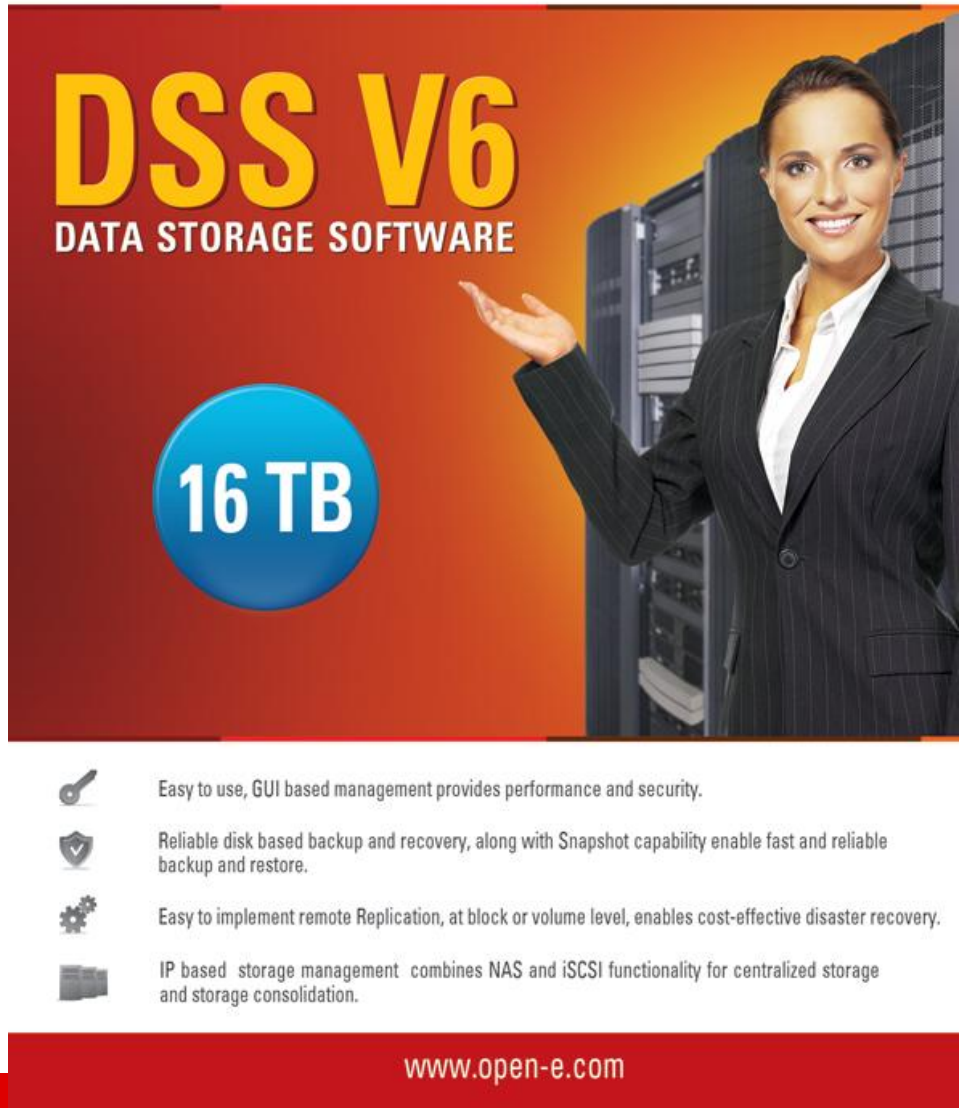
Step-by-Step Guide to Asynchronous Data (File) Replication (File Based) within a System Supported by Open-E® DSS V6



Software Version: DSS ver. 6.00 up85

Presentation updated: September 2011

Asynchronous **Data (File) Replication** within a System

	Replication Mode		Source/Destination			Data Transfer		Volume Type			
									iSCSI		
	Synchronous	Asynchronous	w/ System	LAN	WAN	File based	Block based	NAS	File-IO	Block-IO	FC
Asynchronous Data (File) Replication within a system		✓	✓			✓		✓			

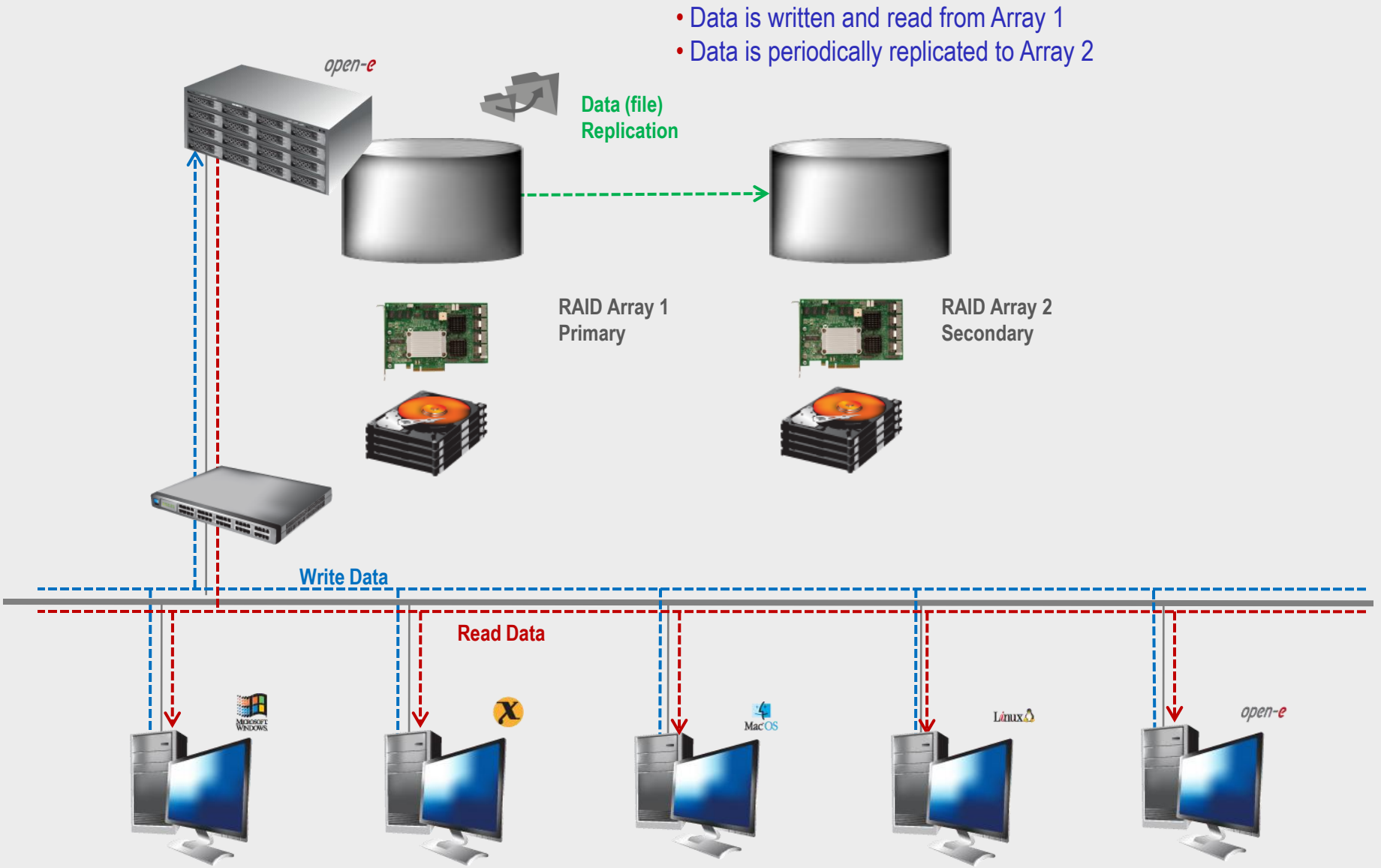
- **ASYNCHRONOUS DATA (FILE) REPLICATION within a System** enables **asynchronous** file and folder copy from one LUN or Volume Group to another on the same system.
  - With asynchronous replication a point-in-time snapshot copy of data on the source is made and copied to the target storage device.

Asynchronous **Data (File) Replication** within a System

REPLICATION BETWEEN TWO RAID ARRAYS WITHIN ONE SYSTEM

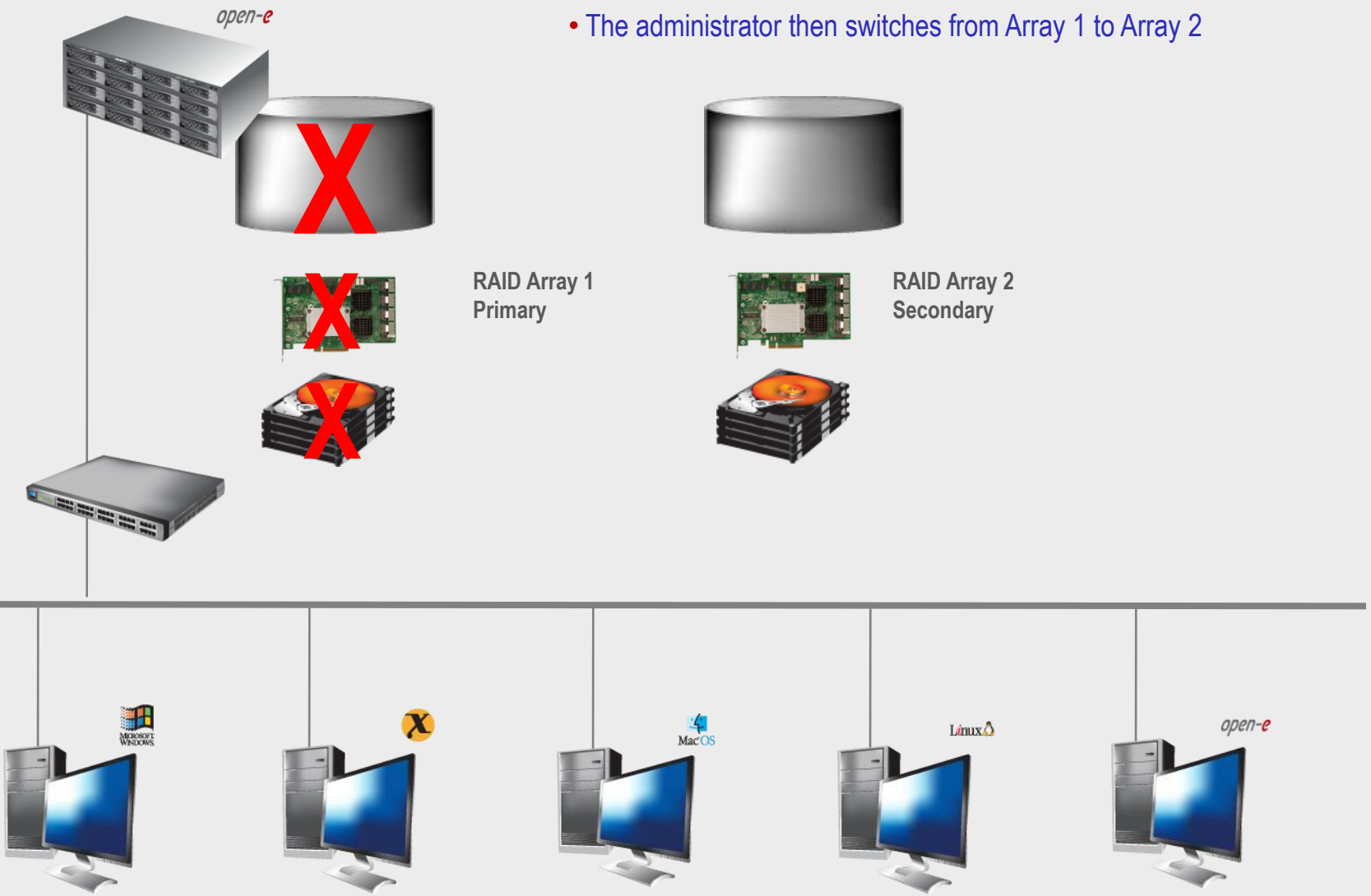
- **Recommended Resources**
  - Key Hardware
    - ✓ x86 compatible
    - ✓ RAID Controller 1
    - ✓ RAID Controller 2 (optional, single RAID controller can manage 2 RAID arrays as well)
    - ✓ HDD's
    - ✓ Network Interface Cards
  - Software
    - ✓ Open-E DSS V6
- **Benefits**
  - Data redundancy over RAID Array
  - Local data availability
  - Low cost solution
- **Disadvantages**
  - In case of complete system failure, data will be lost or inaccessible

