HP OpenView Proxy Server Using Radia

for the AIX, HP-UX, Linux, Solaris, and Windows operating systems*

Radia Release Version: 4.2i

Software Version: 2.2

Installation and Configuration Guide

*Information in this guide can be used for all supported platforms except where indicated for a specific platform only.

Document Release Date: September 2006

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Documentation Updates

This manual's title page contains the following identifying information:

- Version number, which indicates the software version.
- Print date, which changes each time the document is updated.

To check for recent updates or to verify that you are using the most recent edition, visit the following URL:

http://ovweb.external.hp.com/lpe/doc_serv/

You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

Table 1 indicates changes made to this document since the last released edition.

Table 1   Document Changes

Chapter	Version	Change
Chapter 2	2.1	Page 31, UNIX System Requirements: Added new UNIX platforms on which the Proxy Server can be installed: • Solaris operating system Version 2.5.1 or above, SPARC CPU or Sunx86 platform. • Red Hat Enterprise Linux Version 2.1 or above. • SUSE LINUX Enterprise Server Version 8 or 9. Also removed references to Motif 1.2 libraries from the UNIX System Requirements listings.
Chapter 2	2.1.1	Page 73, Creating a Distribution Model for a Static Cache Preload: expanded the procedures to include more detail on performing each step from the System Explorer of the Radia Administrator Workstation. Also removed steps to load PRDMAINT files using an _ALWAYS connection.
Chapter 2	2.1.1	Page 76, Preloading Deployment Options, added new subtopics for Preloading using SSL and Preloading Using Multicast.
Chapter 2	2.1.1	Page 78, Preloading Using SSL (TCPS or HTTPS): new topic discusses how to configure the Proxy Server for a preload using SSL and TCP (TCPS), as well as a preload using SSL and HTTP (HTTPS). Both implementations rely upon the installation of the HP OpenView Adapter for SSL using Radia (SSL Adapter).

Chapter	Version	Change
Chapter 2	2.1.1	Page 82, Preloading Using Multicast: new topic discusses how to preload a Proxy Server using multicast, includes an example of using multicast with dynamic windows, and where to find the session logs. This requires the installation and configuration of the HP OpenView Multicast Server for Radia (Multicast Server).
Chapter 2	2.2	Page 86, Preloading Windows Installer Enabled Applications: • Added the following best practice information: Using a single application and a ZSTOP expression on the ACP package is considered the best practice model. This model is applied automatically when you publish Windows Installer Applications using the Advanced publishing mode of the Administrative Workstation using Radia Publisher (Publisher) and apply the default Admin Install Point (AIP) options. • Deleted the model to preload *all* ACP packages through the use of a common package suffix and a single ACP service. Replaced it with a warning against adopting the model because it presents unnecessary overload on your infrastructure.
Chapter 3	2.1.1	Page 101, Management Portal and the Proxy Server: updated the Management Portal task list and descriptions, and deleted references to Activity Log and Statistical Data Collection.
Chapter 3	2.2	Page 101, Management Portal and the Proxy Server: updated content to reflect Management Portal (v2.1 and above) task name changes: • Install Client was renamed Install Radia Client • Manage Proxy Server was renamed Assign Proxy Server • Purge Dynamic Cache was renamed Purge Proxy Server Dynamic Cache

Support

Visit the HP OpenView support web site at:

http://www.hp.com/managementsoftware/support

This web site provides contact information and details about the products, services, and support that HP OpenView offers.

HP OpenView online software support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valuable support customer, you can benefit by using the support site to:

- Search for knowledge documents of interest
- Submit enhancement requests online
- Download software patches
- Submit and track progress on support cases
- Manage a support contract
- Look up HP support contacts
- Review information about available services
- Enter discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and log in. Many also require a support contract.

To find more information about access levels, go to:

http://www.hp.com/managementsoftware/access_level

To register for an HP Passport ID, go to:

http://www.managementsoftware.hp.com/passport-registration.html

Contents

1 About the Proxy Server

At the end of this chapter, you will:

- Understand the role of the HP OpenView Proxy Server Using Radia (Proxy Server).

- Understand when to use a Proxy Server.

- Know how to use the Proxy Server.

Who this Guide is for

This book is for Radia system administrators who want to install the Proxy Server in their enterprise environments to cache data at a location between the Configuration Server and their subscribers. To use some of the features in this publication, you should be familiar with the Management Portal, the System Explorer for the HP OpenView Administrator Workstation Using Radia (System Explorer), the Configuration Server, and Radia clients.

What this Guide is about

The *Proxy Server Guide* describes:

- what the Proxy Server is, and its static and dynamic cache processes.

- how to install and configure the Proxy Server:

  — as an agent when servicing clients.

  — as a server when co-located with the Configuration Server for HTTP download support.

- how to implement the Proxy Server with your Configuration Server and clients.

- how to administer the Proxy Server using the Management Portal version 2.0 or greater.

  > To administer the Proxy Server using the Management Portal version 1.x, refer to procedures in the appropriate *Installation and Configuration Guide for the HP OpenView Management Portal Using Radia (Management Portal Guide)*, available from the HP OpenView support web site.

What is the Proxy Server?

When the Proxy Server is used, it 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 Proxy Server. Requests are made using either HTTP (recommended for all new installations) or TCP/IP. The Proxy Server has the ability to service multiple, concurrent client requests using both protocols simultaneously. Figure 1 below depicts the Radia Infrastructure using Proxy Server to deploy applications to clients.

Figure 1   Radia Infrastructure using Proxy Server
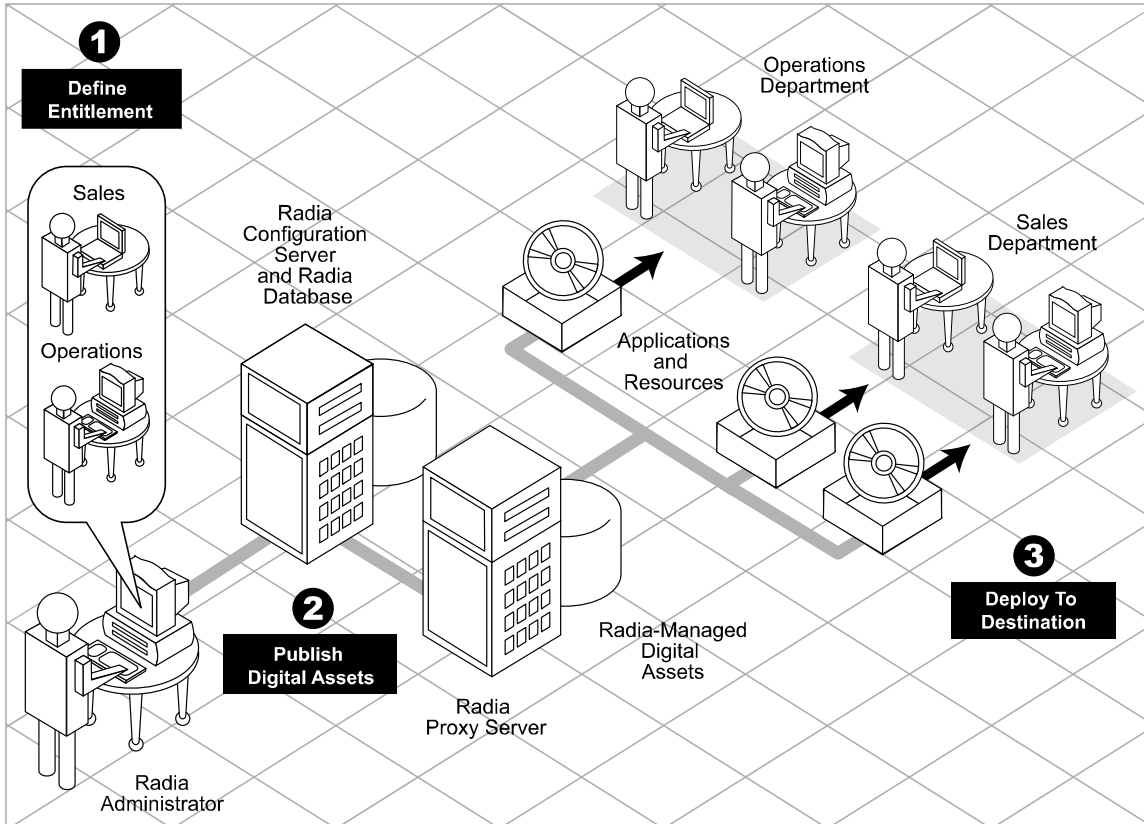
When to use a Proxy Server

Proxy Servers are beneficial in your environment if you have many client computers requesting the same resources from the same location. When data is cached on the Proxy Server, the demand placed on the HP OpenView Configuration Server Using Radia (Configuration Server) is decreased, allowing the Configuration Server to allocate more resources to other tasks.

Placing Proxy Servers at strategic points in your network increases the rate at which data is transferred. The connection between subscribers and the Proxy Server may be more efficient than the connection between the subscribers and the 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.

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

This publication describes:

- Proxy Server components and processes.

- The installation of the Proxy Server components.

- The configuration and implementation of the Proxy Server.

- The configuration of your Radia Database and Radia clients for use with Proxy Servers.

- The administration of the Proxy Server.

Proxy Server Processing

The logical flow for a typical client request to a Proxy Server is as follows (assuming all components are enabled):

1 The Radia client's resolution process indicates it needs resources, and it should request them from a Proxy Server.

2 The Radia client sends a request to the Proxy Server, which is received by the Proxy Server front-end protocol. The client request is validated, and passed to the cache manager.

> The default (and recommended) protocol for client communication with the Proxy Server is HTTP. Optionally, TCP is also available. A Proxy Server can service multiple, concurrent client requests using both protocols simultaneously

3 The local static cache is searched, and if the data is found, the request is satisfied and the data is sent to the Radia client.

4 If the data is not in the local static cache, the local dynamic cache is then searched. If the data is found, the request is satisfied.

5 If the file does not reside in the dynamic cache, Dynamic PassThru requests the file from the defined upstream host (typically, another Proxy Server) using HTTP. If there is a connection failure with the upstream host, and multiple upstream hosts were defined (for fail-over support), Dynamic PassThru tries the next host on the list. The original request is satisfied, and the file is stored in the dynamic cache for future requests.

Figure 2 on page 16 illustrates the Proxy Server process flow for handling client requests.

Figure 2   Proxy Server process flow
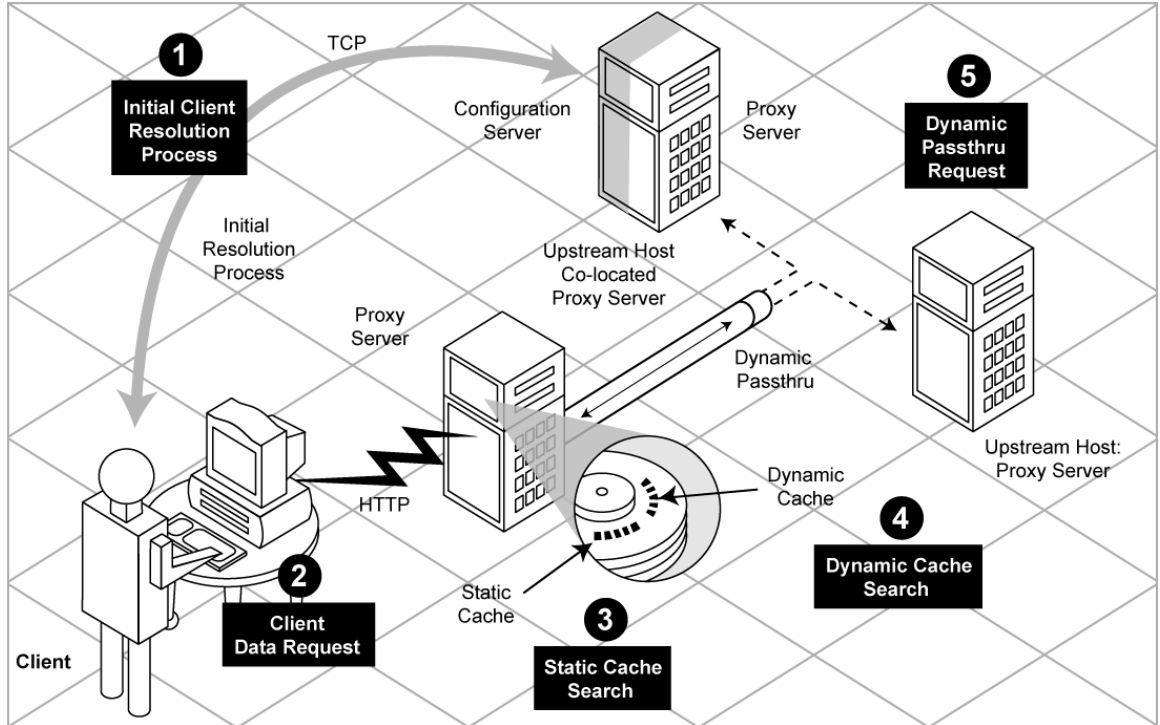
Cache Definitions and Support

The Proxy Server supports two types of cache locations: static and dynamic.

Static Cache

The **static cache** is the primary cache location for the Proxy Server. The static cache can be configured to operate in one of two ways:

- **Static Type = Agent**
  When set to agent, the static cache is populated by the Preloader. For performance efficiency, this static cache should be preloaded with all resources that are expected to be distributed by the Proxy Server to Radia clients. The static cache is typically preloaded during off hours, so the required resources are available when requested by a Radia client. For a discussion of this process, see Preloader Process below.

- **Static Type = Server** (when co-located with the Configuration Server)
  When set to server, the static cache points to a native Radia Database on the same machine as the Proxy Server. This co-located (or co-resident) Proxy Server provides a means to download resources from the Radia database using HTTP. (The Configuration Server can only download resources using TCP/IP.) For details on when downloading resources from the Radia database using HTTP is required, see What is a Co-Located Proxy Server on page 21.

In both cases, the Proxy Server views static cache as read only.

Preloader Process

The Preloader populates the static cache of a Proxy Server using a process that parallels the standard Radia client resolution and deployment process. When the Preloader runs, it uses TCP to connect to the assigned Configuration Server for a resolution of the Proxy Server's predefined distribution model. The required resources are then deployed to the Proxy Server's static cache. In addition, resources no longer included in the Proxy Server distribution model are removed from the static cache.

> As part of the Proxy Server installation, a small version of the Radia Application Manager client is also installed. These components provide the functionality to support the Static Cache Preload process.

The preload resources can be deployed using TCP or HTTP. HTTP is available when the Configuration Server has a co-located Proxy Server.

Preloader Distribution Model

The Preload process is an application of the usual Radia distribution model for clients, with the following specific elements. Each element is illustrated in Figure 3 on page 19.

1 **Define Entitlement**
    The entitlement for Preloading a Proxy Server is defined in the POLICY domain as follows:

    — **User**
      The machine identity of the Proxy Server being managed (or preloaded).

    — **Applications**
      The software that is being preloaded to the Proxy Server's static cache. This should include all applications normally requested by the set of Radia clients that will be assigned to the Proxy Server.

2 **Publish Digital Assets**

    — **Application Files**
      The components that make up the applications. When publishing MSI applications for distribution from a Proxy Server, use the techniques discussed in this guide to have the Administrator Control Point (ACP) preloaded to the Proxy Servers but not distributed to the clients.

3 **Preload Proxy Servers**

    — **Deployment Source and Protocol**
      Resources to preload the Proxy Servers can come from the Configuration Server, or, optionally, another Proxy Server or HP OpenView Staging Server Using Radia (Staging Server). Resources can be deployed using TCP or HTTP. HTTP deployment from the Configuration Servers uses the HTTP port of a co-located Proxy Server.

    — **Deployment Destinations**
      In this case, the Proxy Server's static cache location is the Preload deployment destination.

Figure 3   Proxy Server Preload Distribution model
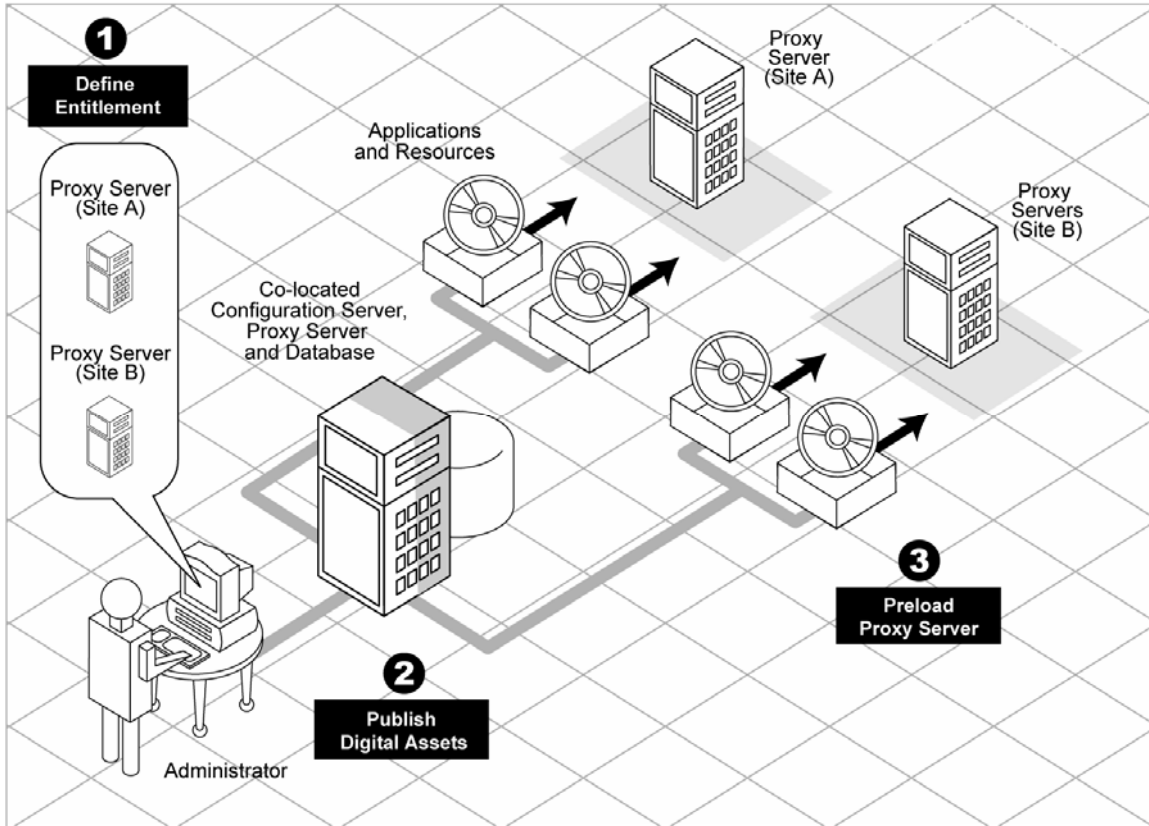
Dynamic Cache

The **dynamic cache** is an optional, secondary cache location for the Proxy Server. When enabled, the dynamic cache is populated on demand by the Dynamic PassThru component of the Proxy Server using HTTP. When a requested resource is not found in the primary (static) cache, the dynamic cache is searched. If the requested resource is not found in the dynamic cache, the Dynamic PassThru process obtains the resource from an upstream host. The dynamic cache is viewed as a safety net for requests that fall through the static cache search.

Dynamic PassThru

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

For fail-over support, you can designate more than one upstream host for obtaining dynamic cache. If the Proxy Server fails to connect with the first host on the list, it attempts to connect with the second listed host, and so on, to obtain the dynamic cache resources.

Dynamic Cache Management

Dynamic PassThru also manages this cache, purging files that have not been requested in a previously configured number of days. (This avoids keeping files in the dynamic cache after they exist in the static cache.) To support the purge process, an index file is maintained to keep track of when files were last used. The dynamic cache cleanup of "aged" files can be run from the HP OpenView Management Portal Using Radia (Management Portal) using the Purge Dynamic Cache task. The purging of aged files will also run whenever the index file is saved. You can schedule the index file to be saved on a daily or more frequent basis. However, a scheduled save of the index file is skipped if dynamic cache resources were not used since the last save.

The dynamic cache can also be purged, as necessary, when a user-specified maximum file size is exceeded. The least-used files are deleted until the dynamic cache size is below the maximum file size. A "freespace" purge option allows you to purge down to a low-water mark, which is a certain percentage below the maximum file size. This "freespace" eliminates constant purging in an active dynamic cache environment.

Another purge option allows you to define "large files", and then exempt these large files from the first pass of a size-based purge. If large files are purged and then later requested, an undue load could be placed on the network. Use the large file options to alleviate this load.

What is a Co-Located Proxy Server?

The Configuration Server communicates with other servers and clients using TCP/IP. It no longer supports a native HTTP data download capability. To obtain HTTP download capability, you need to use a co-located Proxy Server.

A **co-located** Proxy Server is a Proxy Server placed on the same machine as the Configuration Server to provide a source for downloading Radia database resources to another Radia server or clients using HTTP. It is defined with a static cache type of *server*, instead of agent. It does not manage its own static cache, but merely points to the Radia Database on the Configuration Server. Thus, it needs no preloading (or synchronization), and normally has its dynamic cache disabled. This is shown in Figure 4 below.

Figure 4   Co-located Proxy Server enables HTTP downloads
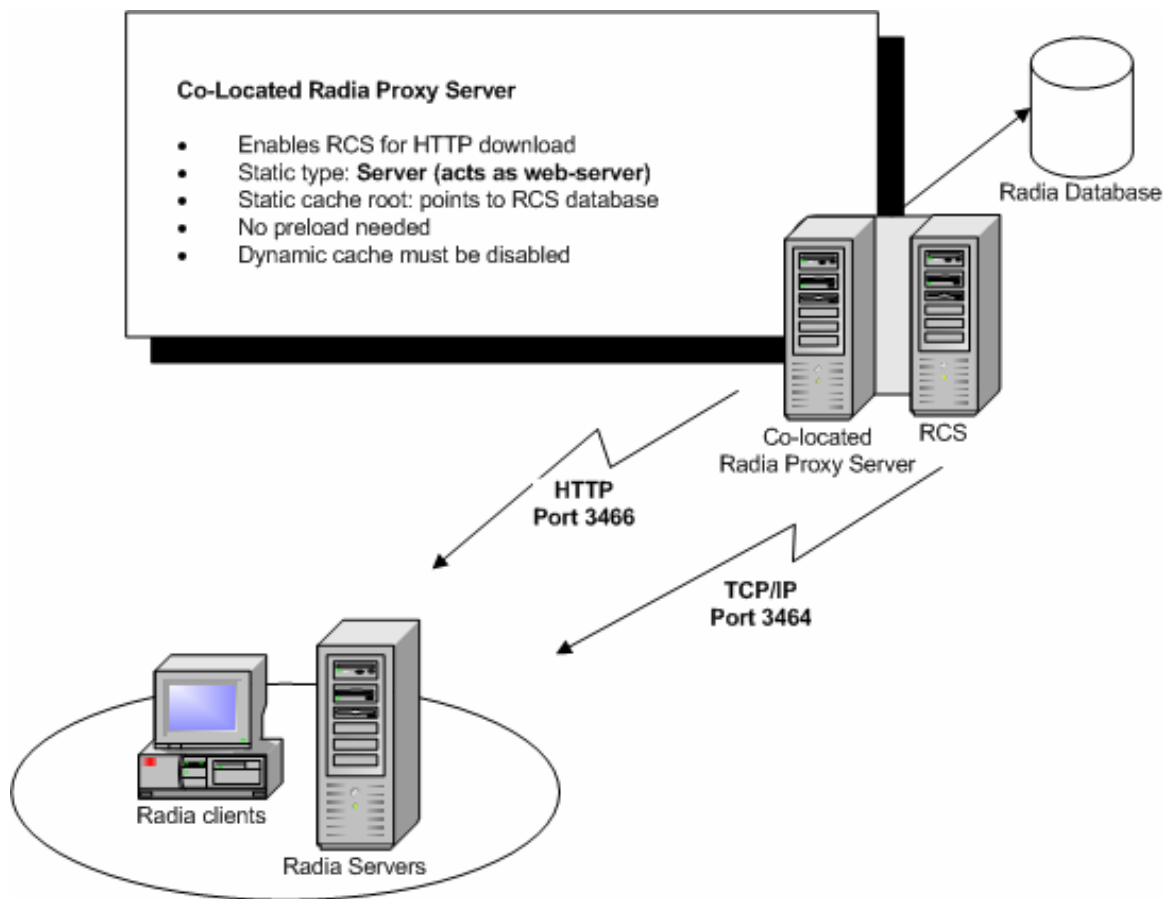
For details on installing and configuring a co-located Proxy Server, see Co-Locating a Proxy Server with a Configuration Server for HTTP Support on page 68.

