Disaster Recovery Module AIX

Version 2.6

Installation and User's Guide

STOREWAY DPA

STOREWAY DPA

Disaster Recovery Module AIX Version 2.6

Installation and User's Guide

Software

March 2008

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Chapter 1. Installation

See:

"Installation prerequisites" page 8

"Installing the agent" page 9

Installation prerequisites

To install the **StoreWay DPA Disaster Recovery for AIX Agent**, you need the **Disaster Recovery Unix & Linux** installation CD.

The AIX backup agent must be installed before installing the AIX Disaster Recovery agent.

> See the installation instructions contained in the installation CD.

To know if your AIX version is supported, refer to the StoreWay DPA compatibility guide or contact your Bull sales representative.

Installing the agent

Insert the installation CD-ROM into the AIX CD drive. If the CD-ROM is not configured, you will need to do this by using the AIX system **smit** program.

Mount the CD-ROM on your AIX system with the **mount** command, for example:

mount /dev/cd0

In a terminal window or directly in the system text console run the script « install.sh ».

> Go to the CDROM root directory, for example: **# cd /cdrom**

> Run the installation script using ksh: **# ksh ./install.sh**

> Follow installation instructions.

When the installation completes, the Disaster Recovery agent includes a **sbx_mkimage** binary in the **bin** directory of the chosen installation path.

Chapter 2 - System backup

TIP: To restore the system in the event of a problem, the AIX system backup must be performed before any system modification,

- Backups must also be performed regularly to be able to restore a stable system state in the event of disk or configuration corruption.
- Do not wait for a crash to test your restoration: there are many reasons why a bootable image will not work starting with the quality of the media used. You must therefore test the restoration of your Disaster Recovery images.

See:

"Perform a Disaster Recovery backup" page 11

"Disaster Recovery options" page 13

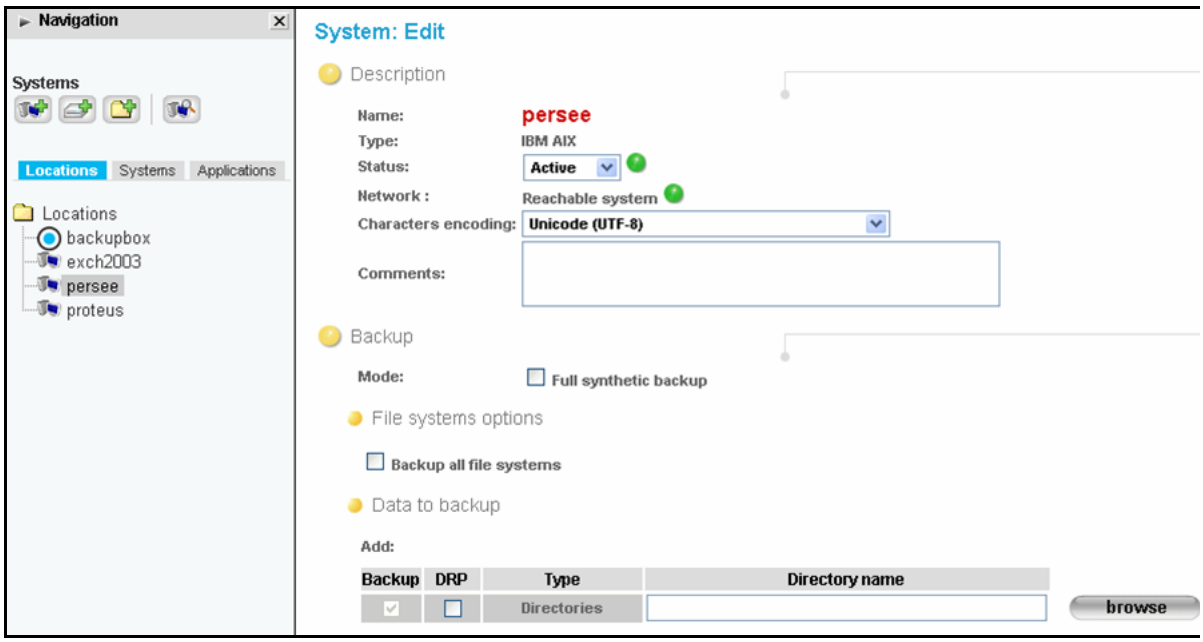
"Disaster Recovery backups follow-up" page 15

"Externalize Disaster Recovery images to tape" page 16

"Generation of CD or DVD images" page 17

Perform a Disaster Recovery backup

1 Once the StoreWay DPA and Disaster Recovery agents are installed on your AIX system, your AIX server is auto-detected on the StoreWay DPA. You must declare it and associate it with a backup profile.



