

open-e

ENTERPRISE LEVEL STORAGE OS
for EVERY BUSINESS

*Setting up data redundancy
on DSS V6 with
Asynchronous Data
Replication
and local Backup*

DSS V6
DATA STORAGE SOFTWARE

16 TB



Easy to use, GUI based management provides performance and security.



Reliable disk based backup and recovery, along with Snapshot capability enable fast and reliable backup and restore.



Easy to implement remote Replication, at block or volume level, enables cost-effective disaster recovery.



IP based storage management combines NAS and iSCSI functionality for centralized storage and storage consolidation.

Software Version: DSS ver. 6.00 up50

Presentation updated: October 2010

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SAMPLE CONFIGURATION

Local Data Redundancy as described in this document does not fulfill professional backup requirements, but is strongly recommended if you are using no backup at all. Experience shows that most data loss incidents can be protected with this simple and inexpensive solution. Local Data Redundancy as explained within this document requires a single NAS device with two RAID Arrays within the system.

Local Data Redundancy uses two of the features built into the Open-E DSS V6:

- Local Backup with Restore
- Data Replication

An example configuration:

- First Array RAID is for live data on **volume group DATA** (vg00)
- Second Array RAID is for backup and replications as **volume group BACKUP** (vg01)

Setup Backup and Data Replication:

- ✓ Backup schedule is set every day with a 6 week retention time for "DATA" share
- ✓ Scheduled Data Replication is set for an hourly interval for "DATA" share

Local Data Redundancy

■ Recommended Resources

- Hardware
 - ✓ x86 compatible
 - ✓ RAID Controller 1
 - ✓ RAID Controller 2 (optional, single RAID controller can manage 2 RAID arrays as well)
 - ✓ HDD's
 - ✓ Network Interface Cards
- Software
 - ✓ Single Open-E DSS V6

■ Benefits

- Low cost solution
- Ensures local data availability

■ Disadvantages

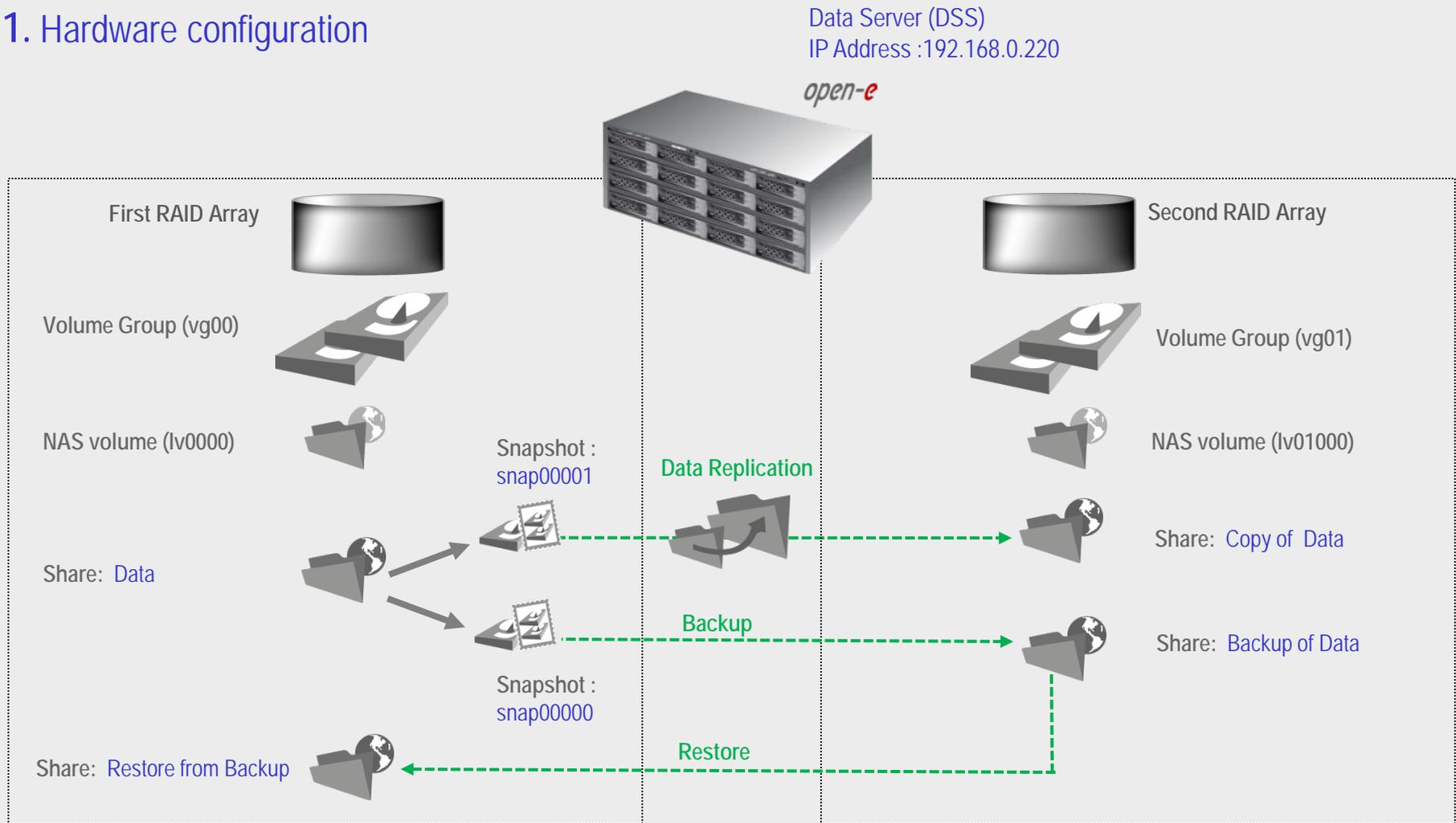
- In case of total disaster, such as fire or flood, data and the backup could be lost

