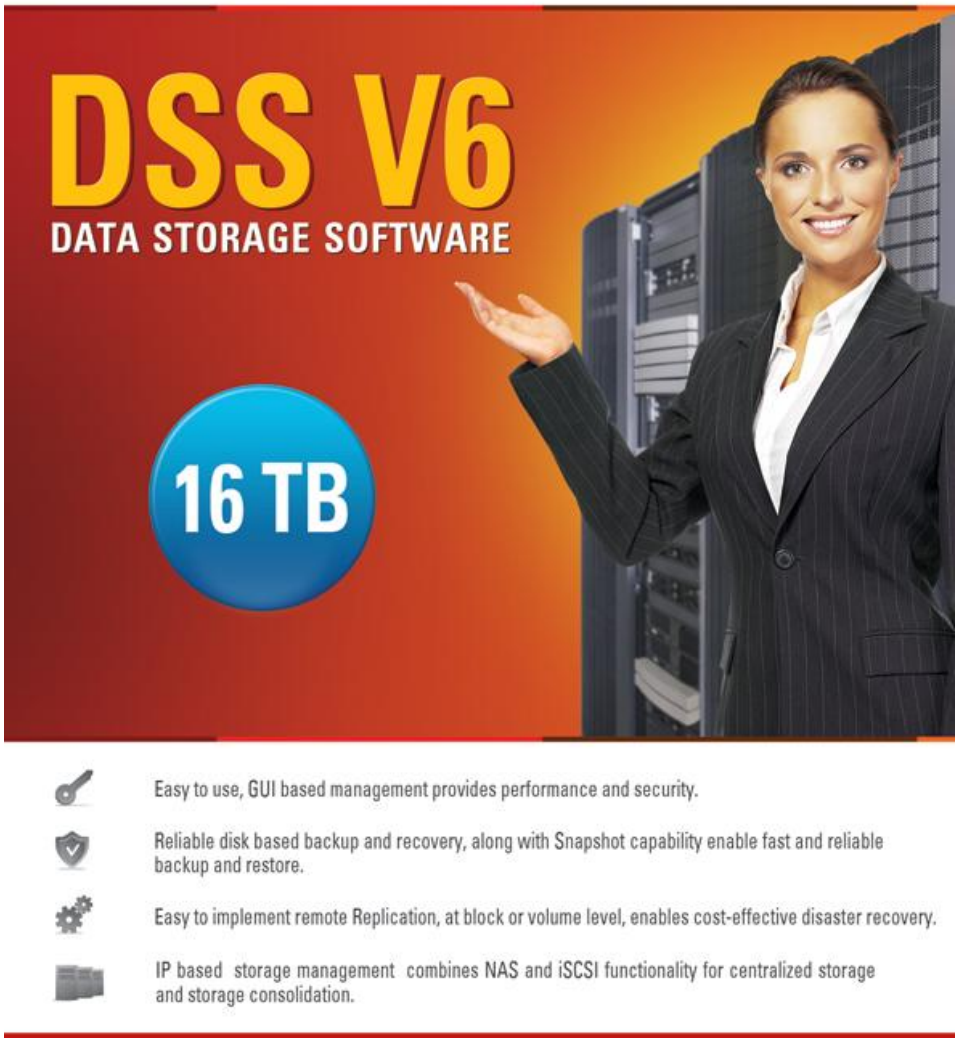
Step-by-Step Guide to Asynchronous *Data (File) Replication (File Based) over a LAN Supported by Open-E® DSS V6*



Software Version: DSS ver. 6.00 up85

Presentation updated: September 2011

Asynchronous **Data (File) Replication** over a LAN

	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 over a LAN		✓		✓		✓		✓			

- **ASYNCHRONOUS DATA (FILE) REPLICATION over a LAN** enables **asynchronous** file and folder copy from one storage system to another over Local Area Network:
  - With asynchronous replication a point-in-time – snapshot copy of data on the source is made and copied to the target storage system.

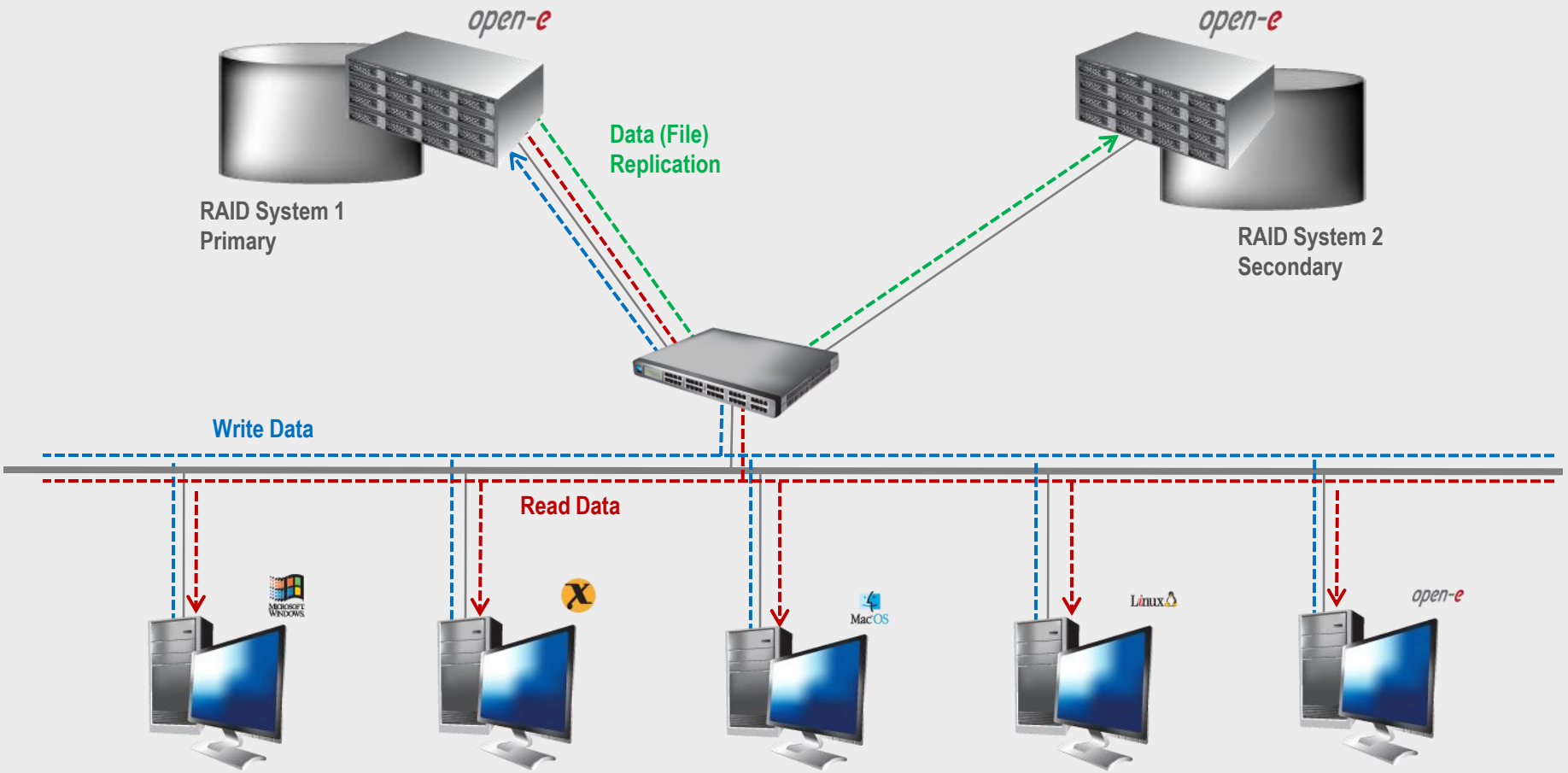
Asynchronous **Data (File) Replication** over a LAN

REPLICATION BETWEEN TWO SYSTEMS WITHIN ONE LAN

- **Recommended Resources**
  - Key Hardware (two systems)
    - ✓ x86 compatible,
    - ✓ RAID Controller,
    - ✓ HDD's,
    - ✓ Network Interface Cards.
  - Software
    - ✓ Open-E DSS V6, 2 units.
- **Benefits**
  - Data Redundancy over a LAN,
  - Enables continuous data access.
- **Disadvantages**
  - High cost of solution,
  - Natural disasters can destroy local systems.

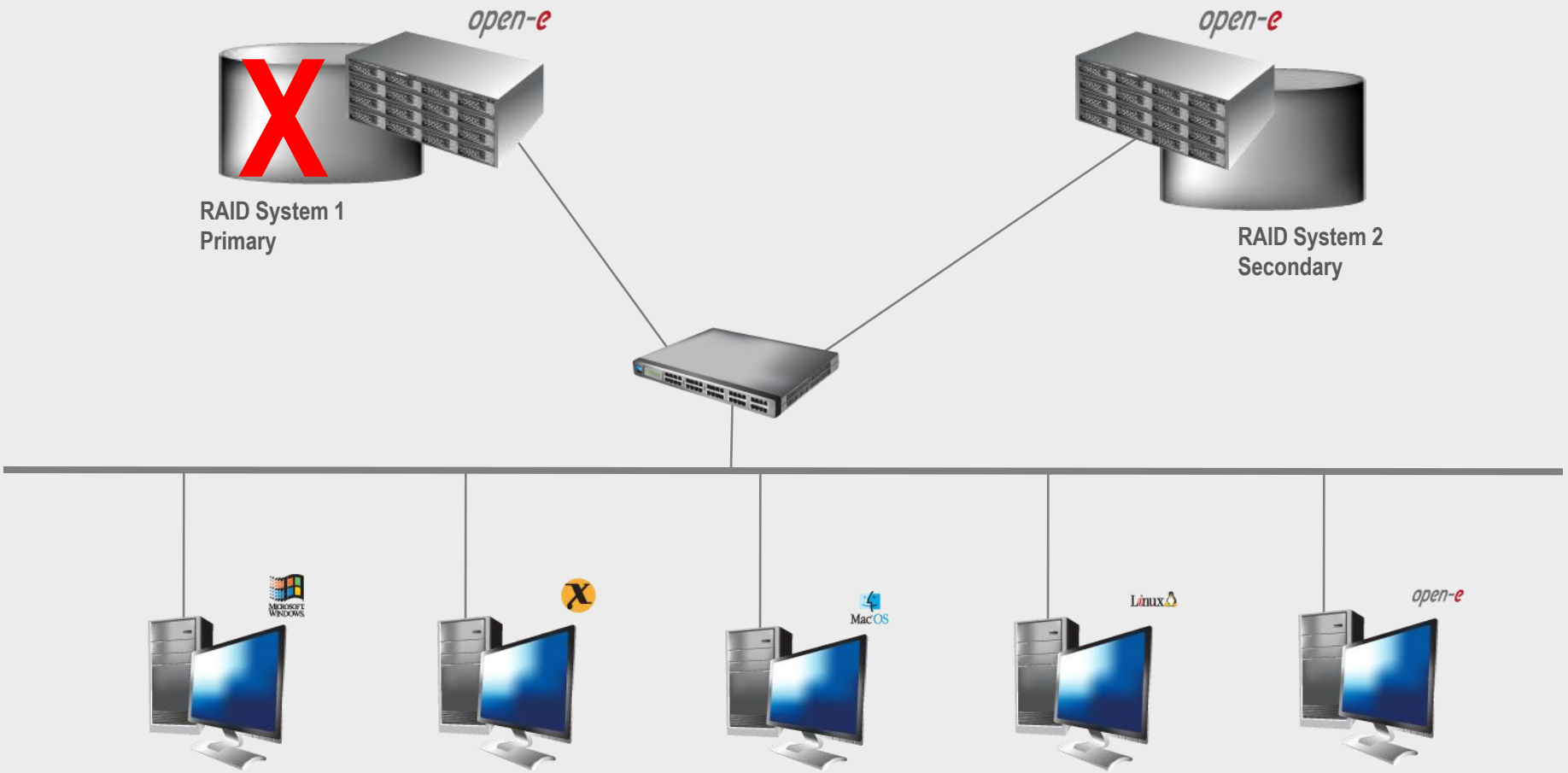
Asynchronous **Data (File) Replication** over a LAN

- Data is written and read to System 1
- Data is continiously replicated to System 2



