

# **Step-by-Step Guide** to Open-E DSS V7 Asynchronous Data (File) Replication (File Based) over a WAN

**Software Version: DSS ver. 7.00 up11**

Presentation updated: July 2013

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

1. Configure hardware
2. Configure DSS1 and DSS2 on the WAN
3. Configure the destination node
4. Configure the source node
5. Configure replication schedule
6. Check the status Data (File) Replication

# Setting up Data (File) Replication over a WAN



## 1. Configure hardware

### Hardware Requirements

To run the Data (File) Replication of Open-E DSS V7, a minimum of two systems are required. Logical volumes working in slave mode must have snapshots created and enabled. Both servers are working in the Wide Area Network. An example configuration is shown below:

Data Server (DSS1)

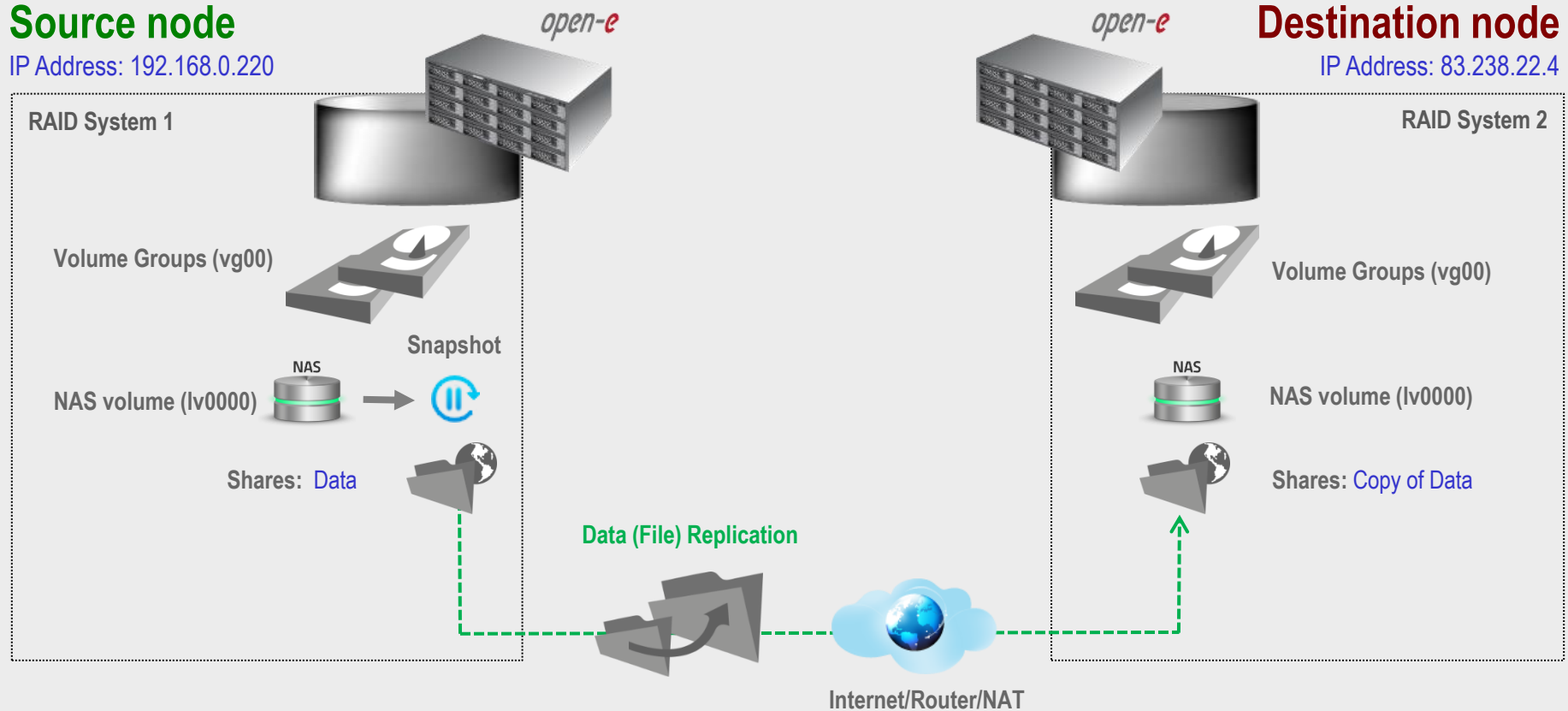
**Source node**

IP Address: 192.168.0.220

Data Server (DSS2)

**Destination node**

IP Address: 83.238.22.4



## 2. Configure DSS1 and DSS2 on the WAN

BELOW YOU CAN FIND SETTINGS OF THE DSS1 AND DSS2 ON THE WAN:

- DSS 1 - machine behind the NAT with local IP address,
- Forwarding TCP port 873 to local IP from DSS 1 in your router (see screenshot)

Port Range					
Application	Start	End	Protocol	IP Address	Enable
DSS	873	to 873	TCP	192.168.0.220	<input checked="" type="checkbox"/>
		to	TCP	192.168.0.	<input type="checkbox"/>
		to	TCP	192.168.0.	<input type="checkbox"/>
		to	TCP	192.168.0.	<input type="checkbox"/>

- DSS 2 – Data Storage System with external internet IP address router/firewall

# Setting up Data (File) Replication over a WAN



Data Server (DSS2)  
**Destination node**  
IP Address:83.238.22.4

## 3. Configure the destination node

In the "CONFIGURATION" menu, select "Volume manager" and then "Volume groups".

Volume Groups (vg00)



Add the selected physical units (Unit H2) to create a new volume group (in this case, vg00) and click **apply**.

The screenshot shows the open-e web interface for configuring a volume group. The breadcrumb trail is: Configuration > Volume manager > Volume groups. The "Unit manager" table shows Unit H2 selected with a checkmark. The "Action" dropdown is set to "new volume group" and the "Name" field contains "vg00". The "apply" button is visible at the bottom of the form.

