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WHERE TO GO NEXT

Linux

Walks you through the process of installing and configuring the File System *i*DataAgent for Linux.

AIX

Walks you through the process of installing and configuring the File System *i*DataAgent for AIX

FreeBSD

Walks you through the process of installing and configuring the File System $i{\rm DataAgent}$ for FreeBSD.

HPUX

Walks you through the process of installing and configuring the File System $i{\rm DataAgent}$ for HPUX.

Solaris

Walks you through the process of installing and configuring the File System $i{\rm DataAgent}$ for Solaris.

Tru64

Walks you through the process of installing and configuring the File System *i*DataAgent for Tru64.

INTRODUCTION

Calypso software provides a simplified end-to-end protection of file system data residing on all the Unix computers in your enterprise. In addition to complete protection of file system data for disaster recovery, it also provides a robust and comprehensive backup and recovery solution with significant speed performance and efficient use of disk and tape drives. It also assists you in full system rebuilds and eliminates recovery failures.

KEY FEATURES

The Unix File System iDataAgents offers the following key features:

SIMPLIFIED DATA MANAGEMENT

The Unix File System *i*DataAgents enables easy management of all the UNIX systems in your environment, by providing a singular approach to manage the data using the same unified console and infrastructure.

POINT-IN-TIME RECOVERY

In the event of a serious system failure, such as the breakdown of hardware, software, or operating systems, the Unix File System *i*DataAgent provides point-in-time recovery of files at any given time.

SNAPPROTECT BACKUP

SnapProtect backup enables you to create a point-in-time snapshot by temporarily quiescing the data, taking a snapshot, and then resuming live operations. SnapProtect backup works in conjunction with hardware snapshot engines.

BACKUP AND RECOVERY FAILOVERS

In the event that a MediaAgent used for the backup or recovery operation fails, it is automatically resumed on alternate MediaAgents.

In such cases, the backup or restore job will not restart from the beginning, but will resume from the point of failure. This is especially useful for backups and restores of large amount of file system data.

In the event, that a network goes down, the backup and recovery jobs are resumed on alternate data paths. Similarly, in the event of a device failure, the jobs are automatically switched to alternate disk and tape drives.

EFFICIENT JOB MANAGEMENT AND REPORTING

You can view and verify the status of backup and recovery operations from the Job Controller and Event Viewer windows within the CommCell Console. You can also track the status of the jobs using Reports, which can be saved and easily distributed. Reports can be generated for different aspects of data management.



You also have the flexibility to customize the reports to display only the required data and save them to any specified location in different formats. For example, you can create a backup job summary report to view at-a-glance the completed backup jobs.

In addition, you can also schedule these reports to be generated and send them on email without user intervention.

BLOCK LEVEL DEDUPLICATION

Deduplication provides a smarter way of storing data by identifying and eliminating the duplicate items in a data protection operation.

Deduplication at the data block level compares blocks of data against each other. If an object (file, database, etc.) contains blocks of data that are identical to each other, then block level deduplication eliminates storing the redundant data and reduces the size of the object in storage. This way dramatically reduces the backup data copies on both the disk and tapes.

ADD-ON COMPONENTS

SRM FOR UNIX FILE SYSTEM

SRM is integrated with UNIX File System iDataAgent to provide several advanced reporting capabilities for your backups. When enabled, backup jobs collect details on the file systems currently being used or not used, the memory and hardware resources consumed, storage usage, and granular file-level analytics.

SRM reports include detailed information on the state of your file system data, including free space, used space, file count, file sizes, directory structure, and many other useful statistics.

In addition, **SRM summaries** provide a graphical, real-time representation of usage information such as memory and CPU utilization. Optional file-level analytics provides even more granular details at the file-level for optimizing your storage resources.

SRM integration with UNIX File System iDataAgent can be easily enabled with your backups to take advantage of these features.

1-TOUCH

1-Touch recovery helps to recover a crashed system in the least amount of time. By automatically rebuilding the operating system, you can recover systems with defective components such as inaccessible volumes or crashed disks. You don't need to reinstall the individual software packages or operating systems manually.

ONEPASS AGENT

The OnePass Agent is an integrated File System agent which backs up and archives the qualified data. It reclaims backup storage space when files and stubs are deleted on the primary storage.

CONTENT INDEXING AND SEARCH

Content Indexing and Search enables users to content index their data and later search the data from a user-friendly web interface. The users can also perform restore operations or other advanced actions on the searched data.

DESKTOP BROWSE

Desktop Browse enables users to browse and restore data from a Web Browser, which provides the facility to access and restore data from anywhere.

TERMINOLOGY

The Unix File System documentation uses the following terminology:

CLIENT	The computer in which the <i>i</i> DataAgent is installed and contains the data to be secured.	
BACKUP SET	A group of subclients which includes all of the data backed up by the <i>i</i> DataAgent.	
SUBCLIENT	The Unix file system data to be backed up.	

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System Requirements - Linux File System iDataAgent

AIX HP-UX FreeBSD Linux Solaris Tru64 Supported Features

The following are the requirements for Linux File System *i*DataAgent:

OPERATING SYSTEM		PROCESSOR	
LINUX	DEBIAN		
	Debian 7.x	Intel Pentium, x64 or compatible processors	
	Debian 6.x	Intel Pentium, x64 or compatible processors	
	Debian 5.x	Intel Pentium, x64 or compatible processors	
	FEDORA		
	Fedora release 9 with glibc 2.8.x	Intel Pentium, x64 or compatible processors	
	Fedora release 8 with glibc 2.7.x	Intel Pentium, x64 or compatible processors	
	Fedora release 17 with glibc 2.15.x	Intel Pentium, x64 or compatible processors	
	Fedora release 16 with glibc 2.14.x	Intel Pentium, x64 or compatible processors	
	Fedora release 15 with glibc 2.13.x	Intel Pentium, x64 or compatible processors	
	Fedora release 14 with glibc 2.13.x	Intel Pentium, x64 or compatible processors	
	Fedora release 13 with glibc 2.12.x	Intel Pentium, x64 or compatible processors	
	Fedora release 12 with glibc 2.11.x	Intel Pentium, x64 or compatible processors	
	Fedora release 11 with glibc 2.10.x	Intel Pentium, x64 or compatible processors	
	Fedora release 10 with glibc 2.9.x	Intel Pentium, x64 or compatible processors	
	GENTOO		
	Gentoo release 11 with glibc 2.12.x	Intel Pentium, x64 or compatible processors	
	Gentoo release 10.1 with glibc 2.6.x	Intel Pentium, x64 or compatible processors	
	MANDRIVA		
	Mandriva Linux 2010 with glibc 2.10.x	Intel Pentium, x64 or compatible processors	
	Mandriva Linux 2009 with glibc 2.9.x	Intel Pentium, x64 or compatible processors	
	OPENSUSE		
	OpenSuSE 13.1 with glibc 2.18.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 12.3 with glibc 2.17.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 12.2 with glibc 2.15.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 12.1 with glibc 2.14.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 11.3 with glibc 2.11.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 11.2 with glibc 2.10.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 11.1 with glibc 2.9.x	Intel Pentium, x64 or compatible processors	
	OpenSuSE 11.0 with glibc 2.8.x	Intel Pentium, x64 or compatible processors	
	ORACLE LINUX		
	Oracle Linux 6.x with glibc 2.12.x	Intel Pentium, x64 or compatible processors	
	Oracle Linux 5.x with glibc 2.5.x	Intel Pentium, x64 or compatible processors	
	Oracle Linux 4.x with a minimum of glibc 2.3.4	Intel Pentium, x64 or compatible processors	
	RED FLAG LINUX		