When to use a Co-located Proxy Server

You need a Proxy Server co-located with the Configuration Server for HTTP support in the following configurations:

- To support Radia clients configured to retrieve resources from the Radia Database using HTTP (instead of TCP/IP).

- To support a subordinate, or downstream, Proxy Server that is obtaining its dynamic cache resources from the Radia database. Dynamic cache resources must be obtained using HTTP.

- To support preloading a subordinate, or downstream, Proxy Server using HTTP instead of TCP/IP.

Each configuration requiring a co-located Proxy Server is discussed below:

- **Radia clients using HTTP to obtain their resources**
  Radia clients always obtain their policy resolution from the Configuration Server. By default, the Radia clients then obtain their resources from the Radia Database of the Configuration Server using TCP/IP. To have Radia clients obtain their resources from the Radia Database using HTTP, instead, you need to add a co-located Proxy Server with the Configuration Server, and then direct the clients to obtain their resources from the co-located Proxy Server. For details on directing clients to obtain their resources from a Proxy Server, see Configuring Radia Clients for Use with the Proxy Server page 89.

- **Preloading a Proxy Server from the Radia Database using HTTP**
  By default, a Proxy Server is preloaded from the Radia Database using TCP/IP. Optionally, it can be preloaded from the Radia Database using HTTP, instead. This configuration would also require a Proxy Server co-located with the Configuration Server for HTTP support, as shown in Figure 5 on page 23. For details on using this option, see the topic Preloading Deployment Options on page 76.

Figure 5   Proxy Server Preload Distribution model using HTTP
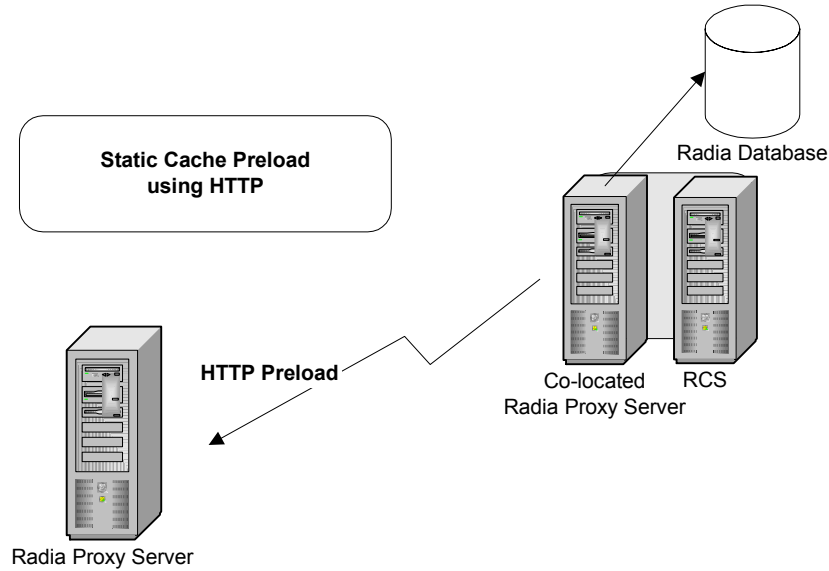
- **Proxy Server using the Configuration Server as its dynamic cache upstream host**
  Enabling the dynamic cache for a Proxy Server means that when a client requests resources from the Proxy Server, and the resources are not in the local cache, the Dynamic Cache PassThru process immediately requests the resources from its predefined upstream host using HTTP.

  When a Proxy Server is enabled for dynamic caching, and is using the Configuration Server as the upstream host for obtaining its dynamic cache resources, you need to use a co-located Proxy Server for HTTP download support. This is because the Dynamic PassThru process uses HTTP exclusively. Figure 6 on page 24 shows this configuration.

  For details on specifying the dynamic cache and upstream host, see Configuring the Dynamic Cache Parameters on page 61.

Figure 6   Dynamic cache upstream host

Dynamic cache upstream host:
RCS.
Requires HTTP download support.

Dynamic PassThru:
HTTP

Radia Configuration Server:
with co-located Radia Proxy Server

Radia Proxy Server
[Dynamic cache enabled]
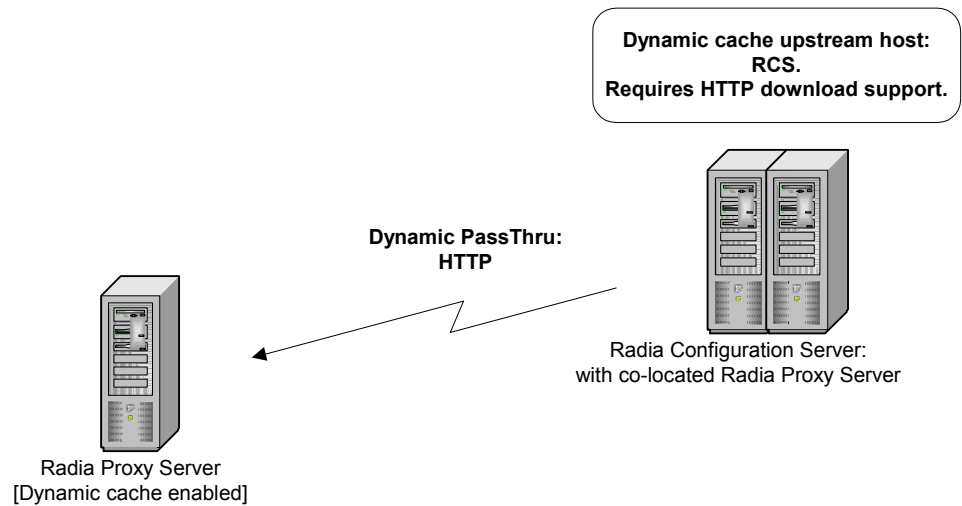
Integration Server and the Proxy Server

The Proxy Server runs as a loaded module under the control of the HP OpenView Integration Server Using Radia (Integration Server). The Integration Server is a base component for various Radia infrastructure modules, such as the Inventory Manager, the Management Portal, and the Policy Manager. It provides web services that are shared by 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.

The location of the Integration Server is the base installation directory of the Proxy Server. If the Integration Server is not currently present, it is installed with the Proxy Server.

Management Portal and the Proxy Server

The Management Portal provides a web-based, single access point from which Radia administrators 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 Management Portal provides the ability to both install and perform many administrative functions for your Proxy Servers. The remote install from the Management Portal honors a pre-configured `*.INI` file, so the installed Proxy Server is ready to go. In addition, the Management Portal can be used to start, stop, preload (synchronize) the static cache, and purge the dynamic cache of any Proxy Server in your Network.

In conjunction with the Management Portal's ability to install Radia clients remotely, Proxy Servers can also be used to assist the Management Portal in distributing client install scripts. This serves to spread the workload of deploying large numbers of clients between the Management Portal and Proxy Servers, just as the Proxy Servers assist the Configuration Server in deploying applications to the clients.

Summary

- Proxy Servers enable an additional server to act as an extension of the Configuration Server. The Proxy Server stores a copy of the application software that Radia distributes, and delivers it to the Radia client computers that are attached to the server.

- Each client will receive resources directly from the Proxy Server. The recommended protocol for client communications is HTTP, although multiple, concurrent protocols are supported.

- A Proxy Server's static cache is preloaded with the applications defined for it in the Radia Database. The preload process connects using TCP, but can have resources deployed using TCP or HTTP. HTTP is available when the Configuration Server has a co-located Proxy Server.

- A Proxy Server enabled for dynamic cache will request resources from a predefined upstream host when they are not currently available in its local static or dynamic cache. Multiple upstream may be defined to provide fail-over support after a connection error. Dynamic cache resources are downloaded to the Proxy Server using HTTP. The dynamic cache offers a number of purge options to remove old files and to keep it under a specified maximum size.

- A Proxy Server co-located with the Configuration Server is used whenever you need to obtain resources from the Radia Database using HTTP. The Configuration Server no longer supports downloading resources using HTTP.

- The potential benefit of a Proxy Server must be evaluated individually for each server and its attached client computers.

2 Installing and Configuring the Proxy Server

At the end of this chapter, you will:

- Be able to install the Proxy Server software locally using installation media, or remotely using the Management Portal.

- Be able to access and apply any updates to bring the product to the latest level.

- Be able to configure the Proxy Server after installation for different options, including the use of the dynamic cache and several preload options.

- Understand how to configure the different Radia components for use with the Proxy Server.

Installation and Configuration Overview

Before you can use a Proxy Server, you must prepare your Radia environment. To configure your enterprise for using Proxy Servers, you will need to complete the following tasks:

❑ Install the Proxy Server on the designated server.

- Read the topics on system requirements and installation notes, and then follow the steps to install the Proxy Server locally or remotely (using the Management Portal). Separate procedures are given local Windows and UNIX installations.
- If you are installing the Proxy Server co-located with the Configuration Server (to provide a source for downloading resources from the Radia database using HTTP), see Co-Locating a Proxy Server with a Configuration Server for HTTP Support on page 68.
- Also visit the HP Technical Support web site to check for the latest available updates to the product, such as a Service Pack update.

❑ Review and modify the Proxy Server configuration parameters after installation. For example, edit the configuration file to enable and configure the dynamic cache.

See Configuring the Proxy Server on page 53.

❑ Create a distribution policy in the Configuration Server database for preloading the Proxy Server static cache.

See Configuring the Radia Database for the Static Cache Preload on page 72.

❑ Preload the Proxy Server static cache.

See Preloading the Proxy Server on page 102.

❑ Assign the appropriate subscribers to the Proxy Server.

See Configuring Radia Clients for Use with the Proxy Server on page 89.

Proxy Server System Requirements

Hardware Requirements and Recommendations

- **Static Type of Agent**
  In general, a Proxy Server with a static type of Agent is most dependent on network bandwidth and disk I/O speed. Use the recommendations given in Table 2 below to obtain desired performance on your Proxy Servers. The Proxy Server will run on lesser machines, but performance will probably suffer under peak loads.

- **Static Type of Server**
  A Proxy Server co-located with the Configuration Server for HTTP support has a static type of Server. Most hardware requirements that satisfy the Configuration Server's needs more than accommodate the Proxy Server, especially the requirements for processor speed, memory, and disk drive speed. Refer to the *Getting Started Guide for the HP OpenView Configuration Server for Radia* (*OpenView Getting Started Guide*) for specific requirements. For additional considerations, see Table 2 below.

Table 2   Proxy Server Hardware Recommendations

Component	Static Type = Agent	Static Type = Server
Overall	In general, the Proxy Server is most dependent on network bandwidth and disk I/O speed.	A machine sized for the Configuration Server more than accommodates a co-located Proxy Server.
Processor	A higher processor speed is more important than having multiple processors. Thus, we recommend as fast a processor as is practical (for example, 2 GHz).	Use the Configuration Server requirements for speed. However, multi-processors are strongly recommended for this configuration.
Memory	At least 512 MB. As with all systems, the more memory the better.	Configuration Server requirements are fine.

Component	Static Type = Agent	Static Type = Server
Disk Space	Provide at least double the anticipated total volume of resources to be housed (that is, your anticipated static and dynamic cache).	Configuration Server requirements are fine.
Disk Drive Speed	Fast access disk drives are highly advisable.	Configuration Server requirements are fine.
Network Interface Card (NIC)	A fast network card is a plus. Use a 1 GB NIC if your network supports it.	A second network card is helpful to address configurations where network volume becomes a constraining factor (large volume due to the size or number of resources to be transferred to clients). When using two network cards, the Configuration Server is homed to one NIC IP address and the Proxy Server to the other.
Network Configuration	Minimize the number of router hops between client requesters and their respective Proxy Server to improve performance.	If servicing clients, recommendation for a static type of Agent applies.

Windows System Requirements

- One of the following supported Windows operating systems:
  — 2000 with Service Pack 3
  — XP with Service Pack 2
  — Server 2003 with Service Pack 1
- Connection to a computer running the Configuration Server.
- Administrator rights to the computer to install the Proxy Server.

UNIX System Requirements

- One of the following supported UNIX platforms:
  — Solaris operating system Version 2.5.1 or above, SPARC CPU or x86 platform.
  — HP-UX operating system Version 11.0 or above, PA Risc CPU.
  — AIX operating system Version 4.3.1.
  — Red Hat Linux Version 6.2 or above, Intel Pentium processor or compatible CPU.
  — Red Hat Enterprise Linux Version 2.1 or above.
  — SUSE LINUX Enterprise Server Version 8 or 9.
- Connection to the computer running the Configuration Server.

Proxy Server Installation

There are two methods for installing the Proxy Server:

- Install the Proxy Server directly onto a local server.
- Install the Proxy Server remotely through the Management Portal. For more information, refer to the *Management Portal Guide*.

Windows and UNIX Installation Notes

- To complete the Proxy Server installation prompts, you need to understand the Proxy Server Preload process that resolves and loads the static cache. For details, please see Cache Definitions and Support on page 17.

- Before you begin, locate your license file. You need this license file to install the products that you have purchased. If you need assistance, contact HP Technical Support (see page 6).

  During installation of the Proxy Server, the license file is renamed `license.nvd`, and is copied to the Integration Server's module directory.

- After installation, the Windows Proxy Server service is started automatically; but the UNIX Proxy Service is not.

- After installing the product from the Radia Management Infrastructure CD-ROM, check the HP Technical Support web site to see if a maintenance Service Pack is needed to bring the product to the latest level. For details, see Applying Product Updates on page 53.

- To install the Proxy Server on a UNIX system, make sure the user who is installing the Proxy Server is logged in as root, and has adequate rights to create and update the target installation directory.

  > For the Proxy Server to operate correctly on Solaris platforms, the UNIX userID running the Proxy Server must include the directory `/usr/sbin` in the UNIX PATH environment variable setting. Contact your local system administrator if you need assistance.

> In order for Radia to install correctly on HP-UX platforms, you must mount the Radia Infrastructure CD-ROM using pfs_mount.
>
> The Radia Infrastructure CD-ROM is created using the Rock Ridge format. Since the HP-UX standard mount procedure is incompatible with the Rock Ridge file system type, HP has made available the PFS package (Portable File System) that allows their workstations to recognize this format. Specific instructions follow.
>
> To mount the CD-ROM, insert it and type
>
> **/usr/sbin/pfs_mount -v -x unix /**_cdrom_**/mnt**
>
> where:
>
> _/cdrom_ is your physical CD-ROM device.
>
> To un-mount the CD-ROM, type
>
> **/usr/sbin/pfs_umount /mnt**
>
> See your local UNIX systems administrator and UNIX man pages for more information.

Installing the Proxy Server to a Local Directory

This section describes how to install the Proxy Server to a local site for both Windows and UNIX.

- Instructions for Windows begin below.

- Instructions for UNIX begin on page 39.

Following the installation, proceed with Configuring the Proxy Server on page 53.

Installing the Proxy Server Locally for Windows

This section describes how to install the Proxy Server to a local site for Windows.

To install the Proxy Server locally for Windows

1 Double-click the setup.exe file from the Proxy Server installation source directory. The source directory is found on the Radia Infrastructure CD-ROM at the following path: \extended_infrastructure\proxy_server\win32.

The Welcome window for the Proxy Server Setup program opens.

2   Click **Next**.

The End-User License Agreement window opens for you to read the licensing terms for this product. You must accept the terms before the Proxy Server can be installed.

3   Click **Accept** to agree to the terms of the software license and continue with the installation.

The Proxy Server Directory window opens for you to select or enter the base directory for the Proxy Server install. This Proxy Server base directory specifies the location of the foundation Integration Server component. The default is C:\Novadigm\IntegrationServer.
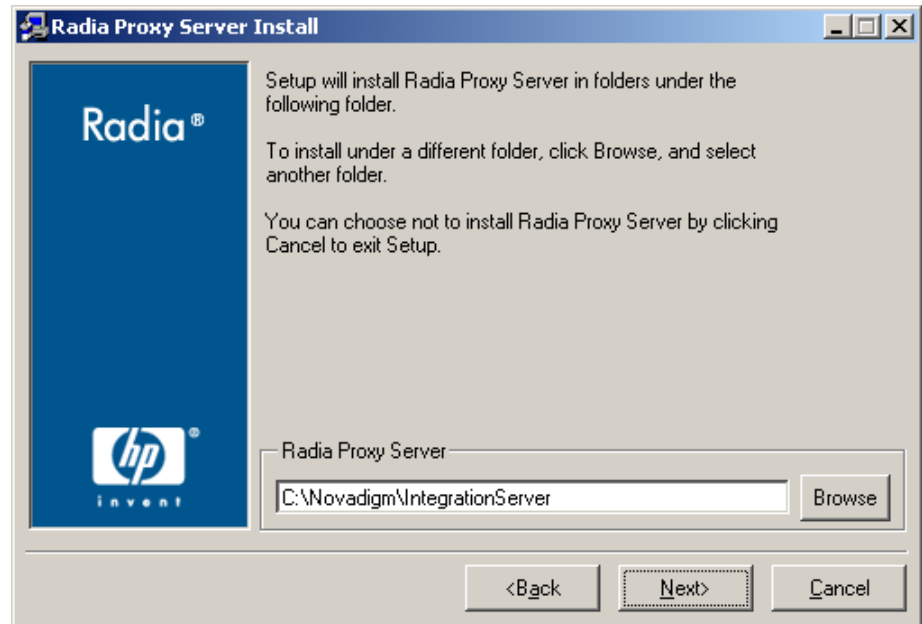
If an instance of the Integration Server component [httpd.tkd] is already on the target machine, then the Proxy Server Directory window is bypassed and the Proxy Server is installed automatically to the existing Integration Server folder. Continue with step 5.

4   Type the name of the base directory in which to install the Proxy Server, accept the default directory shown in the text box, or click **Browse** and navigate to the directory in the Browse dialog box.

> For each value requested during this installation procedure, press the **Enter** key to accept the default.

5   Click **Next**.

The License File window opens.
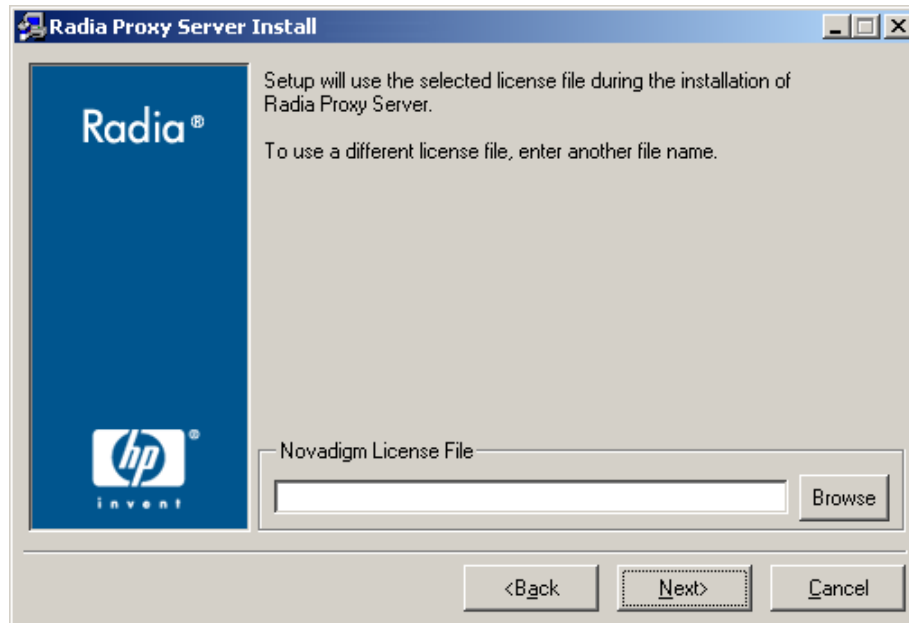
6   Browse to or type the name of your License File in the text box. You must enter a valid license file to continue the installation.

The license file will be copied to the `/modules` folder as `license.nvd` during the installation.

7   Click **Next**.

The Configuration Server IP Address window opens.
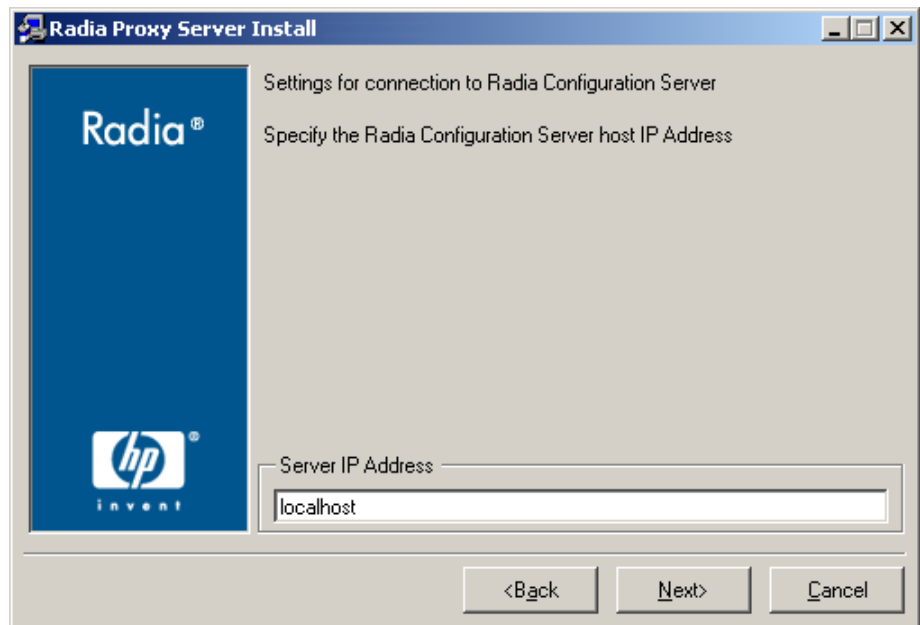
8   In the Server IP Address text box, type the IP Address or DNS name of
    the host Configuration Server. The Proxy Server connects to this host
    during the preload process to obtain its static cache resolution and static
    cache files. The default is `localhost`.

