EMC® Ionix™ IP Management Suite

Version 7.0 Service Pack 4

Installation Guide

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Preface

As part of an effort to improve and enhance the performance and capabilities of its product lines, EMC periodically releases revisions of its hardware and software. Therefore, some functions described in this document may not be supported by all versions of the software or hardware currently in use. For the most up-to-date information on product features, refer to your product release notes.

If a product does not function properly or does not function as described in this document, please contact your EMC representative.

Note: This document was accurate as of the time of publication. However, as information is added, new versions of this document may be released to the EMC Powerlink website. Check the Powerlink website to ensure that you are using the latest version of this document.

Note: On July 8th, 2009, EMC announced EMC® Ionix™– the new family name that unifies EMC®Smarts®, EMC® Voyence®, and EMC® ControlCenter™. In addition to the new family name, individual products will be renamed in future releases. The new title of this document includes the new family name, but references to earlier releases and their supporting documentation use EMC Smarts.

Purpose

This document provides instructions for installing EMC Smarts IP Management Suite products on Solaris, HP-UX, Linux, and Microsoft Windows platforms.

Audience

This guide is intended for administrators and integrators who are responsible for installing the IP Management Suite.

EMC Smarts IP Management Suite documentation

The following EMC Smarts documents are relevant to users of the IP Management product suite:

- *EMC Smarts IP Management Suite Release Notes*
- *EMC Smarts IP Management Suite Third-Party Copyright Read Me*
- *EMC Smarts IP Management Suite Installation Guide*
- *EMC Smarts IP Management Suite Deployment Guide*
- *EMC Smarts IP Management Suite Configuration Guide*
- *EMC Smarts IP Management Suite Discovery Guide*
- *EMC Smarts IP Availability Manager User's Guide*
- *EMC Smarts IP Performance Manager and Server Performance Manager User's Guide*
- *EMC Smarts IP Availability Manager Extension for NAS User's Guide*
- *EMC Smarts Quick Start Guide*

Refer to the *EMC Smarts Documentation Catalog* for documentation resources provided with other EMC Smarts product suites.

Additional documentation

In addition to this document, EMC Corporation provides a help system for command line programs, as well as product documentation.

Help for command line programs

Descriptions of command line programs are available as HTML pages. The index.html file, which provides an index to the various commands, is located in the BASEDIR/smarts/doc/html/usage directory.

EMC Smarts documentation

Readers of this guide may find the following related documentation helpful:

- *EMC Smarts Documentation Catalog*
- *EMC Smarts System Administration Guide*
- *EMC Smarts ICIM Reference*
- *EMC Smarts Common Information Model Infrastructure Models Chart*
- *EMC Smarts Common Information Model Application and Business Models Chart*
- *EMC Smarts ASL Reference Guide*

- *EMC Smarts Perl Reference Guide*
- *EMC Smarts Dynamic Modeling Tutorial*
- *EMC Smarts MODEL Reference Guide*

Note: These documents are updated periodically. Electronic versions of the updated manuals are available on the EMC Powerlink website:

http://Powerlink.EMC.com

Suggestions for searching PDF files

You may search across multiple PDF files by using the Adobe Reader software:

1. If the documentation is not accessible to all users of the EMC Smarts product suite, copy the contents of the BASEDIR/smarts/doc/pdf directory to a central location, such as a shared drive on your LAN, that operators and others may view.
2. To search throughout the documentation library, open the Acrobat Reader software:
   a. Select **Edit** > **Search**, and enter a word or phrase.
   b. In the **Where would you like to search** option, select **All PDF Documents in** and type the pathname of the location where the PDF documents reside.

If you have more than one EMC Ionix product suite installed, you can set up cross-product document searches by copying files from the BASEDIR/smarts/doc/pdf directory for each product suite into this common documentation directory path.

Conventions used in this document

EMC uses the following conventions for special notices:

Note: A note presents information that is important, but not hazard-related.

CAUTION

A caution contains information essential to avoid data loss or damage to the system or equipment.

IMPORTANT

An important notice contains information essential to software or hardware operation.

Typographical conventions

EMC uses the following type style conventions in this document.

Normal	Used in running (nonprocedural) text for: • Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) • Names of resources, attributes, pools, Boolean expressions, buttons, DQL statements, keywords, clauses, environment variables, functions, utilities • URLs, pathnames, filenames, directory names, computer names, filenames, links, groups, service keys, file systems, notifications
Bold	Used in running (nonprocedural) text for: • Names of commands, daemons, options, programs, processes, services, applications, utilities, kernels, notifications, system calls, man pages Used in procedures for: • Names of interface elements (such as names of windows, dialog boxes, buttons, fields, and menus) • What user specifically selects, clicks, presses, or types
Italic	Used in all text (including procedures) for: • Full titles of publications referenced in text • Emphasis (for example a new term) • Variables
`Courier`	Used for: • System output, such as an error message or script • URLs, complete paths, filenames, prompts, and syntax when shown outside of running text
`Courier bold`	Used for: • Specific user input (such as commands)
`Courier italic`	Used in procedures for: • Variables on command line • User input variables
< >	Angle brackets enclose parameter or variable values supplied by the user
[ ]	Square brackets enclose optional values

|	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces indicate content that you must specify (that is, x or y or z)
...	Ellipses indicate nonessential information omitted from the example

Smarts Manager

Unless otherwise specified, the term Smarts Manager is used to refer to EMC Smarts programs such as Domain Managers, Global Managers, and adapters.

EMC Smarts IP Management Suite installation directory

In this document, the term BASEDIR represents the location where EMC Smarts software is installed.

- For Windows, this location is: C:\InCharge\<*productsuite*>.

On Windows operating systems, this product is, by default, installed to: C:\InCharge\IP\smarts. This location is referred to as BASEDIR\smarts.

Optionally, you can specify the root of BASEDIR to be something different, but you cannot change the <*productsuite*> location under the root directory.

For more information about the directory structure of EMC Smarts software, refer to the *EMC Smarts System Administration Guide*.

EMC Smarts IP Management Suite products

The EMC Smarts IP Management Suite includes the following products:

- EMC Smarts IP Availability Manager
- EMC Smarts IP Performance Manager
- EMC Smarts IP Discovery Manager
- EMC Smarts IP Server Performance Manager
- EMC Smarts IP Availability Manager Extension for NAS
- EMC Smarts Adapter for HP OpenView NNM
- EMC Smarts Adapter for IBM/Tivoli NetView

Where to get help

EMC support, product, and licensing information can be obtained as follows.

Product information — For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to the EMC Powerlink website (registration required) at:

`http://Powerlink.EMC.com`

Technical support — For technical support, go to Powerlink and choose **Support**. On the Support page, you will see several options, including one for making a service request. Note that to open a service request, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send your opinions of this document to:

`techpubcomments@emc.com`

1

Introduction

This chapter includes the following sections:

- EMC Smarts IP Management Suite 14
- EMC Smarts product and version compatibility..... 15
- Installation tasks..... 16
- Uninstallation tasks 18

This chapter describes the suite products and their compatibility with other EMC Smarts products.

The product suite is distributed on a CD and is installed in the /IP subdirectory under the InCharge root directory.

EMC Smarts IP Management Suite

The suite contains the following products:

- **EMC Smarts IP Availability Manager***:* The IP Availability Manager product provides a diagnosis of connectivity failures, including an analysis of their root causes, in IP networks.
- **EMC Smarts IP Performance Manager***:* The IP Performance Manager product provides a diagnosis of faults, including device- and performance-centric analysis of their root causes, in IP networks.
- **EMC Smarts IP Discovery Manager***:* The IP Discovery Manager product performs layer-3 and layer-2 connectivity and device containment discovery for IP networks. It also discovers information about a system's resources.

EMC Smarts product and version compatibility

The IP Management Suite requires the following EMC Smarts products:

- Service Assurance Management Suite Global Manager
- Service Assurance Management Suite Global Console

All other EMC Smarts products are optional.

The IP Management Suite Version 7.0 Service Pack 4 is compatible with the versions of the products listed in the interoperability chart shown in Table 1 on page 15.

Table 1 Interoperability chart

EMC Smarts Product Suite	Version
Application Connectivity Monitor	2.1.x, 2.2.x, 2.3
ATM/Frame Relay Availability Management Suite	1.0, 1.1, 2.0.x
IP Management Suite	6.5.x, 7.0.x
MPLS Management Suite	2.1, 3.0, 3.1
Multicast Manager	1.1.x, 1.2, 2.0
Network Protocol Management Suite	2.1, 3.0
Optical Transport Management Suite	2.0.0.1, 5.0
Service Assurance Management Adapter Suite	1.0, 1.1, 1.2
Service Assurance Management Suite	7.1, 7.2.0.25, 8.0.0.4, 8.1.0.3[a]
Storage Insight for Availability	1.0.0.2,1.0.0.3, 2.0.x, 2.1, 2.3
Server Manager	1.1, 2.0
VoIP Management Suite	2.0, 3.0, 4.0
Adapter for Alcatel-Lucent 5620 SAM EMS	2.1, 3.0, ,3.1, 3.2
ITOps Performance Reporter	1.0, 1.2, 2.0.x, 8.1.0.3

a. Service Assurance Management Suite 8.1.0.3 is required for the following enhancements made in IP Management Suite Version 7.0 Service Pack 4:
- Virtual Router Redundancy Protocol (VRRP)
- Link Layer Discovery Protocol (LLDP)
- File system, temperature, and voltage sensor threshold settings

Installation tasks

To install the IP Management Suite, satisfy the requirements and perform the tasks listed in Table 2 on page 16.

Table 2 Installation requirements and tasks (page 1 of 2)

Task	Procedure
Before you install the EMC Smarts IP Management Suite	
Satisfy all requirements to install the suite.	"IP Management Suite requirements" on page 19 "Before installation" on page 30
Check the Broker configuration.	"Determine the location of the EMC Smarts Broker" on page 30
Detect and stop EMC Smarts programs.	"Detect and stop EMC Smarts programs" on page 30
Choose an operating mode for the installation program.	"Choose an operating mode for the installation program" on page 35
Installation method:	
Mount the CD.	"Mount the CD" on page 37
Perform the installation based on the appropriate mode: • Wizard mode • CLI mode • Unattended (silent) mode	• "Install by using Wizard mode" on page 38 • "Install by using CLI mode" on page 41 • "Install by using unattended mode" on page 42
After you install:	
Save your EMC Smarts evaluation license, *smarts.lic,* to the BASEDIR/smarts/local/conf directory. Edit the SM_LICENSE variable in the `runcmd_env.sh` file so that the variable specifies the full pathname to the `smarts.lic` file.	"Obtain and install a temporary license file" on page 62
Start the suite products for the first time.	"Start EMC Smarts products" on page 63
Verify the current state of the products and Broker.	"Verify the EMC Smarts product status" on page 66
Install your permanent EMC Smarts license.	*EMC Smarts System Administration Guide*

Table 2 Installation requirements and tasks (page 2 of 2)

Task	Procedure
Configure EMC Smarts installations with the appropriate level of security. Although default encryption is enabled during the installation process of Version 7.0 Service Pack 4, you should configure a greater level of security for your deployment.	*EMC Smarts System Administration Guide*
Configure the Global Manager.	*EMC Smarts Service Assurance Manager Configuration Guide*
Configure the Domain Managers and initiate discovery.	*EMC Smarts IP Management Suite Configuration Guide*

Uninstallation tasks

To uninstall the IP Management Suite, satisfy the requirements and perform the tasks listed in Table 3 on page 18.