	Red Flag Linux 5.x with a minimum of glibc 2.3.4	x64
	Red Flag Linux 4.x with a minimum of glibc 2.3.4	Intel Pentium or compatible processors
	RED HAT ENTERPRISE LINUX/CENTOS	
	Red Hat Enterprise Linux/CentOS 6.x with glibc 2.12.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	Red Hat Enterprise Linux/CentOS 5.x with glibc 2.5.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	Red Hat Enterprise Linux/CentOS 4.x with a minimum of glibc 2.3.4	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	SCIENTIFIC LINUX	
	Scientific Linux SL 5.x with glibc 2.5.x	x64
	Scientific Linux 6.x	x64
	SLACKWARE	
	Slackware 14.0 with glibc 2.15.x	Intel Pentium, x64 or compatible processors
	SUSE LINUX (SLES)	
	SuSE Linux 11.x with glibc 2.9.x and above	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	SuSE Linux 10.x with glibc 2.4.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	UBUNTU	
	Ubuntu 9.10	Intel Pentium, x64 or compatible processors
	Ubuntu 9.04	Intel Pentium, x64 or compatible processors
	Ubuntu 8.10	Intel Pentium, x64 or compatible processors
	Ubuntu 8.04	Intel Pentium, x64 or compatible processors
	Ubuntu 12.04 LTS	Intel Pentium, x64 or compatible processors
	Ubuntu 11.10	Intel Pentium, x64 or compatible processors
	Ubuntu 11.04	Intel Pentium, x64 or compatible processors
	Ubuntu 10.04 LTS	Intel Pentium, x64 or compatible processors
Z-LINUX	Linux on zSeries (System z9/z10)	s390x 64-bit, s390 31-bit
	RED HAT ENTERPRISE LINUX	
	Red Hat Enterprise Linux 5.x	s390x 64-bit, s390 31-bit
	Red Hat Enterprise Linux 4.x	s390x 64-bit, s390 31-bit
	SUSE LINUX (SLES)	
	SuSE Linux 11.x Enterprise Server	s390x 64-bit, s390 31-bit
	SuSE Linux 10.x Enterprise Server	s390x 64-bit, s390 31-bit

CLUSTER - SUPPORT

The software can be installed on a Cluster if clustering is supported by the above-mentioned operating systems.

For information on supported cluster types, see Clustering - Support.

HARD DRIVE

750 MB minimum of hard disk space for software

100 MB of additional hard disk space for log file growth

500 MB of reserved hard disk space for the Job Results directory

1 GB of temp space required for install or upgrade (where the temp folder resides) For information on space requirements to install/upgrade the File System and service pack, see Service Pack - System Requirements.

MEMORY

16 MB RAM minimum required beyond the requirements of the operating system and running applications

Swap space = 2*RAM size

PERIPHERALS

DVD-ROM drive

Network Interface Card

MISCELLANEOUS

NETWORK

TCP/IP Services configured on the computer.

SELINUX

If you have SELinux enabled on the client computer, create the SELinux policy module as a root user before performing a backup. The SELinux Development package must be installed on the client.

To create an SELinux policy module, perform the following steps as user "root":

1. Create the following files in the /usr/share/selinux/devel directory:

File Name	Content of the File
<directory>/<file_name>.te</file_name></directory>	The content of the file should be as follows:
where:	policy_module(<name>,<version>)</version></name>
<pre><directory> is /usr/share/selinux/devel</directory></pre>	#######################################
<file_name> is the name of the Unix file, created to save the</file_name>	where:
policy module statement. It is a good idea to use the same name for policy module and the file.	<name> is the name of the policy module. You can give any unique name to the policy module, such as a process or application name.</name>
For example: When you are creating a policy module for backup IDA application, you can use the following file name:	<pre><version> is the version of the policy module. It can be any number, such as 1.0.0.</version></pre>
backup_IDA.te	For Example: While creating a policy module for the backup_IDA application, you can use the following content.
	policy_module(backup_IDA,1.0.0)
<directory>/<file_name>.fc</file_name></directory>	The content of the file should be as follows:
where:	Note that the following list of files is not exhaustive. If the process fails to launch, check /var/log/messages. Also, if required, add it to the following list of files.
<directory> IS /usr/share/selinux/devel</directory>	/opt/ <software directory="" installation="">/Base/libCTreeWrapper.so gen context</software>
<file_name> is the name of the Unix file, created to save the nolicy module statement. It is a good idea to use the same</file_name>	(system_u:object_r:texrel_shlib_t,s0)
name for policy module and the file.	<pre>/opt/<software directory="" installation="">/Base/libCVMAGuiImplgso gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
For example: When you are creating a policy module for backup_IDA application, you can use the following file name: backup IDA.fc	<pre>/opt/<software directory="" installation="">/Base/libdb2locale.so.1 gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libdb2osse.so.1 gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libDb2Sbt.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libdb2trcapi.so.1 gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libDrDatabase.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libIndexing.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libSnooper.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>

2. Create the policy file from command line. Use the following command. Ensure that you give the following commands in the /usr/share/selinux/devel directory.