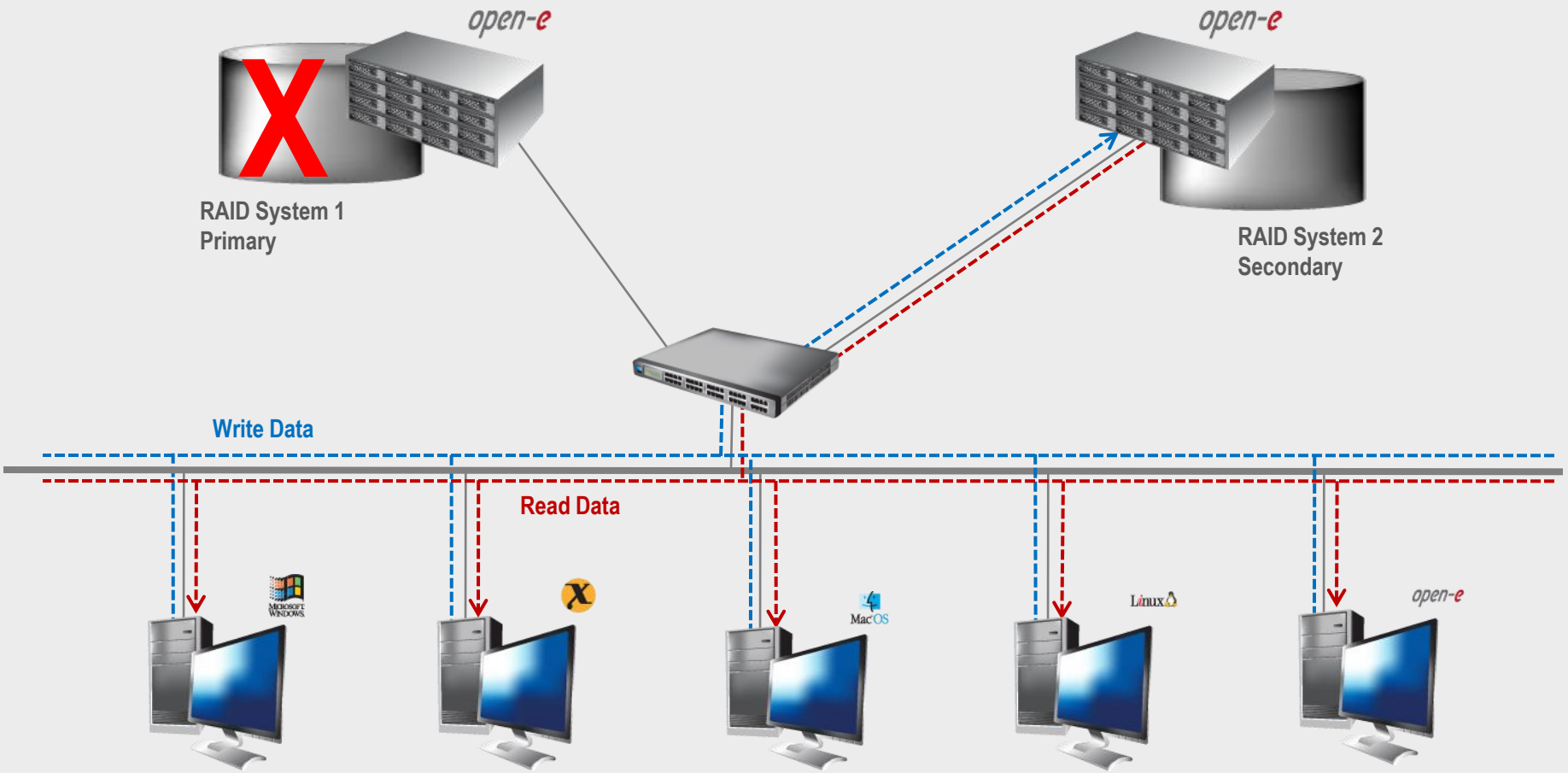
Asynchronous **Data (File) Replication** over a LAN

- In case of raid array error or disk drive error on the System 1, the server will send an e-mail notification to the administrator,
- In the case of a failure of system 1, users will be notified,
- Administrator then switches users to the System 2.



Asynchronous **Data (File) Replication** over a LAN

- After switching, replicated data is available on System 2



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

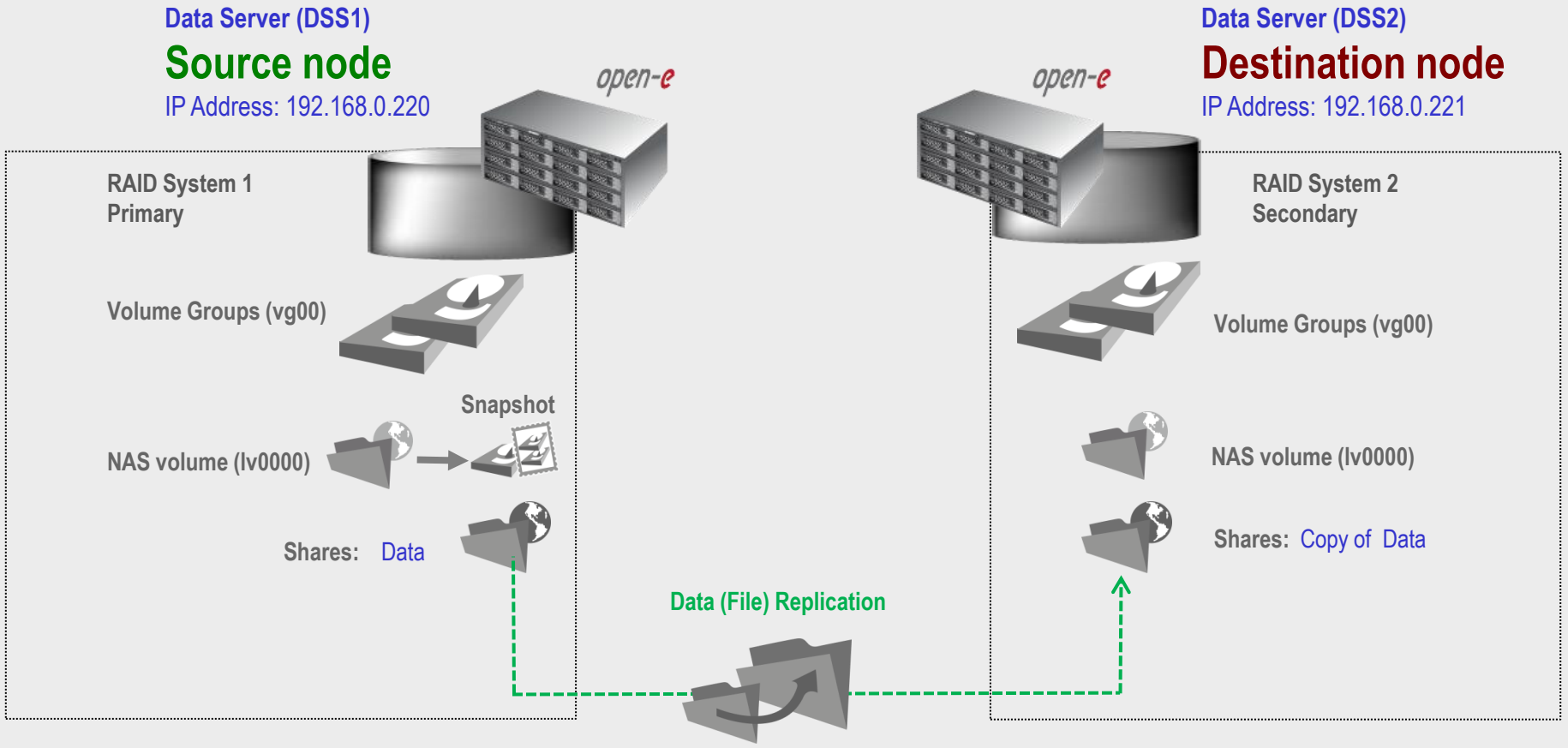
1. Configure Hardware
2. Configure the destination node
3. Configure the source node
4. Configure schedule replication
5. Check the status of Data (File) Replication

Setting up Asynchronous **Data (File) Replication** over a LAN

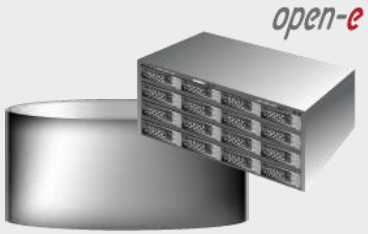
1. Configure Hardware

Hardware Requirements

To run the Data (File) Replication on Open-E DSS V6 over LAN, a minimum of two systems are required. Logical volumes working on source node must have snapshots created and enabled. Both servers are working in the Local Area Network. An example configuration is shown below:



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS2)

Destination node

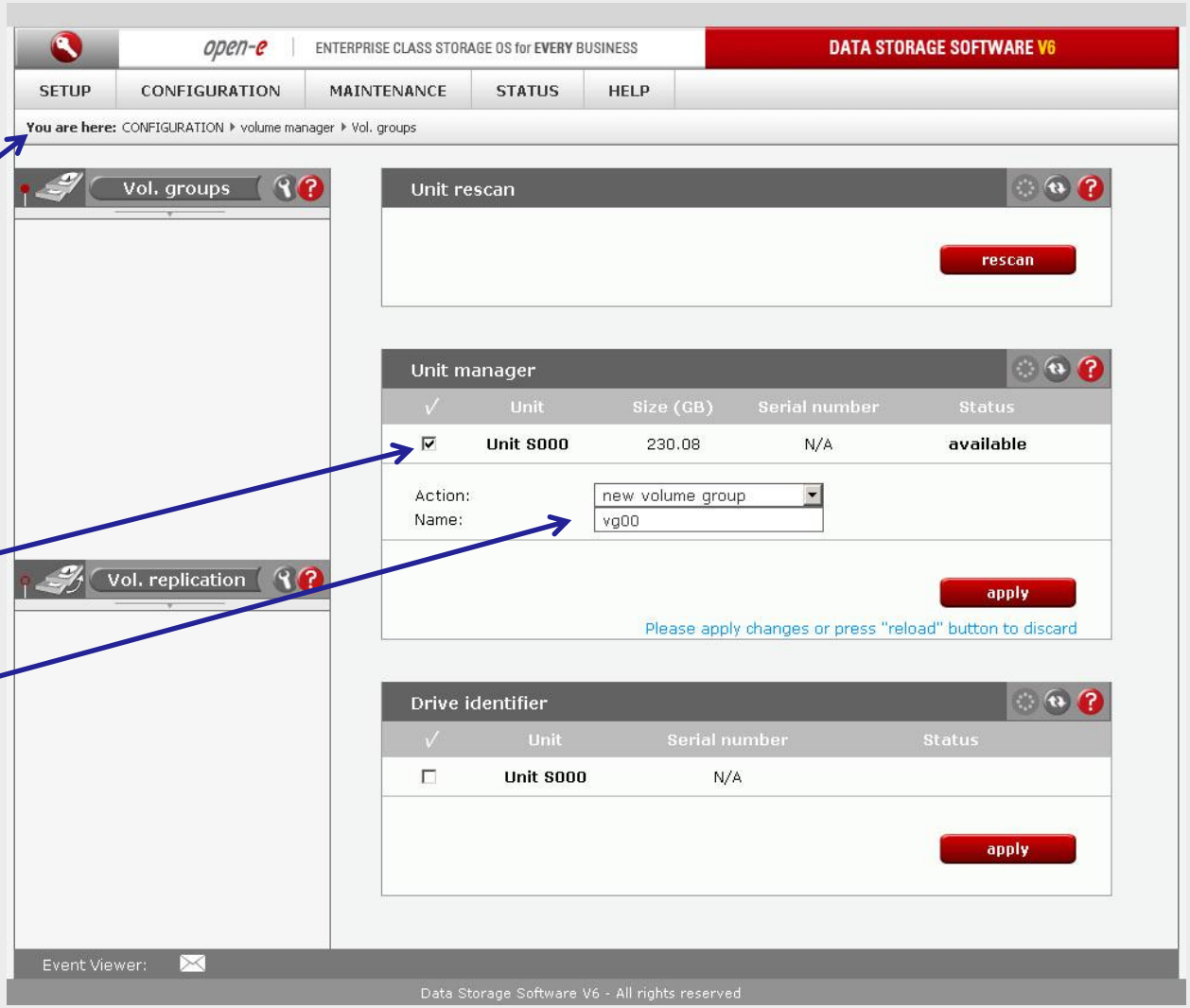
IP Address: 192.168.0.221

2. Configure the Destination Node

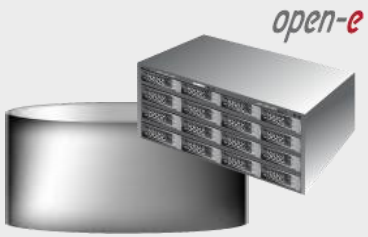
Under the „**CONFIGURATION**" menu, select „**volume manager**" and „**Vol. groups**.

Volume Groups (vg00)

Add the selected physical units (**Unit S000**) to create a new volume group (in this case, **vg00**) and click apply button.



