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#### AIX

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

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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

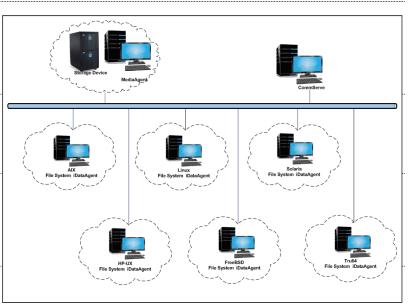
In the event that a MediaAgent used for the backup or recovery operation fails, it is automatically resumed on alternate MediaAgents.

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		
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 - FreeBSD File System iDataAgent

AIX HP-UX FreeBSD Linux Solaris Tru64 Supported Features

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

## **OPERATING SYSTEM**

OPERAI		F ROCESSOR
FREEBSD	FreeBSD 9.x	Intel Pentium, x64 or compatible processors
	FreeBSD 8.x	Intel Pentium, x64 or compatible processors
	FreeBSD 7.3 (or higher)	Intel Pentium, x64 or compatible processors

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## **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.

## SUPPORTED FILE SYSTEMS

The FreeBSD File System iDataAgent supports the following file systems:

Unix File System (UFS)

Zettabyte File System (ZFS)

#### 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 - FreeBSD File System Deployment**

Use the following steps to install the File System iDataAgent on a FreeBSD 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 you are installing the software from CD, run the following command to mount the CD:

#### mount -t cd9600 /dev/<acd0>/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.

Press Enter.

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.

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]

We found one network interface available on your machine.



7. If you have only one network interface, press **Enter** to accept the default network 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 iDataAgent and press Enter.
- A confirmation screen will mark your choice with an "X".
   Type d for Done, and press Enter.

11. Press Enter.

**12.** 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.

#### 13. 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.

#### 14.

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:

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

We will associate it with the physical machine being 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

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 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

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

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 176MB 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]

45		
15.	Press <b>Enter</b> to accept the default location.	Please specify where you want to keep Calypso log files.
	<ul> <li>Enter a path to modify the default location and press Enter.</li> <li>All the modules installed on the computer will store the log files in this directory.</li> </ul>	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]
16.	Type <b>Yes</b> and press <b>Enter</b> .	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]
17.	Type the <b>Group name</b> and press <b>Enter</b> . Press <b>Enter</b> 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>
18.	Type a network TCP port number for the Communications Service (CVD) and press <b>Enter</b> .	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 <b>Enter</b> .	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]
19.	If you do not wish to configure the firewall services, press <b>Enter</b> .	Is there a firewall between this client and the CommServe? [no]
	If this computer is separated from the CommServe by firewall(s), type <b>Yes</b> and then press <b>Enter</b> .	
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
20.	Type the fully qualified CommServe host name and press Enter.	Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name
	Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.	services configured on this machine.
		CommServe Host Name: mycommserve.company.com
21.	Press <b>Enter</b> .	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]
22.	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:
		<ol> <li>SP_StandAloneLibrary2_2</li> </ol>

- 2) SP\_Library3\_3
- SP\_MagLibrary4\_4

If you have not created a storage policy, this message will be displayed. You may not be prompted for user input.

You can create the Storage Policy later in step 24.

#### 23. Type 3 and press Enter.

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]



If you already selected a storage policy in step 22, proceed to the Configuration section.

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

- 24.
- 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.
- $\circ\;$  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.

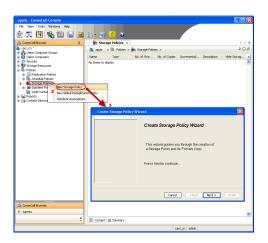
Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

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

### METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE8

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.

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



2. Click Next.

3. Select **Unix and Linux**, and then click **Next**.

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

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This wizard guides you through the steps required to install software on computers.	
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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:

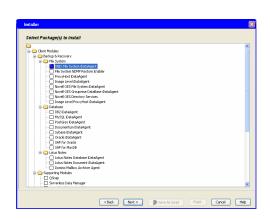
- Defaults targetpw # ask for the password of the target user i.e. root
- ALL ALL=(ALL) ALL # WARNING! Only use this together with 'Defaults targetpw'!

On Red Hat Enterprise Linux/CentOS:

• Defaults requiretty

8. Select Unix File System iDataAgent.

#### Click Next.



9. • Select Client Group from Available and click Add.



Enter the host names of the computers

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.