[root] # make backup_IDA.pp Compiling targeted backup_IDA module /usr/bin/checkmodule: loading policy configuration from tmp/backup_IDA.tmp /usr/bin/checkmodule: policy configuration loaded /usr/bin/checkmodule: writing binary representation (version 6) to tmp/backup_IDA.mod Creating targeted backup_IDA.pp policy package rm tmp/backup_IDA.mod tmp/backup_IDA.mod.fc [root] # semodule -i backup_IDA.pp [root] #

3. Execute the policy module. Use the following command:

[root]# restorecon -R /opt/<software installation directory>

SELinux is now configured to work with this application.

SUPPORTED FILE SYSTEMS

The Linux File System iDataAgent supports the following file systems:

B-tree File System (Btrfs) Extended 2 File System (ext2) Extended 3 File System (ext3) Extended 4 File System (ext4) General Parallel File System (GPFS) Global File System (GFS/GFS2) Lustre File System (Clustered File System) Moose File System (NooseFS) Oracle Cluster File System (OCFS2) Reiser File System (reiserfs) VERITAS File System (VxFS) VERITAS Cluster File System (VxCFS) X9000 IBRIX File System (IBRIXFS) 6.x

'X' File System (XFS)

VOLUME MANAGERS

Veritas Volume Manager (VxVM) 5.0 or higher

Logical Volume Manager (LVM)

DISCLAIMER

Minor revisions and/or service packs that are released by application and operating system vendors are supported by our software but may not be individually listed in our System Requirements. We will provide information on any known caveat for the revisions and/or service packs. In some cases, these revisions and/or service packs affect the working of our software. Changes to the behavior of our software resulting from an application or operating system revision/service pack may be beyond our control. The older releases of our software may not support the platforms supported in the current release. However, we will make every effort to correct the behavior in the current or future releases when necessary. Please contact your Software Provider for any problem with a specific application or operating system.

Additional considerations regarding minimum requirements and End of Life policies from application and operating system vendors are also applicable

Getting Started - Linux File System Deployment

Use the following steps to install the File System iDataAgent on a Linux computer.

WHERE TO INSTALL

Install the software directly on the computer you wish to protect.

Make sure the computer satisfies the minimum requirements specified in the System Requirements.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

Use this procedure to directly install the software from the installation package or a network drive.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on a client computer.

METHOD 1: INTERACTIVE INSTALL

1. Logon to the client computer as **root** or as a sudo user.

If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.

 If your are installing the software from CD, run the following command to mount the CD:

mount -t iso9660,udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package or mount point: ./cvpkgadd

- 3. The product banner and other information is displayed.
 - Press Enter.
- 4. Read the license agreement. Type **y** and press **Enter**.
- 5. Press Enter.

6. Press Enter.

Download Software Packages Download the latest software package to perform the install.

BEFORE YOU BEGIN

System Requirements Verify that the computer in which you wish to install the software satisfies the System Requirements.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

- 1) Install data protection agents on this computer
- 2) Advance options
- 3) Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

- 1) Install on a physical machine
- 2) Install on a virtual machine

3) Exit

Your choice: [1]

7. If you have only one network interface, press Enter to accept the default network

We found one network interface available on your machine. We will associate it with the physical machine being



interface name and continue.

If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown.

- 8. Press Enter.
- 9. Type the number associated with the Unix File System *i*DataAgent and press Enter.
- A confirmation screen will mark your choice with an "X".
 Type d for Done, and press Enter.
- Type Yes to install Backup Monitor utility which allows you to view the backup job summary of your client computer. See Monitor - Laptop User for more information. Otherwise, accept no, press Enter.
- 12. Press Enter.

13. Type the appropriate number to install the latest software scripts and press Enter.

- Select **Download from the software provider website** to download the latest software scripts. Make sure you have internet access.
- Select Use the one in the installation media to install the software scripts from the package or share from which the installation is currently being performed.
- Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.
- 14. Press Enter.

It is recommended to download the latest Service pack(s). Type **Yes** and press **Enter** to automatically install the available updates during installation.

15. Press **Enter** to accept the default path.

- If you want to specify a different path, type the path and then press **Enter**.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.

In order to make sure that the client computer has read/write access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI.

Please check the interface name below, and make connections if necessary:

Physical Machine Host Name: [angel.company.com]

Please specify the client name for this machine.

It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe.

Physical Machine Client name: [angel]

Install Calypso on physical machine angel

Please select the Calypso module(s) that you would like to install.

[] 1) MediaAgent [1301] [CVGxMA]

[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:2</pre>

Install Calypso on physical machine angel

Please select the Calypso module(s) that you would like to install.

[] 1) MediaAgent [1301] [CVGxMA]

[X] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d</pre>

Do you want to configure the iDataAgent for laptop or desktop backups? [no]

Do you want to use the agents for restore only without consuming licenses? [no]

Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.

If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

1) Download from the software provider website.

2) Use the one in the installation media $% \left({{{\left[{{{\left[{{{\left[{{{c_{{\rm{m}}}}} \right]}}} \right]}}}} \right]$

3) Use the copy I already have by entering its unix path $% \left({{{\boldsymbol{x}}_{i}}} \right)$

Your choice: [1] 2

Keep Your Install Up to Date - Latest Service Pack

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 176ME of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

Installation Directory: [/opt]

16.	Press Enter to accept the default location.	Please specify where you want to keep Calypso log files.
	 Enter a path to modify the default location and press Enter. All the modules installed on the computer will store the log files in this directory. 	It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".
		Log Directory: [/var/log]
17.	Press Enter .	Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "dba" group.
		We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.
		If you're planning to backup Oracle DB you should use "dba" group.
		Would you like to assign a specific group to Software? [yes]
18.	Type the Group name and press Enter . Press Enter again.	Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.
		In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here.
		Group name: sky1
		REMINDER
		If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "skyl".
		Press <enter> to continue</enter>
19.	Type a network TCP port number for the Communications Service (CVD) and press Enter .	Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.
	Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press Enter .	The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.
		Please enter the port numbers.
		Port Number for CVD : [8400]
		Port Number for EvMgrC: [8402]
20.	If you do not wish to configure the firewall services, press Enter.	Is there a firewall between this client and the CommServe? [no]
	If this computer is separated from the CommServe by firewall(s), type Yes and then press Enter .	
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
21.	Type the fully qualified CommServe host name and press Enter.	Please specify hostname of the CommServe below. Make sure
	Ensure that the CommServe is accessible before typing the name:	the hostname is fully qualified, resolvable by the name services configured on this machine.
	otherwise the installation will fail.	CommServe Host Name: mycommserve.company.com
22.	Press Enter .	Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters.
		1) Use Cell level policy
		2) Always use Global filters
		3) Do not use Global filters
		Please select how to set the Global Filters for the default subclient? [1]
23.	Type the appropriate number to select the Client Group and press Enter .	Client Group(s) is currently configured on CommServe mycommserve.company.com. Please choose the group(s) that

This screen will be displayed only if Client Groups are configured for the $\operatorname{CommCell}$

Client Group(s) is currently configured on CommServe mycommserve.company.com. Please choose the group(s) that you want to add this client angel.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with the selection, select "Done with the Selection". 24. A confirmation screen will mark your choice with an "X".Type d for Done, and press Enter.