Table 3 Uninstallation requirements and tasks

Task	Procedure
Before you uninstall the EMC Smarts IP Management Suite	
Detect and stop EMC Smarts Programs.	"Detect and stop EMC Smarts programs" on page 71 **Note:** If IP Management Suite patches are installed, uninstall all patches before uninstalling the base install. Refer to Chapter 7, "Uninstalling Patches," for the uninstallation steps.
Uninstallation methods:	
Uninstall the IP Management Suite by using one of these methods or modes: • Wizard mode • CLI mode • Unattended (silent) mode • Windows Control Panel method	• "Uninstall by using Wizard mode" on page 77 • "Uninstall by using CLI mode" on page 78 • "Uninstall by using unattended mode" on page 80

2

IP Management Suite requirements

This chapter includes the following sections:

- Migration from previous versions 20
- Operating system requirements 21
- Hardware requirements 25

Migration from previous versions

IP Management Suite Version 7.0 Service Pack 4 can be migrated from the following older versions:

- EMC Smarts IP Management Suite 6.2 SP3
- EMC Smarts IP Management Suite 6.5 SP3

Note: The *EMC Smarts IP Management Suite Migration Guide* provides instructions for migrating from IP Management Suite 6.2 SP3 or 6.5 SP3.

If your current IP Management Suite installation is not at either of these version levels, you must first install the appropriate SmartPack to bring it to either of these levels before starting the IP Management Suite Version 7.0 Service Pack 4 installation.

To determine your existing 6.*x* version level:

1. Go to BASEDIR/smarts/bin/.
2. Type the following command:
   sm_server --version

EMC Smarts displays the following:

```
V<number> <date> <build>
   Copyright <Date> EMC Corporation
```

CAUTION

If patches for any version are installed, uninstall all patches before performing migration or upgrade.

Upgrade and migration

Table 4 on page 20 summarizes the supported versions of IP Management Suite for migration and upgrade.

Table 4 Supported versions of IP Management Suite for migration and upgrade

Task	Version supported
Migration	EMC Smarts IP Management Suite 6.2 SP3 EMC Smarts IP Management Suite 6.5 SP3
Upgrade	EMC Smarts IP Management Suite 7.0 SP1 EMC Smarts IP Management Suite 7.0 SP2 EMC Smarts IP Management Suite 7.0 SP3

Operating system requirements

Table 5 on page 21 summarizes the operating system platforms that are supported by each product in the IP Management Suite.

Note: IP Management Suite Version 7.0 Service Pack 4 is a 32-bit application but can be installed on both 32-bit and 64-bit operating systems.

Table 5 Supported operating systems for IP Management Suite (page 1 of 3)

EMC Smarts Product	Solaris	HP-UX	Linux	Microsoft Windows	VMware ESX server 2.5	VMware ESX Version 3.5	VMware vSphere 4
EMC Smarts IP Availability Manager	8, 9, 10	11i	Red Hat Enterprise Linux 3, 4, 5	• Windows Server 2003 Enterprise Edition SP1, SP2, and R2 • Windows Server 2008 Enterprise Edition SP1, SP2, and R2	• Windows 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5
EMC Smarts IP Performance Manager	8, 9, 10	11i	Red Hat Enterprise Linux 3, 4, 5	• Windows Server 2003 Enterprise Edition SP1, SP2, and R2 • Windows Server 2008 Enterprise Edition SP1, SP2, and R2	• Windows 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5

Table 5 Supported operating systems for IP Management Suite (page 2 of 3)

EMC Smarts Product	Solaris	HP-UX	Linux	Microsoft Windows	VMware ESX server 2.5	VMware ESX Version 3.5	VMware vSphere 4
EMC Smarts IP Discovery Manager	8, 9, 10	11i	Red Hat Enterprise Linux 3, 4, 5	• Windows Server 2003 Enterprise Edition SP1, SP2 and R2 • Windows Server 2008 Enterprise Edition SP1, SP2 and R2	• Windows 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5
EMC Smarts IP Availability Manager Extension for IPv6	8, 9, 10	Not supported	Not supported	• Windows Server 2003 Enterprise Edition SP1, SP2, and R2 • Windows Server 2008 Enterprise Edition SP1, SP2, and R2	• Windows Server 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5
EMC Smarts Adapter for HP OpenView NNM	8, 9, 10	11i	Not supported	• Windows Server 2003 Enterprise Edition SP1, SP2 and R2 • Windows Server 2008 Enterprise Edition SP1, SP2 and R2	• Windows Server 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5

Table 5 Supported operating systems for IP Management Suite (page 3 of 3)

EMC Smarts Product	Solaris	HP-UX	Linux	Microsoft Windows	VMware ESX server 2.5	VMware ESX Version 3.5	VMware vSphere 4
EMC Smarts Adapter for IBM/Tivoli NetView	8, 9, 10	Not supported	Not supported	• Windows Server 2003 Enterprise Edition SP1, SP2 and R2 • Windows Server 2008 Enterprise Edition SP1, SP2 and R2	• Windows Server 2003 Enterprise Edition SP1 and R2 • Red Hat Enterprise Linux AS 3 Update 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5	• Windows Server 2003 SP2 (x64) and Windows Server 2008 • Red Hat Enterprise Linux 4, 5

Recommended patch levels

Table 6 on page 23 summarizes the operating system patches required by the IP Management Suite product suite.

CAUTION

Verify that your operating systems are patched to the levels recommended by the manufacturer. The patch levels in Table 6 on page 23 have been identified as critical to the proper functioning of the EMC Smarts software.

Table 6 Required operating system patches (page 1 of 2)

Operating system	Patches
Solaris 8	108434-22 C++ runtime library (32-bit)
	108435-22 C++ runtime library (64-bit)
	111721-04 libm patch
Solaris 9	111711-16 C++ runtime library (32-bit)
	111712-16 C++ runtime library (64-bit)
	111722-04 libm patch
Solaris 10	119963-08 C++ patch

Table 6 Required operating system patches (page 2 of 2)

Operating system	Patches
HP-UX	Apply the latest standard HP-UX patch bundle that the HP patch assessment tool recommends.
Linux	libstdc++-2.96-124.7.2 (when the Global Console is accessed on Linux systems)
Linux 5	*compat-libstdc++-33-3.2.3-61*

Hardware requirements

The section identifies the hardware requirements for the IP Management Suite.

- Table 7 on page 25 presents the minimum hardware requirements.
- Table 8 on page 26 presents the minimum hard disk storage requirements.

If you are installing multiple products, then your system must meet the total of each of the item's memory and data disk space requirements.

Table 7 Hardware requirements for the IP Management Suite products.

Platform	Product	Hardware
Solaris 8, 9, and 10	All products	Sun Fire 280
HP-UX 11i	IP Availability Manager, IP Performance Manager, IP Discovery Manager	L2000/rp5400
	Adapters	b2600
Red Hat Enterprise Linux 3, 4, 5	IP Availability Manager, IP Performance Manager, IP Discovery Manager	Two Pentium 4 processors, 2 GHz
	Adapters	Not supported
• Windows Server Enterprise Edition 2003 SP1, SP2, and R2 • Windows Server Enterprise Edition 2008 SP1, SP2, and R2	IP Availability Manager, IP Performance Manager, IP Discovery Manager, IP Availability Manager Extension for IPv6	Two Pentium 4 processors, 2 GHz
	Adapters	Pentium III, 1.6 GHz
VMware ESX server 2.5 VMware ESX Version 3.5 VMware vSphere 4	IP Availability Manager, IP Performance Manager, IP Discovery Manager, IP Availability Manager Extension for IPv6	Two Pentium 4 processors, 2 GHz

Required disk space for the IP Management Suite shown in Table 8 on page 26 lists disk space requirements for installing all products in the IP Management Suite.

Table 8 **Required disk space for the IP Management Suite.**

Platform	Disk space
Solaris 8, 9, 10	450 MB
HP-UX 11i	650 MB
Red Hat Enterprise Linux 3, 4, 5.	325 MB
Windows Server 2003 and 2008	350MB
VMware ESX server 2.5 that runs Red Hat Enterprise Linux 3, 4, 5	325 MB
VMware ESX server 2.5 that runs Windows 2003 Enterprise Edition SP1	300 MB
VMware ESX Version 3.5 that runs Red Hat Enterprise Linux 4 and 5	325 MB
VMware ESX Version 3.5 that runs Windows Server 2003 SP2 (x64)	300 MB
VMware ESX Version 3.5 that runs Windows Server 2008	300 MB
VMware vSphere 4 that runs Red Hat Enterprise Linux 4 and 5	325 MB
VMware vSphere 4 that runs Windows Server 2003 SP2 (x64)	300 MB
VMware vSphere 4 that runs Windows Server 2008	300 MB

Table 9 on page 27 lists minimum requirements for CPUs, memory, and data disk space used by the software for writeable files such as logs, repository files, and output files.

Note: CPU means the number of physical CPU cores, not the number of CPUs displayed when hyperthreading is activated.

If you are installing more than one product, then your system must meet the total memory and data disk space requirements.

The EMC Smarts Adapter for HP OpenView NNM and the EMC Smarts Adapter for IBM/Tivoli NetView must run on the same host as OpenView NNM and IBM/Tivoli NetView, respectively.

Table 9 CPU, memory, and data disk space requirements

EMC Smarts product	CPUs	Memory (RAM)	Data disk space
EMC Smarts IP Availability Manager	2	512 MB	100 MB each
EMC Smarts IP Performance Manager	2	512 MB	100 MB each
EMC Smarts IP Discovery Manager	1	512 MB	100 MB each
EMC Smarts Adapter for HP OpenView NNM	1	256 MB	N/A
EMC Smarts Adapter for IBM/Tivoli NetView	1	256 MB	N/A

Additional HP-UX requirements

This section lists additional requirements for HP-UX 11i.

Use the HP-UX system administration manager tool to verify that the parameters in Table 10 on page 28 are set accordingly. Use “Choose Kernel Configuration”, “Choose Configurable Parameter” to get to the definition page. The required procedures are described in the *HP-UX System Administration Tasks* manual.

If necessary, make changes. Then, rebuild the kernel and reboot the system. You may want to contact your system administrator if you need additional help.

Note: You can also use the HPjconfig tool that checks kernel parameter values as well as patches. The kernel parameter values required for Smarts software usually exceed the minimum values recommended by HPjconfig. Use the larger of the two values, which is either the value based on the formula provided in this or the value recommended by HPjconfig.

Table 10 on page 28 summarizes HP-UX parameter requirements and their values.

Table 10 HP-UX parameters and values

Parameter	Value
maxdsiz	At least 2 GB (or the maximum memory)
max_thread_proc	At least 256
ncallout	nproc + 10*nSMARTS
nkthread	2*nproc + max_thread_proc*nSMARTS

Formulas are provided as follows:

- The process data size limit kernel parameter (maxdsiz) must be set to at least 2 GB (or the maximum memory).

  The value of this parameter is in decimal bytes. If it is below 2 GB (2147483648 bytes), increase it, rebuild the kernel, and restart the system.

- The max_thread_proc parameter must be set to at least 256, and the ncallout and nkthread parameters are calculated as follows:

  In the formulas, “nSMARTS” is the total number of Smarts Managers and Consoles that run simultaneously on the machine, and “nproc” is a varying system parameter displayed by HP-UX System Administration Manager. It represents the maximum number of processes on the machine.

- The ncallout value must be equal to at least the calculated result, although the HP-UX System Administration Manager default is almost always sufficient.

  ncallout = nproc + 10*nSMARTS

- The nkthread value must be equal to at least the calculated result:

  nkthread = 2*nproc + max_thread_proc*nSMARTS

  The max_thread_proc parameter must be at least 256.