12. Click Finish.

Installer
Enter Recommended Settings for the selected Software
Recommended Settings
Client Groups
Available: Selected:
Laptop Laptop Bodrup
Laptop Group
Laptop_Group
Add All >>
<< Remove All
Global Filters Use Cell level policy
Use cellever policy
Configure For Laptop Backups
<ul> <li>Storage Policy to use</li> </ul>
Subclent Policy to use
CRack Nexts Even A Course Even Labor
< Back Next > Save As Script Finish Cancel Help
Installer 🛛
Enter Additional Install Options
Enter Additional Install Options
🗟 Installer Flags
✓ Instal Updates
Reboot (f required)
Kill Browser Processes (if required)
Ignore Running Jobs
Stop Oracle Services (if required)
Skip clents that are already part of the CommCell component
Advanced Options
Delete Packages After Install
Listen only on the network interface used as hostname
Do not load WA driver in to kernel this time
Number Of Streams
Unix Group
Access permissions for other users
✓ Ignore Client/Host Name Conflict
Instal Agents For Restore Only
Optional Settings
Job Result Directory
Job Result Directory     Path
Everge: Port 8402
Instal Directory
CommServe Host Name
< Back Next > Sove As Script Finish Cancel Help
Installer
Please Select When To Run The Job
Job Initiation
() Immediate
Run this job now
O Schedule
Configure Schedule Pattern Configure
$\frown$
<back (next="">) Save As Script Finish Cancel Help</back>

- Summer
  S Override Software Cache: No Select Type Of Installation: Copy packages to remote machine Components Selected Components To Install: UNIX File System iDataAgent <Back Next > Save As Script Phish Cancel Help iler × Job Controller ×
   Job Controller
   FL. Job ID Operation Client Co... Agent Type Subclient Job Typer <sup>1</sup> (Phase Storage ... Media/quet Status Progress Brons K
   H Pause Printing Runnin
   Force Henner
   Severt Henner
   Severt Henner
   Severt Henner
   200 D010100101 000 Computer Event Code Der 0 4:345 4:345 35:254 08/31/2010 11:45:07 CVD 08/31/2010 11:45:07 CVD 08/31/2010 11:45:07 CVD 08/31/2010 11:41:39 EvMar5 apple apple apple Installation of [Virtual Server -Installation of [Windows File S User [advin] has logged on. 226 225 224 II Pause Floring Information, Neor, Hajor, Critical, Maximum events shows: 200 Previous Next >
- **13.** You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

# Getting Started - FreeBSD 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.

### **INSTALLING THE FREEBSD FILE SYSTEM /DATAAGENT - 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 you are installing the software from CD, run the following command to mount the CD:

#### mount -t cd9600 /dev/<acd0>/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.

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

- 8. Press Enter.
- 9. Type the number associated with the Unix File System iDataAgent and press Enter.
- A confirmation screen will mark your choice with an "X".
   Type d for Done, and press Enter.

#### 11. Press Enter.

- 12. 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.

#### 13. 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.

14.

16.

Press Enter.

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:

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

- **15.** 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.

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

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 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

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 176MB 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]

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

**18.** 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**.

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

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

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

**20.** 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.

21. Press Enter.

22. 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.

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]

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 "sky1".

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? [1]

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".

[ ] 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,&gt;,&lt;,?" here: d</pre>
24.	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:
		<ol> <li>SP_StandAloneLibrary2_2</li> </ol>
		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
	You can create the Storage Policy later in step 35.	and assign it to all subclients
		Adjusting modes and permissions of files
		Successfully installed Calypso
25.	Type 2 to install Unix File System iDataAgent on a Virtual machine , and press	Cluster Support
	Enter.	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: [2]
26.	If you have only one network interface, press <b>Enter</b> 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 <b>Enter</b> .	Please enter the hostname or IP address of the virtual 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 cvpkgadd.
		Virtual Machine Host Name: stone.company.com
27.	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 is that it must be unique on the CommServe.
		Virtual Machine Client Name: [stone]
28.	Type the number associated with the Unix File System iDataAgent and press	Install Calypso on virtual machine stone
	Enter.	Please select the Calypso module(s) that you would like to install.
		[ ] 1) MediaAgent [1301] [CVGxMA]
		[ ] 2) UNIX File System iDataAgent [1101] [CVGxIDA] >) >>>>>>>> NEXT PAGE >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
		<pre>[a=all n=none r=reverse q=quit d=done &gt;=next &lt;=previous ? =help]</pre>

		<pre>Enter number(s)/one of "a,n,r,q,d,&gt;,&lt;,?" here:2</pre>
29.	A confirmation screen will mark your choice with an "X".	Install Calypso on virtual machine stone
	Type <b>d</b> for <b>Done</b> , and press <b>Enter</b> .	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,&gt;,&lt;,?" here:d</pre>
30.	Press Enter.	Do you want to use the agents for restore only without consuming licenses? [no]
31.	Specify the path for the Job Results directory, and press Enter	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
	If Job Results directory does not exist, it prompts you to create it. Type <b>Yes</b> to create it.	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:
32.	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:
		<ol> <li>SP_StandAloneLibrary2_2</li> </ol>
		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.
	You can create the Storage Policy as shown in step 35.	Adjusting modes and permissions of files
		Successfully installed Calypso
33.	Type 4 to the Exit option and proce Enter	Calypso is currently configured on the following
55.	Type <b>4</b> to the <b>Exit</b> option and press <b>Enter</b> .	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.1) Add a new package to PM angel(angel.mycompany.loc)
		<ol><li>Add a new package to VM stone (stone.company.com)</li></ol>
		<ol> <li>Install Calypsopackages on a new virtual machine</li> </ol>
		4) Exit this menu
		Your choice: [1] 4
34.	Type <b>3</b> to the <b>Exit</b> option, and press <b>Enter</b> .	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 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.
		<ol> <li>Add agents to existing Instance001 going to CS mycommserve.company.com</li> </ol>
		2) Create a new instance of Calypso
		3) Exit this menu
		Your choice: 3
CHOICE	If you already selected a storage policy in step 32, proceed to the Configuration section.	

