

*Step-by-Step Guide to
Synchronous
Volume Replication
(Block Based)
with Failover over a LAN
Supported by Open-E® DSS™*

Software Version: DSS ver. 6.00 up07 August 28, 2009

Presentation updated: September 2009

open-e

ENTERPRISE LEVEL STORAGE OS
for EVERY BUSINESS



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.

www.open-e.com

Synchronous Volume Replication with Failover over a LAN *open-e*

	Replication Mode		Source/Destination			Data Transfer		Volume Type			
	Synchronous	Asynchronous	w/ System	LAN	WAN	File based	Block based	NAS	iSCSI		FC
									File-IO	Block-IO	
Synchronous Volume Replication with Failover over a LAN	✓			✓			✓			✓	

- **Open-E DSS Synchronous Volume Replication with Failover** is a fault tolerance process via iSCSI volume replication, that creates mirrored target data volumes.
 - Data is copied in real-time, and every change is immediately mirrored from the primary server to the secondary storage server.
 - In case of a failure, scheduled maintenance of the primary server, or loss of the primary data source, failover automatically switches operations to the secondary storage server, so processes can be continued as usual.

Synchronous Volume Replication with Failover over a LAN *open-e*

VOLUME REPLICATION WITH FAILOVER BETWEEN TWO SYSTEMS WITHIN ONE LAN

■ Recommended Resources

- Key Hardware (two systems)
 - ✓ x86 compatible
 - ✓ RAID Controller with **Batery Backup Unit**
 - ✓ HDD's
 - ✓ Network Interface Cards
 - ✓ Ping Node (ping node it is any permanently (24/7) available host in the network. In particular case the ping node function can be performed by the server storing the data on the iSCSI failover volume).
- Software
 - ✓ Open-E DSS, 2 units

■ Benefits

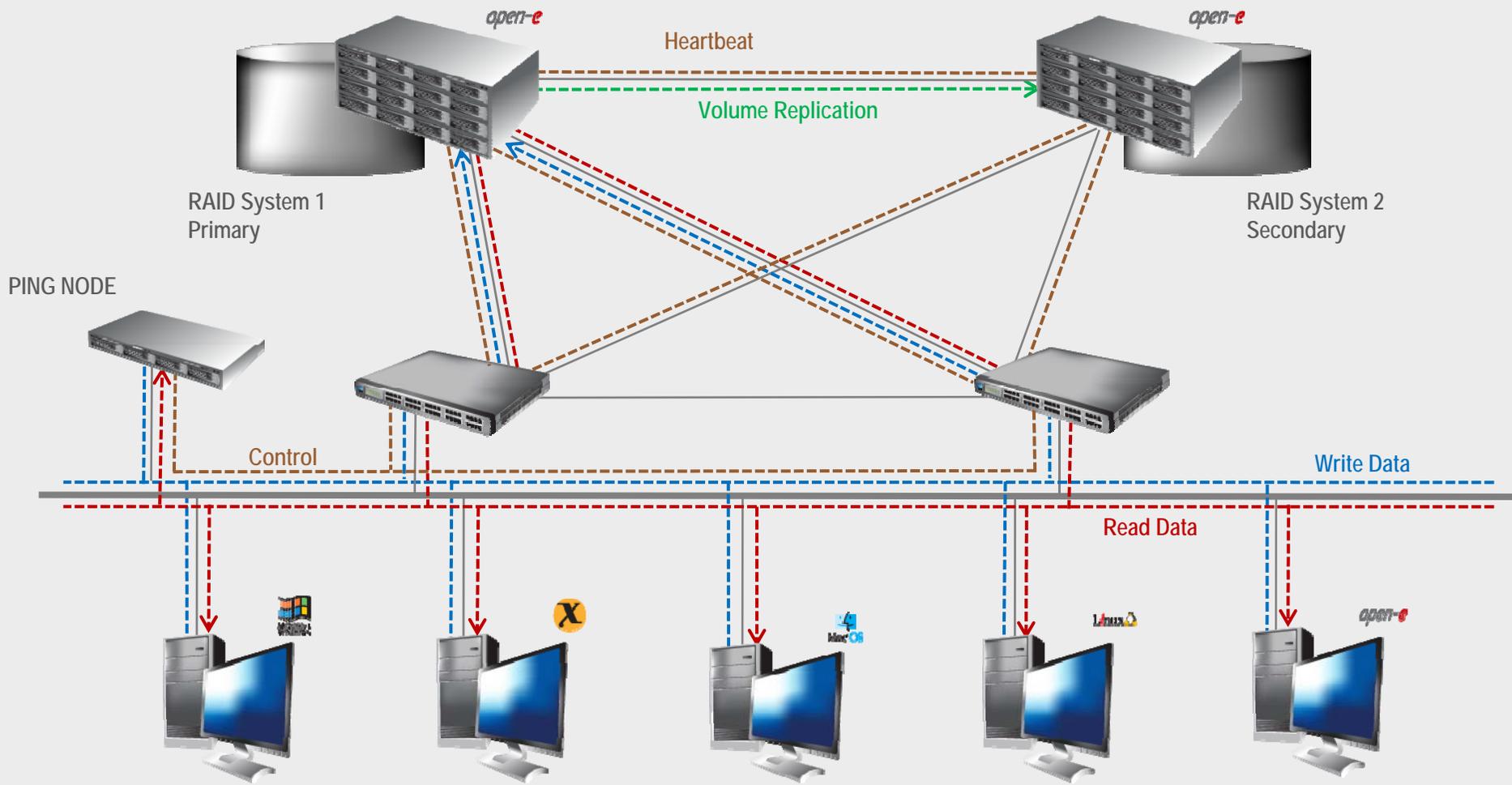
- Eliminate business disruption
- Data Redundancy over a LAN
- Switch Redundancy

■ Disadvantages

- High cost of solution
- Natural disasters (earthquake, fire, flood...) can destroy local systems

