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

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
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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
Local Data Redundancy with DSS

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
1. Hardware configuration

Data Server (DSS)
IP Address: 192.168.0.220

First RAID Array
Volume Group (vg00)
NAS volume (lv0000)
Share: Data
Snapshot: snap00001
Share: Restore from Backup
Snapshot: snap00000

Data Replication
Data Replication
Backup
Restoration

Second RAID Array
Volume Group (vg01)
NAS volume (lv01000)
Share: Copy of Data
Share: Backup of Data

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2. Configure the Local Backup

Under the “CONFIGURATION” menu select “volume manager” and Vol. groups

Add the selected physical units (Unit MD0) to create a new volume group (in this case, vg00) and click the apply button.
Add the selected physical units (Unit S003) to create a new volume group (in this case, vg01) and click the apply button.
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.
The source NAS volume is now configured. This logical volume lv0000 will be the source of the local backup and replication processes.
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 Snapshot is now created, and has been assigned to the logical volume lv0000.
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.
The destination NAS volume now configured. This logical volume lv0100 will be the destination of the local backup and replication processes.
Under the “CONFIGURATION” menu, select the “NAS settings”

Check the Use local backup box. Also select, Default share on LV as lv0100, and click the apply button
Under the "CONFIGURATION" menu, select "NAS resources" and Shares.

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.
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.
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.

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

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.
Now create the next 3 tapes accordingly.

Backup devices: Tape02
After creating tapes in “Backup device tapes” function, four tapes are present.

Backup devices: VirtualTapesGroup
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.
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.
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.
Local Data Redundancy with DSS

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

Backup tasks: BackupTask
Local Data Redundancy with DSS

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

Backup tasks: BackupTask

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

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**Local Data Redundancy with DSS**

2. … Continue
The configuration of Backup is now complete.
Under the “CONFIGURATION” menu, select “NAS resources”.

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.

First RAID Array

3. Create Restore from Backup
Under the “MAINTENANCE” menu, select “restore”

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

Restore task: RestoreTask
Local Data Redundancy with DSS

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

Click on the "Restore Task" name.

Restore task: RestoreTask

First RAID Array

3. ... Continue
Local Data Redundancy with DSS

Under the “STATUS” menu, select “tasks” and **Restore from backup**

In the “Runnings tasks” function detailed information on the current **Restore from backup** task is displayed.
Local Data Redundancy with DSS

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

The configuration of the Restore from Backup is now complete.
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".

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

**NAS volume (lv0000) → Snapshot (snap0001)**

4. Configure of the Data Replication
Under the “CONFIGURATION” menu, select “NAS settings”.

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

First RAID Array

4. ... Continue
Local Data Redundancy with DSS

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.

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.
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.
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
After the share to be replicated has been configured, go to the “MAINTENANCE” menu and select “backup” to choose Data replication.
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.
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.
To obtain detailed information about the progress of data replication tasks, click the “STATUS” menu and select "tasks". Next, click Data Replication tasks.
The configuration of data replication is now complete.

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

Local Data Redundancy with DSS
Thank you!