>   • Leave the default entry of localhost if you are co-locating
      this Proxy Server with a Configuration Server to enable
      HTTP download support. For additional details, see Co-
      Locating a Proxy Server with a Configuration Server on
      page 68.
    • The Proxy Server Preload process must always connect to
      the host Configuration Server specified in the Server IP
      Address field for its static cache resolution. However, you
      can configure the Proxy Server to obtain the static cache
      files from another Proxy Server, if desired. For details,
      see To change the deployment source or protocol for a
      preload to use HTTP on page 77.

9   Click **Next**.

    The Configuration Server Port window opens.
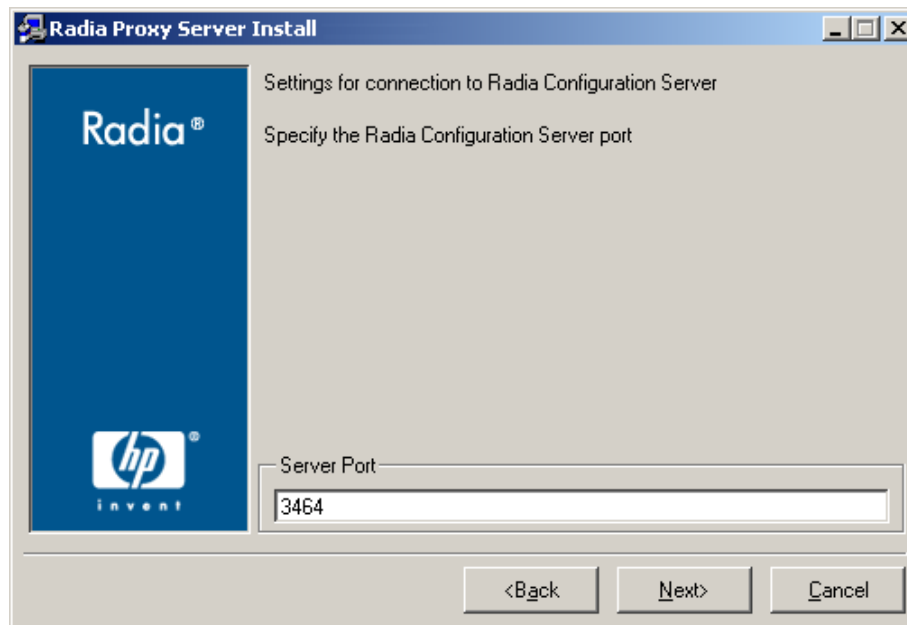
10 Accept or type the TCP port number of the Configuration Server to be used during the preload process for the static cache. The default port number is 3464.

11 Click **Next**.

The Configuration Server User ID window opens.
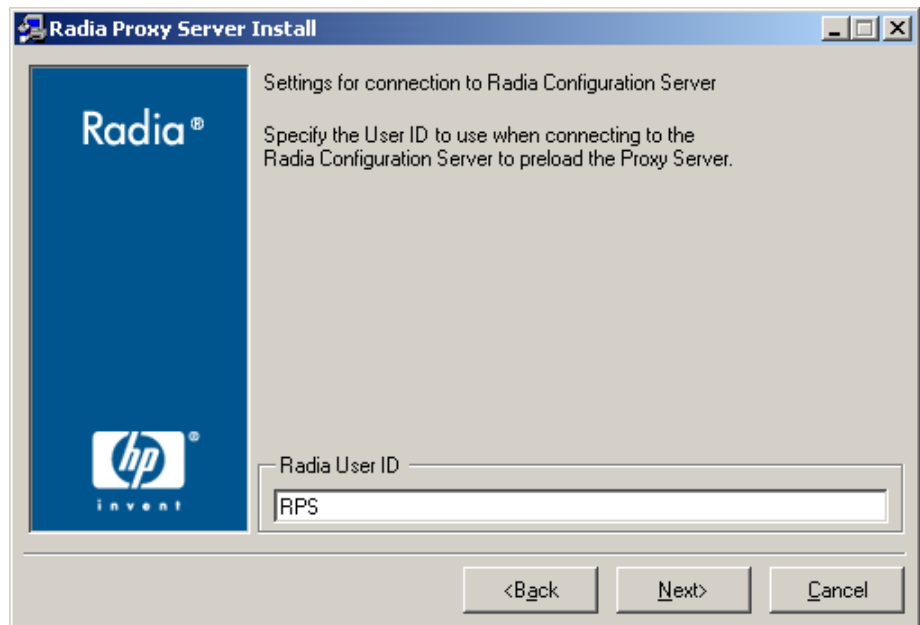
12 Specify the Radia User ID for this Proxy Server to use when it connects to the Configuration Server for its static cache preload resolution. The default is RPS.

▶ The Radia user ID entered must correspond to a Policy User class instance in the Radia Database, where the static cache distribution model for this Proxy Server is defined. See Configuring the Radia Database for the Static Cache Preload on page 72.

13 Click **Next**.

The Installation Settings window opens.

14 Review the settings in the Installation Settings window. If you want to change any of these settings, click **Back**.

15 Click **Install** to begin the Proxy Server installation.

The Installation Progress window opens.

16 When the installation is finished, the Successful Installation window opens.
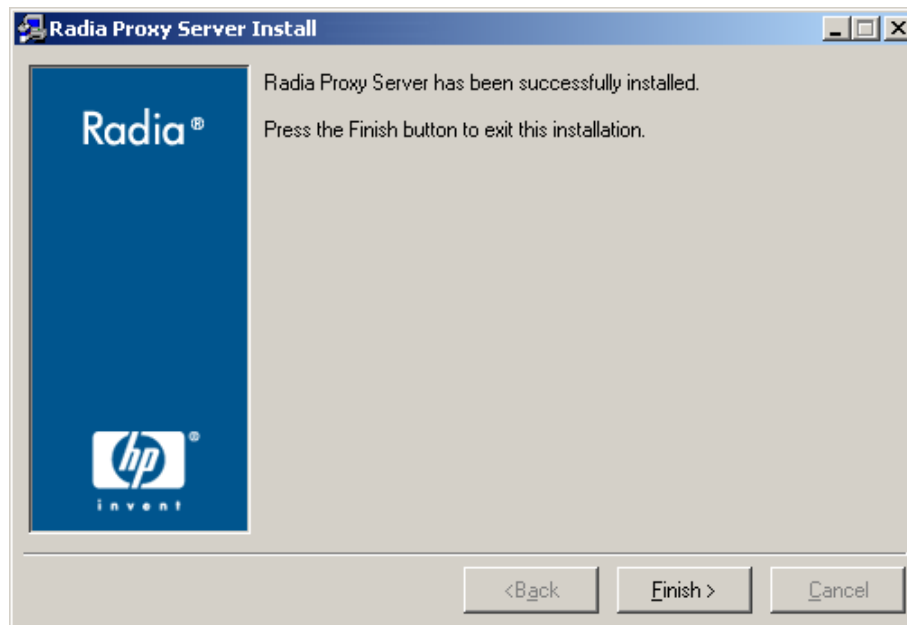
17 Click **Finish** to exit the installation program.

You have successfully installed the Proxy Server Windows to a local directory. The Proxy Server service is started.

- To apply any available product updates at this time, see Applying Product Updates on page 53.

- To complete the configuration of the Proxy Server for various options, see Configuring the Proxy Server on page 53.

Installing the Proxy Server Locally for UNIX

This section describes how to install the Proxy Server to a local site for UNIX.

Following installation, proceed with the topic Configuring the Proxy Server on page 53.

To install the Proxy Server locally for UNIX

1 Change your current working directory to the directory containing the Proxy Server media. This will be either your mounted CD-ROM directory or a temporary directory where you loaded the Proxy Server media.

2 At the command prompt, type **./install**, and then press **Enter**.

The Welcome window for the Proxy Server Setup program opens.

3   Click **Next**.

The End-User License Agreement window opens for you to read the licensing terms for this product. You must accept the terms before the Proxy Server can be installed.

4   Click **Accept** to agree to the terms of the software license and continue with the installation.

The Installation Directory window opens for you to select or enter the base directory for the Proxy Server install.

➤   If an instance of the Integration Server component (`httpd.tkd`) is already on the target machine, then the Proxy Server Directory window is bypassed and the Proxy Server is installed automatically to the existing Integration Server folder. Continue with step 7.
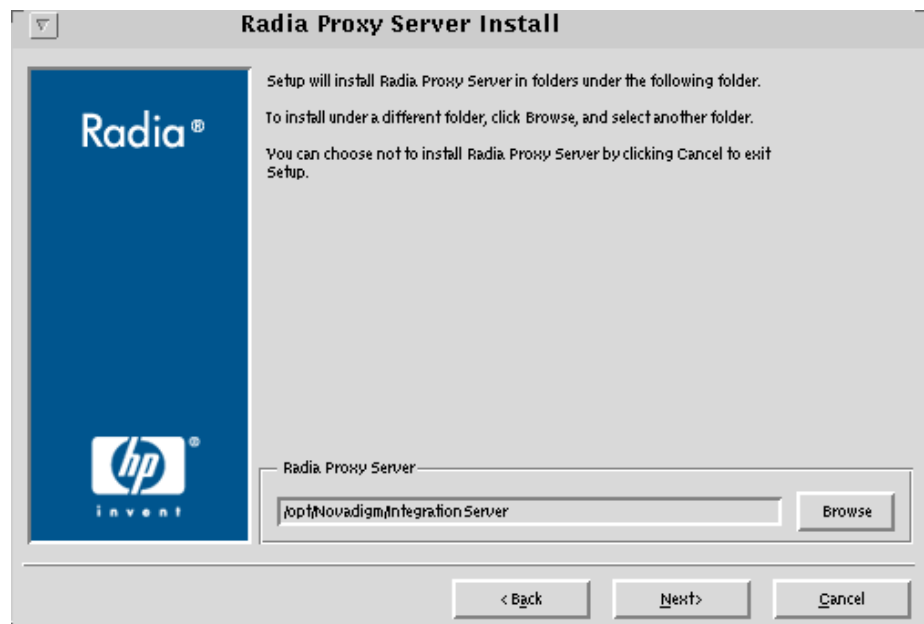
5   Accept the default Proxy Server location, or type or browse to an alternate directory where you would like to install the Proxy Server.

This Proxy Server base directory specifies the location of the Integration Server component, installed with the product.

6   Click **Next**.

The License File window opens.
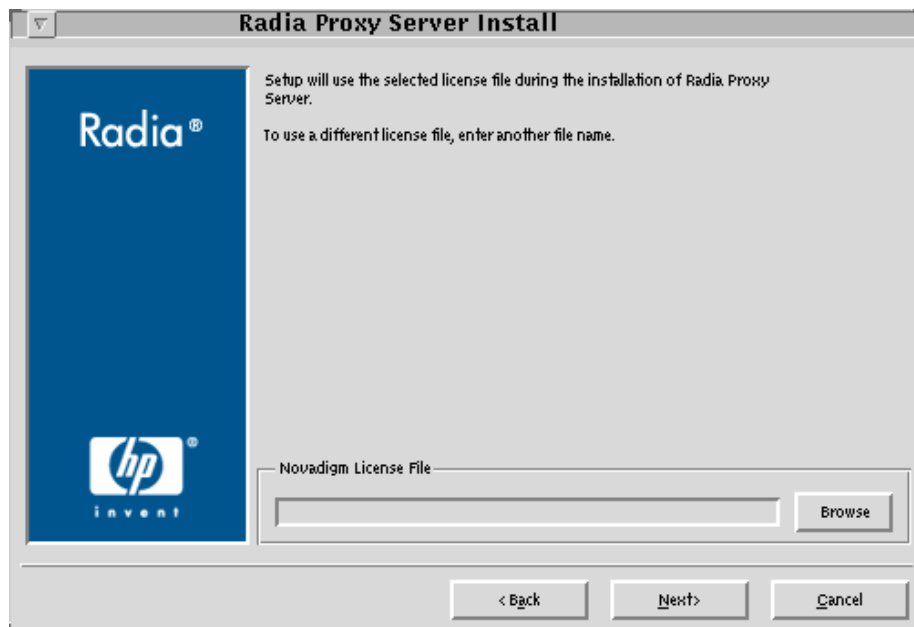
7   Type the location and name of your License File, or click **Browse** to select the file from the Browse dialog box.

8   Click **Next**.

The Configuration Server IP Address window opens.
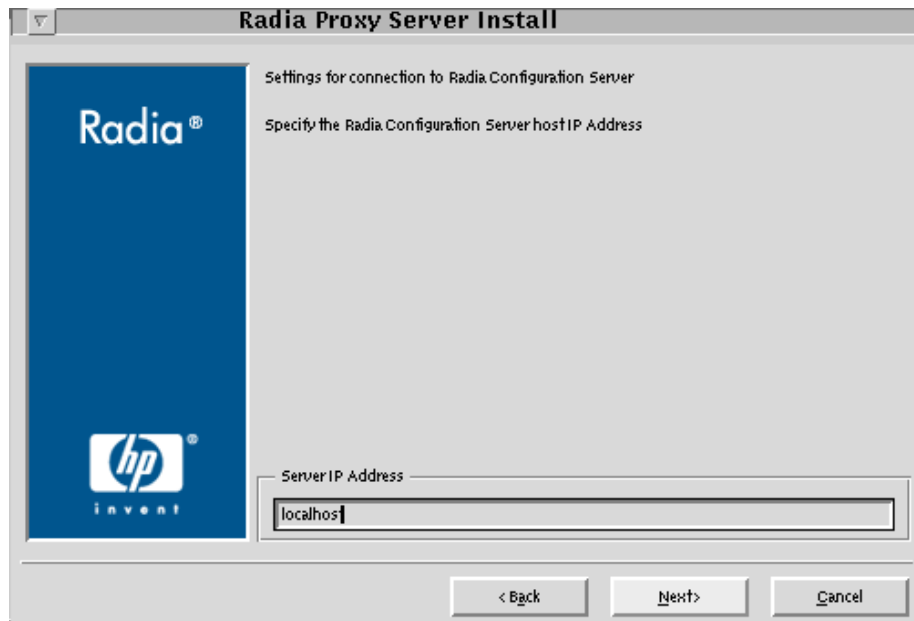
9 Type the IP Address or hostname of the host Configuration Server the Proxy Server will connect to during a preload to obtain its static cache resolution and static cache files.

> Leave the default entry of `localhost` if you are co-locating this Proxy Server with a Configuration Server to enable HTTP download support. For additional details, see Co-Locating a Proxy Server with a Configuration Server on page 68.
>
> The Proxy Server Preload process must always connect to the host Configuration Server specified in the Server IP Address field for its static cache resolution. However, you can configure the Proxy Server to obtain the static cache files from another Proxy Server, if desired. For details, see the procedure To change the deployment source or protocol for a preload to use HTTP on page 77.

10 Click **Next**.

The Configuration Server Port window opens.
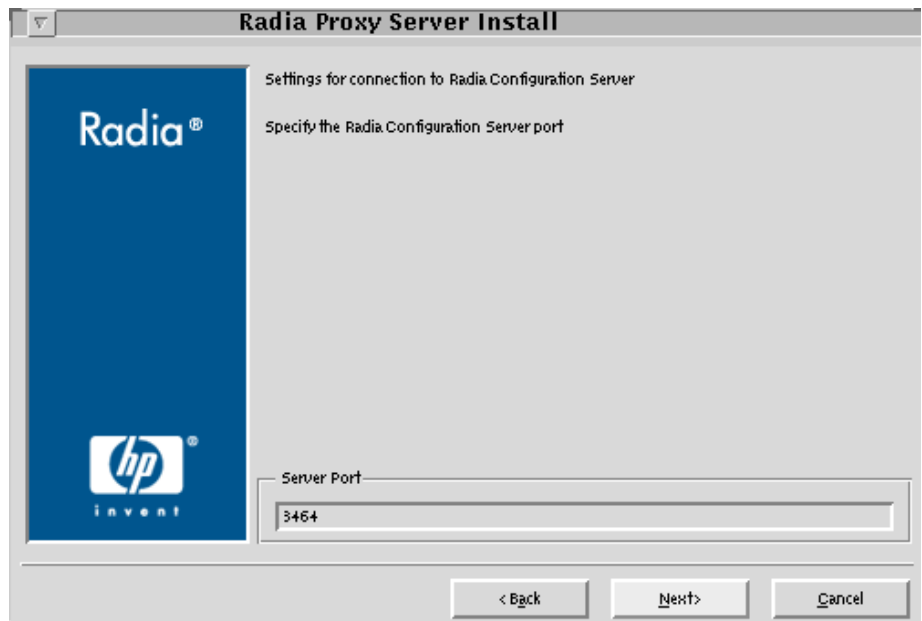
11 Accept or type the TCP port number of the Configuration Server to be used to connect to the Proxy Server for the static cache Preload resolution. The default port number is 3464.

12 Click **Next**.

The Configuration Server User ID window opens.
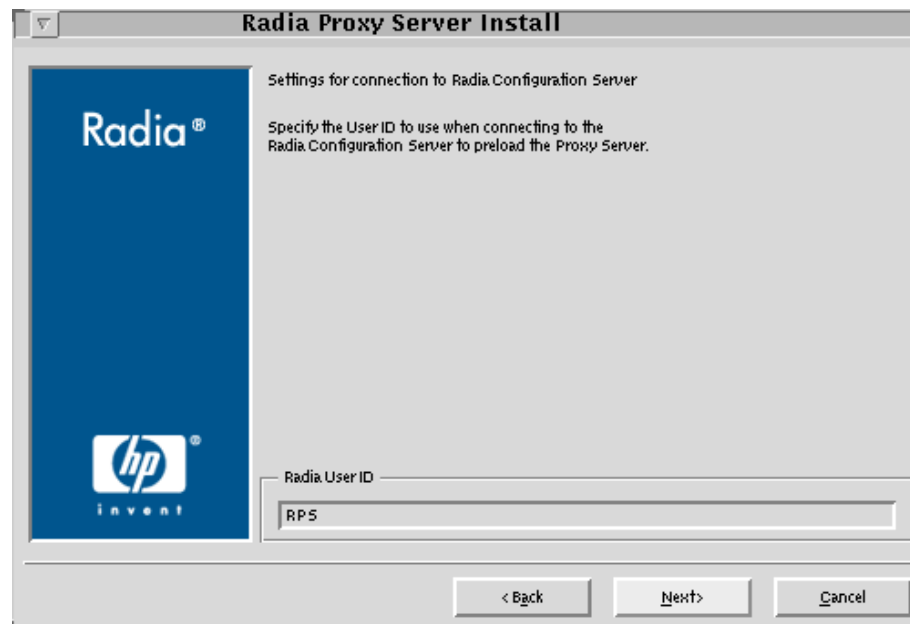
13 Type the user ID that the Proxy Server will use to connect to the Configuration Server to obtain its static cache preload resolution. The default is RPS.

> The Radia user ID entered must correspond to a Policy User class instance in the Radia Database, where the static cache distribution model for this Proxy Server is defined. See Configuring the Radia Database for the Static Cache Preload on page 72.

14 Click **Next**.

The Installation Settings window opens.

15 Review the settings. If you want to change any of them, click **Back** until you reach the area of the installation you would like to change, and then click Next until you return to the Installation Settings window again.

16 Click **Install** to begin the Proxy Server installation.

The Installation Progress window opens.

17 When the installation is finished, the Successful Installation window opens.
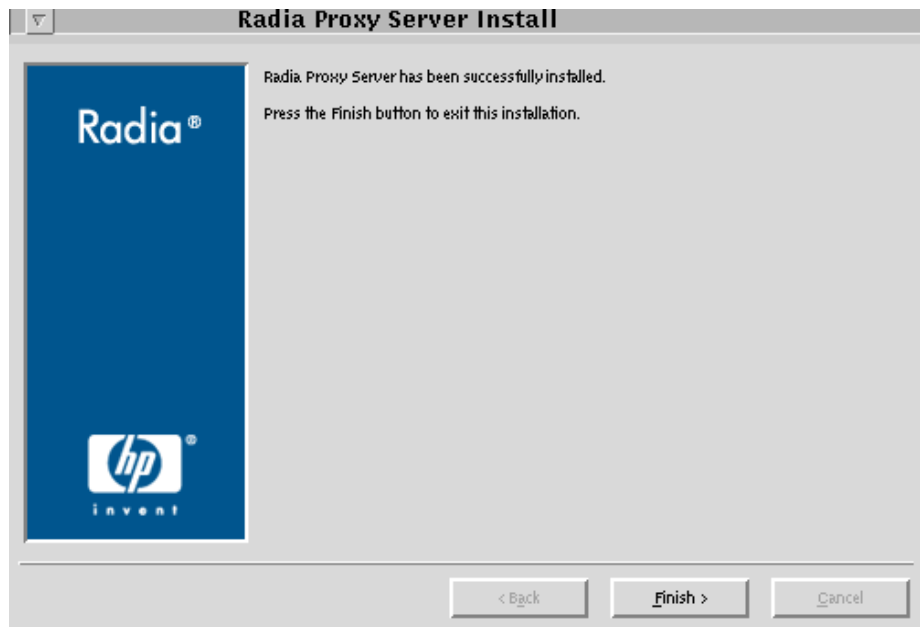
18 Click **Finish** to exit the installation program.

You have successfully installed the Proxy Server locally for UNIX.

- To apply Product Updates at this time, see Applying Product Updates on page 53.

- To complete the configuration of the Proxy Server for various options, see Configuring the Proxy Server on page 53.

- To start or stop the Proxy Server for UNIX, use the commands discussed in the next topic, Starting and Stopping the Proxy Server for UNIX.

Starting and Stopping the Proxy Server for UNIX

To start the Proxy Server for UNIX

1 Change your current directory to the directory where you installed the Proxy Server (`/opt/Novadigm/IntegrationServer/` by default).

2 Type **`./nvdkit httpd.tkd`**

3 Press **Enter**.

4 The Proxy Server is started on your computer.

▶ The following are general guidelines and the commands are examples that may vary slightly depending on the UNIX type you are using.

1 Obtain the process ID for the Proxy Server by listing all the UNIX processes and extracting the process ID for nvdkit.

```
ps -f | grep nvdkit | sed /grep/d | awk '{ print $2 }'
```

2 Run the following command.

```
kill <PID>
```

The Proxy Server is stopped on your computer.

Installing the Proxy Server to a Remote Location

The Proxy Server can be installed remotely using the Management Portal from any web browser. During the installation, you will receive status information, and if the installation fails, it can be rescheduled.

The Management Portal also allows you to select a pre-configured CFG file during the Install Proxy Server task. Using this option means the installed Proxy Server can be fully configured and ready to run. See Preparing and Locating Configuration Files for Remote Proxy Server Installs on page 46 for more information.