2 On your AIX system, go to the StoreWay DPA agent installation directory (by default: **/usr/dpa)**.

3 Run the **bin/sbx_mkimage** command: the AIX system Disaster Recovery backup is performed automatically and stored on by the StoreWay DPA.

```
# uname -a
AIX persee 3 4 0044658B4C00
 # cd/usr/dpa
 # bin/sbx_image
Sun 10 Dec 17:23:48 2006 - sbx_mkimage V1.6 - Copyright (c) 2004-2006, Bull tm
Sun 10 Dec 17:23:48 2006 - Step 1 - Temporary directories creation
Sun 10 Dec 17:23:49 2006 - Step 2 - Setting system environment
Sun 10 Dec 17:23:49 2006 - Step 3 - Building image
Initializing mkcd log: /var/adm/ras/mkcd.log...
Verifying command parameters...
Creating image.data file...
Creating mksysb image...

Creating list of files to back up .
Backing up 41609 files.............................
41609 of 41609 files backed up (100%)
0512-038 mksysb: Backup Completed Successfully.
Populating the CD or DVD file system...
Warning: mkcd was unable to copy the optional file: /usr/lib/libdiag.a
and did not included this file in the backup.
Warning: mkcd was unable to copy the optional file: /usr/lib/liblvm.a
and did not included this file in the backup.
Warning: mkcd was unable to copy the optional file: /usr/lib/libsm.a
and did not included this file in the backup.
Warning: mkcd was unable to copy the optional file: /usr/lpp/diagnostics/bin/diagsrv
and did not included this file in the backup.
Warning: mkcd was unable to copy the optional file: /usr/lpp/diagnostics/bin/dctrl
and did not included this file in the backup.
Copying backup to the CD or DVD file system...
Building chrp boot image...
Creating Rock Ridge format image...
Running mkisofs ...
mkrr_fs was successful.
Making the personal CD or DVD image bootable...
Sun 10 Dec 17:35:51 2006 - Step 4 - Cleaning up environment
#
```

Notes:

- Local disk space is required on your AIX system to generate or store Disaster Recovery images.
- The AIX Disaster Recovery backups can be started automatically by the StoreWay DPA: simply run the **sbx_mkimage** command process before backing up the StoreWay DPA backup profile.
- Depending on system capacity utilization, the Disaster Recovery backup can last several hours. For a standard system, however, this time is generally below two hours.
- The **sbx_mkimage** command authorizes certain options, which can be useful depending on the situation.

Disaster Recovery options

The sbx_mkimage binary has a certain number of options, accessible by running the argument **–help** when the command starts:

```
sbx_mkimage [ -dpa < StoreWay DPA name> ] [ -vg <vg_name> ] [ -media
<CD|DVD> ] [ -tmp local|network ] [ -hostname <hostname> ]
-dpa Choose the target StoreWay DPA
-vg To backup a particular volume group. Default: rootvg.
Backing-up non-rootvg volume group will create non-bootable media.
-media Choose Disaster Recovery media size: CD or DVD. Default: CD
-tmp local Use local temporary directories for image building. This
is quicker, but needs some disk space.
-tmp network Use StoreWay DPA temporary directories for image
building.
Default tmp directory: network
-hostname Allow to choose hostname for which data will be stored on
the StoreWay DPA.
This may be used especially when local hostname is uppercase, while
the hostname declared on the StoreWay DPA is lowercase.
Default hostname: system_name_as_declared_in_the_appliance
-v Verbose mode
-q Quiet mode
-h Display this usage message
If you wish to exclude files or directories from backup, list them
into /etc/exclude.<vg_name> using regular expression matching.
```

- **-dpa**: specifies the StoreWay DPA name on which the image will be stored. By default, the «reference» StoreWay DPA is selected (in the **admin.cfg** file located by default in the **/usr/dpa/config** directory).

  WARNING: **Create the system on the destination appliance if it is different from the referenced appliance mentioned in the admin.cfg file.**

- **-vg:** volume group of the AIX system to back up, by default rootvg.