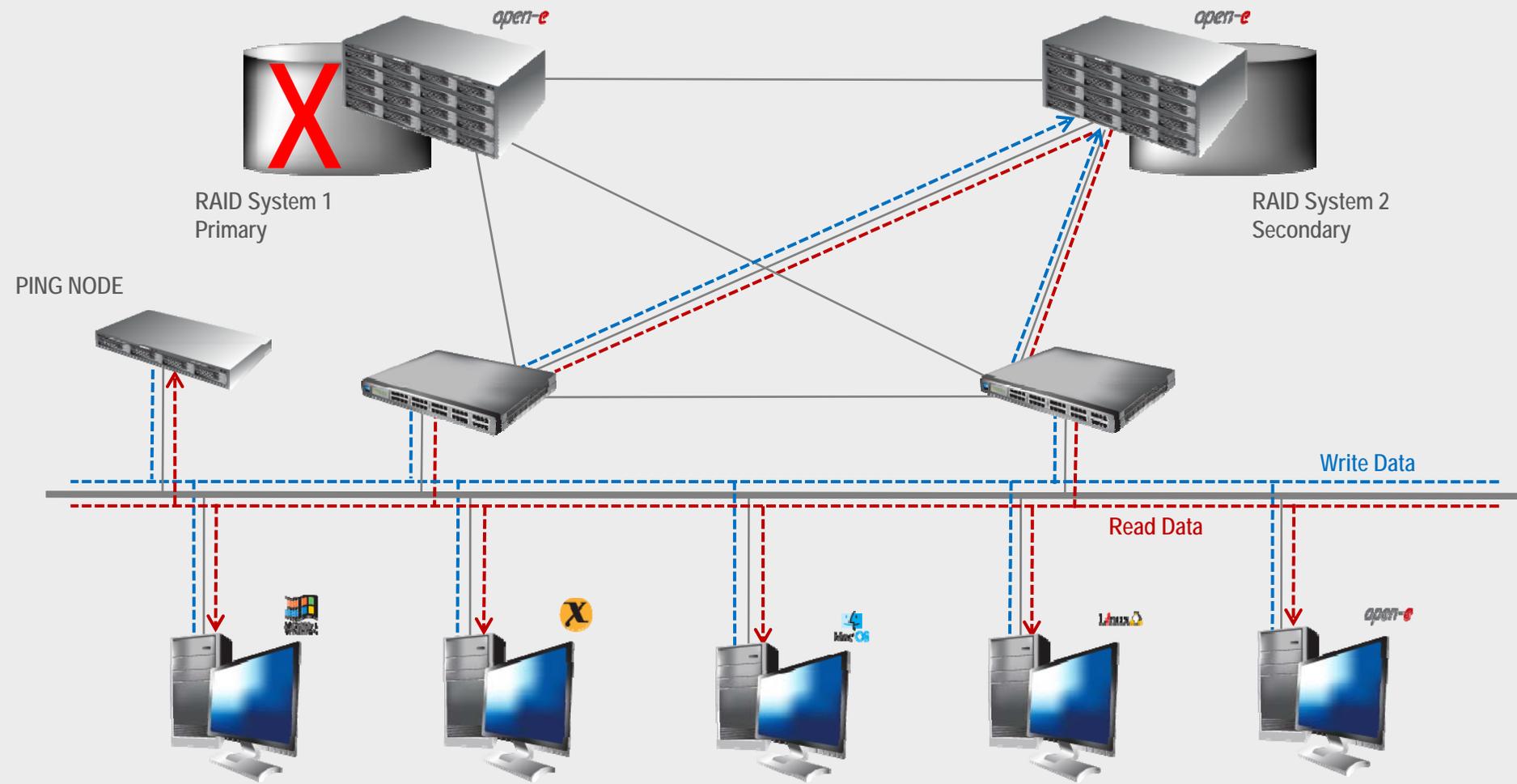
Synchronous Volume Replication with Failover over a LAN *open-e*

- Data is written and read to System 1 (primary)
- Data is continually replicated to System 2 (secondary)



Synchronous Volume Replication with Failover over a LAN *open-e*

- After switching, the replicated volume is available on System 2 (secondary)



Synchronous Volume Replication with Failover over a LAN *open-e*

TO SET UP VOLUME REPLICATION WITH FAILOVER, PERFORM THE FOLLOWING STEPS:

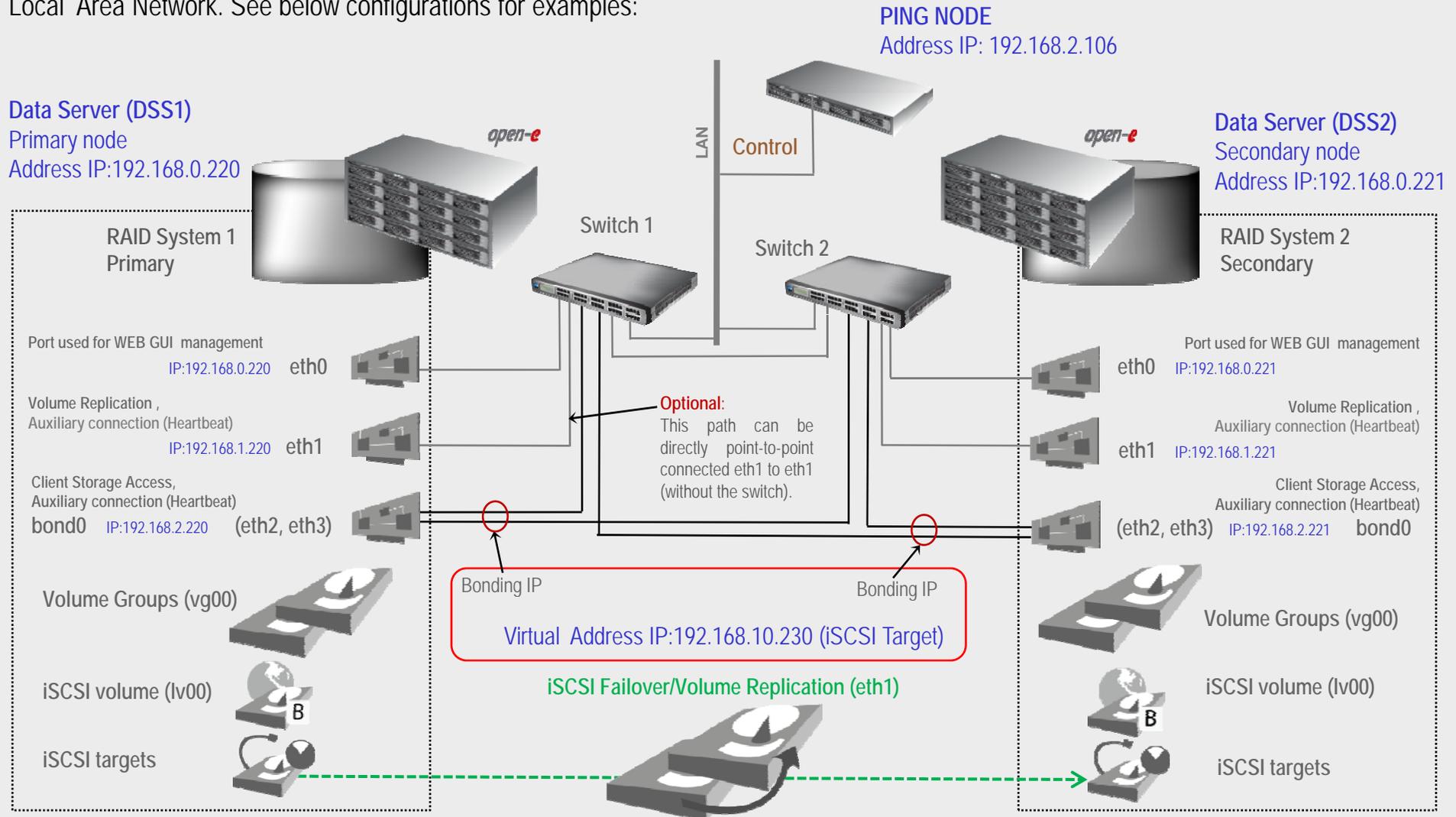
1. Hardware configuration:
 - Settings server names, ethernet ports and bonding on secondary and primary node
2. Configure the Secondary node:
 - Create a Volume Group, iSCSI Volume
 - Configure Volume Replication mode (destination mode) – settings mirror IP address
3. Configure the Primary node
 - Create a Volume Group, iSCSI Volume
 - Configure Volume Replication mode (source mode) – settings mirror IP address, creating Volume Replication task and start replication task.
4. Create new target on Secondary node
5. Create new target on Primary node
6. Configure virtual IP and Auxiliary connection
7. Configure iSCSI Failover
8. Start Failover Service
9. Test Failover Function
10. Run Failback Function

Synchronous Volume Replication with Failover over a LAN *open-e*

Hardware Requirements:

To run the Volume Replication with Failover, two DSS systems are required. Both servers must be located and working in the Local Area Network. See below configurations for examples:

1. Hardware Configuration



Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

1. Hardware Configuration

After logging on the DSS V6 please go to „**SETUP**“ tab, „**network**“ and „**Interfaces**“. In „**Server name**“ function enter Server name, in this example „**dss2**“ and click **apply** button. (All connections will be restarted)

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

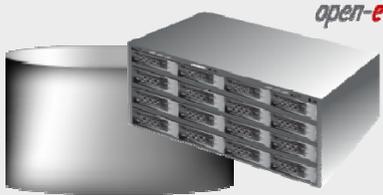
- Navigation:** SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP
- Current Location:** You are here: SETUP > network > Interfaces
- Interfaces:** A list of network interfaces: eth0, eth1, eth2, eth3.
- Server name:** A form with 'Server name:' set to 'dss2' and 'Comment:' set to 'Data Storage Server'. An 'apply' button is visible below.
- DNS settings:** A form with 'DNS:' and an 'apply' button.
- Create new bond interface:** A table with columns: Primary, Interface, Active, Cable, State.

Primary	Interface	Active	Cable	State
<input type="checkbox"/>	eth0	yes	cable	Single
<input type="checkbox"/>	eth1	yes	no cable	Single
<input type="checkbox"/>	eth2	yes	cable	Single
<input type="checkbox"/>	eth3	yes	cable	Single

Below the table, there are fields for 'Create:' (set to 'New balance-rr') and 'MAC:' (set to '02:84:51:03:C8:8C').

At the bottom of the interface, it says 'Event Viewer: [icon]' and 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



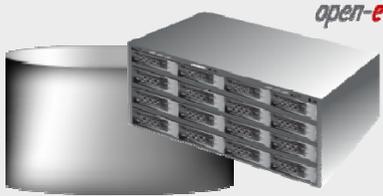
Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

1. Hardware Configuration

Next select **eth0** interface and change address IP from 192.168.0.220 in field IP address to 192.168.0.221, and click **apply** button. (This will restart network configuration).

The screenshot displays the open-e web management interface. At the top, the navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The breadcrumb trail indicates the current location: SETUP > network > Interfaces > eth0. The main content area is divided into two panels. The left panel, titled 'Interfaces', shows a list of network interfaces: eth0 (selected), eth1, eth2, and eth3. Below this is the 'iSCSI Failover' section, also with a list of interfaces. The right panel, titled 'Interface info', shows details for the selected eth0 interface, including the hardware description: 'Intel Corporation 82546GB Gigabit Ethernet Controller (rev 03)'. Below this is the 'IP address' configuration section, which includes a warning: 'Warning! You are currently connected through this interface.' The configuration options are: Active (checked), DHCP (unselected), and Static (selected). The IP address field is set to 192.168.0.221, the Netmask is 255.255.255.0, and the Broadcast is set to auto. The Gateway field is empty. An 'apply' button is located at the bottom right of the IP address configuration section. At the bottom of the interface, there is an 'Event Viewer' icon and a status message: 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

1. Hardware Configuration

Next select eth1 interface and change IP address from 192.168.1.220 in field IP address to 192.168 .1.221 and click **apply** button.

