Part Number 313460105

Shared Virtual Array
Administrator

Version 3.1.0

for AIX

Quick Start Guide

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Edition E, May 2005. **EC 132282.** This edition applies to Version 3.1.0 of the Shared Virtual Array Administrator for AIX. Information in this document is subject to change.

System Requirements

Before beginning the installation, please contact StorageTek Software Support to verify that your site meets the minimum hardware and software requirements supported by StorageTek. You will need to provide details about your site configuration, including:

- Host system processor and memory
- Host disk space
- Host operating system level
- SVA subsystem microcode
- Host bus attachments (HBAs)
- Switches
- High-availability software
- Third-party disk management software

INSTALLATION

Note: SnapShot is automatically installed with SVAA for AIX V3.1.0.

VERIFY FREE SPACE

In order to complete the installation, you must have the following amount of free space on the AIX host:

- At least 15MB of free space in the file system where you plan to install the SVAA server software (`/opt/storagetek/SVAA3.1.0` is the default directory).
- For a graphical installation, at least 20MB of free space on the mount point defined as `TEMP`. If you have not defined `TEMP`, the Install Shield uses the directory `/usr/tmp` (in which case, you must have at least 20MB of free space on `/usr/tmp`). A graphical installation also requires X Windows; see “Installation Modes” for details.
- For a text-only installation, `TEMP` is not used.

INSTALLATION MODES

The SVAA V3.1.0 installation can run in two modes: graphical or text-only. The mode is automatically determined based on the presence of the X Windows manager and how your `DISPLAY` environment variable is set. Essentially, the installation is designed to run in graphical mode if the machine to which you are installing SVAA is X Windows-capable, and in text-only mode if the machine is not X Windows capable.

Some details:

- If `DISPLAY` (where the X Windows display will be routed/displayed) is set correctly on your machine, then graphical mode is executed.
- If `DISPLAY` is not set on your machine, then your terminal is assumed to be non-graphics capable, and text-only mode is executed.

- If `DISPLAY` is not set correctly on your machine (that is, your terminal does not match what is specified by `DISPLAY`), then text-only mode is executed.
- If you are using a dummy terminal, in order for text-only mode to execute flawlessly, you must make sure that the `TERM` environment variable is set to match your monitor type and no `DISPLAY` variable is set.

Regardless of mode, the installation outcome is exactly the same; that is, the same files are installed to the same locations.

GRAPHICAL INSTALLATION

Use the following steps to use the graphical mode to install the SVAA server files on the AIX host. See “Text-only Installation” on page 5 for the text-only mode.

1 In an X Windows terminal, log in as `root`.

2 Insert the SVAA software CD-ROM in the drive.

3 If the Volume Manager is installed, it displays the contents of your CD-ROM. Close this window.

4 Open a console or terminal window.

5 Mount the CD-ROM:

```
# mount -v  cdrfs -p -r  /dev/cd0  mount_point
```

Where *mount_point* is the full pathname of the directory where you want the CD-ROM mounted.

6 Change to your CD-ROM:

```
# cd mount_point
```

Where *mount_point* is the full pathname (mount point) of your CD-ROM.

7 Start the installation:

```
# ./install
```

8 The installation script begins. It displays some messages as it determines your display capabilities, then some extraction notices which you can ignore.

Then the Install Shield begins. Depending on your X Windows configuration, it may display a warning message having to do with fonts; you can ignore this.

9 On the StorageTek splash screen, click Next.

10 On the Welcome screen, read the information and click Next.

11 On the README Information screen, read the information and click Next.

12 On the Choose Destination Directory screen, you can accept the default installation directory (`/opt/storagetek/SVAA3.1.0`), or you can enter the full pathname of a different one. Then click Install.

Note: If you enter a different directory (including one that is NFS-mounted), `root` must have read/write access to it.

13 If the installation directory does not already exist, you are prompted to confirm its creation. Click Yes.

14 On the Installation Complete screen, click Finish.

15 Unmount the CD-ROM:

```
# umount mount_point
```

Where *mount_point* is the full pathname (mount point) of your CD-ROM.

16 Remove the CD-ROM from the drive.

The installation is now complete. See “Configure the SVAA Server” on page 8 for instructions on running the `sibconfig` utility to configure the SVAA server.

TEXT-ONLY INSTALLATION

Use the following steps to use the text-only mode to install the SVAA server files on the AIX host. See “Graphical Installation” on page 3 for the graphical mode.

Note: If for some reason you have an X Windows-capable machine but want to run the installation in text-only mode, you can force text-only mode by unsetting the `DISPLAY` variable and setting the `TERM` variable to a dummy terminal (`VT100` or equivalent). See “Installation Modes” on page 2 for details.