Unit	Size (GB)	Serial number	Status
<input checked="" type="checkbox"/> Unit H2	14.65	QM00003	available

Unit	Serial number	Status
<input type="checkbox"/> Unit H2	QM00003	

# Setting up Data (File) Replication over a WAN



open-e

Data Server (DSS2)

**Destination node**

IP Address:83.238.22.4

## 3. Configure the destination 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**. Set 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.

The screenshot shows the open-e web interface for configuring a new NAS volume. The breadcrumb trail is: Configuration > Volume manager > Volume groups > vg00. The left sidebar shows 'Vol. groups' with 'vg00' selected. The main content area displays a table of system volumes and a configuration form for a new NAS volume.

Unit	Serial number	Size (GB)
Unit H2	QM00003	14.65

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	6.59

Action:

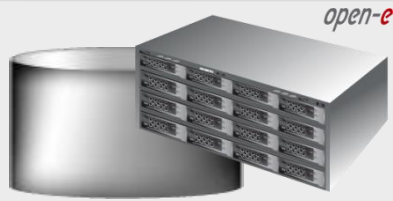
Use volume replication

WORM

0  GB 6.59

Please apply changes or press "reload" button to discard

# Setting up Data (File) Replication over a WAN



open-e Data Server (DSS2)  
**Destination node**  
IP Address:83.238.22.4

## 3. Configure the destination node

Volume Groups (vg00)



The destination NAS Volume is now configured.

NAS volume (lv0000)



The screenshot shows the open-e Data Storage Software V7 interface. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'Configuration > Volume manager > Volume groups > vg00'. The 'Vol. groups' panel on the left shows 'vg00'. The 'Volume manager' panel on the right displays a success message: 'Logical volume lv0000 has been created successfully.' Below this is a table of logical volumes:

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	NAS				N/A	5.00

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

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	1.59

The 'Action:' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM', both of which are unchecked. A slider is visible with a value of 0.00 GB. An 'apply' button is located at the bottom right of the configuration panel.

