Installing VolServ®

VolServ Version 5.0
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601351 Rev A

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Preface

Getting Started 1

Installation Procedures 2

Post Installation Tasks 3

Preface

NOTES

Purpose of This Book

This book describes how to install VolServ.

Who Should Read This Book

This book is intended as a reference guide for use by the VolServ installation team and the site system administrator. Use this guide for the installation and setup of a VolServ system.

It assumes the administrator has a strong familiarity with:

- UNIX operating systems
- Applications running in their site environment

How This Book is Organized

This book contains the following chapters:

Chapter 1: Getting Started — Installing hardware and other preparations before the actual installation of VolServ.

Chapter 2: Installation Procedure — Instructions for installing and configuring VolServ.

Chapter 3: Post Installation Tasks — Tasks after installing VolServ, such as: database maintenance, media management, and configuring for use with FileServ. Additional tasks include: updating the license string and configuring label printers.

Conventions

The conventions used throughout the VolServ technical books are listed below:

Convention	Example

Screen text, file names, program names, and commands are in `Courier` font.	`Request to add a new volume:`
	`Volume group will be “20”`
	`Volume position will be “A123”.`

The root prompt is shown as a number symbol.	`#` **`su root`**
What you should type in is shown in `Courier` **bold** font.	**`vsarchiveqry`**
Site-specific variables are in a *Times italics* font.	**tar -xvf** ***tapedevicename***
A backward slash (\ ) denotes the input is continued onto the next line; the printed page is just not wide enough to accommodate the line.	#**sh** ***nodename*** **`-n dd if=/dev \`** **/*tapedevicename*/`bs=20b | tar xvfb \`** **`- 20`** (You should type the entire command without the backward slash.)
Pressing <Return> after each command is assumed.	
A menu name with an arrow refers to a sequence of menus.	Config-->MediaType-->Redefine

Books

The books described below are part of the technical documentation set, and are shipped on CD along with the VolServ software:

Overview
Provides an overview of VolServ. Contains a glossary.

Installing VolServ
Describes server requirements, installation instructions, troubleshooting procedures, and configuration parameters.

Using the VolServ GUI
Describes how to perform system administrative tasks using the graphical user interface.

API Guide
Provides a list of API functions.

Administrative Tasks
Describes how to perform system administrative tasks using VolServ commands.

Command Reference
Contains a list of VolServ commands

Error Messages
Provides corrective action for system log errors.

Quick Reference Card
Summarizes commands.

Online Books

The documentation CD contains VolServ book files and Adobe® Acrobat® Reader. The Reader allows you to view and navigate the online documentation files yet preserves the page design and graphics from the printed books.

Related Publications

The publications described in the table below are created and distributed on an as-needed basis.

Related Publications	Description
"Release Notes"	For each version of VolServ, the "Release Notes" contain: • Summary of enhancements • Describes: - Fixed problems - Known problems - Installation and configuration issues • Lists: - Operating system patches. - System requirements
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1

Getting Started

Roadmap

Topic	Refer To Chapter
Prepare to install VolServ	1
Install VolServ	2
Tasks after installing VolServ: • Startup and shutdown scripts • Put Linter engine in PATH • Database maintenance and recovery • Media management Site-specific tasks: • Modifying .cshrc file • Configuring SCSI Device Nodes • Configuring for use with FileServ • Changing the configuration file • Updating license strings • Configuring label printers	3

Prior to Installation

The tasks below are presented as guidelines only since the actual steps for your specific site are unique:

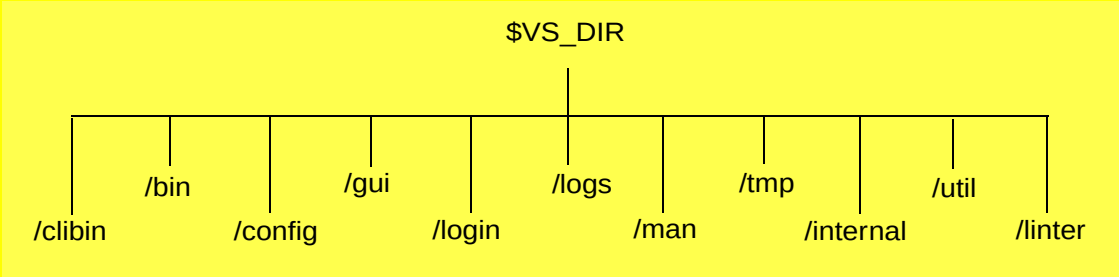
Step	Task	Refer to Page
1	Install the hardware and connect the storage devices to the network. **NOTE**: If you are also using FileServ, first install VolServ, then install FileServ.	
2	A new installation on an existing system may require the system administrator to do some data manipulation and disk repartitioning. For database recovery, the ideal hardware system would include at least two disk drives, approximately 2 GBs each.	
3	Become acquainted with the VolServ directory structure.	1-4
4	Complete the System Parameters Checklist table.	1-6
5	Create VolServ directories.	1-7
6	Configure the UNIX environment.	1-8
7	Obtain a license string.	1-11

VolServ Directory Structure

The `VS_DIR` environment variable is set up in the local `.cshrc` file by the installation script.