1 Log in as `root`.

2 Insert the SVAA software CD-ROM in the drive.

3 Mount the CD-ROM:

```
# mount -v cdrfs -p -r /dev/cd0 mount_point
```

Where *mount_point* is the full pathname of the directory where you want the CD-ROM mounted.

4 Change to your CD-ROM:

```
# cd mount_point
```

Where *mount_point* is the full pathname (mount point) of your CD-ROM.

5 Start the installation:

```
# ./install
```

6 The installation script begins. It displays some messages as it determines your display capabilities.

7 Answer the prompts as instructed below:

a. Please hit enter to view README file.
   Use ‘f’, ‘b’ and ‘q’ to forward, rewind and quit the README file respectively...
   ?

   Press Enter to view the README file which contains important information regarding the SVAA 3.1.0 installation. The file will be displayed through the `more` command.

   When the file reaches the end, or you enter `q`, the following message appears.

b. If you did not get to read all parts of the README file, then manually view the *cdrom_dir*/README_SVAA_AIX file.

   Please hit enter to start the actual installation process ...
   ?

   Press Enter to continue with the installation. You can either view the README file on the CD-ROM after the installation is complete, or if you want to view the file now, you can press Ctl-C to exit the installation (you will need to return to Step 4 to restart the installation when you are done with the file).

c. SVAA for AIX installation directory
   Default: /opt/storagetek/SVAA3.1.0

```
Type path or hit enter for default
?
```

Specify the directory to which you want to install the SVAA server software. Press Enter to accept the default (`/opt/storagetek/SVAA3.1.0`), or enter the full pathname of a different directory and press Enter.

If the directory does not exist you will see the following message as the directory is created:

```
Directory does not exist. Creating directory.
```

If the directory does already exist you will see the following prompt:

```
Warning: install_dir directory already exists
Do you still want to continue [(y)es/(n)o]
Default: (n)o
?
```

Press `y` to overlay the SVAA server software on top of the existing directory. Press `n` or Enter to exit the installation script (you will need to return to Step 4 to restart the installation).

d. You will see the following messages as the software is installed:

```
Preparing to untar files to install_dir ...

file1
file2
...
filen
.........
```

```
Setting up JRE ...

Installation of SVAA for AIX is now complete
(assuming, no abnormal termination occurred).

If successful, then please "cd install_dir/bin"
and run ./sibconfig to configure your SVAA server
or refer to the user manual for more details.
```

8 Unmount the CD-ROM:

```
# umount mount_point
```

Where *mount_point* is the full pathname (mount point) of your CD-ROM.

9 Remove the CD-ROM from the drive.

The installation is now complete. See "Configure the SVAA Server" on page 8 for instructions on running the `sibconfig` utility to configure the SVAA server.

Install Necessary Patch(es)

Before continuing to the next procedure, you should install the latest SVAA for AIX patch level. To do so, access the StorageTek Customer Resource Center (CRC) website at `www.support.storagetek.com` and download any necessary patches, then install them according to the given instructions.

Configure the SVAA Server

Use the following steps to configure the SVAA server for your installation.

1 In a terminal or console window, change to the installation directory:

```
# cd install_dir
```

By default, *install_dir* is `/opt/storagetek/SVAA3.1.0`.

2 Start the configuration utility:

```
# cd bin
# ./sibconfig
```

3 Answer the prompts as instructed below:

a. `Enter Unique Name for SVAA Server:`
`Default: Server 31`
`Type name or hit enter for default`
`?`

Each SVAA server must have a unique name. The default is: `Server31` The following characters are accepted, even as the first one: a to z, A to Z, 0 to 9, $, @, #, -, _, +, &, ., and /.

Note: You must not have two SVAA servers with the same name, even if they are running on different hardware platforms, as this can have unpredictable results.

b. `Enter Pathname for SVAA:`
`Default: /opt/storagetek/SVAA3.1.0`
`Type path or hit enter for default`
`?`

This is the SVAA installation directory. The default is: `/opt/storagetek/SVAA3.1.0`.

Enter a full pathname, or press Enter to accept the default.

c. `Enter Location where Configuration File Stored:`
`Default: /opt/storagetek/SVAA3.1.0/Server31/`

```
Type path or hit enter for default
?
```

This is the location where the SVAA server's `config.dat` file will be stored. This file contains the answers to the questions asked by this utility, as well as other configuration information. (Refer to the *SVAA for AIX User's Guide* for a complete explanation of the `config.dat` file.) The default is */install_dir/server_name/* (for example, `/opt/storagetek/SVAA3.1.0/Server31/`).

Enter a full pathname, or press Enter to accept the default.