Asynchronous **Data (File) Replication** within a System



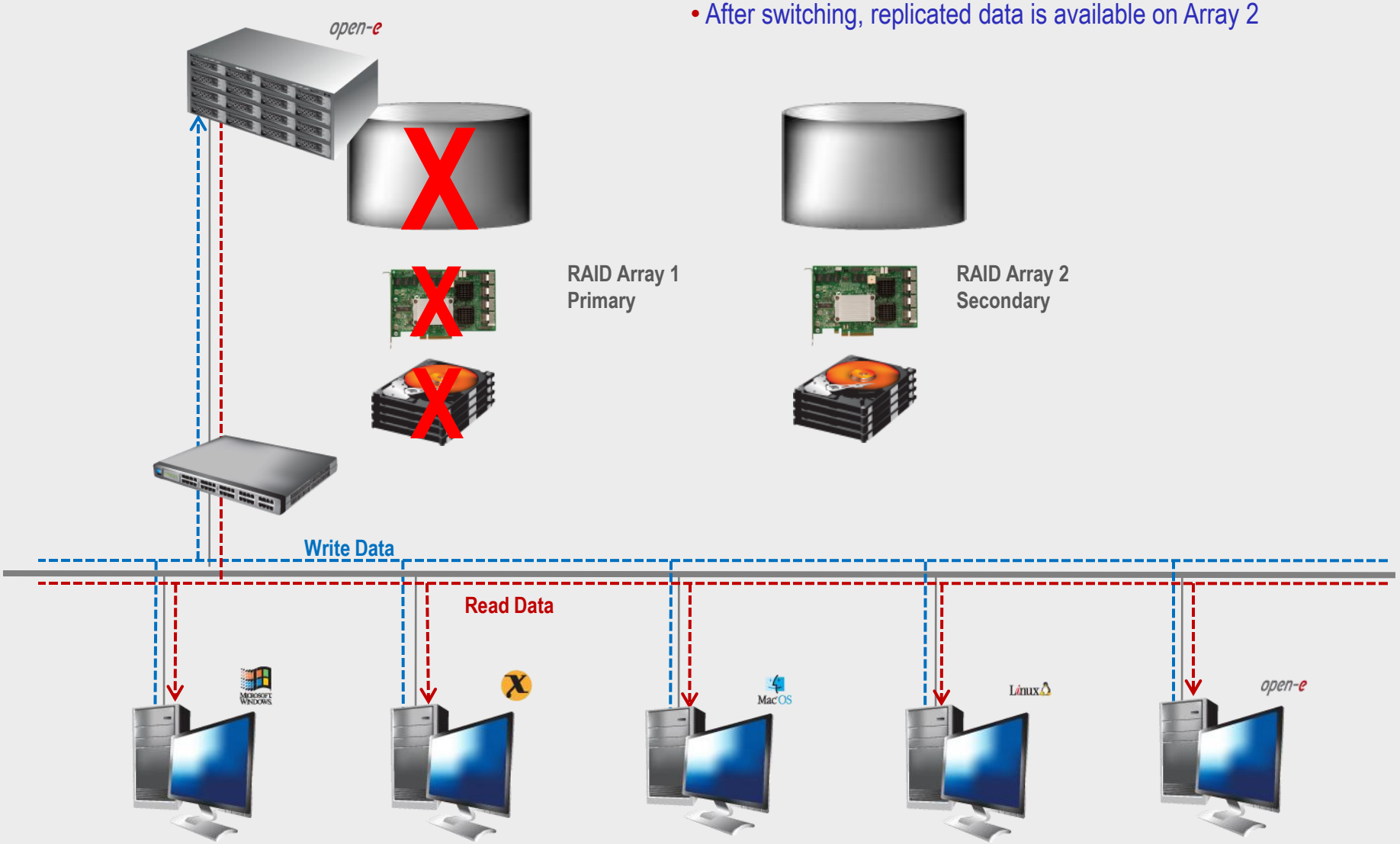
Asynchronous **Data (File) Replication** within a System

- In case of raid array error or disk drive error on the Raid Array 1, the server will send an e-mail notification to the administrator and/or users
- The administrator then switches from Array 1 to Array 2



Asynchronous **Data (File) Replication** within a System

- After switching, replicated data is available on Array 2



TO SET UP DATA (FILE) REPLICATION, PERFORM THE FOLLOWING STEPS:

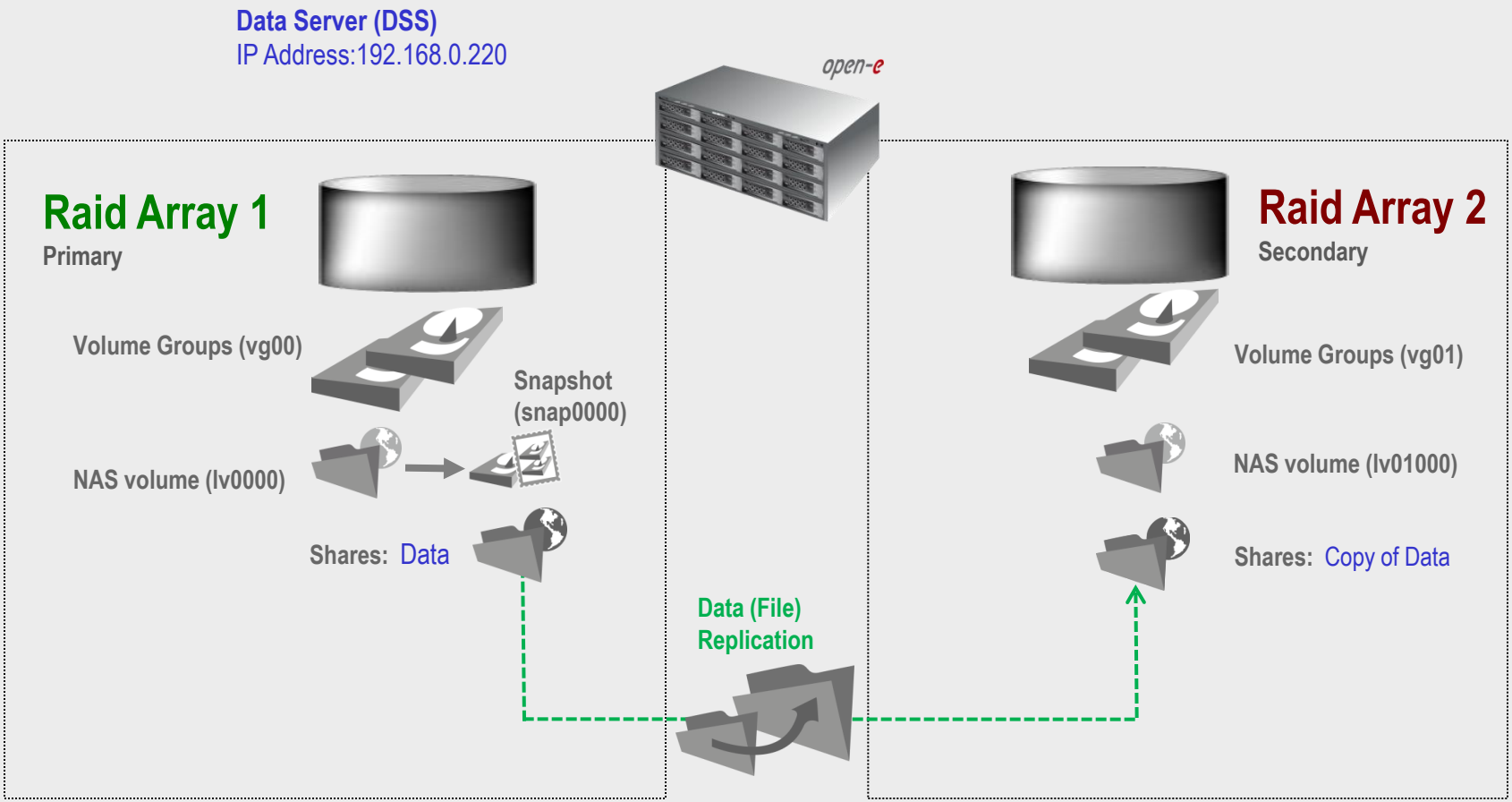
1. Configure Hardware
2. Configure the destination volume
3. Configure the source volume
4. Configure Schedule replication
5. Check the status of Data (File) Replication

Setting up Asynchronous **Data (File) Replication** within a System

1. Configure Hardware

Hardware Requirements

To run the Data (File) Replication on Open-E DSS V6, a minimum of two RAID arrays are required on one system. Logical volumes working on RAID Array 1 must have snapshots created and enabled. An example configuration is shown below:



Setting up Asynchronous **Data (File) Replication** within a System

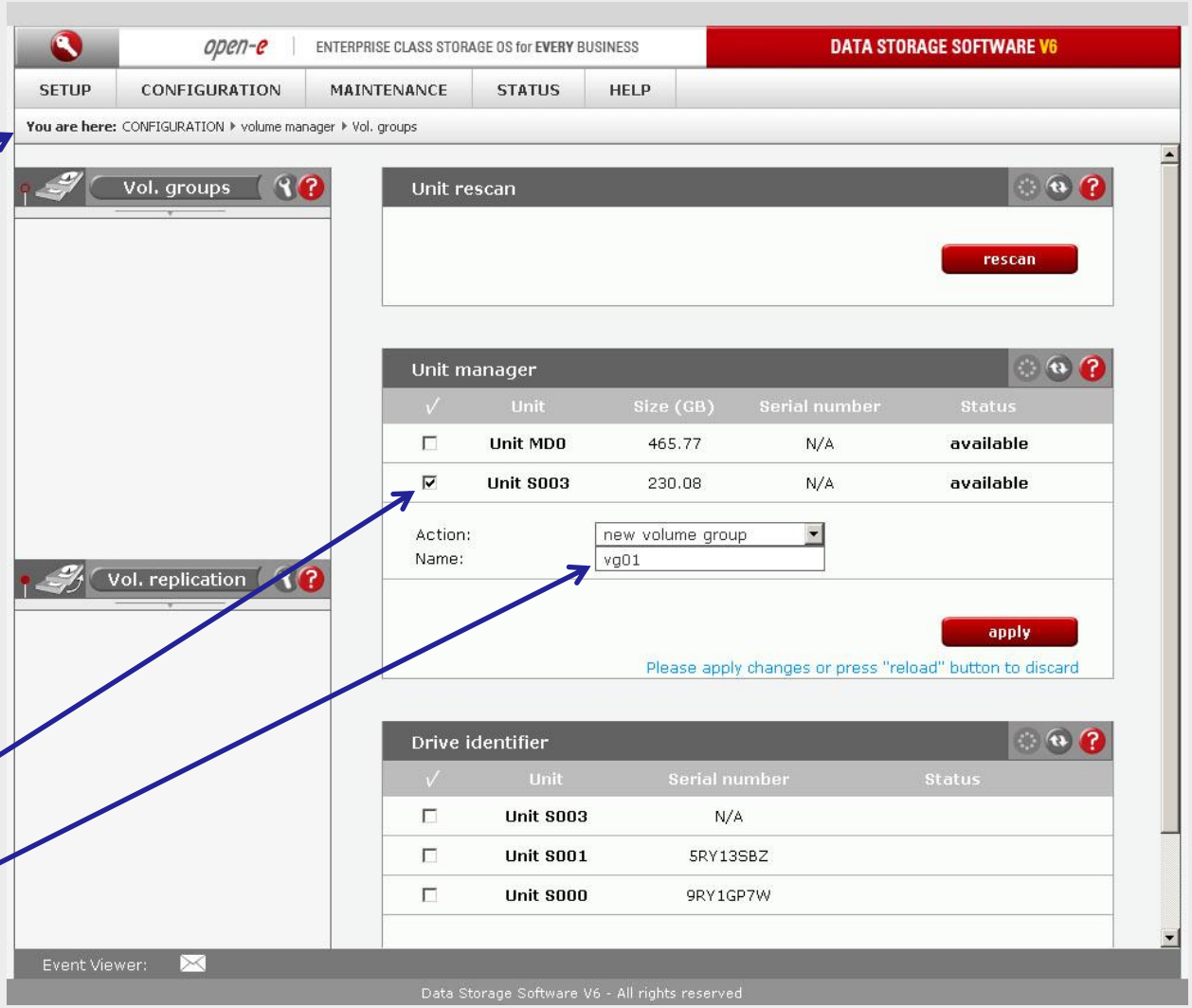
Data Server (DSS)
Raid Array 2
IP Address:192.168.0.220

2. Configure the destination volume

Under the "**CONFIGURATION**" menu, select "**volume manager**" and "**Vol. Groups**"

Volume Groups (vg01)

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



Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 2
IP Address:192.168.0.220

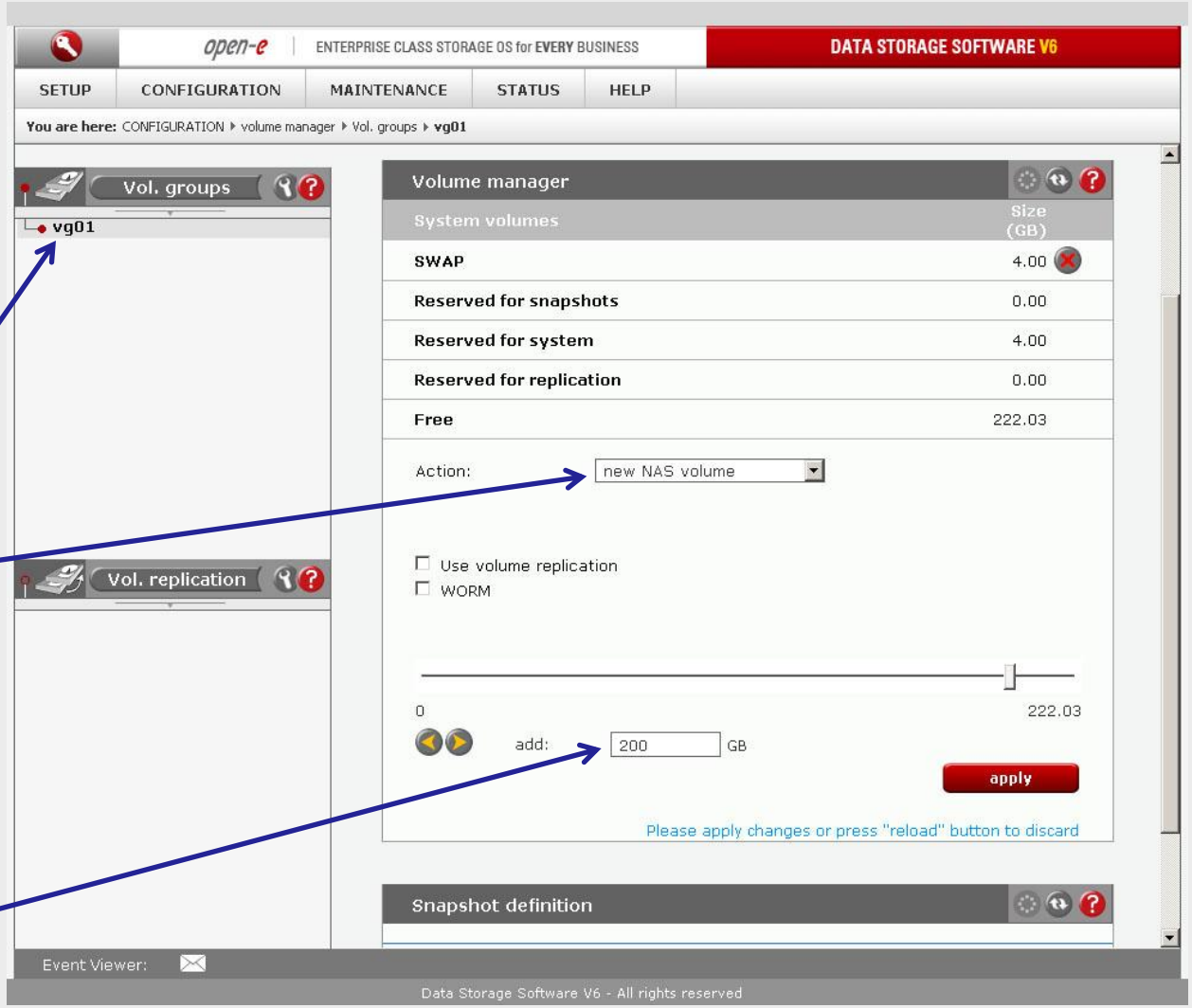
2. Configure the destination volume

Volume Groups (vg01)

NAS volume (lv0100)

Select the appropriate **volume group (vg01)** from the list on the left and create a **new NAS volume** of the required size. This logical volume **lv0100** will be the destination of the replication process.

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



Setting up Asynchronous **Data (File) Replication** within a System

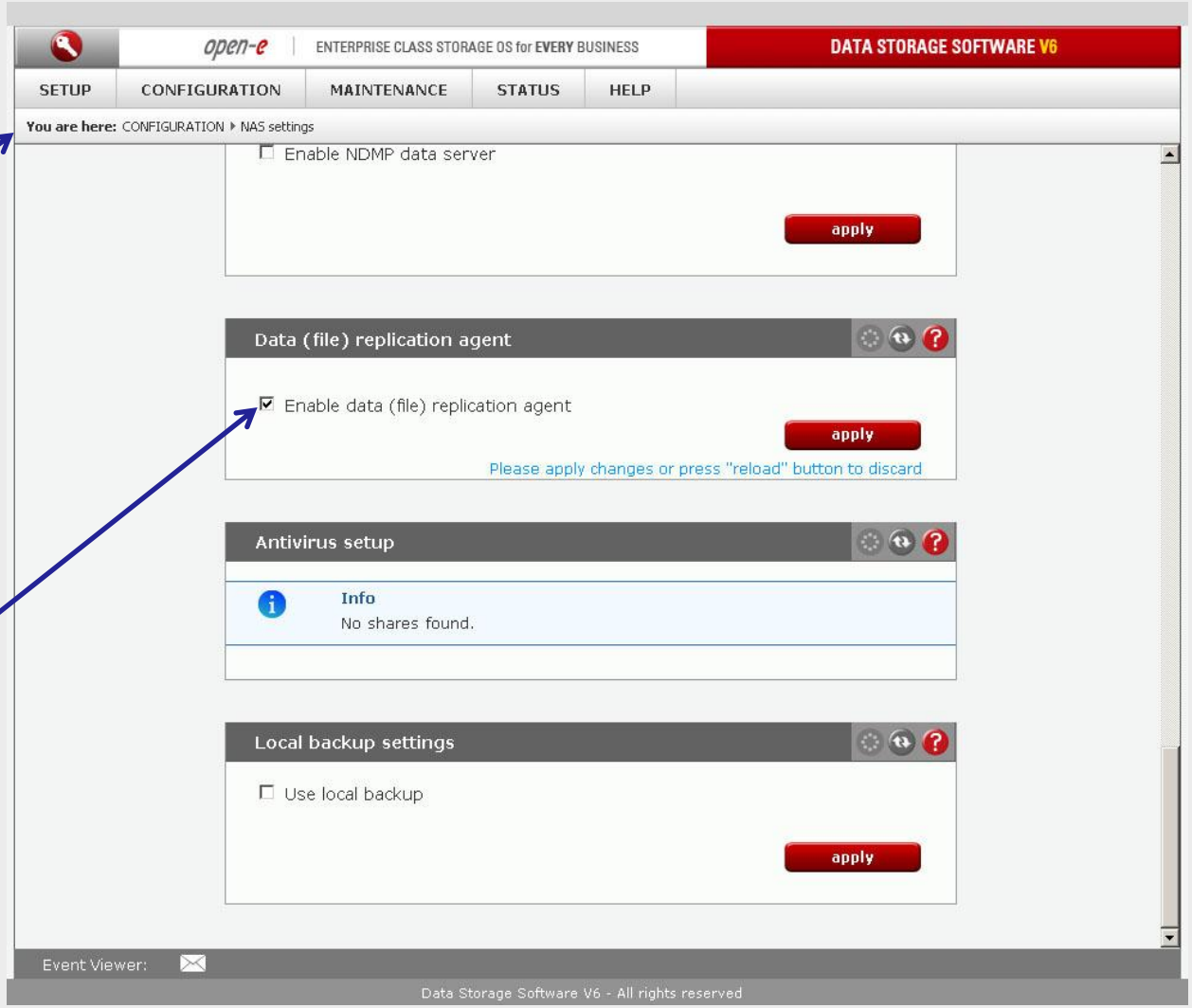
Data Server (DSS)
Raid Array 2
IP Address:192.168.0.220

2. Configure the destination volume

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

Data (File) Replication

In the **Data (file) replication agent** function, check the **Enable data (file) replication agent** box, and click the apply button