During execution of the script, a prompt asks for the name of the directory in which to install VolServ. The default value of `VS_DIR` is `/volserv/volserv` but you can enter a different location during execution of the installation script.

VolServ is installed in a number of directories and files below the `$VS_DIR` directory as shown in the following figure and described in the table below.



Directory	Contents
clibin	Command line interface files.
bin	VolServ processes invoked when VolServ is started.

Directory	Contents
config	A series of `*.config` files. Changes to VolServ operating environment can be made by altering entries in the `*.config` files. For example, the user can elect to add or to remove VolServ capabilities available to the clients or VolServ system administrator by modifying `command.config` or `operator.config` files. In most cases, changes made to the `*.config` files do not take effect until VolServ and the system administrator consoles have been cycled.
gui	Graphical User Interface. Contains X-Window system resource files used by the VolServ GUI.
login	Sample environment files, such as `.cshrc`,`.login`, `.mwmrc`, `.logout`, and `.xinitrc` files.
logs	All VolServ log files.
man	Man pages for the `volserv` and `vswin` commands.
tmp	Temporary installation files.
internal	Contains directories and files for operation of VolServ. **NOTE**: Items in this directory are created/maintained automatically and must NOT be altered directly.
util	Software utilities. **NOTE**: These utilities should only be run under the advice of ADIC technical support.
linter	Stores the database log of events between checkpoints.

System Parameters Checklist

The installation script prompts you for configuration information. Therefore, before running the script, complete the System Parameters Checklist table shown below.

Information Needed	Default	Customer Entry
User ID for VolServ administrator	`vsadm`	
Group ID for VolServ files	`vsadmin`	
Host identifier	• On SGI, use `sysinfo -s` • On Sun, use `hostid`	
CDROM device name		
VolServ hostname		
VolServ license string	Contact ADIC technical support.	
AML license string		
Library license string		
Library2 license string		
Library3 license string		
Library4 license string		
Archive controller hostname	See site system administrator.	
Archive controller internet address		

Create VolServ Directories

During the VolServ installation process, you are requested to either:

- Accept the default directories.
- Or, supply directory locations for certain files that assist in database recovery.

If you do not want to accept the defaults, create the new directories before beginning the VolServ installation process. The required directories are described below.

Note

The default value of `VS_DIR` is `/volserv/volserv`

Name	Description	Path	Permissions
Installation directory	Volserv binaries and files.	`/volserv`	vsadm
VolServ API files	Application program interface.	`/volserv/vsapi`	vsadm
Linter Database	Database engine.	`/volserv/volserv/linter/db`	
Journal files*	Stores the database log of occurrences between checkpoints.	`/volserv/volserv/linter_jnl`	
Checkpoint files*	Stores a snapshot of the database at some specified time interval.	`/volserv/volserv/linter_ckp`	
Checkpoint archive*	Stores the checkpoints.	`/volserv/volserv/ckp_archive`	

* ADIC recommends that the journal and checkpoint directories reside on a different disk than the VolServ Database.

Configure UNIX Environment

Step 1. Login as `root` user.

Step 2. Use an editor, such as vi, to add the `vsadmin` group to the `/etc/group` file. This file must contain a line entry for each group recognized by the system. The format of each entry is:

groupname:password:gid:[user-list]

where:

Option	Description
groupname	Name of the group.
password	Encrypted group password or * if no password.
gid	Group's numerical identifier within the system; it must be unique.
user-list	Comma-separated list of users allowed in the group.

The newly created line should look similar to the following example.

```
vsadmin:*:11:vsadm
```

For example, if the eleventh group id is not assigned, it should be placed as the 11th line entry in the file so that its `gid` is in numerical order with the other entries

Step 3. Use an editor, such as vi, to view the `/etc/passwd` file. If this file already contains a `vsadm` entry, no further action is necessary. Otherwise, the user must add a `vsadm` user definition to the file. This file must contain a line entry for each user recognized by the system. The format of each entry is:

username:password:uid:gid:information:login_directory:login_shell

where:

Option	Description
username	The name of the user.
password	The encrypted user password or `*` if no password is used.
uid	The user's unique numerical identifier within the system.
gid	The group's numerical ID within the system; it must be unique and must match the gid entered in the `/etc/group` file earlier.
login_directory	The directory at which the user will be positioned when login is successful.
login_shell	The shell under which the user logs in.

The added line looks like the following example. It should be placed in the file so that its `uid` is in numerical order with the other entries.

```
vsadm:x:111:11:-VSAdmin:/volserv/volserv:/bin/csh
```

Note

Creating shadow files are optional. If you are not creating a shadow file, go to Step 7.

Step 4. Change the `/etc/shadow` file access mode to 600.

```
# chmod 600 /etc/shadow
```

Step 5. Use an editor, such as vi, to view the `/etc/shadow` file. Make the following `vsadm` entry:

```
vsadm::::::::
```

Make sure to enter eight colons after the **vsadm** string.