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS2)

Destination node

IP Address: 192.168.0.221

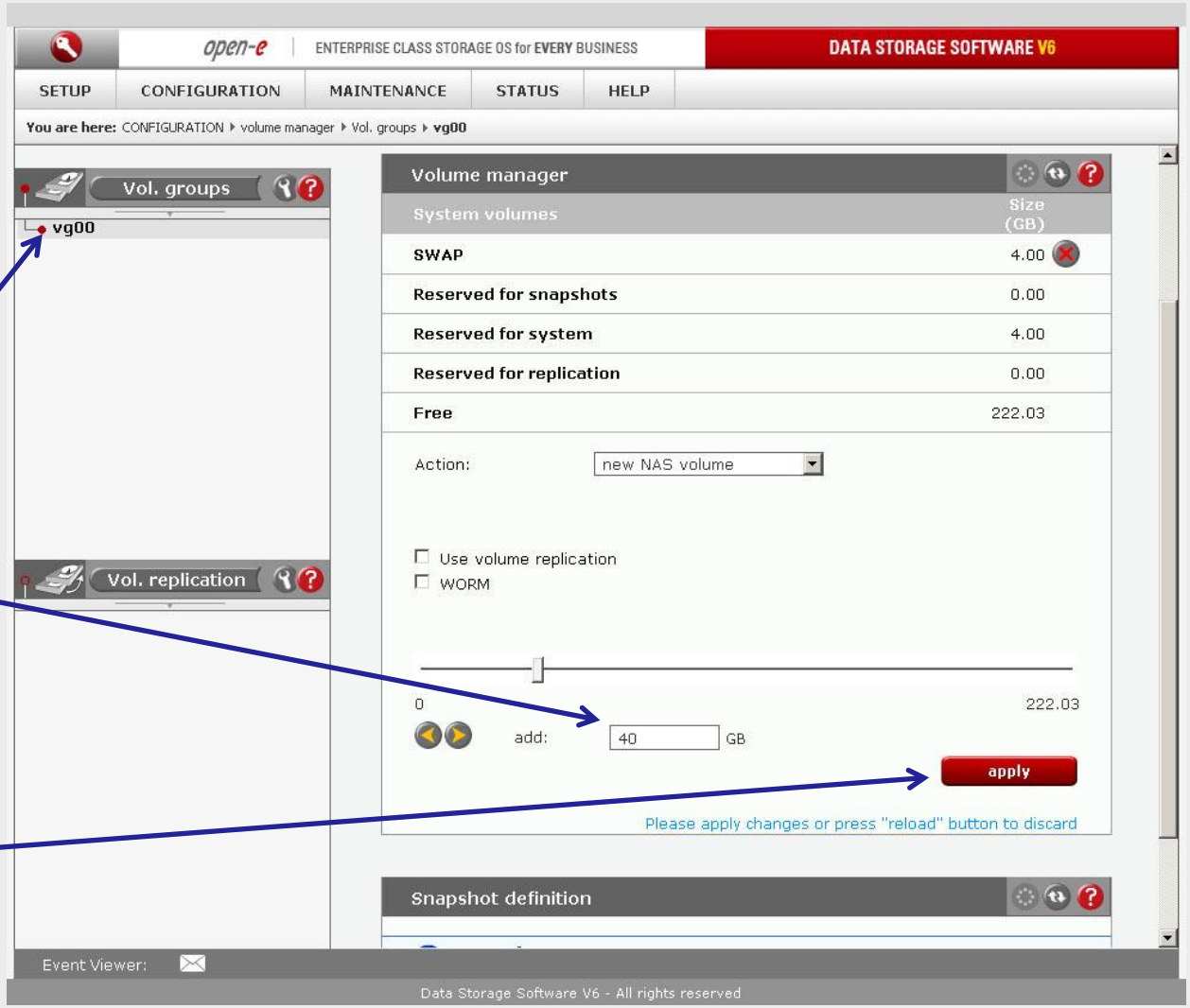
Volume Groups (vg00)

NAS volume (lv0000)

2. Configure the Destination Node

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 destination of the replication process.

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



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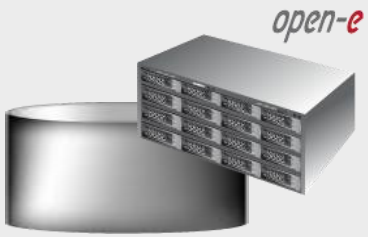


Data Server (DSS2)

Destination node

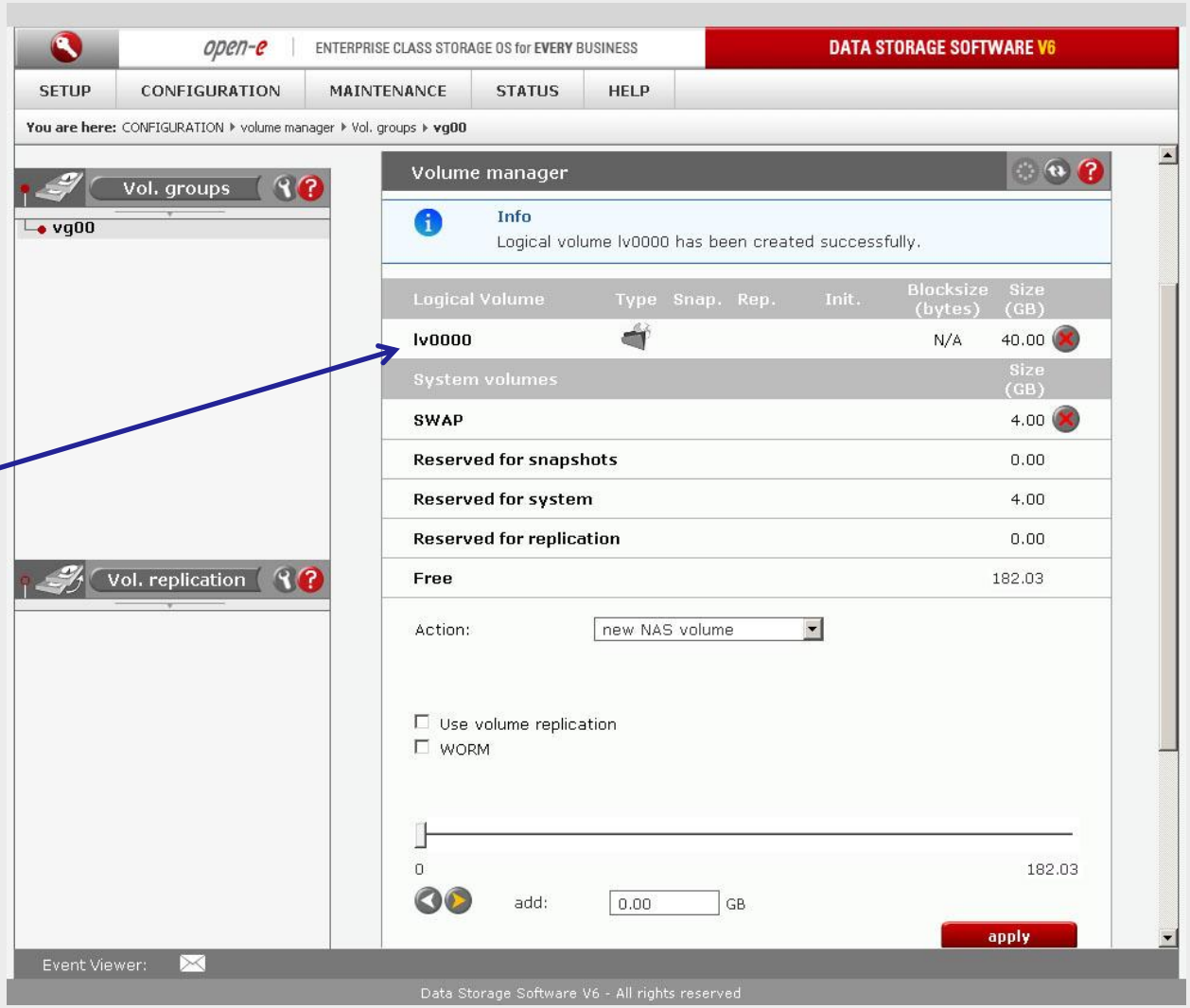
IP Address: 192.168.0.221

2. Configure the Destination Node

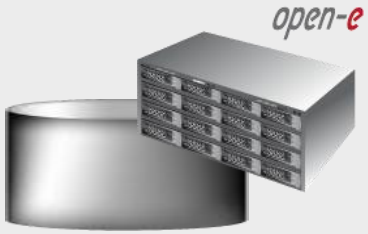
Volume Groups (vg00)

The destination NAS Volume is now configured.

NAS volume (lv0000)



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS2)

Destination node

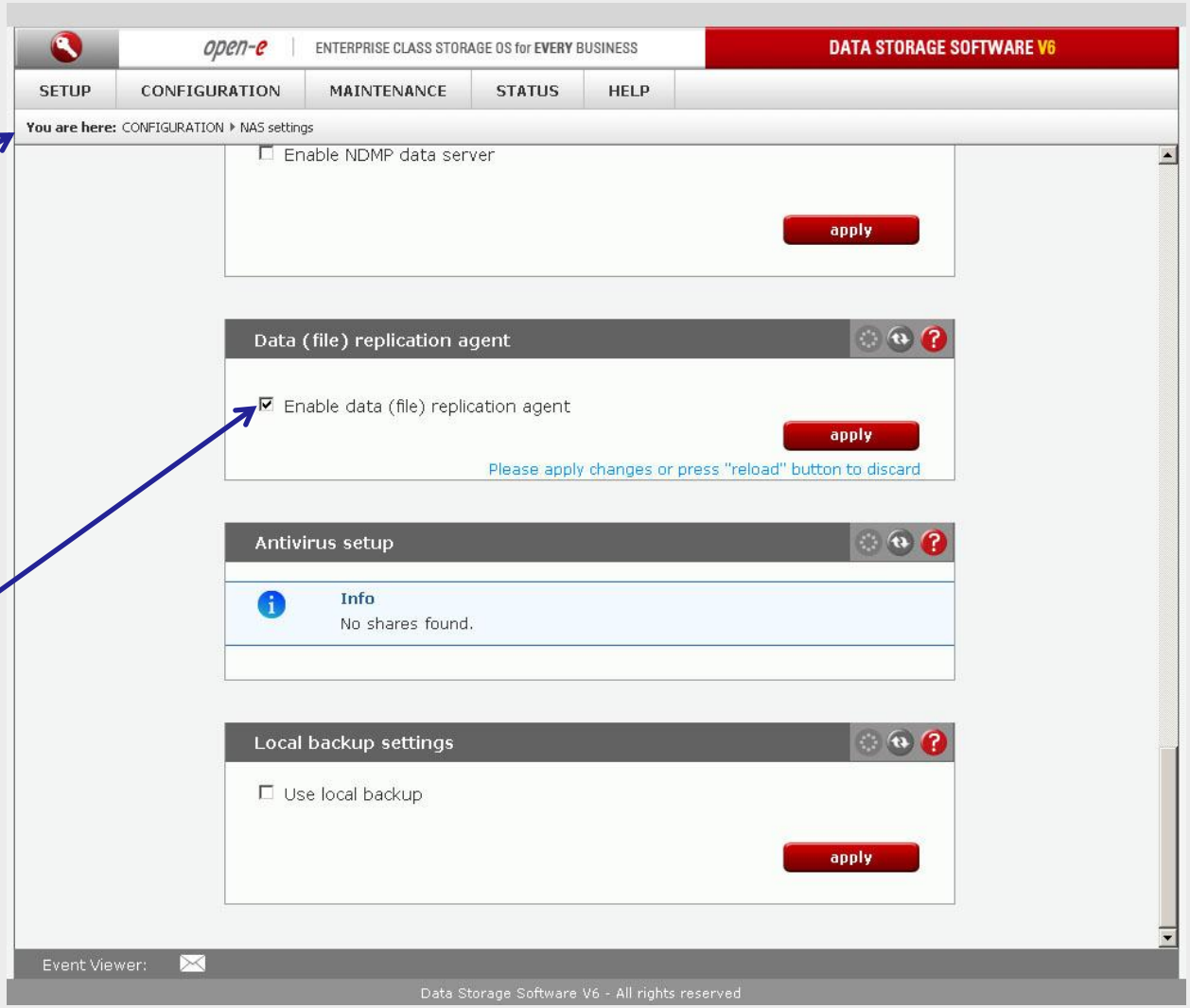
IP Address: 192.168.0.221

2. Configure the Destination Node

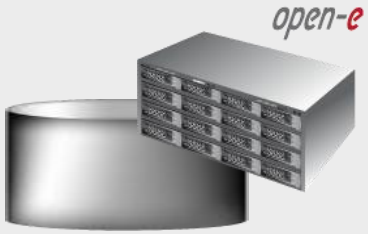
Under the „**CONFIGURATION**" menu, select „**NAS settings**"

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** over a LAN



Data Server (DSS2)