Setting up Asynchronous **Data (File) Replication** within a System

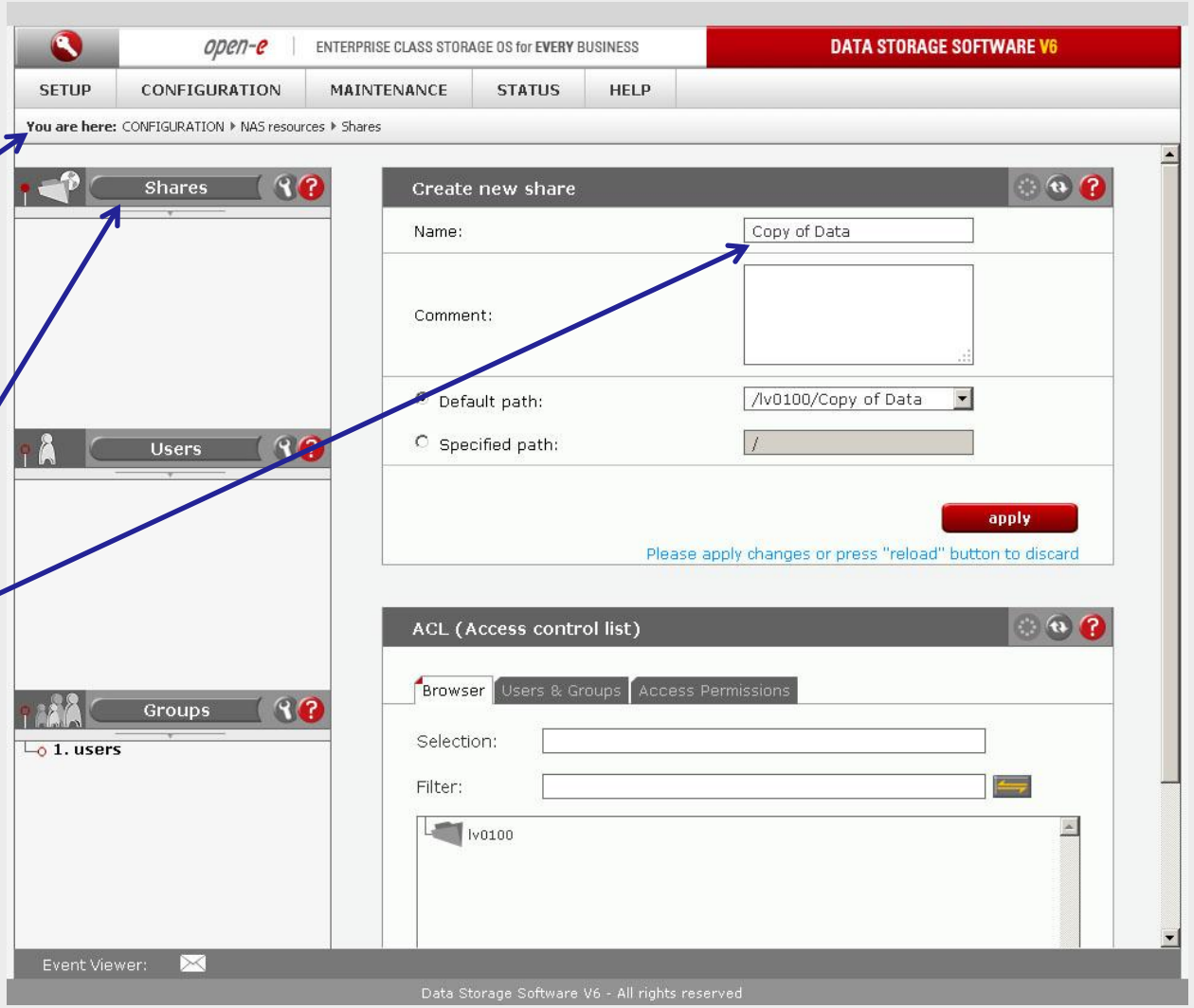
Data Server (DSS)
Raid Array 2
IP Address:192.168.0.220

2. Configure the destination volume

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

Shares: Copy of Data

A tree listing of NAS shared volumes (**Shares**) will appear on the left side of the DSS console. In the example, a shared volume named **Copy of Data** on **lv0100** has been created.



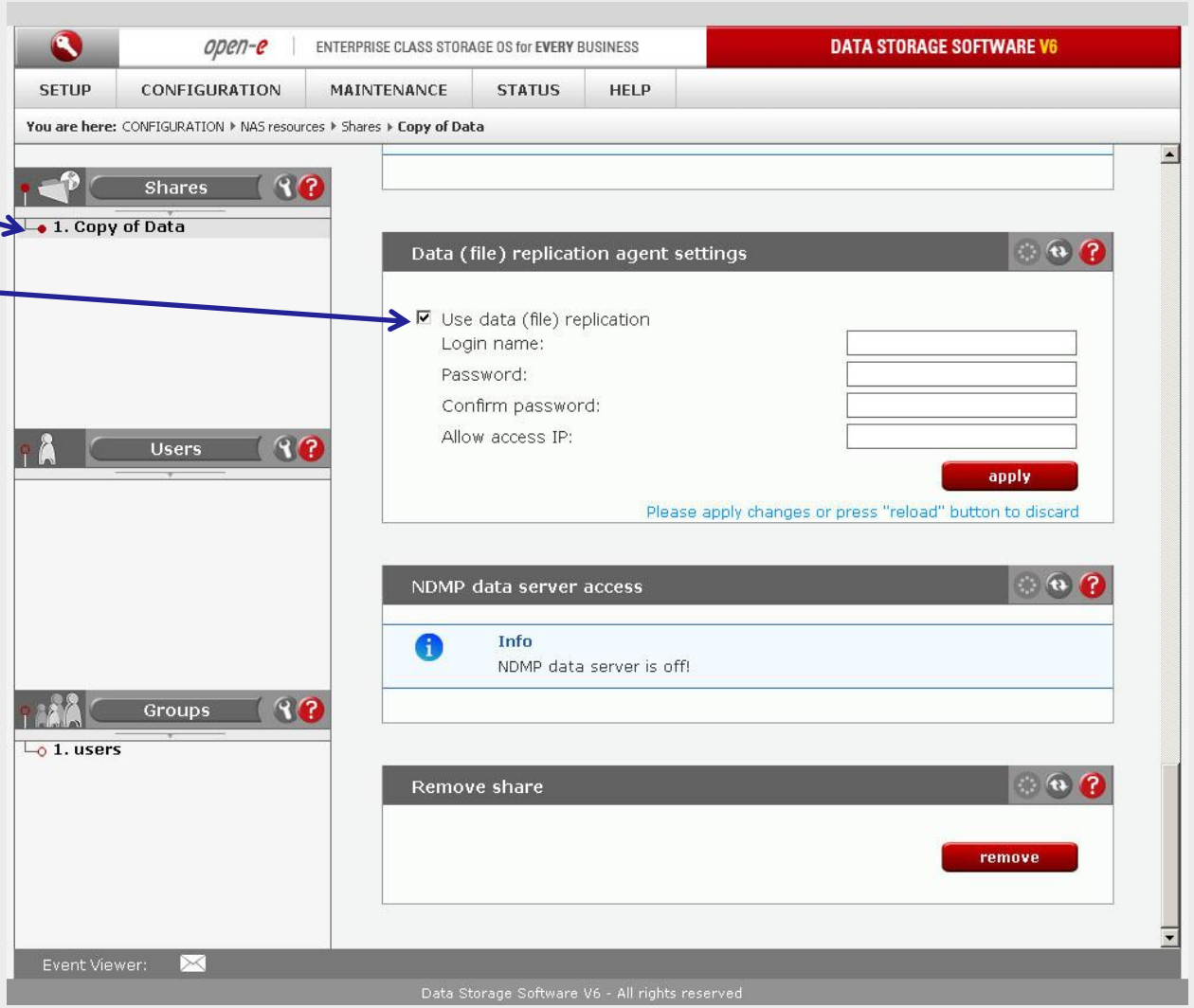
Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 2
IP Address:192.168.0.220

2. Configure the destination volume

After creating the new shared volume, click on the share name, check the box **Use data (file) replication** within **Data (file) replication agent settings** function and click on the apply button.

Data (File) Replication



NOTE:
It is 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 (File) Replication tasks from accessing this share.

The configuration of the destination volume is now complete.

Setting up Asynchronous **Data (File) Replication** within a System

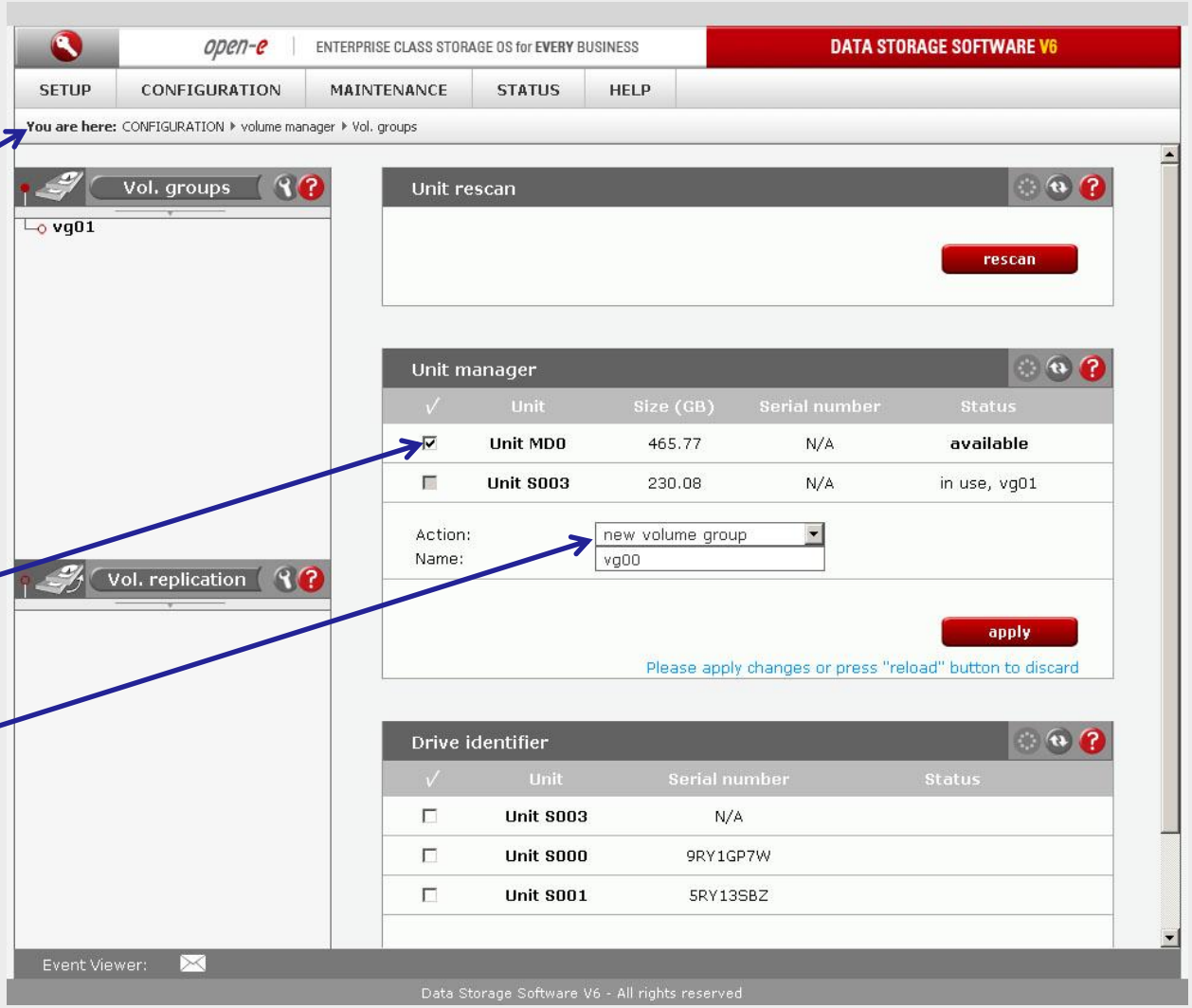
Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

Under the "**CONFIGURATION**" tab, select "**volume manager**"..