Note: If you will be running multiple SVAA servers on this host, each server must have its own `config.dat` file.

d.
```
Enter Unique Log File Name:
Default: /opt/storagetek/SVAA3.1.0/Server31/
Server31Log
Type name or hit enter for default
?
```

This is the name of the file where the SVAA server will write error messages. Refer to the *SVAA for AIX User's Guide* for a complete explanation of the server log. The default is */install_dir/server_name/server_name*`Log` (for example, `/opt/storagetek/SVAA3.1.0/Server31/Server31Log`).

Enter the full pathname for the file, or press Enter to accept the default.

Note: If you will be running multiple SVAA servers on this host, each server should have its own log file.

e. The valid security modes are active, warn or none, enter a security mode:
Default is: ACTIVE
Type a security mode or hit enter for default
?

This is the security mode for the SVAA server; the SVAA server will come up in this mode whenever it is started (until you explicitly change the mode). See the *SVAA for AIX User's Guide* for a complete explanation of the security modes. The default is "active" (SVAA security is in full force).

Enter a mode (`active`, `warn`, or `none`), or press Enter to accept the default.

f. Enter a user group name to be the SVAA administrator group:
Type name or hit enter for the system default admin group name
?

This is the user group authorized to have SVAA administrator privileges. When SVAA security is in "active" mode, all SVAA server administration functions are limited to the user "`root`" and to users in the SVAA server administrator group. Refer to the *SVAA for AIX User's Guide* for a complete explanation of the SVAA administrator group.

The group you enter here must be a valid UNIX group, as defined in the `/etc/group` file. The default is the default AIX administrator group.

Enter the group, or press Enter to accept the default.

g. Enter Unique Server Port:
   Default: 41248
   Type port number or hit enter for default
   ?

   This is the port number for the SVAA server. The default is 41248.

   Enter any integer between 1025 and 64567, or press Enter to accept the default.

   Note: If you will be running multiple SVAA servers on this host, each server must have its own unique port number.

h. Enable Web Interface? (y/n)

   The utility asks if you want to enable the SVAA WBI. The WBI is currently used to generate detailed point-in-time reports of SVA subsystem activity.

   Enter y if you want to enable the WBI for this SVAA server. Enter n if you do not.

i. Enter Unique Web Interface Port:
   Default: 65535
   Type port number or hit enter for default
   ?

   This prompt appears if you entered y or pressed Enter at the previous prompt. This is the port number by which the SVAA server will communicate with the WBI.

   Enter any integer between 1025 and 64567, or press Enter to accept the default.

Note: This entry must be different from the Server Port number entered above. Also, if you will be running multiple SVAA servers on this host, this entry must be different from the Server Port number(s) and WBI port number(s) of the other server(s).

j. `Add an ECAM device to Server configuration (y/n)?`

The utility asks if you want to add an ECAM device to the SVAA server.

Enter `y` if you want to add an ECAM device. Enter `n` if you do not.

k. `Enter device specification:`

This prompt appears if you entered `y` or pressed Enter at the previous prompt. This is the pathname of an ECAM device which the SVAA server will use for communicating with the SVA subsystem.

Enter the full pathname of the raw device. It should look something like:

`/dev/rhdisk`*n*

Note: You should have written down the `rhdisk` identifier of the device during SVAA pre-installation .

Note: See “Installing SVA Path with SVA Administrator” in the *SVA Path for AIX User’s Guide* for instructions on updating the ECAM device configuration in SVA Path.

l. `Add another ECAM device (y/n)?`

The utility asks you if you want to add another ECAM device to the SVAA server.

Enter y if you want to add another ECAM device. Enter n if you do not.

m. `Write startup daemon to /etc/ directory (y/n)?`

The utility asks you if you want to add scripts to your system that will automatically run at system startup and shutdown.

The startup script, called `/etc/svaa`, starts the SVAA server before starting any applications that rely on the SVA subsystem. The shutdown script, called `/etc/svaa`, shuts down the SVAA server after shutting down any applications that rely on the SVA subsystem.

Enter y if you want to install the scripts now. Enter n if you do not.

n.
```
Server Name:          server_name
Server Home:          installation_directory_path
Configuration Path:   config.dat_file_path
Log File Name:        log_file_path
Security Mode:        mode
Admin Group Name:     svaa_admin_group
Server Port:          server_port_number
Web Interface:        wbi_status
Web Interface Port:   wbi_port_number
ECAM device:          device_path

Are all values correct (y/n)?
```

The utility displays all the values you have entered and asks you to confirm them.

Enter y if all the values are correct.

Enter `n` if any of the values are not correct, and all the prompts will be displayed again (after first prompting you if you want to overwrite the existing `sibserv` and `sibadmin` files).

o. If you chose in Step m to install the SVAA script, you will need to use the UNIX `mkitab` command to add a new record to the `/etc/inittab` file in order to start the SVAA server automatically after a system reboot (see the `mkitab` man pages for command details).