To Set up Local Data Redundancy, Perform the Following Steps:

1. Configure Hardware
2. Configure the Local Backup
3. Create the Restore from Backup
4. Configure the Data Replication

Local Data Redundancy with DSS

1. Hardware configuration



Local Data Redundancy with DSS



First RAID Array

2. Configure the Local Backup

Under the "CONFIGURATION" menu select "volume manager" and Vol. groups

Volume Groups (vg00)



Add the selected physical units (Unit MD0) to create a new volume group (in this case, vg00) and click the **apply** button

The screenshot shows the open-e web interface for configuring storage. The breadcrumb trail is "You are here: CONFIGURATION > volume manager > Vol. groups". The "Vol. groups" tab is active, showing a table of units and a form to create a new volume group.

Unit	Size (GB)	Serial number	Status
<input checked="" type="checkbox"/> Unit MD0	465.77	N/A	available
<input type="checkbox"/> Unit S003	230.08	N/A	available

Action: new volume group
Name: vg00

apply

Please apply changes or press "reload" button to discard

Unit	Serial number	Status
<input type="checkbox"/> Unit S003	N/A	
<input type="checkbox"/> Unit S000	9RY1GP7W	
<input type="checkbox"/> Unit S001	5RY13SBZ	

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Add the selected physical units (Unit S003) to create a new volume group (in this case, vg01) and click the **apply** button

The screenshot shows the open-e web interface for configuring storage. The breadcrumb trail is: CONFIGURATION > volume manager > Vol. groups. The main content area is divided into several panels:

- Vol. groups:** Shows a list of volume groups with 'vg00' selected.
- Unit rescan:** Contains a 'rescan' button.
- Unit manager:** A table listing physical units. Unit S003 is checked for selection.
- Action:** A dropdown menu is set to 'new volume group' and the 'Name' field contains 'vg01'.
- Apply:** An 'apply' button is visible at the bottom of the unit manager section.
- Drive identifier:** A table listing all physical units, including S000, S001, and S003.

Unit	Size (GB)	Serial number	Status
Unit MD0	465.77	N/A	in use, vg00
<input checked="" type="checkbox"/> Unit S003	230.08	N/A	available

Unit	Serial number	Status
<input type="checkbox"/> Unit S003	N/A	
<input type="checkbox"/> Unit S000	9RY1GP7W	
<input type="checkbox"/> Unit S001	5RY13SBZ	

Volume Groups (vg01)



Local Data Redundancy with DSS



First RAID Array

2. ... Continue

Volume Groups (vg00)



Select the appropriate **volume group (vg00)** from the list on the left and create a **new NAS volume** of the required size. This logical volume **lv0000** will be the source of the local backup and replication processes.

After assigning an appropriate amount of space for the NAS volume, click the **apply** button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > volume manager > Vol. groups > vg00

Vol. groups

- vg00
- vg01

Vol. replication

Volume manager

System volumes	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	457.72

Action: new NAS volume

Use volume replication
 WORM

0 457.72

add: 200 GB

apply

Please apply changes or press "reload" button to discard

Snapshot definition

Event Viewer: [icon]

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Local Data Redundancy with DSS



First RAID Array

Volume Groups (vg00)



NAS volume (lv0000)



2. ... Continue

The source NAS volume is now configured. This logical volume lv0000 will be the source of the local backup and replication processes.

The screenshot shows the open-e web interface for configuring storage. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'CONFIGURATION > volume manager > Vol. groups > vg00'. The 'Volume manager' section displays a table of logical volumes and system volumes. A blue arrow points from the text box to the 'lv0000' entry in the table.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000					N/A	200.00
System volumes						Size (GB)
Reserved Pool						4.00
Reserved for snapshots						0.00
Reserved for system						4.00
Reserved for replication						0.00
Free						257.72

Below the table, the 'Action:' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM', both of which are unchecked. A progress bar is visible at the bottom of the configuration area, showing 0% completion.

Local Data Redundancy with DSS



First RAID Array

2. ... Continue

Snapshot



To run the local backup process, you must first define a new snapshot in the **Volume manager** function of the volume to be backed up. Next, you select "Assign to volume lv0000".

After assigning an appropriate amount of space for the **snapshot**, click the **apply** button. Usually snapshots are 10-15% of the size of the logical volume.