Volume Groups (vg00)

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



Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

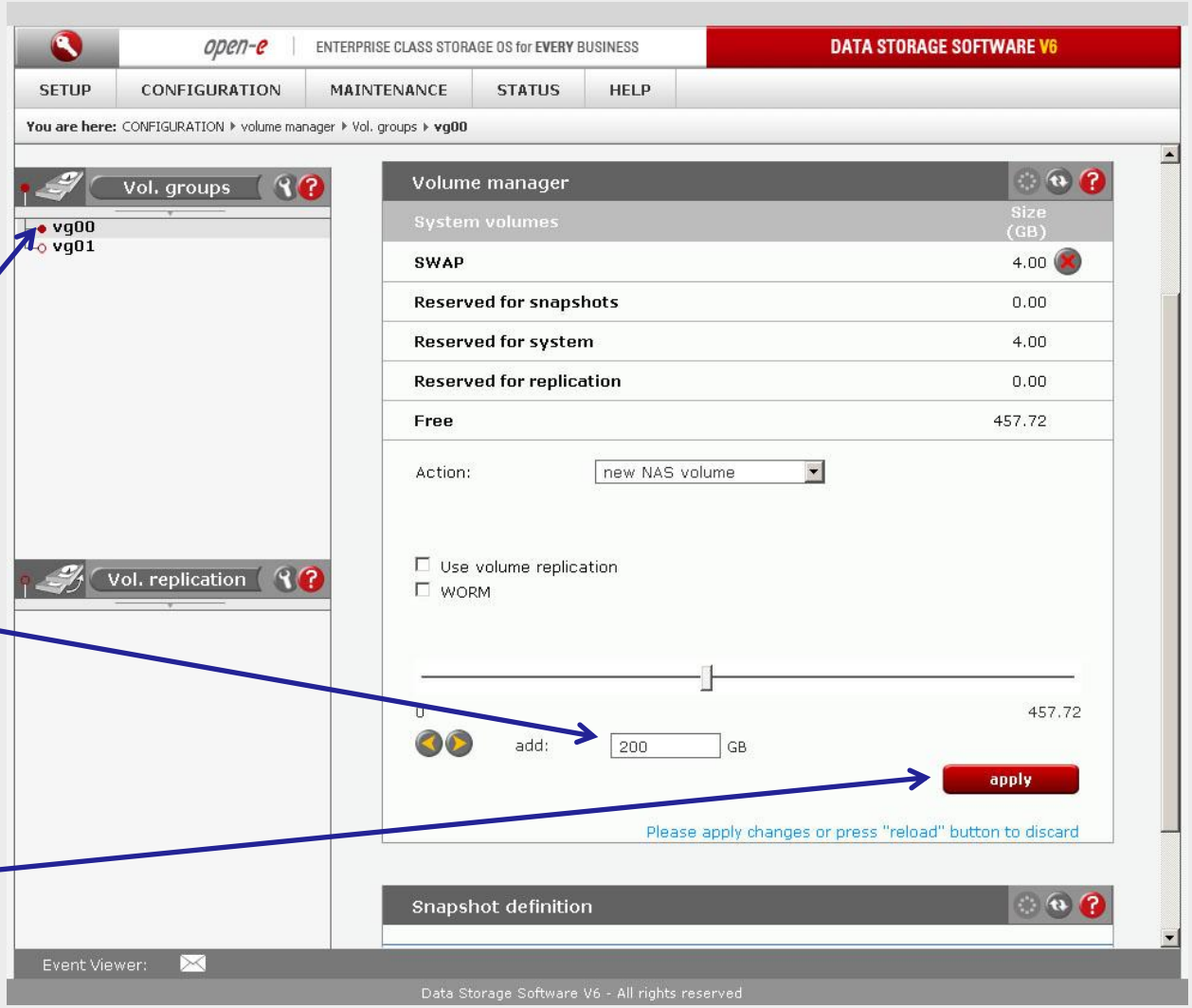
3. Configure the source volume

Volume Groups (vg00)

NAS volume (lv0000)

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 will be the source of the replication process.

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



Setting up Asynchronous **Data (File) Replication** within a System

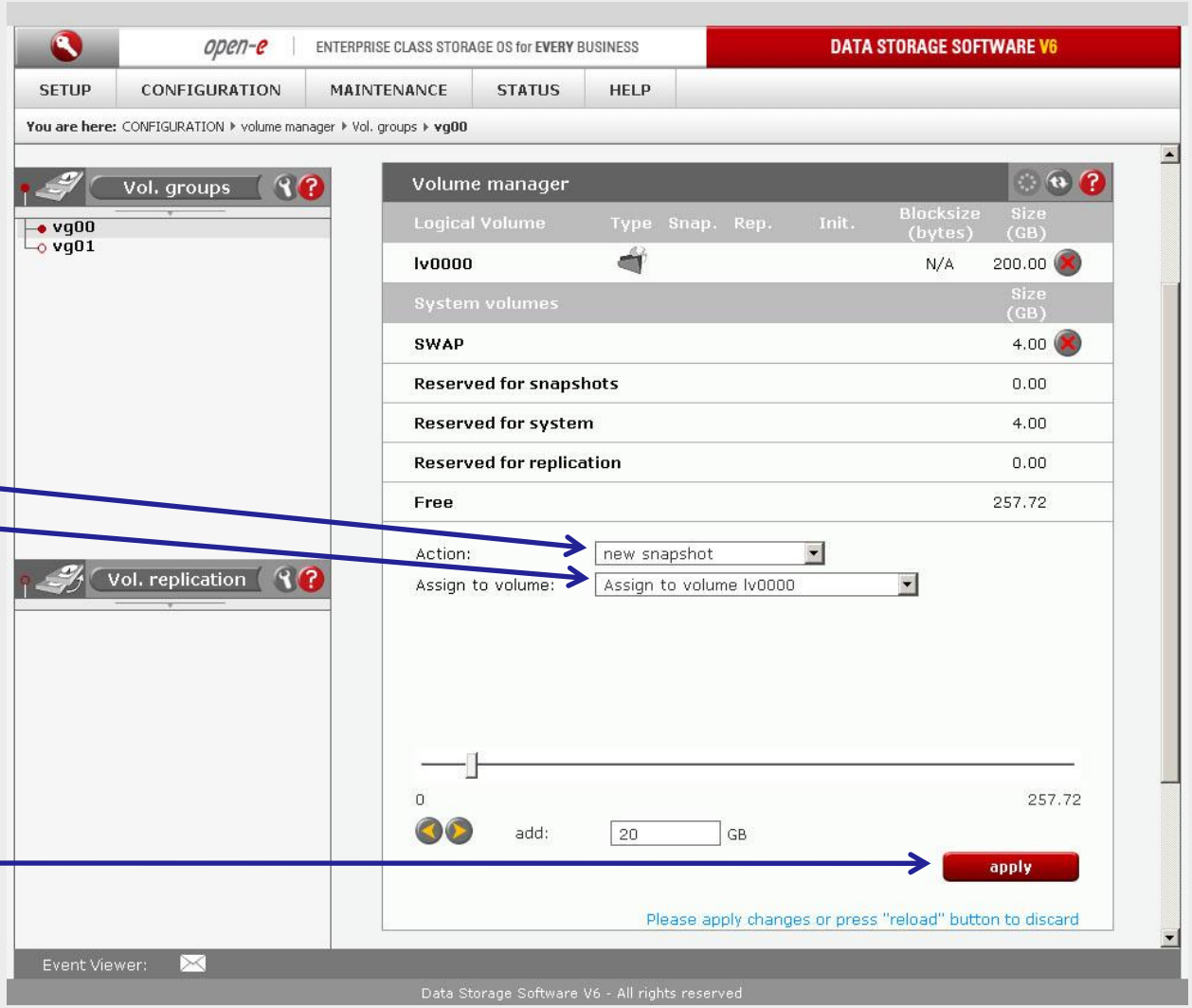
Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

To run the replication process, you must first define a **new snapshot** to be taken of the volume to be replicated. Snapshot size should be large enough to accommodate the changes you anticipate, 10% to 15% of the logical volume is sometimes recommend. Next, you select "**Assign to volume lv0000**".

Snapshot 

After assigning an appropriate amount of space for the **new snapshot,** click the apply button.



Setting up Asynchronous **Data (File) Replication** within a System

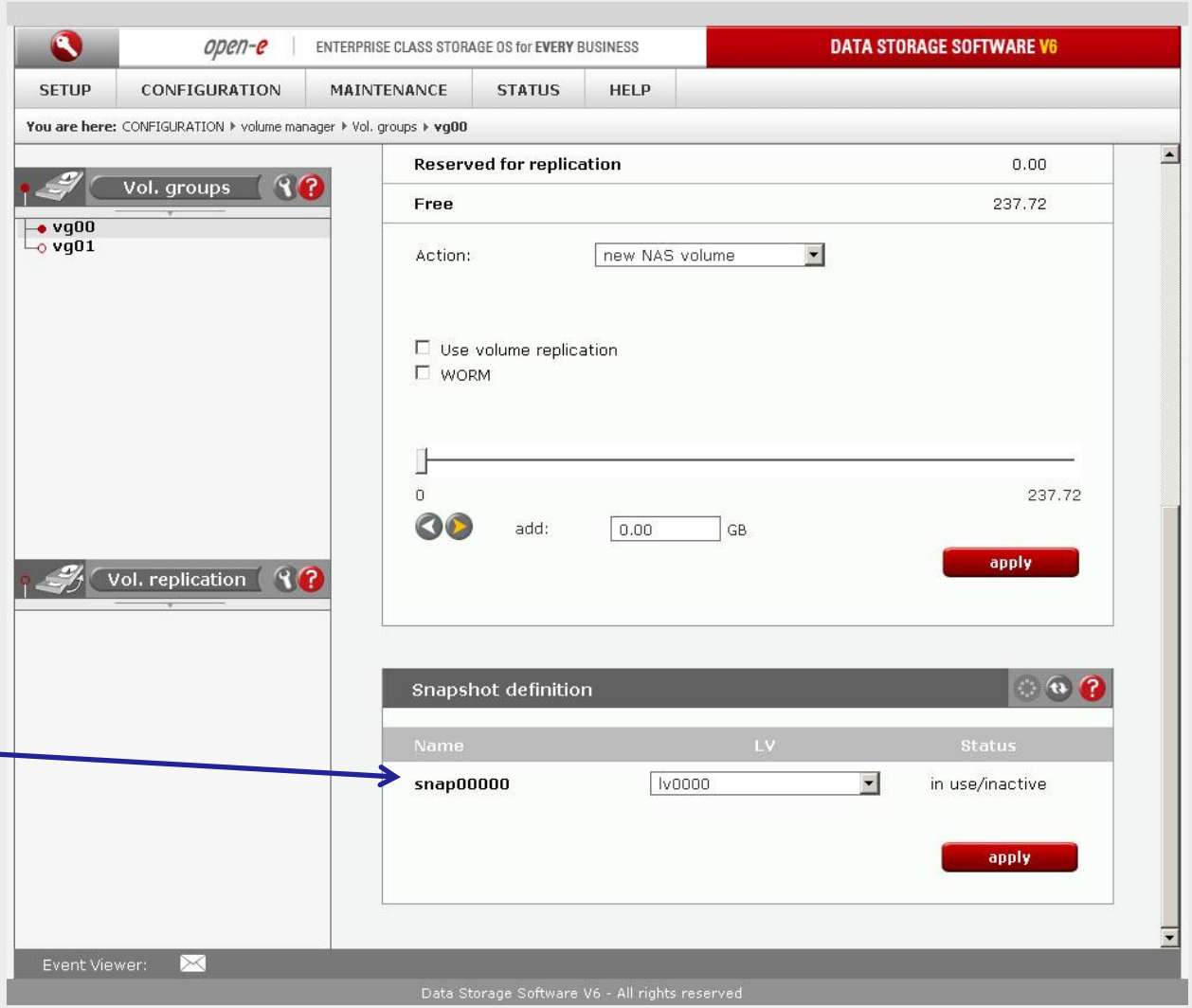
Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