Step 6. Reset the `/etc/shadow` file access mode to 400.

```
# chmod 400 /etc/shadow
```

Step 7. Run the `passwd` command to initialize the `vsadm` password.

```
# passwd vsadm
```

Obtain VolServ License Strings

Step 1. Display the host identification number for the host server.

- On SGI, use the following command:

```
# sysinfo -s
```

- On Sun, use the following command:

```
# hostid
```

Step 2. Obtain a site license strings by calling the ADIC Technical Assistance Center:

- In the USA and Canada, call 1-800-827-3822.
- Outside the USA and Canada, call 303-874-0188 or toll-free 00800-9999-3822.
- Send e-mail to: support@adic.com.

ADIC support personnel will request the host identifier displayed in Step 1. and then provide you with the license strings appropriate for your site.

Step 3. Enter the license strings in the column labeled "Customer Entry" provided in the table on page 1-6.

Note
The license strings are case sensitive.

NOTES

2

Installation Procedures

Roadmap

Topic	Refer To Chapter
Prepare to install VolServ	1
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Distribution Media

The VolServ distribution CD contains:

- Information describing the release
- A script file to perform installation
- One or more data files to be installed

The installation process involves verifying the header file and loading and executing the installation script file. The script controls the remainder of the installation process.

Running the Installation Script

Installing VolServ takes approximately 30 minutes.

The following procedure includes the prompts issued by the installation script. The lines and prompts issued by the script are shown in `Courier` font.

- If <RETURN> is pressed without an entry, the default answer shown in less than (<) or greater than (>) symbols, is used in invoking the installation script.
- Press <RETURN> after keying in each value.

The script performs the following operations:

- Distributes the VolServ command executable files and support files (internal, system parameter, syslog, etc.) into the default system directories.
- Interactively initializes the parameter files consisting of system configuration parameters and system defaults.

The installation script copies software files from the installation CD into the appropriate directories. The script initializes the system configuration and default parameters that are used by the software packages.

VolServ parameter files are ASCII text files that can be modified using a text editor. The system administrator can change these parameters to tune the system for site-specific needs.

The VolServ administrator environment is created during installation. The exact setup of the environment depends largely upon the intended use of the VolServ system.

Installation Summary

The following steps are required for a successful installation:

Step	Task	Refer to Page
1	Complete the steps in the “Prior to Installation” table.	1-3
2	Extract the files from the CD.	2-6
3	Use the `vs_install` script to install VolServ onto the UNIX server.	2-8
4	Determine which post installation tasks you need to perform.	3-3
5	Determine which site-specific tasks you need to perform.	3-7

Extract Files from CD

Step 1. Place the VolServ CDROM into the CD drive.

Step 2. Login to the VolServ host computer as the `root` user.

Step 3. If a windowing environment is used, expand the shell window to a width of 80 columns or more.

Step 4. **Remote only:** Edit the remote host's `/.rhosts` file by adding the hostname (of the machine that VolServ is being installed on) to the file.

Step 5. **Local only**: When you are using a local CD device, use the command as shown below to extract the installation script:

```
# tar xvf /cdromdevice/vs50/volserv/platform_dist/install_scripts
```

where:

Option	Description
platform	Enter your UNIX server platform type: • Solaris 7= SUNOS570sparc • Solaris 8 = SUNOS580sparc • IRIX 6.5 = IRIX650

Step 6. **Remote only:** Or, if you are doing a remote installation, use the command as shown below to extract the installation script:

```
# rsh remote_host dd if=/cdromdevice/vs50/volserv/platform_dist\
    /install_scripts ibs=20b | tar xvBf -
```

where:

Option	Description
platform	Enter your UNIX server platform type: • Solaris = sol • IRIX 6.2 = sgi6.2 • IRIX 6.5 = sgi6.5

Step 7. To start extracting the VolServ files, press <RETURN>.

The VolServ support and executables files are extracted from the installation CD. Extraction time depends on platforms and media type.

Install VolServ

Step 1. At the command line, enter the following command to begin the VolServ install script:

```
# /usr/tmp/volserv/vs_install
```

Step 2. The ADIC copyright license and the date the distribution CD was created displays as shown below:

```
Copyright 1992-2001 by ADIC, Inc. All rights reserved.
No part of this work may be reproduced or transmitted
in any form or by an means, electronic or mechanical,
including photocopying and recording, or by any
information storage or retrieval system, except as may
be expressly permitted by the 17 U.S.C. section 101,
et. seq., or in writing by ADIC, Inc.

CREATED ON <date stamp>
```

Step 3. To answer the script questions, use the table under "System Parameters Checklist" on page 1-6.

```
This installation will allow you to install multiple software
packages. If you elect not to install something, then the
installation will move on to the next package. The following
software packages are contained in this installation:
  - ADIC VolServ 5.0.0
  - ADIC VolServ API 5.0.0

Do you wish to continue (<y> or n) ? y
-------------------------------------------------------------
Locating user commands...done.
-------------------------------------------------------------
Is media device location local  (<y> or n) ? n

Enter hostname of remote device < >: hostname

Is hostname your intended response (<y> or n)? y
```

```
Are you installing from CDROM (<y> or n)? y

Is your intended response (<y> or n)? y
-------------------------------------------------------------
Enter remote CDROM device path (e.g. /cdrom/volserv)<>

Ready to install/update the necessary VolServ files
Do you wish to install/update the VolServ files now (<y> or n)? y
```

Step 4. Either accept the default `volserv` installation directory or enter a new path.