Destination node

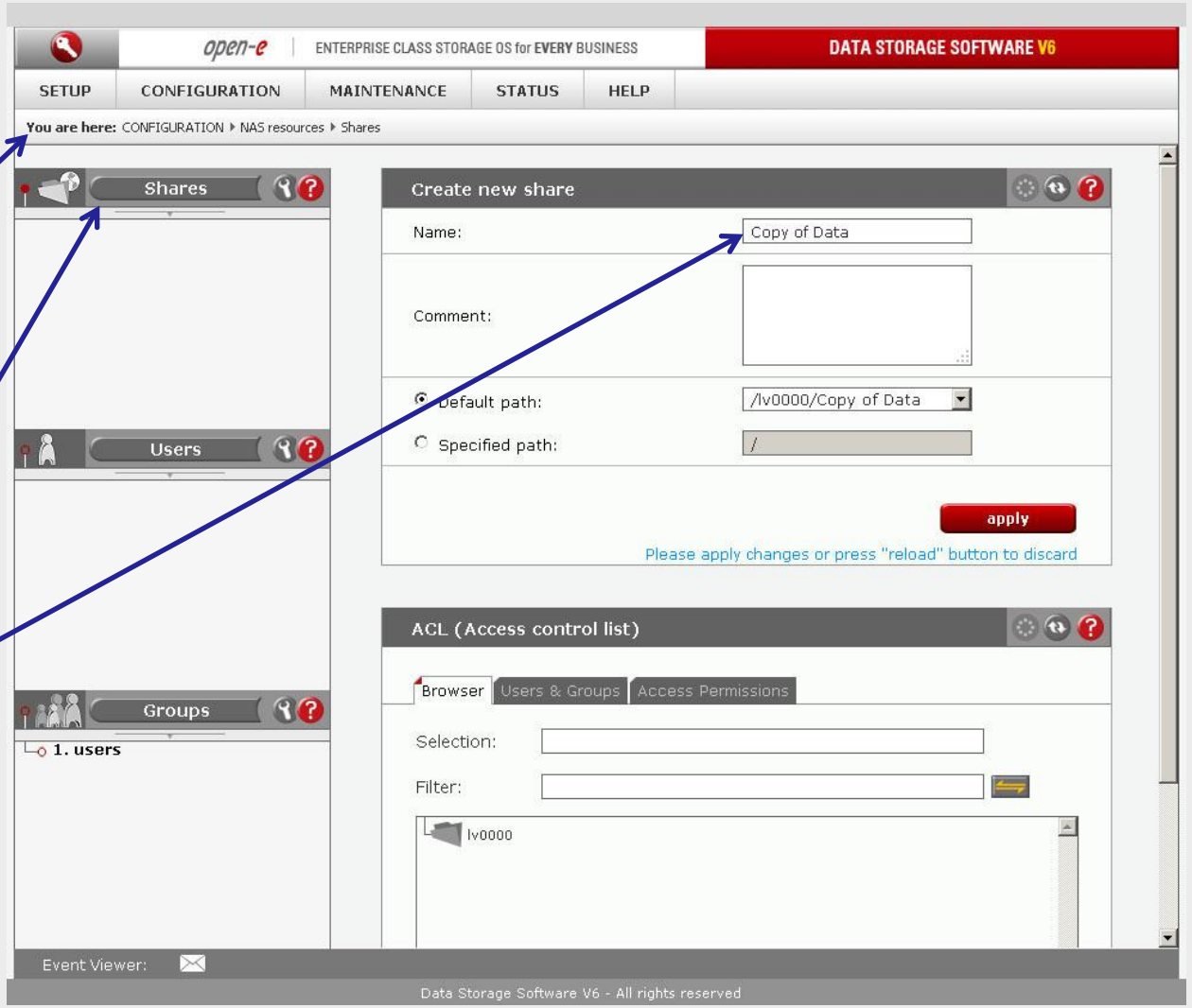
IP Address: 192.168.0.221

2. Configure the Destination Node

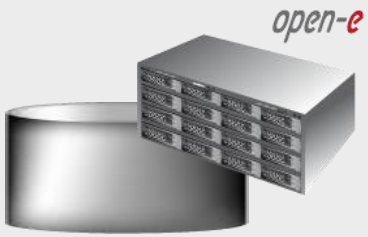
Under the „**CONFIGURATION**" menu, select „**NAS resources**" and „**Shares**".

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 **lv0000** has been created.



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS2)

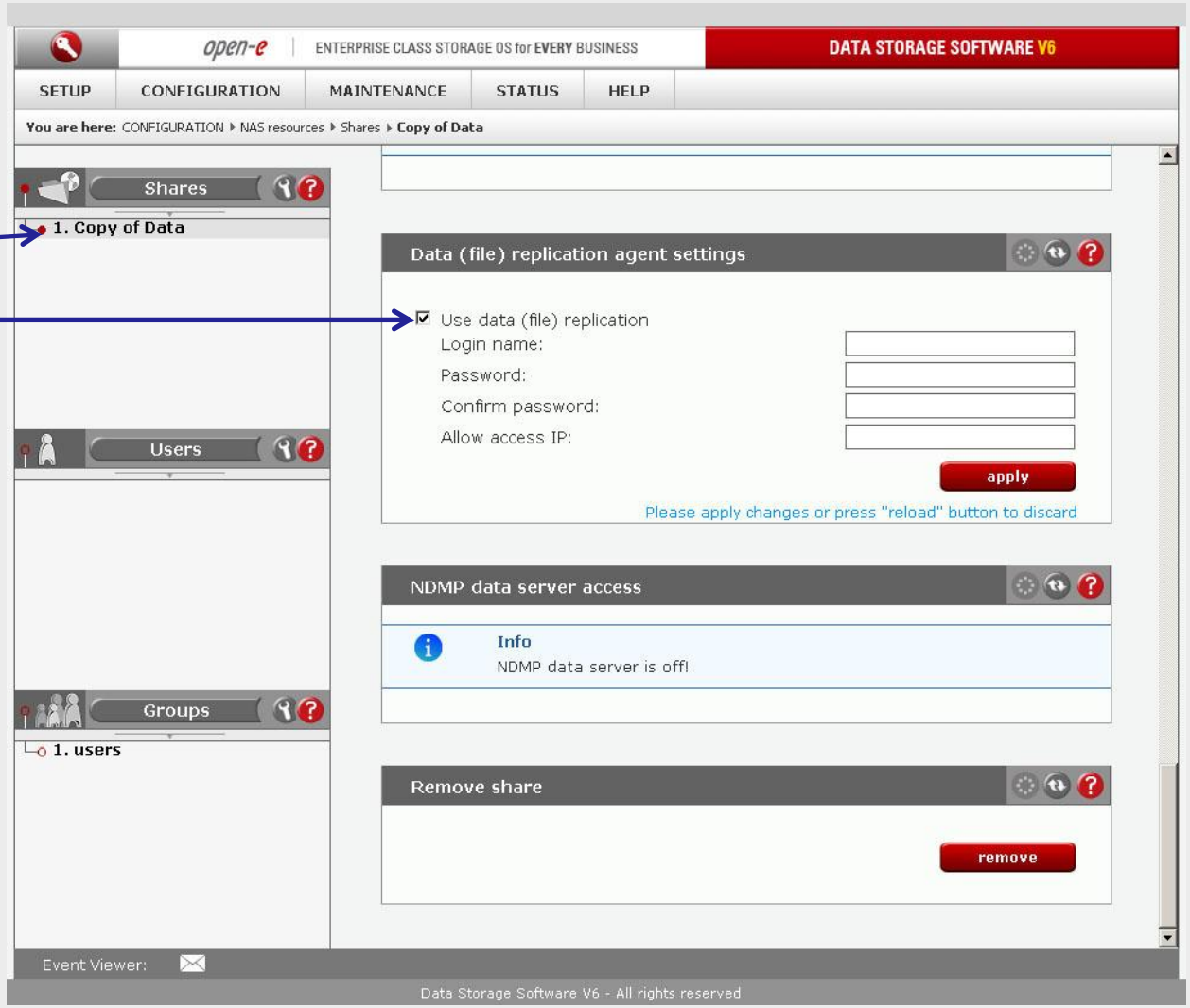
Destination node

IP Address: 192.168.0.221

2. Configure the Destination Node

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

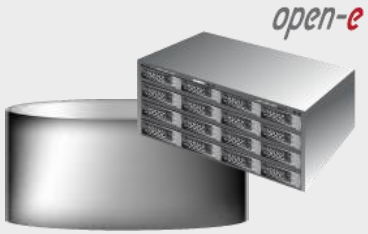


NOTE:

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 Node (storage server) is now complete.

Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS1)

Source node

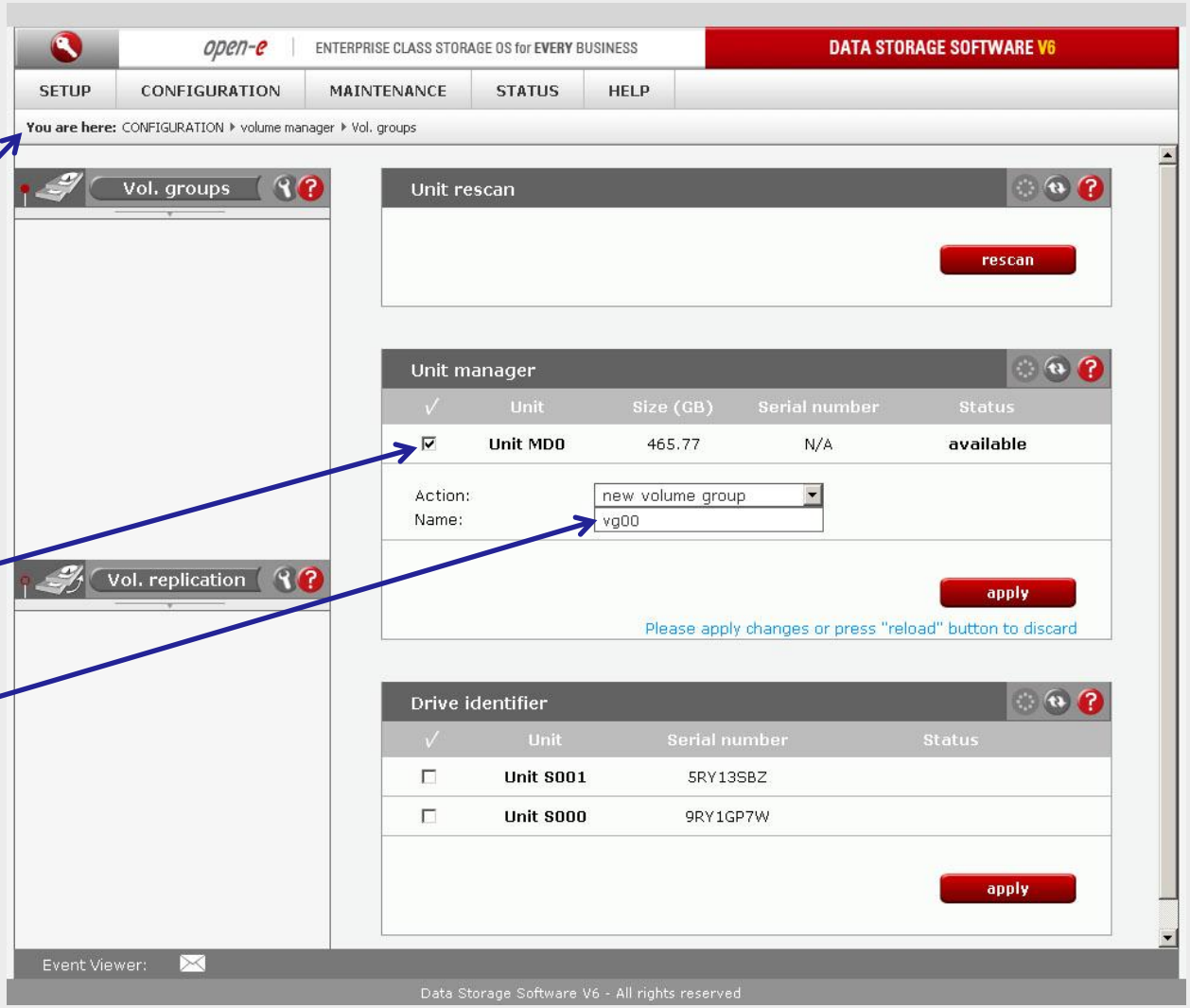
IP Address: 192.168.0.220

3. Configure the Source Node

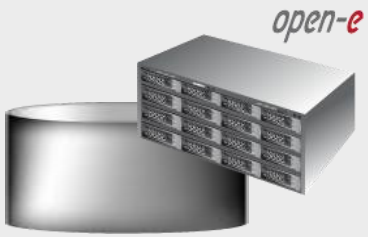
Under the „**CONFIGURATION**" menu, select „**volume manager**"

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** over a LAN



Data Server (DSS1)