3

Installing the IP Management Suite

This chapter includes the following sections:

- Before installation 30
- Install the IP Management Suite 37

This chapter provides instructions for installing this product suite or migrating from previous versions.

The basic installation steps are the same for all supported platforms of UNIX and Windows.

Before installation

This section explains the requirements that must be met before installing the IP Management Suite.

- "Meet the installation requirements" on page 30
- "Determine the location of the EMC Smarts Broker" on page 30
- "Detect and stop EMC Smarts programs" on page 30
- "Choose an operating mode for the installation program" on page 35

Meet the installation requirements

Before starting the installation, ensure that the user performing the installation is either a superuser (User ID 0) on UNIX platforms, or has administrative privileges on Windows platforms. The installation program will stop responding if the user does not have the appropriate privileges.

Determine the location of the EMC Smarts Broker

You must specify the location of the EMC Smarts Broker during installation of the EMC Smarts software. Typically, this location is chosen during the design of the EMC Smarts software deployment and before any installation begins.

Consult with your deployment planner or check the build guide that documents your deployment to determine the name of the host where the Broker was installed and the port that the Broker uses.

If the location is the same host where you are installing this suite, then the installation program will automatically install the Broker if it is not already on the host.

Detect and stop EMC Smarts programs

Before installing or uninstalling your suite, you must stop all EMC Smarts services, EMC Smarts scheduled jobs, and any other process that uses programs or libraries in any EMC Smarts installation area.

CAUTION

For new installations or uninstallations on UNIX, do not stop the EMC Smarts service daemon process, sm_serviced.

When you install or uninstall suites, all EMC Smarts product suites on the same host must be shut down. If the Broker is on the host, it too must be shut down. This will prevent EMC Smarts applications from starting and new connections from being established while the Broker is down. Inform any users who may be affected and, if necessary, schedule the installation or uninstallation for a period of low utilization.

Detecting EMC Smarts programs

The sm_plist utility identifies all EMC Smarts programs that are running for any product suite on your machine. You can use the sm_plist utility whenever you need to identify EMC Smarts programs that are running (for example, before an installation or uninstallation, or applying another SmartPack or Rolling Patch).

To use the utility, invoke it from the BASEDIR/smarts/script directory. The utility displays active programs in a window.

1. Go to the *BASEDIR/smarts/script* directory.
2. Start the *sm_plist* utility:

   For UNIX, type:

   ```
   # ./sm_plist.sh BASEDIR2
   ```

   For Windows, type:

   ```
   cscript sm_plist.vbs BASEDIR2
   ```

   where *BASEDIR* is the directory where the *sm_plist* utility is installed, and *BASEDIR2* represents the location of any EMC Smarts product suite.

Stopping active EMC Smarts programs (UNIX)

To stop active EMC Smarts programs (UNIX):

1. Stop active EMC Smarts services by using the sm_service utility from BASEDIR/smarts/bin:

   ```
   ./sm_service stop --all
   ```

Note: sm_serviced waits 30 minutes after sending a shutdown request to a process. If that process is still running after 30 minutes, sm_serviced stops it.

2. Determine if any EMC Smarts services are still running by using the brcontrol utility from BASEDIR/smarts/bin:

```
./brcontrol -b <host>:<port>
```

Based on the location of the Broker, go to the appropriate step, as indicated in Table 11 on page 32.

Table 11 Next steps for detecting and stopping programs

Location of Broker	Display	Action to take
On same host	An "Error attaching to Broker" message	The EMC Smarts Broker is not running. Go to step 4 .
	List of servers registered with the Broker	• The Broker or service daemon did not shut down. • If any servers are still running on the host, these did not shut down. Go to step 3 .
On different host	List of servers registered with the Broker	If any servers are still running on the host where you will install the EMC Smarts software, these did not shut down. Go to step 3 .

3. Stop any EMC Smarts server that is still running. If the Broker is on the host, stop the local Broker:
   - To stop any server that is still running, use the *dmquit* utility from BASEDIR/smarts/bin:

     ```
     ./dmquit --server=<servername> -b <host>:<port>
     ```

   - To stop the local Broker from BASEDIR/smarts/bin:

     ```
     ./brquit --broker=localhost:<port>
     ```

4. Determine if any other EMC Smarts processes are still running and shut the processes down:
   a. Detect the processes by using the following command:

      ```
      ps -ef | grep "sm_"
      ```

      If a list is displayed, note the process ID (PID) of these active EMC Smarts processes.

CAUTION

Do not stop or kill the EMC Smarts service daemon process, sm_serviced.

b. Shut down these EMC Smarts processes (except sm_serviced) using the following command:

```
kill <pid>
```

Stopping active EMC Smarts programs (Windows)

To stop a service from the Windows desktop, use the Microsoft Management Console:

1. Select **Settings** > **Control Panel**.
2. At the **Control Panel**, select **Administrative Tools**.
3. At the **Administrative Tools** folder, select **Services**.
4. At the **Services** window, locate any running EMC Smarts services. These services start with the words "EMC Smarts," "EMC Ionix,""InCharge," or "Smarts." For each of these services, right-click the service and then select **Stop**.

   Note: Do not stop the Broker service.

5. Repeat step 4 until all EMC Smarts services are stopped.
6. Open a command prompt and determine if any Smarts Managers are running by using the *brcontro*l utility from *BASEDIR\smarts\bin:*

   brcontrol -b *<host>:<port>*

7. Stop any EMC Smarts server that is still running using the *dmquit* utility from *BASEDIR/smarts/bin:*

   ```
   dmquit --server=<servername> -b <host>:<port>
   ```

8. If the Broker is installed on the same host, use the *brquit* utility from BASEDIR/smarts/bin to stop it:

   brquit --broker=localhost:*<port>*

9. Press **Ctrl-Alt-Delete**. The **Windows Security** dialog box appears.

10. Click **Task Manager**.
    The **Windows Task Manager** appears.
11. Select the **Processes** tab.

CAUTION

Wait 30 minutes before performing the next step. EMC Smarts servers with large topologies can take considerable time to stop while saving the topology to the repository. Stopping processes prematurely may corrupt your repository file.

12. In the **Processes** tab, look in the column labeled **Image Name** for sm_server. Right-click each sm_server, and then select **End Process**.
13. In the **Processes** tab, look for other image names that start with **sm_**, for example, sm_notify, sm_adapter, sm_beacon, and so on. Right-click each instance, and then select **End Process**.

Note: Do not shut down any sm_authority or sm_logger processes. The sm_authority and sm_logger processes are child processes of a EMC Smarts server. The child processes will stop when the parent process stops.

Back up your configuration

Back up your current suite configuration, including all customizations, by using the *smgetinfo* utility. This utility collects version information and saves the /conf, /local, /rules, and /setup directories to an archive file.

For all platforms, to collect information about installed products and components, the Perl interpreter (version 5.0 or later) must be installed.

For Windows, WinZip is required. If WinZip is not installed in its default directory, set the variable *ZIPPER* to point to the WinZip directory.

To run the *smgetinfo* utility:

1. Ensure that the value for SM_HOME is set to *BASEDIR*.
2. Go to the *BASEDIR/smarts/script* directory.

3. Execute the appropriate command:
   - For UNIX type:

     ```
     ./smgetinfo
     ```

     or

     ```
     sh smgetinfo
     ```

   - For Windows type:

     ```
     smgetinfo.cmd
     ```

   The name and location of the resulting .tar or .zip archive file is displayed.
4. Archive the file for later use, if necessary.

Choose an operating mode for the installation program

Use one of the following modes supported by the installation program:

- Wizard mode is a Java-based graphical user interface (GUI).
- Command line interface (CLI) mode (UNIX only) is a text-based method intended to support systems with nongraphic consoles.
- Unattended (silent) mode reads the selections and settings for the installation from a user-modifiable file, which enables users to easily duplicate the installation on many computer systems.

Use the decision tree in Figure 1 on page 36 to choose the appropriate mode for the installation program.

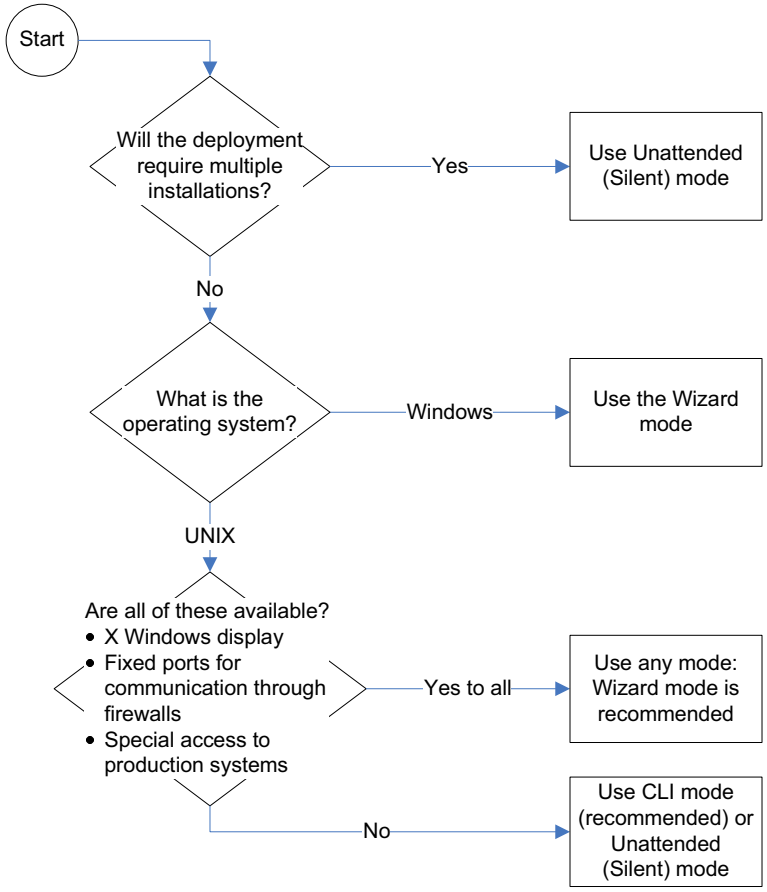

Figure 1 **Choose an operating mode for the installation program**

Note: On UNIX systems, Wizard mode uses the X Window System to display the installation wizard. The host on which you install the EMC Smarts software and the host where you log on must be configured to run the X Window System. Before starting the installation program verify that the X Window System is running.

Install the IP Management Suite

This section describes how to install the IP Management Suite Version 7.0 Service Pack 4 into a new directory structure.

Note: Ensure that directory names used in BASEDIR do not contain spaces.

Mount the CD

Mount the CD and change to the CD-ROM directory by using established procedures for your environment. The procedure for mounting the CD differs based on the operating system.

UNIX

If necessary, Appendix B describes typical commands and examples.

Insert the CD

1. Insert the CD into the CD-ROM drive. If autoplay is enabled, the installation program starts automatically by using the Wizard mode.
2. If necessary, change the directory to the CD-ROM. Use Windows Explorer to access the CD-ROM drive and locate the /suite directory.

Perform the installation

To perform the installation, use the procedure for the installation program mode that you selected:

- For Wizard mode, see "Install by using Wizard mode" on page 38.
- For CLI mode, see "Install by using CLI mode" on page 41.
- For Unattended (Silent) mode, see "Install by using unattended mode" on page 42.

Install by using Wizard mode

Wizard mode provides a GUI for the installation program for UNIX and Windows platforms.

On UNIX systems, Wizard mode uses the X Window System to display the installation wizard. The host on which you install the EMC Smarts software and the host where you log in must be configured to run the X Window System. Before starting the installation program, verify that the X Window System is running.

