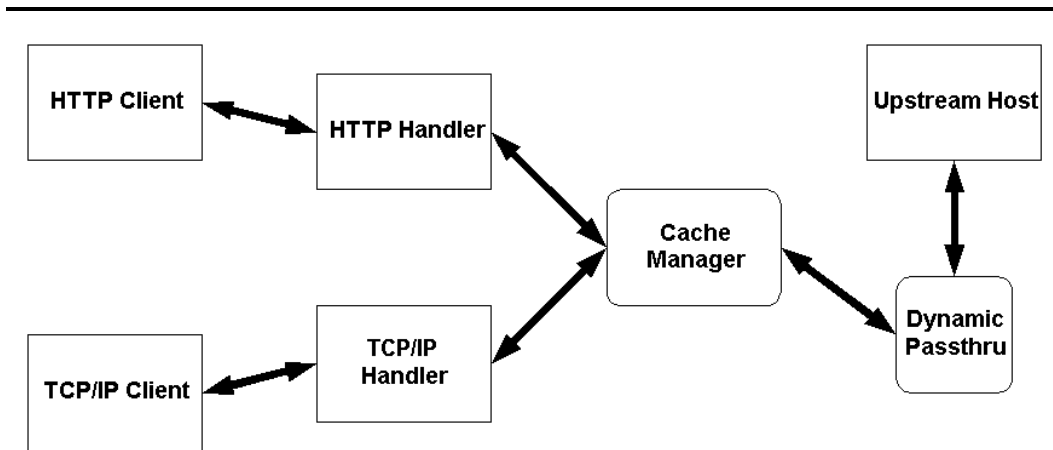


Figure 3.20 ~ Radia Proxy Server process.

Static and Dynamic Cache

The *static cache* is managed by the Preloader component of Radia Proxy Server. This component manages this cache by connecting to the assigned Radia Configuration Server, similar to a Radia Client. The static cache is typically *preloaded* during the off hours, so the required resources are available when requested. This is the primary cache location for the Radia Proxy Server. For performance efficiency, this cache should be preloaded with all resources that are to be distributed by the Radia Proxy Server.

The *dynamic cache* is populated on demand by the Dynamic PassThru component of the Radia Proxy Server. When a requested resource is not found in the primary (static) cache, the dynamic cache is searched and populated if necessary. This cache is viewed as a safety net for requests that fall through the static cache search. The Dynamic PassThru component also manages this cache, removing files that have not been requested in a previously configured number of days. You can define the maximum number of days this cache is defined in the Radia Proxy Server configuration file.

Preloader

The Preloader component maintains the static cache by interacting with its defined Radia Configuration Server. Required resources are placed into the cache, while resources no longer included in the Radia Proxy Server model are removed from the cache. The Radia Proxy Server's model is created according to the POLICY domain on the Radia Configuration Server.

Dynamic PassThru

When a client request is received for a resource that does not exist locally, the Radia Proxy Server can request these resources from an upstream host, such as the Radia Configuration Server or another Radia Proxy Server. These resources are then returned to the requesting client, as well as stored locally in the dynamic cache for subsequent requests.

Radia OS Manager Image Deployment Server Architecture

The Radia OS Manager deployment architecture involves a set of servers designed to manage and deploy operating systems to a set of target machines based on a set of criteria. Typically, you will need four server machines. During deployment, the following server components are used:

■ Machine 1

● DHCP Server

The target machine uses a DHCP server to obtain an IP address. You can easily implement Radia OS Manager in an existing DHCP-enabled network. There is no need to install additional DHCP servers.

■ Machine 2

● Radia OS Manager Server (ROMS)

The Radia OS Manager Server sends requests for images from the target machine to the Radia Configuration Server.

● Radia Configuration Server (RCS)

The Radia Configuration Server manages the policy information and images for Radia OS Manager. See the *Radia Configuration Server Guide* on the HP OpenView support web

site. The Radia Database must be updated, as described in this document, to accommodate the Radia OS Manager.

- **Radia Proxy Server (RPS)**

The Radia Proxy Server is a web server used to deploy the service containing the gold image to the target machines. The Radia Proxy Server handles the heavy lifting for transferring gold images to targeted machines. Radia Proxy Servers should be placed and sized to accommodate high volume data transfer. This is consistent with standard recommendations. Where appropriate, separate Radia Proxy Servers may be used for applications and OS file serving.