The screenshot shows the open-e Volume Manager interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: CONFIGURATION > volume manager > Vol. groups > vg00'. The main content area is divided into two panes: 'Vol. groups' on the left and 'Volume manager' on the right. The 'Volume manager' pane displays a table of logical volumes and system volumes. Below the table, there are configuration options for a new snapshot, including 'Action:' set to 'new snapshot' and 'Assign to volume:' set to 'Assign to volume lv0000'. A slider and a text input field for 'add: 20 GB' are also visible. A red 'apply' button is located at the bottom right of the configuration area. A blue arrow points from the text box to the 'new snapshot' dropdown, another blue arrow points from the text box to the 'Assign to volume lv0000' dropdown, and a third blue arrow points from the text box to the 'apply' button.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000					N/A	200.00
System volumes						Size (GB)
Reserved Pool						4.00
Reserved for snapshots						0.00
Reserved for system						4.00
Reserved for replication						0.00
Free						257.72

Action: new snapshot
Assign to volume: Assign to volume lv0000
add: 20 GB
apply

Local Data Redundancy with DSS



First RAID Array

2. ... Continue

NAS volume
(lv0000)



Snapshot (snap0000)

The Snapshot is now created, and has been assigned to the logical volume lv0000.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000			✓		N/A	200.00
snap000000					N/A	20.00
System volumes						Size (GB)
Reserved Pool						4.00
Reserved for snapshots						20.00
Reserved for system						4.00
Reserved for replication						0.00
Free						237.72

Action:

Use volume replication
 WORM

Event Viewer:

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Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Volume Groups (vg01)



NAS volume



Select the appropriate volume group (vg01) from the list on the left and create a **new NAS volume** of the required size.

After assigning an appropriate amount of space for the NAS volume, click the **apply** button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > volume manager > Vol. groups > vg01

Vol. groups

- vg00
- vg01

Vol. replication

Volume manager

System volumes	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	222.03

Action: new NAS volume

Use volume replication
 WORM

0 222.03

add: 200 GB

apply

Please apply changes or press "reload" button to discard

Snapshot definition

Event Viewer: [icon]

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Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Volume Groups (vg01)



NAS volume (lv0100)



The destination NAS volume now configured. This logical volume lv0100 will be the destination of the local backup and replication processes.

The screenshot shows the open-e web interface for configuring storage. The breadcrumb trail is: CONFIGURATION > volume manager > Vol. groups > vg01. The 'Vol. groups' panel shows 'vg01' selected. The 'Volume manager' panel displays a success message: 'Logical volume lv0100 has been created successfully.' Below this is a table of logical volumes:

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0100					N/A	200.00

Below the table, the 'System volumes' section shows:

- Reserved Pool: 4.00
- Reserved for snapshots: 0.00
- Reserved for system: 4.00
- Reserved for replication: 0.00
- Free: 22.03

The 'Action:' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM', both of which are unchecked. At the bottom, there is a slider for 'add:' with a value of '0.00' GB and a total of '22.03' GB.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Under the "CONFIGURATION" menu, select the "NAS settings"

Local Backup



Check the Use local backup box. Also select, Default share on LV as lv0100, and click the apply button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > NAS settings

Data replication agent

Enable Data replication Agent

apply

Antivirus setup

Info
No shares found.

Local backup settings

Use local backup

Select backup database location:

Default share on LV: lv0100

Other share: <choose share>

Create database

Move database

apply

Please apply changes or press "reload" button to discard

Event Viewer: [envelope icon]

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Local Data Redundancy with DSS



First RAID Array

2. ... Continue

Under the "CONFIGURATION" menu, select "NAS resources" and Shares

Shares: *Data*



A tree listing of NAS shared volumes (Shares) will appear on the left side of the DSS V6 console. In the example, a shared volume named *Data* has been created on lv0000.

The screenshot displays the open-e DSS V6 console interface. At the top, the navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: CONFIGURATION > NAS resources > Shares. The left sidebar contains a tree view with three main sections: Shares, Users, and Groups. The Shares section is expanded to show '1. backup_db_lv0100'. The Users section is expanded to show '1. users'. The Groups section is collapsed. The main content area is titled 'Create new share' and contains the following fields: Name (Data), Comment (empty), Default path (/lv0000/Data), and Specified path (/). An 'apply' button is located at the bottom right of the form. Below the form is the 'ACL (Access control list)' section, which includes a 'Browser' tab and a tree view showing 'lv0000' and 'lv0100'. The footer of the console reads 'Data Storage Software V6 - All rights reserved'.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Shares: Backup of Data



After creation of the **Data** share, you must create a share for the local backup. In the example, a shared volume named **Backup of Data**, has been created on **lv0100**.