Run Wizard mode

To start the Wizard mode:

1. Run the setup command appropriate for the operating system:

Table 12 **Setup command syntax for Wizard mode**

Operating system	Setup command
HP-UX	# ./setup-IP-7_0_4_0-hpux.bin
Linux	# ./setup-IP-7_0_4_0-linux.bin
Solaris	# ./setup-IP-7_0_4_0-sol.bin
Windows	setup-IP-7_0_4_0-win.exe

The InstallShield wizard dialog box displays and closes. The **Shutdown EMC Smarts Programs** dialog box and the **Welcome** screen appear.

2. Click **OK** in the **Warning** dialog box.

   If stopping services is necessary, you will be prompted with specific instructions later in the installation process.

3. Click **Next** in the **Welcome** screen.

   Next is disabled if you do not have administrative privileges and a message also appears. To install, you must restart the installation with the appropriate privileges.

4. Read and accept the EMC Corporation end user license agreement and click **Next**.

5. If the installation program detects an existing installation of the same suite, the **Installation Type** screen appears.

   Select **Install the product to a new directory**.

   Note: This screen does not appear if you are installing the suite for the first time on the system.

6. Click **Next** to accept the default installation directory, or type your preferred directory and click **Next**.

   The default installation directory is:

   - `/opt/InCharge` (on UNIX)
   - `C:\InCharge` (on Windows)

   If you specify a directory, the directory name cannot contain spaces. If the specified directory does not exist, it will be created. If you do not have write privileges, an error message appears.

   Note: Ensure that directory names used in BASEDIR do not contain spaces.

7. In the **Setup** screen, select:

   - **Complete** to install all products in the suite. Click **Next**.
   - **Custom** to install a specific product. Click **Next**.
     a. Deselect products that you do not want to install (by default, all products are selected).
     b. Click **Next.**

8. The **Services Selection** screen appears. Select the products to install as services and click **Next**. If you do not install services at this point, you will need to install them manually later.

   If you have an older version of a service running on the host, you must stop that service before installing a new version of the service.

   Note: When installed as services, EMC Smarts products start automatically when the system starts up. If the system is stopped and restarted, the EMC Smarts products restart automatically. EMC Smarts products should be installed as services whenever possible. If any of the products being installed can be started as services, these products are displayed in the Services selection screen.

9. Specify the EMC Smarts Broker.
   - If you are installing the Broker as a service, specify the port. The hostname defaults to localhost.
   - If the Broker is already running on this host, keep the default values.
   - If the Broker is running on another host, specify the hostname of that system and the port the Broker uses.

   Click **Next** to continue.
10. The **Migration** screen appears.
    - If you are not migrating from a previous version of the suite, click **Next**.
    - If you are migrating from a previous version of the suite on the same host, specify the location of the repository files to be copied to the new installation. Click **Next**.
11. Review the list of products that will be installed and the target installation directory. At the bottom of the list, the total amount of disk space required for the selected products is provided so that you can verify that adequate disk space is available. To install the products, click **Next** and the **Installation Progress** screen appears.
12. Upon completion, the **Installation Summary** displays informational messages such as successful confirmations, error messages, and warnings. Click **Finish** to exit the installation. It is not necessary to restart the system after installation.

    Investigate any errors or warnings. The log file is a text file with the naming convention: Install.<suite>.<productversionNumber>.log. It is located in the BASEDIR/smarts/setup/logs directory. If the installation process fails, the log files are located in the */tmp directory*.
13. Remove the CD after completing the installation. Be sure that no processes are currently accessing the drive.

Next steps

For all postinstallation steps, see "Verifying the Installation" on page 61.

Install by using CLI mode

CLI mode provides a text-based method for invoking the installation program. This mode is intended for UNIX platforms with non-graphics consoles. The CLI mode follows the same process as the wizard mode but uses text rather than graphics.

Running CLI mode

To start the CLI mode, invoke the setup command with the console option.

Table 13 **Setup command syntax for CLI-mode**

Operating system	Executable
HP-UX	./setup-IP-7_0_4_0-hpux.bin -console
Linux	./setup-IP-7_0_4_0-linux.bin -console
Solaris	./setup-IP-7_0_4_0-sol.bin -console

User selections and navigation in CLI mode

During the installation and uninstallation processes, you are prompted with a series of steps and menus:

- For prompts, accept the default value or select another choice. The default values are indicated in brackets. To accept the default value, press **Enter**. To reply yes, type **Y**; to reply no, type **N**. Do not press **Delete**; this causes the process to terminate with an error message.
- For selections in menus, accept the default selections or type the number of the item and press **Enter**. The default values are indicated in brackets or as predefined selections in menus. An **X** is used to indicate the selected item. When you are finished making selections, type zero (**0**) and press **Enter**.

If you incorrectly type an entry, press **5** to repeat the prompt and select the correct value. Arrow keys and the backspace key are not supported.

To navigate between each step, use the keys as defined in Table 14 on page 42.

Table 14 Navigation keys

Key	Operation
1	Next, continue to the next step
2	Previous, go back to the previous step
3	Cancel, terminate the program
5	Redisplay, repeat the step
0	Accept the marked (**[X]**) menu choice

Next steps

For all postinstallation steps, see "Verifying the Installation" on page 61.

Install by using unattended mode

Unattended mode is supported for all operating systems, but separate response files are needed for UNIX and Windows systems. This method reads the selections and settings for the installation from a user-modifiable file, which enables users to easily duplicate the installation on many computer systems. Manual intervention is not necessary after you execute the setup command.

Note: The unattended install mode does not automatically copy repository files if you are migrating from a previous version of the software. You must manually copy the repository and configuration files after installation to complete the migration.

Running unattended mode

Run the setup command from a command line shell.

Table 15 Setup command syntax for unattended mode

Operating system	Executable
HP-UX	# ./setup-IP-7_0_4_0-hpux.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Linux	# ./setup-IP-7_0_4_0-linux.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Solaris	# ./setup-IP-7_0_4_0-sol.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Windows	setup-IP-7_0_4_0-win.exe -options <*path*>\RESPONSE_FILE_NAME-response.txt

For example, to start the unattended installation on Solaris for the IP Management Suite when the response file is located in /opt/home, execute:

```
▼# ./setup-IP-7_0_4_0-sol.bin -options
/opt/home/IP_NETWORK_SUITE-response.txt ▲
```

Note: ▼ ▲ Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

Modifying the response file

Each suite has a response file located on the CD in the /utils directory. Its naming convention is <suite>-response.txt.

The response file provides instructions and examples of command line options that are passed to the program in unattended mode. The command line options are organized by process flow. The process flow is almost identical to that of the Wizard mode.

By default, the response file includes settings that support the installation of all products from the CD and configure the Broker location as localhost at port 426. You must edit the response file to change settings to:

- Support Windows operating systems
- Specify a different Broker location

To modify the response file:

1. Copy the response file from the CD */utils* directory to a directory on your system, for example, the */tmp* directory.

2. Using a text editor, modify the values for the command line options in the response file:
   - Specify the target directory.
   - Select a directory for the process log file.
   - Select the products to install. Ensure that the property value for the product is set to **true**.
   - Select the products to start as services. Ensure that the property value for the product is set to **true**.
   - Specify the location of the Broker.
3. Save the file.

Next steps

For all postinstallation steps, see "Verifying the Installation" on page 61.

4

Upgrading the IP Management Suite

This chapter includes the following sections:

- Upgrade installation 46
- Upgrade the IP Management Suite 53

This chapter provides instructions for an upgrade installation in which you apply a service pack to an existing installation.

The basic installation steps are the same for all supported UNIX and Windows platforms.

Upgrade installation

When you upgrade an EMC Smarts product suite with a new major release (7.0, for example), a new minor release (7.1, for example), or a new service pack release (7.0.4, for example), the upgraded version becomes the new baseline for the product. The upgrade incorporates all changes from any previous patches.

Currently, you must uninstall any patches before upgrading your EMC Smarts product suite with a new major, minor, or service pack release. When you uninstall a patch, the patch files installed in the BASEDIR/smarts/local directory are removed.

Before an upgrade installation

This section explains the requirements that must be met before installing the IP Management Suite.

- "Meet the upgrade requirements" on page 47
- "Determine the location of the EMC Smarts Broker" on page 47
- "Detect and stop EMC Smarts programs" on page 47
- "Choose an operating mode for the installation program" on page 51
- "Uninstalling Patches" on page 81

Meet the upgrade requirements

Before starting the installation, ensure that the user performing the installation must either be superuser (User ID 0) on UNIX platforms or have administrative privileges on Windows platforms. The installation program will halt if the user does not have the appropriate privileges.

Determine the location of the EMC Smarts Broker

You must specify the location of the EMC Smarts Broker during installation of the EMC Smarts software. Typically, this location is chosen during the design of the EMC Smarts software deployment and before any installation begins.

Consult with your deployment planner or check the build guide that documents your deployment to determine the name of the host where the Broker was installed and the port that the Broker uses.

If the location is the same host where you are installing this suite, then the installation program will automatically install the Broker if it is not already on the host.

Detect and stop EMC Smarts programs

Before upgrading an EMC Smarts product suite, you must stop all services, scheduled jobs, and other processes that use programs or libraries that run from the EMC Smarts product suite and that you intend to upgrade.

You must also stop the EMC Smarts service daemon, sm_serviced, if it is running from the product suite to be upgraded.

Detecting EMC Smarts programs

The sm_plist utility identifies all EMC Smarts programs that are running for any product suite on your machine. You can use the sm_plist utility whenever you need to identify EMC Smarts programs that are running (for example, before applying a service pack or patch and uninstalling the product suite).

To use the utility, run it from the BASEDIR/smarts/script directory. The utility displays active programs in a window:

1. Go to the *BASEDIR/smarts/script* directory.
2. Start the sm_plist utility:

   For UNIX, type

   ```
   ./sm_plist.sh BASEDIR2
   ```

   For Windows, type

   ```
   cscript sm_plist.vbs BASEDIR2
   ```

   where <*BASEDIR*> is the directory where the sm_plist utility is installed, and <*BASEDIR2*> represents the location of any EMC Smarts product suite.

Stopping active EMC Smarts programs (UNIX)

To stop active EMC Smarts programs (UNIX):

1. Stop active EMC Smarts services using the *sm_service* utility from BASEDIR/smarts/bin:

   ```
   ./sm_service stop <service_name>
   ```

   where <*service_name*> is the name of the service to stop.

   Note: sm_serviced waits 30 minutes after sending a shutdown request to a process. If that process is still running after 30 minutes, sm_serviced stops it.

2. Repeat step 1 for each EMC Smarts service that is running from the suite to be upgraded.

3. Verify that EMC Smarts services are stopped by using the *sm_service* utility from BASEDIR/smarts/bin:

   ```
   ./sm_service show
   ```

4. If the EMC Smarts service daemon, *sm_serviced*, is running from the suite to be upgraded, stop it by using the proper command:

   - On Solaris, type:

     ```
     /etc/init.d/ic-serviced stop
     ```

   - On Linux, type:

     ```
     /etc/init.d/ic-serviced stop
     ```

   - On HP-UX, type:

     ```
     /sbin/init.d/ic-serviced stop
     ```

5. Determine if any Smarts Managers are running by using the *brcontrol* utility from BASEDIR/smarts/bin:

   ```
   ./brcontrol
   ```

6. Stop any Smarts Manager that is still running from the suite to be upgraded. If the Broker is running from the suite, stop the local Broker:

   - To stop any server that is still running, use the *dmquit* utility from BASEDIR/smarts/bin:

     ```
     ./dmquit --server=<servername> -b localhost:<port>
     ```

   - To stop the local Broker from BASEDIR/smarts/bin:

     ```
     ./brquit --broker=localhost:<port>
     ```

7. Determine if any other EMC Smarts processes are still running from the suite and stop the processes:

   - Detect the processes by using the following command:

     ```
     ps -ef | grep "sm_"
     ```

     If a list is displayed, note the process ID (PID) of these active EMC Smarts processes.