Source node

IP Address: 192.168.0.220

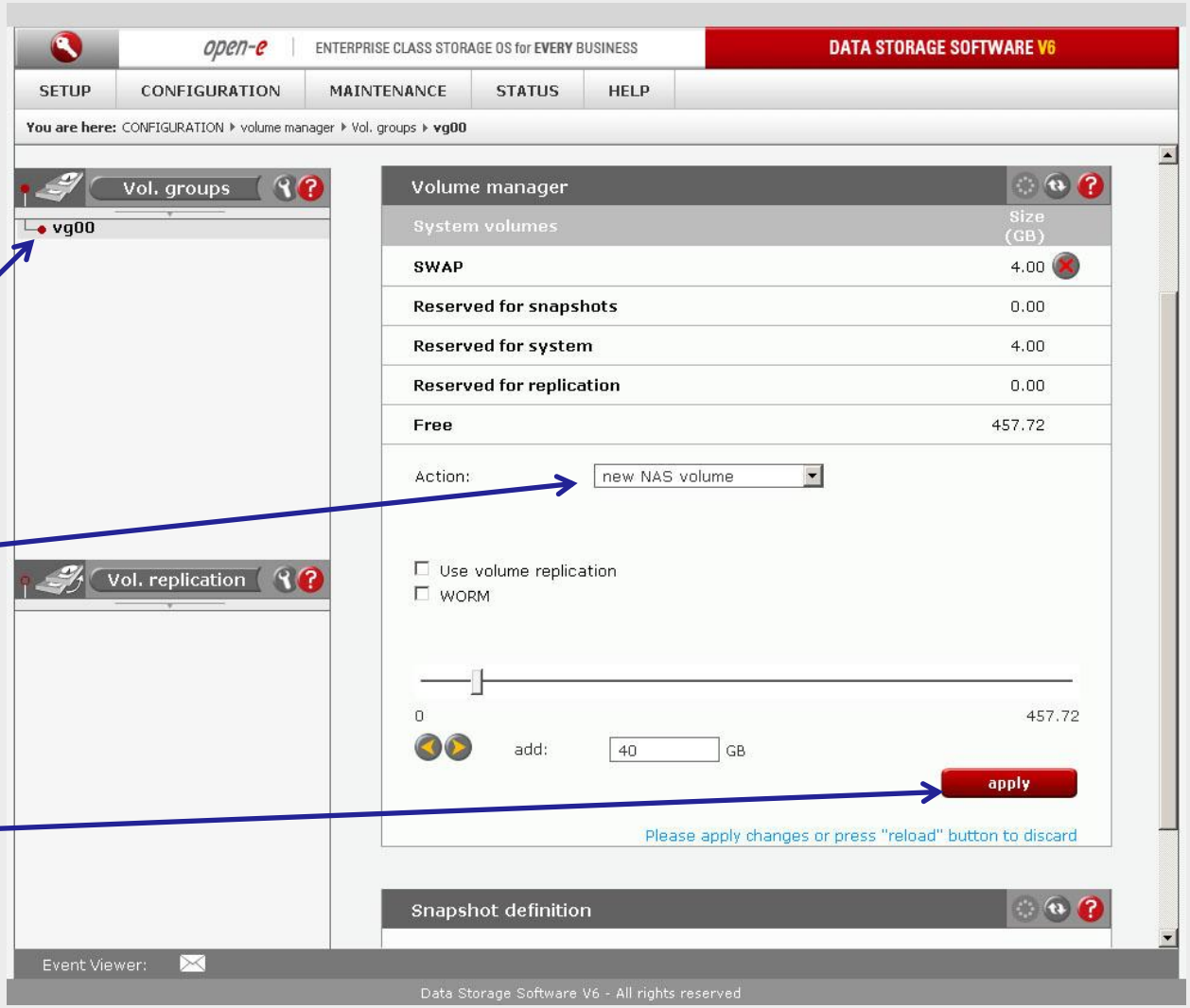
3. Configure the Source Node

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.



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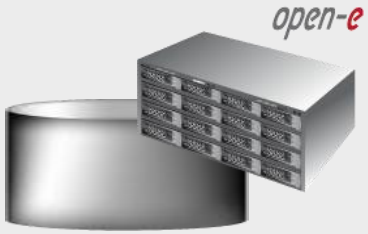


Data Server (DSS1)

Source node

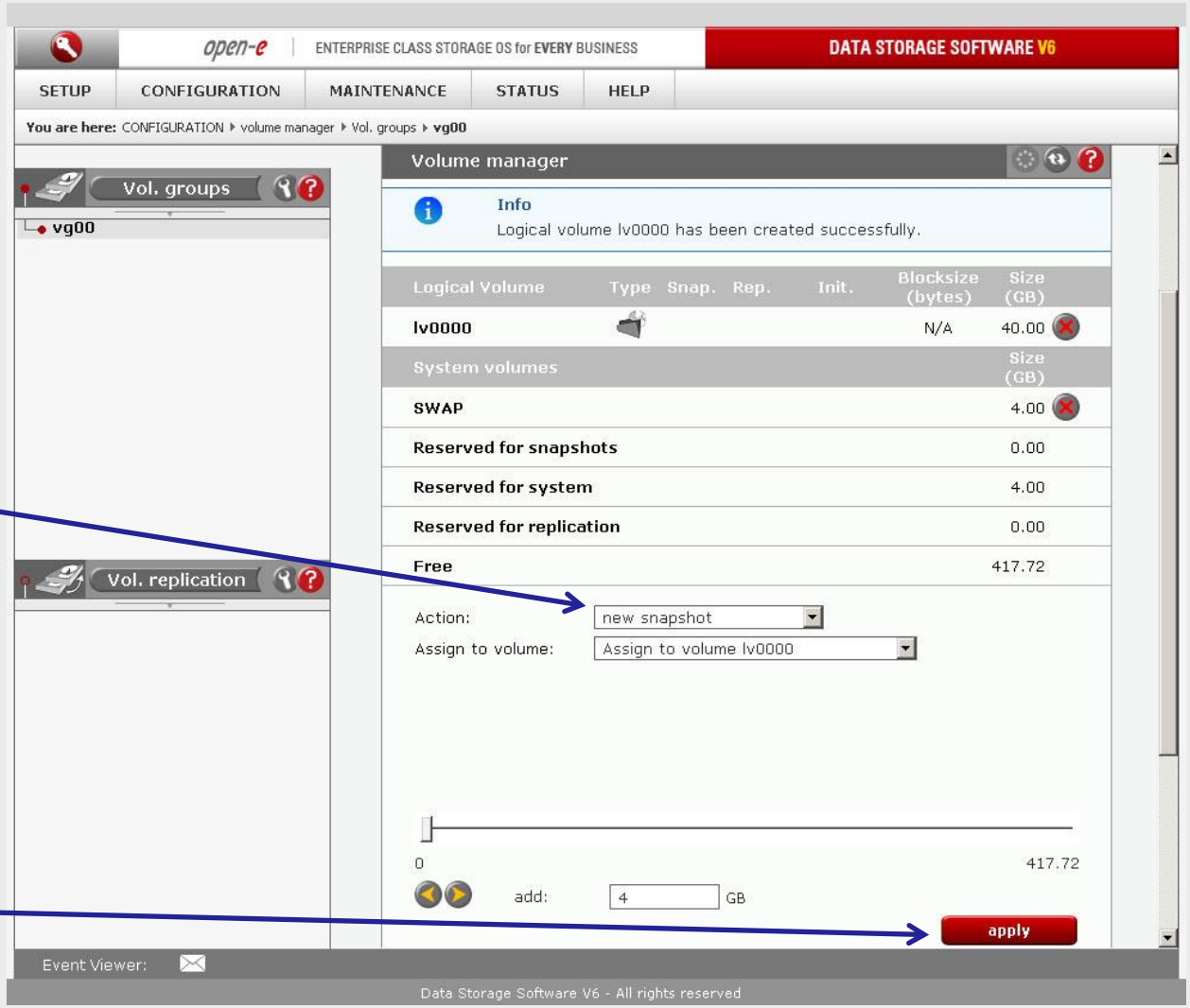
IP Address: 192.168.0.220

Snapshot

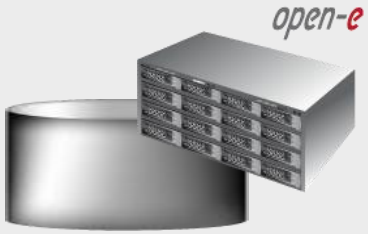
3. Configure the Source Node

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**".

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



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS1)

Source node

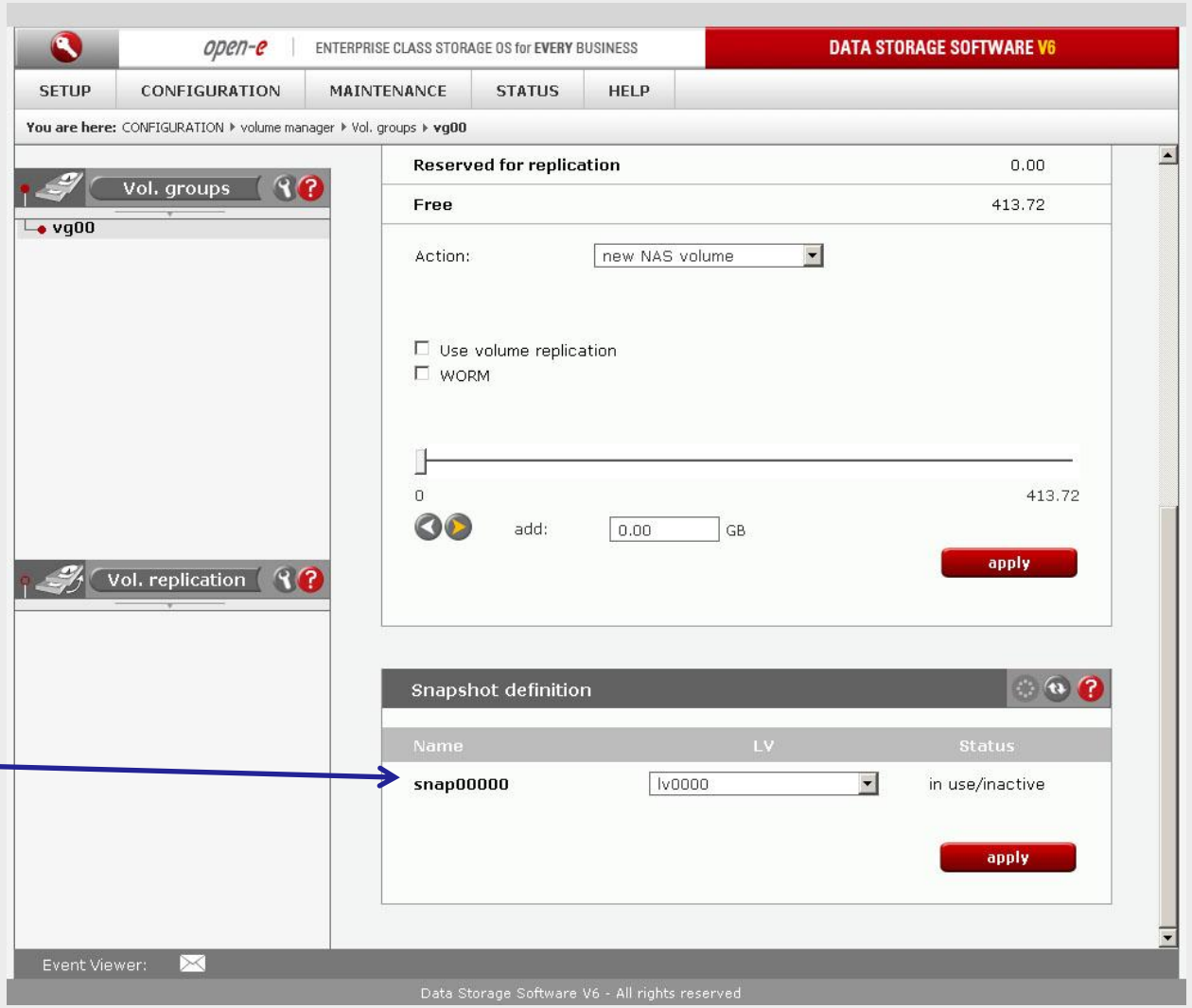
IP Address: 192.168.0.220

3. Configure the Source Node

NAS volume (lv0000)

Snapshot

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



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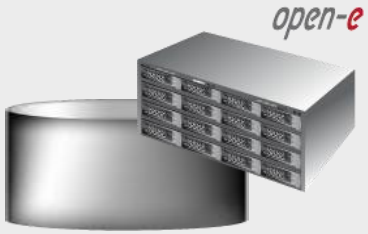


Data Server (DSS1)