# Setting up Data (File) Replication over a WAN



Data Server (DSS2)

**Destination node**

IP Address:83.238.22.4

## 3. Configure the destination node

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

Data (File) Replication



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

The screenshot shows the open-e web interface for configuring the destination node. The navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'CONFIGURATION' tab is active, and the breadcrumb trail shows 'You are here: Configuration > NAS settings'. The main content area contains three configuration panels:

- NDMP data server:** Includes an unchecked checkbox for 'Enable NDMP data server' and an 'apply' button.
- Data (file) replication agent:** Includes a checked checkbox for 'Enable data (file) replication agent' and an 'apply' button. A note below the button reads 'Please apply changes or press "reload" button to discard'.
- Antivirus setup:** Includes an 'Info' section with the text 'No shares found.'

At the bottom of the interface, there is an 'Event Viewer' icon and a footer that reads 'Data Storage Software V7 - All rights reserved'.



# Setting up Data (File) Replication over a WAN



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Data Server (DSS2)

**Destination node**

IP Address:83.238.22.4

## 3. Configure the destination node

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

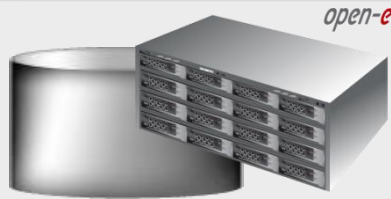
Shares: Copy of Data



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** has been created.

The screenshot shows the open-e web interface for configuring a share. The breadcrumb trail is "Configuration > NAS resources > Shares". The "Create new share" form has the following fields: Name: Copy of Data; Comment: (empty); Default path: /v0000/Copy of Data (selected); Specified path: /; and an apply button. Below the form is the ACL (Access control list) section with a "Browser" tab selected, showing a tree view with "1. users" and "v0000".

# Setting up Data (File) Replication over a WAN



Data Server (DSS2)  
**Destination node**  
IP Address:83.238.22.4

## 3. Configure the destination node

After creating the new shared volume, configure it:

- Click on the share name (**Copy of Data**).
- Check the box **Use data (file) replication** within **Data (file) replication agent settings** function.
- Click on the **apply** button.

Data (File) Replication



**NOTE:**  
It is strongly recommended to protect 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 user name and password must be the same on both nodes.**

The configuration of the destination node (storage server) is now complete.

# Setting up Data (File) Replication over a WAN



open-e Data Server (DSS1)  
**Source node**  
IP Address: 168.192.0220

## 4. Configure the source node

Under the "CONFIGURATION" menu, select "Volume manager" and then "Volume groups".

Volume Groups (vg00)



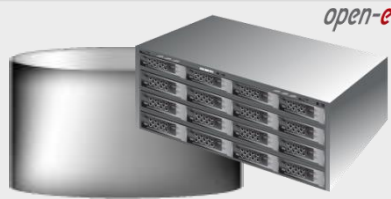
Add the selected physical units (Unit MD0) to create a new volume group (in this case, vg00) and click **apply** button.

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 V7
- Navigation: SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP
- Breadcrumbs: You are here: Configuration > Volume manager > Volume groups
- Left Panel: Vol. groups, Vol. replication
- Unit rescan: rescan button
- Unit manager table:

Unit	Size (GB)	Serial number	Status
<input checked="" type="checkbox"/> Unit MD0	298.10	N/A	available
- Action: new volume group (dropdown)
- Name: vg00 (input field)
- apply button
- Footer: Event Viewer, Data Storage Software V7 - All rights reserved

# Setting up Data (File) Replication over a WAN



open-e Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 4. Configure the source node

Volume Groups (vg00)



NAS volume (lv0000)



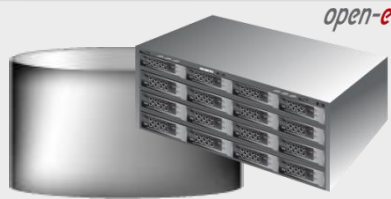
Select the appropriate volume group (**vg00**) from the list on the left and create a **new NAS volume**. Set the required size. This logical volume will be the source of the replication process.