The screenshot displays the open-e web interface for configuring a new share. The main content area is titled 'Create new share' and contains the following fields:

- Name: Backup of Data
- Comment: (empty text area)
- Default path: /lv0100/Backup of Data (selected with radio button)
- Specified path: / (radio button not selected)

An 'apply' button is located at the bottom right of the form. Below the form, there is an 'ACL (Access control list)' section with a 'Browser' tab and a list of volumes including lv0000 and lv0100.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Under the "MAINTENANCE" menu, select "backup" and Backup pools

Backup pools: Pool60days



In the "Create new pool" function, enter a name for the pool and select **Tape retention after**. In this example, enter 2 months (60 days) and click on the **apply** button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: MAINTENANCE > backup > Backup pools

Backup pools

Create new pool

Name: Pool60days

Tape retention after: 2 months (60 days)

Use each tape only once

create

Please apply changes or press "reload" button to discard

Backup devices

Backup tasks

Data replication

Event Viewer: [icon]

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Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Next, choose Backup devices

Backup devices: VirtualTapesGroup

In "Create new virtual backup device" function, enter a name for the virtual backup device, and select **Share**. In this example choose **Backup of Data** and click the **apply** button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: MAINTENANCE > backup > Backup devices

Backup pools

Pool60days

Backup devices

Backup tasks

Data replication

Event Viewer: [icon]

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Create new virtual backup device

Name: VirtualTapesGroup

Use as device:

Share: Backup of Data

Dynamic volume:

create

Please apply changes or press "reload" button to discard

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

After the DSS V6 Web page has been reloaded, the new Backup device should appear. Next, click VirtualTapesGroup, in the Backup devices tree.

Backup devices: Tape01



In the "Label new tape" function enter a name for the new tape (Tape01) and select the Pool name. In this example, choose Pool60days. Next, check the box, Limit tape size and choose the appropriate capacity for the new tape. Click the **apply** button. In this example, 4 tapes will be created

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Now create the next 3 tapes accordingly.

Backup devices: [Tape02](#)



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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: MAINTENANCE > backup > Backup devices > VirtualTape

Backup pools

- Pool60days

Backup devices

- VirtualTapesGroup

Backup tasks

Data replication

Event Viewer: [icon]

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Label new tape

Name:

Pool name:

Limit tape size

Please apply changes or press "reload" button to discard

Backup device tapes

Name	Pool	Status	Used/size	Action
Tape01	Pool60days	Append	0.00kB/25.00GB	[refresh] [delete]

Remove backup device

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

After creating tapes in "Backup device tapes" function, four tapes are present

Backup devices: *VirtualTapesGroup*



The screenshot shows the open-e web interface. The breadcrumb trail is: You are here: MAINTENANCE > backup > Backup devices > VirtualTape. The main content area is divided into two panes. The left pane shows a tree view with 'Backup pools' containing 'Pool60days', 'Backup devices' containing 'VirtualTapesGroup', 'Backup tasks', and 'Data replication'. The right pane is titled 'Backup device tapes' and contains a table with the following data:

Name	Pool	Status	Used/size	Action
Tape01	Pool60days	Append	0.00kB/25.00GB	[Refresh] [Delete]
Tape02	Pool60days	Append	0.00kB/25.00GB	[Refresh] [Delete]
Tape03	Pool60days	Append	0.00kB/25.00GB	[Refresh] [Delete]
Tape04	Pool60days	Append	0.00kB/25.00GB	[Refresh] [Delete]

Below the table is a 'Remove backup device' section with a 'remove' button. The top right of the interface shows 'DATA STORAGE SOFTWARE V6' and the bottom right shows 'Data Storage Software V6 - All rights reserved'.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Share: Backup of Data



The screenshot shows a Windows Explorer window titled "Backup of Data on Data Storage Server (192.168.0.220)". The address bar shows the path "\\192.168.0.220\Backup of Data". The main pane displays a list of four folders: Tape01, Tape02, Tape03, and Tape04. Each folder is 1 KB in size and is a File type. The dates modified and created are listed for each folder. A blue arrow points from a text box to the Tape01 folder.

Name	Size	Type	Date Modified	Attributes	Date Created
Tape01	1 KB	File	2010-10-08 22:04		2010-10-08 22:04
Tape02	1 KB	File	2010-10-08 22:13		2010-10-08 22:13
Tape03	1 KB	File	2010-10-08 22:15		2010-10-08 22:15
Tape04	1 KB	File	2010-10-08 22:16		2010-10-08 22:16

After configuration of four virtual tapes four folders will appear on the "Backup of Data" share. This is where resources from "Data" will be backed-up.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Next, select **Backup tasks**. In the "Create new backup task" function, enter a name for the backup tasks and select the **Logical volume**. In this example choose **lv0000**

Backup tasks: BackupTask



Next, you must select shares for the local backup (**Data**). Move the **Available shares** to be used for the local backup to the **Assigned shares** area by clicking **➡** button

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Backup tasks: BackupTask



In the "Create new backup task" function, choose Snapshot and select Store on pool. In this example, snap0000 and Pool60days. Next, select the backup Level (e.g. incremental) check box, Compress data, and click the apply button

The screenshot shows the open-e Data Storage Software V6 interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'Backup tasks' under the 'MAINTENANCE' section. The left sidebar contains sections for 'Backup pools' (with 'Pool60days' selected), 'Backup devices', and 'VirtualTapesGroup'. The main area is divided into 'Available shares' and 'Assigned shares'. The 'Assigned shares' list contains 'Data'. Below the share lists are configuration options: 'Snapshot' (set to 'snap00000'), 'Store on pool' (set to 'Pool60days'), 'Level' (with 'incremental' selected), 'Compress data' (checked), and 'Make full backup every:'. An 'apply' button is at the bottom right. A blue box on the left contains instructions with arrows pointing to these configuration elements.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

After the DSS Web page has been reloaded, the new Backup tasks should appear. Next, click **BackupTask**, in the **Backup tasks** tree.