You may not be prompted for user input.

Type 3 and press Enter.

- [] 1) Unix
- []2) DR

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]s</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 2</pre>

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with the selection, select "Done with the Selection".

[] 1) Unix

[X] 2) DR

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]s</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d</pre>

Please select one storage policy for this IDA from the list below:

1) SP StandAloneLibrary2 2

2) SP_Library3_3

3) SP MagLibrary4 4

Storage Policy: [1]

There seem to be no Storage Policies configured on the CommServe. Before you can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy and assign it to all subclients..

Adjusting modes and permissions of files

Successfully installed Calypso

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

Currently you have Calypso installed on physical node angel.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

1) Add another package to angel.company.com

2) Install Calypso on a virtual machine

3) Exit

Your choice: [3]



25.

26.

If you already have a storage policy selected in step 25, click the Next button available on the bottom of the page to proceed to the Configuration section. If you do not have Storage Policy created, follow the procedure given below.

Enter the number associated with the storage policy you want use and press Enter.

If you do not have Storage Policy created, this message will be displayed.

You can create the Storage Policy later in step 27.

27.

1. From the CommCell Browser, navigate to Policies.

- 2. Right-click the **Storage Policies** and then click **New Storage Policy**.
- 3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - Select the Storage Policy type as Data Protection and Archiving and click Next.
 - o Enter the name in the Storage Policy Name box and click Next.
 - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the MediaAgent list, click the name of a MediaAgent that will be used to create the primary copy and then click Next.
- For the device streams and the retention criteria information, click Next to accept default values.
- Select Yes to enable deduplication for the primary copy.



 $\circ\;$ From the $\textbf{MediaAgent}\;$ list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

• Review the details and click **Finish** to create the Storage Policy.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

For sudo users, Service Pack 4B (or higher) must be available in the CommServe cache before performing the install. See Configure Download Software for step-by-step instruction on downloading the latest software or updates.

ils)

 Summary

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12

Summary

Data Classification Con

🚯 Add/Remove Software

2 🖬

1. From the CommCell Browser, select Tools menu, point to Add/Remove Software, and then click Install Software.

з. Select Unix and Linux, and then click Next.

CommCell Browser	
Agencs	
	murphy admin
	_
Installer	×
instali Wizard	
histan Wizard	
This wizard guides you through the steps r	equired to install software on computers.
Click Next to continue.	
< Back Next > Save A	s Script Finish Cancel Help
Installer	
Select the computer's operating syste.	m
 Windows 	
a line and lines 1	
Contraine children	
2	

🐞 murphy 🗙 🔝 Job Controller 🗙

Client ompute

Install Update:

Remove Updates Install Software Upgrade Softv Download Software Copy Software Add/Remove Software Configuratio

Client Computer

murphy >

8

900

o Security

Select Manually Select Computers ,and then click Next. 4.

5. Enter the fully qualified domain name of the computer in which you wish to install. For example: apple.domain.company.com

The **Unix File System** *i***DataAgent** will be installed on this client computer. Click **Next**.

6. Click Next.

7. Type the User Name and Password of client computer who has administrator or sudo privileges.

Click Next.

- If a SUDO user has been created for root access then use visudo to change /etc/sudoers, so that this user can SUDO into ssh without being prompted for the password. Change the /etc/sudoers by commenting the following lines.
- For Sudo users with restricted privileges, in order to gain privilege to install the software remotely, you need to have **/bin/sh** added to the permission section in the sudoers file.

On SuSE Linux:

- Defaults targetpw # ask for the password of the target user i.e. root
- ALL ALL=(ALL) ALL # WARNING! Only use this together with 'Defaults targetpw'!

On Red Hat Enterprise Linux/CentOS:

- Defaults requiretty
- 8. Select Unix File System iDataAgent.

Click Next.

Installer
Select how to discover the computers for installing the software
Manualy select computers
Automatically discover computers
Computers will be discovered when the job runs.
<book next=""> Save As Script Finish Cancel Help</book>
Installer
Enter the host names of the computers
Please enter the host names of the computers, one per line
apple.domain.company.com
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Installer
Installer 2
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Installer Select Software Cache To use current Client or Clent Group Software Cache sottrage, did. Next. To overside Software Cache settings check Override Software Cache and setting Software Cache to be used. Overside Software Cache
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- 9.
- Select **Client Group** from **Available** and click **Add**. Do not add more than one Client Group.
- Select a **Storage Policy** from the drop-down list. Click **Next**.
 - Select the **Configure for Laptop or Desktop Backup** option to install **Backup Monitor** utility. This utility allows you to view the backup job summary from the client computer without opening the CommCell Console. See Monitor Laptop User for more information.

10. Click Next.

11. Select Immediate. Click Next.

0-1	
Select Package(s) to install	<u> </u>
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- UNIX File System Da	ashgent store Enabler
ProxyHost iDataAge	* ent
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	<back next=""> Save As Script Finish Cancel Help</back>
Installer	8
Enter Recommended Sett	ngs for the selected Software
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Laptop Backup Laptop Group	Add>
Laptop_Group	< Remove
Global Filters	Use Cell level policy
Configure For Laptop Ba	dups
 Storage Policy to use 	
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<Back (Next >) Save As Script Finish Cancel Help

Quick Start - Linux File System iDataAgent

12. Click Finish.

13. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

Installer	Đ
Summary	
Select Type Of Installation: This and Linux	ne jo optinis as a script.
Select Type Of Histanaului. Only and Enfort	-
Reuse Active Directory credentials: No	
Client Authentication for Job	
User Name: aan	
Password: ****	
Install Flags	
Install Opdates: Yes	
Kill Browser Processes (if required): No	
Ignore Running Jobs: No	
Stop Oracle Services (if required): No	
Delete Packages After Install: Yes	
Listen only on the network interface used as hostname: No	
Do not load WA driver in to kernel this time: No	
Access permissions for other users: 0	
Ignore Client/Host Name Conflict: Yes	-
Install Agents For Restore Only: No	
Client Composition	
Override Software Cache: No Solution Trans Of Justice Companying C	
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Getting Started - Linux File System - Deployment on a Cluster

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT INSTALLING THIS AGENT ON A CLUSTER.