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

The screenshot shows the open-e web interface for configuring a new NAS volume. The breadcrumb trail is: Configuration > Volume manager > Volume groups > vg00. The 'Vol. groups' panel on the left shows 'vg00' selected. The 'Volume manager' panel on the right shows system volumes: SWAP (4.00 GB), Reserved for snapshots (0.00 GB), Reserved for system (4.00 GB), Reserved for replication (0.00 GB), and Free (290.06 GB). The 'Action' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM', both unchecked. A slider shows the available space (0 to 290.06 GB). The 'add:' field is set to 5 GB. The 'apply' button is highlighted in red. Below the main panel, the 'Snapshot definition' panel shows 'No snapshot volumes defined.'

System volumes	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	290.06

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 4. Configure the source node

Snapshot

To setup a data replication, new snapshot needs to be created in Volume manager. Snapshot size should be large enough to accommodate the changes you anticipate, 10% to 15% of the logical volume is recommended

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

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: Configuration > Volume manager > Volume groups > vg00

Vol. groups

- vg00

Vol. replication

Volume manager

Info

Logical volume lv0000 has been created successfully.

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000					N/A	5.00

System volumes

	Size (GB)
SWAP	4.00
Reserved for snapshots	0.00
Reserved for system	4.00
Reserved for replication	0.00
Free	285.06

Action: new snapshot

Assign to volume: Just create snapshot volume

0 GB

add: 1 GB

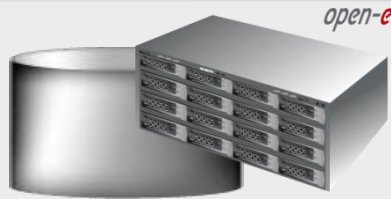
apply

Please apply changes or press "reload" button to discard

★ Event Viewer

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# Setting up Data (File) Replication over a WAN



open-e Data Server (DSS1)  
**Source node**  
IP Address: 168.192.0220

## 4. Configure the source node

NAS volume  
(lv0000)



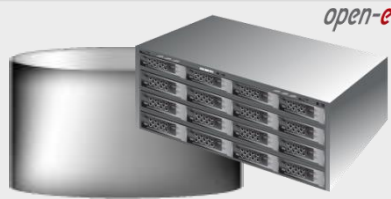
Assign the snapshot (snap00000) to the logical volume which will be replicated (in this example: lv0000) and click the **apply** button.

The screenshot shows the open-e web interface for configuring a source node. The breadcrumb trail is: Configuration > Volume manager > Volume groups > vg00. The 'Vol. groups' section shows 'vg00'. The 'Vol. replication' section is currently empty. The 'Snapshot definition' table is as follows:

Name	LV	Status
snap00000	lv0000	unused

The 'Reserved for system' is 4.00, 'Reserved for replication' is 0.00, and 'Free' is 284.06. The 'Action' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM', both of which are unchecked. A slider is set to 0. The 'add:' field is set to 0.00 GB. An 'apply' button is visible at the bottom right of the configuration area. A blue box with arrows points from the text in the blue box to the 'lv0000' dropdown and the 'apply' button in the 'Snapshot definition' table.

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address:168.192.0220

## 4. Configure the source node

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

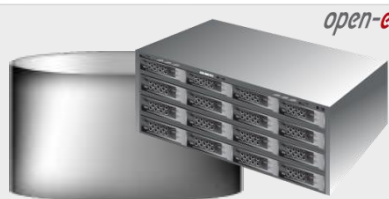
Data (File)  
Replication



Check the **Enable Data (File) Replication Agent** box, and click the **apply** button.