NAS volume
(lv0000)

Snapshot (snap0000)

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

3. Configure the source volume



Setting up Asynchronous **Data (File) Replication** within a System

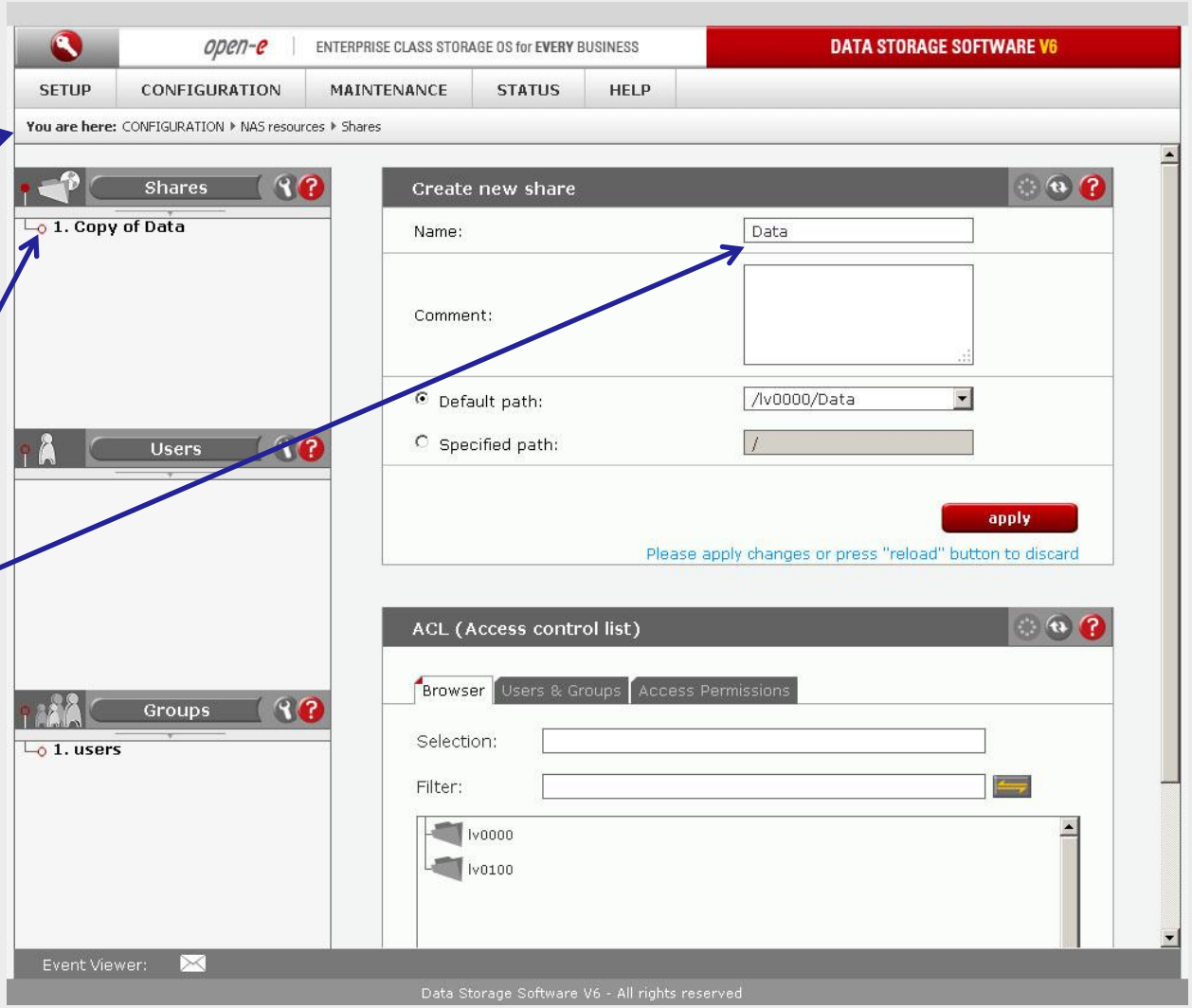
Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

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 console. In the example, a shared volume named **Data** has been created.



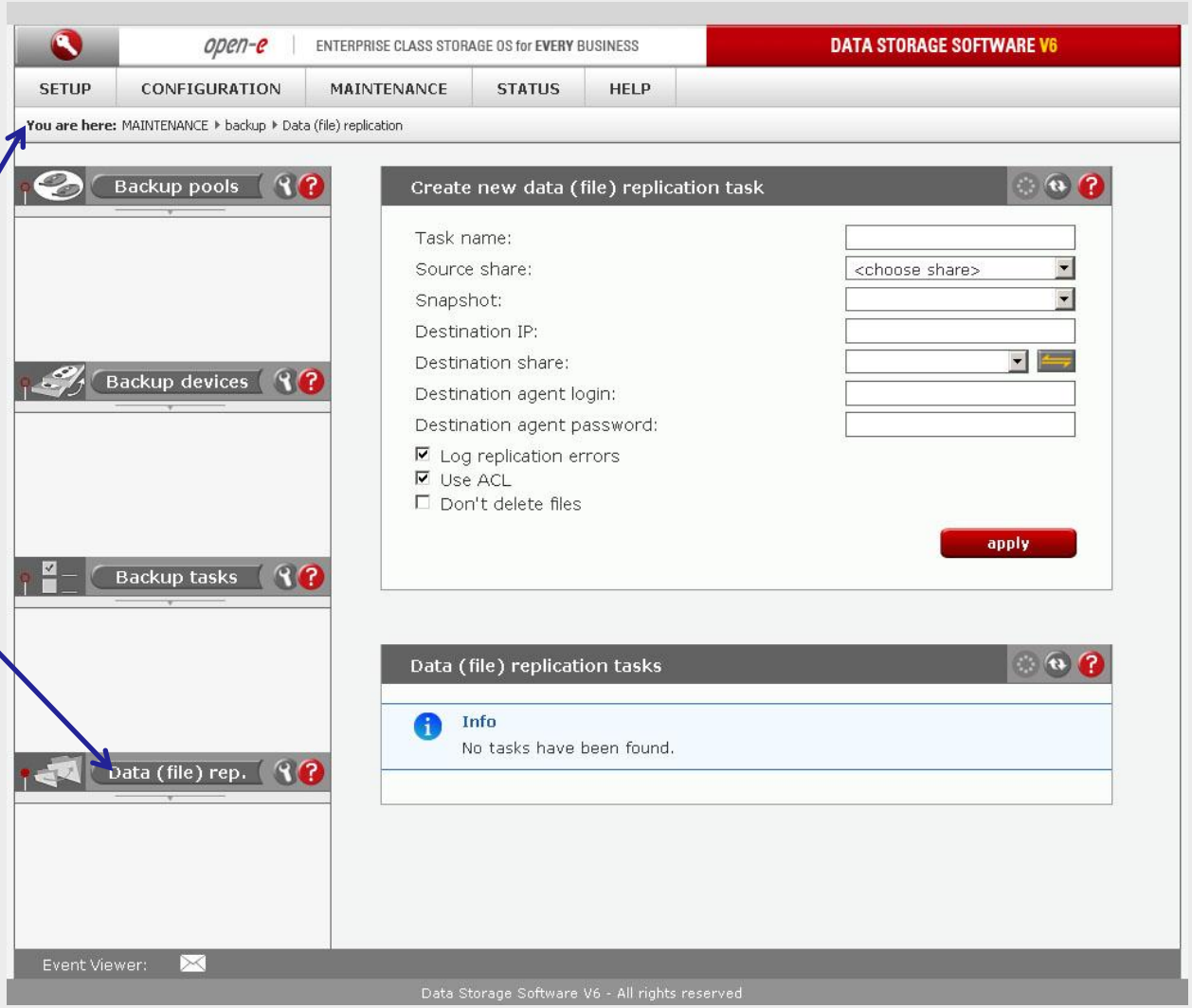
Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