Click Next > to continue with the deployment.

WHERE TO INSTALL

Install the software from the active node in the cluster group. Make sure the cluster group satisfies the minimum requirements specified in the System Requirements.

Follow the steps given below to install the File System iDataAgent in a Clustered Environment.

BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

System Requirements Verify that the computer in which you wish to install the software satisfies the System Requirements.

Unix Cluster

Additional information about installing the software on a Unix cluster.

1. Logon to the client computer as **root** or as a sudo user.

If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.

 If your are installing the software from CD, run the following command to mount the CD:

mount -t iso9660,udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package or mount point:

If your computer is 64-bit, see Install Unix Agents on 64-bit Platform for step-by-step

./cvpkgadd

- The product banner and other information is displayed.
- Press Enter.

3.

6.

4. Read the license agreement. Type **y** and press **Enter**.

If your computer is 32-bit, press Enter.

5. Press Enter.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

2) Advance options

3) Exit this menu

Your choice: [1]

32 or 64?

This machine supports both 32 bit and 64 bit binaries. By default, we will install 32 bit binary set that has full support for all the modules included in this package. Please note that 64 bit binary set currently only support limited modules.

1) 32 bit

2) 64 bit

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

1) Install on a physical machine

2) Install on a virtual machine

7. Press Enter.

procedure.

3) Exit Your choice: [1] We found one network interface available on your machine. 8. If you have only one network interface, press Enter to accept the default network We will associate it with the physical machine being interface name and continue. installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be If you have multiple network interfaces, enter the interface name that you wish to use able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java as default, and then press Enter. GUT The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown. Please check the interface name below, and make connections if necessary: Physical Machine Host Name: [angel.company.com] 9. Press Enter. Please specify the client name for this machine. It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe. Physical Machine Client name: [angel] 10. Type the number associated with the Unix File System iDataAgent and press Install Calypso on physical machine angel Enter Please select the Calypso module(s) that you would like to install. [] 1) MediaAgent [1301] [CVGxMA] [] 2) UNIX File System iDataAgent [1101] [CVGxIDA] [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,g,d,>,<,?" here:2</pre> A confirmation screen will mark your choice with an "X". 11. Install Calypso on physical machine angel Please select the Calypso module(s) that you would like to Type d for Done, and press Enter. install. [] 1) MediaAgent [1301] [CVGxMA] [X] 2) UNIX File System iDataAgent [1101] [CVGxIDA] [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d</pre> Do you want to use the agents for restore only without 12. Press Enter. consuming licenses? [no] Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please 13. Type the appropriate number to install the latest software scripts and press **Enter**. specify how you want to get this pack. Select Download from the software provider website to download the latest software scripts. Make sure you have internet access. If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet • Select Use the one in the installation media to install the software scripts from the package or share from which the installation is connectivity. currently being performed. 1) Download from the software provider website. • Select Use the copy I already have by entering its unix path, to 2) Use the one in the installation media specify the path if you have the software script in an alternate location. 3) Use the copy I already have by entering its unix path Your choice: [1] 2 Keep Your Install Up to Date - Latest Service Pack 14. Press Enter. Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. It is recommended to download the latest Service pack(s). Type Yes and press Enter to automatically install the available updates during can download the latest service pack from software provider website. installation. If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity. Do you want to download the latest service pack now? [no] 15. Please specify where you want us to install Calypso Press Enter to accept the default path. binaries. • If you want to specify a different path, type the path and then press Enter. It must be a local directory and there should be at least 176MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press Enter. files will actually be placed into "/opt/calypso". Installation Directory: [/opt] In order to make sure that the client computer has read/write access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

- 16. Press Enter to accept the default location.
 - Enter a path to modify the default location and press **Enter**.
 - All the modules installed on the computer will store the log files in this directory.
- 17. Press Enter.

18. Type the Group name and press Enter. Press Enter again.

19. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.

Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press ${\mbox{\bf Enter}}.$

20. If you do not wish to configure the firewall services, press **Enter**.

If this computer is separated from the CommServe by firewall(s), type $\ensuremath{\text{Yes}}$ and then press $\ensuremath{\text{Enter}}.$

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

21. Type the fully qualified CommServe host name and press Enter.

Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.

22. Press Enter.

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calvoso" or a "dba" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.

If you're planning to backup Oracle DB you should use "dba" group.

Would you like to assign a specific group to Software? [yes]

Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here.

Group name: skyl

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "skyl".

Press <ENTER> to continue ...

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.

Please enter the port numbers.

Port Number for CVD : [8400]

Port Number for EvMgrC: [8402]

Is there a firewall between this client and the CommServe? [no]

Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name services configured on this machine.

CommServe Host Name: mycommserve.company.com

Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters.

1) Use Cell level policy

2) Always use Global filters

3) Do not use Global filters

Please select how to set the Global Filters for the default subclient? $\left[1\right]$