The screenshot shows the open-e web interface for Data Storage Software V7. The navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'NAS settings' under the 'CONFIGURATION' menu. The 'Data (file) replication agent' section is active, showing a checked checkbox for 'Enable data (file) replication agent' and an 'apply' button. Below it, a message reads 'Please apply changes or press "reload" button to discard'. The 'Antivirus setup' section shows an 'Info' icon and the text 'No shares found.' The footer includes 'Event Viewer' and 'Data Storage Software V7 - All rights reserved'.

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 4. Configure the source node

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

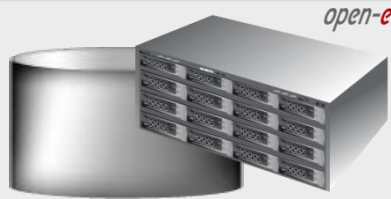
Shares: Data



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



# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 4. Configure the source node

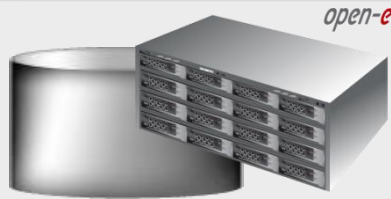
After data replication on a share has been enabled, go to the "MAINTENANCE" menu and select "Data (file) replication".

Data (File)  
Replication



The screenshot shows the open-e web interface for configuring data replication. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The 'MAINTENANCE' menu is active, and the breadcrumb trail shows 'You are here: Maintenance > Data (file) replication'. The main content area is titled 'Data (file) rep.' and contains a form to 'Create new data (file) replication task'. The form fields are: Task name (text input), Source share (dropdown menu with '<choose share>' selected), Snapshot (dropdown menu), Destination IP (text input), Destination share (dropdown menu with a right-pointing arrow icon), Destination agent login (text input), and Destination agent password (text input). There are three checkboxes: 'Log replication errors' (checked), 'Use ACL' (unchecked), and 'Don't delete files' (unchecked). A red 'apply' button is located at the bottom right of the form. At the bottom of the interface, there is an 'Event Viewer' icon and a footer that reads 'Data Storage Software V7 - All rights reserved'.

# Setting up Data (File) Replication over a WAN




Data Server (DSS1)

**Source node**

IP Address:168.192.0220

## 4. Configure the source node

Select the replication source share. In 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.

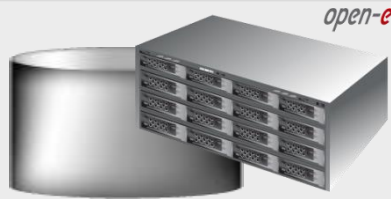
In the **Destination IP** field, enter the IP address of the destination server (in this example, 88.238.22.4) and the user name/password (if applicable) for the destination. Next, configure the **Destination share** field by clicking on the  button. In this example, the **Copy of Data** share appears. Click on the **apply** button.

The screenshot shows the 'Create new data (file) replication task' configuration page in the open-e web interface. The page is titled 'Data (file) replication' and contains the following fields and options:

- Task name: ReplicationTask
- Source share: Data
- Snapshot: snap00000
- Destination IP: 88.238.22.4
- Destination share: Copy of Data
- Destination agent login: (empty field)
- Destination agent password: (empty field)
- Log replication errors
- Use ACL
- Don't delete files

An 'apply' button is located at the bottom right of the form. A footer bar at the bottom of the page shows 'Data (file) replication tasks' and 'Event Viewer'.

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 4. Configure the source node

After the DSS V7 Web console, has been reloaded, the new task (**ReplicationTask**) should appear. An additional information about the selected replication task is visible in the **Data (file) replication task** window.

The configuration of the source node (storage server) is now complete.