  WARNING: **The backup to of another volume group from rootvg does not allow you create a bootable Disaster Recovery image**, **but can handle data volume group backups.**

- **-media**: option enables you to choose to create a CD-size image (by default) or single layer-size DVD. **Note: this option is only proposed if your AIX system has a DVD drive.**

- **-tmp:** the creation of a system image uses temporary disk space. This option enables you to choose between temporary space on the StoreWay DPA (default option which does not use AIX system disk space) and local temporary space on your AIX system (faster).

  WARNING: **The use of local space requires that this disk space is available.**

- **-hostname**: this option enables you to position the name under which the system was declared in the StoreWay DPA. This can be useful in the case where

your AIX system is known under several names (aliases) on the network, and the one used by the StoreWay DPA declaration is not the one returned by the «hostname» command (the name chosen by default by the **sbx_mkimage** command).

- **-v**: verbose mode, enables you to obtain more information on the processing performed during the image creation (mode generally used when generation problems occur).
- **-q**: quiet mode, no information is generated from the Disaster Recovery image generation.
- **-h**: displays the different options that can be used.

Exclusion

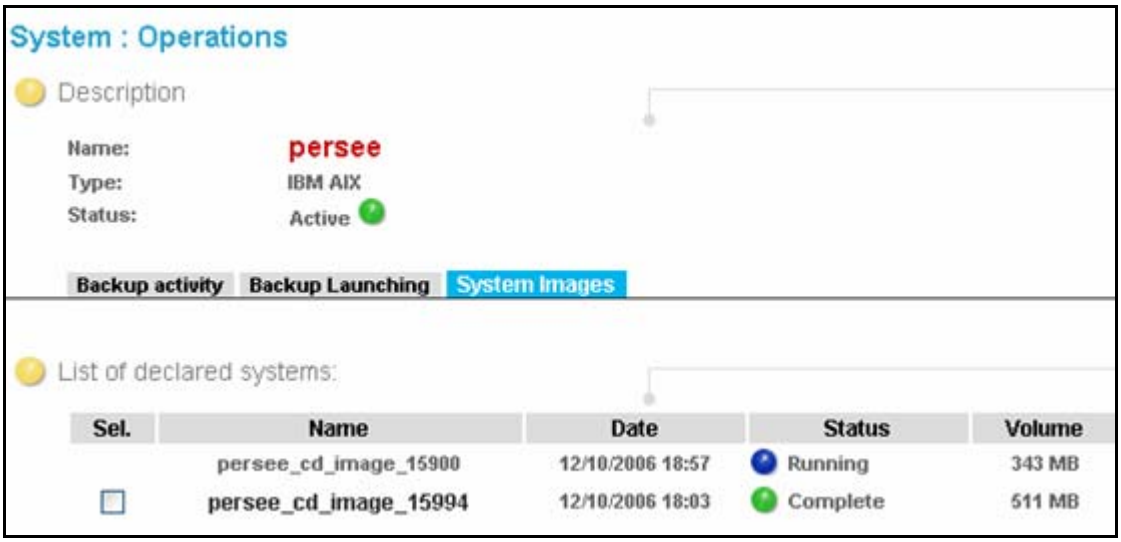
Disaster Recovery backup restores the system and not data. Specify in the **/etc/exclude.rootvg** file the directories to not back up. In this way, you reduce image creation time and the number of ISO images generated. Directories to be excluded can be listed by using regular expressions.

Disaster Recovery backups follow-up

WARNING: Because of their critical nature, StoreWay DPA Disaster Recovery backups are generated with no limit to their retention period. They are therefore kept as long as you have not expressly requested their removal from the disk.

Display available Disaster Recovery images:

1. Log onto the StoreWay DPA and select the **operations/Backup** menu.
2. In the tree menu, select your AIX system.
3. Choose the **System Images** tab (this tab is only visible when Disaster Recovery type images have been performed on the server), which enables you to display available Disaster Recovery images on your system.



4. To remove a disk image for the selected StoreWay DPA, select this image, and click the **erase** button at the bottom of the page. Delete images regularly, but always keep at least two versions. We recommend you also regularly burn images to CD or DVD.