Install Calypso on physical machine angel

23. Type the number associated with the Unix File System *i*DataAgent and press Enter.

Please select the Calypso module(s) that you would like to

		install.
		[] 1) MediaAgent [1301] [CVGxMA]
		[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]
		[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here:2</pre>
24.	A confirmation screen will mark your choice with an "X". Type d for Done , and press Enter .	Client Group(s) is currently configured on CommServe mycommserve.company.com. Please choose the group(s) that you want to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished
		with the selection, select "Done with the Selection".
		[] 1) Unix
		[X] 2) DR
		<pre>[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]s</pre>
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d</pre>
25.	Enter the number associated with the storage policy you want use and press Enter .	Please select one storage policy for this IDA from the list below:
		1) SP_StandAloneLibrary2_2
		2) SP_Library3_3
		<pre>3) SP_MagLibrary4_4</pre>
		Storage Policy: [1]
	If you do not have Storage Policy created, this message will be displayed. You may not be prompted for user input.	There seem to be no Storage Policies configured on the CommServe. Before you can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy
	You can create the Storage Policy later in step 36.	and assign it to all subclients.
		Successfully installed Calunso
26	Ture 2 to install Univ File System 'Data Agent on a Virtual machine, and proce	Cluster Support
26.	Type 2 to install UNIX FILE System (DataAgent on a Virtual machine , and press Enter.	Cluster Support
		IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail- over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.
		Currently you have Calypso installed on physical node stone.company.com.
		Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.
		1) Add another package to angel.company.com
		2) Install Calypso on a virtual machine
		3) Exit
		Your choice: [2]
27.	If you have only one network interface, press Enter to accept the default network interface name and continue.	Virtual Machine Host Name
	If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press ${\bf Enter}.$	machine being installed. It can be either short or long; the only requirement is that it must be resolvable by the name services configured on this machine
	The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown.	WARNING: You should follow this path ONLY if this host participates in a cluster and you really want to install Calypso on the virtual machine. This is
		NOT how most people will use Calypso.
		The name to be entered will be used by certain Calypso CommServe to talk to this
		virtual machine. Datapipe Interface Pairs used for the backup data traffic can be customized later in the Calypso Java GUI.
		If you got into this screen by mistake, hit ^C and restart $\operatorname{cvpkgadd}\nolimits$
		Virtual Machine Host Name: stone.company.com
28.	Type the Virtual Machine Client Name, and press Enter.	Virtual Machine Client Name
		Please specify the client name for this machine.
		It does not have to be the network host name: you can enter any word here without spaces. The only requirement

29.

Enter.

Type the number associated with the **Unix File System** *i***DataAgent** and press

		1050411.
		[] 1) MediaAgent [1301] [CVGxMA]
		[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]
		>) >>>>>>> NEXT PAGE >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
		[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
		Enter number(s)/one of "a,n,r,q,d,>,<,?" here:2
30.	A confirmation screen will mark your choice with an " \mathbf{X} ".	Install Calypso on virtual machine stone
	Type d for Done , and press Enter .	Please select the Calypso module(s) that you would like to install.
		[] 1) MediaAgent [1301] [CVGxMA]
		[X] 2) UNIX File System iDataAgent [1101] [CVGxIDA]
		>) >>>>>>>> NEXT PAGE >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
		[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d</pre>
31.	Press Enter.	Do you want to use the agents for restore only without consuming licenses? [no]
32.	Specify the path for the Job Results directory , and press Enter If Job Results directory does not exist, it prompts you to create it. Type Yes to create it.	Calypso Job Results Directory Please specify the name for the JobResults directory.Since you are installing Calypso on a virtual machine, the JobResults directory must reside on a shared disk and should have at least 20NB of free space available. The directory will be used to store intermediate data that should be passed from one backup phase to another.
		JobResults Directory:/Shared_ext3/unix_cluster_install Directory "/Shared_ext3/unix_cluster_install" does not exist.
		Do you want us to create it? [yes] Calypso job results files will be created in /Shared ext3/unix_cluster_install.Calypso <- postinstall -> CVGxBase for (x86_64) glibc2.9 Creating Job Results directory done. Adjusting modes and permissions of Calypso files
		Successfully installed CVGxBase
33.	Enter the number associated with the storage policy you want use and press Enter.	Please select one storage policy for this IDA from the list below:
		 SP_StandAloneLibrary2_2
		2) SP_Library3_3
		3) SP_MagLibrary4_4
		Storage Policy: [1]
	If you do not have Storage Policy created, this message will be displayed. You may not be prompted for user input.	There seem to be no Storage Policies configured on the CommServe. Before you can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy and assign it to all subclients
	fou can create the Storage Policy as shown in step 50.	Adjusting modes and permissions of files
		Successfully installed Calypso
34.	Type 4 to the Exit option and press Enter .	Calypso is currently configured on the following virtual/physical machines.
	The installation is now complete.	Now you have an option of either installing certain Calypso on another virtual machine
		or adding a new package to the existing installations.l) Add a new package to PM angel(angel.mycompany.loc)
		 Add a new package to VM stone (stone.company.com)
		3) Install Calypsopackages on a new virtual machine
		4) Exit this menu
		Your choice: [1] 4
35.	Type 3 to the Exit option, and press Enter .	Install a new Instance?
		Calypso now supports the concept of instances, each of which can be installed to a separate CommServe and be totally independent of others. Instances are not the same as the virtual machines on a cluster, in fact, you will be given a choice to configure one or more virtual machines

is that it must be unique on the CommServe. Virtual Machine Client Name: [stone]

Install Calypso on virtual machine stone

Please select the Calypso module(s) that you would like to

later. Contrary to previous releases of Calypso (6.1 and older), all virtual machines installed on the same host now share the same set of binaries and the same set of services.

Instances, on the other hand, have unique set of binaries and services and one situation where it is useful is when you want to back up the same host to several CommServes.

You already have one instance configured.

1) Add agents to existing Instance001 going to CS docint01.testlab.company.com

2) Create a new instance of Calypso

3) Exit this menu

Your choice: 3



If you already selected a storage policy in step 33, proceed to the Configuration section.

If you do not have Storage Policy created, follow the procedure given below.

36.

1. From the CommCell Browser, navigate to Policies.

- 2. Right-click the Storage Policies and then click New Storage Policy.
- 3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - Select the Storage Policy type as Data Protection and Archiving and click Next.
 - Enter the name in the Storage Policy Name box and click Next.
 - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
- For the device streams and the retention criteria information, click Next to accept default values.
- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

Review the details and click **Finish** to create the Storage Policy.



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Linux File System Deployment - Veritas Clustered Environment

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SKIP THIS PAGE IF YOU ARE NOT INSTALLING THIS AGENT ON A VERITAS CLUSTER.

Click Next > to begin Configuration

WHERE TO INSTALL

Install the software on the Linux computer where you have application data and is part of Veritas Cluster.

Follow the steps given below to install the File System *i*DataAgent in a Veritas Clustered Environment.

RELATED TOPICS

Download Software Packages

Download the latest software package to perform the install.

System Requirements Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall

Provides comprehensive information on firewall.

INSTALLING THE LINUX FILE SYSTEM IDATAAGENT - VERITAS CLUSTERED ENVIRONMENT

1. Logon to the client computer as **root** or as a sudo user.

If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.

 If your are installing the software from CD, run the following command to mount the CD:

mount -t iso9660,udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package or mount point: ./cvpkgadd

3. The product banner and other information is displayed.

Press Enter.