- **Radia OS Manager Administrative Interface**

The ROM Administration tasks, which create a Radia OS Manager Administrative Interface, are a plug-in to the Radia Management Portal. This provides a graphical user interface for performing OS management tasks.

Notes

You can also install the Radia Publisher on this machine.

■ Machine 3

- **Boot Server (PXE/TFTP servers)**

The Boot Server is a Windows-based PXE (Pre-execution environment) server and TFTP (Trivial File Transfer Protocol) server. *Do not install the Boot Server on the same machine as your DHCP server.*

For information about PXE industry standards, see

<http://pxes.sourceforge.net/pxe.html>.

■ Machine 4

- **Radia Information Base Server (RIB)**

The Radia Information Base Server, a component of the Radia OS Manager, stores the information about the machines in your environment in a single location that can be shared by all of the components.

The following diagram illustrates the deployment architecture.

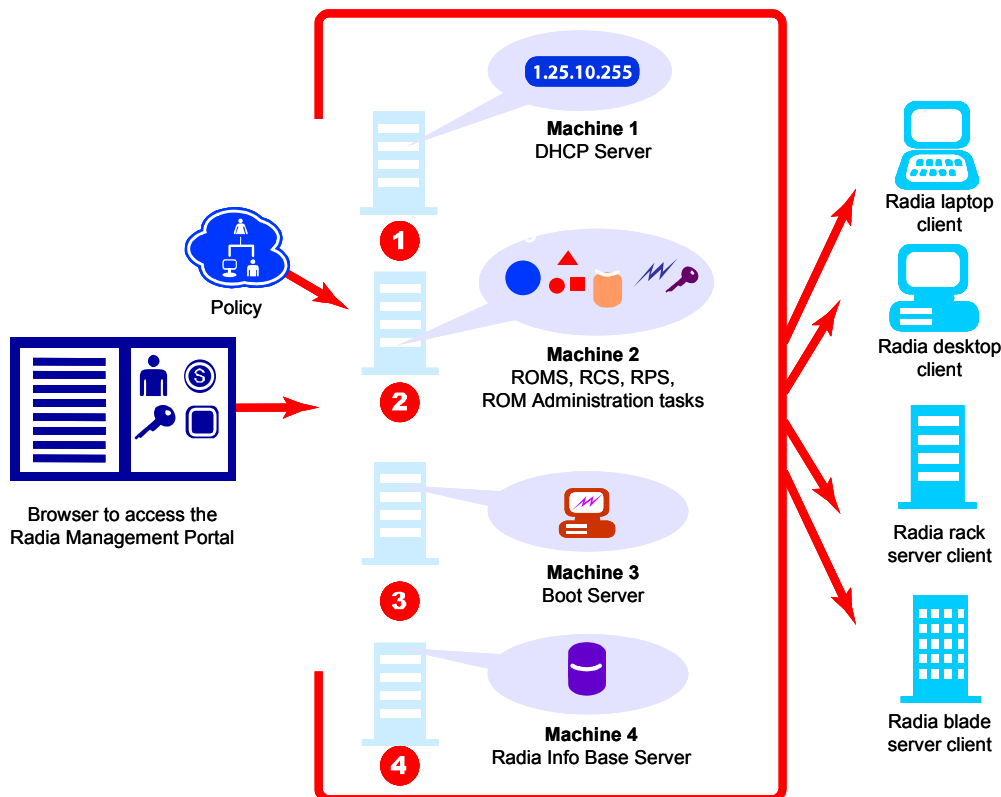


Figure 3.21 ~ Deployment architecture.

Radia Patch Manager Acquisition

Radia Patch Manager acquires security patches and synchronizes the patch's information in the Radia Database on the Radia Configuration Server with the Patch database on an SQL or Oracle Server. During the acquisition, the following things occur:

- The vendor's web site is contacted to prepare for the acquisition of Bulletins.
- Either the information about the Security Bulletins and Service Packs and the actual patch files or only the information about the patches is downloaded. The information downloaded contains, but is not limited to, detailed data about each patch, such as supercedence, reboot requirements, and probe information.
- An xml file is created for each security bulletin acquired and is put in the vendor's folder in the Radia Integration Server's directory. These files are called patch descriptor files.