The screenshot displays the open-e web management interface. At the top, there is a navigation bar with tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. Below this, a breadcrumb trail indicates the current location: SETUP > network > Interfaces > eth1. The main content area is divided into two panels. The left panel, titled 'Interfaces', shows a list of network interfaces: eth0, eth1 (selected), eth2, and eth3. Below this is an 'iSCSI Failover' section with a similar list. The right panel, titled 'Interface info', shows details for the selected eth1 interface, including the hardware model 'Intel Corporation 82546GB Gigabit Ethernet Controller (rev 03)'. Below this is the 'IP address' configuration section, which is currently set to 'Static'. The IP address field is set to '192.168.1.221', the netmask is '255.255.255.0', and the broadcast is 'auto'. A red 'apply' button is visible at the bottom right of the IP address section. A blue callout box on the left points to the 'eth1' interface in the list and the IP address field in the configuration section.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

1. Hardware Configuration

Again select „Interfaces” and in Create new bond interface function check two boxes with eth2 and eth3. In field Create select bonding mode. In this example select New balance-rr.

Next enter address IP in field IP address 192.168 .2.221, Netmask, and click **create** button.

✓	Primary	Interface	Active	Cable	State
<input type="checkbox"/>	<input type="checkbox"/>	eth0	yes	cable	Single
<input type="checkbox"/>	<input type="checkbox"/>	eth1	yes	no cable	Single
<input checked="" type="checkbox"/>	<input type="checkbox"/>	eth2	yes	cable	Single
<input checked="" type="checkbox"/>	<input type="checkbox"/>	eth3	yes	cable	Single

Create:

MAC:

DHCP

Static

Address IP:

Netmask:

Broadcast:

Gateway:

create

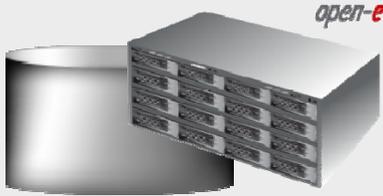
Please apply changes or press "reload" button to discard

HTTP proxy

Use HTTP proxy

apply

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

1. Hardware Configuration

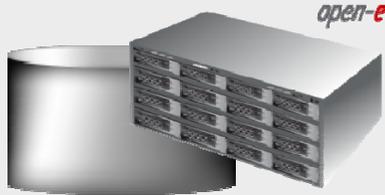
After reloading page on the dss2 server you have configured bond0. Setting of the network interfaces on the secondary node is finished.

The screenshot shows the open-e web interface for a secondary node. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates 'You are here: SETUP > network > Interfaces'. The main content area is divided into several sections:

- Interfaces:** A list of network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0. The bond0 interface is highlighted with a blue arrow pointing from the text box on the left.
- Server name:** A form with 'Server name:' set to 'dss2' and 'Comment:' set to 'Data Storage Server'. An 'apply' button is present.
- DNS settings:** A form with a 'DNS' input field and an 'apply' button.
- Create new bond interface:** A table with columns: Primary, Interface, Active, Cable, and State. The table shows configurations for eth0, eth1, eth2, and eth3, all of which are active and part of the bond0 interface.

At the bottom of the interface, there is an 'Event Viewer' icon and a status message: 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

1. Hardware Configuration

After logging on the primary node please go to „**SETUP**“ tab, „**network**“ and „**Interfaces**“. In „**Server name**“ function enter Server name. In this example enter **dss1** and click **apply** button. (All connection will be restarted).

open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6

SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: SETUP > network > Interfaces

Interfaces

- eth0
- eth1
- eth2
- eth3

iSCSI Failover

- eth0
- eth1
- eth2
- eth3

Server name

Server name:

Comment:

apply

Please apply changes or press "reload" button to discard

DNS settings

DNS:

apply

Create new bond interface

✓	Primary	Interface	Active	Cable	State
<input type="checkbox"/>	<input checked="" type="checkbox"/>	eth0	yes	cable	Single
<input type="checkbox"/>	<input checked="" type="checkbox"/>	eth1	yes	cable	Single
<input type="checkbox"/>	<input checked="" type="checkbox"/>	eth2	yes	cable	Single
<input type="checkbox"/>	<input checked="" type="checkbox"/>	eth3	yes	cable	Single

Create:

MAC:

Event Viewer: [icon] | Product is activated. | Data Storage Software V6 - All rights reserved.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

1. Hardware Configuration

Again select „Interfaces” and in Create new bond interface function check two boxes with eth2 and eth3. In field Create select mode for bonding. In this example selected New balance-rr..

Next enter address IP in field IP address 192.168 .2.220, Netmask, and click **create** button.

The screenshot shows the 'open-e' web interface for 'DATA STORAGE SOFTWARE V6'. The navigation menu includes SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'Interfaces' under 'network'. A 'Create new bond interface' dialog is open, showing a table of interfaces and a configuration form.

Primary	Interface	Active	Cable	State
<input type="checkbox"/>	eth0	yes	cable	Single
<input type="checkbox"/>	eth1	yes	cable	Single
<input checked="" type="checkbox"/>	eth2	yes	cable	Single
<input checked="" type="checkbox"/>	eth3	yes	cable	Single

Configuration form for the new bond interface:

- Create:
- MAC:
- DHCP
- Static
- Address IP:
- Netmask:
- Broadcast:
- Gateway:

Buttons: **create**, **apply**

HTTP proxy section: Use HTTP proxy

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

1. Hardware Configuration

After reloading page on the dss1 server you have configured bond0. Setting of the network interfaces on the secondary node is finished.

The screenshot shows the open-e web interface for configuring network interfaces. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates 'You are here: SETUP > network > Interfaces'. The main content area is divided into two sections: 'Interfaces' and 'ISCSI Failover'. The 'Interfaces' section shows a list of network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0. The 'ISCSI Failover' section shows a list of interfaces: eth0, eth1, and bond0. To the right of the interface lists are configuration panels for 'Server name', 'DNS settings', and 'Create new bond interface'. The 'Server name' panel shows 'Server name: dss1' and 'Comment: Data Storage Server'. The 'DNS settings' panel shows a 'DNS' input field. The 'Create new bond interface' panel contains a table with columns for 'Primary', 'Interface', 'Active', 'Cable', and 'State'. Below the table are fields for 'Create:', 'MAC:', and 'DHCP'.

✓	Primary	Interface	Active	Cable	State
<input type="checkbox"/>	<input type="checkbox"/>	eth0	yes	cable	Single
<input type="checkbox"/>	<input type="checkbox"/>	eth1	yes	cable	Single
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	eth2	yes	cable	bond0
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	eth3	yes	cable	bond0

Create:
MAC:
 DHCP

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

2. Configure the Secondary node

Under the „CONFIGURATION” tab, select „volume manager” and next Vol. Groups.