Backup tasks: BackupTask

In the "Create new schedule for backup" function, enter a Comment for the new schedule and Select time. In this example choose **Weekly** and check the box for all of days of the week. Select time for the start task (8 pm). Next, click the **apply** button.

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

The Backup tasks function shows the status of the backup tasks.

Backup tasks: BackupTask



The screenshot shows the open-e web interface for backup management. The main navigation bar includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Backup tasks' under the MAINTENANCE section. The left sidebar contains sections for Backup pools (Pool60days), Backup devices (VirtualTapesGroup), Backup tasks (BackupTask), and Data replication. The main content area displays a table of backup tasks with columns for Name, Start time, and Action. A task named 'BackupTask' is listed with a start time of 'n/a'. Below the table, there is a 'last log' section with the message 'No logs found.' and a 'short description' section with details: shares: Data, pool: Pool60days, and level: incremental. At the bottom, there is a 'Create new backup task' form with fields for Name, Logical volume (lv0000), and Shares for backup. The interface also includes an Event Viewer icon and a footer with 'Data Storage Software V6 - All rights reserved'.

Name	Start time	Action
BackupTask	n/a	

last log
No logs found.

short description
shares: Data
pool: Pool60days
level: incremental

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

The Backup tasks function shows the backup task running at 8 pm

Backup tasks: BackupTask



The screenshot shows the open-e web interface with the following components:

- Header:** open-e logo, "ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS", and "DATA STORAGE SOFTWARE V6".
- Navigation:** SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP.
- Breadcrumbs:** You are here: MAINTENANCE > backup > Backup tasks.
- Left Sidebar:** Backup pools (Pool60days), Backup devices (VirtualTapesGroup), Backup tasks (BackupTask), and Data replication.
- Main Content:**
 - Backup tasks table:**

Name	Start time	Action
BackupTask	2010-10-09 20:00:05	[Status icons]
 - last log:**

2010-10-09 20:00:41	start
---------------------	-------
 - short description:**

shares:	Data
pool:	Pool60days
level:	incremental
 - Create new backup task form:**
 - Name:
 - Logical volume:
 - Shares for backup: Available shares (Data) and Assigned shares (empty).
- Footer:** Event Viewer icon and "Data Storage Software V6 - All rights reserved".

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Under the "STATUS" tab, select "tasks" and Backup

Backup tasks: BackupTask

Click on the "Runnings tasks" function to display detailed information on the current Backup task

The screenshot shows the open-e web interface with the following elements:

- Header: open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6
- Navigation tabs: SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP
- Breadcrumb: You are here: STATUS > tasks > Backup
- Left sidebar: Tasks menu with sub-items: Backup (selected), Restore from backup, Data Replication, Antivirus, Volume Replication, Snapshots.
- Main content area:
 - Running tasks** table:

Name	Type	Start time
BackupTask	Backup	2010-10-09 20:00:05
 - Tasks log** table:

Time	Name	Type	Status	Action
2010-10-09 20:00:41	BackupTask	Backup	OK	Started

Event Viewer: [icon] | Data Storage Software V6 - All rights reserved

Local Data Redundancy with DSS



Second RAID Array

2. ... Continue

Share: Backup of Data



After the end of the Backup all data from "Data" share are located in two subfolders "Tape01" and "Tape02".

The configuration of Backup is now complete.

Name	Size	Type	Date Modified	Attributes	Date Created
Tape01	26 214 363 KB	File	2010-10-09 21:38		2010-10-08 22:04
Tape02	455 099 KB	File	2010-10-09 21:41		2010-10-08 22:13
Tape03	1 KB	File	2010-10-08 22:15		2010-10-08 22:15
Tape04	1 KB	File	2010-10-08 22:16		2010-10-08 22:16

Local Data Redundancy with DSS



First RAID Array

3. Create Restore from Backup

Under the "CONFIGURATION" menu, select "NAS resources"

Shares: Restore from Backup

In order to execute Restore, you must create a new share. Click Shares on the left side of the DSS V6 console. In the example, a shared volume named **Restore from Backup** has been created on lv0000

The screenshot displays the open-e web interface for configuring shares. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: CONFIGURATION > NAS resources > Shares'. The left sidebar shows the 'Shares' section expanded, listing three items: '1. Backup of Data', '2. backup_db_lv0100', and '3. Data'. The main content area is titled 'Create new share' and contains a form with the following fields: 'Name' (text input with 'Restore from Backup'), 'Comment' (text area), 'Default path' (dropdown menu with '/lv0000/Restore from Bac'), and 'Specified path' (text input with '/'). An 'apply' button is located at the bottom right of the form. Below the form is the 'ACL (Access control list)' section, which includes a 'Browser' tab and a list of volumes: 'lv0000' and 'lv0100'. The footer of the console shows 'Event Viewer' and 'Data Storage Software V6 - All rights reserved'.