   - If SVA Path is installed, you must insert the SVAA startup record immediately after the SVA Path record; this is to ensure that all devices under SVA Path's control are started before the SVAA server. At the UNIX system prompt, type the following command:

     ```
     # mkitab -i svapath "svaa:2:wait:/etc/svaa
     start"
     ```

   - If SVA Path is not installed, the SVAA startup record can go at the end of the `/etc/inittab` file. At the UNIX system prompt, type the following command:

     ```
     # mkitab "svaa:2:wait:/etc/svaa start"
     ```

SVAA server configuration is now complete.

Enhancing AIX Performance

To enhance the performance of SVA I/O on AIX systems, StorageTek provides a script that inserts predefined SVA disk definitions into the AIX ODM (object data manager). The defined disks are:

- StorageTek V2X Shared Virtual Array—for support of V2X devices

- StorageTek V960 Shared Virtual Array—for support of V960 devices
- StorageTek 9500 Shared Virtual Array—for support of 9500 devices

The script sets the attributes of these SVA disks to an optimal level to enhance SVA disk performance. Once you use the script, the AIX host operating system will use the enhanced SVA disk definitions rather than default fibre-channel disk definitions. It is recommended that you install the script before proceding to “Validate the SVAA Server and CLI”.

The script is located at the StorageTek Customer Resource Center (CRC) Website at: `www.support.storagetek.com`. Use the following steps to download the script:

1 Log in.
2 Click on **Current Products**.
3 Click on **Software**.
4 Under the “Virtual Disk (SVA) Software” heading, click on **SVA Administrator for AIX**.
5 Under the “FAQs” heading, click on **Adding SVA V2X, V960, and 9500 predefined disks to AIX’s ODM**.
6 At the top of the FAQ, click on **stkodm_sva.tar** to download the file.

Note: Please read the `README.txt` file before installing the script.

VALIDATE THE SVAA SERVER AND CLI

Use the following steps to start the SVAA server and the CLI (command line interface) and verify that they are running correctly.

Note: The SVAA server requires `localhost` to be defined; if it is unable to resolve `localhost`, the SVAA server will not start. Therefore, if necessary, you should define `localhost` prior to starting the SVAA server.

1 Log in as `root`, if you aren't already.

2 Bring up a terminal or console window.

3 Change to the SVAA server installation directory:

```
# cd install_dir
```

Where *install_dir* is the pathname of the installation directory you specified during SVAA server configuration (typically `/opt/storagetek/SVAA3.1.0`).

4 Start the SVAA server:

```
# cd bin
# ./sibserv
```

Note: Refer to the *SVAA for AIX User's Guide* for a complete explanation of the `sibserv` command and its options.

As soon as you see the message `Running SVAA Server`, proceed to the next step.

5 To verify that the server is communicating with the SVA subsystem, open another terminal or console window and type the following:

```
# cd install_dir/bin
# ./sibadmin querysubsystem
```

The display should appear similar to the following example:

```
SVAA Server: Server31      Date/Time: 01-24-2001 22:20:07 MDT
SubsysDev
SubsysProd
SubsysTest
```

6 In this same console or terminal window, start the CLI (command line interface):

```
# ./sibadmin
```

Note: Refer to the *SVAA for AIX User's Guide* for a complete explanation of the `sibadmin` command and its options.

7 To verify that the CLI is communicating with the SVAA server, type the following at the CLI prompt:

```
SIB> queryversion
```

The display should appear similar to the following example:

```
SVAA Server: Server31      Date/Time: 12-12-2001 17:01:33 MDT

Shared Virtual Array Administrator 3.1.0 PPFinfo PTF=L2P004J Patch=12 Fix=0
Issue=695582 for AIX
```

8 Shut down the SVAA server:

```
SIB> shutdownserver
SIB9862D: Halt the SVAA server Server31 (y/n)? y
SIB9604I: Disconnected with server.
```

9 Exit from the CLI:

```
SIB> exit
```

Validation is now complete.

SVAA Server Security Considerations

SVAA server administration functions are limited to the user "`root`" and to users in the SVAA server administrator group (which you have defined with the `sibconfig` utility).

Note: SVAA administrator privileges apply only to SVAA server administration functions. In order for any user (including members of the

SVAA administrator group and `root`) to be able to perform functions that modify the SVA subsystem (such as defining devices or forming arrays), the user must have write-access to a privileged ECAM device. Other restrictions apply for specific functions, such as snapping a logical volume or volume group. For complete details, see the following sections in the *SVAA User's Guide*:

- “Chapter 2, Security”—Describes the SVAA server security system.
- “Chapter 5, SVAA CLI Commands”—Describes how to use the CLI and provides detailed reference on all commands.