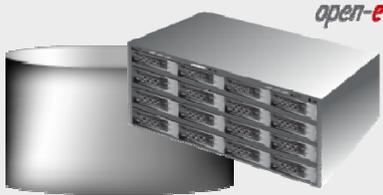
Volume Groups (vg00)

In Unit manager function add the selected physical units (Unit S000 or other) 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 components:

- Header: open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6
- Navigation: SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP
- Breadcrumbs: You are here: CONFIGURATION > volume manager > Vol. groups
- Left Panel: Vol. groups (selected), Vol. replication
- Unit rescan: rescan button
- Unit manager: Table with columns Unit, Size (GB), Serial number, Status. Row: Unit S000, 230.08, N/A, available. Action: new volume group, Name: vg00. apply button.
- Drive identifier: Table with columns Unit, Serial number, Status. Row: Unit S000, N/A. apply button.
- Footer: Event Viewer: [icon], Product is activated., Data Storage Software V6 - All rights reserved.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

2. Configure the Secondary node

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

Next check the box with **Use volume replication**

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

The screenshot shows the open-e web interface for configuring a secondary node. The breadcrumb trail is: CONFIGURATION > volume manager > Vol. groups > vg00. The left sidebar shows 'Vol. groups' with 'vg00' selected and 'Vol. replication' below it. The main panel is titled 'Volume manager' and contains a table of system volumes:

System volumes	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	1.00
Reserved for replication	0.00
Free	225.03

Below the table, the 'Action' dropdown is set to 'new iSCSI volume' and 'Options' is 'Just create volume'. The 'Use volume replication' checkbox is checked. Under 'Block I/O', the 'Initialize' checkbox is checked. A slider for volume size is set to 10.00 GB, with a note '(+0.12 GB for replication)'. The 'apply' button is highlighted in red. At the bottom, it says 'Please apply changes or press "reload" button to discard'. The footer includes 'Event Viewer: [icon]', 'Product is activated.', and 'Data Storage Software V6 - All rights reserved'.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

2. Configure the Secondary node

The destination iSCSI Volume Block I/O is now configured.



iSCSI volume (lv0000)

open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6

SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > volume manager > Vol. 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	B		✓		N/A	10.00
System volumes						
Reserved Pool						4.00
Reserved for snapshots						0.00
Reserved for system						1.00
Reserved for replication						0.13
Free						214.91

Action: new NAS volume

Use volume replication
 WORM

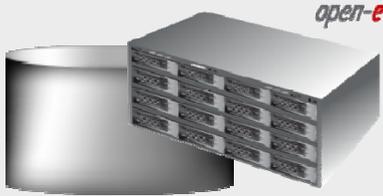
0 214.91

add: 0.00 GB

apply

Event Viewer: Product is activated.
Data Storage Software V6 - All rights reserved

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

2. Configure the Secondary node

Now, select the Vol. replication and check the box under **Destination** and click the **apply** button

Next, under **Mirror Server IP** function, enter the IP address of the Primary node (in our example, this would be 192.168.1.220) and click the **apply** button

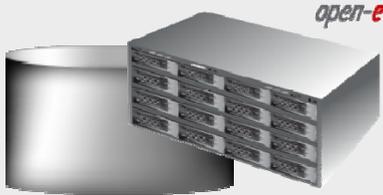
NOTE:

The Mirror server IP Address must be on the same subnet in order for the replication to communicate. VPN connections can work providing you are not using a NAT. Please follow example:

- Source: 192.168.1.220
- Destination: 192.168.1.221

Logical Volume	Init	Source	Destination	Clear metadata
lv0000	done	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

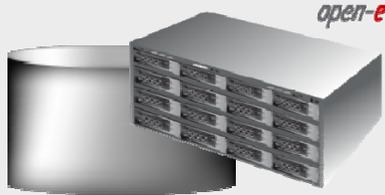
Under the „CONFIGURATION“ tab, select „volume manager“ and next „Vol. Groups“

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



Volume Groups (vg00)

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

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

Next, check box **Use volume replication**

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

The screenshot shows the open-e web interface for configuring a new iSCSI volume. The breadcrumb path is "CONFIGURATION > volume manager > Vol. groups > vg00". The "Volume manager" section displays a table of system volumes:

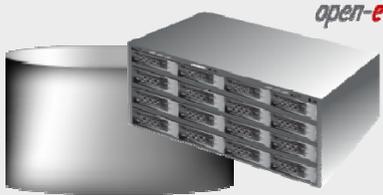
System volumes	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	1.00
Reserved for replication	0.00
Free	460.72

The "Action:" dropdown is set to "new iSCSI volume" and the "Options:" dropdown is set to "Just create volume". The "Use volume replication" checkbox is checked. Under "Block I/O", the "Initialize" checkbox is also checked. A slider for volume size is set to 10.00 GB, with a note "(+0.12 GB for replication)". The "apply" button is highlighted in red.

NOTE:

The source and destination volumes must be of identical size.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

The destination iSCSI Volume Block I/O is now configured.



iSCSI volume (lv0000)

open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6

SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > volume manager > Vol. 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	B		✓		N/A	10.00

System volumes

	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	1.00
Reserved for replication	0.13
Free	450.59

Action: new NAS volume

Use volume replication
 WORM

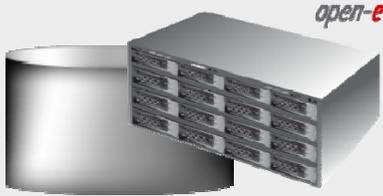
0 450.59

add: 0.00 GB

apply

Event Viewer: [icon] Product is activated.
Data Storage Software V6 - All rights reserved

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

Now, select Vol. replication, and check the box under **Source** and click the **apply** button

Next, under **Mirror Server IP** function, enter the IP address of the Secondary node (in our example this would be 192.168.1.221) and click the **apply** button

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

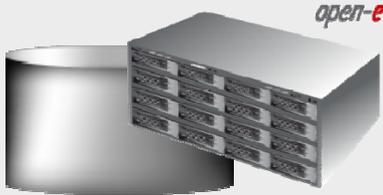
- Navigation:** SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP. Breadcrumbs: You are here: CONFIGURATION > volume manager > Vol. replication.
- Vol. groups:** A list containing 'vg00'.
- Vol. replication:** A sub-section with a table for volume replication mode.