Tip

For this example, the default is used. Therefore, the directory where the VolServ executables and support files reside is `/volserv`.

VolServ creates the `volserv` subdirectory in the `/` (root) directory.

Note

When the environmental variables are set in the `VS_DIR` environment, variables should be set to the full pathname created in this step; for example, `/volserv`.

```
-----------------------------------------------------------------
When prompted for the installation directory, remember that
"/volserv" is appended to your response.
For example, if you choose "/usr/local" then /usr/local/volserv
is used as the installation directory.

The directory you specify must already exist, because the
installation script will only create the appropriate sub-directories.
```

Step 5. VolServ checks the available disk space for the specified load directory. If insufficient space is available, an error is returned.

```
The installation script also checks the selected file system
to ensure that enough free disk space is available.
Where do you want to install/update VolServ </volserv> ?
Is /volserv your intended response (<y> or n) ? y
-----------------------------------------------------------------

-----------------------------------------------------------------
Installing VolServ files.
-----------------------------------------------------------------
Please mount cdrom on hostname
Press return when ready (or "abort" to quit):

-----------------------------------------------------------------
Extracting the VolServ Support files from distribution.done.

Extracting the VolServ executables from distribution.done
-----------------------------------------------------------------
```

Step 6. Install the command line interface (CLI) executables. The CLI executables are extracted from the distribution media.

```
Now you will be able to install the executables for the
archives which your system supports.  We recommend only
installing what you need.  This will save you time and
conserve disk space.  You can always install the
executables for a new archive whenever it is added.
You will also be able to install the CLI executables
at this time if you desire the command line interface.

Do you wish to install the VolServ CLI executables(<y> or n) ? y
Checking disk space in /volserv/volserv... done.

Extracting the VolServ CLI executables from distribution...done
---------------------------------------------------------------
```

Step 7. If you have a DataShelf, Stage, DataTower, AML, Silo, or SCSI library connected, you are asked about installing those executables as well.

```
Do you wish to install the VolServ DataShelf executables (<y> or n)? n
-------------------------------------------------------------
Do you wish to install the VolServ Stage executables (<y> or n)? y

Checking disk space in /volserv/volserv... done.

-------------------------------------------------------------
Do you wish to install the VolServ DataTower executables (<y> or n)? n
-------------------------------------------------------------
Do you wish to install the VolServ AML executables (<y> or n)? n
-------------------------------------------------------------

Do you wish to install the VolServ Silo executables (<y> or n) ? n
Uncompressing files...

Do you wish to install the VolServ XDI executables (<y> or n)? y
Checking disk space in /volserv/volserv... done.
Extracting the VolServ XDI executables from distribution... done.
```


Note

XDI (eXtensible Device Interface) is a software subsystem that supports SCSI and Scalar DLC connected libraries.

Step 8. For default user IDs and group IDs, see "System Parameters Checklist" on page 1-6.

```
-------------------------------------------------------------------
Enter the VolServ Administrator userid <vsadm> ?
Is vsadm your intended response (<y> or n) ? y
-------------------------------------------------------------------

Enter the Group id for VolServ files <vsadmin> ?
Is vsadmin your intended response (<y> or n) ? y
```

```
The “vsadm” user and “vsadmin” group must exist
before the installation can continue.  You must create
them now if you have not already done so.

If you are installing from a single-window terminal, you may
suspend this install process by using <CONTROL>-Z and then
resume when ready by using the fg command.

Press <RETURN> to continue...
-----------------------------------------------------------------
```

Step 9. Either accept the defaults or enter new pathnames for the following:

- VolServ Database name
- Database journal files
- Database checkpoint files

Caution

ADIC recommends the `journal` and `checkpoint` directories reside on a different disk than the `database`.

```
-----------------------------------------------------------------
Enter the VolServ database name <voldb> ?
Is voldb your intended response (<y> or n) ? y
-----------------------------------------------------------------

-----------------------------------------------------------------
Where do you want the db journal files /volserv/volserv/linter_jnl?
Is /volserv/volserv/linter/db your intended response (<y> or n) ? y
Where do you want the db checkpoint files /volserv/volserv/linter_ckp?
Is /volserv/volserv/linter/db your intended response (<y> or n) ? y
-----------------------------------------------------------------
```

Step 10. Enter the VolServ license string. If you do not enter it now or want to change the string later use the `$VS_DIR/util/change_license` utility. For instructions, see "Updating the License String" on page 3-17.

```
Please enter the license strings that were delivered with
the VolServ software.  If for some reason you did not
receive any license strings, please call the ADIC ATAC
at:
     1-800-827-3822 (within the USA and Canada)

Have this number ready: #####

You can skip this section now and enter the license later.

Do you wish to enter the license strings now (<y> or n) ? y

-----------------------------------------------------------------
What is the VOLSERV license string 00000000? #######
Is ####### your intended response (<y> or n) ? y
Updating VOLSERV  license string ... done.
-----------------------------------------------------------------
```

Step 11. Enter the appropriate license strings for all your storage devices. The `$VS_DIR/config/envvar.config` file will be updated to incorporate these entries.