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

35.

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.

< Previous ( Next >

# **Getting Started - FreeBSD File System Configuration**

< Previous ) Next >

## **CONFIGURATION**

1.

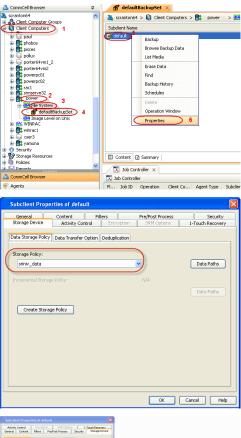
2.

з.

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 the Storage Device tab.

Click Next > to continue.

• Click OK.

storage policy.

#### 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 - FreeBSD File System Backup

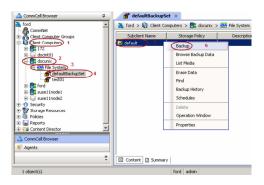
WHAT GETS BACKED UP	WHAT DOES NOT GET BACKED UP
FILE SYSTEMS	By default, the following file systems are automatically skipped during backups:
Unix File System (UFS)	• cd9660
Zettabyte File System (ZFS)	<ul> <li>cd</li> <li>ext2fs</li> </ul>
	<ul> <li>linpro</li> <li>mfs</li> <li>msdos</li> </ul>
	<ul> <li>nfs</li> <li>ntfs</li> </ul>
	<ul><li>nwfs</li><li>procfs</li></ul>
	<ul> <li>smbfs</li> <li>umap</li> </ul>
	<ul><li>union</li><li>lofs</li></ul>
	<ul><li>tmpfs</li><li>proc</li></ul>
	• ctfs
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	
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.

2.

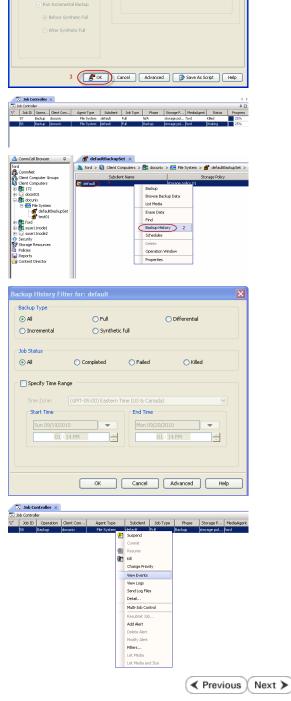
• Click OK.

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

O Schedule

Run this job now

Backup Options

O Incremental

O Differential

O Synthetic Full

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# **Getting Started - FreeBSD File System Restore**

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## **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.

Eli File System
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×
Help
Help
Help
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e T Modified F 2/7/1 ▲
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3
3
3

- 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.

General Job Initiation
Job Initiation
<ul> <li>⊙ Immediate</li> </ul>
Run this job now
Configure Schedule Pattern Configure
🖉 OK Cancel Advanced 🚱 Save As Script Help
3bb Controller ×           3bb Controller           3bb Controller           3bb Controller           (b) Do Controller           (c) Do Controler
9 jugarway Pastore judoway MisSystem   Bastore   Putring [ 5%
ComrCel Browser 0
Image: Construction
Grad Solo     Grad File System
All Tasks
Control Technology     Control Technology     Control Technology     Control Technology     Control Technology     Control Technology
El Contex Discus
/ □ kb Controller × □ kb Controller
H         Job ID         Operation         Otent Co         Appent Type         Subdimit ^1         Job Type         Phore           41         Backup         SUN         Solaris File System default         Full         Scan
<u>к.</u>
Restore History Filter for: defaultBackupSet
Destination Client Computer:
All Clients
Specify Time Range
Time Zone: (UTC-05:00) Eastern Time (US & Canada)
Start Time End Time
red 03/09/2011
07 : 10 AM
Job Type           Job Type           Image: Recovery/Retrieve           Image: Stub Recall
Job Status
All     Completed     Failed     Killed
OK Cancel Advanced Help
💣 defaultitationalest 🗴 🦄 Reatore 3db Hatory of de_ 🗙 4
Cover Xot (Stabilized Xot)     Stabilized Xot     Stabiliter Xot     Stabilized Xot     Stabilized Xot     Stabilized Xot
12 ≥ Consettent (2000/12/2112-22:23) [2010/12/112:22:23) [2   247   ellem   26 ● Feled 2010/12/2111:10:23 2339/12/2111:10:44 0 549 edmn [24:04]
Total records found: 2

Restore Options for All Selected Items

- 9. You can view the following details about the job by right-clicking the job:
  - View Restore Items You can view them as Successful, Failed, Skipped or All.
  - View Job Details
  - View Events of the restore job.
  - View Log files of the restore job
- 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.

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.

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