Logical Volume	Init	Source	Destination	Clear metadata
lv0000	done	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

An 'apply' button is located below the table.
- Mirror server IP:** A form with 'IP address:' set to '192.168.1.221' and a 'WAN' checkbox. An 'apply' button is at the bottom.
- Create new volume replication task:** An info message: 'Mirror Server IP is not set.'
- Replication tasks manager:** An info message.

At the bottom, there is an 'Event Viewer' icon and the text 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

Enter the task name in field Task name next click on the button 

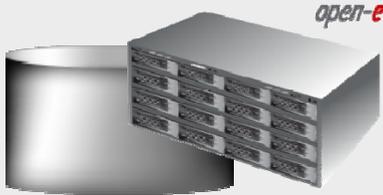
In the Destination volume field select the appropriate volume (in this example, lv0000) and click **create** to confirm

The screenshot shows the open-e web interface for configuring a primary node. The main navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'Vol. replication' under 'CONFIGURATION > volume manager > Vol. replication'. The interface is divided into several panels:

- Mirror server IP:** A form with 'IP address:' set to '192.168.1.221' and a 'WAN' checkbox. An 'apply' button is at the bottom.
- Create new volume replication task:** A form with 'Task name:' set to 'Mirror_00', 'Source volume:' set to 'lv0000', and 'Destination volume:' set to 'lv0000'. It also has a 'Bandwidth for Syncsource (MB):' field set to '40' and an 'Asynchronous protocol:' checkbox. A 'create' button is at the bottom.
- Replication tasks manager:** A panel showing 'Info' with the message 'No tasks have been found.'

At the bottom of the interface, there is an 'Event Viewer' icon and the text 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

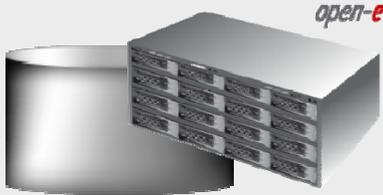
Now, in the **Replication task manager** function, click on  button under to start the Replication task on the Primary node

The screenshot shows the open-e web interface for configuring a primary node. The breadcrumb trail is: CONFIGURATION > volume manager > Vol. replication. The left sidebar shows a tree view with 'Vol. groups' containing 'vg00' and 'Vol. replication' containing 'Mirror_00'. The main content area has several sections: 1. An 'apply' button. 2. 'Mirror server IP' section with an IP address field containing '192.168.1.221' and a 'WAN' checkbox. 3. 'Create new volume replication task' section with an info message: 'No volumes with replication functionality found or all volumes have a task assigned already.' 4. 'Replication tasks manager' section with a table:

Name	Start time	Action
Mirror_00	n/a	  

At the bottom, there is an 'Event Viewer' icon and the text 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

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: CONFIGURATION > volume manager > Vol. replication
- Left Panel: Vol. groups (vg00) and Vol. replication (Mirror_00)
- Main Content Area:
 - Mirror server IP: IP address: 192.168.1.221, WAN checkbox, apply button.
 - Create new volume replication task: Info message: No volumes with replication functionality found or all volumes have a task assigned already.
 - Replication tasks manager: Table with columns Name, Start time, Action.

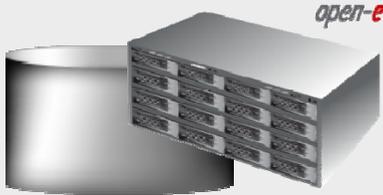
Name	Start time	Action
Mirror_00	2009-09-02 23:43:11	[Play] [Pause] [Stop]

Source volume: lv0000
Destination volume: lv0000
Destination IP: 192.168.1.221
Protocol type: Synchronous

Event Viewer: [Envelope icon] Product is activated.
Data Storage Software V6 - All rights reserved

In the Replication tasks manager function information is available about the current running replication task

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

3. Configure the Primary node

Under the „STATUS” tab,
select „tasks” and Volume
Replication

Click on the  button with
task name (in this case
Mirror_00) to display detailed
information on the current
replication task

open-e | ENTERPRISE CLASS STORAGE OS FOR EVERY BUSINESS | DATA STORAGE SOFTWARE V6

SETUP CONFIGURATION MAINTENANCE STATUS HELP

You are here: STATUS > tasks > Volume Replication

Tasks

- Backup
- Restore from backup
- Data Replication
- Antivirus
- Volume Replication**
- Snapshots

Running tasks

Name	Type	Start time
Mirror_00	Volume replication	2009-09-02 23:43:11

Protocol type: Synchronous
Connection: Connected

Source info:
Logical volume: lv0000
Consistency: Consistent

Destination info:
Logical volume: lv0000
Consistency: Consistent
IP address: 192.168.1.221

Tasks log

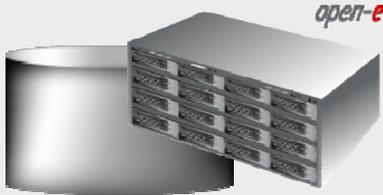
Time	Name	Type	Status	Action
2009-09-02 23:43:20	Mirror_00	Volume replication	OK	Started

Event Viewer:  Product is activated.
Data Storage Software V6 - All rights reserved

NOTE:

Please allow the replication task to complete similar to above with status being "Consistent" before writing to the iSCSI Logical Volume.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

4. Create new target on the Secondary node

Choose „CONFIGURATION“, „iSCSI target manager“ and „Targets“ from the menu

In the Create new target function, uncheck the box Target Default Name, and enter a name for the new target in the Name field and click **apply** to confirm

The screenshot displays the open-e web interface for configuring iSCSI targets. The navigation menu at the top includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: CONFIGURATION > iSCSI target manager > Targets'. The main content area shows the 'Targets' tab selected, with a 'Create new target' dialog box open. In this dialog, the 'Target Default Name' checkbox is unchecked. The 'Name' field is filled with 'mytarget' and the 'Alias' field is filled with 'target0'. An 'apply' button is present at the bottom right of the dialog. Below the dialog, there is a 'Discovery CHAP user access' section with an unchecked checkbox for 'Enable CHAP user access authentication' and another 'apply' button. The footer of the interface shows 'Event Viewer' with an envelope icon and 'Product is activated. Data Storage Software V6 - All rights reserved.'