6.

- 4. Read the license agreement. Type **y** and press **Enter**.
- 5. Type 2 and press Enter.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

- 2) Advanced options
- 3) Exit this menu
- Your choice: [1] 2

limited modules.

1) All platforms (32 bit)

2) FS and MA only (64 bit)

Please select a setup task you want to perform from the list below:

```
[Record and Play]
1) Create a recording of user selections (Record Mode
2) Play a recorded install on this computer
[Custom Package Creator]
3) Create a custom install package
[De-coupled Installer]
4) Pre-install software Components [De-couple Mode]
[Integrated File Archiver]
5) File System iDataAgent with Archiving Enabler
[Customized Cluster Agents]
6) Veritas Cluster Agents
[Third Party Connector]
7) Symantec NetBackup Agent
8) NetApp Snap Manager for Oracle
9) NetApp Snap Manager for SAP/Oracle
[Done]
10) Exit this menu
Your choice: [1] 6
```

This machine supports both 32 bit and 64 bit binaries. By

default, we will install 32 bit binary set that has full support for all the modules included in this package.

Please note that 64 bit binary set currently only support

7. Enter the number corresponding to the binaries that you wish to install.

Type 6 to select Veritas Cluster Agents and press Enter.

- Select 32 bit when installing on a 32-bit computer.
- When installing on a 64-bit computer, if this is the first package, determine whether you want to install 32-bit binaries or 64 bit binaries.

You can determine this by verifying whether all the components that

Type 2 and press Enter.

you wish to install in this computer are supported in 64-bit in System
Requirements.
Note that when the first component is installed using 64-bit binaries,
you cannot subsequently install another component using 32-bit. (Or
vice-versa.)
Type the number corresponding to the VCS service group and press Enter.
Please select one service group from the list below:
1) AIXVCS
2) ClusterService
Service Group: [1]

Please select physical or virtual machine to install:

1) Install Calypso on a physical machine ibmaix21

2) Install Calypso on a virtual machine AIXVCS

3) Exit this menu

Your choice: [1] >>> User answer was "2" $\!\!\!\!$

Please select the client hostname or IP address below.

1) aix61cluster.mydomain.mycompany.com

Interface number: [1] >>> User answer was "1".

Install Calypso on physical machine client.company.com

Select the Calypso module that you would like to install

[] 1) Media Agent [1301] [CVGxMA]
[] 2) UNIX FileSystem iDataAgent [1101] [CVGxIDA]
>) >>>> NEXT PAGE >>>>>

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 2</pre>

Install Calypso on physical machine client.company.com

Select the Calypso module that you would like to install

[] 1) Media Agent [1301] [CVGxMA]
[X] 2) UNIX FileSystem iDataAgent [1101] [CVGxIDA]
>) >>>> NEXT PAGE >>>>>

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d</pre>

Do you want to use the agents for restore only without consuming licenses? $\left[no \right]$

Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.

If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

- 1) Download from the software provider website.
- 2) Use the one in the installation media $% \left({{{\left[{{{\left[{{{\left[{{{c_{{\rm{m}}}}} \right]}}} \right]}}}} \right]$

 Use the copy I already have by entering its unix path Your choice: [1] 2

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 170MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

Installation Directory: [/opt]

13. Press Enter.

8.

9.

10.

11.

12.

Enter.

14. Type the appropriate number to install the latest software scripts and press **Enter**.

Type appropriate number to select client host name and press **Enter**.

A confirmation screen will mark your choice with an "X".

Type d for Done, and press Enter.

Type the number associated with the Unix File System iDataAgent and press

- Select **Download from the software provider website** to download the latest software scripts. Make sure you have internet access.
- Select **Use the one in the installation media** to install the software scripts from the package or share from which the installation is currently being performed.
- Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.
- 15. Press Enter.

It is recommended to download the latest Service pack(s). Type **Yes** and press **Enter** to automatically install the available updates during installation.

16.

Press Enter to accept the default path.

- If you want to specify a different path, type the path and then press **Enter**.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.

In order to make sure that the client computer has ${\tt read/write}$ access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS

Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

- **17.** Press **Enter** to accept the default location.
 - Enter a path to modify the default location and press Enter.
 - All the modules installed on the computer will store the log files in this directory.
- 18. Press Enter.

Type the Group name and press Enter.
 Press Enter again.

20. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.

Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press **Enter**.

21. If you do not wish to configure the firewall services, press **Enter**.

If this computer is separated from the CommServe by firewall(s), type $\ensuremath{\text{Yes}}$ and then press $\ensuremath{\text{Enter}}.$

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

22. Type the fully qualified CommServe host name and press **Enter**.

Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.

23. Type path for the Job Results Directory and press Enter.

24. Press Enter.

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

Most of Calypso processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "dba" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Calypso processes, all temporary and configuration files will be created with rw-rw-rw permissions.

If you're planning to backup Oracle DB you should use "dba" group.

Would you like to assign a specific group to Calypso? [yes]

Please enter the name of the group which will be assigned to all Calypso files and on behalf of which all Calypso processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here.

Group name: dba

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes ibataAgent, please make sure to include Informix, DB2, etc. users into group "dba".

Press <ENTER> to continue ...

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.

Please enter the port numbers.

Port Number for CVD : [8600]

Port Number for EvMgrC: [8602]

Is there a firewall between this client and the CommServe? [no]

Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name services configured on this machine.

CommServe Host Name: mycommserve.company.com

Please specify the name for the JobResults directory.

Since you are installing Calypso on a virtual machine, the JobResults directory must reside on a shared disk and should have at least 20MB of free space available. The directory will be used to store intermediate data that should be passed from one backup phase to another.

JobResults Directory:

Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters. CommCell.

The installation is now complete.

25.

26.

27.

28.