   - Shut down these EMC Smarts processes using the following command:

     ```
     kill <pid>
     ```

Stopping active EMC Smarts programs (Windows)

To stop a service from the Windows desktop, use the Microsoft Management Console:

1. Select **Settings** > **Control Panel**.
2. At the **Control Panel**, select **Administrative Tools**.
3. At the **Administrative Tools** folder, select **Services**.
4. At the **Services** window, locate running EMC Smarts services. These services start with the words "EMC Smarts." For each service running from the suite to be upgraded, right-click the service and select **Stop**.

   Note: Do not stop the Broker service.

5. Open a command prompt and determine if any Smarts Managers are running by using the *brcontrol* utility from BASEDIR\smarts\bin:

   ```
   brcontrol
   ```

6. Stop any Smarts Manager that is still running from the suite by using the *dmquit* utility from BASEDIR/smarts/bin:

   ```
   dmquit --server=<servername>
   ```

7. If the Broker is running from the suite to be upgraded, use the *brquit* utility from BASEDIR/smarts/bin to stop it:

   ```
   brquit --broker=localhost:<port>
   ```

Back up your configuration

Back up your current suite configuration, including all customizations, by using the *smgetinfo* utility. This utility collects version information and saves the /conf, /local, /rules, and /setup directories to an archive file.

For all platforms, to collect information about installed products and components, the Perl interpreter (version 5.0 or later) must be installed.

For Windows, WinZip is required. If WinZip is not installed in its default directory, set the variable *ZIPPER* to point to the WinZip directory.

To run the *smgetinfo* utility:

1. Ensure that the value for SM_HOME is set to *BASEDIR*.
2. Go to the *BASEDIR/smarts/script* directory.
3. Execute the appropriate command:
   - For UNIX type:

     ```
     ./smgetinfo
     ```

     or

     ```
     sh smgetinfo
     ```

   - For Windows type:

     ```
     smgetinfo.cmd
     ```

     The name and location of the resulting .tar or .zip archive file is displayed.
4. Archive the file for later use, if necessary.

Choose an operating mode for the installation program

Use one of the following modes supported by the installation program:

- Wizard mode is a Java-based graphical user interface (GUI).
- Command line interface (CLI) mode (UNIX only) is a text-based method intended to support systems with nongraphic consoles.
- Unattended (silent) mode reads the selections and settings for the installation from a user-modifiable file, which enables users to easily duplicate the installation on many computer systems.

Use the decision tree in Figure 2 on page 52 to choose the appropriate mode for the installation program.

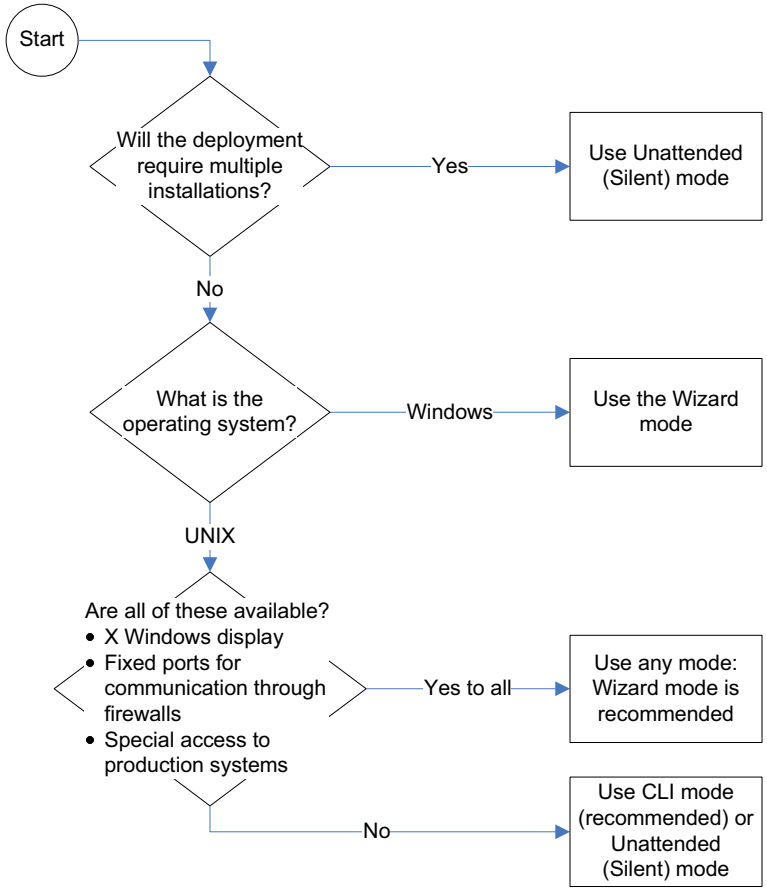

Figure 2 **Choose an operating mode for the installation program**

Note: On UNIX systems, Wizard mode uses the X Window System to display the installation wizard. The host on which you install the EMC Smarts software and the host where you log on must be configured to run the X Window System. Before starting the installation program verify that the X Window System is running.

Upgrade the IP Management Suite

This section describes how to upgrade the IP Management Suite Version 7.0 Service Pack 4.

Note: Ensure that directory names used in BASEDIR do not contain spaces.

Mount the CD

Mount the CD and change to the CD-ROM directory by using established procedures for your environment. The procedure for mounting the CD differs based on the operating system.

UNIX

If necessary, Appendix B describes typical commands and examples.

Insert the CD

1. Insert the CD into the CD-ROM drive. If autoplay is enabled, the installation program starts automatically by using the Wizard mode.
2. If necessary, change the directory to the CD-ROM. Use Windows Explorer to access the CD-ROM drive and locate the /suite directory.

Performing the upgrade installation

To perform the upgrade installation, use the procedure for the upgrade installation program mode that you selected:

- For Wizard mode, see "Upgrade by using Wizard mode" on page 54.
- For CLI mode, see "Upgrade by using CLI mode" on page 56.
- For Unattended (Silent) mode, see "Upgrade by using unattended mode" on page 57.

Upgrade by using Wizard mode

Wizard mode provides a GUI for the installation program for UNIX and Windows platforms.

On UNIX systems, Wizard mode uses the X Window System to display the installation wizard. The host on which you install the EMC Smarts software and the host where you log in must be configured to run the X Window System. Before starting the installation program, verify that the X Window System is running.

Running Wizard mode

To start the Wizard mode:

1. Run the setup command appropriate for the operating system:

Table 16 **Setup command syntax for Wizard mode**

Operating system	Setup command
HP-UX	# ./setup-IP-7_0_4_0-hpux.bin
Linux	# ./setup-IP-7_0_4_0-linux.bin
Solaris	# ./setup-IP-7_0_4_0-sol.bin
Windows	setup-IP-7_0_4_0-win.exe

The InstallShield wizard dialog box displays and closes. The **Shutdown EMC Smarts Programs** dialog box and the **Welcome** screen appear.

2. Click **OK** in the **Warning** dialog box. If stopping services is necessary, you will be prompted with specific instructions later in the installation process.
3. Click **Next** in the Welcome screen.

   Next is disabled if you do not have administrative privileges and a message also appears. To install, you must restart the installation with appropriate privileges.
4. Read and accept the EMC Corporation end user license agreement and click **Next**.
5. Select **Upgrade existing suite** from the **Installation Type** screen and click **Next**.

6. Select the suite to upgrade:
   - If the installation program detects a single installation of the suite, it is selected.
   - If the installation program detects multiple installations of the suite, select the suite to upgrade.

   Click **Next**.

   Note: If the installation program detects an installed patch for the selected suite, an error message appears prompting you to uninstall the patches. Click **OK**. The installation program exits.

   The **Upgrade Product** screen is displayed.
7. Select the product or products you wish to upgrade and click **Next**. If the suite contains additional uninstalled products, you may add them at this time.
8. If the installation program detects services running from the install area, the installation cannot continue. Stop each service listed by the installation program. If sm_serviced is listed, you must also stop sm_serviced.

   Note: If you stop sm_serviced, the status of services will be listed as UNKNOWN.

   Return to the installation program and click **Refresh**. All services should now be stopped. Click **Next**.
9. Review the list of products that will be installed and the target installation directory. At the bottom, the total amount of disk space required for the selected products is provided so that you can verify that adequate disk space is available. Click **Next**. The installation progress screen appears:

   ```
   After this step you will not be able to cancel
   installation.
   ```
10. Click **Next**. The Installation Summary displays informational messages such as successful confirmations, error messages, and warnings. Click **Finish.**

Note: All customer-modified files will be backed up into <BASEDIR>/smarts/.local.bkp.7.0.X.

Next steps

See "Post upgrade steps" on page 59.

Upgrade by using CLI mode

CLI mode provides a text-based method for invoking the installation program. This mode is intended for UNIX platforms with non-graphics consoles. The CLI mode follows the same process as the wizard mode but uses text rather than graphics.

Running CLI mode

To start the CLI mode, invoke the setup command with the console option.

Table 17 The setup command syntax for CLI-mode

Operating system	Executable
HP-UX	./setup-IP-7_0_4_0-hpux.bin -console
Linux	./setup-IP-7_0_4_0-linux.bin -console
Solaris	./setup-IP-7_0_4_0-sol.bin -console

User selections and navigation in CLI mode

During the upgrade process, you are prompted with a series of steps and menus:

- For prompts, accept the default value or select another choice. The default values are indicated in brackets. To accept the default value, press **Enter**. To reply yes, type **Y**; to reply no, type **N**. Do not press **Delete**; this causes the process to terminate with an error message.
- For selections in menus, accept the default selections or type the number of the item and press **Enter**. The default values are indicated in brackets or as predefined selections in menus. An **X** is used to indicate the selected item. When you are finished making selections, type zero (**0**) and press **Enter**.

If you incorrectly type an entry, press **5** to repeat the prompt and select the correct value. Arrow keys and the Backspace key are not supported.

To navigate between each step, use the keys as defined in Table 18 on page 57.

Table 18 Navigation keys

Key	Operation
1	Next, continue to the next step
2	Previous, go back to the previous step
3	Cancel, terminate the program
5	Redisplay, repeat the step
0	Accept the marked ([X]} menu choice

Next steps

See "Post upgrade steps" on page 59.

Upgrade by using unattended mode

Unattended mode is supported for all operating systems, but separate response files are needed for UNIX and Windows systems. This method reads the selections and settings for the installation from a user-modifiable file, which enables users to easily duplicate the installation on many computer systems. Manual intervention is not necessary after you execute the setup command.

Note: The unattended install mode does not automatically copy repository files if you are migrating from a previous version of the software. You must manually copy the repository and configuration files after installation to complete the migration.

Running unattended mode

Run the setup command from a command line shell.