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

Data (File) Replication



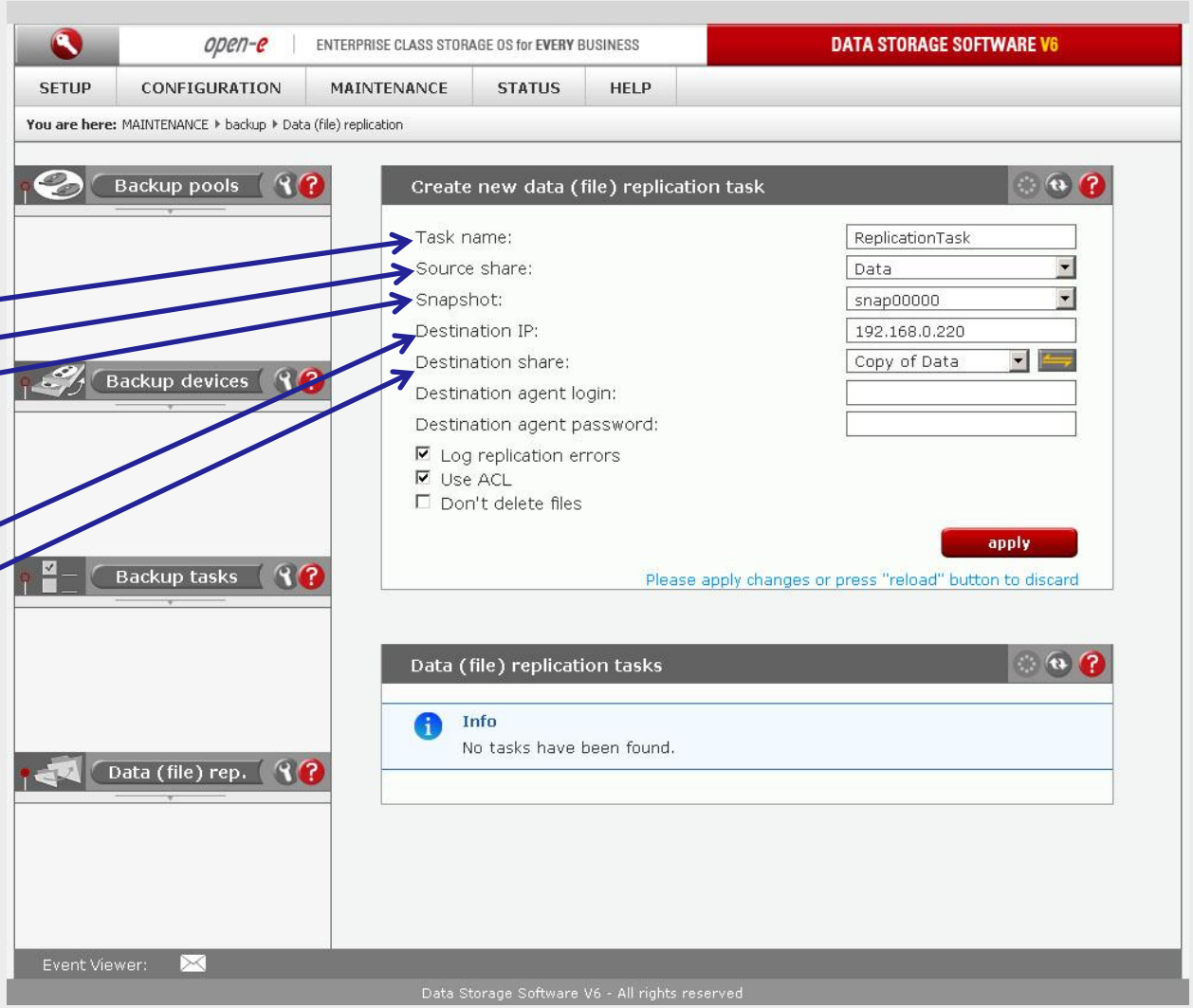
Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

Select the source share to be replicated. Under the **Create new data (file) replication task** function, enter a name for the task and select the source share to be replicated. At this point, a snapshot (**snap00000**) of the source share will automatically be assigned.

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



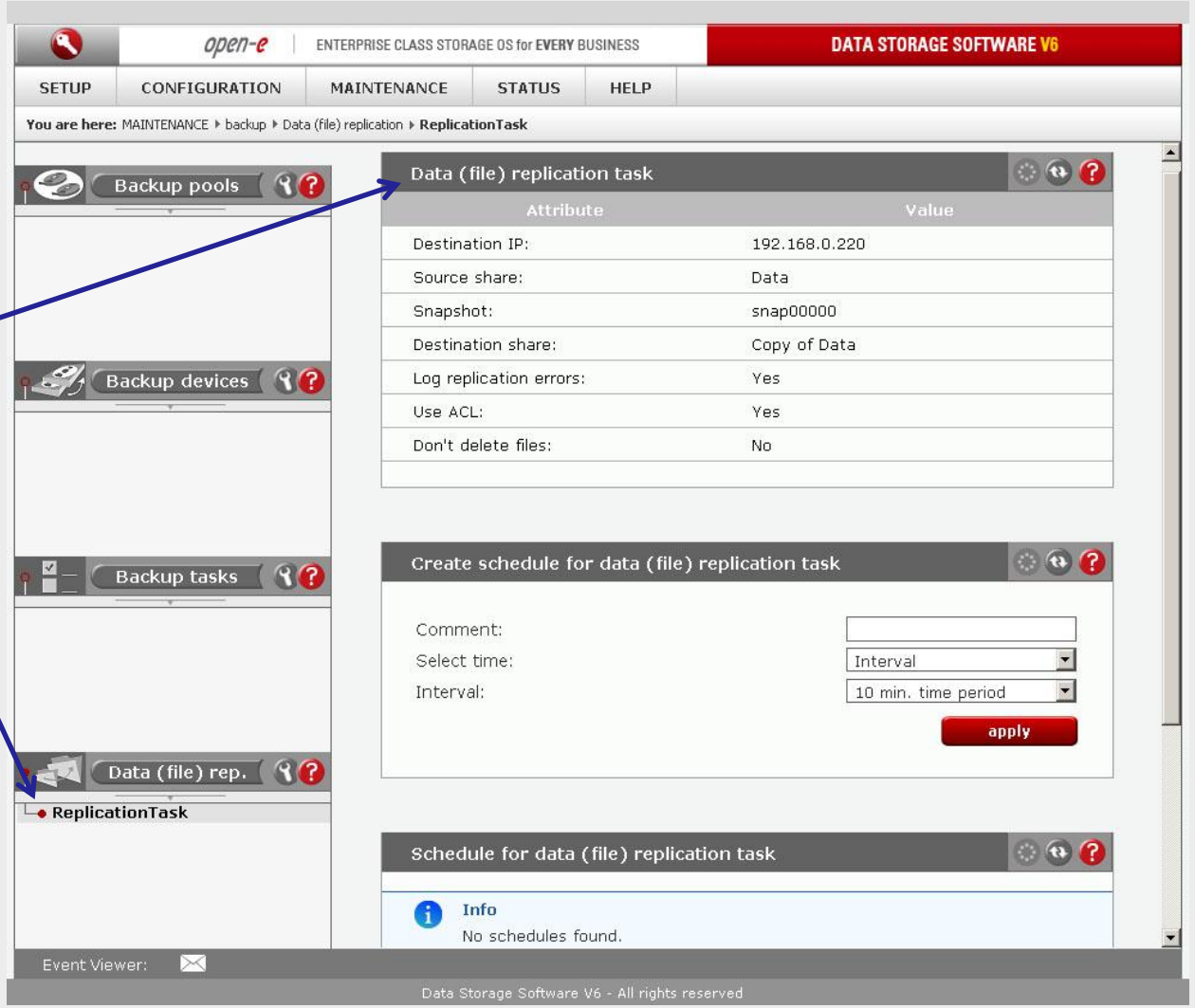
Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

3. Configure the source volume

After the DSS V6 Web console has been reloaded, the new task should appear. Additional information about a selected replication task is visible in the **Data (file) replication task** function.

The configuration of the source volume is now complete.

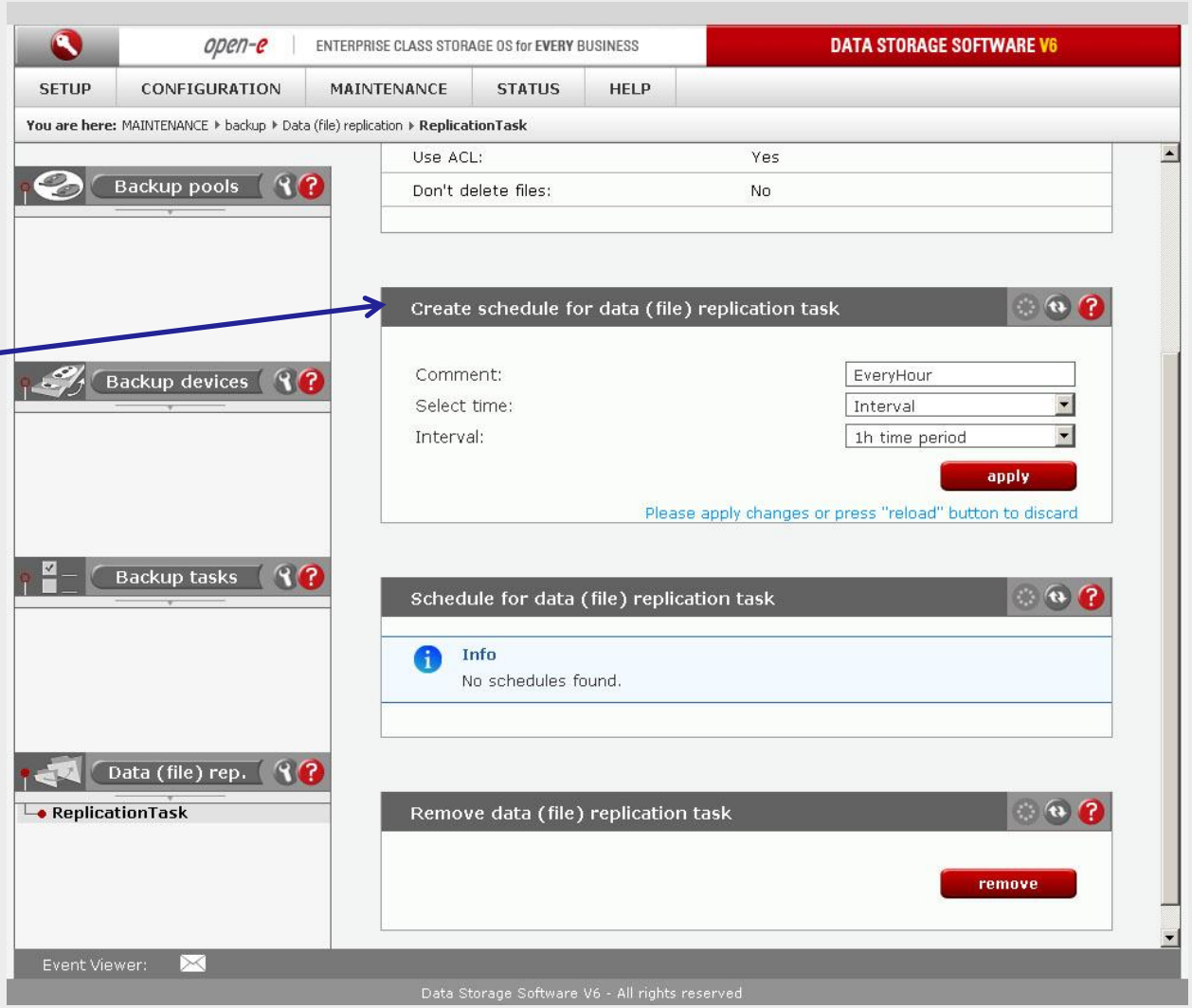


Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

4. Configure Schedule replication

Using the **Create schedule for data (file) replication task** function, set the desired replication schedules or explicitly start, stop and delete Data (File) Replication tasks, as desired.