Source node

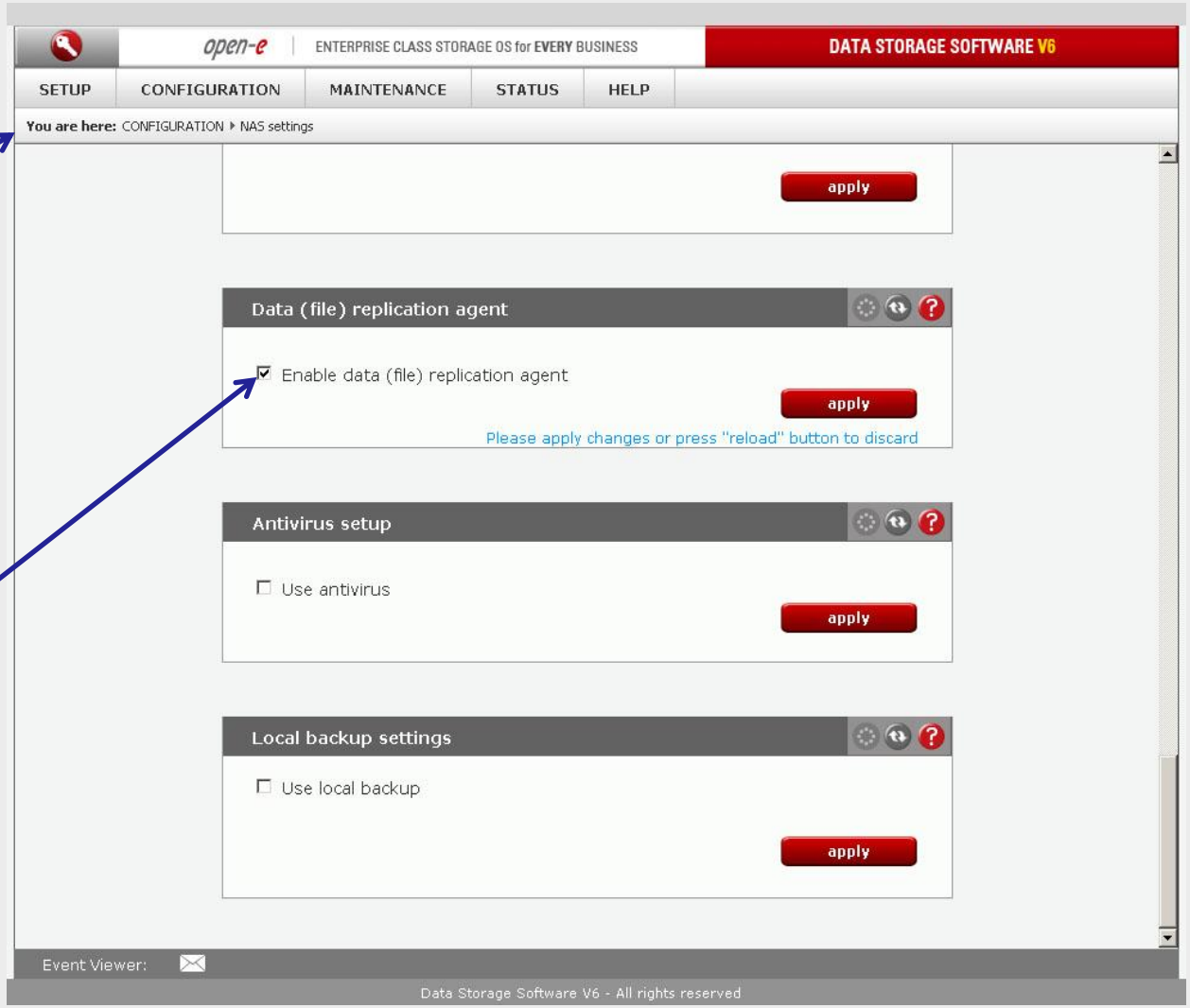
IP Address: 192.168.0.220

3. Configure the Source Node

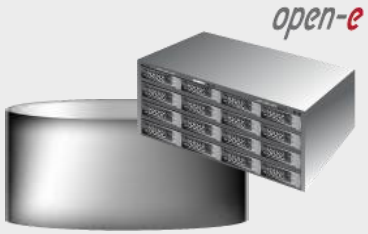
Under the „**CONFIGURATION**" menu, select „**NAS settings**"

Data (File) Replication

Check the **Enable data (file) replication agent** box, and click the apply button.



Setting up Asynchronous **Data (File) Replication** over a LAN



Data Server (DSS1)

Source node

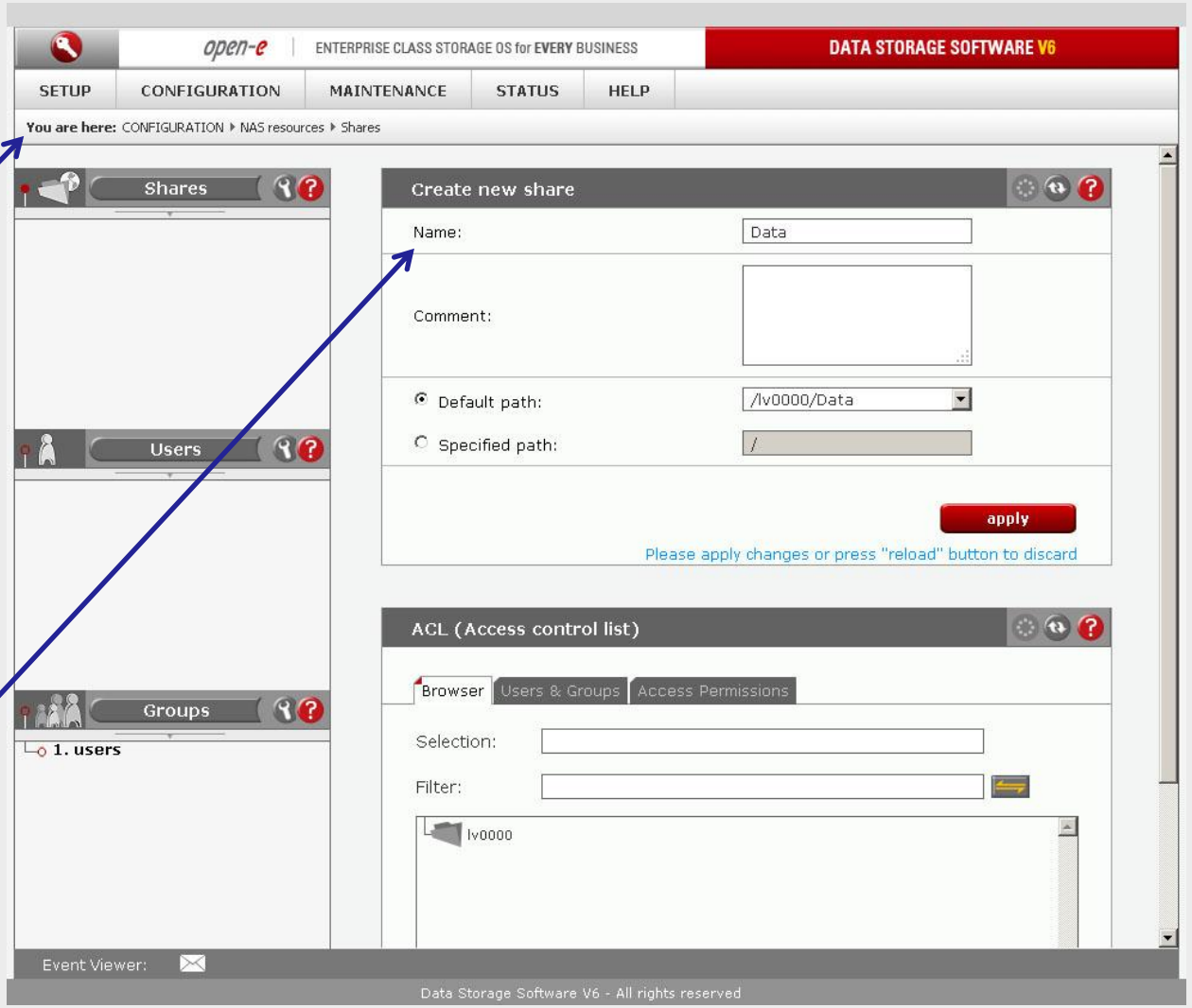
IP Address: 192.168.0.220

3. Configure the Source Node

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

Shares: Data

To create a share, enter the share name in field **Name**. In this example a new share named **Data** has been created.



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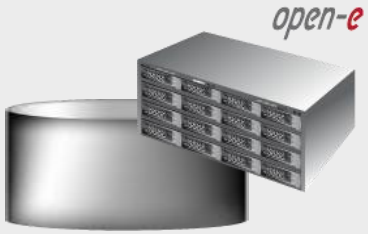


Data Server (DSS1)

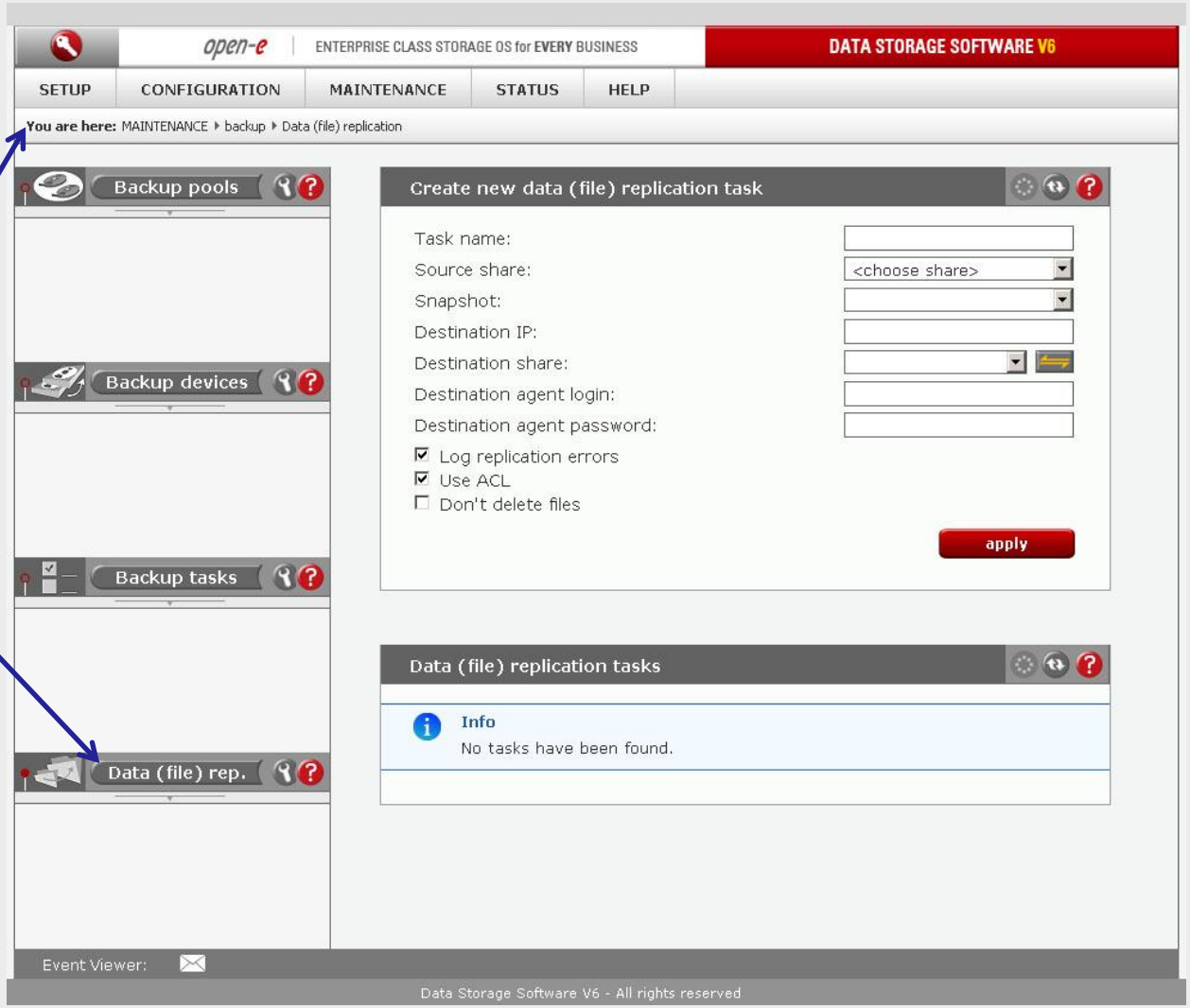
Source node

IP Address: 192.168.0.220

3. Configure the Source Node

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



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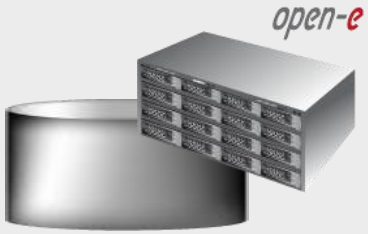