Table 19 Setup command syntax for unattended mode

Operating system	Executable
HP-UX	# ./setup-IP-7_0_4_0-hpux.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Linux	# ./setup-IP-7_0_4_0-linux.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Solaris	# ./setup-IP-7_0_4_0-sol.bin -options <*path*>/RESPONSE_FILE_NAME-response.txt
Windows	setup-IP-7_0_4_0-win.exe -options <*path*>\RESPONSE_FILE_NAME-response.txt

For example, to start the unattended installation on Solaris for the IP Management Suite when the response file is located in /opt/home, execute:

```
▼# ./setup-IP-7_0_4_0-sol.bin -options
/opt/home/IP_NETWORK_SUITE-response.txt ▲
```

Note: ▼▲ Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

Modifying the response file

Each suite has a response file located on the CD in the /utils directory. Its naming convention is <suite>-response.txt.

The response file provides instructions and examples of command line options that are passed to the program in unattended mode. The command line options are organized by process flow. The process flow is almost identical to that of the Wizard mode.

By default, the response file includes settings that support the installation of all products from the CD and configure the Broker location as localhost at port 426. You must edit the response file to change settings to:

- Support Windows operating systems
- Specify a different Broker location

To modify the response file:

1. Copy the response file from the CD */utils* directory to a directory on your system, for example, the */tmp* directory.

2. Using a text editor, modify the values for the command line options in the response file:
   - Specify the target directory.
   - Select a directory for the process log file.
   - Select the products to install. Ensure that the property value for the product is set to **true**.
   - Select the products to start as services. Ensure that the property value for the product is set to **true**.
   - Specify the location of the Broker.
3. Save the file.

Next steps

See "Post upgrade steps" on page 59.

Post upgrade steps

All customer-modified files are backed up at <BASEDIR>/smarts/.local.bkp.7.0.x directory.

1. Compare the modified files with the IP Management Suite Version 7.0 Service Pack 4 files in <BASEDIR>/smarts directory.
2. Use sm_edit utility to modify the IP Management Suite Version 7.0 Service Pack 4 files that require action.
3. Merge the customized files manually from the older version of the files into IP Management Suite Version 7.0 Service Pack 4.
4. Save and close the newly installed and modified file.

5

Verifying the Installation

This chapter includes the following sections:

- Obtain and install a temporary license file 62
- Start EMC Smarts products 63
- Start EMC Smarts services 64
- Verify the EMC Smarts product status..... 66
- Next steps 67

This chapter describes tasks for confirming proper installation of the IP Management Suite.

Obtain and install a temporary license file

The EMC Corporation will e-mail a temporary license to you. Copy the license file, smarts.lic, to the BASEDIR/smarts/local/conf directory on the system where the EMC Smarts software is installed. If the evaluation license has a different name, rename it to smarts.lic.

- If multiple EMC Smarts product suites run on the same system, copy the license file to the BASEDIR/smarts/local/conf directory for each suite smarts.lic.
- If EMC Smarts product suites run on multiple systems, copy the license file to the BASEDIR/smarts/local/conf directory on each system where the software is installed.

Edit the SM_LICENSE variable in runcmd_env.sh on each system where EMC Smarts software is installed so that it specifies the full path and filename of a single smarts.lic file. When multiple EMC Smarts product suites are installed on the same system, each suite will include a runcmd_env.sh in its BASEDIR/smarts/local/conf directory.

Temporary licenses for EMC Smarts software are time-limited. At the end of the trial period, the software will no longer start. You can request an extension to your temporary license by emailing ionixlicensing@EMC.com with your request.

The *EMC Smarts System Administration Guide* provides information on licensing or instructions for obtaining and installing a permanent license.

Start EMC Smarts products

Install managers and adapters as services. If you installed the products as services, you must start them for the first time. These services start automatically upon system reboot, but the following sections describe additional methods to start EMC Smarts services.

If you did not install the products as services, you can install them now.

"Manually Installing Services" on page 87 provide information on how to manually install the products as services..

"Start EMC Smarts services" on page 64 provide information on how to start the services.

For more information, see the *EMC Smarts System Administration Guide*.

Start EMC Smarts services

The following sections describe methods for starting EMC Smarts services.

Starting services on UNIX

Verify the status of the service daemon before starting a service.

Verifying the status of the service daemon

Use the **ic-serviced** command to check the status of the service daemon. The path to the ic-serviced command varies by operating system.

Solaris

On Solaris systems, type the following command to verify the status of the service daemon:

```
/etc/init.d/ic-serviced status
```

If the *sm_serviced* process does not respond, the process is not running. Start the service by typing the command:

```
/etc/init.d/ic-serviced start
```

Linux

On Linux systems, type the following command to verify the status of the service daemon:

```
/etc/init.d/ic-serviced status
```

If the sm_serviced process does not respond, the process is not running. Start the service by typing the command:

```
/etc/init.d/ic-serviced start
```

HP-UX

On HP-UX systems, type the following command to verify the status of the service daemon:

```
/sbin/init.d/ic-serviced status
```

If the *sm_serviced* process does not respond, the process is not running. Start the service by typing the command:

```
/sbin/init.d/ic-serviced start
```

Starting EMC Smarts services

To start or stop, use the sm_service utility. Type the command from the BASEDIR/smarts/bin directory:

```
./sm_service start <service_name> [<service_name> ...]
```

where <*service_name*> is each service you need to start.

Starting services on Windows

To start an EMC Smarts service from the Windows desktop:

1. Select **Start** > **Settings** > **Control Panel** > **Administrative Tools**.
2. Select **Services**.
3. Right-click the EMC Smarts service.
4. Select **Start**.

Note: Start the Broker service first if it is not running.

Verify the EMC Smarts product status

You can determine the current state of the products in the suite that register with the Broker by typing the following command from the BASEDIR/smarts/bin directory:

```
./brcontrol
```

This command displays a list of EMC Smarts Managers and adapters registered with the Broker, their states (RUNNING, DEAD, UNKNOWN), process IDs, port numbers, and the last time that their states changed.

Also check any log files for the products. Typically, these log files are in BASEDIR/smarts/local/logs.

Next steps

EMC Smarts products must be configured before they can perform useful analysis and provide information to operators. To continue deploying the EMC Smarts IP Management Suite, perform the following tasks:

1. Configure the IP Domain Managers, for example:
   - EMC Smarts IP Availability Manager, as described in the *EMC Smarts IP Availability Manager User's Guide*.
   - EMC Smarts IP Performance Manager, if used, as described in the *EMC Smarts IP Performance Manager and Server Performance Manager User's Guide*.
   - EMC Smarts IP Discovery Manager, as described in the *EMC Smarts IP Management Suite Discovery Guide*.
2. Configure IP Adapters, as described in the *EMC Smarts IP Adapters User's Guide*.
3. Install permanent licenses, as described in the *EMC Smarts System Administration Guide*.
4. Configure security, as described in the *EMC Smarts System Administration Guide*.
5. Start the Global Console, as described in the *EMC Smarts Service Assurance Manager Operator's Guide*. You will use the Global Console to monitor network activity sent from the underlying Domain Managers.
6. Configure the Global Manager to receive notifications from the Domain Managers, as described in the *EMC Smarts Service Assurance Manager Configuration Guide*.
7. Discover the network, as described in the *EMC Smarts IP Management Suite Discovery Guide*.

6

Uninstalling the IP Management Suite

This chapter includes the following sections:

- Before uninstallation 71
- Uninstalling the IP Management Suite 69

CAUTION

For UNIX only, when uninstalling EMC Smarts suites from the same server, the EMC Smarts suite that was installed *first* must be uninstalled *last*.

During the installation of the first EMC Smarts suite, the EMC Smarts Service Database is also installed and the other suites subsequently access it. Uninstalling the suite installed first will also uninstall the Service Database which will disable the sm_service command for those products, prevent their proper operation and uninstallation, and interrupt products that run as services.

Perform this check by looking at the value of the SMHOME variable in:
/etc/init.d/ic-serviced for UNIX
/sbin/init.d/ic-serviced for HP-UX.
The suite listed in SMHOME is the suite that should be uninstalled last.

CAUTION

EMC Smarts product suites use standard installation software to install and uninstall product suites. To uninstall EMC Smarts software, you must use the following:
For UNIX, use the uninstaller command.
For Windows, you must use the Add/Remove Programs.
Failure to use the appropriate method will result in an unstable system and/or inconsistent product directories. Do not manually delete the installed product directories.

***The uninstall process is not a rollback*. It removes all product suite files, not simply files that changed as a result of a new product installation. If you need a full rollback procedure, contact EMC Smarts technical support.**

CAUTION

If you install additional services manually by selecting Custom from the Installation Type screen, you can only uninstall those services manually. They do not uninstall when you perfom a standard uninstallation.

Before uninstallation

The following section covers the preparation required for the uninstallation process:

- "Detecting EMC Smarts programs" on page 71
- "Stopping active EMC Smarts programs (UNIX)" on page 72
- "Stopping active EMC Smarts programs (Windows)" on page 73
- "Uninstall the FLEXnet License Server" on page 75

Detect and stop EMC Smarts programs

Before installing or uninstalling your suite, you must stop all EMC Smarts services, EMC Smarts scheduled jobs, and any other process that uses programs or libraries in any EMC Smarts installation area.

CAUTION

For new installations or uninstallations on UNIX, do not stop the EMC Smarts service daemon process, sm_serviced.

When you install or uninstall suites, all EMC Smarts product suites on the same host must be shut down. If the Broker is on the host, it too must be shut down. This will prevent EMC Smarts applications from starting and new connections from being established while the Broker is down. Inform any users who may be affected and, if necessary, schedule the installation or uninstallation for a period of low utilization.

Detecting EMC Smarts programs

The sm_plist utility identifies all EMC Smarts programs that are running for any product suite on your machine. You can use the sm_plist utility whenever you need to identify EMC Smarts programs that are running (for example, before an installation or uninstallation, or applying another SmartPack or Rolling Patch).

To use the utility, invoke it from the BASEDIR/smarts/script directory. The utility displays active programs in a window.

1. Go to the *BASEDIR/smarts/script* directory.

2. Start the *sm_plist* utility:

   For UNIX, type:

   ```
   # ./sm_plist.sh BASEDIR2
   ```

   For Windows, type:

   ```
   cscript sm_plist.vbs BASEDIR2
   ```

   where *BASEDIR* is the directory where the *sm_plist* utility is installed, and *BASEDIR2* represents the location of any EMC Smarts product suite.

Stopping active EMC Smarts programs (UNIX)

To stop active EMC Smarts programs (UNIX):

1. Stop active EMC Smarts services by using the sm_service utility from BASEDIR/smarts/bin:

   ```
   ./sm_service stop --all
   ```

   Note: sm_serviced waits 30 minutes after sending a shutdown request to a process. If that process is still running after 30 minutes, sm_serviced stops it.

2. Determine if any EMC Smarts services are still running by using the brcontrol utility from BASEDIR/smarts/bin:

   ```
   ./brcontrol -b <host>:<port>
   ```

   Based on the location of the Broker, go to the appropriate step, as indicated in Table 20 on page 72.

Table 20 Next steps for detecting and stopping programs

Location of Broker	Display	Action to take
On same host	An “Error attaching to Broker” message	The EMC Smarts Broker is not running. Go to step 4 .
	List of servers registered with the Broker	• The Broker or service daemon did not shut down. • If any servers are still running on the host, these did not shut down. Go to step 3 .
On different host	List of servers registered with the Broker	If any servers are still running on the host where you will install the EMC Smarts software, these did not shut down. Go to step 3 .

3. Stop any EMC Smarts server that is still running. If the Broker is on the host, stop the local Broker:
   - To stop any server that is still running, use the *dmquit* utility from BASEDIR/smarts/bin:

     ```
     ./dmquit --server=<servername> -b <host>:<port>
     ```

   - To stop the local Broker from BASEDIR/smarts/bin:

     ```
     ./brquit --broker=localhost:<port>
     ```

4. Determine if any other EMC Smarts processes are still running and shut the processes down:

   c. Detect the processes by using the following command:

   ```
   ps -ef | grep "sm_"
   ```

   If a list is displayed, note the process ID (PID) of these active EMC Smarts processes.