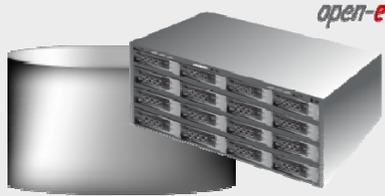
iSCSI targets



NOTE:

Both systems must have the same Target name.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

4. Create new target on the Secondary node

Select target0 within the Targets field.

To assign a volume to the target, click the button  located under **Action**

NOTE:

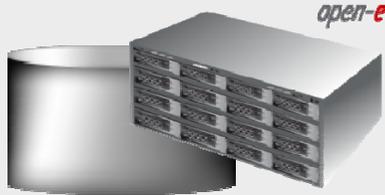
Both systems must have the same SCSI ID and LUN#

WARNING:

Please do not switch on the write back (WB) cache !

The screenshot shows the open-e web interface for configuring a target. The breadcrumb trail is: CONFIGURATION > ISCSI target manager > Targets > mytarget. The 'Targets' field shows 'target0' selected. The 'Target volume manager' section contains three informational messages and a table with columns: Volume, SCSI ID, LUN, RO, WB, and Action. The table has one row with Volume 'lv0000', SCSI ID '0ICQNwUehQW9jtHI', LUN '0', and checkboxes for RO and WB. The 'Action' column has a plus sign button. Below the table, there are fields for 'Volume replication: Size (GB):' and 'Destination: 10.00'. The 'Discovery CHAP user access' section has a checkbox for 'Enable CHAP user access authentication' and an 'apply' button. The footer shows 'Event Viewer: [icon]', 'Product is activated.', and 'Data Storage Software V6 - All rights reserved'.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

5. Create new target on the Primary node

Choose „CONFIGURATION“ and „iSCSI target manager“ and „Targets“ from the menu

In the Create new target function, uncheck the box Target Default Name, and enter a name for the new target in the Name field and click **apply** to confirm

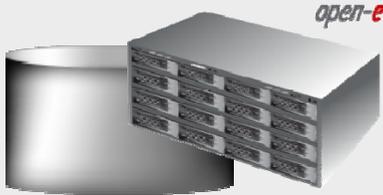
iSCSI targets



NOTE:

Both systems must have the same Target name.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

5. Create new target on the Primary node

Select the target0 within the Targets field

To assign a volume to the target, click the button  located under **Action**

WARNING:

Please do not switch on the write back cache (WB) !

open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | DATA STORAGE SOFTWARE V6

SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: CONFIGURATION > ISCSI target manager > Targets > mytarget

Targets

target0

CHAP users

Target volume manager

Info

Currently there are no LUN's added to this target. In order to add a LUN, click on the plus "+" sign in the "Action" column for this LUN.

Info

Please note that in order to access iSCSI-enabled data from an initiator, the target needs to have a LUN 0, otherwise the data in all other LUNs will be inaccessible. The data will also be inaccessible if you select an inactive snapshot or a destination volume (volume replication) as LUN 0.

Volume	SCSI ID	LUN	RO	WB	Action
lv0000	EEecLiFgPlkDFj4u	0	<input type="checkbox"/>	<input type="checkbox"/>	 

Discovery CHAP user access

Enable CHAP user access authentication

apply

Target IP access

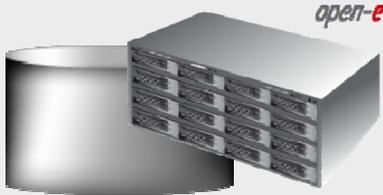
Deny access:

Allow access:

Event Viewer:  Product is activated.

Data Storage Software V6 - All rights reserved

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

6. Configure Virtual IP and Auxiliary connection

Now, select the **bond0** within **iSCSI Failover**.
In the **Virtual IP Settings** function check box **Enable virtual IP** and enter IP address, Netmask, Broadcast, and click the **apply** button.

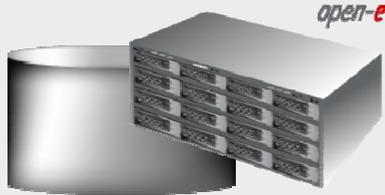
In the **Auxiliary connection** function check box **Use this network interface to communicate between the nodes** and click the **apply** button.

NOTE:

There need to be at least two *auxiliary connections*. The interface with the virtual IP can also serve as one of the auxiliary connections. Please set the Virtual IP Address in a different network subnet then the physical IP Address. To have additional iSCSI Failover systems, please set this pair in a different network subnet from the other iSCSI Failover systems. This limitation will be removed in the future.

The screenshot displays the open-e web interface for configuring iSCSI Failover. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'iSCSI Failover' under 'network'. The 'Interfaces' section shows a list of interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0. The 'Virtual IP Settings' panel is active, showing the MAC address 02:14:ed:66:b1:e8, and the 'Enable virtual IP' checkbox is checked. The IP address is set to 192.168.10.230, the netmask to 255.255.255.0, and the broadcast to 192.168.10.255. The 'Auxiliary connection' panel is also active, with the checkbox 'Use this network interface to communicate between the nodes' checked. Both panels have 'apply' buttons. A footer bar shows 'Event Viewer' and 'Product is activated. Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



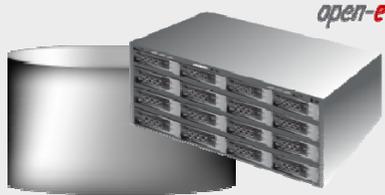
Data Server (DSS1)
Primary node
Address IP:192.168.0.220

6. Configure Virtual IP and Auxillary connection

Now, select the eth1 within iSCSI Failover.
In the Auxiliary connection function check box Use this network interface to communicate between the nodes and click the apply button.