- The Radia Database PATCHMGR domain is populated with this information
- Services are created in the PATCHMGR domain for each of the bulletins acquired.
- The PATCHMGR domain is synchronized with the SQL database you created.

If you have already performed an acquisition, only instances that are different are updated.

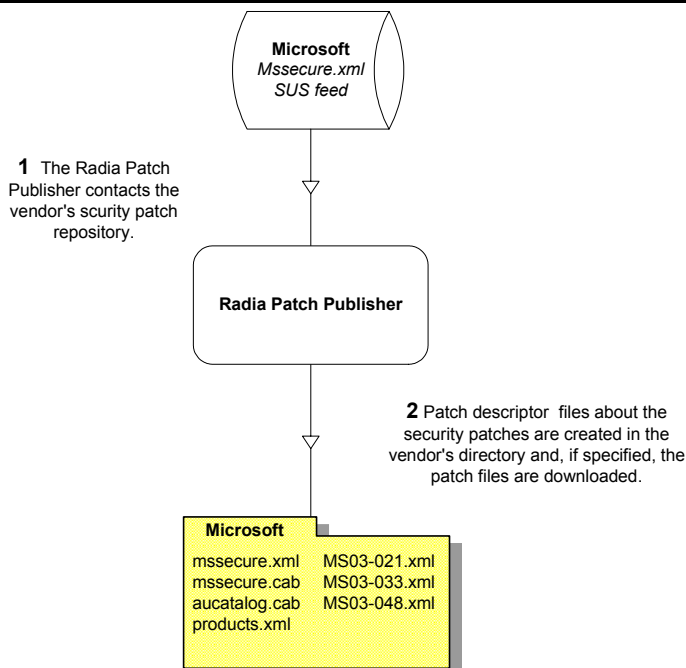


Figure 3.22 ~ The vendor's patch repository is contacted.

About Patch Descriptor Files

When security patches are acquired an xml (patch descriptor file), with information about the patch is created and placed in the vendor's directory. The vendor directories are located by default in `\\Novadigm\IntegrationServer\Data\Patch`. For example, patch descriptor files for Microsoft bulletins would be in `\\Novadigm\IntegrationServer\Data\Patch\Microsoft`. The security bulletin number is the file name with an xml extension. If the bulletin is identified by MS03-051, then the patch descriptor will be named MS03-051.xml. If you also acquired the actual files associated with the bulletin, a folder is created with the name of the bulletin that contains the patch files.

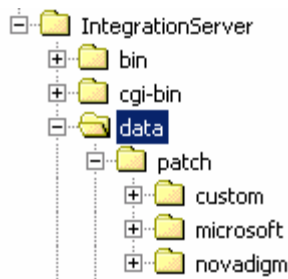


Figure 3.23 ~ View the acquired Patch Descriptor file directory structure.

Some of the information acquired from the vendor may need to be altered before the patch can be managed. Therefore, there are two other subdirectories in \\Novadigm\IntegrationServer\Data\Patch. HP provides you with some additional patch descriptor files that are located in the Novadigm subdirectory. Patch descriptor files located in the Novadigm directory override patch descriptor files in the Microsoft directory. You can also create or modify your own patch descriptors that will override files in the Novadigm and Microsoft directories. Use a text editor to make the changes, name the file *exactly* as it is named in the vendor's directory, and place these xml files in the Custom subdirectory.

