

# *InCharge*<sup>TM</sup>

Availability Manager for Wide  
Area Networks

Installation Guide for UNIX



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# Preface

This document provides installation instructions for InCharge Availability Manager for Wide Area Networks (WAN Availability) and the InCharge Consoles on the Solaris operating system.

The InCharge consoles include:

- Administration Console
- Broker Admin Console
- Monitoring Console

## Intended Audience

This guide is intended for users who are responsible for installing InCharge WAN Availability. Network operations personnel who monitor the results of WAN Availability and other network applications should see the guides that relate to their work.

## Document Organization

This guide consists of the following:

1. Overview	Describes supported UNIX platforms, typical configurations, and provides an installation checklist
2. Pre-installation Requirements	Summarizes hardware, software, patch and other requirements
3. Installation Steps	Explains how to install and start InCharge WAN Availability
4. Running the InCharge Console As a Java Applet	Describes how to launch a Java applet and attach to a domain manager
5. Uninstalling InCharge	Describes how to remove InCharge WAN Availability from your system

**Table 1:** Document Organization

## Documentation Conventions

Several conventions may be used in this document as shown in Table 2.

CONVENTION	EXPLANATION
<code>sample code</code>	Indicates code fragments and examples in Courier font
<b>keyword</b>	Indicates commands, keywords, literals, and operators in bold
<code>%</code>	Indicates C shell prompt
<code>#</code>	Indicates C shell superuser prompt
<code>&lt;parameter&gt;</code>	Indicates a user-supplied value or a list of non-terminal items in angle brackets
<code>[option]</code>	Indicates optional terms in brackets
<code>/InCharge</code>	Indicates directory path names in italics
<b><i>yourDomain</i></b>	Indicates a user-specific or user-supplied value in bold, italics
<code>File &gt; Open</code>	Indicates a menu path in italics

**Table 2:** Documentation Conventions



In this document, the term **BASEDIR** represents the location where InCharge software is installed. The term **BASEDIR** represents the `/opt` directory for UNIX, the `C:\InCharge` directory for Windows, or your specified path. The InCharge software resides in the **BASEDIR**/`smarts` subdirectory.

Directory path names are shown with forward slashes (`/`). Users of the Windows operating systems should substitute back slashes (`\`) for forward slashes.

Also, if there are figures illustrating consoles in this document, they represent the consoles as they appear in Windows. Under UNIX, the consoles appear with slight differences. For example, in views that display items in a tree hierarchy such as the Topology Browser, a plus sign displays for Windows and an open circle displays for UNIX.



## Overview

This chapter describes:

- InCharge products and supported UNIX platforms
- Installations and typical configurations
- A checklist of the installation process
- The **sminstallcheck** command. Issue this command to quickly verify that your system resources and patch levels meet InCharge's minimum requirements.

## InCharge Products

InCharge products are installed separately. You can install one or more products. InCharge products include:

- ATMFR (InCharge ATM / Frame Relay Availability Manager)
- MDM\_AD (InCharge ATM / Frame Relay Adapter for Preside MDM)
- CWM\_AD (InCharge ATM / Frame Relay Adapter for Cisco WAN Manager)
- Consoles (Administration, Broker Admin, and Monitoring)

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**Note:** SMARTS recommends you deploy InCharge applications and the InCharge console on different machines.

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# Supported UNIX Platforms for Each InCharge Product

Table 3 identifies the supported UNIX platforms for each InCharge product.

**Note:** The InCharge Console is also supported in the Windows NT and Windows 98/2000 environments.

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PLATFORM	APPLICATIONS	CONSOLES
Solaris 2.6 (5.6), 7 (5.7), and 8 (5.8)	Yes	Yes

**Table 3:** InCharge Products and Supported UNIX Platforms

Refer to "Pre-installation Requirements" on page 5 for information on hardware, software, and patch requirements.

# About Installations and Configurations

The installation process depends on the type of installation and the configuration you wish to implement. Types of installations are:

- Installing an InCharge product for the first time
- Installing an additional product of the *same* InCharge version (an add-on)

Typical configurations can be:

- One InCharge product on one system (for example, Console product on one system)
- Multiple InCharge products on one system (for example, Applications and Console products on one system)

**Note:** SMARTS recommends you deploy InCharge Applications and the InCharge Console on different machines.

---

# Installation Checklist

The following checklist steps depend on your system, the InCharge product(s) you intend to install, and the type of installation and configuration.

- 1** Determine whether your system meets the hardware and software requirements for the InCharge product(s) you are installing. These requirements are operating system-specific. If necessary, upgrade your system.
- 2** Determine what vendor patches are required for your system. Patches are operating system-specific. If necessary, obtain the required patches and apply them to your system. Refer to the "Pre-installation Requirements" on page 5 for details.

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**Note:**

You may issue the **sminstallcheck** command to verify that your system meets hardware, software, and patch requirements. Refer to the "Checking Available Resources and Applied Patches" on page 3 for details about issuing this command.

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- 3** If you intend to run the InCharge Console as a Java applet, determine whether your client machine's browser meets the browser requirements. Then obtain, install, and configure the Java 1.2.2 Plug-in appropriate for your operating system. Refer to "More About Java Applet Requirements" on page 8.
- 4** Installation of the InCharge ATM / Frame Relay Adapter packages should be performed on the machine where the EMS application is installed.
- 5** Install the InCharge product(s) you purchased. Refer to "Installation Steps" on page 11.

## Checking Available Resources and Applied Patches

Before you install an InCharge product, you should determine whether your system meets InCharge's minimum requirements for hardware, software, and operating system patch levels. To do so, use the **sminstallcheck** command provided on the InCharge CD-ROM.

This command checks the requirements for a specified product (APPLICATIONS or CONSOLE) and displays the check results online. The results are also saved in a log file for future reference. See "The sminstallcheck Command" on page 4.

If your system successfully passes the system requirements check, read "Pre-installation Requirements" on page 5 for additional information on privileges, adapter, or upgrade requirements, then follow the "Installation Steps" on page 11.

If your system fails the system requirements check, you should upgrade your system before you continue with the installation process. Refer to "Pre-installation Requirements" on page 5 for detailed information on hardware, software, and patch requirements.

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**Note:** This system requirements check is also performed automatically during the installation process.

---

## The sminstallcheck Command

The **sminstallcheck** command is provided on the InCharge CD-ROM. To use, the command, perform these steps:

- 1 Insert the InCharge CD-ROM into your drive and mount the CD-ROM.
- 2 Go to the directory on the mounted CD-ROM that is appropriate for your operating system.
- 3 Issue the command:

```
./sminstallcheck <BASEDIR> <product>
```

where **product** is: APPLICATIONS or CONSOLE.

The check compares InCharge hardware and software requirements for the specified product, including patch levels, against actual system resources and applied patches, and displays the results. If the test fails, the failure is indicated by a >>>>.

The check results are also recorded to a log file, `/tmp/sminstall.log.mm.dd.yyyy`. Checks performed on the same day are appended to the file. You can refer to the log file if system upgrades are required.

## Pre-installation Requirements

This chapter includes:

- A summary of hardware, software, and patch requirements
- Detailed patch information for Solaris
- Java applet requirements
- Privileges requirement

For a summary of supported UNIX platforms and InCharge products, refer to "Supported UNIX Platforms for Each InCharge Product" on page 2.

## Summary of Hardware and Software Requirements

Hardware, software, and patch requirements summarized here represent minimum levels.

If you are installing more than one InCharge product, then:

- Your system must meet the products' *total* RAM and disk space requirements.
- SMARTS suggests that you use a dual processor.

In order to determine whether your system meets InCharge's minimum requirements for a specific product, use the **sminstallcheck** command. See "The sminstallcheck Command" on page 4.

## Memory Requirements

Table 4 summarizes memory requirements for each InCharge product.

PLATFORM	CONSOLES	APPLICATIONS
Solaris 2.6 (5.6), 7 (5.7), and 8 (5.8)	128 MB	512 MB

**Table 4:** Memory Requirements

## Disk Space Requirements

Table 5 summarizes disk space requirements for each InCharge product.

PLATFORM	CONSOLES	APPLICATIONS
Solaris 2.6 (5.6), 7 (5.7), and 8 (5.8)	50 MB	160 MB

**Table 5:** InCharge Disk Space Requirements

## Processor Requirements

Table 6 summarizes processor requirements for each InCharge product.

PLATFORM	CONSOLES	APPLICATIONS
Solaris 2.6 (5.6), 7 (5.7), and 8 (5.8)	SPARC Ultra 1	Enterprise 250

**Table 6:** InCharge Processor Requirements

## Patch and Java Runtime Environment (JRE) Requirements

Table 7 summarizes patch and Java Runtime Environment (JRE) requirements for each supported UNIX platform. Detailed patch information for each platform is provided in subsequent sections.

PLATFORM	PATCHES	JAVA RUNTIME ENVIRONMENT
Solaris 2.6 (5.6)	105181-20, 105210-27, 105284-31, 105568-16, 105669-10, 105591-09, 106040-13, 107733-09, 108091-03	Installed with InCharge
Solaris 7 (5.7)	106980-10, 107081-11, 107636-03	Installed with InCharge
Solaris 8 (5.8)	None	Installed with InCharge

**Table 7:** UNIX Patch and JRE Requirements



# More About Solaris Requirements

This section describes detailed patch information for Solaris.

## Patch Requirements for Solaris

Table 8 lists the minimum patch requirements for Solaris 2.6 and 7. The two-digit number following the dash in each patch ID is the revision of that patch. Some of these patches are required for the Java Runtime Environment (JRE 1.2.2), which is included with your InCharge distribution and is automatically installed when you install the InCharge Console.

**Note:** Solaris 8 does not require patches for the console or applications.

SOLARIS VERSION	PATCH ID	APPLICATION OR CONSOLE	DESCRIPTION
2.6 (5.6)	105181-20	application	Kernel Update (socket close/hang)
2.6 (5.6)	105591-09	application	LibC Patch for C++
2.6 (5.6)	105210-27	console	Libc Patch
2.6 (5.6)	105284-31	console	Motif 1.2.7 Runtime Library Patch
2.6 (5.6)	105568-16	console	Libthread Patch
2.6 (5.6)	105669-10	console	CDE 1.2: libDTSvc Patch (dtmail)
2.6 (5.6)	106040-13	console	X Input & Output Method Patch
2.6 (5.6)	107733-09	console	Dynamic Linker Patch
2.6 (5.6)	108091-03	console	SunOS 5.6:ssJDK1.2.1_03 fails with fatal error in ISO8859-01 locales
7 (5.7)	106980-10	console	Libthread Patch
7 (5.7)	107636-03	console	X Input & Output Method Patch
7 (5.7)	107081-11	console	Motif 1.2.7 and 2.1.1:runtime patch for Solaris

**Table 8:** Solaris 2.6 and 7 Patches for InCharge

The Solaris patches required for the console can be downloaded from <http://www.sun.com/solaris/java> or obtained from your service provider.

In addition to the patches listed, you may also want to install the latest patch cluster for your version of Solaris, which includes both recommended and security patches. Solaris patch clusters are available for download on the Web; follow the appropriate links starting at <http://sunsolve.sun.com>.

### Patches for Asian Locales

The patches listed in Table 9 are additional Solaris patches required for Asian locales.

SOLARIS VERSION	PATCH ID	DESCRIPTION
2.6 (5.6)	105633-36	OpenWindows 3.6: Xsun Patch
7 (5.7)	108376-03	OpenWindows 3.6: Xsun Patch

**Table 9:** Asian Locale Solaris Patches for InCharge Console

## More About Java Applet Requirements

The InCharge Console can also run on a client workstation as a Java applet. When the console is run as an applet, a client can attach to the host where the InCharge Domain Manager is running.

To run the console as an applet, the following is required:

- InCharge Console and InCharge applications *must be* installed on the same host machine.
- Netscape 4.75 or Internet Explorer 5.5 must be installed on the client machine.
- The browser must be JavaScript enabled.
- The Java plug-in (JPI) for the Java 1.2.2 must be installed and properly configured on the client machine.

The Java plug-ins can be downloaded from the following locations:

For the Solaris plugin, download from:

<http://www.sun.com/software/solaris/netscape/jpis/>

Follow the vendor instructions for installing and configuring the plug-in.

Also, a list of specific versions of browsers that are supported on different platforms can be found at:

*<http://java.sun.com/products/plugin>*

## **Privileges Requirement (All UNIX Platforms)**

In order to perform this installation process, you need to be a superuser (User ID 0).



## Installation Steps

This chapter describes the installation steps for the ATMFR, MDM\_AD, CWM\_AD and Console products. The basic steps for installing InCharge products are the same for all supported UNIX platforms. Products are installed separately. You must be a superuser to install InCharge products.

If you choose to install multiple products on the same machine and one is ATMFR, you *must* install the ATMFR product first.

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**Note:** SMARTS recommends you deploy InCharge ATMFR and the InCharge Console on different machines.

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**Note:** Installation of either CWM\_AD or MDM\_AD products should occur on the respective machine where Cisco WAN Manager or Preside MDM is running.

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InCharge documentation (user's guides in Acrobat .PDF format and HTML pages for SMARTS commands) is automatically installed with all products.

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**Note:** If you are a current customer, you must first uninstall your old version of InCharge before installing InCharge WAN Availability. Refer to "Uninstalling InCharge" on page 19.

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# Installing an InCharge Product

**1** Mount the InCharge CD-ROM.

If the Volume Manager is running, it automatically mounts the InCharge CD-ROM to `/cdrom/incharge`.

If the Volume Manager is not running, use the **mount** command:

```
# mount -o ro -F hsfs DEVICE /mnt
```

Where **DEVICE** is your CD-ROM. For example,

```
# mount -o ro -F hsfs /dev/dsk/c0t6d0s0 /mnt
```

For device information, ask your System Administrator.

**2** Change directory to the mounted CD-ROM.

```
# cd /cdrom/incharge/solaris2
```

If the Volume Manager is not running, use this command instead:

```
# cd /mnt/solaris2
```

**3** Create the **BASEDIR** directory.

```
/opt/InCharge6/ATMFR/
```

**4** Install the InCharge product using the **sminstall** command.

SMARTS recommends installing the InCharge product under `/opt`, referred to as **BASEDIR**. All SMARTS software is installed under **BASEDIR/smarts**.

TO INSTALL....	TO SPECIFY:
ATM/FR Server	# ./sminstall BASEDIR ATMFR
Preside MDM Client	# ./sminstall BASEDIR MDM_AD
Cisco WAN Manager Client	# ./sminstall BASEDIR CWM_AD
InCharge Console	# ./sminstall BASEDIR CONSOLE
This command's arguments are not case sensitive.	

**Table 10:** The sminstall Commands

At this point, the requirements check is automatically performed. The progress and check results are printed to the console and logged to a file. Upon completion, the results are appended to a file of the same name in the **BASEDIR/smarts/conf/install** directory.

If the system fails the requirements check, you are prompted to verify whether or not you want to continue. At this point, you should discontinue the installation and investigate why the check failed.

**5** Answer the prompt:

This program is about to install the product <product> into the directory <BASEDIR>. Are you sure you want to continue [n] **y**

**6** For all products:

Specify the **Host** and **Port** setting of the InCharge Broker, where **Host** refers to the name of the machine on which the broker is running and **Port** refers to the broker's port number.

To accept the default host and port values (localhost:426), press the **Return** key.

When installing either InCharge ATM / Frame Relay Adapter for Cisco WAN Manager or InCharge ATM / Frame Relay Adapter for Preside MDM ensure that the Host and Port settings of the InCharge Broker refer to the same machine.

To specify another host value and/or port value, enter the values in <host>:<port> format and press the **Return** key. The port value can range between 1025 and 65535.