▶ The following sections require you to be familiar with the Management Portal. For detailed information, refer to the Management Portal Guide.

Requirements for Remote Installations from the Management Portal

In order to install Radia Infrastructure products from the Management Portal, you must be aware of the following requirements.

- For Windows, the remote computer must be running Windows 2000, XP, or Server 2003.

- For HP-UX, the remote computer must be running the HP-UX operating system Version 11.0 or above, PA Risc CPU.

- For Solaris, the remote computer must be running the Solaris operating system Version 2.5.1 or above, SPARC CPU.

- The installation files for the Radia product must be stored in the Integration Server's \media directory. The Management Portal installation program will copy these files automatically when you opt to install the components for remote installations from the installation dialog boxes. See Installing the Management Portal for Windows in the *Management Portal Guide* for more information.

  If you did not copy these files using the installation program, you must manually copy them from the appropriate CD-ROM to the Integration Server's \media\extended_infrastructure directory. The directory structure of this directory should mirror the CD-ROM layout.

Figure 7   \media\extended_infrastructure directory
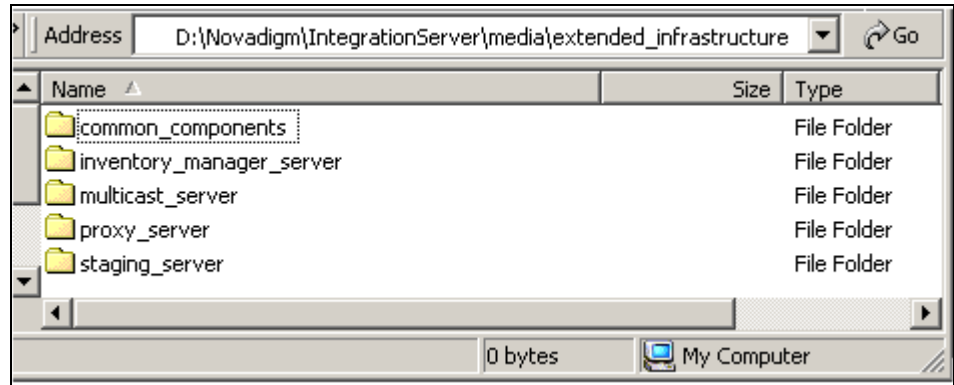
- A packing list, which contains a list of the files to be transferred across the network, must exist in the directory with the installation files. The Management Portal creates the packing list when you launch the remote installation.

- For Management Portal version 2.x and above, the Devices container must have an entry for each machine to which you are installing the Proxy Server. Refer to the *Management Portal Guide* for more information.

Preparing and Locating Configuration Files for Remote Proxy Server Installs

Optionally, use these procedures to prepare one or more fully configured RPS.CFG files before you run the Management Portal Install Proxy Server task. This allows you to install a Proxy Server that is already configured and ready to go.

The pre-configured `RPS.CFG` files must be placed in a specific media location for the Management Portal to use them. When you run the Install Proxy Server task from the Management Portal, the task will prompt you to select a specific CFG file, if multiple ones exist.

To prepare a pre-configured RPS.CFG file for use with the Install Proxy Server task

1 Prepare a fully configured `rps.cfg` file.

   Perform a local installation of the Proxy Server on a test machine running the same platform as the intended Proxy Server platform. Edit the resulting `rps.cfg` file using the directions given in Configuring the Proxy Server on page 53.

2 Place the configured `rps.cfg` file in the appropriate Management Portal media directory. The location of a configured `rps.cfg` file will vary according to the platform on which you are installing the Proxy Server: win32, hpux, or solaris. For example, the location for a Windows Proxy Server installation is similar to this:

   ```
   C:\Novadigm\IntegrationServer\media\extended
   _infrastructure\proxy_server\win32\media\etc
   ```

   Use the steps below to place the `rps.cfg` file at the appropriate \media location for the Management Portal.

   a Go to the directory where the Management Portal is installed.

      The default is either
      `SystemDrive:\Novadigm\Integration Server`

      or

      `SystemDrive:\Novadigm\IntegrationServer`

   b Go to the following folder in the Management Portal directory:
      `\media\extended_infrastructure\proxy_server\platform`
      `\media` where `platform` is aix, linux, hpux, solaris, sunx86 or win32, according to the platform on which you are installing the Proxy Server.

   c Add a `\etc` folder to the `\media` directory.

   d Copy the `rps.cfg` file to this platform-specific `\media\etc` folder. For example, if the Management Portal is installed on `C:\Novadigm\IntegrationServer`, and the Proxy Server will be installed on a Windows platform, then place the `rps.cfg` file in the following location:

```
C:\Novadigm\IntegrationServer\media\extended_infrastr
ucture\proxy_server\win32\media\etc
```

3   Run the Install Proxy Server task from the Management Portal, as usual.
    See Performing the Install Proxy Server Task below. The installation
    task will transfer the fully configured `rps.cfg` file. If you prepare more
    than one configuration file, use the RPS Config File drop-down list to
    select the appropriate one during the Install Proxy Server task.

Performing the Install Proxy Server Task

Use these steps to install one or more Proxy Servers from the Management
Portal version 2.0 or later. If you are using an earlier version of the
Management Portal, refer to the Management Portal Guide for that release
for detailed steps.

> You may also want to check for the latest information available on
> this topic on the HP OpenView support web site.

To install the Proxy Server to a remote location

1   Access the Management Portal from any web browser.

2   Use the Navigation aid to select the place in your infrastructure where
    you want to install the Proxy Server. For example, you can select a single
    device from the Devices container or you can select a group of devices
    from the Groups container.

    > If a group of devices is selected as the audience (target), the
    > Proxy Server will be installed on all members of the group.
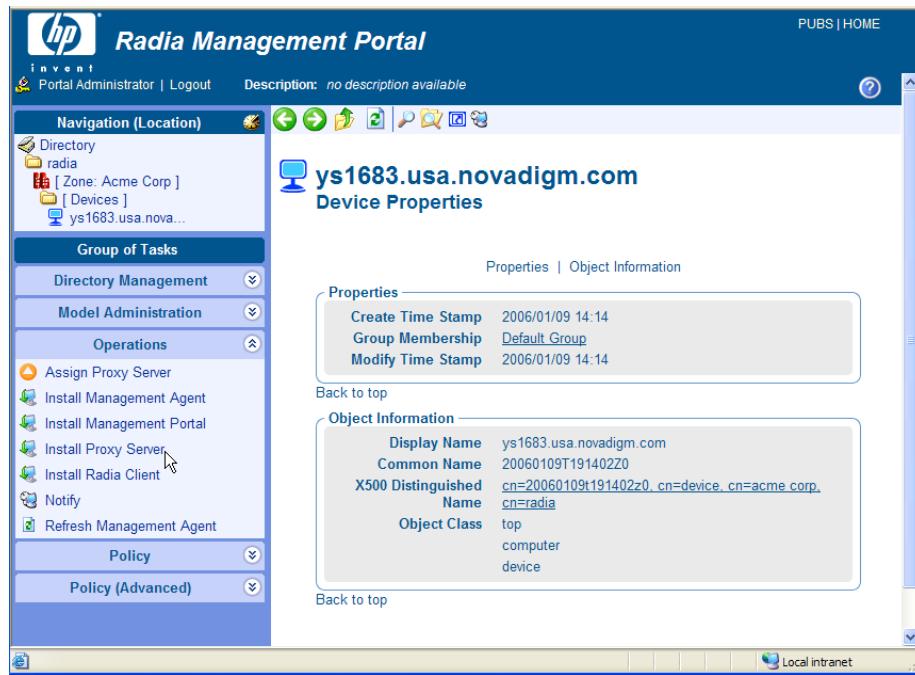
3   From the Operations task group, click **Install Proxy Server**.

4   Click **Next**.

The Install Proxy Server—RPS Options dialog box opens.

5   In the RCS Host Name text box, type the name or IP address for the Configuration Server.

6   In the RCS Port number text box, type the port number for the Configuration Server.

7   In the RCS User text box for Install Options, type the user ID to use to connect to the Configuration Server.

8   If available, select which RPS configuration file to use during the installation from the RPS Config File drop-down list. This field only appears if multiple customized `rps.cfg` configuration files have been added to the Management Portal.

> To make customized Proxy Server configuration files available for selection during this task, see Preparing and Locating Configuration Files for Remote Proxy Server Installs on page 46.

9   In the User text box for Remote Client Credentials, type the administrator ID to obtain administrative authority on the target device's domain.

> In order to take advantage of the Install Proxy Server task, consider creating a standard administrator ID across the domains in your network.

10 (*Windows only*) In the User Password text box, type the administrator password to obtain administrative authority on the target device's domain.

If you do not enter the password, and administrative authority is required, the job may fail. Check the job status for specific information.

> If you do not enter the password, and administrative authority is required, the job may fail. Check the job status for specific information.

11 Click **Next**.

The Schedule dialog box opens.

12 In the Schedule dialog box, specify when you want this job to run. See *Scheduling Jobs* in the *Management Portal Guide* for more information.

13 Click **Next**.

The Install Proxy Server—Summary dialog box opens.

🖥️ **Install Proxy Server**

① Query — ② Select — ③ Rps-opts — ④ Schedule — ⑤ **Summary**

Selected Audience

ys1683.usa.novadigm.com

Install Options

RCS Host Name:	physw2k.usa.novadigm.com
RCS Port Number:	3464
User:	RPS
RPS Config File:	Default Copy
Client Port Number:	Dynamic
User:	administrator

Scheduler Information

Starting On:	05/06/2004 17:50:00
Duration:	0
Periodic Interval:	0
Priority:	0
Type:	none

Submit   Back   Cancel

14 Click **Submit**.

The Job Status page opens with list of the jobs. This page automatically refreshes every 60 seconds. Press **F5** to manually refresh it.
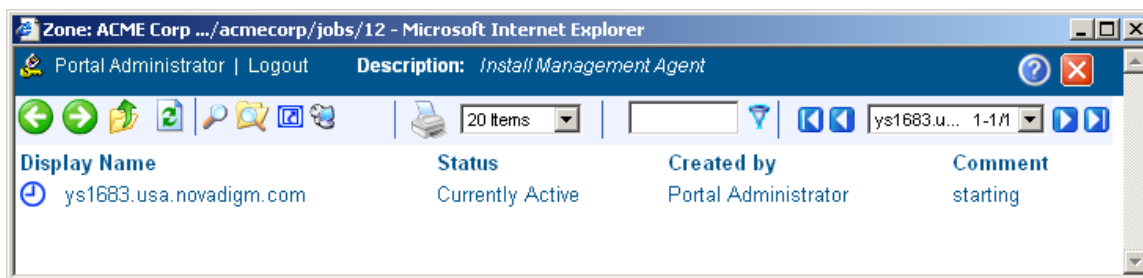
— Click 📁 to go up one level in the job or directory tree. For example, after viewing job details, click this icon to return to the Job Group Summary.

— Click 🔄 if you want to refresh the status of the installation.

— Click 🔍 to view detailed properties for the job or job group. This gives you detailed information on the job status.

— Click 🔲 to add a shortcut for Jobs to your Desktop.

— Click 🖨️ to obtain a printable view of the Jobs Status page.

15 When you are done viewing the job status, click ❌ to close the Job
    Status page, and return to the Management Portal.

You have finished installing the Proxy Server. The Proxy Server service for
Windows is automatically started after it is installed.

▶ When the Radia Management Agent is also installed on the devices
   running a Proxy Server, those devices automatically become
   members of the Proxy Server group in the Zone →Cross References
   → Infrastructure Services container of the Management Portal. See
   About the Zone Containers in the *Management Portal Guide for
   Windows* for more information.

Proxy Server Directory Structure

The Proxy Server is installed, by default, into the following folders:

- `Novadigm\IntegrationServer` folder, for Windows.

- `/opt/Novadigm/IntegrationServer` folder, for UNIX.

Installing the Proxy Server adds the following subdirectories to the
`IntegrationServer\data` folder for storing its dynamic and static cache.

Figure 8   Proxy Server directory structure
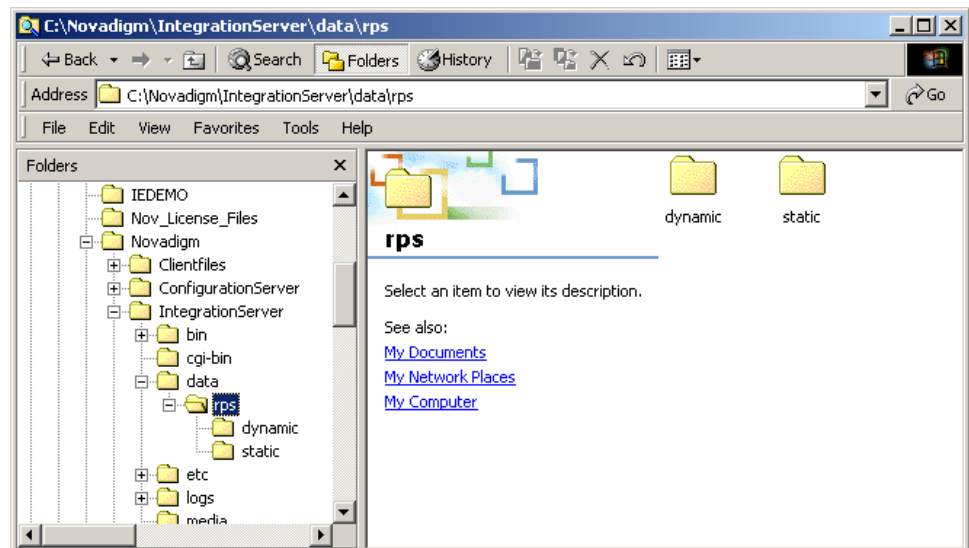
Applying Product Updates

Product updates for licensed users of the Proxy Server are available for download from the HP OpenView Support web site (see page 6).

- Check this site after installing the product from the Radia Infrastructure CD to see if later updates are available to bring the product to the latest level.

- Check this site on a regular basis to learn about available product maintenance.

Configuring the Proxy Server

Proxy Server Configuration File Overview

The Proxy Server installation creates a configuration file, `rps.cfg`, located in the `/etc` folder of the Proxy Server base installation directory. Following a local install, review the configuration parameters and make modifications to the `rps::init` section for the front-end communications protocol or the static or dynamic cache.

Table 3 on page 55 defines all parameters in the `rps.cfg` file and their default values.

Sample rps.cfg File After an Installation

The code below shows a sample `rps.cfg` file after product installation. Your `rps.cfg file` may show additional entries.

```
rps::init {

    -httpd            1
    -httpd-prefix     "/RESOURCE"

    -static-root      "C:/Novadigm/IntegrationServer/data/rps/static"
    -static-trace     0
    -static-host      123.123.999.999
    -static-port      3464
    -static-user      RPS
    -static-ssl       0
```

```
        -dynamic          0
        -dynamic-root     "C:/Novadigm/IntegrationServer/data/rps/dynamic"
        -dynamic-url      "http://upstream:3466"
        -dynamic-trace    0
        -dynamic-maxsizeMB 0
        -dynamic-makeidx  1
}
#
# END OF CONFIG
#
# DO NOT REMOVE
#
rps::start
```

By default, after the installation:

1 Http front-end protocol is enabled; Stager front-end protocol (for TCP) is
   disabled.

2 Static cache is configured with entries from the install. The -static-root
   entry defines the data store location, and the -static-host, -static-port and
   -static-user entries define the static cache preload operation.

3 Dynamic cache operations are disabled.

Refer to the following topics to configure your `rps.cfg` file:

- RPS.CFG Configuration Parameters Table below. This defines all of the
  configuration parameters available in this release.

- Configuring the Dynamic Cache Parameters on page 61.

- Configuring the Proxy Server in an Internet Proxy (Firewall)
  Environment on page 67.

- Co-Locating a Proxy Server with a Configuration Server on page 68.

RPS.CFG Configuration Parameters Table

Table 3 on page 55 summarizes the parameters in the `rps.cfg` file and their
default values. Parameters are listed in alphabetical order.

The configuration parameters in the `rps.cfg` file fall into three categories:

- **Front-end client communication options: -httpd (http) or -stager
  (TCP/IP)**
  By default, the Proxy Server is configured with the –httpd front end
  enabled. This uses the HTTP front end protocol to communicate with
  Radia clients. When needed, the -stager front-end option is also available

to communicate with Radia 2.x clients using TCP/IP; for details, see Using TCP/IP for Client Communication on page 91.

- **Static cache settings**
  The group of –static* parameters configure the static cache and its TCP connection to the Configuration Server to obtain a preload resolution. Modify the –static* parameters in the `rps.cfg` file to change the values set during the installation or to set additional options, such as tracing.

  > To configure a Proxy Server co-located with the Configuration Server, you need to modify the static cache parameters after installation. See the topic Co-Locating a Proxy Server with a Configuration Server on page 68.

- **Dynamic cache settings**
  The dynamic cache is not configured during the install. You must manually enable it (that is, change –dynamic from 0 to 1 in `rps.cfg`) and specify its options by editing the `rps.cfg` file. For details, see Configuring the Dynamic Cache Parameters on page 61.

Table 3   Configuration file rps.cfg parameters

Parameter	Default	Description
-dynamic	0	When set to 1, the dynamic cache is enabled and an entry in –dynamic-url is required to specify the upstream host. When set to 0, the dynamic cache is disabled, and all –dynamic* parameters are disregarded.
-dynamic-allow-shared-resource-purge	0	When set to 0, safeguards against purging dynamic cache from a Radia Database. Recommend keeping at 0. Set to 1 to remove the safeguard.
-dynamic-defdmn		HTTP upstream URL (Configuration Server's) domain.
-dynamic-defcls		HTTP upstream URL (Configuration Server's) class.

Parameter	Default	Description
-dynamic-freespace	10	A percentage of the -dynamic-maxsizeMB to be left as free disk space after executing a size-based purge. The default is 10 %. When a size-based purge is triggered, the purge will delete files until the cache file size is reduced by this percentage below the maximum size. Used with –dynamic-maxsizeMB.
-dynamic-largefile-mindays	0	Specifies the minimum days a 'large file' should be retained (during a size-based purge). Disabled when set to 0 (default). Used with –dynamic-maxsizeMB and -dynamic-largefile-size.
-dynamic-largefile-size	0	Specifies the size of a 'large file' in bytes. To specify the size in MB, enclose in quotation marks, such as: "250 mb". When not equal to 0, files of this size or greater are excluded from deletion during the first pass of a size-based purge. Disabled when set to 0 (default) Used with –dynamic-maxsizeMB.
-dynamic-maxdays	7	The number of days to keep un-requested resources in the dynamic cache (if a file is regularly requested, it would never be deleted). Defines "aged" files for dynamic cache cleanup. Files that have not been requested for longer than this period are deleted from the cache whenever the Purge Dynamic Cache task is run from the Management Portal, and whenever the dynamic index file is saved. (See *-dynamic-savetod* and *–dynamic-savefreq* for frequency.)
-dynamic-maxsizeMB	0	Maximum size of dynamic cache. 0 indicates no maximum. To set a maximum size, enter the number of MB, such as 200 for 200 MB.

Parameter	Default	Description
-dynamic-makeidx	`1`	When set to 0, turns off making the dynamic cache idx file (no purge). A date-based purge of aged files is performed whenever the index file is saved. (See *-dynamic-maxdays*).
-dynamic-prefix	`"/RESOURCE"`	HTTP upstream URL prefix (append `Domain.Class.OID`).
-dynamic-proxy-host		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Dynamic Cache Upstream Host machine, enter the Internet proxy's hostname or IP address.
-dynamic-proxy-pass		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Dynamic Cache upstream host machine, enter the connecting User's password.
-dynamic-proxy-port		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Dynamic Cache Upstream Host machine, enter the Internet Proxy port number to use.
-dynamic-proxy-user		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Dynamic Cache Upstream Host machine, enter the connecting User name.
-dynamic-root	See description.	The fully-qualified location to store the dynamic cache. For example: `"C:/Novadigm/IntegrationServer/data/rps/dynamic"`
-dynamic-savefreq	`90`	When –dynamic-savetod is disabled (-1), specifies how often (in minutes) to save index file and cleanup cache. The save index file process is skipped when there are no changes to be applied.

Parameter	Default	Description
-dynamic-savetod	`-1`	Specifies time of day (hh:mm:ss) to save dynamic index file and cleanup cache each day. Overrides –dynamic-savefreq. Disabled when set to –1. The save index file process is skipped when there are no changes to be applied.
-dynamic-trace	`0`	When set to 1, information is recorded for diagnostic tracing.
-dynamic-url	`"http://upstream:3466"`	HTTP upstream URL (append `prefix`). Replace `upstream` with the upstream host the Proxy Server makes a connection with for obtaining dynamic cache. The upstream host can be Proxy Server co-located with the Configuration Server, or another Proxy Server. To change the default port (3466) modify the PORT setting in the `httpd.rc` file located in the `/etc` directory where you installed the Proxy Server. Optionally, define multiple upstream hosts for fail-over support. Enclose all entries in one set of quotation marks. Space separate each upstream host. For example: `"http://upsteam1:3466 http://upstream2:3466"`
-httpd	`1`	When set to 1, HTTP front end is enabled, supporting HTTP communication with Radia clients. Do not change.
-httpd-prefix	`"/RESOURCE"`	The URL prefix registered to Integration Server. Do not change.
-httpd-trace	`0`	This parameter is reserved for future use.
-stager	`0`	Staging on or off. When set to 1, the stager (native TCP/IP) front end is enabled. Not recommended for use with Radia 3.x clients. Typically used to transition only from Radia 2.x to Radia 3.x.

Parameter	Default	Description
-stager-addr	`0.0.0.0`	Restricts IP address used by Proxy Server (if using multiple IP addresses on one computer).
-stager-port	`3461`	Listening port used by the stager front end.
-stager-trace	`0`	When set to 1, information is recorded for diagnostic tracing.
-static-host	`xxx.xxx.xxx.xxx`	Agent upstream host (example, Configuration Server). Used for initiating the Preloader connect.
-static-logsize	`1000000`	Specifies the size of the Preloader `connect.log` file in bytes. `Connect.log` is in the Integration Server's `/logs/rps` folder. When the logsize is reached, a backup file (`.BAK`) is created. By default, this file is `connect.bak`. If a backup file already exists, it will be overwritten.
-static-port	`3464`	Agent upstream TCP port. Used during preload.
-static-proxy-host		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Agent upstream host during Preload, enter the Internet proxy's hostname or IP address.
-static-proxy-pass		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Agent upstream host during the Preload, enter the connecting User's password.
-static-proxy-port		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Agent upstream host during the Preload, enter the Internet Proxy port number.
-static-proxy-user		To pass through an Internet proxy machine or a Firewall proxy when connecting to the Agent upstream host during the Preload, enter the connecting User name.