Data Server (DSS1)

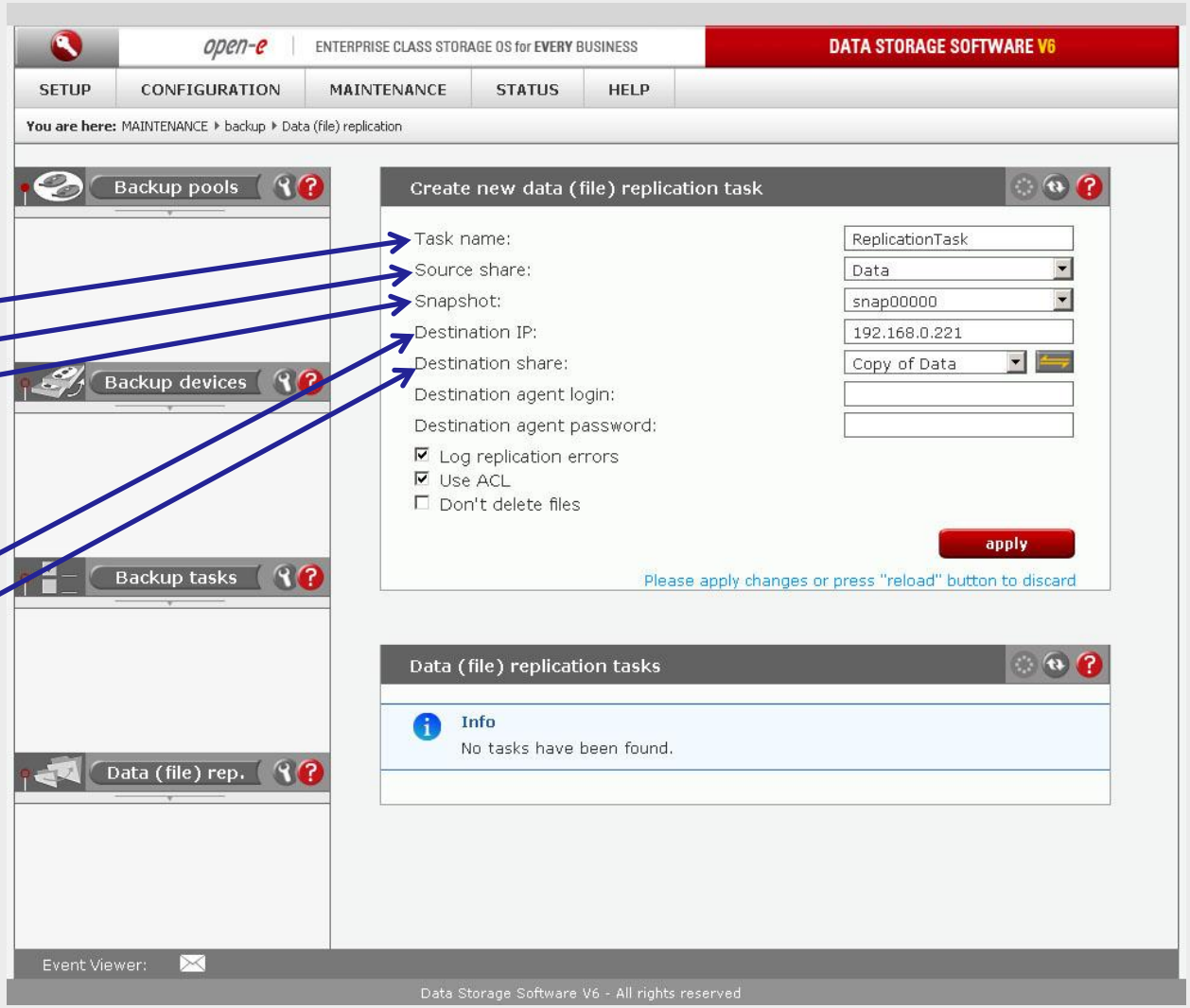
Source node

IP Address: 192.168.0.220

3. Configure the Source Node

Select the source share to be replicated. Under **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, 192.168.0.221) 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 will appear. Next click on the apply button.



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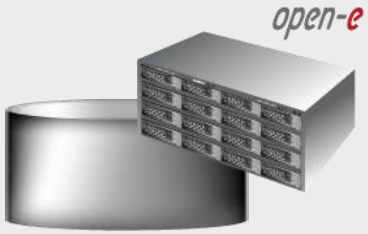


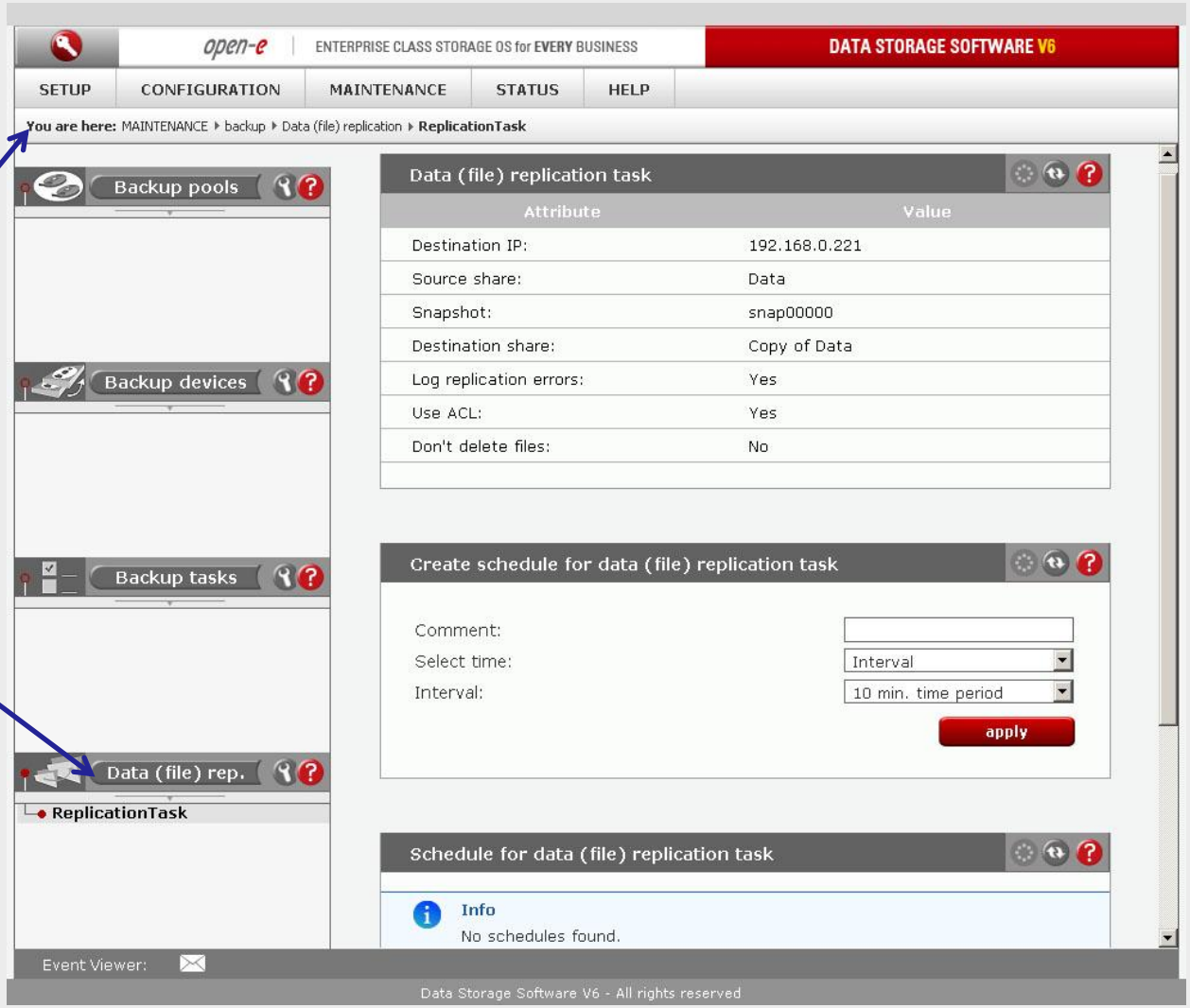
Data Server (DSS1)

Source node

IP Address: 192.168.0.220

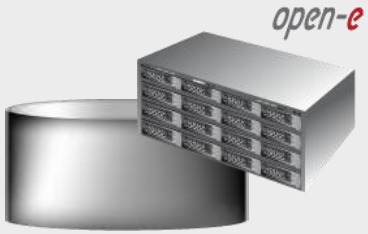
3. Configure the Source Node

After the DSS WEB console, has been reloaded, the new task should appear (**ReplicationTask**).
Obtain additional information about a selected replication task by accessing the **Data (file) replication task** function.



The configuration of the Source Node (storage server) is now complete.

Setting up Asynchronous **Data (File) Replication** over a LAN



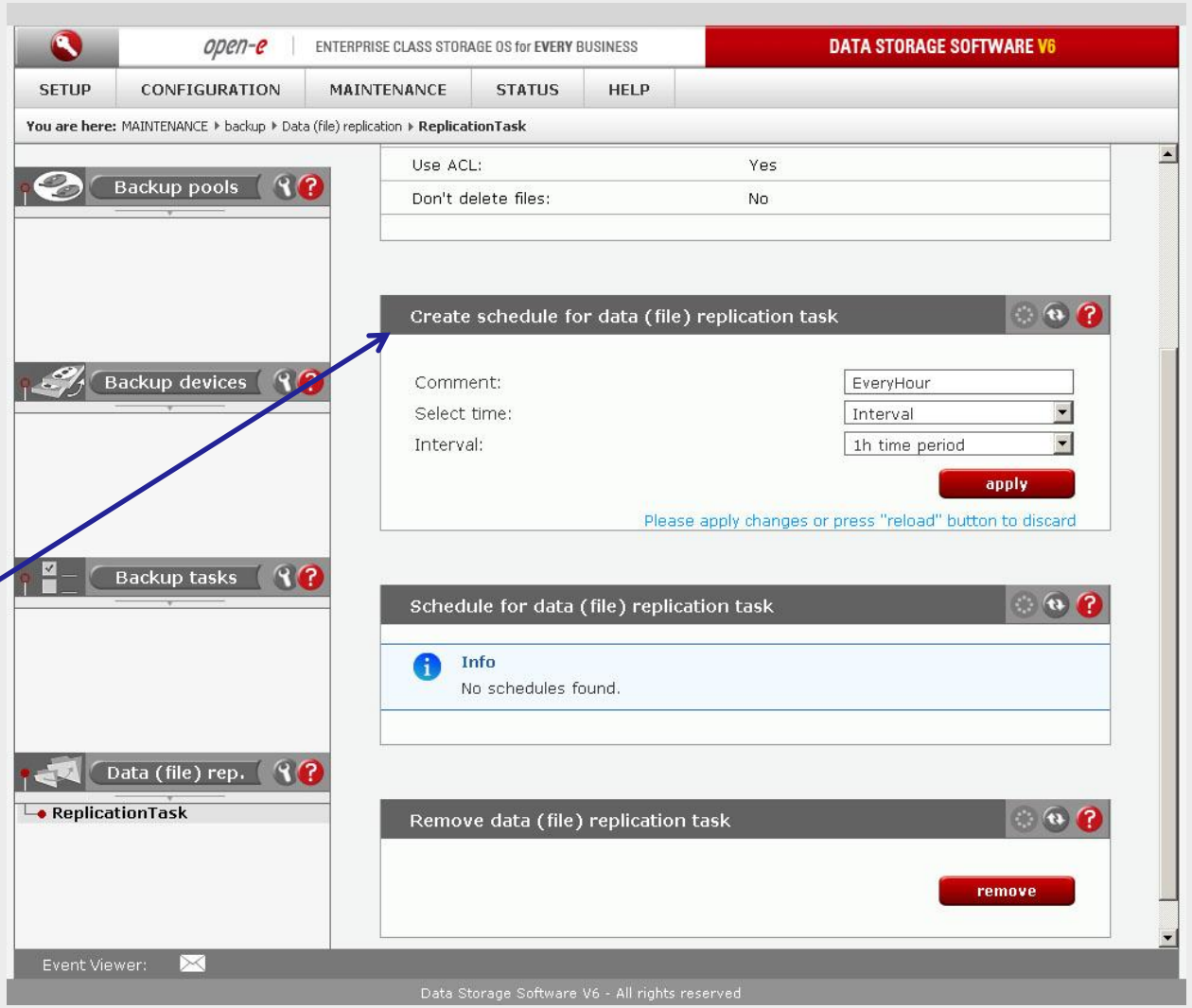
Data Server (DSS1)