Tip

In the example below, a SCSI library is being installed.

```
What is the SCSI license string 0000000000000 ? #############
Is ############# your intended response (<y> or n) ? y
Updating SCSI license string ... done.
```

```
------------------------------------------------------------
Setting VolServ permissions... done.
------------------------------------------------------------
```

Step 12. The VolServ database (Linter) is installed under `$VS_DIR/linter`.

```
The home directory of the linter database
is /vsdev/volserv/linter. The LINTER_DIR environment
variable will be set to this value.
Commencing installation of the VolServ database.

Copying Linter RDBMS files to /vsdev/volserv/linter...
    .
    .
    .

Creating Linter database...
Linter database has been created.
Starting Linter database kernel...
Linter database kernel has been started.
Creating user voldb...
User voldb has been created.
Creating Linter system tables...

Linter system tables have been created.
Creating Linter error messages table...
Linter error messages table has been created.
Loading Linter error messages table...
Linter error messages table has been loaded.
Shutting down Linter database kernel...
Linter database kernel has been shut down.

Setting up necessary tables for database voldb...
Starting Linter database kernel...
Linter database kernel has been started.
```

```
 'Version' table created
 'ArchiveClass' table created
 'InsertArchiveClass ' created
 'DeleteArchiveClass ' created
 'UpdateArchiveClass ' created

'ArchiveType' table created
      .
      .
      .
'InsertArchive ' created
 'DeleteArchiveSuite ' created
 'UpdateArchive ' created

Set up of tables for database voldb complete.
```

Step 13. After all the database tables are entered, VolServ automatically makes an initial checkpoint of the Linter Database.


```
Checkpointing the voldb database . . .
Linter database kernel is already active!
Performing Linter database backup. . .
Linter database backup completed.
Checkpoint of the voldb database complete.
```

Step 14. Either accept the default path or enter a new pathname where the database checkpoint files will be stored.

```
Enter directory for archiving database checkpoint files
(/volserv/volserv/ckp_archive):
```

Step 15. The Application Program Interface (API) is used to interface the client's software with VolServ. The API man pages are also installed and include API descriptions. For more information, refer to the VolServ *API Guide*.

Either accept the default path or enter a new pathname.

```
------------------------------------------------------------------
Ready to install the necessary VolServ API files.
Do you wish to install/update the VolServ API files now (<y> or n) ? y
------------------------------------------------------------------

When prompted for the installation directory, remember that“/vsapi” is
appended to your response.
For example, if you choose “/usr/local” then /usr/local/vsapi
is used as the installation directory.

The directory you specify must already exist, because the
installation script will only create the appropriate sub-directories.

The installation script also checks the selected file system
to ensure that enough free disk space is available.

Where do you want to install/update VolServ API </volserv> ?
Is /volserv your intended response (<y> or n) ? y
Checking disk space in /volserv... done.

------------------------------------------------------------------
Installing VolServ API files.
------------------------------------------------------------------

Extracting the VolServ API files from drive...done.

Uncompressing the utilities...done.

Setting VolServ API permissions...done.
------------------------------------------------------------------
```

Step 16. At the end of the installation, the files installed will be displayed and a copy of the installation configuration will be written to a file.

```
The following software was installed:
            ADIC VolServ 5.0.0
            ADIC VolServ API 5.0.0
            Relex, Inc. Linter RDBMS v593
ADIC 5.0 Software Installation Script Complete

------------------------------------------------------------
A transcript of this install can be found in
/volserv/volserv/logs/install.5.0.0.log#
```

After installation, the `VS_DIR` environment variable indicates the home directory of the VolServ binary and support files.

Step 17. Remove the CD from the drive.

NOTES

3

Post Installation Tasks

Roadmap

Topic	Refer To Chapter
Prepare to install VolServ	1
Install VolServ	2
Tasks after installing VolServ: • Start-up and shutdown scripts • Put Linter engine in PATH • Database maintenance and recovery • Media management Site-specific tasks: • Modifying .cshrc file • Configuring SCSI Device Nodes • Configuring for use with FileServ • Changing the configuration file • Updating license strings • Configuring label printers	3

Post Installation Topics

Setting up the VolServ environment includes the following tasks:

Put Linter in PATH

VolServ uses a Linter Database to store and track information about the archived files, tape drives, and media managed by VolServ. If Linter goes down, VolServ also terminates.

Edit either the `.cshrc` or `.profile` file for the `root` user to add `$VS_DIR/linter/bin` to the `$PATH` environment variable.