CAUTION

Do not stop or kill the EMC Smarts service daemon process, sm_serviced.

   d. Shut down these EMC Smarts processes (except sm_serviced) using the following command:

   ```
   kill <pid>
   ```

Stopping active EMC Smarts programs (Windows)

To stop a service from the Windows desktop, use the Microsoft Management Console:

1. Select **Settings** > **Control Panel**.
2. At the **Control Panel**, select **Administrative Tools**.
3. At the **Administrative Tools** folder, select **Services**.
4. At the **Services** window, locate any running EMC Smarts services. These services start with the words "EMC Smarts," "EMC Ionix,""InCharge," or "Smarts." For each of these services, right-click the service and then select **Stop**.

   Note: Do not stop the Broker service.

5. Repeat step 4 until all EMC Smarts services are stopped.

6. Open a command prompt and determine if any Smarts Managers are running by using the *brcontro*l utility from *BASEDIR\smarts\bin:*

   brcontrol -b *<host>:<port>*

7. Stop any EMC Smarts server that is still running using the *dmquit* utility from *BASEDIR/smarts/bin:*

   dmquit --server=*<servername>* **-b** *<host>:<port>*

8. If the Broker is installed on the same host, use the *brquit* utility from BASEDIR/smarts/bin to stop it:

   brquit --broker=localhost:*<port>*

9. Press **Ctrl-Alt-Delete**. The **Windows Security** dialog box appears.
10. Click **Task Manager**.
    The **Windows Task Manager** appears.
11. Select the **Processes** tab.

CAUTION

Wait 30 minutes before performing the next step. EMC Smarts servers with large topologies can take considerable time to stop while saving the topology to the repository. Stopping processes prematurely may corrupt your repository file.

12. In the **Processes** tab, look in the column labeled **Image Name** for sm_server. Right-click each sm_server, and then select **End Process**.
13. In the **Processes** tab, look for other image names that start with **sm_**, for example, sm_notify, sm_adapter, sm_beacon, and so on. Right-click each instance, and then select **End Process**.

Note: Do not shut down any sm_authority or sm_logger processes. The sm_authority and sm_logger processes are child processes of a EMC Smarts server. The child processes will stop when the parent process stops.

Uninstall the FLEXnet License Server

The FLEXnet License Server is used by EMC Smarts products for license management. The FLEXnet software is provided as part of any EMC Smarts software distribution. To install a FLEXnet License Server and set up permanent licenses for your EMC Smarts products, see the *EMC Smarts System Administration Guide*.

When uninstalling all of your EMC Smarts products and suites that use a specific FLEXnet License Server, you must also uninstall the FLEXnet License Server.

Note: If any EMC Smarts products will remain in your network and use the FLEXnet License Server, do not uninstall either the license server or the EMC Smarts product suite where the permanent license file resides.

If you uninstall EMC Smarts products without uninstalling the FLEXnet License Server, a message displays that the FLEXnet (lmgrd) service is still running. Note that an EMC Smarts application will not start if it is unable to contact the license server.

To stop and uninstall the FLEXnet License Server:

1. Stop the FLEXnet License Server.
   - On Solaris, type:

     ```
     /etc/init.d/SMARTS-License stop
     ```

   - On HP-UX, type:

     ```
     /sbin/init.d/SMARTS-License stop
     ```

   - On Linux, type:

     ```
     /etc/init.d/SMARTS-License stop
     ```

   - On Windows:

     To manually stop the license server on Windows, do the following as administrator:

     a. Select **Start** > **Settings** > **Control Panel** > **Administrative Tools**.

     b. Select **Services**.

     c. Select the **FLEXnet License Server** service.

     d. Right-click and select **Stop**.

2. Run the *install_license* script with the **uninstall** command from the BASEDIR/smarts/script directory.
   - In UNIX, type:

     ```
     BASEDIR/smarts/script>install_license.sh uninstall
     ```
   - In Windows, type:

     ```
     BASEDIR\smarts\script>install_license.cmd uninstall
     ```

Uninstall the IP Management Suite

The following section covers the uninstallation process for the following modes:

- "Uninstall by using Wizard mode" on page 77
- "Uninstall by using CLI mode" on page 78
- "Uninstall by using unattended mode" on page 80

Uninstall by using Wizard mode

Wizard mode provides a graphical user interface to the uninstallation program for UNIX and Windows platforms.

On UNIX systems, Wizard mode uses the X Window System to display the installation wizard. The host on which you install the EMC Smarts software and the host where you log in must be configured to run the X Window System. Before starting the installation program, verify that the X Window System is running.

1. Invoke the the uninstaller program:
   - For UNIX, type:

     `BASEDIR/_uninst/uninstaller.bin`

   - For Windows, use Add/Remove Programs:
     a. Click **Start** > **Settings** > **Control Panel**.
     b. Double-click **Add/Remove Programs**.
     c. From the **Add/Remove Programs** window, select the appropriate service for your product suite.
     d. Click **Change/Remove.**
2. Click **Next** in the **Welcome** screen to continue.
3. In the **Product Selection** screen, click **Next** to uninstall the entire suite of products (by default, all products are selected) or deselect products that should remain installed.
4. Review the list of products that will be uninstalled and the target installation directory. Once you click **Next**, you cannot cancel the uninstallation process.

If necessary, click **Back** to return to the **Product Selection** screen to revise your selections.

To uninstall the products, click **Next**; the **Uninstallation Progress** screen appears.

5. Upon completion, the **Uninstallation Summary** displays informational messages such as successful confirmations, error messages, and warnings. If **Next** displays, your system needs to be rebooted. Click **Next** and then reboot your system. Otherwise, click **Finish** to exit the uninstallation.

   The log file is a text file with the naming convention Uninstall.<*suite*>.<*productversionNumber*>.log. It is located in the BASEDIR/smarts/setup/logs directory. If the uninstallation process fails, the log files are located in the /tmp directory.

6. If you plan to reinstall EMC Smarts then examine any remaining directories and save customized files located in the */local* directory. Depending upon the suite, some or all of the following subdirectories will remain in the BASEDIR/smarts directory after uninstallation because they contain user-modified files:

   - /local
   - /bin
   - /setup

Uninstall by using CLI mode

To uninstall an EMC Smarts product or product suite:

1. Type the following command and press **Enter**:

   ```
   BASEDIR/_uninst/uninstaller.bin -console
   ```

   During the uninstallation processes, you are prompted with a series of steps and menus. You can either accept the default value or select another choice. The default values are indicated in brackets or as predefined selections (checkmarks) in menus. To accept the default value, press **Enter**.

   When replying to a prompt, you can either accept the default value or select another choice.
   To reply yes, type **Y**

To reply no, type **N**.
Do not press **Delete**; this causes the process to terminate with an error message.

For selections in menus, you can accept default selections or type the number of the item and press **Enter**. An X displays next to the item. When you are finished making selections, type zero (**0**) and press **Enter**.

If you incorrectly type an entry, press **5** to repeat the prompt and select the correct value. Arrow keys and the backspace key are not supported.

Upon completion, the **Uninstallation Summary** displays informational messages such as successful confirmations, error messages, and warnings.

2. Press **Enter** to continue. If necessary, the installation program will prompt to restart your computer.
3. Press **1** to restart immediately or press **2** to restart later.
4. If you chose not to restart your computer, press **3** to finish.
5. Examine any remaining directories if you plan to reinstall the suite and save customized files located in the */local* directory.

   Depending upon the suite, some or all of the following subdirectories will remain in the BASEDIR/smarts directory after uninstallation because they contain user-modified files:

   - /local
   - /bin
   - /setup

   The installation log file is a text file with the naming convention Uninstall.<suite>.<productversionNumber>.log. It is located in the BASEDIR/smarts/setup/logs directory. If the uninstallation process fails, the log files are located in the /tmp directory.

Uninstall by using unattended mode

The unattended mode enables you to automate the removal of EMC Smarts product suites.

1. Invoke the uninstallation program with appropriate options for the operating system:

   - On UNIX systems, use the **uninstaller.bin** program:

     ```
     BASEDIR/_uninst/uninstaller.bin -silent -G
     replaceNewerResponse="Yes to All"
     ```

   - On Windows system, use the **uninstaller.exe** program:

     ```
     BASEDIR\_uninst\uninstaller.exe -silent -G
     replaceNewerResponse="Yes to All"
     ```

     Note: Type each command as one line.

2. Examine any remaining directories if you plan to reinstall the suite and save customized files located in the */local* directory.

   Depending upon the suite, some or all of the following subdirectories will remain in the BASEDIR/smarts directory after uninstallation because they contain user-modified files:

   - /local
   - /bin
   - /setup

The log files from the uninstallation are located in the BASEDIR/smarts/setup/logs directory. If the uninstallation process fails, the log files are located in the /tmp directory. A non-zero status indicates a failure.

7

Uninstalling Patches

This chapter includes the following section:

- Uninstallation 82

Uninstallation

Uninstalling a patch removes all previously applied patches and returns the EMC Smarts software to the baseline product version. Uninstall the patch by using one of the following methods:

- To uninstall by using the Windows Control Panel, follow the instruction in "Uninstalling using the Control Panel (Windows Only)" on page 83.
- To use the uninstallation program in Wizard or Command Line Interface (CLI) mode, follow the instruction in "Uninstalling using the uninstaller program in Wizard or CLI mode" on page 83.
- For Unattended (silent) mode, follow the instruction in "Uninstalling using Unattended (Silent) mode" on page 84.

Note: Administrative privileges are required to uninstall a patch.

CAUTION

You must use either the uninstaller program or, for Windows, the Add/Remove Programs to uninstall a patch. Failure to use one of these methods can result in an unstable system and/or inconsistent product directories.

CAUTION

Before uninstalling a patch, you must stop all EMC Smarts services, scheduled jobs, and any other process that uses programs or libraries in any EMC Smarts installation area. On UNIX systems, this also includes the EMC Smarts service daemon process, sm_serviced. "Detect and stop EMC Smarts programs" on page 30 provides instructions for stopping EMC Smarts programs.

Uninstalling using the Control Panel (Windows Only)

CAUTION

If you installed a patch to two different installations of the product on the same system, use the uninstaller program to remove the patch. Do not use the Add/Remove Programs Control Panel because it does not support multiple instances of the same software.

To uninstall a patch by using the Windows Control Panel:

1. Click **Start** > **Settings** > **Control Panel**.
2. Double-click **Add/Remove Programs.**
3. From the Add/Remove Programs window, select **EMC Smarts IP Management Suite** 7.0.x.x.
4. Click **Change/Remove.**

The uninstall program proceeds as described in "Completing the installation" on page 85

Uninstalling using the uninstaller program in Wizard or CLI mode

You can uninstall a patch from a specific directory on the local host by using the uninstaller program.

CAUTION

Do *not* to use the *uninstaller program* in the *_uninst* directory because it will remove the entire product.

To uninstall a patch by using Wizard or CLI mode:

1. Change directory or use the file navigator to find the */_rpuninst* directory. For example:
   - /opt/InCharge7/IP/_rpuninst on UNIX systems
   - C:\InCharge7\SAM_rpuninst on Windows systems
2. Invoke the uninstaller program. For example:
   - ./**uninstaller.bin** on UNIX systems
   - C:**uninstaller.exe** on Windows

Note: To run the uninstaller program in CLI mode, specify the **-console** option after the command.