Parameter	Default	Description
-static-root	*See description*	The fully qualified location of the Preloader's data store (IDMDATA). For example: `"C:/Novadigm/IntegrationServer/data /rps/static"`
-static-type	`agent`	When set to agent, the static cache is populated by the Preloader. Set to server to point the cache to a native Configuration Server Database (where the Proxy Server is installed on the same computer as the Configuration Server).
-static-ssl	`0`	When set to 1, indicates the Preloader is to use SSL.
-static-trace	`0`	When set to 1, information is recorded for diagnostic tracing.
-static-user	`RPS`	Agent upstream identity on the Radia database in Policy.User (ZUSERID). Used during preloading. The services connected to this user ID will be preloaded into the static cache on the Proxy Server.

Editing the RPS.CFG File

To edit the RPS.CFG File

Before modifying the `rps.cfg` file, stop the service for the Proxy Server. See Starting and Stopping the Proxy Server for Windows on page 98 or Starting and Stopping the Proxy Server for UNIX on page 44.

1 Make your modifications to the `rps::init` section of the `rps.cfg` file.

2 After making your modifications, restart the service.

Syntax Notes

- When the following parameters are disabled (that is, set to 0), all other options related to the parameter are disregarded:

```
-dynamic
-httpd
-stager
```

For example, if –dynamic is 0, the entire set of –dynamic* parameters are disregarded.

- Use quotation marks to enclose entries that include special characters or spaces. For example, the following –dynamic-root entry uses quotation marks to enclose the fully-qualified location of the dynamic cache store.

```
-dynamic-root "C:/Novadigm/IntegrationServer/data/rps/dynamic"
```

- Use slashes [/] to specify the paths for the –dynamic-root and –static-root parameters in both Windows and UNIX environments. For example:

```
-dynamic-root "C:/Novadigm/IntegrationServer/data/rps/dynamic"
```

Configuring the Dynamic Cache Parameters

When dynamic caching is enabled, client requested resources not available on the Proxy Server's local cache would be requested on demand from a designated upstream host. The resources are downloaded from the upstream host using HTTP, placed in the dynamic cache of the Proxy Server, and provided to the client.

> ⚠️ Dynamic cache use is never recommended for a Proxy Server co-located with a Configuration Server. For details, please see Co-Locating a Proxy Server with a Configuration Server on page 68.

The minimal `rps.cfg` entries required for dynamic caching are simply the -dynamic and -dynamic-url parameters, which enable the dynamic cache and define the upstream URL for obtaining the requested files. (The –dynamic-root location is set during the install.)

```
rps::init {
...
   -dynamic  1
   -dynamic-url  http://<upstream>:3466
...
}
```

The balance of the dynamic cache entries are optional. If absent from the rps::init section, the default values are assumed. Use Table 4 as a guide to configuring the dynamic cache for your environment.

> ▶ See Table 3 on page 55 for complete definitions of each parameter listed in Table 4 on page 62.

Table 4   Dynamic Cache parameter summary

Objective	RMS.CFG Parameters to Use
Specify an upstream host and http port; either a Configuration Server enabled for HTTP downloads, or another Proxy Server. Specify multiple hosts for fail-over support. Required.	-dynamic 1 -dynamic-url "http://upstream:3466" or -dynamic-url "http://upstream:3466 http://upstream2:3466 http://upstreamN:3466"
Specify where to store the dynamic cache on the Proxy Server.	-dynamic-root
Save the index file that is used to track when files were last requested. A save also purges "aged" dynamic cache files not requested in a specific number of days. Schedule the index file save daily or every nn minutes. Note: A scheduled index file save (and thus the data-based purge) is skipped if there are no changes in the index file at that time.	-dynamic-maxdays -dynamic-makeidx -dynamic-savefreq -dynamic-savetod
Set a maximum cache size. If the maximum cache size is exceeded, the least recently used files are deleted until the maximum size is reached. Options: 1 Set a low-water mark (freespace) for a size-based purge. 2 Define 'large files' to be exempt during the first pass of the size-based delete.	-dynamic-freespace -dynamic-maxsizeMB -dynamic-largefile-size -dynamic-largefile-mindays
Revise the safeguard against purging the dynamic cache stored on a shared resource, such as the Configuration Server.	-dynamic-allow-shared-resource-purge

Objective	RMS.CFG Parameters to Use
Set diagnostic tracing.	-dynamic-trace
Provide server, port, user, and password information to pass through an Internet Proxy or Firewall required to connect to the upstream host. Also, enable SSL protocol.	-dynamic-proxy-host -dynamic-proxy-port -dynamic-proxy-user -dynamic-proxy-pass -dynamic-ssl
Override the default prefix.domain, and class OID for obtaining resources from the upstream URL. Not normally needed.	-dynamic-prefix -dynamic-defdmn -dynamic-defcls

Coding Multiple Upstream Hosts for Dynamic Cache Fail-over Support

When dynamic cache is enabled, the upstream host and port are defined in the –dynamic-url parameter of the rps.cfg configuration parameter. Multiple hosts may now be specified in the -dynamic-url parameter, using a blank separated list, to provide for a second, third, or more, upstream host with which to attempt to connect if a connection with the previously listed host fails. If all defined hosts in the list fail, an error will be returned to the Proxy Server user.

For example, if you code the –dynamic-url as:

-dynamic-url   "http://111.111.111.11:3466 http://upstream2:3466 http://upstream3:3466"

the Proxy Server will first attempt to connect to **http://111.111.111.11** on port 3466 to obtain its dynamic cache. If that connection fails, it will attempt to connect to the second upstream host in the list, **http://upstream2** on port 3466. If the second connection fails, it will attempt the third entry, **http://upstream3** on port 3466. If the third connection fails, an error message is generated.

> Use one set of quotation marks to enclose the entire list of upstream hosts. Otherwise, you will receive a syntax error.

The Date-Based Purge of the Dynamic Cache

Every time a file is requested from the Dynamic Cache, the request date is recorded and maintained. If a file has not been requested in a pre-defined maximum number of days, it is deleted whenever a date-based purge occurs. Use the -dynamic-maxdays parameter in `rps.cfg` to specify the maximum number of days to keep unrequested files in the dynamic cache. The default is 7 days.

A date-based purge can be triggered in the following ways:

1   Explicitly from the Management Portal by running the task: Purge Dynamic Cache. See the later topic, Purging the Dynamic Cache using the Management Portal on page 104.

2   Whenever the dynamic cache index file is saved. For details, see the following topic, Saving the Index File.

Saving the Index File

An index file is maintained to keep track of when files in the Dynamic Cache were last used. Every so often this index file is saved to update the "last-used" date in the dynamic cache files. Whenever the index file is saved, a date-based purge of the dynamic cache also takes place to cleanup "aged" files.

The schedule for saving the index file is established using either the -dynamic-savetod or -dynamic-savefreq parameters. Use the -dynamic-savefreq parameter to schedule the index file save process every nn minutes.

> ⚠ For a date-based purge to occur, the index file save process must run. The index file save process is skipped when there are no changes to be applied to it. Therefore, if a dynamic cache has had no resources requested of it or added to it since a previous save, the index file save is skipped and the date-based purge is also skipped.

To use either of these options, first ensure the following dynamic cache parameters are specified:

```
-dynamic              1
-dynamic-makeidx      1
-dynamic-maxdays          <max days to hold unrequested files>
```

- Use the -dynamic-savetod parameter to set a daily schedule for saving the dynamic index and purging the dynamic cache. A -dynamic-savetod entry overrides a -dynamic-savefreq entry. Valid values are –1 (disabled) or *hh:mm:ss*. Seconds may be omitted.

  Example: To set a time-of-day for the purge to occur daily, use the -dynamic-savetod parameter with the time specified in the format hh:mm:ss. For example, the following set of parameters will automatically run a purge of the dynamic cache each day at 3:00 AM to delete files that have not been requested for seven days.

  ```
  -dynamic              1
  -dynamic-makeidx      1
  -dynamic-maxdays      7
  -dynamic-savetod      3:00
  ```

- If -dynamic-savetod is not specified, use the -dynamic-savefreq parameter to specify how often (in minutes) to save the index file and purge the dynamic cache.

  Example: The following set of parameters automatically runs a purge of the dynamic cache every 120 minutes for files unrequested for seven days.

  ```
  -dynamic              1
  -dynamic-makeidx      1
  -dynamic-maxdays      7
  -dynamic-savefreq     120
  ```

Specifying a Size-Based Purge of the Dynamic Cache

Use the following options to automatically have files deleted from the dynamic cache to keep its size in check.

- Automatically run a size-based purge when the maximum size is exceeded.

  The maximum size of the dynamic cache is specified in the -dynamic-maxsizeMB parameter in `rps.cfg`. When this maximum size is exceeded, a size-based purge of the dynamic cache will run automatically, purging the least recently used files until the target size is reached.

  For example, the following entries specify an automatic purge of the least recently used files if the dynamic cache exceeds 300 MB. The purge process deletes the least recently used files until the cache is below the maximum size, or, to the size required by the new -dynamic-freespace parameter (next feature).

```
-dynamic            1
-dynamic-maxsizeMB  300
```

- Define a "freespace" amount to be available after a size-based dynamic cache purge

  When a size-based purge is triggered, you may specify a –dynamic-freespace option to purge the dynamic cache down to a low-water mark (as a percentage of the maximum file size). This allows you to bring the cache size down to a predefined manageable size whenever it reaches the maximum file size. Use this option to eliminate repetitive calls to the purge process if upstream downloads occur frequently.

  To specify the –dynamic-freespace parameter, define a percentage of free space required upon completion of a size-based purge. For example: the following options will trigger a purge of the dynamic cache when it reaches 300 MB, and will purge the least recently used files until the dynamic cache size is more than 10% below 300, or under 270 MB.

```
-dynamic            1
-dynamic-maxsizeMB  300
-dynamic-freespace  10   <percentage below the maxsizeMB after the
```
purge>

- Exempt large files from the first-pass of a size-based purge

  Normally, when a size-based purge takes place, the least recently used files are purged from the dynamic cache first. If large files are purged and then later requested, an undue load could be placed on the network. Use the following two "large file" parameters to allow the purge process to skip over the files that meet these large file criteria during an initial purge.

```
-dynamic-largefile-size    <defines minimum large file size, in
```
bytes>
```
-dynamic-largefile-mindays <defines minimum days large files stay in
```
cache>

  Example: The following entries define large files as "25 MB" and the minimum number of days to remain in the cache as 15. So, the first pass of the purge will exempt files 25 MB or larger that have remained in the cache less than 15 days, even if they meet the normal "least recently used" criteria.

```
-dynamic                    1
-dynamic-maxsizeMB          300
-dynamic-freespace          10
-dynamic-largefile-size     "25 MB"
-dynamic-largefile-mindays  15
```

If, after purging the non-large files, the desired (reduced) cache size is not achieved, then the purge process will be repeated without regard to the large file settings.

Configuring the Proxy Server in an Internet Proxy (Firewall) Environment

The following examples illustrate how to use the set of –static-proxy* and –dynamic-proxy* configuration parameters that provide support for environments with an Internet proxy or firewall server. Use these parameters to define the host, port, user name and passwords needed to pass through the firewall or Internet proxy for a static cache preload or a dynamic cache request.

Examples of TCP Parameters for Static Cache Preloader

The static cache Preloader uses TCP to connect to the Configuration Server for the initial resolution. In the examples below, 443 is defined in order to get through a firewall, which typically opens ports 80 and 443.

- **Simple Connection**

```
-static-host      "<RCS IP Address or hostname">
-static-port      3464
```

- **Connection through Web Proxy**

```
-static-proxy-host      "<Web-Proxy IP address or Hostname>"
-static-proxy-port      8080
-static-host             "<RCS IP Address or Hostname>"
-static-port            443
```

- **Connection through Web Proxy performing Basic User Authentication**

```
-static-proxy-host       "<Web-Proxy IP address or
Hostname>"
-static-proxy-port      8080
-static-proxy-user      "<Web-Proxy Username>"
-static-proxy-pass      "<Web-Proxy Password>"
-static-host            <RCS IP Address or Hostname>
-static-port            443*
```

The dynamic cache uses an HTTP port to connect to a Configuration Server enabled for HTTP-download support, or another Proxy Server. Additional dynamic cache parameters are available to pass through an Internet or Firewall Proxy, with or without basic user authentication. The following examples illustrate how to use these Firewall Proxy parameters.

- **Simple Connection to upstream HTTP host and port**

```
-dynamic          1
-dynamic-url      http://upstream:3466
```

- **Connection through Web Proxy**

```
-dynamic              1
-dynamic-url          http://upstream:3466
-dynamic-proxy-host   "Web-Proxy IP Address or Hostname"
-dynamic-proxy-port   8080
```

- **Connection through Web Proxy performing Basic User Authentication**

```
-dynamic              1
-dynamic-url          http://upstream:3466
-dynamic-proxy-host   "Web-Proxy IP address or Hostname"
-dynamic-proxy-port   8080
-dynamic-proxy-user   "Web-Proxy-username"
-dynamic-proxy-pass   "Web-Proxy-Password"
```

Co-Locating a Proxy Server with a Configuration Server for HTTP Support

The Configuration Server no longer supports native HTTP download capability. When you use a Radia configuration that requires obtaining resources from the Radia database using HTTP, you need to co-locate a Proxy Server on the same machine as the Configuration Server. The co-located Proxy Server is defined with a static type of server, instead of agent. This means it does not store its own static cache, but merely points to that of the Radia Database. It does not need to be preloaded. Configurations that Require a Co-located Proxy Server

You need a Proxy Server co-located with the Configuration Server to provide HTTP download support in the following configurations:

- To support Radia clients configured to obtain their resources from the Radia database using HTTP, instead of TCP/IP.

- To support a subordinate, or downstream, Proxy Server, configured to obtain its dynamic cache from the Radia database.

- To preload a subordinate, or downstream, Proxy Server from the Radia database using HTTP, instead of TCP/IP.

For details on each of these configurations, see When to use a Co-located Proxy Server on page 22.

Once you co-locate a Proxy Server on the Configuration Server, you can use its IP address and port number (generally: 3466) to obtain the Radia database resources using HTTP.

Installing and Configuring a Co-located Proxy Server

Use these procedures to establish a co-located Proxy Server with your Configuration Server in order to service HTTP requests for resources to be downloaded from the Radia Database.

> The ability to service HTTP requests was previously provided through ZHTTPMGR, which is no longer supported. A co-located Proxy Server provides improved performance and scalability over ZHTTPMGR for enabling the Configuration Server for HTTP communications. Steps to remove ZHTTPMGR begin on page 71.

To install and configure a co-located Proxy Server

1 Install the Proxy Server on the same machine as the Configuration Server. Accept the default values throughout the install prompts.

   For details, see Proxy Server Installation topics on page 31.

2 For Windows, stop the Radia Integration Service (which starts automatically after the Radia Proxy Service is installed).

3 Modify the following rps.cfg file parameters using the guidelines given in Table 5 on page 70. The rps.cfg file is located in the /etc folder of the base install directory.

   > See Table 3 on page 55 for a complete listing of rps.cfg parameters.

Table 5   Configuring the RPS.CFG for a Co-located RPS

Parameter	Default	Set to this Value	Description

-static-root	See description	See description	The fully qualified location of the Preloader's data store. Enter the location of the Radia Database. Use slashes (/) as delimiters in the entry for Windows as well as UNIX. By default, this location is:
			
			Windows:
			`C:/Novadigm/ConfigurationServer/DB`
			
			UNIX:
			`/opt/Novadigm/ConfigurationServer/DB`

-static-type	agent	server	Set to server to point the static cache to a native Radia Database.
-dynamic	0	0	Use of the dynamic cache is **NOT RECOMMENDED** for a co-located Proxy Server. For details, see Safeguarding the Radia Database from a Dynamic Cache Purge on page 71.

Here's a sample `rps.cfg` file configured for a Proxy Server co-located with the Configuration Server.

```
rps::init {
    -httpd              1
    -httpd-prefix        "/RESOURCE"
    -static-root        "C:/Novadigm/ConfigurationServer/DB"
    -static-type        server
    -static-trace        0
    -static-host                                   <leave default>
    -static-port        3464
    -static-user        RPS
    -static-ssl         0
    -dynamic            0
    -dynamic-root                                   <leave default>
    -dynamic-url        http://upstream:3466     <leave default>
    -dynamic-trace       0
    -dynamic-maxsizeMB  0
    -dynamic-makeidx    0
}
#
```

```
# END OF CONFIG
#
# DO NOT REMOVE
#
rps::start
```

4   Restart the co-located Proxy Server.

5   If necessary, switch the dynamic cache upstream port number (specified in the -dynamic-url parameter of `rps.cfg`) for any Proxy Servers that were previously pointing to the Configuration Server port as its upstream host. These Proxy Servers should now point to the co-located Proxy Server port (3466) as their upstream port.

Safeguarding the Radia Database from a Dynamic Cache Purge

The recommended approach for configuring a Proxy Server co-located with the Configuration Server is to point the static cache at the Radia Database, set the -static-type to "server", and disable the dynamic cache.

The Proxy Server includes automatic protection to guard against purging files from the Radia Database in the event that a co-located Proxy Server's dynamic cache is enabled. The –dynamic-allow-shared-resource-purge parameter, when set to 0 (default), prevents Radia Database files from being deleted during any dynamic cache purge process. This might occur when a co-located Proxy Server is unusually configured (against recommendation) as follows:

•   dynamic cache is enabled

•   dynamic cache root points to the Radia Database.

Using the default (-dynamic-allow-shared-resource-purge set to 0) protects your Radia Database from any dynamic cache purges.

Setting the parameter to 1 removes the safeguard and allows a purge of dynamic-cache files from the Radia Database.

Removing the Use of ZHTTPMGR for HTTP Support

If you previously used ZHTTPMGR to enable your Configuration Server for HTTP, you should remove that support and replace it with a co-located Proxy Server.

1 Locate the Configuration Server Settings file, EDMPROF. The specific EDMPROF file name and location for Unix and Windows are listed below:

— On UNIX operating systems, it is `.edmprof`, located on the `home` directory of the UNIX user ID that installs, starts, stops, and maintains the Configuration Server.

— On Windows operating systems, it is `edmprof.dat`, located in the `bin` folder of the Configuration Server directory.

If a Configuration Server was enabled for HTTP support through the use of ZHTTPMGR, the EDMPROF file will have the following entries in the MGR_ATTACH_LIST and `MGR_HTTP` sections:

```
[MGR_ATTACH_LIST]
CMD_LINE=(zhttpmgr ADDR=<RCS IP Addr, PORT=8080)
RESTART=YES

[MGR_HTTP]
HTTP_PORT=8080
```

2 In the [MGR_ATTACH_LIST] section, comment out the CMD_LINE entry for zhttpmgr.

3 In the [MGR_HTTP] section, comment out the HTTP_PORT entry.

Configuring the Radia Database for the Static Cache Preload

Each Proxy Server whose static type is set to agent (that is, not a Proxy Server co-located with the Configuration Server) requires a Preload distribution model defined in the Radia Database.

This Preload distribution model defines:

• The resources to be loaded onto the Proxy Server's static cache when the Preload runs.

• Where the resources should be distributed from and under which protocol. By default, the resources are distributed from the host Configuration Server using TCP.

The following additional preload configuration options are available, and discussed in the topic Preloading Deployment Options on page 76:

— Preload using HTTP from a co-located, or another, Proxy Server

— Preload using a Secure Socket Transfer (SSL) protocol

— Preload using multicast from a Configuration Server or another Proxy Server that has a co-located Multicast Server

- For Windows Installer Enabled Applications, the ACP resources to be loaded onto the Proxy Server, but not distributed to the clients. See Preloading Windows Installer Enabled Applications on page 86.

Use the following procedures to create a static cache distribution model in the Radia Database for each Proxy Server to be preloaded. This can be done before or after the Proxy Servers are installed and configured.

Creating a Distribution Model for a Static Cache Preload

To create a distribution model for the Preload of the Static Cache

> This task requires a basic understanding of the Radia Database and how to build a distribution model. These topics are covered in the Building a Radia Database Distribution Model chapter of the *System Explorer Guide*.

1 Create a POLICY.USER instance in the Radia Database that matches the User ID entered during the Proxy Server install, or later specified in the –static-user parameter in the /etc/rps.cfg file. The User ID default is RPS. However, the User ID is often set to: RPS_*machine_name*.

2 Connect the POLICY.USER instance to the set of applications to be preloaded to the Proxy Server's static cache.

> Alternatively, if multiple Proxy Servers require the same set of applications to be preloaded, create a POLICY.WORKGRP instance to define the set of applications to be preloaded, and then connect each POLICY.USER instance to the POLICY.WORKGRP instance. For details, see To configure a Proxy Server Workgroup to preload all database applications on page 74.

For details on how to entitle a POLICY.USER instance to application services, refer to the Implementing Entitlement Policy chapter of the *Application Manager Guide*.

To configure a Proxy Server Workgroup to preload all database applications

The following steps serve as one example of defining the applications to preload on a Proxy Server. This example preloads the Proxy Server with all available applications using a POLICY.WORKGRP instance. Your preload should specify the set of applications normally required by the clients assigned to that Proxy Server.

1   Use System Explorer to create a POLICY.WORKGRP instance called RADIA_PROXY_PRELOAD_APPS.

    a   From the **Start** menu, select **Programs → Radia Administrator → Workstation → Radia System Explorer**.

    b   In the tree-view, double-click on the following icons to open them: **PRIMARY → POLICY →WORKGRP**.

    c   Right-click **WORKGRP** and select **New Instance** from the pop-up menu.

        The Create Instance dialog box appears, allowing you to type a display name and an instance name. The display name defaults to the instance name if left blank.

    d   Tab to the second text entry field below **Create a new Workgroups (WORKGRP) instance named:**.

    e   Type a name for the instance, for example: **RADIA_PROXY_PRELOAD_APPS**, and click **OK**.

        The RADIA_ prefix of this instance is now displayed in the tree view and the full name of the instance is displayed in the list view.

2   Edit the instance to manually add an _ALWAYS Offers field value to preload all applications onto the Proxy Server. Details follow:

    a   Click on the **Workgroups (WORKGRP)** class entry in the tree view.

    b   Double-click on the **Radia_Proxy_Preload_Apps** entry in the list view.

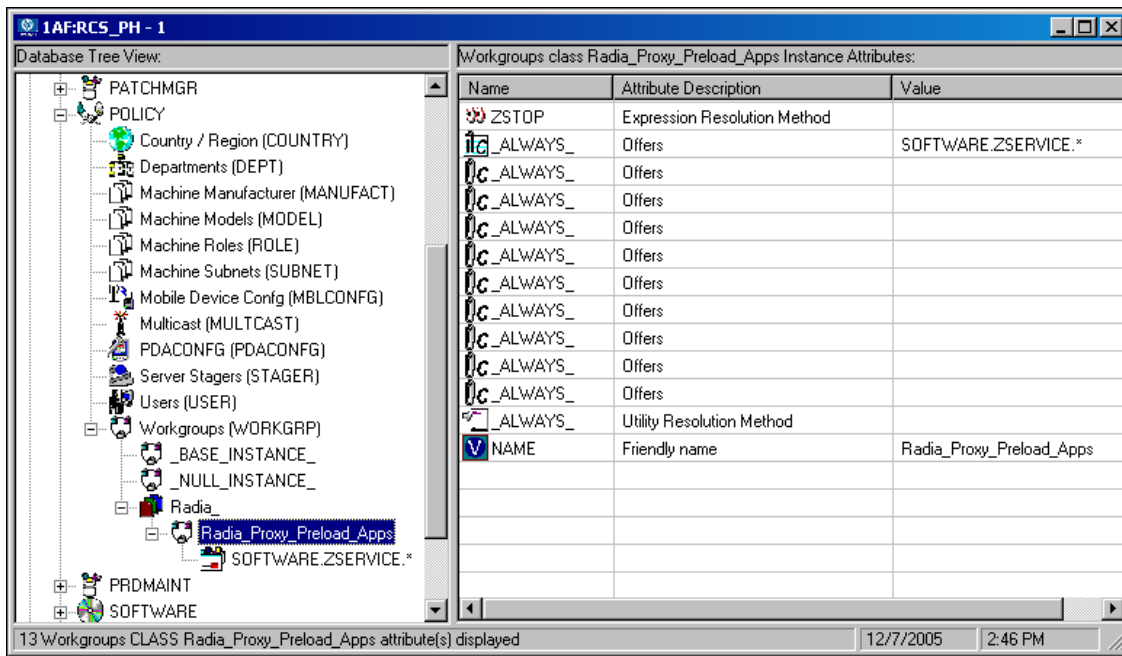   c   Double-click on the top _ALWAYS attribute in the list view.

    d   In the edit instance dialog box, type the following Offers value:

        SOFTWARE.ZSERVICE.*

    e   Click **OK**.

The following figure shows the _ALWAYS entry added to preload all applications.

1AF:RCS_PH - 1

Database Tree View:

- PATCHMGR
- POLICY
  - Country / Region (COUNTRY)
  - Departments (DEPT)
  - Machine Manufacturer (MANUFACT)
  - Machine Models (MODEL)
  - Machine Roles (ROLE)
  - Machine Subnets (SUBNET)
  - Mobile Device Confg (MBLCONFG)
  - Multicast (MULTCAST)
  - PDACONFG (PDACONFG)
  - Server Stagers (STAGER)
  - Users (USER)
  - Workgroups (WORKGRP)
    - _BASE_INSTANCE_
    - _NULL_INSTANCE_
    - Radia_
      - Radia_Proxy_Preload_Apps
        - SOFTWARE.ZSERVICE.*
- PRDMAINT
- SOFTWARE

Workgroups class Radia_Proxy_Preload_Apps Instance Attributes:

Name	Attribute Description	Value
ZSTOP	Expression Resolution Method	
ALWAYS	Offers	SOFTWARE.ZSERVICE.*
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Offers	
ALWAYS	Utility Resolution Method	
NAME	Friendly name	Radia_Proxy_Preload_Apps

13 Workgroups CLASS Radia_Proxy_Preload_Apps attribute(s) displayed   12/7/2005   2:46 PM

3   Connect the POLICY.USER instance for the Proxy Server(s) with this POLICY.WORKGRP instance. Details on making this connection follow.

➤   Refer to the Implementing Entitlement Policy chapter of the *Application Manager Guide* for comprehensive information on how to assign users to groups.

To connect a Policy User RPS instance to a Policy Workgroup instance

1   In the System Explorer tree view, navigate to the PRIMARY.POLICY.USER class.

2   Double-click **Users** to expand the class instances.

3   Right-click on the **RPS** user instance that is to be connected to the Workgroup instance, and from the pop-menu that appears, click **Show Connections**.

4   In the resulting POLICY.CONNECTIONS dialog box, double-click the Class listing for **Workgroups**.

Now, Radia_Proxy_Preload_Apps should be in the System Explorer list view of all Workgroup instances, and the Policy.User class should be open in the tree view.

5   Starting from the list view, use your mouse to drag the icon for the Radia_Proxy_Preload_Apps workgroup instance over the selected RPS user instance in the tree view.

> ➤   Your mouse icon changes to a paper-clip when you place it on the selected User.RPS instance. This indicates that the connection is allowed.

6   Complete the connection by dropping the Radia_Proxy_Preload_Apps icon (by releasing the left mouse button) on the RPS user instance.

The Select Connection dialog opens, indicating a connection will be made between the selected User.RPS instance and the Workgroups.Radia_Proxy_Preload_Apps instance.

7   Click **Copy** on the Select Connection dialog box to complete the _ALWAYS connection.

8   Click **Yes** to confirm the connection.

The User.RPS instance is connected to the Workgroups.Radia_Proxy_Preload_Apps instance.

9   To test the preload, open a web browser window and type the following command:

http://_proxy_machine_name_**:3466/proc/rps/sync**

For more information on using this command and where to check for the preloaded data files, see Testing the Proxy Server Preload on page 114.

To run the Preload from the Management Portal, see Preloading the Proxy Server on page 102.

Preloading Deployment Options

A Proxy Server's preload resolution is always performed on the host Configuration Server. However, there are several ways to configure the actual deployment of the static cache resources in a Radia environment. These deployment options are set the same way that clients are configured to obtain their resources from the Proxy Server. For HTTP or HTTPS, this means associating a pre-configured STAGER instance with the Proxy Server's User instance in the Radia database. For multicast, this means associating a pre-configured MULTCAST instance with a Proxy Server User or Workgroup instance in the Radia database.

The configuration options for preloading the Proxy Server Static Cache include:

- Preloading Using HTTP
- Preloading Using SSL (TCPS or HTTPS)
- Preloading Using Multicast

These configuration options are discussed in the following topics.

Preloading Using HTTP

By default, a Proxy Server's static cache is preloaded from the resources on the host Configuration Server using TCP. Use the following configuration steps to preload the static cache from the HTTP port of a co-located Proxy Server or another, pre-loaded, Proxy Server.

To change the deployment source or protocol for a preload to use HTTP

1 Using the System Explorer on the Configuration Server, create a STAGER instance to be used to preload the Proxy Server from another Proxy Server, or to preload using the HTTP port of a co-located Proxy Server.

2 Set the **ZPCPROTL** and **ZDATAURL** attributes for the Stager instance to the values given in Table 6 below.

Table 6 shows the Stager instance attributes that are needed to preload a Proxy from a co-located or remote Proxy Server using HTTP.

Table 6   Stager Instance Attributes

Stager Attribute	Set to this Value
ZPCPROTL	HTTP
ZDATAURL	`http://<Your RPS IP Addr or Hostname>:3466`
	Replace `<Your RPS IP Addr or Hostname>` with the IP address or Hostname of the Proxy Server to be used to obtain the static cache Preload files, in lieu of the Configuration Server.
	For a co-located Proxy Server, this will be the same address as the Configuration Server.

The following Figure shows the STAGER instance STAGER_PROXY_01 configured to preload using HTTP.

Figure 9   STAGER_PROXY_01 instance configured for a preload using HTTP
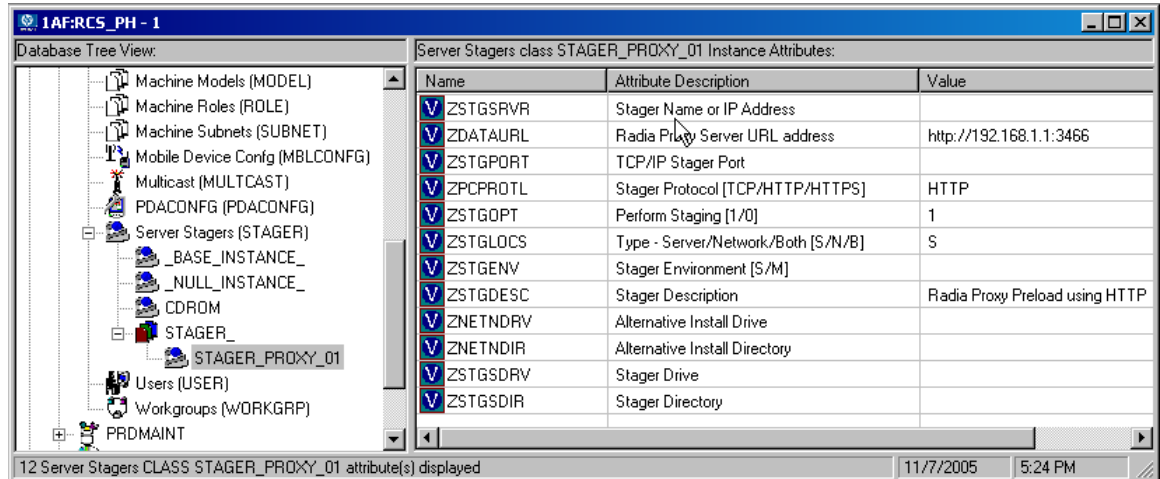
3   Locate the POLICY.USER instance for the Proxy Server that is to receive its preload using HTTP. This is usually named `RPS_machine_name`.

4   Associate the POLICY.USER `RPS_machine_name` instance with the POLICY.STAGER instance configured for a preload using HTTP.

When a Proxy Server connects to the Configuration Server for its Preload, its Preload distribution is resolved using the entries defined in its POLICY.USER instance. The connection to the STAGER_PROXY_01 instance means the Preload is deployed using HTTP from the Proxy Server URL specified in the STAGER instance.

Preloading Using SSL (TCPS or HTTPS)

The preload for a Proxy Server static cache can be obtained over a Secure Socket Layer (SSL) from a Configuration Server (this uses a secure TCP protocol, or TCPS) or from another Proxy Server (this uses a secure HTTP protocol, or HTTPS). These capabilities are provided by the features of the HP OpenView Adapter for SSL using Radia (Adapter for SSL).

Specific tasks related to using the Adapter for SSL to secure your Proxy Server preloads follow.

To Preload using TCPS

Use these steps to enable Proxy Servers currently receiving their preloads from a Configuration Server using TCP to now use TCP over SSL (TCPS).

1 Install the Adapter for SSL on the Radia Configuration Server that is downloading the resources for the preload. During the install, make sure to select the option:

— **Enable secure RCS TCP task (Configuration Server TCP task)**

▶ Refer to the *Adapter for SSL Installation and Configuration Guide (Adapter for SSL Guide)* for complete installation instructions.

2 Also complete the tasks as described in the *Adapter for SSL Guide* for:

— Locating the required Certificate Authority files for SSL support.

— Verifying the Configuration Server is configured for TCPS support.

3 On the Proxy Server machine receiving the preload, use a text editor to modify the `rps.cfg` file located in the `IntegrationServer\etc` directory. Establish the following settings:

```
rps::init {

    -stager          0

    -static-ssl      1
    -static-port     <SSL port>
```

Where `<SSL port>` is the SSL port number on the secure Configuration Server. The default SSL port number is 443.

4 To apply these new `rps.cfg` file settings, restart the Radia Integration Server service for the Proxy Server.

5 Execute the Proxy Preload using either of the following methods:

— To manually run the proxy preload, open a web browser window and type the following command:

http://*proxy_machine_name***:3466/proc/rps/sync**

For more information on using this command and where to check for the preloaded data files, see Testing the Proxy Server Preload on page 114.

— To run the Preload from the Management Portal, see Preloading the Proxy Server on page 102.

To verify the preload used a secure TCP protocol (TCPS), review the entries in the Proxy Server's preload log, `connect.log`. This log is located in the `IntegrationServer\logs\rps` directory. Look for the following entries:

```
Verified Certificate
[C:\Novadigm\INTEGR~2\bin\rps\CACertificates\cacert.pem]

SSL Manager = <Configuration Server host or IP address>

SSL Port = 443
```

To Preload using HTTPS

Use these steps to enable Proxy Servers currently receiving their preloads
from the HTTP port of another Proxy Server to now receive them using HTTP
over SSL (HTTPS). The same steps apply whether or not the Proxy Server
sending the preload resources is co-located with a Configuration Server or
not.

⚠️ See earlier topics in this guide for tasks related to:

- Co-Locating a Proxy Server with a Configuration Server on
  page 68.

- Preloading Using HTTP on page 77.

1   Install the Adapter for SSL on the Proxy Server that is the upstream
    source of another Proxy Server's preload using HTTP.

    — Refer to the *Adapter for SSL Guide* for full details on how to install
      the Adapter for SSL.

    — During the Adapter for SSL install, choose **Radia Infrastructure
      Server** from the Component Selection window, and then select the
      option **Enable Secure Radia Proxy Server Preload**.

2   Also complete the tasks as described in the *Adapter for SSL Guide* for:

    — Locating the required Certificate Authority files for SSL support.

    — Verifying the Integration Server (for the Proxy Server) is configured
      for HTTPS support.

3   On a Proxy Server machine receiving the preload, use a text editor to
    modify the `rps.cfg` file located in the `IntegrationServer\etc`
    directory. Include a `-static-ssl` parameter set it to `1,` and make sure
    the –stager parameter is set to 0.

    ```
    rps::init {

        -stager          0
        -static-ssl      1
        -static-port     <SSL port>
    ```

Where *<SSL port>* is the SSL port number on the secured Proxy Server established in Step 1 on page 80. The default SSL port number is 443.

4 To apply the new `rps.cfg` file settings, restart the Radia Integration Server service for the Proxy Server receiving the preload.

5 Establish a POLICY.STAGER instance as discussed in Preloading Using HTTP on page 77; however, use the values for ZPCPROTL and ZDATAURL given in Table 7 below. This table shows the Stager instance attributes needed to preload a Proxy Server using HTTPS.

Table 7   Stager Instance Attributes

Stager Attribute	Set to this Value
ZPCPROTL	HTTPS
ZDATAURL	`https://<RPS Source IP address>:<SSL_port>` where <SSL port> is the SSL port number on the secured Proxy Server (see Step 1 on page 80). The default SSL port number is 443.

6 For each Proxy Server to be preloaded using HTTPS, associate its POLICY.USER instance with this POLICY.STAGER instance.

7 Execute the Proxy Preload as usual.

Preloading Using Multicast

A set of proxy servers can obtain their static cache preloads from an HP OpenView Multicast Server using Radia (Multicast Server). In this configuration, the Proxy Servers receiving their preload resources are configured the same way that Radia clients are configured to receive resources from a multicast server.

The Proxy Server preloads can also receive their resources using the dynamic windows feature of a multicast server, as discussed on page 85.

To preload Proxy Servers using Multicast

> ⚠️ HP recommends Administrators become thoroughly familiar with the operation of the Multicast Server before using it for a Proxy Server Preload. The Multicast Server is fully documented in the *HP OpenView Multicast Server using Radia Installation and Configuration Guide (Multicast Server Guide).*

1 For each Proxy Server to participate in the preload, use System Explorer to create a POLICY.USER instance in the Radia Database that matches the User ID entered during the Proxy Server install, or later specified in the –static-user parameter in the /etc/rps.cfg file. The User ID default is RPS. However, the User ID is often set to: RPS_machine_name.

2 Using System Explorer, create a POLICY.WORKGROUP instance for the Proxy Servers to specify their distribution model for the Preload of the Static Cache (as discussed on page 73). The procedure: To configure a Proxy Server Workgroup to preload all database applications, shows an example using the friendly name **Radia Proxy Preload Apps**.

3 Install and configure a Multicast Server. The Multicast Server can be co-located with the Configuration Server or co-located with another Proxy Server.

   For detailed Multicast installation and configuration information, refer to the *Multicast Server Guide.*

4 Using System Explorer, also create a multicast policy instance just for Proxy Preloads. For example, follow these steps to create an instance named **POLICY.MULTCAST.MCPRELOAD**.

5 Edit the MCPRELOAD instance attribute values.

   — Set ALTADDRM to the IP address of where the Multicast Server is installed.

— Set CGMTDATE and CGMTTIME to specify a multicast session start date and time, in Greenwich Mean Time (GMT), so that the session will be active when the proxy preload command is to be executed.

> The hours for the collection start time, CGMTTIME, are specified using a 24-hour (military) format.

— Also refer to the Multicast Server Guide for detailed information on the MULTCAST instance attributes and how to set their values.

The following figure illustrates an MCPRELOAD instance with CGMTDATE and CGMTTIME entries that will initiate a multicast session for the Proxy Preload on November 4, 2005 at 2 p.m. GMT.

> The Proxy Preload command must be issued at the same time or shortly after the multicast collection session starts.


As specified in the previous figure, the collection phase (CWINDOW) will last 45 minutes, at which time the Multicast Server stops the collection process.

There will be a 2-minute delay (MDELAY) before the transmission begins. At the designated multicast start-time (CGMTTIME + CWINDOW + MDELAY = 14:47:00 GMT), the Multicast Server (specified by ALTADDRM) starts multicasting the files that are on the list is compiled from the various eligible clients.

▶ Refer to the chapter Configuring a Multicast Server Environment in the *Multicast Server Guide* for additional information.

6 Connect the Workgroup Policy instance for the Radia Proxy Preload Application to the POLICY.MULTCAST.MCPRELOAD instance as shown in the following figure. For details on making this connection, refer to the topics in the *Multicast Server Guide*.
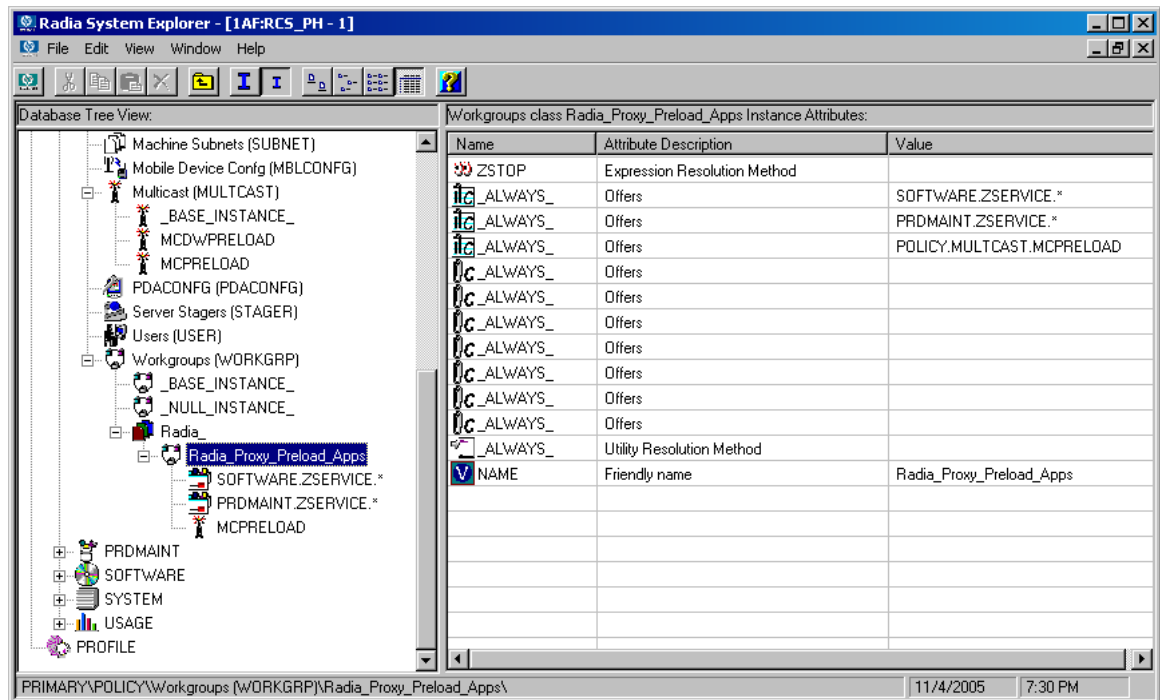
7 Issue the Proxy Preload command when the CGMTTIME and CGMTDATE apply.

▶ For information on viewing the results of the multicast session, see Session Logs for a Preload Using Multicast on page 85.

Preloading using Multicast with Dynamic Windows

The Multicast Server offers the ability to configure dynamic (collection and transmission) windows. This means for a group of proxy servers being preloaded, multiple multicast distributions can be active concurrently.

This topic gives three sample configurations for using the multicast dynamic windows feature to preload proxy servers. Only three MULTCAST instance attributes are used to implement dynamic windows: ADDRESS, CGMTDATE, and CGMTTIME.

⚠️ Before using this feature, please review the Multicast Dynamic Windows topic in the *Multicast Server Guide*.

Preload using Multicast with Dynamic Windows Example

The following MULTCAST instance values can be used to initiate a multicast session (using up to 22 dynamic windows) that will start at 05:01:00 GMT *each day*. The empty value of CGMTDATE is used to specify a multicast session that will be run once a day.

⚠️ A Proxy Server's preload must also be scheduled for this same time each day for it to participate in the multicast session.

```
ADDRESS    = 235.0.0.000-021
CGMTDATE   = empty
CGMTTIME   = 05:01:00


CWINDOW    = 45
MDELAY     =  2
ALTADDRM   = <multicast_server_IP>
```

During this daily multicast session, the multicast server can issue IP addresses from 235.0.0.000 through 235.0.0.021. The addresses in this range will be used sequentially to accommodate overlapping windows for a group. When a given multicast session completes its transmission, the IP address is removed from the in-use list and is available once again.

The CWINDOW value of 45 specifies a collection window of 45 minutes.

Session Logs for a Preload Using Multicast

On a Proxy Server receiving a Preload from a Multicast Server, the preload session logs are found in the directory:

```
<IntegrationServer>\logs\rps
```

The following logs trace the activity of the collection, requests, and received items in a multicast session:

```
connect.log
radreqst.log
radcrecv.log
```

> The `connect.log` for a Proxy Server Preload includes the collection information found in the `radclect.log` of a Radia client multicast session.

For details on the contents of these multicast session logs, refer to the Troubleshooting topic in the *Multicast Server Guide*.

Preloading Windows Installer Enabled Applications

There are two packages associated with each Windows Installer enabled application, the MSI package that includes the list of MSI Features, and the Administrator Control Point (ACP) package.

> An Administrative Control Point (ACP) is also known as a Windows Installer Administrative Installation Point (AIP).

The ACP package instance contains all of the file resources that are required by a Windows Installer product. If you are using Proxy Servers or Staging Servers, the ACP package needs to be deployed to these servers but not installed on the client computers. Only the MSI package needs to be installed on the client computers. There are two models for doing this.

Model 1: Create one Application (ZSERVICE) that includes a ZSTOP expression on the ACP Package

Create one Application (ZSERVICE) instance for both the MSI and ACP packages. Include a ZSTOP expression on the ACP package to prevent the client computers from downloading it. Staging Servers and Proxy Servers ignore expressions, and will download the ACP package.

> This model is considered the best practice and is applied automatically when you publish Windows Installer Applications using the **Advanced** publishing mode of the Administrative Workstation using Radia Publisher (Publisher) and apply the default **Admin Install Point (AIP)** options. For more information on publishing Windows Installer Enabled applications, refer to the *Administrator Workstation using Radia Publisher Guide*.

Use the procedure below if you need to apply the ZSTOP expression to an ACP package manually.

To enable an ACP package for preloading only

1 Use the System Explorer to navigate to the ACP package that you want to preload.

2 Right-click on the ACP package and choose **Edit Instance** from the shortcut menu.

3 Click **ZSTOP000 Stop Resolution (000)** and type a value of 1.

   Typing a value of 1 will prevent client computers from resolving the ACP package, but will allow the Proxy Server or Staging Server to preload the ACP package.
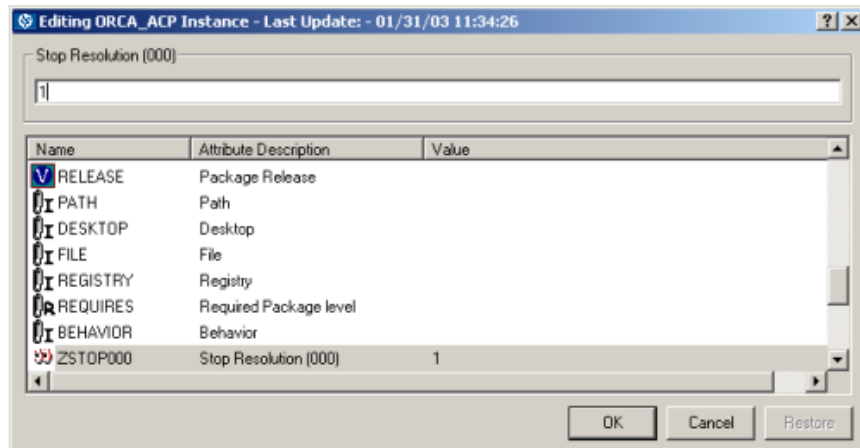
4 Click **OK**.

5 Click **Yes** to confirm the change.

6 Connect the ACP package and the MSI package to the same service.

Model 2: Create separate Applications (ZSERVICEs) for MSI Packages and ACP Packages

An alternative model is to create separate Application (ZSERVICE) instances for the MSI Package and the ACP Package. Deploy the MSI Package to the client computers and the ACP Package to the Staging Server and Proxy Servers.

⚠ HP does *not* recommend naming ACP packages with a common suffix for the purpose of connecting *all* of the ACP packages to a single service and deploying this service to your Staging Servers and Proxy Servers. This method presents unnecessary overload on your infrastructure.

Configuring Radia Clients for Use with the Proxy Server

The Proxy Server functions as an extension of the Configuration Server. When used, the Proxy Server becomes the primary repository for Radia client data. Once a Radia client determines which resources it needs to achieve its 'desired state', it can request the resources from the Proxy Server.

After installing a Proxy Server, configure the desired set of Radia clients to request their needed resources from the Proxy Server instead of the Configuration Server. This is done in the POLICY Domain of the Configuration Server's database.

Using HTTP for Client Communication

When the Proxy Server front-end protocol is HTTP, use these steps to configure your clients in the Radia database. The HTTP front-end is enabled by default in the `rps.cfg` file (that is: -httpd is set to 1).

> Although client requests can be made using HTTP or TCP/IP, HTTP is the recommended protocol for communication with the Proxy Server. To use TCP/IP, see Using TCP/IP for Client Communication on page 91.

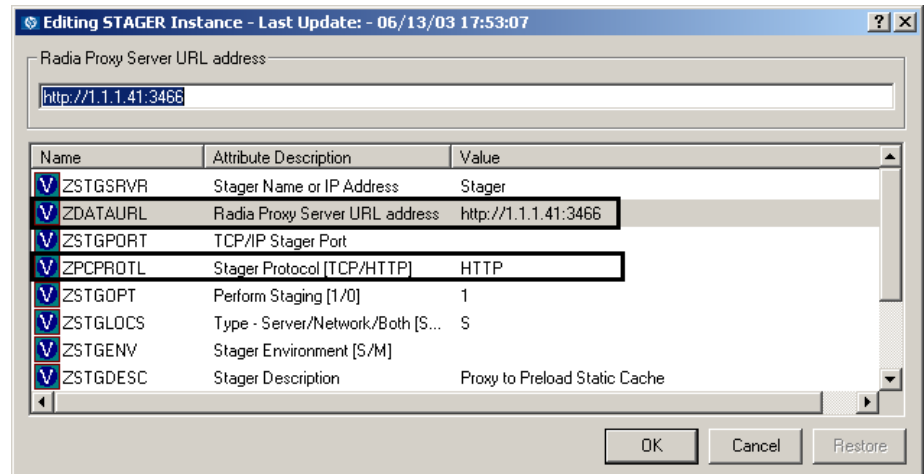### To configure Radia clients for a Proxy Server using HTTP

1 Use the System Explorer to create and edit a POLICY.STAGER instance to define the Proxy Server as the deployment source for subscribers.

2 Update the following STAGER class attributes to specify the Proxy Server information, as follows.

— ZPCPROTL — Set the value of ZPCPROTL to indicate HTTP is the protocol the clients are to use for communicating with the Proxy Server.

— ZDATAURL — When using HTTP, set the ZDATAURL field to store the URL and port for the Proxy Server. Storing the Proxy Server URL in the Configuration Server Database allows the Proxy Server IP address or Hostname to be centrally controlled. Anytime this IP address or Hostname changes, the ZDATAURL field must be updated.

Thus, the recommended settings for enabling clients to request data from a Proxy Server using HTTP are:

```
ZPCPROTL = HTTP
```

```
ZDATAURL = http://<Your RPS IP Address or Hostname>:3466
```

Replace *Your RPS IP Address or Hostname* with the IP address or Hostname of your Proxy Server.

3   Connect the configured STAGER instance to the POLICY instances that represent the set of Radia clients that will use this Proxy Server. This is usually one or more workgroups or departments.

To connect a STAGER instance to a Workgroups instance

In the following example, we connect the Default Workgroup to a pre-configured STAGER instance so that *all* subscribers will receive applications from the Proxy Server.

1   Open the System Explorer, and navigate to the PRIMARY.POLICY.STAGER class.

2   Double-click the **Server Stagers (STAGER)** to see the STAGER instances.

3   Double-click the **Workgroups (WORKGRP)** to see the WORKGRP instances.

4   Connect the predefined STAGER instance to the appropriate WORKGRP instance (Default, in our example).

In this example, all clients that are members of the Default Workgroup will request their resources from the Proxy Server named in the STAGER instance Proxy_01 using HTTP communication.
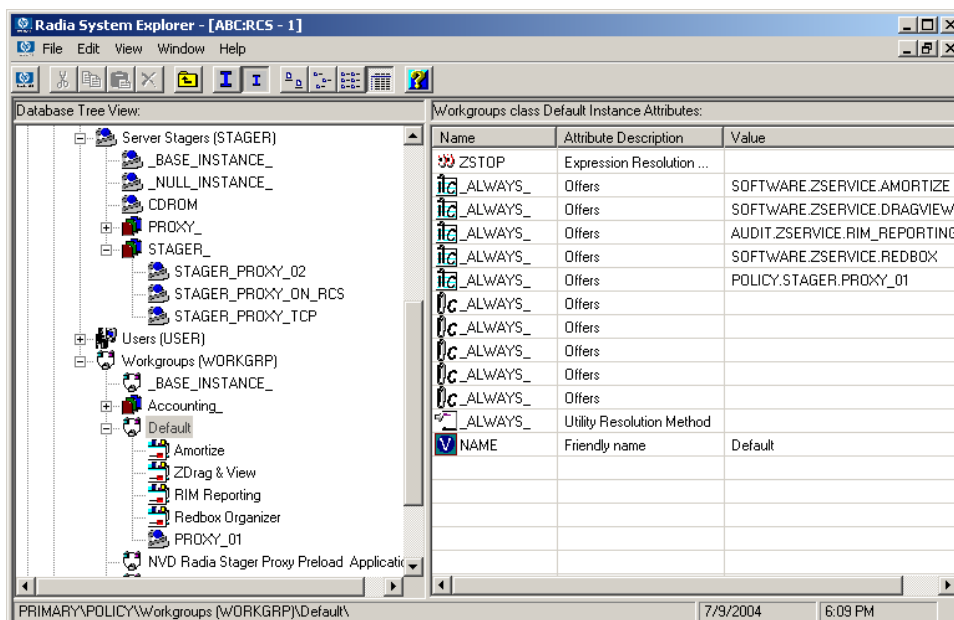
Using TCP/IP for Client Communication

➤ HTTP is the recommended protocol for client communication with the Proxy Server. This topic discusses using the alternative TCP/IP protocol, when necessary.

Under certain circumstances, you may need to use the TCP/IP protocol to communicate with your clients. One example is when migrating from Radia 2.x to Radia 3.x Clients.

- To have the Proxy Server communicate with clients using TCP/IP, you must enable the -stager front-end in the Proxy Server Configuration file, `rps.cfg`. Set –stager to 1. By default, the –stager-port listening port is set to 3461. For details, refer to the –stager* parameters in Table 3 on page 55.

- To have the Radia clients communicate with this Proxy Server using TCP/IP, create a POLICY.STAGER instance in the Radia Database that sets the following definitions for the STAGER class attributes:

  ```
  ZSTGSRVR = <Proxy Server IP Address or Hostname>
  ```

```
ZDATAURL = leave blank
ZSTGPORT = 3461 (the default Proxy Server TCP/IP Port)
ZPCPROTL = TCP
```

- If you are currently using TCP/IP to communicate between Radia clients and Staging Servers, and would like to continue using TCP/IP with the Proxy Server, you need only change the IP address and port number of the Staging Server to the IP address and port number of the Proxy Server within Policy class. The policy instances will be unaffected.

  — Update the ZSTGSRVR attribute with the IP address of your Proxy Server.

  — Update the ZSTGPORT attribute with the port number of your Proxy Server for TCP, normally 3461.

Figure 10 is a view of the System Explorer screen showing the Stager instance attributes for Proxy Server serving clients using TCP.

Figure 10   STAGER instance attributes in System Explorer
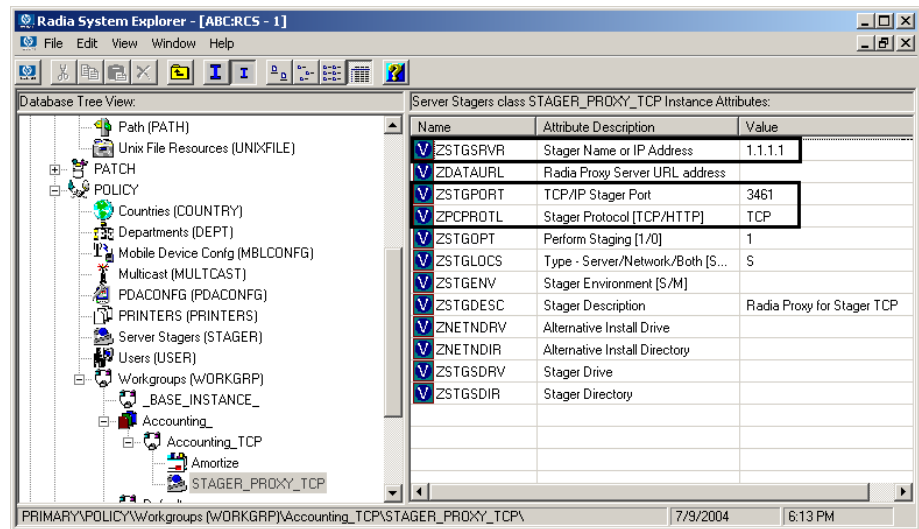
For more information about using the existing Radia Staging Requestor or modifying Stager instances, refer to the *Staging Server Guide*.

Additional Configuration Topics

Enabling the Configuration Server for HTTP Support

The Configuration Server no longer supports downloading resources from the Radia Database using the HTTP protocol. Previously, this was provided through the ZHTTPMGR method. To obtain database resources from the Radia Database using HTTP, use a Proxy Server co-located with the Configuration Server.

For details, see Co-Locating a Proxy Server with a Configuration Server on page 68.

Summary

- You can install the Proxy Server locally or remotely.

- The Proxy Server component must be installed separately on each server to be used as a Proxy Server.

- The Integration Server is a foundation component of the Proxy Server. Start or stop the Radia Integration Service (httpd) to start or stop the Proxy Server.

- Review the `rps.cfg` in the `/etc` folder of the Proxy Server install directory after an installation. Modify the parameters to set options, such as enabling and configuring the dynamic cache.

- The Configuration Server no longer supports the HTTP protocol. When you need to obtain resources from the Radia Database using HTTP, install a Proxy Server co-located with your Configuration Server. The co-located Proxy Server and port become the source for downloading resources from the Radia database using HTTP.

- Create a preload distribution model in the Radia Database for each Proxy Server in your infrastructure installed remotely from the Configuration Server.

- The Radia clients must be configured to communicate with the Proxy Server. The default and recommended protocol is HTTP. TCP/IP is also supported.

3 Proxy Server Administration

At the end of this chapter, you will:

- Know how to start and stop the Proxy Server.

- Know how to preload the Proxy Server from the Management Portal.

- Know how to purge the dynamic cache from the Management Portal.

- Know how the Proxy Server can be used in conjunction with the Management Portal to deploy Radia client installs.

- Know which logs to use to troubleshoot a Proxy Server.

There may be special circumstances involved in your Proxy Server implementation. This chapter explores these possible situations:

- Starting and stopping the Proxy Server.

- Populating the Proxy Server before any clients try to install software.

# Starting and Stopping the Proxy Server for Windows

Since the Proxy Server is a loaded module under the control of the Integration Server, in order to start and stop the Proxy Server, start and stop the Integration Server service on your computer. To do so, use the Service Control Manager window, as you would with any other Windows services. The Integration Server service is started automatically after the Proxy Server is installed on Windows platforms.

On UNIX platforms, the Integration Server service is not started automatically after installation; it must be started manually after the installation program is finished. See Starting and Stopping the Proxy Server for UNIX on page 44 for instructions.

For this example, we are using Windows 2000.

To start the Proxy Server service

1 From your Windows Desktop, click **Start** → **Settings** → **Control Panel** → **Administrative Tools** → **Services**.

   or

   From a Windows XP or later Desktop, click **Start** → **Control Panel** → **Administrative Tools** → **Services**.

2 The Service Control Manager window opens.
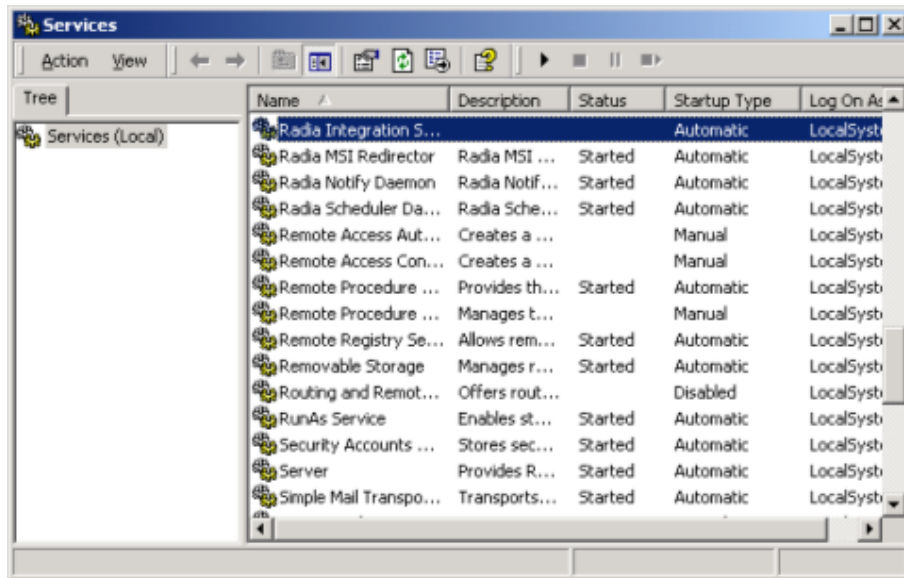
3   Right-click on the service **Radia Integration Server (httpd)** and select
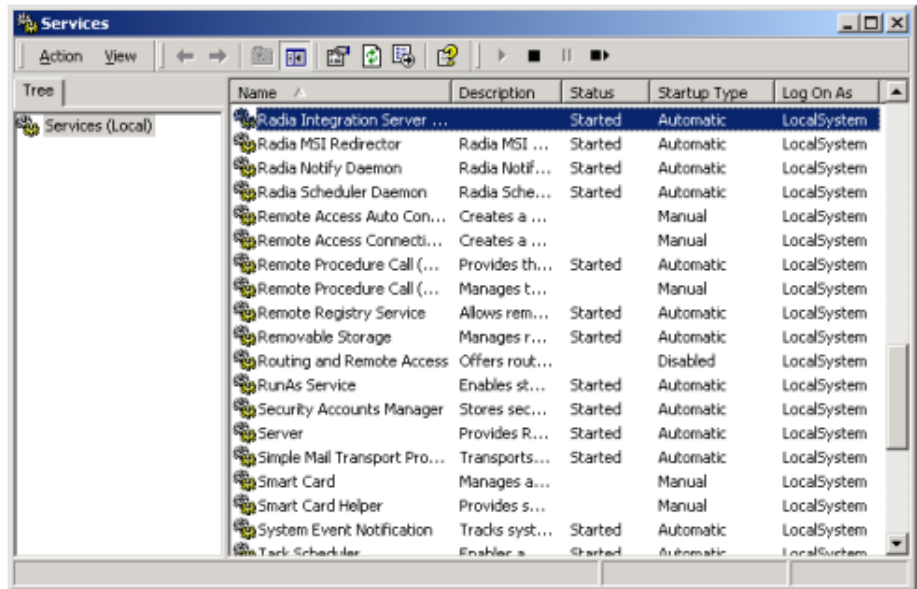   **Start** from the shortcut menu that opens.
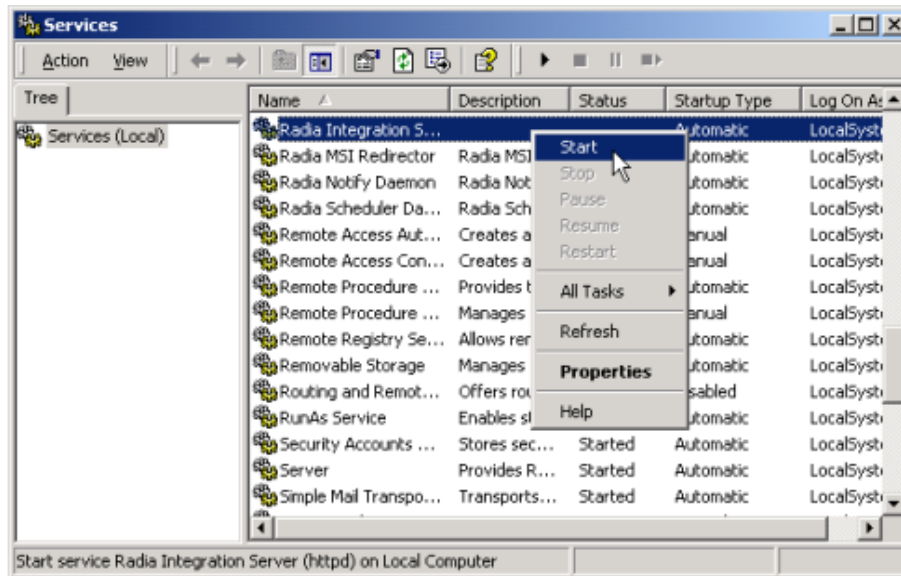
The Proxy Server is now running on your computer.

To stop the Proxy Server service

> You can also use the Management Portal to start and stop the Proxy Server. Refer to the Management Portal Guide for detailed information. There are separate guides for Windows and UNIX.

1 From your Windows desktop, click **Start** → **Programs** → **Administrative Tools** → **Services**.

2 The Service Control Manager window opens.

3 Right-click on the service **Radia Integration Server (httpd)** and then select **Stop** from the shortcut menu that opens.
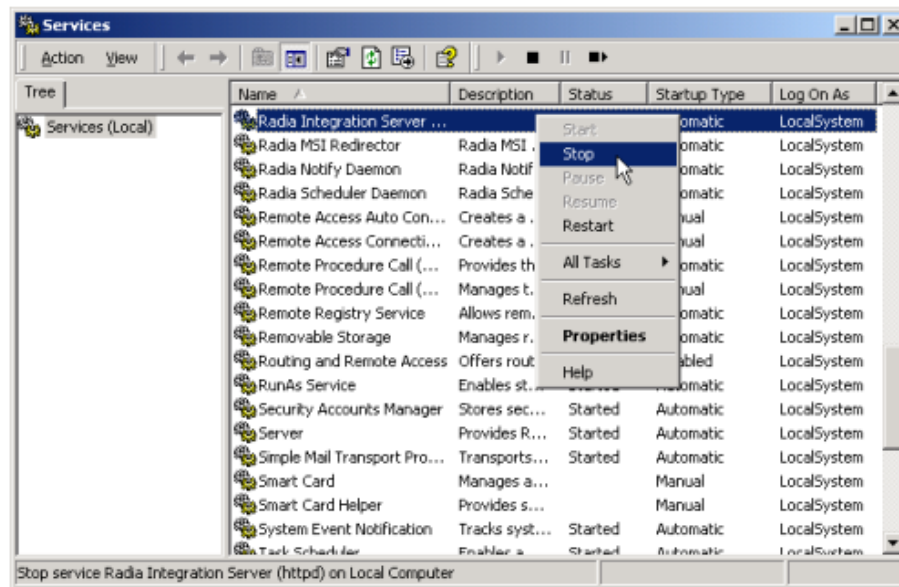
The Proxy Server has been stopped.

Management Portal and the Proxy Server

You can use the Management Portal to remotely install as well as manage your Proxy Servers. The Proxy Server-related tasks available through the Management Portal are summarized below. For complete information, also refer to the *Management Portal Guide for Windows* or the *Management Portal Guide for UNIX*.

- **Install Proxy Server**
  Permits remote installation of a Proxy Server using a default or a pre-configured `rps.cfg` file. For details, see Installing the Proxy Server to a Remote Location on page 45.

- **Synchronize Proxy Server (Preload)**
  Preloads the selected Proxy Servers with services defined in the Radia Database. Permits an immediate or scheduled preload for one or all Proxy Servers in the Management Portal Zones. The status of a Synchronize Proxy Server job will report the following events:

  — Submission of the job request to the Proxy Server.

— Start of session between the Proxy Server and Configuration Server (for preloading the files to the Proxy Server static cache).

— When the preload is complete.

For details, see Preloading the Proxy Server below.

- **Purge Proxy Server Dynamic Cache**
  Every time a file is requested, the request date is recorded and maintained. If a file has not been requested in a pre-defined maximum number of days, it is deleted from the Dynamic Cache. This purging of aged files can be initiated through the Management Portal.

  For details, see Purging the Dynamic Cache using the Management Portal on page 104.

- **Assign Proxy Server**
  When using the Management Portal to install many clients remotely, the Assign Proxy Server task gives you the option of using the Proxy Servers to assist in the delivery of the install payload to the clients. This option offloads work from the Management Portal to the assigned Proxy Servers in your enterprise. For details, see Using Proxy Servers to Install Radia Clients Remotely from the Management Portal on page 106.

Preloading the Proxy Server

After installation, through the Management Portal, you can choose to preload your Proxy Server with services defined in the Radia Database. These services will be copied to the static cache located on the Proxy Server.