Local Data Redundancy with DSS



First RAID Array

3. ... Continue

Under the "MAINTENANCE" menu, select "restore"

Restore task: RestoreTask



In the "Create new restore task" function, check the box BackupTask. Enter a name for the Restore tasks name (e.g. RestoreTask), and select the destination share in the Restore to field. In this example, choose Restore from Backup share. Next, click on the apply button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: MAINTENANCE > restore

Restore tasks

Create new restore task

Backup tasks search

Task:

Device:

File name contain:

Day Month Year

From date:

To date:

Name	Date	Device
<input checked="" type="checkbox"/> BackupTask	2010-10-09 21:41:13	VirtualTapesGroup

Restore task name:

Restore to:

Overwrite files

always

if newer

if older

never

run immediately after creation

Please apply changes or press "reload" button to discard

Event Viewer: [icon]

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Local Data Redundancy with DSS



First RAID Array

3. ... Continue

You can choose to run this task any time you wish from the "Backup Restore tasks" function.

Restore task: [RestoreTask](#)



The screenshot shows the open-e Data Storage Software V6 interface. The top navigation bar includes 'open-e', 'ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS', and 'DATA STORAGE SOFTWARE V6'. Below this are tabs for 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current view is 'MAINTENANCE > restore'. The main content area is divided into two panes. The left pane, titled 'Restore tasks', shows a tree view with 'RestoreTask' selected. The right pane, titled 'Backup Restore tasks', contains a table with the following data:

Name	Start time	Action
RestoreTask	2010-10-10 11:46:55	  

Below the table is a section titled 'Create new restore task' with an 'Info' message: 'Backup restore in progress. Please wait for backup restore process to finish.'

Local Data Redundancy with DSS



First RAID Array

3. ... Continue

Click on the "Restore Task" name

Restore task: [RestoreTask](#)



In the "Restore task" function there will be detailed information on the current restore task

The screenshot shows the open-e web interface. At the top, there is a navigation menu with 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. Below the menu, the breadcrumb trail reads 'You are here: MAINTENANCE > restore > RestoreTask'. The main content area is divided into two panels. The left panel, titled 'Restore tasks', contains a list with one entry: 'RestoreTask'. A blue arrow points from the text 'Click on the "Restore Task" name' to this entry. The right panel, titled 'Restore task', displays a table of attributes and values for the selected task. Below the table is a 'Remove restore task' section with an information message and a 'remove' button. A second blue arrow points from the text 'In the "Restore task" function there will be detailed information on the current restore task' to the 'Restore task' panel.

Attribute	Value
Backups:	RestoreTask
Destination shares:	Restore from Backup
Device:	VirtualTapesGroup
Overwrite files:	always

Remove restore task

Info
Restore task is running. You must stop this task before you can remove it.

remove

Local Data Redundancy with DSS



First RAID Array

3. ... Continue

Under the "STATUS" menu, select "tasks" and Restore from backup

Restore tasks: RestoreTask

In the "Runnings tasks" function detailed information on the current Restore from backup task is displayed.

The screenshot shows the open-e web interface with the following elements:

- Header: open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6
- Navigation: SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP
- Breadcrumbs: You are here: STATUS > tasks > Restore from backup
- Left Panel: Tasks menu with options: Backup, Restore from backup (selected), Data Replication, Antivirus, Volume Replication, Snapshots.
- Right Panel: Running tasks table and Tasks log table.

Running tasks		
Name	Type	Start time
RestoreTask	Restore from backup	2010-10-10 11:46:55

Tasks log				
Time	Name	Type	Status	Action
2010-10-10 11:46:58	RestoreTask	Restore from backup	OK	Started

Event Viewer: [icon]

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Local Data Redundancy with DSS