The screenshot shows the open-e web console interface. At the top, there is a navigation bar with tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. Below this, a breadcrumb trail reads "You are here: Maintenance > Data (file) replication > ReplicationTask". The main content area is divided into two panels. The left panel, titled "Data (file) rep.", shows a list of tasks with "ReplicationTask" selected. The right panel, titled "Data (file) replication task", displays a table of attributes and values for the selected task.

Attribute	Value
Destination IP:	83.238.22.4
Source share:	Data
Snapshot:	snap00000
Destination share:	Copy of Data
Log replication errors:	Yes
Use ACL:	No
Don't delete files:	No

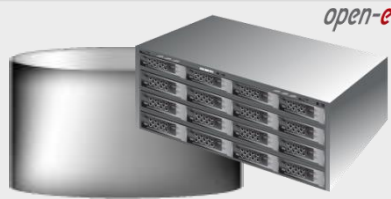
Below the table is a section titled "Create schedule for data (file) replication task" with the following fields:

- Comment:
- Select time:
- Interval:

An "apply" button is located at the bottom right of this section.

At the bottom of the console, there is an "Event Viewer" icon and a footer that reads "Data Storage Software V7 - All rights reserved".

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address:168.192.0220

## 5. Configure replication schedule

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.

The screenshot shows the open-e web interface for configuring a replication task. The breadcrumb trail is: Maintenance > Data (file) replication > ReplicationTask. The left sidebar shows 'Data (file) rep.' with a sub-item 'ReplicationTask'. The main content area has a table with the following settings:

Log replication errors:	Yes
Use ACL:	No
Don't delete files:	No

Below this is the 'Create schedule for data (file) replication task' form:

- Comment: EveryHour
- Select time: Interval
- Interval: 1h time period


An 'apply' button is at the bottom right of the form. A note below it says: 'Please apply changes or press "reload" button to discard'. Below the form is a 'Schedule for data (file) replication task' section with an 'Info' message: 'No schedules found.' The footer of the interface includes 'Event Viewer' and 'Data Storage Software V7 - All rights reserved'.