---

**Note:**

The specified setting of the InCharge Broker is assigned to the SM\_BROKER\_DEFAULT variable in the shell file runcmd\_env.sh. The variable becomes the default for all SMARTS applications and any subsequent installations. You can edit this file if you need to change the default. The shell file is located in the **BASEDIR/smarts/conf** directory.

---

This completes the installation process for the product you specified.

**7** For the Console product:

If you installed the console on Solaris, the Sun JRE 1.2.2 is automatically installed with the SMARTS software.

If you have installed the JRE in an alternate location, you must edit the shell file runcmd\_env.sh located in the **BASEDIR/smarts/conf** directory. You must change the variable SM\_JAVA\_DEFAULT setting to the location of the 1.2.2 JRE file.

At this point, you can:

- Install another InCharge product.

- Proceed to the post-installation steps.
- 8** For the MDM\_AD product:
- Please ensure that all of the switches have been configured with a userid and that userid has FMIP privileges turned on.
- Review the configuration settings located in the **BASEDIR**/*smarts/conf/icwan/discovery/discovery-nortel.conf* file.
- 9** For the CWM\_AD product:
- Review the configuration settings located in the **BASEDIR**/*smarts/conf/icwan/cisco/icwan-cwm-client.conf* file.

## Starting InCharge (Post-Installation Steps)

After the installation process is completed, you might need to restart your system. This depends on the InCharge product(s) which you installed. You should also check the status of the InCharge Broker and InCharge Domain Manager and review the newly-created InCharge directories. Lastly, open the Administration Console and proceed to configure your InCharge application.

- 1** Configure the Global Manager's *ics.conf* file.
- Copy the *dxa-atmfr-hook.asl* and the *dxa-atmfr.conf* files from **BASEDIR**/*smarts/conf/ics* directory to the *opt/InCharge6/SAM/smarts/conf/ics* directory.
  - Add a DomainType entry for ATMFR to the Global Manager's *ics.conf* file. Use the *sm\_edit* utility to edit the *ics.conf* file, located in the *InCharge6/SAM/smarts/conf/ics* directory.

```
# DomainType definition for ATM-FR
DomainType
{
    ConfFile           = "dxa-atmfr.conf";
    MinimumCertainty  = 0.24;
    SmoothingInterval = 65;
    # HookScript = "ics/dxa-atmfr-hook.asl";
    Name              = "INCHARGE-ATMFR";
}
```



**2** For the all products:

Manually start the InCharge Broker and InCharge Domain Manager or, after all the InCharge products are installed, reboot your system.

- To manually start the InCharge Broker, use:

```
# /etc/init.d/ic-broker start
```

- To manually start the InCharge ATM/Frame Relay Domain Manager, use:

```
# /etc/init.d/ic-atmfr-server start --output --daemon
```

- To manually start the InCharge ATM / Frame Relay Adapter for Preside MDM, use:

```
# /etc/init.d/ic-atmfr-mdm-client start
```

- To manually start the InCharge ATM / Frame Relay Adapter for Cisco WAN Manager, use:

```
# /etc/init.d/ic-atmfr-cwm-client start
```

---

**Note:**

To stop either the domain manager or the broker, use the word *stop* instead of *start*.

---

**3** Reconfigure your Global Manager. Invoke the following command from the *opt/InCharge6/SAM/smarts/bin* directory:

```
# sm_adapter -s <global_manager> ics/ICS_RemoteConfig.asl
```

**4** After you restart your system, determine the current state of the InCharge Broker and Domain Manager:

Issue the **BASEDIR**/*smarts/bin*/**brcontrol** command.

This displays a list of InCharge Domain Managers registered with the broker, the state of each domain manager (RUNNING, DEAD, UNKNOWN), the domain manager's process ID, port number, and the last time the domain manager's state changed.

For more information about the broker, see the *InCharge Configuration and Administration Guide*.

**5** Expand the **BASEDIR**/*smarts* directory and review the subdirectories. The InCharge subdirectories are listed in "InCharge Subdirectories" on page 16.

SUBDIRECTORY	CONTAINS
/bin	Commands
/classes	.jar files
/conf	Configuration files
/consoles	Saved consoles
/doc	InCharge documentation
/jre	Java Runtime Environment (JRE)
/lib	Libraries and model files
/logs	Log files
/repos	Saved topology
/rules	Ruleset (.asl) files
/script	Scripts

**Table 11:** InCharge Subdirectories

**6** Start the Administration Console after you have installed InCharge.

To start the console, use the **sm\_gui** command:

```
# BASEDIR/smarts/bin/sm_gui admin
```

You can either:

- Use your InCharge application immediately with default configurations.
- Continue to configure your InCharge application. For information, see the *InCharge ATM / Frame Relay Availability Manager User Guide*.

## Running the InCharge Console As a Java Applet

This chapter provides instructions on how to run the InCharge Console on a client workstation as a Java applet. When the console is run as an applet, a client can attach to the host where the InCharge Domain Manager is running.

Requirements for this type of configuration are described in "More About Java Applet Requirements" on page 8. If the requirements are satisfied, the process involves launching the applet and attaching to your InCharge Domain Manager.

There are limitations to running the console as a Java applet. The applet is *not* able to perform certain operations that the stand-alone application can, namely:

- Loading a local console
- Saving a console
- Saving the alarm log output to a file

---

**Note:** The InCharge Console is also supported in the Windows NT and Windows 98/2000 environments.

---

### Launching the Applet

To launch the applet, perform these steps:

- 1 After configuring the plug-in, exit all of your browser windows including mail windows.
- 2 Restart your browser.
- 3 Point your browser at the URL. This depends on the location of the InCharge Domain Manager and the InCharge Broker.

### Domain Manager and Broker Running on the Same Host

If the domain manager and broker run on the same host, use:

`http://Host:Port/applet/admin.html`

where **Host** refers to the name of the machine on which an InCharge Broker is running and **Port** refers to the broker's port number.

### Domain Manager and Broker Running on Different Hosts

If the domain manager and broker run on the different hosts, use:

`http://Host:Port/applet/admin.html`

where **Host** refers to the name of the machine on which the domain manager is running and **Port** refers to the domain manager's port number.

If you do not know the port number of an InCharge Domain Manager, use the **brcontrol** command or the Broker Admin Console.

Aside from the *admin.html* page, other pages are available:

- *broker-admin.html* for the Broker Admin Console
- *monitoring.html* for the Monitoring Console

## Attaching to an InCharge Domain Manager

Attaching to the InCharge Domain Manager is performed in the same way you would from the stand-alone InCharge Console. However, due to Java security restrictions, you might only be able to connect to InCharge Domain Managers running on the same host as specified in the URL used to launch the applet. To attach the InCharge Domain Manager, follow the instructions on how to start the Console in the *InCharge Availability Manager for Wide Area Networks User Guide*.

## Uninstalling InCharge

The uninstall process removes *all* InCharge products. (Products include Applications and Consoles.) Customized files are left in the **BASEDIR**/*smarts* directory. As a precautionary measure, however, back up customized files before proceeding.

These instructions are valid for InCharge versions 3.2 and above, and version 4.x.

---

**WARNING:** Before you uninstall an InCharge product, you must stop all InCharge processes *and* any adapters that interface with InCharge.

---

To uninstall all InCharge products, perform these steps:

- 1 Stop the InCharge Domain Manager process, use:

```
# /etc/init.d/ic-server stop
```

- 2 Stop the InCharge Broker process, use:

```
# /etc/init.d/ic-broker stop
```

- 3 Stop the FLEXlm license server, use:

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

- 4 Change to the directory as follows:

```
# cd BASEDIR/smarts/bin
```

- 5 Use the **smuninstall** command.

```
# ./smuninstall BASEDIR
```

All files previously installed using the InCharge CD-ROM are removed. However, the **BASEDIR** directory structure and certain log files, etc. are not removed. If desired, you can remove the directory and its contents after you complete the uninstall.