Source node

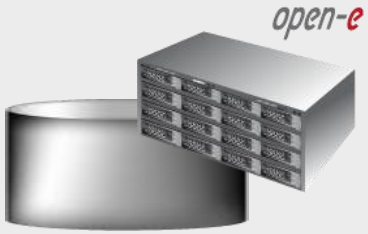
IP Address: 192.168.0.220

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** over a LAN



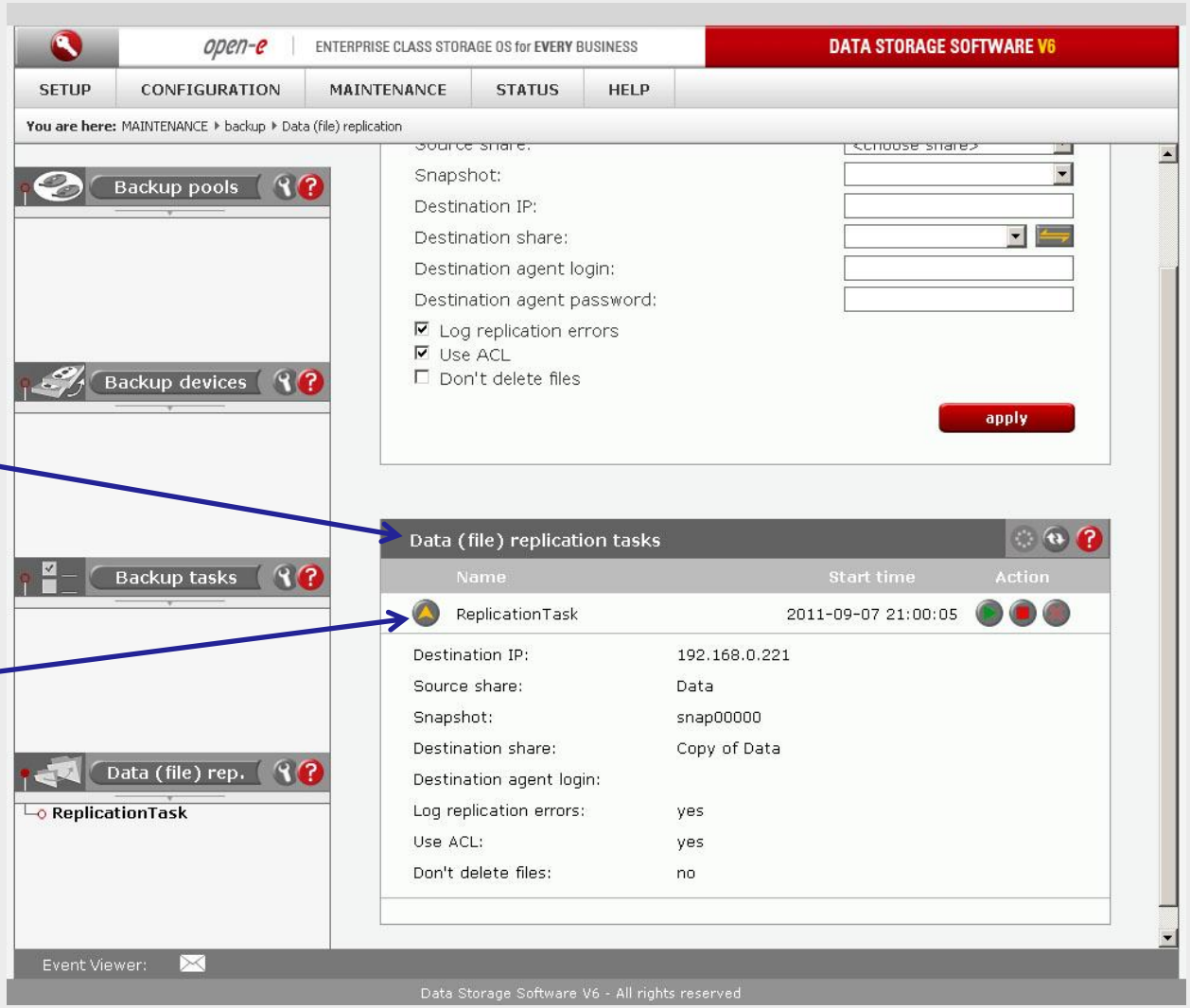
Data Server (DSS1)

Source node

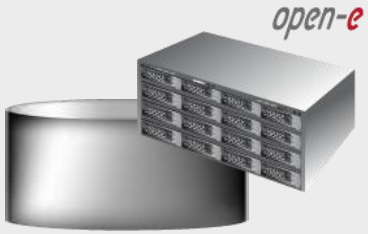
IP Address: 192.168.0.220

5. Check the status of Data (File) Replication

In **Data (file) replication tasks** function set the desired Data (File) Replication to start, stop and delete tasks.
Click on the button with task name (in this case **ReplicationTask**) to display detailed information on the current replication task (the replication task running at 9 pm).



Setting up Asynchronous **Data (File) Replication** over a LAN



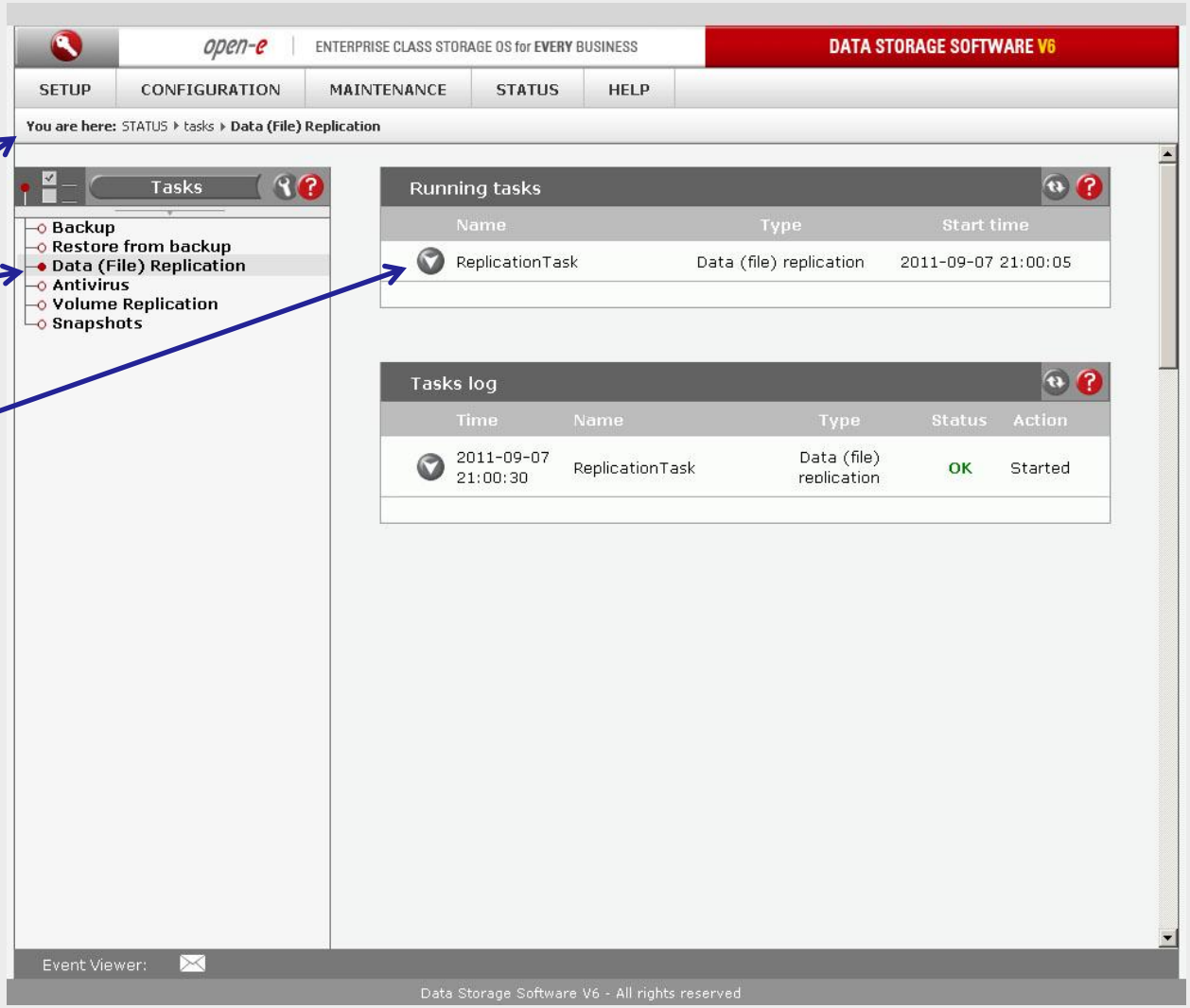
Data Server (DSS1)

Source node

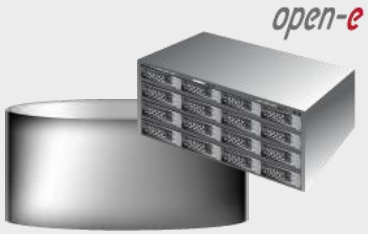
IP Address: 192.168.0.220

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 Task.



Setting up Asynchronous **Data (File) Replication** over a LAN



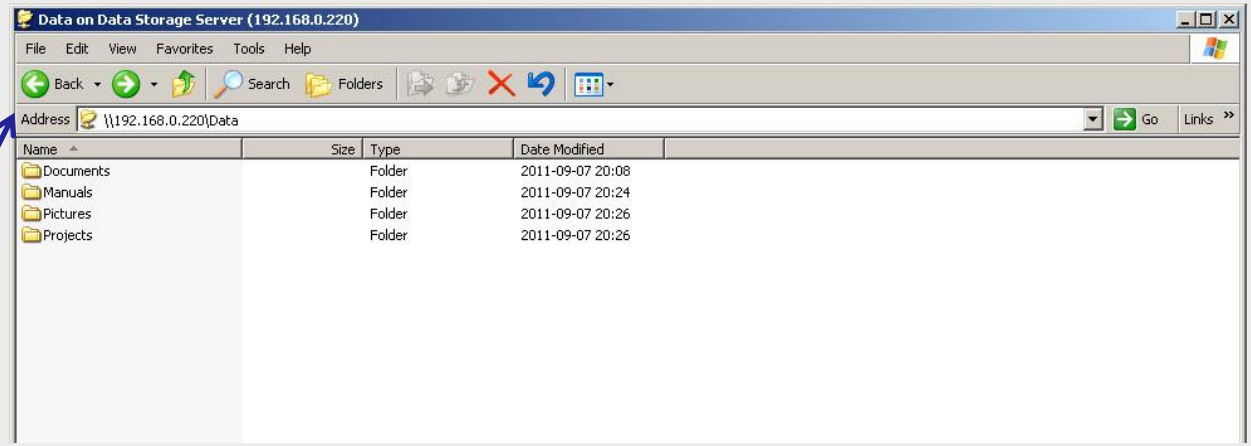
Data Servers (DSS1 and DSS2)

Source and Destination node

IP Address: 192.168.0.220 and 192.168.0.221

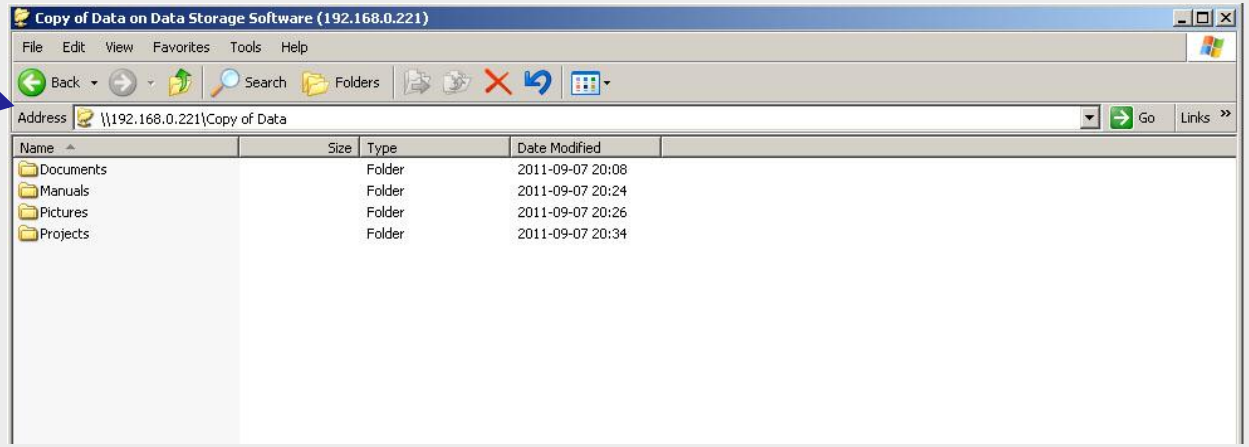
5. Check the status of Data (File) Replication

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 nodes for asynchronous Data (File) Replication is now complete.

Thank you!