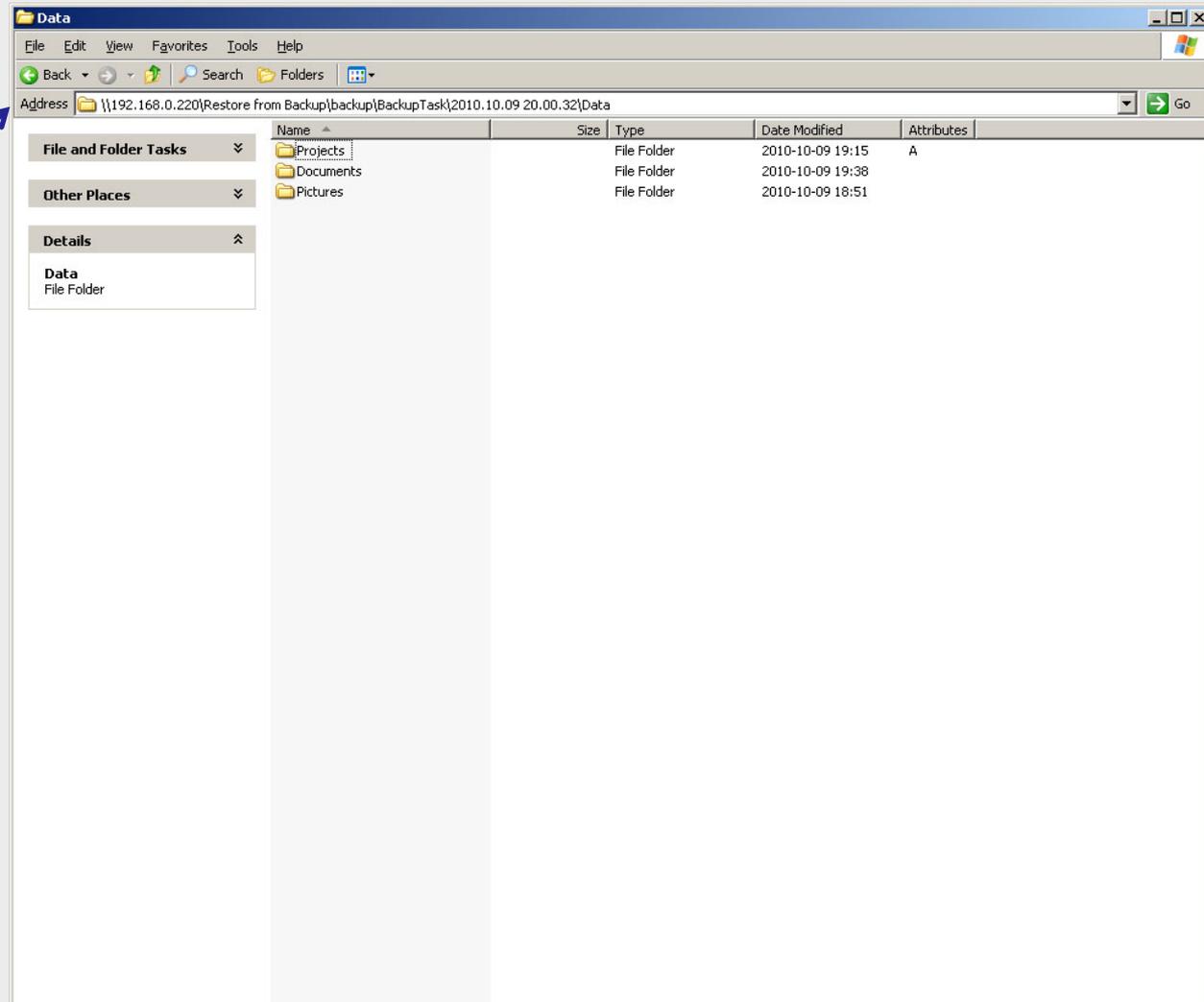


First RAID Array

3. ... Continue

After the Restore from Backup is complete all data from the "Data" share are available on the "Restore from Backup" share.

Share: Restore from Backup



The configuration of the Restore from Backup is now complete.



First RAID Array

4. Configure of the Data Replication

To run the replication process, you must first define a new snapshot to be taken of the volume to be replicated. Next, select "Assign to volume lv0000".

Snapshot



After assigning an appropriate amount of space for the new snapshot, click the **apply** button. Usually snapshots are about 10-15% of the size of the logical volume.

The screenshot shows the open-e web interface for configuring a new snapshot. The breadcrumb path is "You are here: CONFIGURATION > volume manager > Vol. groups > vg00".

Vol. groups

- vg00
- vg01

Vol. replication

Volume manager

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000			✓		N/A	200.00
snap00000					N/A	20.00

System volumes

	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	20.00
Reserved for system	4.00
Reserved for replication	0.00
Free	237.72

Action:

Assign to volume:

0 GB 237.72



First RAID Array

4. Configure of the Data Replication

NAS volume
(lv0000)



Snapshot (snap0001)

The Snapshot is now created,
and has been assigned to the
logical volume lv0000.

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > volume manager > Vol. groups > vg00

Vol. groups

- vg00
- vg01

Vol. replication

Free 217.72

Action: new NAS volume

Use volume replication

WORM

0 217.72

add: 0.00 GB

apply

Snapshot definition

Name	LV	Status
snap00000	lv0000	in use/inactive
snap00001	lv0000	in use/inactive

apply

Event Viewer: [icon]

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Local Data Redundancy with DSS



First RAID Array

4. ... Continue

Under the "CONFIGURATION" menu, select "NAS settings"

Data Replication



Check the Enable Data replication Agent box and click the **apply** button

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > NAS settings

Data replication agent

- Enable Data replication Agent **apply**

Please apply changes or press "reload" button to discard

Antivirus setup

- Use antivirus **apply**

Local backup settings

- Use local backup
- Select backup database location:
 - Default share on LV: lv0100
 - Other share: <choose share>
- Create database
- Move database

apply

Event Viewer: [envelope icon]

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Local Data Redundancy with DSS



First RAID Array

4. ... Continue

Under the "CONFIGURATION" menu, select "NAS resources" and "Shares"

Shares: Data



Next, click on the name Data, and check the box, Use data replication within the Data replication agent settings table, and click the **apply** button

NOTE:

We strongly recommended protecting the replication protocol with a user name and password, along with a list of allowed IP address. This will prevent other data replication tasks from accessing this share.