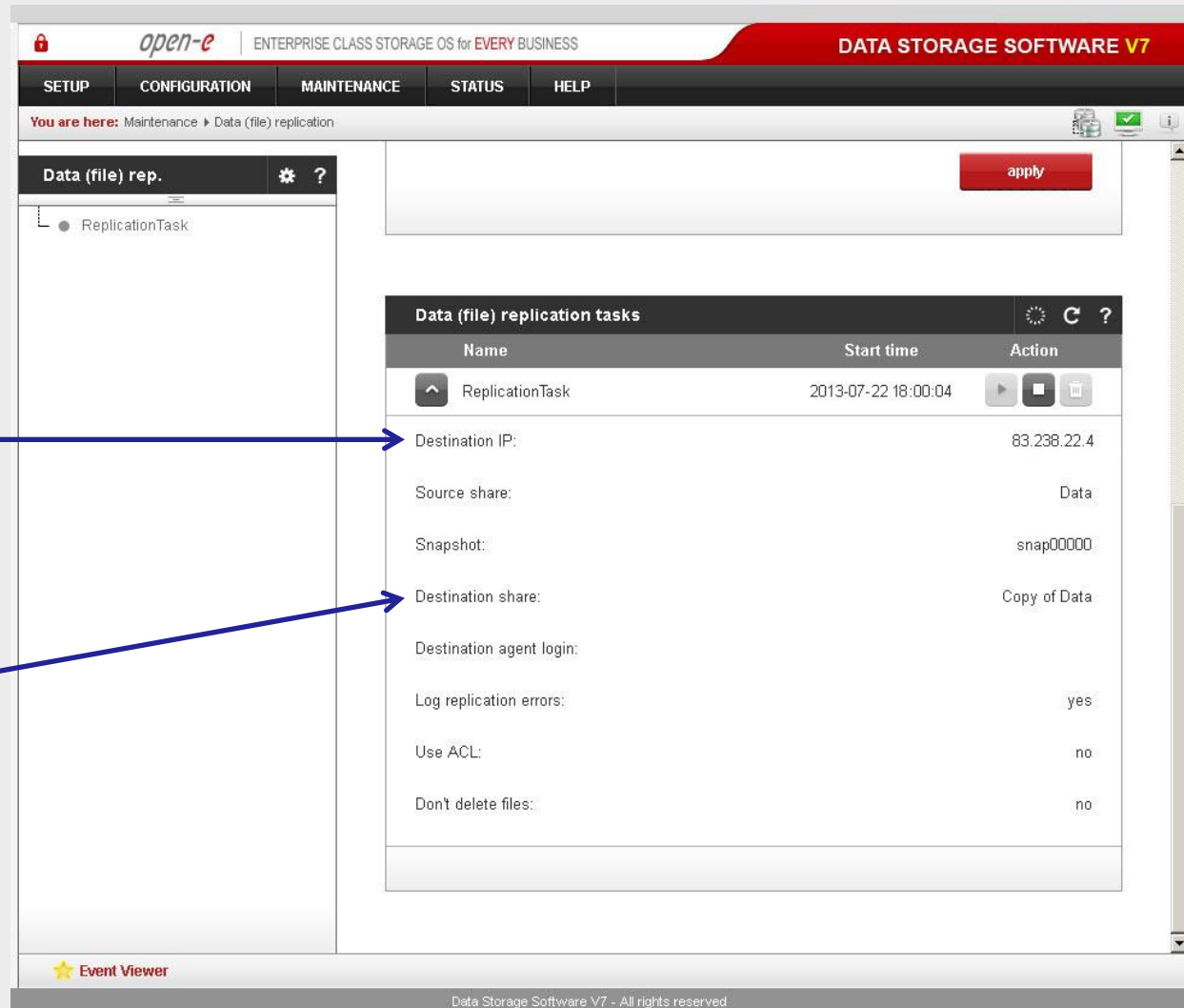
# Setting up Data (File) Replication over a WAN






Data Server (DSS1)  
**Source node**  
IP Address: 168.192.0220

## 6. Check the status 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 **Replication Task**) to display detailed information on the current replication task (the replication task running at 6 pm).



Name	Start time	Action
ReplicationTask	2013-07-22 18:00:04	  

Destination IP:	83.238.22.4
Source share:	Data
Snapshot:	snap00000
Destination share:	Copy of Data
Destination agent login:	
Log replication errors:	yes
Use ACL:	no
Don't delete files:	no

# Setting up Data (File) Replication over a WAN



Data Server (DSS1)

**Source node**

IP Address: 168.192.0220

## 6. Check the status Data (File) Replication

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

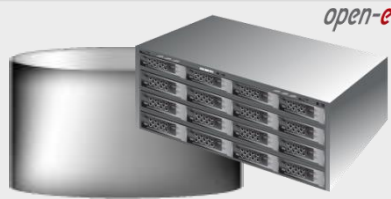
The screenshot shows the open-e web interface for Data Storage Software V7. The navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is "Data (File) Replication" under the "Tasks" section. The "Tasks" list on the left includes Data (File) Replication (selected), Antivirus, Volume Replication, and Snapshots. The "Running tasks" table shows a single task: ReplicationTask, Data (file) replication, starting at 2013-07-22 18:00:04. The "Tasks log" table shows three entries for ReplicationTask, all with a status of "OK" and actions of "Started" or "Finished".