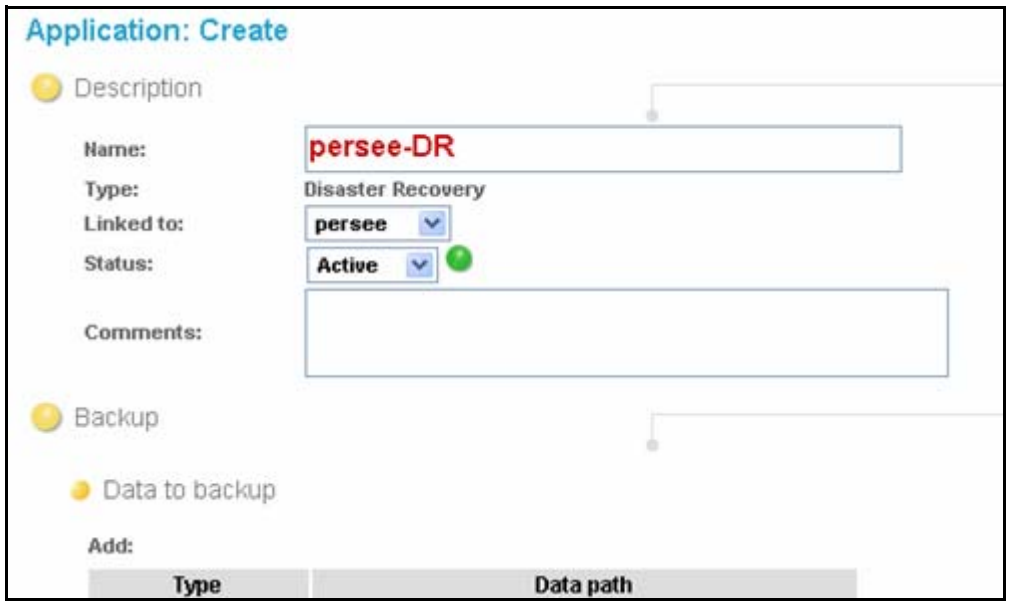
Externalize Disaster Recovery images to tape

To be ready for any disaster situation and prepare a DRP (Disaster Recovery Plan), you might wish to externalize Disaster Recovery images to tape. The StoreWay DPA enables you to perform this operation by creating a Disaster Recovery type application on the system in question then by backing up this application.

NOTE: This method does not enable you to generate media which will directly restore your systems, but simply secure the images by saving them to tape. To prepare your DRP (Disaster Recovery Plan), it is recommended to externalize to a safe, all tapes and bootable CDs or DVDs which have been generated from Disaster Recovery images (See: Generation of CD or DVD images" on page 17.).This media must be stored in a dry, dark, cool and dust-free environment.

Create a Disaster Recovery application

1. In the **settings/System** menu, click the icon which enables you to create a new application.
2. In the **Application: Create** window, select the **Disaster Recovery** application then click **create** at the bottom of the page.
3. In the Disaster Recovery **Application: Create**, choose the name of the application and associate it with your AIX system.
4. Click **create**.



5. Create a Disaster Recovery backup profile
   - In the **settings/System** menu, click on the icon which enables you to create a new backup profile.
   - In the **New backup profile** window, select **Application profile** then the sub-type profile qualifier: **Disaster Recovery Application**. Click **create**.
6. In the **Disaster Recovery Application backup profile** window, choose the name of the profile, and associate it to your Disaster Recovery application.

NOTE: Don't forget to specify the required backup periods and retention periods in the **Backup** tab and click **update**.

Your Disaster Recovery backup is copied to tape as configured. You can follow this externalization at the same time as other backup jobs in the **operations/Backup** menu.

Generation of CD or DVD images

Don't wait for a problem to occur, burn the AIX Disaster Recovery images regularly to externalize the CD or DVD media.

1 **Burn to StoreWay DPA**

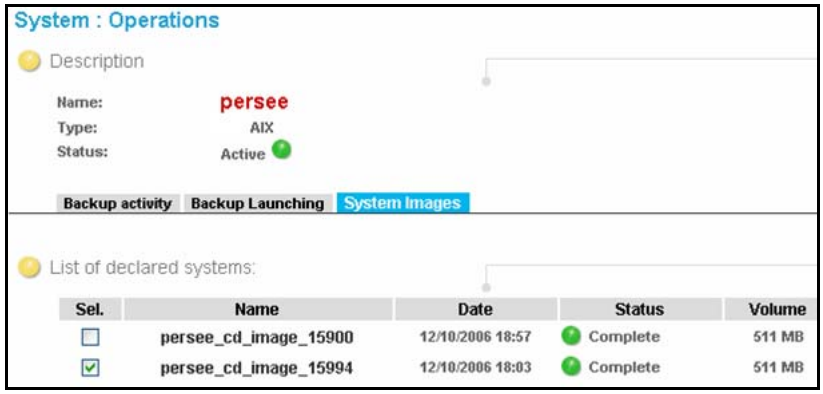
2 In the **operations/Backup** menu, select the corresponding AIX system.