1) Use Cell level policy 2) Always use Global filters 3) Do not use Global filters Please select how to set the Global Filters for the default subclient? [1] Client Group(s) is currently configured on CommServe Type the number of a Client Group and press Enter. cs.company.com. Please choose the group(s) that you want to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with the selection, select "Done with the Selection". [] 1) Unix [] 2) DR [] 3) DKS [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 2</pre> Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want A confirmation screen will mark your choice with an "X". to add this client client.company.com to. The selected Type **d** for done with the selection, and press **Enter** to continue. group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with This screen will be displayed only if Client Groups are configured for the the selection, select "Done with the Selection". [] 1) Unix [X] 2) DR [] 3) DKS [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,g,d,>,<,?" here: d</pre> Enter the number corresponding to the storage policy through which you want to back Please select one storage policy for this IDA from the up the File System iDataAgent and then press Enter. list below: 1) SP_StandAloneLibrary2_2
2) SP_Library3_3 3) SP_MagLibrary4_4 4) fornax_fornax_HWCmp 5) ranger_ranger_HWCmp 6) fornax_fornax_ClntCmp 7) fornax_fornax_MACmp 8) fornax_fornax_NoCmp Storage Policy: [1] There seem to be no Storage Policies configured on the CommServe. Before you can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy If you do not have Storage Policy created, this message will be displayed. You may not be prompted for user input. and assign it to all subclients.. You can create the Storage Policy later in step 29. Adjusting modes and permissions of files Successfully installed Calypso Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" Type 3 to the Exit option and press Enter. belonging to some cluster. At any given time the virtual

machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server

Currently you have Calypso installed on physical node stone.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

1) Add another package to stone.company.com

2) Install Calvpso on a virtual machine

3) Exit

Your choice: [1]



29.

If you already have a storage policy selected in step 27, you can proceed to the Configuration section.

If you do not have Storage Policy created, follow the procedure given below.

1. From the CommCell Browser, navigate to Policies.



- 2. Right-click the Storage Policies and then click New Storage Policy.
- 3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - Select the Storage Policy type as Data Protection and Archiving and click Next.
 - $\circ~$ Enter the name in the Storage Policy Name box and click Next.
 - From the Library list, click the name of a disk library to which the primary copy should be associated and then click Next.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the MediaAgent list, click the name of a MediaAgent that will be used to create the primary copy and then click Next.
- $\circ\;$ For the device streams and the retention criteria information, click Next to accept default values.
- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

 $\circ\;$ Review the details and click Finish to create the Storage Policy.

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Getting Started - Linux File System Configuration

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CONFIGURATION

1.

2.

Once installed, follow the steps given below to assign a storage policy with the default subclient.

- From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet.
 - Right-click the default subclient and then click Properties.

In the Storage Policy box, select a Storage Policy name.





Click Next > to continue.

• Click OK.

storage policy.

• Click the Storage Device tab.

3. 1. Click Create Storage Policy.

2. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:

If you do not have Storage Policy created, follow the step given below to create a

- Select the Storage Policy type as Data Protection and Archiving and click Next.
- Enter the name in the Storage Policy Name box and click Next.
- From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the MediaAgent list, click the name of a MediaAgent that will be used to create the primary copy and then click Next.
- $\circ\;$ For the device streams and the retention criteria information, click Next to accept default values.
- $\circ~$ Select Yes to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

 $\circ~$ Review the details and click Finish to create the Storage Policy.

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Getting Started - Linux File System Backup

WHAT GETS BACKED UP	WHAT DOES NOT GET BACKED UP	
FILE SYSTEMS	By default, the following file systems are automatically skipped during backups:	
B-tree File System (Btrfs)	• nfs	
Extended 2 File System (ext2)	• isofs	
Extended 3 File System (ext3)	openpromfs cmbfc	
Extended 4 File System (ext4)	devfs	
General Parallel File System (GPFS)	procfs	
Global File System (GFS/GFS2)	nsspool	
Lustre File System (Clustered File System)	• sysfs	
Moose File System (MooseFS)	• floppy	
Oracle Cluster File System (OCFS2)	IOTS tmpfs	
Reiser File System (reiserfs)	• proc	
VERITAS File System (VxFS)	• ctfs	
VERITAS Cluster File System (VxCFS)		
X9000 IBRIX File System (IBRIXFS) 6.x		
'X' File System (XFS)		
VOLUME MANAGERS		
Veritas Volume Manager (VxVM) 5.0 or higher		
Logical Volume Manager (LVM)		
FILE SYSTEM ELEMENTS	Files with mandatory locks - these files are not backed up by default. See Configuring Backups For Locked Files to backup files with mandatory locks.	
Files with holes	Files for which the file path or file name contains more than 1024 characters	
Files with advisory locks		
Raw device files		
A maximum path level of 10 symbolic links pointing to each raw device		
Files with names containing non-ASCII characters as long as the appropriate locales are set		
Symbolic links that are browsed or manually added to the data contents		
Shares with Macintosh File System data		

PERFORM A BACKUP

Once the storage policy is configured, you are ready to perform your first backup.

The following section provides step-by-step instructions for performing your first backup:

- 1. From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet.
 - Right-click the default subclient and click **Backup**.



- Click **Full** as backup type and then click **Immediate**.
 - Click OK.

2.

Previous Next >)

- **3.** You can track the progress of the job from the **Job Controller** window of the CommCell console.
- 4. Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.

5. Click **OK**.

- 6. You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job
 - Details of the job
 - Events of the job
 - Log files of the job
 - Media associated with the job



ckup Options for Subclient: default

Job Initiatio

() Immediate

Run this job now

Backup Options

O Incremental

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Getting Started - Linux File System Restore



PERFORM A RESTORE

It is recommended that you perform a restore operation immediately after your first full backup to understand the process. The following section explains how to restore the **etc** folder to a new location.

- 1. From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet
 - Right-click the default subclient and then click **Browse Backup Data**.
- 2. Click OK.

- з.
- Expand the **defaultBackupSet** and navigate to **etc** folder.
- Select the etc folder.
- Click Recover All Selected.

4.

5.

• Clear the **Overwrite Files** and **Restore to same folder** options.

Specify the destination path by clicking **Browse** button.
 This will ensure that the existing files are not overwritten.

• Click OK.

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- Click the Job Initiation tab.
- Select Immediate to run the job immediately.
- Click OK.

- You can monitor the progress of the restore job in the Job Controller window of the 6. CommCell Console.
- 7. Once the restore job has completed, right-click the ${\it defaultBackupSet}$, point to View and then click Restore History.

Click OK. 8.

9.

• View Restore Items

• View Events of the restore job. • View Log files of the restore job

• View Job Details

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Restore Options for All Selected Items

Once the File System is restored, verify that the restored files/folders are available in [parc02] # 1s /.metacity 10. the restore destination provided during step 4.

You can view the following details about the job by right-clicking the job:

You can view them as Successful, Failed, Skipped or All.

etc

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the **Advanced** sections of this documentation.

(Previous) Next >