Start and Stop Linter

Step 1. As the `root` user, run `startlinter` to start the Linter database processes.

Step 2. As the `root` user, run `shutlinter` to stop the Linter database processes.

Database Maintenance

Linter must be active before VolServ initiates. Periodic database maintenance is required to prevent data loss, to improve VolServ performance, and to simplify recovery procedures, if needed.

All maintenance operations are established during the initial VolServ installation. However, the VolServ system administrator can modify the backup script to accommodate the specific needs of each site.

Back Up the Database Location

Back up the Linter database location (`$VS_DIR/linter/db`) when the regular operating system and application backups are performed.

The `$VS_DIR/linter/dict/scr_unix.bsl` backup script is provided to help you control backups of the database checkpoint files. This script contains the daily and weekly backup times that you can adapt to your specific site.

> **Note**
>
> You must edit this script before running the database backup process.

To edit the Linter backup script, follow the steps below:

> **Note**
>
> Make sure that `$VS_DIR/linter/bin` is in the root user's `PATH` environment variable.

Step 1. Close all Linter Database processes by running `shutlinter`.

```
# shutlinter -a
```

Step 2. Enter the time in the `scr_unix.bsl` script for "Everyday" and "CWEEKDAY."

Step 3. When you are finished editing, restart the Linter Database and backup process by running the following:

```
# /etc/rc2.d/S90linter
```

This backup script includes the following two device paths that were set up during the database installation:

- ARCDEVICE—stores weekly backups.
- LHBDEVICE —stores daily backups.

Check Pointing the Database

A checkpoint is a snapshot of the database. Taking regular checkpoints makes recovery of the database faster and more reliable.

A checkpoint directory was created outside the database directory during the installation process.

Caution

Make sure this directory is on a separate disk from the VolServ Database.

Journal the Database

Journaling of the database was also established during VolServ installation.

Caution

Make sure this directory is on a separate disk from the VolServ Database.

Database Recovery

All changes to the database can be recovered by the following operations:

- Journaling enabled for the Linter Database.
- Linter software maintaining a record of every update since the last checkpoint.

If the Linter Database (`$VS_DIR/linter/db`) becomes either corrupt or loses data, you can recover the database from checkpoints, journals, and backups.

To restore your database, follow the steps below:

Step 1. Look in the `ARCDEVICE` path or the `LHBDEVICE` path to determine either the checkpoint or the archived checkpoint file to restore. You designated these locations setting up the `scr_unix.bsl` for your system backup.

Step 2. Call ADIC technical support to assist in the restoration of the database.

Caution

Database recovery should ONLY be performed with the assistance of ADIC technical support. You should NOT attempt to restore the database on your own.

Media Management

For details of VolServ media management, refer to the *Administrative Tasks, Command Reference,* and *Using the VolServ GUI* books.

Site-Specific Topics

Additional tasks include the following topics:

Modifying the .cshrc File

During execution of the VolServ installation script, the `.cshrc` file for `vsadm` was created. This file may need to be modified if the shell used is different from the shell the software was installed under.

Step 1. Login as `vsadm`.

Step 2. Edit either the `.cshrc` file if you are using the C shell or edit the `.profile` file if you are using the Bourne shell. Add the applicable line to define the type of shell used to run VolServ.

C SHELL

```
# source /volserv/volserv/vs_cshrc
```

BOURNE SHELL

```
# . /volserv/volserv/vs_profile
```

Step 3. Cycle `vsadm` to pick up the changes.

Configuring SCSI Device Nodes

Note

These steps are only required when attaching a SCSI-connected library.

If you are attaching a SCSI-connected library, use the following procedures.

SGI/IRIX Host

Note

These instructions do not apply to a SCSI library that is to be controlled via the Scalar DLC network attachment.

To configure a SCSI device node to an IRIX host:

Step 1. Power-down the IRIX machine.

Step 2. Connect a properly terminated SCSI library.

Step 3. Power-up SCSI library.

Step 4. Wait for the library to finish power-up scanning.

Step 5. Power-up the IRIX host.

Step 6. Use the `hinv` utility to display all devices.

Here is an example of the report from `hinv`:

```
$ hinv
2 195 MHZ IP30 Processors
CPU: MIPS R10000 Processor Chip Revision: 2.7
FPU: MIPS R10010 Floating Point Chip Revision: 0.0
Main memory size: 128 Mbytes
Xbow ASIC: Revision 1.3
Instruction cache size: 32 Kbytes
Data cache size: 32 Kbytes

Secondary unified instruction/data cache size: 1 Mbyte
Integral SCSI controller 0: Version QL1040B (rev. 2), single ended
  Disk drive: unit 1 on SCSI controller 0
  Disk drive: unit 2 on SCSI controller 0

Integral SCSI controller 1: Version QL1040B (rev. 2), single ended
  Disk drive: unit 2 on SCSI controller 1
  Disk drive: unit 3 on SCSI controller 1
Integral SCSI controller 2: Version QL1040B (rev. 2), differential
  Tape drive: unit 1 on SCSI controller 2: DLT
  Tape drive: unit 2 on SCSI controller 2: DLT
  Tape drive: unit 3 on SCSI controller 2: DLT
  Tape drive: unit 4 on SCSI controller 2: DLT
  Disk drive: unit 5 on SCSI controller 2
  Jukebox: unit 6 on SCSI controller 2
  Disk drive: unit 8 on SCSI controller 2

IOC3 serial port: tty1
IOC3 serial port: tty2
IOC3 parallel port: plp1
Graphics board: SI
Integral Fast Ethernet: ef0, version 1, pci 2
Iris Audio Processor: version RAD revision 12.0, number 1

$
```


This report identifies the Jukebox as unit 6 on SCSI controller 2

Step 7. Enter `ls /dev/scsi` to display the nodes for all SCSI devices. An example report is:

```
$ ls /dev/scsi
sc0d1l0  sc1d2l0  sc2d1l0  sc2d3l0  sc2d5l0  sc2d8l0
sc0d2l0  sc1d3l0  sc2d2l0  sc2d4l0  sc2d6l0
$
```

In this example, the SCSI Device to be entered for configuration of this SCSI library for VolServ is `sc2d6l0` where `c2` corresponds to Controller 2, `d6` corresponds to SCSI ID (Unit) 6, `l0` and corresponds to Logical Unit Number (LUN) 0.

Solaris Host

Connected SCSI devices to a Solaris host will not be recognized until properly configured. .

Note

These instructions do not apply to a SCSI library that is to be controlled via the Scalar DLC network attachment.

Once configured as a device node, the SCSI target ID must be determined and used for configuring the library for VolServ, refer to the "SCSI Parameters" section of the *Using the VolServ GUI* manual.

To configure a SCSI device node to an Solaris host:

Step 1. Gracefully power-down the Solaris host to be used for the SCSI connected archive.

Step 2. Connect the properly terminated SCSI library.

Step 3. Power-up the library.

Step 4. Wait for the library to finish it's initialization scans.

Step 5. Power-up the Solaris host computer.

Step 6. Edit the `/kernel/drv/sgen.conf` file as shown below.

```
----------------------------------------
name="sgen" class="scsi" target=0 lun=0;
name="sgen" class="scsi" target=1 lun=0;
name="sgen" class="scsi" target=2 lun=0;
name="sgen" class="scsi" target=3 lun=0;
name="sgen" class="scsi" target=4 lun=0;
name="sgen" class="scsi" target=5 lun=0;
name="sgen" class="scsi" target=6 lun=0;
name="sgen" class="scsi" target=7 lun=0;
#name="sgen" class="scsi" target=8 lun=0;
#name="sgen" class="scsi" target=9 lun=0;
#name="sgen" class="scsi" target=10 lun=0;
#name="sgen" class="scsi" target=11 lun=0;
#name="sgen" class="scsi" target=12 lun=0;
#name="sgen" class="scsi" target=13 lun=0;
#name="sgen" class="scsi" target=14 lun=0;
#name="sgen" class="scsi" target=15 lun=0;

device-type-config-list="changer";
inquiry-config-list= "ADIC","*";
----------------------------------------
```

The lines beginning with a # are comments. The lines can be un-commented out but the line corresponding to the known target ID of the connected SCSI library MUST NOT be commented out.

Additionally, the lines `device-type-config-list="changer";` and `inquiry-config-list= "ADIC","*";` MUST be added to this file to support ADIC Media Changers (libraries).

Step 7. Access an `OK` prompt by simultaneously pressing the `STOP` key and the `A` key from a terminal window.

An OK prompt will appear on the desktop, not in a CDE window.

Step 8. Reboot the Solaris host machine using `boot -r` to force re-configuration of hardware devices. This will create the device node required for the attached library.

Be prepared to immediately do another STOP-A sequence as soon as the memory checks starts (this is when you see the cursor spin activity with the characters '\' '-' '/', etc. without moving position).

This will abort the boot and return to the OK prompt.

Step 9. Enter `probe-scsi-all` at the OK prompt.

The output will identify all SCSI connected devices. The following is an example output on a Scalar 10K with two LTO drives.:

```
ok probe-scsi-all
/pci@1f,0/pci5/scsi@2
<Name of controller card>
=========================
PCI Single Channel LVD HBA
SCSI-ID 7
-------------------------
Target 0
  Unit 0  Removable Tape            IBM  ULTRIUM-TD1    16E0
Target 1
  Unit 0  Removable Tape            IBM  ULTRIUM-TD1    16E0
Target 6
  Unit 0  Removable Device type 8   ADIC Scalar 10K  120A

ok
```

Step 10. At the OK prompt, enter `boot` to reboot the system.

Configuring for FileServ

Perform the following steps to provide VolServ media management capabilities for FileServ.

Step 1. Start VolServ.

Step 2. Configure the appropriate libraries.

Step 3. Configure all drives and associate them with their appropriate libraries.

Step 4. Configure client and operator command authorization.

Step 5. Add media to a library.

Step 6. Install FileServ.

Step 7. The FileServ install script automatically:

- Configures the Media Classes.
- Performs archive Media Class associations.
- Implements a client interface to VolServ using the VolServ API.

Changing the Configuration File

Changes to the configuration may be made after installation. For example, the user can elect to add or to remove VolServ capabilities available to the users or operators by modifying the `command.config` or `operator.config` files, respectively.

Step 1. Log in as `vsadm`.

```
# su - vsadm
```

Step 2. Change to the `$VS_DIR/config` subdirectory.

```
# cd $VS_DIR/config
```

Step 3. Edit the appropriate `*.config` files.

where:

*.config File	Description
command.config	A list of VolServ commands available to client software. This file is used by VolServ to determine permission of clients to execute these commands. View information contained in this file for more information.
console.config	Entries that configure the logging system for VolServ. View information contained in this file for more information.
console_locations.config	A list of console names that appears in a pop-up list during execution of the Change Archive Parameters command. View information contained in this file for more information.
envvar.config	Environment variables used by VolServ during operations. View information contained in this file for more information.

*.config File	Description
label_printers.config	Printer name and type of the label printers used by VolServ to print or reprint media labels. View information contained in this file for more information.
operator.config	A list of VolServ commands available to the system administrator. This file is used by VolServ to determine permission of the system administrator to execute these commands. View information contained in this file for more information.
printers.config	A list of printers that appears in a pop-up list during execution of certain VolServ commands. Information in this file should not be modified unless directed by ADIC Technical Assistance Center. View information contained in this file for more information.

*.config File	Description
process.config	A list of processes that are started up following processes contained in the `servers.config` file or are terminated before those in `servers.config`. Information in this file should not be modified unless directed by ADIC technical support. View information contained in this file for more information.
servers.config	A list of processes that are started up prior to those processes in `process.config` file. Conversely, the processes in this file are terminated after those in `process.config`. View information contained in this file for more information.

Updating the License String

After installation, you may need to update a license string or subsystem configuration. The same utilities invoked by the installation script are used to make these updates; therefore, the procedures (after invoking the utilities) follow those shown in the installation script.

The utility for updating a license string is `$VS_DIR/util/change_license`.

Step 1. Log in as `vsadm`.

```
# su - vsadm
```

Step 2. Enter the following to run the utility and update the license string:

```
# $VS_DIR/util/change_license
```

Configuring Label Printers

Step 1. To change entries in the `printcap` file, look for the device driver filename `ttyb` in the barcode label printer entry and change it to `ttya`.

Or, comment-out the entire shelf label printer entry with a **#** at the beginning of the line.

The following example shows entries added to the `/etc/printcap` file for the shelf label and barcode label printers:

```
# Seiko Printer:
#
shelflabel:\
:lp=/dev/ttya:sd=/var/spool/lpd:\
:br#9600:ms=litout,-cstopb,-icrnl:
```

```
#
# Intermec Printer:
#
barcodelabel:\
:lp=/dev/ttyb:sd=/var/spool/lpd:\
:br#9600:ms=evenp:
```

Step 2. If these printers are not attached to the VolServ host machine serial ports A and/or B or if they are attached to parallel ports or a remote machine, the system administrator must set up the `/etc/printcap` file to define the printers.

Step 3. To simplify the `printcap` file modification, use the names of the label printers as defined in the `label_printers.config` file. Otherwise, different names used in the `printcap` file must also be defined in the `label_printers.config` file.

Step 4. Cycle VolServ to pick up the changes.

```
# volserv -t
...
# volserv
```

Step 5. Cycle `vswin` (if open) to pick up the changes.

Configure Printers on Solaris

Solaris only: The system administrator must use the Solaris `admintool` utility to configure the label printers.

This procedure is written for an Intermec barcode label printer attached to a Solaris server. A similar procedure can be applied to the installation of the Seiko shelf label printer.

Step 1. Login as `root`.

```
# su root
```

Step 2. Connect the printer data cable to the appropriate port on the back of the VolServ host computer.

Step 3. Enter the following:

```
# admintool &
```

Step 4. Select the **Serial Port Manager** and disable communication to both serial ports. Close the **Serial Port Manager**.

Step 5. Select the **Printer Manager**.

Step 6. Select **Edit**-->**Add Printer**-->**Add Local Printer** option. Make the following entries for "port A."

- Printer Name: *optional* `barcodelabel`
- Comment: *optional* `barcode label printer`
- Port: `/dev/term/a`
- Printer Type: `Daisy`
- File Contents: `ASCII`
- Fault Notification: `Write to superuser`
- System Defaults: `Yes`
- Print Banner: `Not required`
- User Access List: `all`

Step 7. Select the **Edit**-->**Modify Printer** option. Make the following entries for "port A."

- Printer OS: `BSD`

- Enable Printer Queue: `Yes`
- Accept Print Jobs: `Yes`

Step 8. Close the **Printer Manager.**

Step 9. Close the **admintool** window.

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