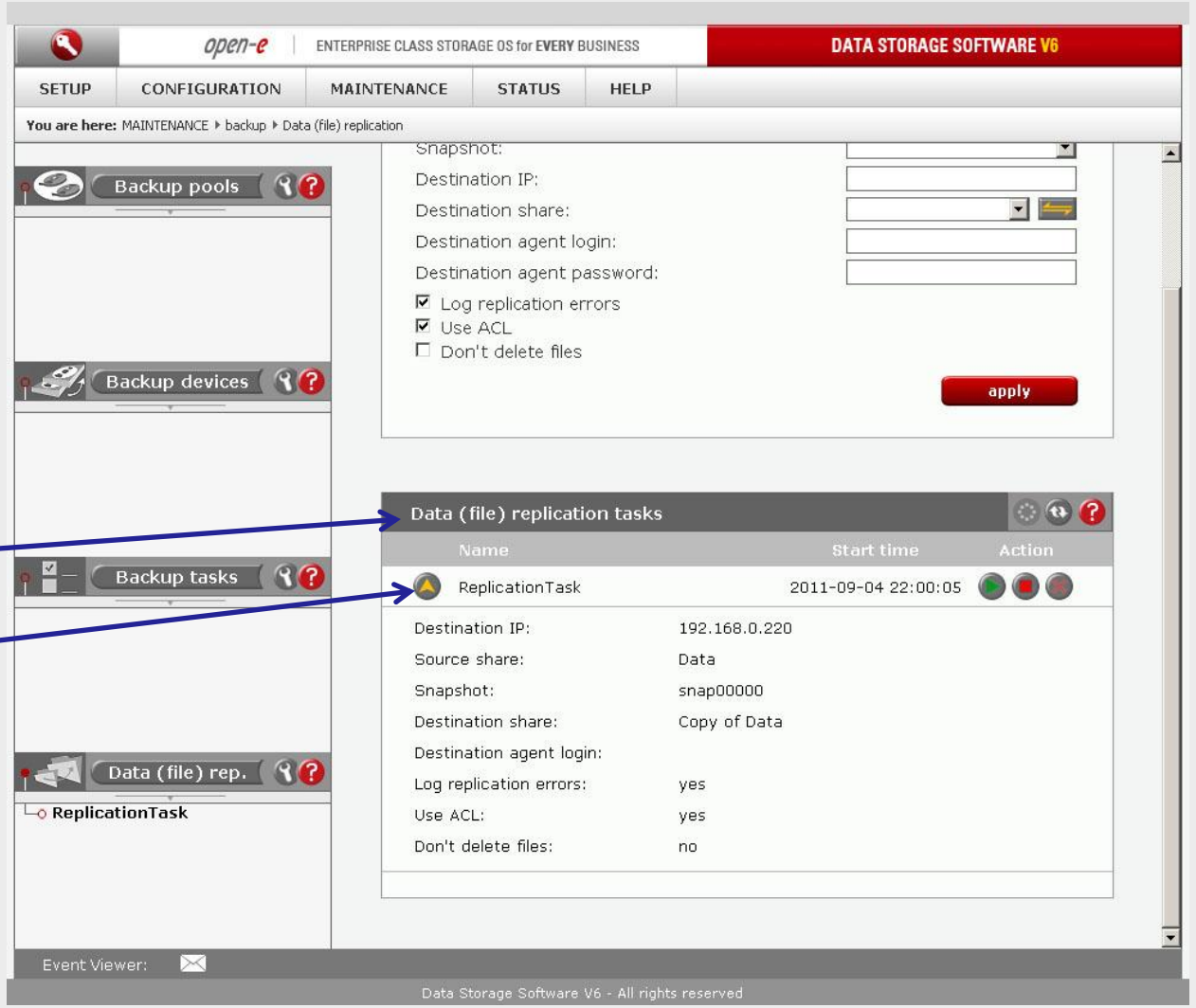


Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

4. Configure Schedule replication

In the **Data (file) replication tasks** function set the desired data (file) replication to start or stop, or you can delete tasks. Click on the button next to the task name (in this case ReplicationTask) to display detailed information on the current replication task (the replication task running at 10 pm)

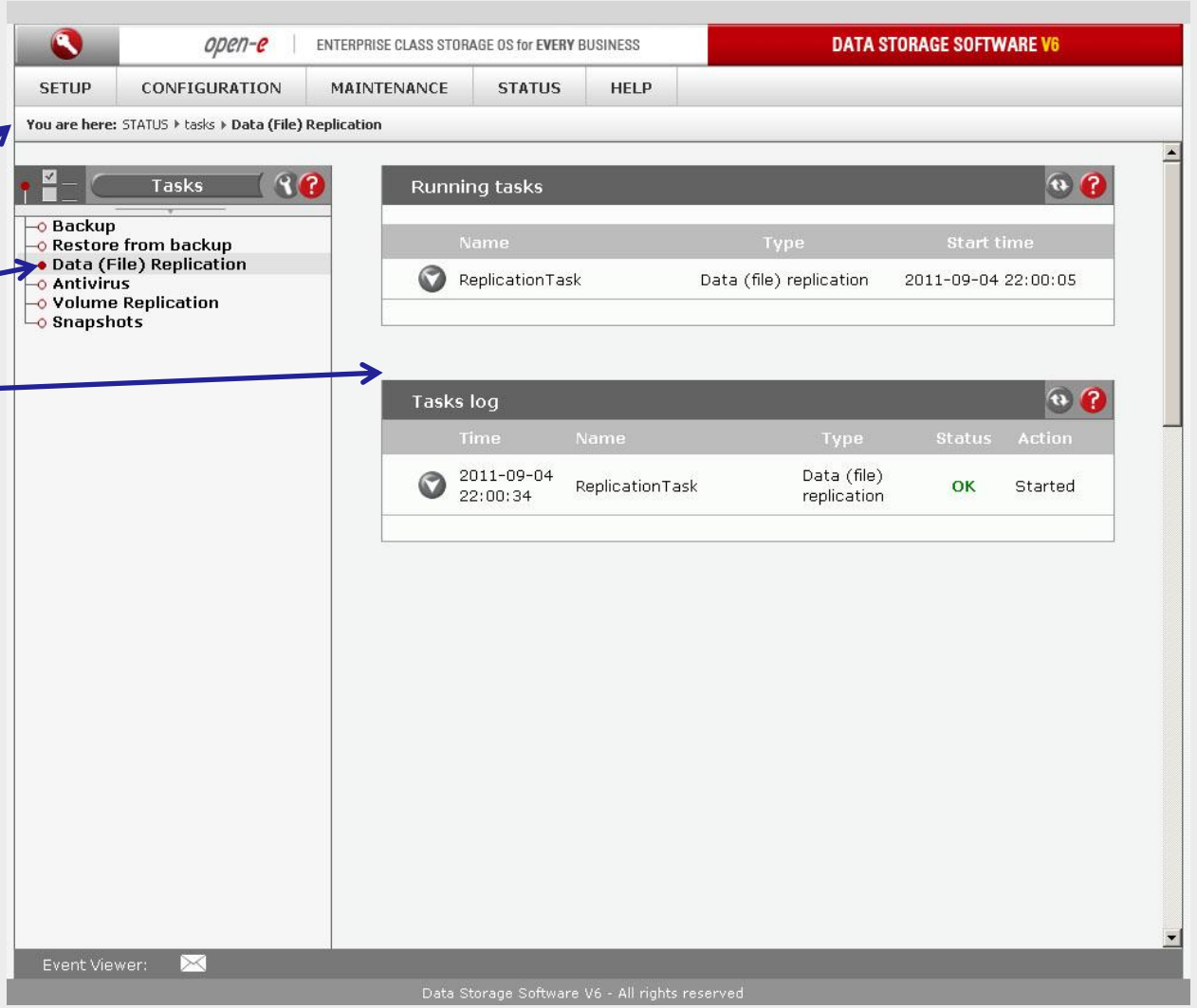


Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1
IP Address:192.168.0.220

5. Check the status of Data (File) Replication

To obtain detailed information about the progress of Data (File) Replication tasks, under the "**STATUS**" menu, select "**tasks**". Next click **Data (File) Replication** tasks and select the Tasks



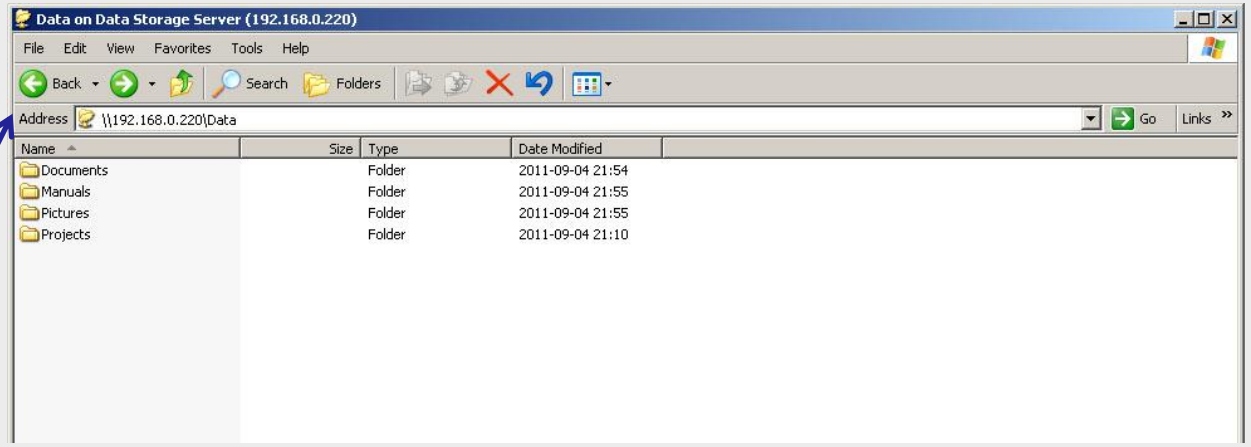
Setting up Asynchronous **Data (File) Replication** within a System

Data Server (DSS)
Raid Array 1 and 2
IP Address:192.168.0.220

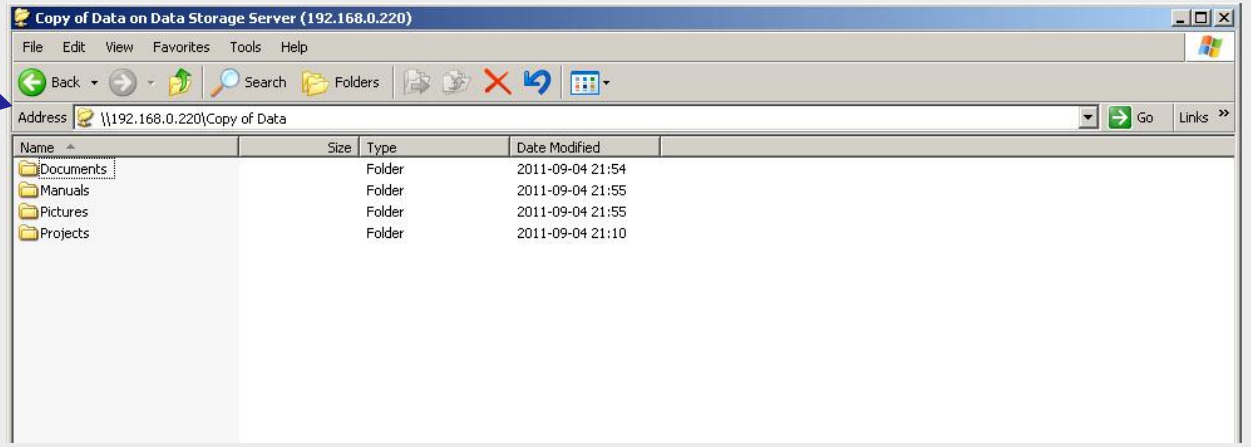
5. Check the status of Data (File) Replication

Share: Data

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



Share: Copy of Data



The configuration of the source and destination volumes for asynchronous Data (File) Replication is now complete.

Thank you!