Running tasks			Refresh	Help
Name	Type	Start time		
ReplicationTask	Data (file) replication	2013-07-22 18:00:04		

Tasks log						Refresh	Help
Time	Name	Type	Status	Action			
2013-07-22 18:00:35	ReplicationTask	Data (file) replication	OK	Started			
2013-07-22 17:01:05	ReplicationTask	Data (file) replication	OK	Finished			
2013-07-22 17:00:32	ReplicationTask	Data (file) replication	OK	Started			

# Setting up Data (File) Replication over a WAN



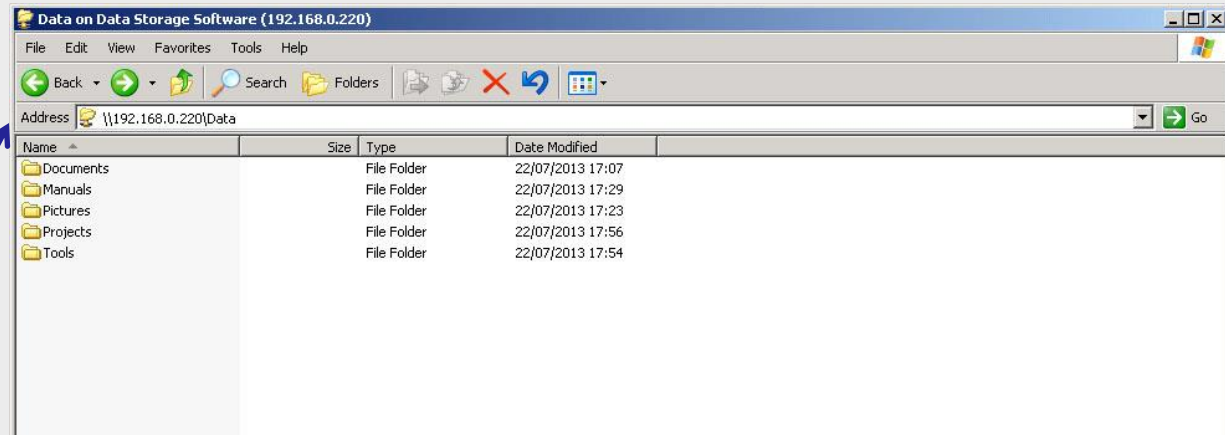
Data Server (DSS1 and DSS2)

**Source and Destination node**

IP Address: 192.168.0.220 and 83.238.22.4

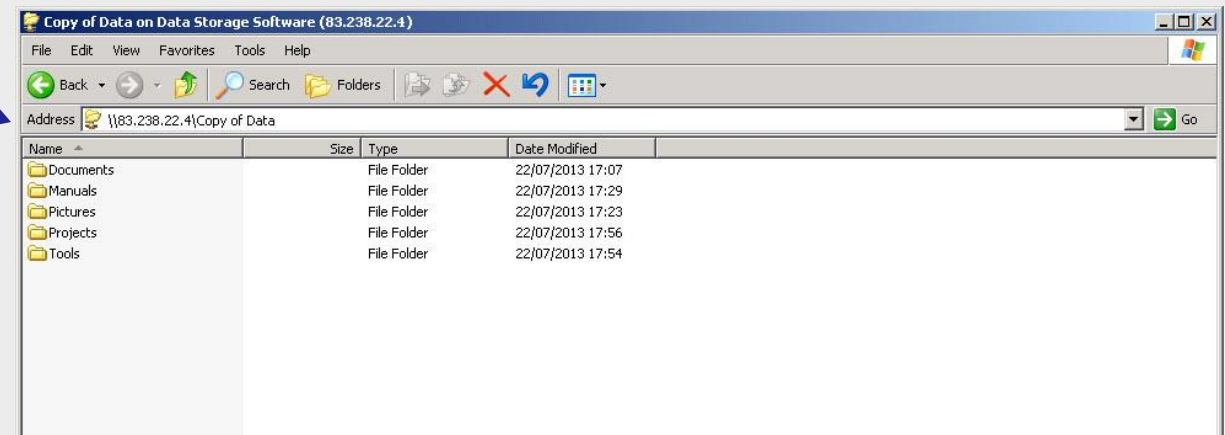
## 6. Check the status Data (File) Replication

Share: Data



Once Data (File) Replication task is completed, 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!

Follow Open-E:

