



AIX System Recovery Guide

Version 7.1



Trademarks and Copyrights

© Copyright Storix, Inc., 1999-2009

Storix is a registered trademark of Storix, Inc.

SBAAdmin is a trademark of Storix, Inc in the USA and other countries

IBM, RS6000, AIX, Tivoli, PowerPC, Micro Channel and RS/6000 Scalable POWERParallel Systems are registered trademarks of International Business Machines Corporation

Publicly Available Software

This product includes software that is publicly available:

AESCrypt*	Rijndael and Cipher Block Feedback mode (CFB-128) encryption/decryption algorithms	Copyright 1999, 2000 Enhanced Software Technologies Inc. http://aescrypt.sourceforge.net/
Tcl	Open source scripting language	Copyright Regents of the University of California, Sun Microsystems, Inc. http://tcl.sourceforge.net
Tk	Tk graphics toolkit	Copyright Regents of the University of California, Sun Microsystems, Inc. http://tcl.sourceforge.net
Xpdf	PDF Document viewer (for AIX)	Copyright 1996-2003 Glyph & Cog, LLC. http://www.foolabs.com/xpdf

*Encryption Software

Storix System Backup Administrator Backup Data Encryption Feature has a cryptographic component, using **Advanced Encryption Standard (AES)** "Rijndael" encryption algorithm in Cipher Block Feedback (stream) mode (CFB-128), supporting 128, 192 and 256-bit keys.

It is not for export or redistribution to any of what are called the "T-10 Terrorist States" as determined by the U.S. Department of State. Storix System Backup Administrator Backup Data Encryption Feature has been registered with U.S. Bureau of Information and Security and is distributed under Export Control Classification Number (ECCN) 5D992. This encryption item is authorized for export and re-export under section 742.15 (B)(2) of the Export Administration Regulations (EAR).

Table of Contents

1. Introduction.....	5
When to Use this Guide	5
2. Create Boot Media for System Installation.....	6
When to Create Boot Media	6
When You Should Create New Boot Media	6
Creating System Installation Boot Media	7
CDROM image.....	7
Tape	8
Hard Disk.....	8
Network	9
No-prompt Installation.....	10
Enabling Remote Installation Manager	12
Configuring RIM when Creating Boot Media.....	12
Configuring RIM after Booting from the Boot Media.....	13
Connecting to the Remote Install Process	14
3. Network Boot/Install Configuration	15
Understanding Network Boot and Network Installation	15
Enable/Disable Network Installation of a Client	15
Disable a Network Install Client.....	18
Using an Alternate Network to Restore the Data	18
Using a Different Install Server than the Boot Server.....	19
Using the Same Boot Server to Install Different AIX Levels	20
Updating Network Boot Images	20
4. Booting to the System Installation Process.....	21
Booting the Various Platform Types	21
Accessing SMS Menus.....	21
CDROM	21
Tape	21
Hard Disk.....	21
Network	22
Completing the Boot Process	22
Troubleshooting a Network Boot	23
Determining the Network Adapter Hardware Address.....	24
LED Codes	24
5. Reinstall from a System Backup.....	28
Cloning Systems	28
Automatic Installation of Device Support Software	28
No-prompt Installation.....	28
Installing from an Encrypted Backup	29
Enter a HEX Key	30
Enter an ASCII (text) Key.....	30
System Installation Process	30
After booting from a network boot server.....	30
After booting from a local tape	31
Verifying the hardware configuration	31
The System Installation and Maintenance Menu	31
Using Keys and Getting Help	32
Change Installation Server or Device	33
Select Local Tape Drive	33

Select Local Parallel Tape Drives.....	34
Select Local Sequential Tape Drives.....	34
Select Local Disk Backup File.....	35
Set or Change Network Configuration.....	36
Select Remote Tape Device.....	37
Select Remote Disk Backup File.....	37
TSM Configuration.....	38
TSM Client Configuration.....	40
TSM Server Configuration.....	40
TSM Administrator Configuration.....	40
Change the Installation Settings.....	41
Install the System with Current Settings.....	41
Network Re-configuration (avoiding conflicts).....	41
System Recovery Options.....	42
Check/Fix Corrupt Operating System.....	42
Reinstall Base Operating System Only.....	43
Start a Maintenance Shell.....	44
Configure Remote Install Manager.....	44
Reboot the System.....	45
6. Change the Volume Group, Logical Volume and Filesystem Settings.....	46
The Change Volume Groups & Logical Volume Settings Menu.....	46
Using Keys and Getting Help.....	47
Change Volume Group Settings.....	48
Creating New Volume Groups.....	48
Change Logical Volume Settings.....	50
Creating New Logical Volumes.....	50
Change Filesystem Attributes.....	52
Index.....	54

1. Introduction

The ***SBAAdmin AIX System Installation Guide*** is a supplement to the ***SBAAdmin User Guide***, providing details on reinstalling an **AIX** system from an **SBAAdmin System Backup**. Note that a System Backup is not limited to reinstalling the same system from which it was made, but it may also be used to “clone” the original system onto different systems containing the same or different hardware.

When to Use this Guide

This guide provides instructions for booting and reinstalling a system from a SBAAdmin System Backup. This document should be reviewed after first installing the software to become familiar with this process and its requirements BEFORE a system installation is required.

Installation from a System Backup is fairly intuitive, but there is information and steps that must be taken to be prepared in the event that a system re-installation is required. The System Backup contains all of the backup data and the information needed to recreate the system and restore the data. If the System Backup is on a tape, then you can boot the system from the tape, so no other media is required. If your System Backup was written to a disk image file on a server, then you must either create a network boot image for booting the client, or a separate Boot-only tape for booting the client to the installation menus.

This guide will refer to information found in the ***SBAAdmin User Guide***. When doing so, the reference term or section will be shown in **Blue Text**. If you need to refer to that information in the Administrator User Guide, highlighted sections (**in bold**) can be found in the **Table of Contents**, and other terms can be found in the **Index**.

Note that some of the screens in this guide are not seen when you are using the ***TSM Edition***.

2. Create Boot Media for System Installation

The SBAAdmin Backup Administrator User Interface provides a very simple procedure for creating boot media, which is described in this section. This interface may be used to create bootable **tapes**, boot **CDROM** images, **network boot** images, or can configure a local **hard disk** to boot the system recovery process. This interface may create any of the boot media types. Also refer to the **stmakeboot** command in the [Commands Reference](#), which may be run on any client to make bootable media directly from that system.

If using a *Network Administrator*, you should have boot media available for every client. If different clients are of the same **platform type**, **AIX release level**, and have the same **adapter support** installed, then they may typically use the same boot media. If you have one system with all device support installed, that system may be used to create boot media that will boot any system regardless of its own platform type or attached hardware. Keep in mind, however that you must create boot media using the same AIX release level you will be installing from the backup.



You must create boot media using the same **AIX** release level you will be installing from the backup!

When to Create Boot Media

It is generally a good idea to create bootable media for each individual system that is backed up using SBAAdmin. This is because most systems do not run under the same AIX release level, have the same device support installed and configured, and have the same software level of various device support and other applications installed.

If you attempt to boot from media created using one AIX release level (i.e. "5.2"), then attempt to install the system from a backup that was running under release 5.3, you may run into problems during or after the installation completes. This is because the devices and filesystems created during the system recovery will be later accessed by a different *AIX kernel* that may not be compatible or provide the proper support. For this reason, the SBAAdmin Installation process provides strong warnings if you boot from a different release level than was running at the time the backup was created. The installation process also verifies that your boot media contains the device support that is required to install the system, based on those devices that were in use at the time of the backup. If the support is not provided by the bootable media, devices may not appear which are needed for the install process.

If you have multiple systems, all running the same AIX release (but not necessary the exact same modification or fix level), it is generally safe to use the same boot media to boot and install different systems. Because the boot media is *probably the most important boot media you will ever need*, it is probably a good idea to keep at least one spare or create boot media of different types.

When You Should Create New Boot Media

1. Any time you apply operating system updates to AIX. Even if the release level has not changed, some new device support may have been added, shared libraries may have changed, or even the kernel may have been updated.
2. Any time you install a new *release level* of [SBAAdmin System Backup Administrator](#). Although we try to maintain compatibility between current and past versions, there may be times when a new feature supported by the backup software also adds new support to the system recovery process. Since the

system recovery programs are written to your boot media, you will need to remake the boot media to make sure you are using the latest installation programs.

Creating System Installation Boot Media

To create the boot media, select **Utilities->Create/Manage Boot Media->(CDROM/Network/Hard Disk/Tape)** from the menu bar in the administrator main menu.

Creation of each media type is described separately:

CDROM image

This process will make a CDROM ISO image, but will not actually burn the image to the CDROM. This image may be copied to any system where your CD/RW device resides where you can use any software or program you choose to copy the image to the CDROM. When making a CDROM, network support (described below) is always included. If using the *Network Administrator* you can make the CDROM image for the local system or for any other client or server system you have configured.

To create a bootable CDROM, select **Utilities→Create System Installation Boot Media→CDROM**.

The screenshot shows the 'Create CDROM Boot Image Media' dialog box. It features a title bar with a maximize, minimize, and close button. The main area is divided into several sections. The top section has two text input fields: 'Boot Server Name' with the value 'aix53lpar' and a dropdown arrow, and 'CDROM Boot Image Name' with the value 'aix535' and a 'Select' button. Below this is a red header section titled 'Client System Information'. This section contains four fields: 'Client Name' with 'aix53lpar' and a dropdown arrow, 'AIX OS Level' with '5.3', 'Platform Type' with 'chrp/mp' and a dropdown arrow, and 'User Description' with 'Generic AIX 53 ML5 boot media' and a 'Clear' button. Below the red header is another red header titled 'System Installation Mode', which contains three radio buttons: 'No-Prompt', 'Menus (set defaults)', and 'Menus (no defaults)'. At the bottom of the dialog are two yellow buttons: 'Create/Update' and 'Remove', and a red close button with a white 'X'.



NOTE **Boot Server Name** and **Client Name** options will not appear when using Workstation Edition.

In the **Boot Server Name** field use the drop down to select the server you would like the boot media to be saved to. You may enter a new name in the **CDROM Boot Image Name** field, or use the Select button to select an existing image to be updated. Use the drop down to select the **Client Name** to create boot media from. **AIX OS Level**, **Platform Type** **User** will populate automatically with the appropriate values. **User Description** is optional and may be used to help identify this boot media and the systems it may be used for.

Use the Create/Update button to start the process. On Workstation edition the .iso file will be created in the Storix install /bootmedia directory (Typically /storix/bootmedia). With Network Edition, the file will be created in the "CDROM & Network Boot Images" directory.

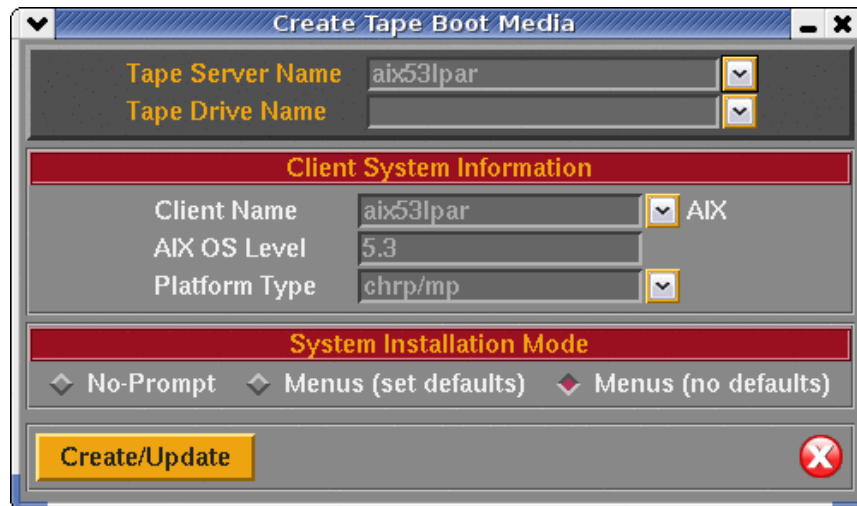
Tape



Tape option does not appear when you are using *TSM Edition*.

Tapes will automatically be made bootable when you create an **AIX System Backup** to the start of the tape. You can stack additional System Backups to the tape, but no further boot images will be written since they must be at the start of the tape. If you have system backups on a tape (or disk) that are not themselves bootable, you can create a separate bootable tape to boot the system, and then select a different installation media.

To create a bootable tape, select **Utilities**→**Create System Installation Boot Media**→**Tape Boot Media**.



This option allows you to create the tape from any client, but write to a tape drive on a different server. The selected client (or the local system if not a *Network Administrator*) will be queried, and the **AIX install level** and **Platform type** will be displayed in the appropriate fields. You may change the **Platform type** if you want to create the image so it will boot on a different platform than the client. The **AIX install level** is for information only and cannot be changed.

If using a **Network Administrator**, select the **Tape Server name**. Then select the **Tape Drive Name**.

To boot from the tape, you must have the tape in the drive, and select to boot from the tape device within the system firmware (**OpenFirmware** on **IBM System p and System i** hardware). After booting from a bootable system backup, the tape will be the default install device, and you can continue the system installation from the same tape without a need to select any other options.

Hard Disk



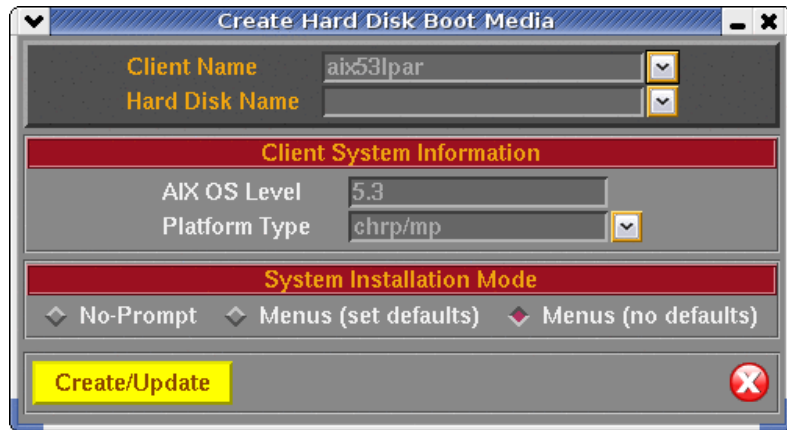
Hard Disk option does not appear when you are using *TSM Edition*.

If you configured a disk for **System Backups** (see **SBAAdmin User Guide**), then this disk (or disks) can also be made bootable to boot directly to the system recovery process. This allows you to perform your system backups to a local (or SAN-attached/portable) disk, then boot and reinstall the system from that same disk with no need for other backup media.



Using this option will not change how the system boots by default. After configuring a disk to boot to the SBAAdmin System Install process, you must select to boot from that disk from within your system firmware boot menus.

To create a bootable disk, select [Utilities](#)→[Create System Installation Boot Media](#)→[Hard Disk Boot Media](#).



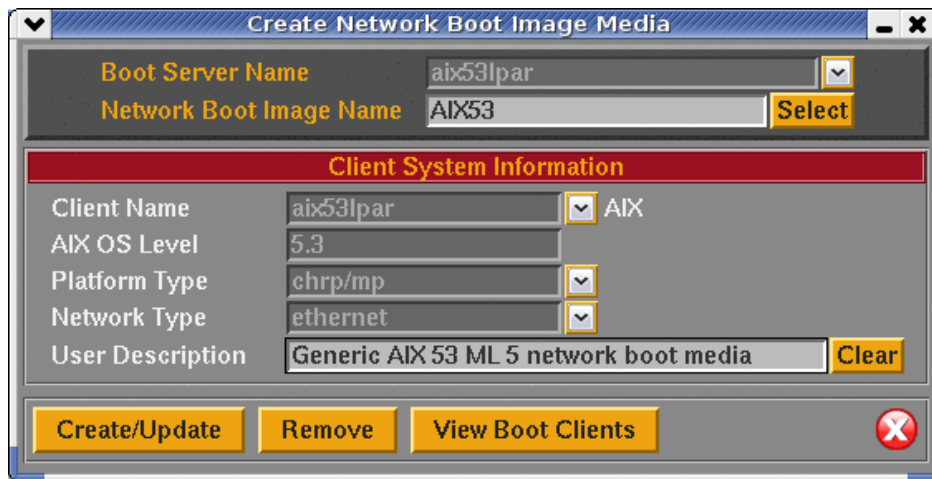
Select the client on which the disk will be made bootable in the **Client Name** field. Then select a disk to configure in the **Hard Disk Name** field by using the arrow to the right of the entry field. When pressing the arrow, the system will be queried to find one or more disks that were configured using the option [Configure a Disk for System Backup/Recovery](#) in the [SBAdmin User Guide](#). If no disks are listed, then none were configured for system backup/recovery.

Network

Use this option to create a **network boot image** to be used to boot a client system over the network from a *network boot server*.

To create a network boot image on any configured client or server and save the image on the boot server, select either:

[Configure](#)→[Network Boot/Install](#)→[Create/Update a Network Boot Image](#) or
[Utilities](#)→[Create System Installation Boot Media](#)→[Network Boot Images](#).



If creating a network boot image from one system which will be used to boot other systems, the original system must be running the same level of AIX as the backup that will be installed onto the client, and must also have the device support installed to support the client system.

The AIX level, platform type and primary network type of the selected host will be automatically displayed. The **AIX install level** shown confirms the AIX level of the boot image that will be created and may not be

changed. If the **Platform Type** shown is not the same as that of the client to be installed, you must change this field to the platform type of the client. The **Network Adapter Type** field will show the first network type detected on the system. If this not the same as the network from which the **client** will be booted, change this field accordingly.

NOTE

If device support for the selected **platform type** or **network adapter type** selected was not installed on the system the boot image is created on, an error message will be displayed. If so, you must either select a different system on which to create the boot image or install the required device support from the AIX installation media.

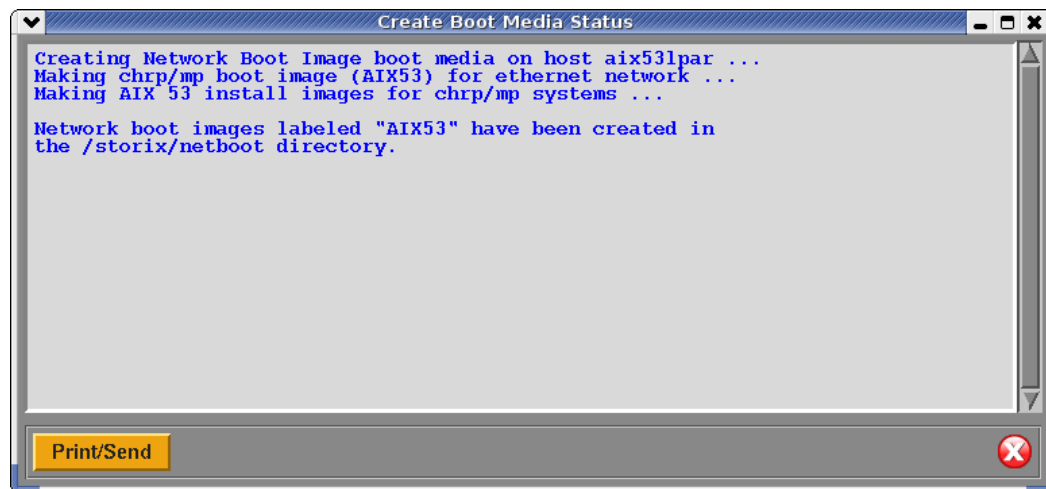
Select the name of the **Boot server Name**. This is the server on which the network boot image will stored after it is created. The network boot server may be the same system from which the network boot image is created.

Lastly, type the name of the boot image in the **Network Boot Image Name** field or select the name of an existing image to overwrite by pressing the arrow button to the right of the entry field. If you enter a unique name, a new image will be created using that name. If you select an existing name, the named image will be overwritten.

Note that the network boot “*image*” actually consists of several files on disk, but will always be referred to within the application as a single image by a unique **Network boot image name**. The files are copied into the directory specified as the **Directory for CDROM & Network Boot Images** when the server was configured. If you specify the name of an image which already exists, that image will be overwritten.

Upon successful completion, the network boot image will be created and transferred, if necessary, to the boot server. It will now be possible to configure any client to boot from this image using the option “[Enable/Disable Network Installation of a Client](#)” below.

When all selections are complete, press the **Create/Update** button. A new window will appear with the output of the command to create the media and any error message if they should occur, such as in the following example:



No-prompt Installation

CDROM and **Network** boot media may be created with the default installation options set, also allowing the system to be installed as soon as a system is booted from this media. This allows an installation to take place simply by booting from a network boot image, for instance, with no operator intervention required.

NOTE

To prevent a system from being inadvertently reinstalled by simply booting from the wrong device, this option is not available when booting from a hard disk. Be very careful, however, not to leave the CDROM in the drive and the system firmware set to boot from CDROM first, as a no-prompt installation could occur without any user intervention.

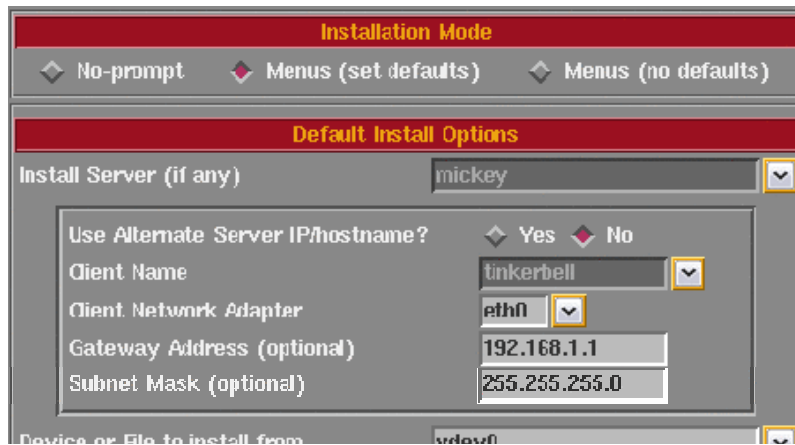
Be very careful when using this option, as the user will not have the option of intervening in the system recovery process if the boot media was created for no-prompt installation. The exception, however, is if the defaults are not valid (such as an installation device not being available), or if the backup data will not fit onto the new system's hardware without some re-configuration.

When creating **CDROM** boot media, the following options are available when using the option to [Create System Installation Media](#). For **Network** boot media, the options are available when selecting to [Enable Network Installation of a Client](#). The reason is that, when creating network boot media, a single network boot image may be used for different client systems, and each client system can be configured with different defaults. Refer to each corresponding section for additional details.

If you select either “**No-prompt**” or “**Menus (set defaults)**” for the **Installation Mode**, additional information will appear within the window, such as in the following example:

The [Install Server](#) is available only if using a *Network Administrator* license. If the client will install from a locally-attached tape drive, leave this field set to “**none**”. If the system will be installed from a remote server, use the arrow button to the right of this field to select a server name.

When selecting a server name, and (when [Enabling a Client for Network Boot/Install](#)) the install server differs from the boot server, more information will appear on the screen below this field:



For the client to be installed from a remote server, you must select the name of the client to be installed (which must have been configured from the *Network Administrator* interface). Also, the network adapter name (of the client) will be required. Other fields are optional, but may be required for the client to contact the server.

Select **Yes** to the [Use Alternate Server IP/Hostname](#) field if the server was configured with an alternate server adapter. In this case, the client will retrieve the backup data from the server using this alternate adapter. Be sure to select the correct adapter name the client will use to contact the server via its alternate adapter.

Enabling Remote Installation Manager

This feature will allow connection to the SBAAdmin *System Installation Process* from any remote system. With proper authority, a remote user can connect to, diagnose and perform system installation of a system after that system has been booted from the SBAAdmin boot media. This process may be started from the SBAAdmin interface on a *Network Administrator* system, or from any SSH client application. Therefore, installation of even a *Workstation Edition* system may be managed remotely.

The remote user will be required to enter a password to access the system installation process. This password may have been defined when the boot media was created or may be defined in the system installation menus after booting from the media.

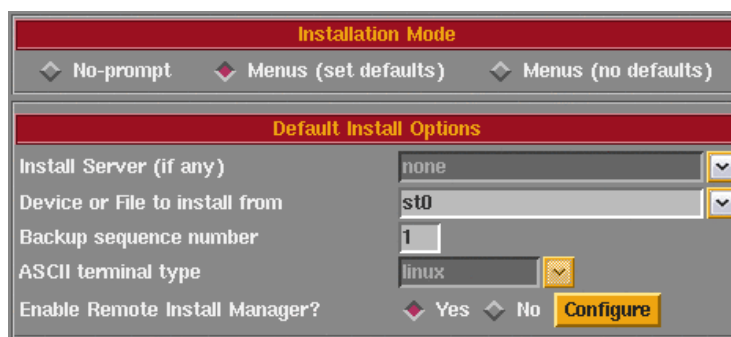
The Remote Install Manager (RIM) may be configured and started in one of two ways:

Configuring RIM when Creating Boot Media

To start RIM automatically when booting a system from SBAAdmin boot media:

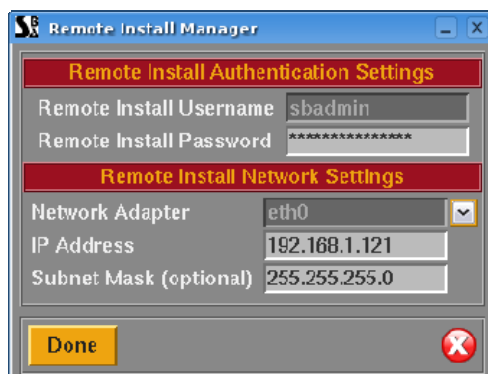
[Utilities](#)→[Create System Installation Media](#)

Select either **Menus (set defaults)** or **No prompt** for the installation mode. The screen will expand to include the following options:



Select “Yes” for **Enable Remote Install Manager**

Select the **Configure** button to the right to configure the settings. You will be presented with the following window:



The **Remote Install Username** is set to “sbadmin” and may not be changed. Enter a password in the **Remote Install Password** field. The password will be necessary to login to the remote install client.

Select the **Network Adapter** that should be configured to connect to the remote install client. If performing a network boot, then you may select **UseBootAdapter** to use the adapter that was used to perform the network boot. If you configured the **Client Network Adapter** on the previous screen, you can select **UseInstallAdapter** to use the same adapter configured for network installation.

Enter the **IP Address** used to configure the network adapter. This field will be disabled if you selected to use either the boot or install adapter, which will already be enabled.

Enter the **Subnet Mask** (if necessary) used when configuring the network adapter. This field will be disabled if you select to use either the boot or install adapter.

After pressing **Done**, the settings will be saved in the boot configuration. The adapter will be enabled, and a remote connection (with appropriate password) will be accepted when booting from this media.

Configuring RIM after Booting from the Boot Media

To enable RIM from within the *system Installation menus* after booting from the SBAAdmin boot media.

From within the system installation menus select [System Recovery Utilities](#). Then select [Configure Remote Install Manager](#), and follow the instructions for [Configuring Remote Install Manager](#) in the Utilities section.

Connecting to the Remote Install Process

To connect to the remote install client use one of the following:

- a. **SSH** client program (i.e. "**ssh sbadmin@192.168.1.121**"): Note that you will always use the user id "sbadmin" and the password you selected in the previous step. If you do not have an ssh client program, you can use the one installed on the Network or Workstation Admin System. This program is called strimsh (i.e. "**/opt/storix/bin/stremsh sbadmin@192.168.1.121**").

or

Select [Actions](#)→[Remote Install Manager](#) from the **Network Administrator**. A window will appear where you must enter the remote install password:



Select the **Remote Install Client Name** from the drop-down list. The primary IP address of the client will be shown in the **Remote Install Client IP** field. You may change this IP address if you are connecting using a different adapter.

When you press the **Connect** button, a new terminal window will display, and the [System Installation Menus](#) will appear. You can, from this window, perform all system installation and maintenance tasks for the remote client.

3. Network Boot/Install Configuration

The information provided in this section will prepare a client system for network boot and installation from a backup server.

Understanding Network Boot and Network Installation

Any client system defined to the [admin system](#) may be installed or reinstalled from a [System Backup](#). That System Backup will typically reside on the disk or on a tape device attached to a backup server. In order for the client to restore from this backup data, it must first be *booted* over the network from a [boot server](#), and then installed from an [install server](#).

- The **boot server** is used solely to provide a basic operating system with which the client will run the remainder of the installation process. If the boot server is not running the same level of AIX as the client to be installed or does not have the device support installed for the client, then a network boot image must be created on another system that meets this requirement, and then placed on the boot server.
- The **install server** is used only to provide access to the data to be restored and its operating system level is not relevant. If the backup is on tape, the install server will be the system on which the tape drive is attached. Likewise, if the backup is a disk image file, the disk will be attached to the install server.

Although the boot server and install server are typically the same system, this is not a requirement. If, for instance, there are several systems on which tape drives are attached, the client may be installed from any tape on any system, even though the client is always booted from the same boot server.

If the client to be booted is running the same level of AIX as the boot server and all device support for the client's platform type and base system devices is already installed on the boot server, then you may skip directly to the option "[Enable/Disable Network Installation of a Client](#)".

If the client and boot server are to run a different level of AIX or if the device support for the client is not already installed on the boot server, then you will need to create a network boot image from the client or any other system running the same level of AIX that you will be installing. The system from which the network boot image is created must also have installed the device support for the client. To create a network boot image on any system and copy the boot image to the boot server, refer to "[Create Bootable Installation Media - Network](#)".

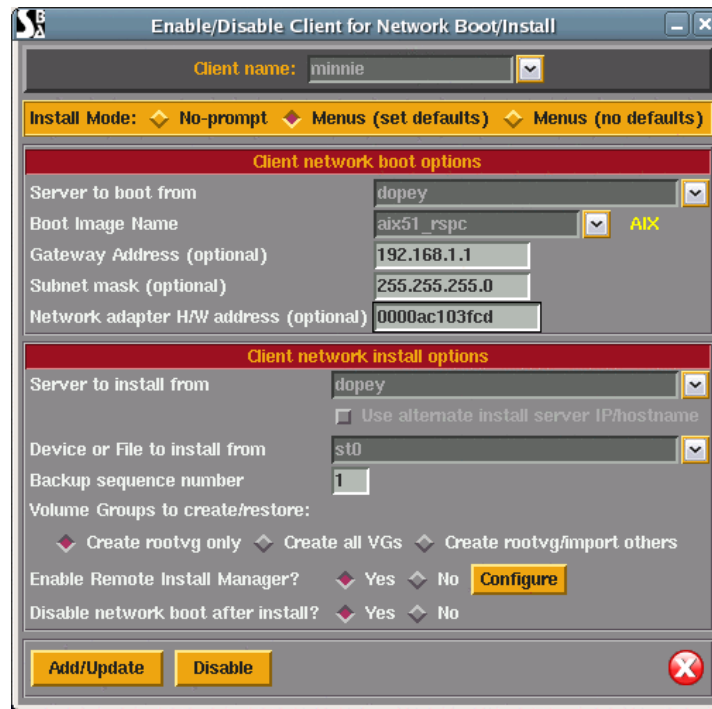
Enable/Disable Network Installation of a Client

This section provides details on configuring a client to be booted and installed from a network **boot server** and/or network **install server**. Although the basic settings are simple, there are optional settings which may be used for more flexibility, such as configuring a [no-prompt installation](#) of the client, or installing (reading the backup data) from a different network adapter than the one the client was booted from.



For AIX clients which are [SP Nodes](#), most of the information on this screen will be filled in automatically if the [admin server](#) is also the [control workstation](#) for the node. This includes the *Network Adapter Hardware Address*, which is required for SP Nodes to boot using the [Network Boot](#) option of the PSSP software.

To setup the client, select the option [Configure→Network Boot/Install→Enable/Disable Network Installation of a Client](#) from the menu bar. You will be prompted for the client to configure. Select the client and press the [Continue](#) button. A screen similar to the following will appear:



Options may appear or disappear from this screen depending on your selections. The screen is broken into two main sections; one for configuring the [Client network boot options](#) and one for configuring the [Client network install options](#). The setting for the **Install Mode** at the top of the screen determines whether or not the **Client network install options** section will appear.

The following fields are used to configure the client to boot from a [boot server](#):

1. **Install mode:** You must select here whether you want to perform a no-prompt or menu-driven installation:
 - a. By selecting **No-prompt**, the client will be installed without entering any information on the client. This is referred to as a [no-prompt install](#). If selected, all of the remaining prompts must be filled in.
 - b. If **Menus (set defaults)** is selected, you will be provided the additional prompts now, all of which are optional. The information you provide will appear as defaults on the client after it is booted, but those options may also be changed on the client.
 - c. If **Menus (no-defaults)** is selected, it is assumed that and all install options will be selected from the client install menus once it is booted. When selected, all remaining options will disappear from the screen as they no longer apply.
2. **Server to boot from:** If the server in this field is incorrect, use the arrow button to list and select a different server from which to boot from. By default, the boot server is assumed to be the install server as well. However, the [install server](#) may be changed as described later.
3. **Boot Image Name:** Use the arrow button to the right of the entry field to select from a list of boot images previously created using the [Create Bootable Installation Media \(Network\)](#) option. The boot image name selected will determine the [AIX level](#), platform, and network type that will be used to install the client.



When more than one client operating system type is supported, the Boot Image Name selected will determine the additional options which appear, specific to the operating system type of the boot image.

4. **Gateway Address:** If the client must go through a gateway to reach the boot server, enter the IP address of the gateway machine.
5. **Subnet Mask:** If the client is on a subnet, enter the subnet mask.
6. **Network Adapter Hardware Address:** If the client and server are on the same network (no gateway between them) and you want to be able to boot the client without entering the server IP address onto the client, you can enter the client's network adapter hardware address (12-digits) here. Refer to the section **Boot a Client for Installation from a System Backup** for details on [determining the client hardware adapter address](#).
7. **Server to install from:** This field will, by default, contain the name of the [boot server](#). If the backup data will be restored from a different server than you booted from, select a different [install server](#) in this field. If the install server differs from the boot server, additional fields will appear on the screen which is described in the section [Using a Different Install Server than the Boot Server](#) below.

If you wish to install the client using the server's alternate network adapter, select the button next to **"Use Alternate Server IP/Hostname"**. If selected, additional fields will appear as described in the section [Using a Different Install Server than the Boot Server](#) below, since the client may need to use a different adapter to reach this alternate adapter on the install server.

8. **Device or File to install from:** Use the arrow button to list and select the device or directory from which the backup data will be restored. If a directory is selected, you will be prompted for the specific [System Backup](#) from which to install. After selecting the backup, the filename of the backup image will be placed in this field, and the **Backup Sequence Number** field will be automatically filled in with the sequence number of the client backup selected. If you select a tape device for this field, the device name will be placed in the field, but the backup will not be read at this time, since the backup may not be in the drive at the moment.
9. **Backup Sequence Number:** If the client will be installed from a tape device, you must manually select the backup sequence number on the tape media to install from. If there is only one [System Backup](#) on the tape, the backup sequence number will be 1 (default). If there is more than one, you must enter the appropriate backup sequence number. If you are unsure as to the correct sequence number to use, view the backup label and use the backup sequence number that corresponds to the desired backup.
10. **Console Device Name:** Select the name of the console device that will be used on the client. If the client is using a graphical display, this is likely **"lft0"**. If the client is an [SP node](#), the device is likely **"tty0"**. The device selected will be used to display progress messages and, if an error occurs or prompts are enabled on the client, they will appear on this device.
11. **Console terminal type:** If the console device selected was a graphical device, the terminal type will be set to **LFT**. Otherwise, an [ASCII terminal](#) is assumed and you must list and select the specific terminal type. Using the arrow key, you can list the terminal types that are available during the installation process and select one from the list.
12. **Volume Groups to create/restore:** This option is used to select the volume groups from the backup that will be created and restored, or imported, during the installation process. It is not possible to select specific volume groups at this time, so you may select one of the following:
 - a. **Create rootvg only:** Select this option if you want only the *rootvg* volume group to be created and restored from the backup. If there are other volume groups on the backup, they will be ignored and will not be defined on the system when the installation completes.
 - b. **Create all VGs:** Select this option if all volume groups for which data was included on the backup should be created and restored. If only the *rootvg* exists on the backup, this option will be identical to the **Create rootvg only** option.
 - c. **Create rootvg/import others:** Select this option if the volume groups defined on the backup already exist on the client's disks and need not be restored. In this case, the *rootvg* volume

group will be created and restored, and all other volume groups, if they exist, will be imported from the existing disks.

If it is necessary to select or deselect individual volume groups to create, import or ignore, then you should select the **Both** option in the **Prompt for remaining options field**. Then, you will be presented with the [Installation and Maintenance Menu](#) on the client, where you can more specifically tailor the installation options.

When all selections have been made, select the **Add/Update** button at the bottom of the screen. If a boot image for the specified platform and network type does not already exist on the boot server, one will be created which will take a minute or two. The client boot information will be saved and the client will be ready to boot and install. Refer to the section [Boot a Client for Installation from a System Backup](#) to initiate the installation process.

Disable a Network Install Client

It may be desirable to disable the network install for a client once the installation of the client is complete. If the client should inadvertently boot over the network and the client is configured for a **no-prompt install**, the client may end up being reinstalled automatically.

To un-configure the client, simply select the option **Configure→Network Boot/Install→Enable/Disable Network Installation of a Client** from the menu bar. Select the client to disable. The client network install configuration will appear. Simply press the **Disable** button at the bottom of the screen to un-configure the network install.

Un-configuring the network install client will prevent the client from booting over the network. Although the network install will be disabled, the information for the network install will be retained and will be automatically used as defaults should the same client be configured for network install again in the future.

Using an Alternate Network to Restore the Data



This option is not applicable to **TSM Edition**.

Even though the boot and install server may be the same, it may be desirable to perform the network install (actual restoration of the data) using a different network than was used to perform the network boot. For instance, the client may boot from the server using the *ent0* (ethernet) network, but may want to restore the data from the same server using the *tok0* (token-ring) network instead. This is commonly done in order to redirect the restore data traffic onto a different network than that which is in use by other applications.

To install using an alternate server network, a button is provided on the [Network Boot/Install Configuration Screen](#) labeled "**Use Alternate Install Server IP/Hostname**". If you want the alternate server network connection to be used for network install, press the button associated with each option. If the button is not selected, the default network connection used by the client to reach the server (as defined by the server hostname and network routing information on the client) will be used.

Note that this button will not be available if there was no alternate IP address or hostname setup for network installs from the server. To set the alternate IP address or hostname for a server, refer to the [server configuration](#) options.

If you select this button, additional options will appear which will be required only if you are using a different network adapter on the client system to contact the install server than was used to boot the client. Refer to the section [Using a Different Install Server Than the Boot Server](#) below for additional instructions.

Using a Different Install Server than the Boot Server

NOTE

This option is not applicable to *TSM Edition*.

If the **Server to install from** (install server) is not the same as the **Server to boot from** (boot server), or if you selected to **Use an Alternate Server IP/Hostname** to reach the install server, additional fields will appear on the screen allowing you to configure the network differently for contacting the **install server**:

The screenshot shows a dialog box titled "Client network install options". At the top, there is a dropdown menu for "Server to install from" with the value "mickey". Below this is a checked checkbox labeled "Use alternate install server IP/hostname". The main area contains several fields: "Gateway Address (optional)" with the value "192.168.2.1", "Subnet mask (optional)" with "255.255.240.0", and a section titled "If boot and install network adapters differ:". Under this section, there are five fields: "Client Network adapter name" (dropdown menu showing "ent0"), "Client IP Address" (text field with "192.168.2.124"), "Token-ring speed" (dropdown menu), "Ethernet interface" (dropdown menu showing "s"), and "Ethernet connection type" (dropdown menu showing "b").

1. **Gateway Address:** If the client must go through a gateway to reach the install server, enter the gateway IP address in this field.
2. **Subnet Mask:** If the network the client uses to reach the install server uses a subnet mask, enter the subnet mask here.
3. **Client Network adapter name:** If the client will use a different network adapter to reach the install server than was used to reach the boot server, use the arrow button to select an adapter name from the list. If you select a different adapter, you must also fill in each of the following fields if they apply:
 - a. **Client IP Address:** Enter the IP address associated with the adapter selected. If you are using a different install server than the boot server, the install server must recognize the client by this IP address and the hostname associated with this IP address must have been used to configure the client in the administrator application. If you are using the same server but an alternate server IP/hostname, you must enter the client IP address that will be used to contact the server using the server's alternate address. Refer to the **Configure Servers** option for information on using an **Alternate Server Hostname/IP** address.
 - b. **Token-ring speed:** If the network adapter used to reach the install server differs from that used to reach the boot server, and a token-ring adapter is used, select the correct token-ring speed in this field. Note that an incorrect token-ring speed can cause an interruption in the entire network.
 - c. **Ethernet interface:** If the network adapter used to reach the install server differs from that used to reach the boot server, and an ethernet adapter is used, select the correct interface to use, either **en** (*standard ethernet*) or **et** (*IEEE 803.1 ethernet*).
 - d. **Ethernet connection type:** If the network adapter used to reach the install server differs from that used to reach the boot server, and an ethernet adapter is used, select the correct ethernet connection type, either **BNC** (*coax*) or **DIX** (*15-pin D-shell*).

Using the Same Boot Server to Install Different AIX Levels

The same boot server may be used to boot clients of any platform, network type and AIX install level. The boot server does not need to have any device support installed to support the client's hardware and does not need to run the same level of AIX as the client. The SBAdmin System Recovery process uses a unique network boot process that does not require identical AIX levels on the client and server and does not use NFS mounted /usr filesystems as do other AIX network boot applications.

Instead, you use a separate option to create a network boot image on any system running the AIX level you will be installing, and copy that boot image to the boot server. Each boot image is saved under a different name and may be separately selected when you configure a client to network boot. This 2-step process is described above in this section. First, [Create a Network Boot Image](#) (which also copies the boot image to the boot server), then [Enable the Network Install of a Client](#) by selecting the boot image on the server you previously created.

Updating Network Boot Images

If you have installed new *base system hardware support* (network devices, disk drives, platform types or display adapters) onto a system that you previously created a network boot image from, you will need to recreate that network boot image before the new device support will be accessible to the clients booting from that image.

After installing the new device support, simply follow the instructions for [Create/Update a Network Boot Image](#) to recreate the boot image and copy to the boot server. If you recreate the boot image for the same platform, network and AIX level, it will not be necessary to reconfigure the clients for network boot/install since the clients using the previous boot image will automatically begin using the newly created boot image.