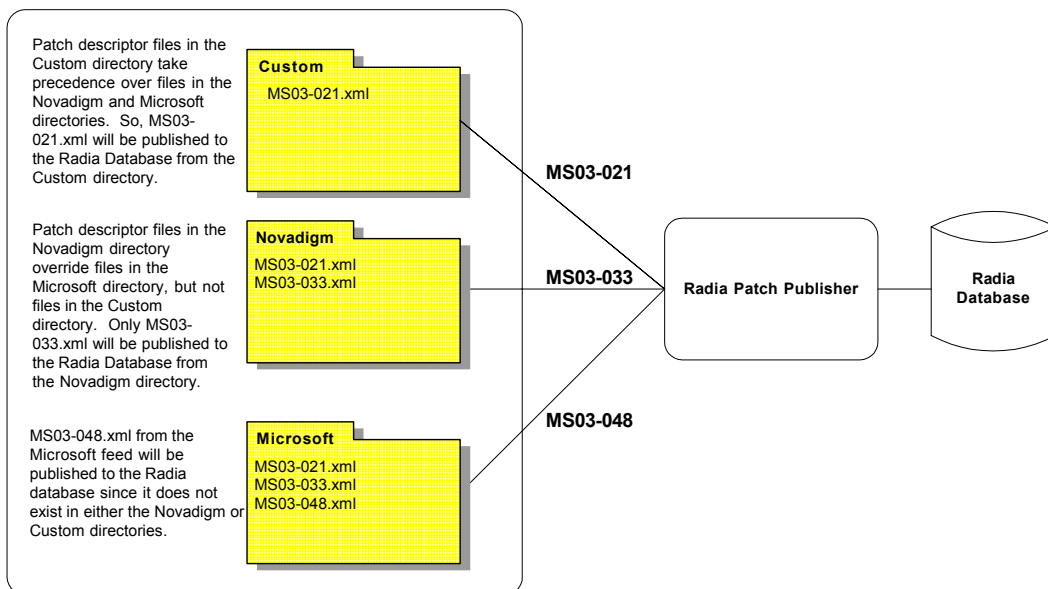


Figure 3.24 ~ Security Patch descriptor files in Custom override those in Novadigm and Microsoft.

Summary

- The Radia Database records your distribution model.
- The Packaging Process identifies and organizes software components into Radia Packages.
- The Client Connect Process insures that a subscriber's client computer matches its distribution model.
- Inventory collection is completed using the Radia Inventory Manager server and client components.
- A client can be configured to retrieve files from a Radia Proxy Server instead of a Radia Configuration Server.



Radia Publications

HP provides an extensive publications library. The following table will help you find more information on Radia products. Check the HP OpenView support web site for new publications and updates to current publications.

Table A.1 ~ Radia Products and Publications

To learn more about . . .	See . .
HP OpenView Management Applications Using Radia	
Application Manager	Radia Application Manager Guide Radia Management Applications Messages and Codes Radia REXX Programming Guide
Inventory Manager	Radia Inventory Manager Guide Radia Management Applications Messages and Codes
OS Manager	Radia OS Manager Guide
Patch Manager	Radia Patch Manager Guide
Software Manager	Radia Software Manager Guide Radia Management Applications Messages and Codes Radia REXX Programming Guide

Table A.1 ~ Radia Products and Publications

To learn more about . . .	See . .
HP OpenView Management Infrastructure Using Radia	
Configuration Server	Radia Configuration Server Guide Radia Configuration Server Messages Guide Radia Getting Started Guide Radia REXX Programming Guide Radia Database Reference Manual
Administrator Workstation	
Client Explorer	Radia Application Manager Guide Radia Software Manager Guide
Packager	Radia Application Manager Guide Radia Software Manager Guide
Publisher	Radia Publisher Guide
System Explorer	Radia System Explorer Guide
HP OpenView Extended Infrastructure Using Radia	
Distributed Configuration Server	Radia Distributed Configuration Server Guide
Inventory Manager	Radia Inventory Manager Guide
Management Portal	Radia Getting Started Guide Radia Management Portal Guide
Mobility Server	Radia Mobile Management Guide
Multicast Server	Radia Multicast Server Guide Radia Multicast Server: Network Test Modules
OS Manager	Radia OS Manager Guide
Patch Manager	Radia Patch Manager Guide
Proxy Server	Radia Proxy Server Guide
Staging Server	Radia Staging Server Guide
Usage Manager	Radia Usage Manager Guide
HP OpenView Management Extensions Using Radia	
Adapter for SSL	Radia SSL Adapter Guide
Extensions for Windows Installer	Radia Extensions for Windows Installer Getting Started Guide Radia Extensions for Windows Installer Guide Radia Configuration Analyzer Guide Radia Knowledge Base Manager Guide
Policy Server	Radia Policy Server Guide
Publishing Adapter	Radia Publishing Adapter Guide
Systems Management Adapters	See the HP OpenView web site for the current list.

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