▶ For a discussion of how to prepare Windows Installer Enabled applications for preloading to a Proxy Server, see Preloading Windows Installer Enabled Applications on page 72.

Synchronizing (preloading) the Proxy Server using the Management Portal

From any web browser use the Management Portal's Synchronize Proxy Server task to force the Proxy Server to connect to the Configuration Server to preload the files to the static cache on the Proxy Server.

To synchronize the Proxy Server using the Management Portal

1 Access the Management Portal from any web browser.

2   Use the Navigation aid to select the Proxy Server that you want to synchronize.

> Alternatively, go to the Proxy Server group located in the Zone → Cross References → Infrastructure Services container to synchronize all proxy servers in a zone at once.
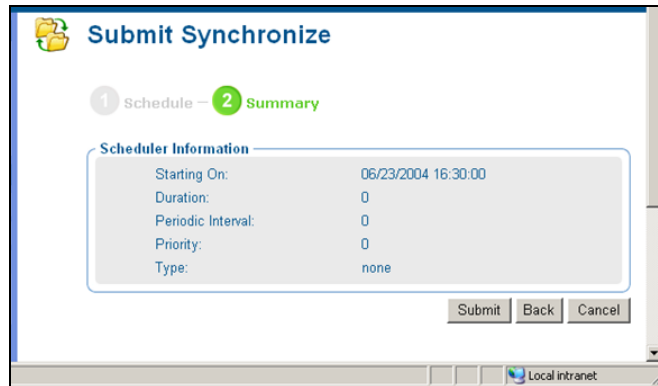
3   In the Operations task list, click **Synchronize Proxy Server**.

The Submit Synchronize – Schedule window opens.
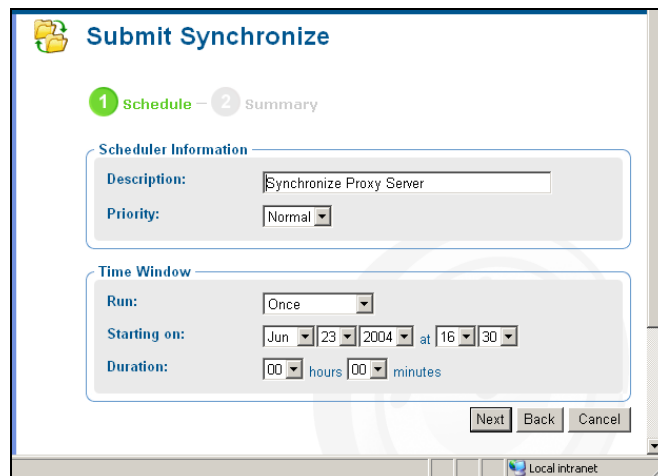
4   In the Schedule window, specify when you want this job to run.

5   Click **Next**.

The Submit Synchronize – Summary window opens.

6   Click **Submit**.

A list of the jobs appears.

The status of the synchronize proxy job will report the following events:

— Submission of the job request to the Proxy Server.

— Start of session between Proxy Server and Configuration Server (for preloading the files to the static cache on the Proxy Server).

— Job completed.

Purging the Dynamic Cache using the Management Portal

Use the Purge Proxy Server Dynamic Cache task of the Management Portal to purge the dynamic cache of the Proxy Server of aged files.

Refer to the *Management Portal Guide* for more information.

> The same purge process occurs whenever the dynamic cache index file is saved. To set the dynamic cache parameters that schedule a save of the index file, see The Date-Based Purge of the Dynamic Cache on page 64.

To purge the dynamic cache of the Proxy Server

1   Access the Management Portal, and use the Navigation aid to select the Proxy Server whose cache you want to purge.

> To schedule a dynamic cache purge of all Proxy Servers in your network at once, go to the Proxy Server group located in the Zone → Cross References → Infrastructure Services container to begin the task. When your audience is a group of devices, the Query window is bypassed.

2   In the Operations task group, click **Purge Proxy Server Dynamic Cache**.

The Schedule window opens.

3   In the Schedule window, specify when you want this job to run. For more information, see Scheduling Jobs in the *Management Portal Guide*.

4   Click **Next**.

The Submit Purge—Summary window opens.

5   Click **Submit**.

A list of the jobs appears. Now, you can use the View Properties task of the Management Portal to view detailed information, such as the status of the job.

Using Proxy Servers to Install Radia Clients Remotely from the Management Portal

Just as Proxy Servers are used to efficiently offload the distribution of applications to clients, the Management Portal supports the use of Proxy Servers to efficiently offload the task of remotely installing clients.

This feature requires the following Radia components:

- Management Portal (RMP) at version 1.2 or above

- Proxy Server at version 1.1 or above, with an installed Radia Management Agent from RMP version 1.2 or above

From the Management Portal, Administrators may use the Assign Proxy Server task to assign a set of manageable nodes (that is, computers which have a Radia Management Agent installed on them) to a Proxy Server. This assigned proxy server becomes the code source for a later RMP request to install a Radia client on the managed node. Thus, the workload of downloading scripts to install Radia clients remotely can be distributed between the Portal and a number of proxy servers.

All tasks are performed from the Management Portal. For details, see the topics Assigning Proxy Servers and Installing Radia Clients in the *Management Portal Guide for Windows*; see the topics Managing Proxy Assignments and Installing Clients in the *Management Portal Guide for UNIX*. An overview of the process involves five steps:

1 Create a group of all devices to be assigned to a given Proxy Server *(Recommended)*.

2 Use the Assign Proxy Server task to assign the group of devices to the Proxy Server.

> If running a Management Portal version 2.0 or 2.1, use the Manage Proxy Assignment task to assign a group of devices to the Proxy Server. The task was renamed after v2.1.

At this time, the Management Portal delivers the client install payload to the Proxy Server.

3 Use the Install Radia Client task to schedule a job to have the Radia client remotely installed on the group of devices.

The Management Portal schedules a client install job for each device in the group.

4   When each client install job executes, the device contacts the assigned Proxy Server.

5   The Proxy Server synchronizes its client payload with the Management Portal using delta processing, and then deploys it to the device.

The initial delivery and delta synchronization of the client install payload from the Management Portal to the Proxy Server rely upon the underlying Radia Integration Server components of both the Management Portal and Proxy Servers.

Summary

- You can start and stop the Proxy Server locally or remotely via the Management Portal.

- You can purge the Proxy Server's dynamic cache from the Management Portal.

- You can preload the Proxy Server's static cache using the Management Portal.

- From the Management Portal, you can designate the Proxy Server to deliver client installs for an assigned set of computers. This feature uses the underlying Radia Integration Server component to synchronize the client payload with the Management Portal and then deliver it to machines requesting the Radia client installs.

4 Troubleshooting

At the end of this chapter, you will:

- Be familiar with the Proxy Server log files.

- Be familiar with troubleshooting the most common error messages.

- Know how to collect the required files and version information when working with HP Technical Support.

- Know how to preload the Proxy Server manually, from any web browser.

Proxy Server Installation Directory

By default, the Proxy Server is installed into the following directories:

Windows: *SystemDrive*:\Novadigm\IntegrationServer

UNIX: /opt/Novadigm/IntegrationServer

▶ Proxy Server Release 1.0 for Windows installed into a different default directory:
SystemDrive:\Novadigm\Integration Server

About the Log Files

The Proxy Server writes several logs, which can be used to track progress and diagnose problems. The log files are stored in the logs subdirectory of the Proxy Server installation directory.

The log files are:

- httpd-*port*.log
  Replace *port* with your port number, for example, httpd-3466.log. Logs the Proxy Server activities of the TCL web server that it runs on. Can be found in the logs subdirectory of the Proxy Server installation directory.

- httpd-*port*.YY.MM.DD.log
  This log contains the web server activity for each day. If the log is empty, it means that there was no activity that day.

- httpd-3466.error.txt
  This log contains messages written to any logs that contain the prefix ERROR. This allows you to view all errors in a single location.

- CONNECT.LOG
  Log created in the \logs\rps subdirectory of the Proxy Server installation directory when the Proxy Server connects to the Configuration Server to preload the static cache. Displays information related to the preload and the modules involved, such as RADCONCT.

  Each time you start the web server a new log is written. The old log is saved as httpd-port.*nn*.log.

Changing the Logging Level

By default the trace level is set to 3, which is the informational tracing level. This displays INFO, WARNING, and ERROR messages.

To change the log level, you can either run the following at a command prompt from the Proxy Server installation directory:

```
nvdkit httpd.tkd -log_level 4
```

or

modify the log level in the *httpd.rc* configuration file found in the \etc folder of the Proxy Server install directory. Use the following procedures.

To change the log level in the httpd.rc file

1 Stop the service for the Proxy Server.

2 Open the file *SystemDrive*:\Novadigm\IntegrationServer\etc\httpd.rc for Windows, which is located on the computer that is running the Proxy Server. The following is an excerpt from the httpd.rc file.

```
# Config Array
# Element             Default
# =======             =======
# HOST                [info hostname]
# PORT                3466
# HTTPS_HOST          [info hostname]
# HTTPS_PORT          443
# DEBUG               0
# DOCROOT             [file join $home htdocs]
# IPADDR              0.0.0.0
# HTTPS_IPADDR        0.0.0.0
# WEBMASTER           support.mail@hp.com
# UID                 50
# GID                 100
# NAME                $tcl_service
# LOG_LEVEL           3
# LOG_LIMIT           7
# AUX_LOG_LINES       5000
#
Overrides Config {
    PORT          3466
    LOG_LEVEL     4
}
#
```

```
# (Re)Initialize Logging
#
Log_Init
```

3   Locate the `Overrides Config` entry below the `Config Array` list of
    elements and default values.

4   Within the `Overrides Config` starting and ending brackets { }, type
    LOG_LEVEL and the appropriate trace level, space delimited, Select the
    appropriate trace level from Table 8 below.

Table 8   Trace Levels

Trace Level	Description
0	No logging.
1	Logs errors only.
2	Logs warnings and errors.
3	Logs informational messages, warnings, and errors. *Recommended trace level setting for customers.*
4	Logs all debug information. *Recommended for experienced customers only.*
5-9	Full trace *Not recommended for customer use.*

5   Save the file changes.

6   Restart the Integration Server service.

Common Problems and Solutions

Performance Problems

Anti-virus software can reset IRPStackSize to a non-recommended, low
value, causing performance issues for RIS (Integration Server)-based
products. If you are experiencing performance problems in a Windows
environment, check that the IRPStackSize in the Windows Registry is set to
an adequate value for your operating system. If IRPStackSize is set too low,
it may severely impair your Integration Server's network performance,
especially under heavy load situations. On the Proxy Server, for example, if

IRPStackSize is set below the normal range for the operating system, application deployment will be slowed considerably.

Use your operating system's registry editor to check if the value of IRPStackSize is set too low. If it is, back up the Windows Registry and then increase the IRPStackSize value to be within the recommended range.

The IRPStackSize setting can be found in the following registry location:

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters]
```

> For Windows XP and 2000, the IRPStackSize value is not created during the installation of Windows 2000 or Windows XP. If there is no value for it at the above location, the default value is used—which is no problem. If IRPStackSize is found at the above registry location, verify that it falls within the recommended values.

To obtain the recommended values for IRPStackSize as well as detailed instructions of how to change the IRPStackSize value, see the following Symantec and Microsoft documents:

- How to Change the IRPStackSize for Computers registry value

- IRPStackSize Parameter in Windows 2000 and Windows 2003

- Antivirus Software May Cause Event ID 2011

These links were active as of this writing.

Errors and Solutions

These topics address some of the errors you may find when analyzing a proxy server log.

- If you receive the following error, you are not properly licensed for the Proxy Server (or the license expired) and will need to obtain the correct license file through Tech Support in order to run this product.

  ```
  ERROR: "c:/novadigm/Integration Server/modules/rps.tkd",
  Not licensed for this product
  ```

- If you receive the following error in the CONNECT.LOG during preload, you must check the Configuration Server's log. The '650' error means something went wrong on the server side and the application was not delivered correctly.

```
[17:10:21 [RADCONCT / 000005a4] SYSTEM --- RADCONCT exit
status [650]

[17:10:21 [RADCONCT / 000005a4] SYSTEM --- RADCONCT [Server
stopped application configuration.]

NVD000010A [radconnect_term] 17:10:21 [RADCONCT / 000005a4]
SYSTEM --- RADCONCT Return Code [650]

NVD000005E [radconct_cleanu] 17:10:21 [RADCONCT / 000005a4]
SYSTEM --! RADCONCT Exit code [650]
```

- If you receive the following error in the CONNECT.LOG during preload,
  you have not assigned any services/applications to the default RPS user
  instance. (Services will be preloaded whether they are Mandatory or
  Optional. Stop Expressions are also ignored.)

```
13:43:36 Warning: RPS/Static: sync: Radskman rc:[109]
[Presently there are no applications available in the
software catalog. Please contact your system administrator
for assistance.] (CHILDSTATUS -1 109)
```

  If additional logging is need, you may be asked to increase the log level.
  You can change the log level at the command prompt by running nvdkit
  httpd.tkd -log_level 4, or by adding the log level to the httpd.rc
  configuration file found in the /etc folder.

Testing the Proxy Server Preload

Use the following command to manually perform a Proxy Server preload
distribution. This is often used in a test environment, but can also be used in
a production environment, if desired.

To manually perform the Preload from a web browser

You can manually perform a Proxy Server's preload by typing the following
command into a web browser:

http://proxy_machine_name**:3466/proc/rps/sync**

You will not get any feedback from the process—just a blank screen.

Check the Proxy Server machine for activity and check the following Proxy
Server directory for data files.

Radia_Integraton_Server\DATA\RPS\STATIC\000D\

where: Radia_Integration_Server represents the base installation
directory where the Proxy Server is installed. By default, this is:

```
C:\Novadigm\IntegrationServer for Windows, and
/opt/Novadigm/IntegrationServer for UNIX.
```

Troubleshooting Questions

To expedite a solution, you should be prepared to answer the following questions before you contact technical support. This will expedite the solution.

- What has changed in your environment?

- What are the build numbers of your RPS.TKD, NVDKIT, and HTTPD.TKD modules? See Collecting Information for HP Technical Support below.

- What error messages were received?

- What actions was the Proxy Server performing when the problem occurred? For example, was the RPS serving files or preloading data?

- If you use HTTP, can you download existing data from the Proxy Server.

    To test this, open an Internet Explorer browser session and type:

    http://host:port/RESOURCE/SOFTWARE/FILE*/<an existing resourceID in static or dynamic cache>*

Collecting Information for HP Technical Support

If you need to contact HP Technical Support for assistance, be sure to collect the following information:

1 Version information for nvdkit, httpd.tkd and rps.tkd. For details, see How to Obtain Version Information, below.

2 The logs directory including all subdirectories, stored by default in the following locations:

    Windows: *SystemDrive*:\Novadigm\IntegrationServer\logs
    UNIX: /opt/Novadigm/IntegrationServer/logs

3 The etc directory files (no subdirectories), stored by default in the following locations:

    Windows: *SystemDrive*:\Novadigm\IntegrationServer\etc
    UNIX: /opt/Novadigm/IntegrationServer/etc

4   For preload problems, also collect the Proxy Server lib directory and contents (except any 000D compressed data subdirectory), stored by default in the following locations:

Windows: *SystemDrive*:\Novadigm\IntegrationServer\etc\rps
UNIX: /opt/Novadigm/IntegrationServer/etc/rps

How to Obtain Version Information

To gather the version information for RPS.TKD, NVDKIT, and HTTPD.TKD

1   From a command prompt, navigate to where the Proxy Server was installed; this is the location for nvdkit.exe.

Your license file (license.nvd) needs to be copied to this folder.

2   Type the NVDKIT commands for each of the components, as given in the following table.

Table 9   Proxy Server Components and Commands to Obtain Version and Build

Component	Location	Command to Obtain Version Number
RPS.TKD	*<RPS-Install>*/modules	NVDKIT VERSION MODULES RPS.TKD
NVDKIT	*<RPS-Install>*	NVDKIT VERSION
HTTPD.TKD	*<RPS-Install>*	NVDKIT VERSION HTTPD.TKD

The following figure shows an example of obtaining the version information.

```
(C) Copyright 1985-2000 Microsoft Corp.

C:\>cd Novadigm\Inte*

C:\Novadigm\IntegrationServer>nvdkit version modules rps.tkd
Kit Version: 2.1
Tcl Version: 8.2.2+

C:/Novadigm/IntegrationServer/modules:

C:/Novadigm/IntegrationServer/modules/rps.tkd:
        module rps, build 20 20021112 19:56:05 UST

C:\Novadigm\IntegrationServer>nvdkit version
Kit Version: 2.1
Tcl Version: 8.2.2+

C:/Novadigm/IntegrationServer/nvdkit.exe:
        module nvdkit, build 131 20021223 19:52:46 UST
        module tclkitsh, build 48 20021205 23:57:46 UST
        module lib/nvd.sql, build 17 20020412 19:04:14 UST
        module lib/nvdtcl, build 54 20021223 18:15:34 UST
        module lib/vfs, build 13 20020503 17:54:14 UST

C:\Novadigm\IntegrationServer>nvdkit version httpd.tkd
Kit Version: 2.1
Tcl Version: 8.2.2+

C:/Novadigm/IntegrationServer/httpd.tkd:
        module httpd, build 60 20021217 20:05:17 UST

C:\Novadigm\IntegrationServer>
```

3   Collect this output for HP Technical Support.

Reporting a Problem for a Proxy Server

Once you have exhausted the options laid out in this topic and reviewed your logs for typical errors, go to the HP OpenView Technical Support web site (see page 6) to report or resolve the problem.

Whenever you contact HP Technical Support for assistance regarding a Proxy Server, be prepared to collect the items discussed in the topic Collecting Information for HP Technical Support on page 115. At a minimum, collect your HTTPD:3466.log plus an output showing the versions of your RPS, NVDKIT, and HTTPD.TKD modules available.

Summary

- Review the `HTTP-port.log` files and the `CONNECT.LOG` files to troubleshoot Proxy Server errors.

- Review the common error messages and solutions given in this topic.

- Collect the version information, required log files, and other relevant directories and files before contacting HP Technical Support or submitting a support case.

- You can enter a command from any web browser to manually preload a Proxy Server.

Glossary

Application Manager

The Application Manager (`radia_am.exe`) is the Radia client that manages mandatory services. The systems administrator uses the System Explorer to specify the services that the Application Manager manages on the subscriber's computer. No user interface is available.

applications

Also called software, data, or services.

Applications are one type of content that Radia can manage on subscriber computers. Use the Radia Publisher to create packages of data to be managed on your subscribers' computers.

attribute

Also called *field, variable,* or *property*.

An attribute is a single, descriptive data item in a class. The class template contains a definition (e.g., the name, data type, description, and length) for each attribute that makes up the class. Class instances contain a set of attributes and each attribute contains a value.

attribute property

An attribute property controls some aspect of how an attribute is processed on the Configuration Server and client computer. Each attribute defined in a class template has a set of Configuration Server properties and a set of client properties.

client computer

A client computer is a subscriber's computer that has the Radia client software installed on it.

Client Explorer

The Client Explorer can be used to view or edit local objects, or create new objects. You can also use the Client Explorer to view objects located on a file server or on other computers to which you are connected via a local area network (LAN).

Configuration Server

Also called the *Manager*.

The Configuration Server distributes applications to client computers. It maintains the Radia Database, which stores information that the Configuration Server needs to manage digital assets for distribution to client computers.

dynamic cache

The dynamic cache is the Proxy Server's secondary cache populated through Dynamic PassThru. When clients request data that is not available in the static cache, Dynamic PassThru sends a request to an upstream host, either a Proxy Server co-located with a Configuration Server, or another Proxy Server, to satisfy the request. Multiple upstream hosts may be defined for fail-over support: if the first named host fails to connect, Dynamic PassThru sends the request to the next upstream host on the list.

Dynamic PassThru

The HTTP process used to populate the dynamic cache. When clients request data that is not available in the static cache or existing dynamic cache, Dynamic PassThru sends a request to an upstream host, either a Proxy Server co-located with a Configuration Server or another Proxy Server, to satisfy the request. Multiple upstream hosts may be defined for fail-over support: if the first named host fails to connect, Dynamic PassThru sends the request to the next upstream host on the list.

instance

Also called *class instance*.

An instance is a Radia Database 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 an instance contain the data describing one specific entity of that class.

Management Portal

The Management Portal is a core Radia product, used to manage many different Radia assets.

method

A method is a program that performs functions that are meaningful in the context from which they are called.

Methods can be written in REXX or in a language that produces an executable that can validly run on the platform where it is invoked. The HP-supplied REXX run-time environment interprets REXX methods.

Client methods run on the subscriber's computer, while Configuration Server methods run on the Configuration Server computer.

object

An object is a data structure containing variables stored in a file with an .EDM suffix on the client computer. An object can consist of one or more instances. Each instance contains the same set of variables. The values held in the variables can vary from instance to instance.

Use the Client Explorer to view, edit, or create objects.

preloading

Preloading is the process of loading the application to be distributed before any clients request the software. It requires a resolution of the Proxy Server's distribution model on the Configuration Server before the applications can be loaded, either directly from the Configuration Server, or indirectly from another Proxy Server. The preload resolution is performed using TCP. The files may be deployed using TCP or HTTP, or a Radia Multicast Server.

Radia Database

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

— The software and data that Radia distributes.

— The "desired state" of each client computer with respect to the managed content.

— The policies determining which subscribers can subscribe to which packages.

— Security and access rules for administrators.

Use the System Explorer to manipulate the Radia Database.

Radia Manager

See *Configuration Server*.

Radia Service

A set of digital assets managed as a Radia unit.

Radia Staging Requestor

The Radia Staging Requestor resides on the client computer, and communicates with the Staging Server to retrieve data from, and supply data to, the Staging Server.

resource

Also called *file*.

A resource is a single component that is bundled into a package. Examples of resources are files, desktop links, and sets of registry keys.

REXX

Radia REXX is an interpreted language that provides a simple way to customize various aspects of Radia processing.

service

Also called a software application, application, or software.

A service is a group of related packages.

Software Manager

The Software Manager (`radia_sm.exe`) is the Radia client used to manage optional services. The systems administrator uses the System Explorer to specify the services that are available to the subscriber.

The subscriber installs and manages services that are available from the Software Manager user interface (Service List).

STAGER instance

The STAGER instance in the POLICY domain of the Radia Database contains information necessary for the client to connect to the Proxy Server or the Staging Server to obtain its needed resources. A STAGER instance can also specify the protocol and deployment source used to preload a Proxy Server.

Staging Requestor

See Radia Staging Requestor.

static cache

The static cache is the Proxy Server's primary cache, managed by the Preloader. After installing the Proxy Server, this cache is preloaded with services as defined in the Configuration Server distribution model. The services may be deployed from the Configuration Server or another Proxy Server.

subscriber

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

System Explorer

The System Explorer is used to manipulate the contents of the Radia Database.

variable

A variable is a piece of named storage that contains a changing value. The variable's value forms a part of the client's resolved distribution model and can influence the resolution process through messaging or symbolic substitution.

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