The unistall program proceeds as described in "Completing the installation" on page 85

Uninstalling using Unattended (Silent) mode

You can uninstall a patch from a specific directory on the local host by using the Unattended mode without user input or a response file.

CAUTION

Do *not* use the *uninstaller program* in the *_uninst* directory because it will remove the entire product. The program for uninstalling patches is in the *_rpuninst* directory.

1. Change directory or use the file navigator to find the */_rpuninst* directory. For example:
   - /opt/InCharge7/IP/_rpuninst on UNIX systems
   - C:\InCharge7\SAM_rpuninst on Windows systems
2. Invoke the uninstaller program. For example:
   - UNIX

     ```
     ./uninstaller.bin -silent -G
     replaceNewerResponse="Yes to All"
     ```

   - Windows

     ```
     uninstaller.exe -silent -G
     replaceNewerResponse="Yes to All"
     ```

To verify a successful uninstall, type the BASEDIR/smarts/bin/**sm_server --version** command and check the results.

In addition, you may check the log file. The uninstaller program creates a log file called Uninstall.RP.7.0.x.x.log. It is located in the *BASEDIR/smarts/setup/logs* directory.

Completing the installation

1. Click **Next** in the Welcome screen to continue.
   The patch to be uninstalled is displayed with its location.
2. Review the patch number and the target installation directory.
3. Click **Next** and the **Uninstallation Progress** screen displays. After you click **Next**, you cannot cancel the uninstallation process. Upon completion, the **Uninstallation Summary** displays informational messages such as successful completions, error messages, and warnings.
4. Click **Next** and then restart your system. Otherwise, click **Finish** to exit the uninstaller program.
5. The uninstaller program creates a log file called Uninstall.RP.7.0.x.x.log. It is located in the BASEDIR/smarts/setup/logs directory.

A

Manually Installing Services

This appendix includes the following sections:

- Broker 89
- IP Availability Manager-only Server 90

Introduction

If you did not start components of the product suite as services when you installed the IP Management Suite, you may install services manually. Services are programs that, once started, are generally intended to run continuously. Components installed as services start automatically upon system reboot. Those components not installed as services (manual processes or disabled processes) require that you issue commands to start and stop them as necessary.

Typical reasons to install products as services include the following conditions:

- During installation of the suite, you choose to start product components manually and now want to run the components as services.
- Multiple instances of a single product component running as a service are required. During installation, you can install only a single instance of a product component as a service.

To install a product component as a service, enter the appropriate **sm_service install** command.

For components that are not installed as services, you need to install them either as services (--startmode=runonce) or manual processes (--startmode=manual) with **sm_service**, and start them as needed with the **sm_service start** command. "Start EMC Smarts services" on page 64 provides for information.

Note: At startup, the IP Availability Manager (AM) Server, IP Performance Manager (PM) Server, or both (AM-PM Server) running as a single process will attempt to listen for SNMP traps on port 9000. Because only one process can listen for traps on port 9000, only one of these three servers (AM, PM, or AM-PM) should be started as a Service.

EMC Smarts System Administration Guide provides a complete description of the command syntax..

Broker

An EMC Smarts client application, such as a console or an adapter, utilizes the Broker to determine where EMC Smarts servers are running.

The default options for the Broker and its values are:

```
▼/opt/InCharge/SAM/smarts/bin/sm_service install
--force
--unmanaged
--name=ic-broker
--startmode=runonce
--description="EMC Ionix Broker"
--env=SM_CLIENTCONNECT=brokerConnect.conf
/opt/InCharge/SAM/smarts/bin/brstart
--port=<port>
--output
--restore=/opt/InCharge/SAM/smarts/local/repos/broker
/broker.rps▲
```

Note: Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

The value for <*port*> is configured during installation.

IP Availability Manager-only Server

EMC Smarts IP Availability Manager monitors and diagnoses availability problems within networks.

The default options for the IP Availability Manager Server and their values are:

```
▲/opt/InCharge/IP/smarts/bin/sm_service install
--force
--unmanaged
--name=ic-am-server
--startmode=runonce
--description="EMC Ionix IP Availability Manager Server"
/opt/InCharge/IP/smarts/bin/sm_server
--name=INCHARGE-AM
--config=icf
--bootstrap=bootstrap-am.conf
--port=0
--subscribe=default
--ignore-restore-errors
--output▼
```

Note: Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

Note: The `--ignore-restore-errors` option is required when starting an IP Server (am, pm, am-pm, or dm) that will use a 4.x repository file.

Performance Manager-only Server

EMC Smarts IP Performance Manager monitors devices within networks, and diagnoses performance problems that occur.

The default options for the Performance Manager and their values are:

```
▼/opt/InCharge/IP/smarts/bin/sm_service install
--force
--unmanaged
--name=ic-pm-server
--startmode=runonce
--description="EMC Ionix IP Performance Manager Server"
   /opt/InCharge/IP/smarts/bin/sm_server
--name=INCHARGE-PM
--config=icf
--bootstrap=bootstrap-pm.conf
--port=0
--subscribe=default
--ignore-restore-errors
--output▲
```

Note: Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

IP Availability Manager and IP Performance Manager Server

The default options and values for the server that runs the IP Availability Manager and IP Performance Managers together are:

```
▼/opt/InCharge/IP/smarts/bin/sm_service install
--force
--unmanaged
--name=ic-am-pm-server
--startmode=runonce
--description="EMC Ionix IP Availability Manager and
Performance Manager Server"
/opt/InCharge/IP/smarts/bin/sm_server
--name=INCHARGE-AM-PM
--config=icf
--bootstrap=bootstrap-am-pm.conf
--port=0
--subscribe=default
--ignore-restore-errors
--output▲
```

Note: Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

Discovery Manager Server

EMC Smarts Discovery Manager provides automated discovery of Layer 2 and 3 elements in IP networks.

The default options for the Discovery Manager Server and their values are:

```
▼/opt/InCharge/IP/smarts/bin/sm_service install
--force
--unmanaged
--name=ic-dm-server
--startmode=runonce
--description="EMC Ionix Discovery Manager Server"
/opt/InCharge/IP/smarts/bin/sm_server
--name=INCHARGE-DISCMGR
--config=icf
--bootstrap=bootstrap-dm.conf
--port=0
--ignore-restore-errors
--output▲
```

Note: Indicates that this command must be typed as one line. Separate each option with a space when typing the command.

B

UNIX Procedures for CD-ROMs

This appendix includes the following section:

◆ Mounting the CD-ROM 96

As a reference, this chapter includes UNIX commands and examples used when installing the suite.

Mounting the CD-ROM

1. Insert the CD into the CD-ROM drive.
2. If the CD-ROM is automatically mounted, continue to step 3. Otherwise, select the appropriate mount command as shown in Table 21 on page 96.

Table 21 Mounting the CD-ROM for UNIX operating systems

Operating System	Commands and Examples
Solaris	Syntax: `mount -o ro -F hsfs <DEVICE> /mnt` Example: `mount -o ro -F hsfs /dev/dsk/c0t6d0s0 /mnt`
HP-UX	Syntax: `mount -ocdcase -o ro -F cdfs <DEVICE> /mnt/cdrom` Example: `mount -ocdcase -o ro -F cdfs /dev/cdrom /mnt/cdrom`
Linux	Syntax: `mount <DEVICE>` Example: `mount /dev/cdrom /mnt/cdrom`
where <*DEVICE*> is the mount point for your CD-ROM drive.	

3. Change to the CD-ROM directory by entering the appropriate command from Table 22 on page 96.

Table 22 Changing to the CD-ROM Directory in Unix Operating Systems

Operating System	Command
Solaris	If Volume Manager (VM) is running: `cd /cdrom/<suite>_<version>_<build>/suite` If VM is not running: `cd /mnt/suite`

Table 22 Changing to the CD-ROM Directory in Unix Operating Systems

Operating System	Command
HP-UX	cd /mnt/cdrom/suite
Linux	If automount is running: `cd /cdrom/<suite>_<version>_<build>/suite` If automount is not running: `cd /mnt/cdrom/suite`
where: • *<suite>* is the product suite, for example, NPM, IP, MPLS, or SAM. • *<version>* is the release version, for example, 1_1_0 or 6_2_0. • *<build>* is a build number, for example, 6219 or 23922.	

C

Manually Starting Products

This chapter includes the following section:

- Start Products in Native Mode (UNIX only)..... 100

Start Products in Native Mode (UNIX only)

If any products were not installed as services in UNIX, you can manually start them. Do not use this method in a production environment. However, this method can be useful for testing. To start a product, enter the appropriate **sm_server** command from Table 23 on page 100. For a complete description of the command syntax, see the *EMC Smarts System Administration Guide*.

Table 23 Starting IP Management Suite products in native mode

Product	Command (▼▲ indicates the command must be typed on one line.)
Broker	▼ *BASEDIR*/smarts/bin/brstart --port=<*port*>--output ▲
IP Availability Manager	▼ *BASEDIR*/smarts/bin/sm_server --name=<*IP_Manager_name*> --config=icf --bootstrap=bootstrap-am.conf --subscribe=default --port=<*port_name*> --output=<*file_name*>▲

D

The sm_edit Utility

As part of the EMC Smarts deployment and configuration process, you need to modify certain files. User modifiable files include configuration files, rule set files, templates, and files (such as seed files, and security configuration files) that contain encrypted passwords. Original versions of these files are installed into appropriate subdirectories under the BASEDIR/smarts/ directory.

Original versions of files should not be altered. If a file requires modification, it must be stored as a local copy of the file in BASEDIR/smarts/local or one of its subdirectories.

Example 1 **Modify serverConnect.conf**

In UNIX:

- The original version of the server connect (serverConnect.conf) security configuration file on UNIX is installed to:
  `/opt/InCharge7/SAM/smarts/conf`
- A modified serverConnect.conf security configuration file on UNIX should be saved to:
  `/opt/InCharge7/SAM/smarts/local/conf`

In Windows:

- The original version of the server connect (serverConnect.conf) security configuration file on Windows is installed to:
  `C:\InCharge7\SAM\smarts\conf`
- A modified serverConnect.conf security configuration file on Windows should be saved to:
  `C:\InCharge7\SAM\smarts\local\conf`

Smarts software is designed to first search for user modifiable files in BASEDIR/smarts/local or one of its subdirectories. If a modified version of a file is not found in the local area, Smarts software then searches appropriate nonlocal directories.

To facilitate proper file editing, EMC Corporation provides the sm_edit utility with every Smarts product suite. When used to modify an original version of a file, this utility automatically creates a local copy of the file and places it in the appropriate location under BASEDIR/smarts/local. This ensures that the original version of the file remains unchanged. You can invoke sm_edit from the command line. Optionally, you can configure Windows so that sm_edit is automatically invoked when user-modifiable files are double-clicked in Windows Explorer.

To invoke the sm_edit utility from the command line, specify the path and the name of the file to edit under BASEDIR/smarts. If multiple Smarts products are running on the same host, invoke sm_edit from the bin directory of the product suite with the files to edit.

Example 2 Edit a configuration file

To edit the configuration file for connecting to a server (serverConnect.conf), invoke the sm_edit utility as follows:

```
/opt/InCharge7/SAM/smarts/bin>sm_edit
conf/serverConnect.conf
```

In this example, the sm_edit utility automatically creates a local copy of the serverConnect.conf file in the /opt/InCharge7/SAM/smarts/local/conf directory and opens the file in a text editor. If a local version of the file already exists, the sm_edit utility opens the local version in a text editor. In addition, sm_edit creates any necessary subdirectories.

The *EMC Smarts System Administration Guide* provides additional information about the sm_edit utility.