3 Click the **System Images** tab to display the images created and present on the StoreWay DPA.

4 Insert a CD/DVD into the StoreWay DPA burner.

5 Select the box corresponding to the image to burn and click **burn**.

WARNING: Images must be burnt one by one. If you want to burn several images, you will have to use several sessions.



6 Burn on an external burner

7 Click the image link to save the ISO image to a machine or server equipped with a DVD burner.

8 Generate a classic ISO image.

NOTE: Once the image is burnt, check that the CD or DVD 1 is bootable.

NOTE: Regularly delete images from the StoreWay DPA (the **erase** button).

Chapter 3 - System restoration

Restore your AIX system when your system is corrupted or does not restart after a modification.

See:

"Restoration prerequisites" page 19

"System restoration: an overview" page 20

"Perform a Disaster Recovery restoration" page 21

Restoration prerequisites

Disaster Recovery images are essential to perform a Disaster Recovery restoration of your AIX system.

Three cases can arise:

1. You have images on the bootable media you prepared prior to a crash: this is the simplest solution; you only have to restore your system.
2. You have the images on non-bootable media which are stored on the StoreWay DPA. Refer to the previous chapter section **Generation of CD or DVD images** to burn the necessary bootable media for your system restoration.
3. Disaster Recovery images only exist on the tape where they were stored for Disaster Recovery application backups:
   - Transfer this data from the tape to the StoreWay DPA disk then
   - Burn bootable CDs or DVDs from these images.

Retrieve system images from tape

1. In the **operations/Restoration** menu, select the Disaster Recovery application in question.
2. Click **open a restoration session**.
3. In the restoration interface, click **time navigation**.
4. Select the display of missing images, specifying how long your Disaster Recovery images have been removed from the disk then choose the date.
5. In the list of images, select the one you wish to retrieve to disk. In the case where the image does not fit on a single media but requires several media to be burnt, select all the images you will need for a complete image of your operating system.
6. Click **restore**, then follow instructions until the system restore image is effectively performed.

Once this retrieval is over you can refer to the previous item "Generation of CD or DVD images" page 17, to burn the necessary bootable media for the restoration of your system.

System restoration: an overview

The restoration of the AIX system is performed from bootable CDs or DVD which will completely reinstall the AIX system as if you were to use the manufacturer's installation CDs or DVDs. If your system image is too voluminous to fit onto a single media, the StoreWay DPA will offer to burn several CDs or DVDs.

The first step therefore consists of retrieving information from the StoreWay DPA to create one or more bootable CD/DVD. This operation, which can take up to 30 minutes, can be performed regularly as part of your standard operations with a view to systematically conserving your AIX system Disaster Recovery CD/DVDs in case of need.

> See "Generation of CD or DVD images" page 17

Once this media is generated, you need to insert the first CD/DVD into your AIX machine drive then start the machine, and follow the standard setup procedure of the AIX system from the CD/DVD.

Perform a Disaster Recovery restoration

Follow the standard AIX system setup procedure using the manufacturer's CD/DVD. When the setup asks you to insert the AIX installation CD/DVDs, insert the media created with the StoreWay DPA Disaster Recovery agent.

Chapter 4 - Appendix

See:
"FAQ" page 23

FAQ

Can I backup partitions whose size exceeds a CD's capacity?

Yes. If the size of the image created exceeds the CD capacity, the Disaster Recovery agent will segment it into several CDs, and the reinstallation will require the successive insertion of the different CDs on the request of the AIX system, in the same way as an AIX installation from several CDs.

WARNING: **In the case of several CDs being burnt, number each one and keep all CDs in order to keep the same image**.

Can I also perform images of non-system partitions?

Yes, this is possible. However, user data can be restored more simply by using the standard StoreWay DPA AIX client agent which enables you to perform more frequent incremental backups. It is therefore preferable to keep Disaster Recovery to only backup the AIX system itself. In addition, backing up all data will probably require a high media volume and take a long time to complete.

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