Second RAID Array

4. ... Continue

In order to run the Data Replication process, you must create a new share, then click on the name **Shares**. Next, in **Create new share** function enter share name. In the example, a shared volume named **Copy of Data** has been created on **lv0100**

Shares: Copy of Data



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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > NAS resources > Shares

Shares

- 1. Backup of Data
- 2. backup_db_lv0100
- 3. Data
- 4. Restore from Backup

Users

- 1. john

Groups

- 1. users

Create new share

Name: Copy of Data

Comment:

Default path: /lv0100/Copy of Data

Specified path: /

apply

Please apply changes or press "reload" button to discard

ACL (Access control list)

Browser | Users & Groups | Access Permissions

Selection:

Filter:

- lv0000
- lv0100

Event Viewer: [icon]

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Second RAID Array

4. ... Continue

After creating the new shared volume, configure it:

- Click on the share name
- Check the box, **Use data replication** within the **Data replication agent settings** function
- Click the **apply** button

Data Replication



Local Data Redundancy with DSS



Second RAID Array

4. ... Continue

Data Replication



After the share to be replicated has been configured, go to the "MAINTENANCE" menu and select "backup" to choose Data replication

The screenshot shows the open-e Data Storage Software V6 interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: MAINTENANCE > backup > Data replication'. The left sidebar contains several menu items: 'Backup pools' (with a sub-item 'Pool60days'), 'Backup devices' (with a sub-item 'VirtualTapesGroup'), 'Backup tasks' (with a sub-item 'BackupTask'), and 'Data replication'. The main content area is titled 'Create new data replication task' and contains the following fields and options:

- Task name: [text input]
- Source share: [<choose share> dropdown]
- Snapshot: [dropdown]
- Destination IP: [text input]
- Destination share: [dropdown]
- Destination agent login: [text input]
- Destination agent password: [text input]
- Log replication errors
- Use ACL
- Don't delete files

An 'apply' button is located at the bottom right of the form. Below the form, a 'Data replication tasks' section shows an 'Info' message: 'No tasks have been found.' The footer of the interface includes 'Event Viewer' and 'Data Storage Software V6 - All rights reserved'.



First RAID Array

4. ... Continue

Select the source share to be replicated. Under **Create new data replication task** function, enter a name for the task and select the source share to be replicated. In this example, for snapshot of the source share select **snap00001**

In the **Destination IP** field, enter the IP address of the destination server (in this example, 192.168.0.220). Next, configure the **Destination Share** field by clicking on the  button. In this example, select the **Copy of Data** share. You can set the user name/password (if applicable) for the destination. Click on the **apply** button

Local Data Redundancy with DSS



Second RAID Array

4. ... Continue

After the DSS V6 WEB console has been reloaded, the new task should appear

Obtain additional information about a selected replication task by accessing the Data replication task function

Using the Create schedule for data replication task function, set the desired replication schedules or explicitly start, stop and delete data replication tasks as desired

The screenshot shows the open-e DSS V6 WEB console interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'ReplicationTask' under the 'MAINTENANCE' > 'backup' > 'Data replication' path. The left sidebar contains several sections: 'Backup pools' (with 'Pool60days' selected), 'Backup devices' (with 'VirtualTapesGroup' selected), 'Backup tasks' (with 'BackupTask' selected), and 'Data replication' (with 'ReplicationTask' selected). The main content area is divided into two panels. The top panel, 'Data replication task', displays a table of attributes and values:

Attribute	Value
Destination IP:	192.168.0.220
Source share:	Data
Snapshot:	snap00001
Destination share:	Copy of Data
Log replication errors:	Yes
Use ACL:	Yes
Don't delete files:	No

The bottom panel, 'Create schedule for data replication task', contains the following fields and controls:

- Comment:
- Select time:
- Interval:
-
- [Please apply changes or press "reload" button to discard](#)

At the bottom of the console, there is an 'Info' message: 'No schedules found.'

Local Data Redundancy with DSS



Second RAID Array

4. ... Continue

To obtain detailed information about the progress of data replication tasks, click the "STATUS" menu and select "tasks".
Next, click Data Replication tasks

The screenshot shows the open-e web interface. At the top, there is a navigation bar with tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is titled "Data Replication" under the "STATUS" menu. A breadcrumb trail indicates "You are here: STATUS > tasks > Data Replication".

On the left side, there is a "Tasks" sidebar menu with the following items: Backup, Restore from backup, Data Replication (highlighted), Antivirus, Volume Replication, and Snapshots. Two blue arrows point from the text box on the left to the "Data Replication" item in the sidebar and the "Running tasks" table.

The main content area displays two tables:

- Running tasks:** A table with columns Name, Type, and Start time. It contains one entry: ReplicationTask (Data replication) starting at 2010-10-10 13:00:05.
- Tasks log:** A table with columns Time, Name, Type, Status, and Action. It contains one entry: 2010-10-10 13:00:38, ReplicationTask (Data replication), Status: OK, Action: Started.

At the bottom of the interface, there is an "Event Viewer" icon and a footer that reads "Data Storage Software V6 - All rights reserved".

Local Data Redundancy with DSS



Second RAID Array

4. ... Continue

After the end of the Data Replication task all data from the "Data" share are available on the "Copy of data" share.

Share: Copy of Data



Name	Size	Type	Date Modified	Attributes
Documents		File Folder	2010-10-10 12:52	A
Pictures		File Folder	2010-10-09 18:51	A
Projects		File Folder	2010-10-09 19:15	A

The configuration of data replication is now complete.

Thank you!