The screenshot displays the open-e web management interface. At the top, there is a navigation bar with tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. Below this, a breadcrumb trail indicates the current location: SETUP > network > iSCSI Failover. The main content area is divided into several panels. On the left, there are two tree views: 'Interfaces' and 'iSCSI Failover'. The 'Interfaces' panel lists eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0. The 'iSCSI Failover' panel lists eth0, eth1, and bond0. The 'eth1' option in the 'iSCSI Failover' panel is selected. On the right side, there are two configuration panels. The 'Virtual IP Settings' panel shows a MAC address of 00:15:17:18:e7:f5 and an unchecked checkbox for 'Enable virtual IP'. The 'Auxiliary connection' panel has a checked checkbox for 'Use this network interface to communicate between the nodes'. Both panels have an 'apply' button. At the bottom of the interface, there is a footer with 'Event Viewer: [icon]', 'Product is activated.', and 'Data Storage Software V6 - All rights reserved'.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

6. Configure Virtual IP and Auxillary connection

Choose, „**SETUP**“ and „**network**“ and „**Interfaces**“ from the menu

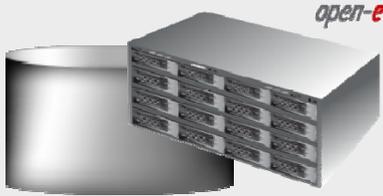
Now, select the **bond0** within **iSCSI Failover**. In the **Virtual IP Settings** function check the box **Enable virtual IP** and enter IP address, Netmask, Broadcast, and click the **apply** button.

In the **Auxiliary connection** function check box **Use this network interface to communicate between the nodes** and click the **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 V6
- Navigation: SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP
- Breadcrumb: You are here: SETUP > network > iSCSI Failover
- Left Panel: **Interfaces** (selected) showing a tree view with eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0. Below it is the **iSCSI Failover** section with eth0, eth1, and bond0.
- Right Panel: **Virtual IP Settings** with fields for MAC (02:ca:53:94:ad:15), Enable virtual IP, IP address (192.168.10.230), Netmask (255.255.255.0), and Broadcast (192.168.10.255). An **apply** button is at the bottom.
- Below that is the **Auxiliary connection** section with Use this network interface to communicate between the nodes. and an **apply** button.
- Footer: Event Viewer: [icon] | Product is activated. | Data Storage Software V6 - All rights reserved

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

6. Configure Virtual IP and Auxillary connection

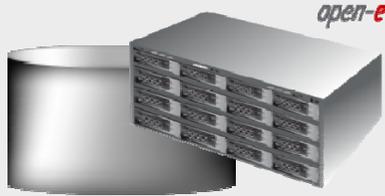
Now, select the eth1 within iSCSI Failover.
In the **Auxiliary connection** function check box **Use this network interface to communicate between the nodes** and click the **apply** button.

The screenshot displays the open-e web interface for configuring iSCSI Failover. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: SETUP > network > iSCSI Failover'. The main content area is divided into several panels:

- Interfaces:** A list of network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0.
- iSCSI Failover:** A list of network interfaces: eth0, eth1 (selected with a red dot), and bond0.
- Virtual IP Settings:** Shows the MAC address as 00:04:23:b9:86:fb and an unchecked checkbox for 'Enable virtual IP'. An 'apply' button is present.
- Auxiliary connection:** Shows a checked checkbox for 'Use this network interface to communicate between the nodes'. An 'apply' button is present. A note below the checkbox reads: 'Please apply changes or press "reload" button to discard'.

At the bottom of the interface, there is an 'Event Viewer' icon, a status message 'Product is activated.', and a footer 'Data Storage Software V6 - All rights reserved'.

Synchronous Volume Replication with Failover over a LAN *open-e*



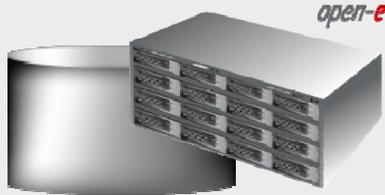
Data Server (DSS1)
Primary node
Address IP:192.168.0.220

7. Configure iSCSI Failover

Now, select iSCSI Failover

In the Failover configuration function, check the box Enable iSCSI failover functionality and enter the Secondary node IP address and the Ping Node IP (must be on the same subnet) and click the **apply** button.

Synchronous Volume Replication with Failover over a LAN *open-e*



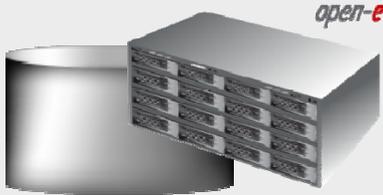
Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

7. Configure iSCSI Failover

Now, select iSCSI Failover

Now, in Failover configuration function, check the box **Enable iSCSI failover functionality** and enter Primary node IP address and click the **apply** button

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

7. Configure iSCSI Failover

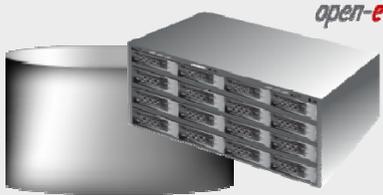
Move the iSCSI Tasks to be used for the failover service to the Failover Tasks area by clicking ➡ button and click **apply**

The screenshot displays the open-e web interface for configuring iSCSI failover. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: SETUP > network > iSCSI Failover'. The interface is divided into several panels:

- Interfaces:** Lists network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0.
- iSCSI Failover:** Lists iSCSI failover targets: eth0, eth1, and bond0.
- Failover Tasks:** Contains an information message: 'Please note asynchronous replication tasks will not be displayed in this window, as only synchronous tasks can be used for failover.' Below this, there are two search boxes and two lists of tasks. The left list is for iSCSI tasks and the right list is for failover tasks. The task 'Mirror_00' is selected in the failover tasks list. A right-pointing arrow button is positioned between the two lists, and a blue arrow from the text box points to it. An 'apply' button is located at the bottom right of this panel.
- Failover manager:** Contains an information message: 'No task has been selected.'

At the bottom of the interface, there is an 'Event Viewer' icon, a status message 'Product is activated.', and a footer 'Data Storage Software V6 - All rights reserved'.

Synchronous Volume Replication with Failover over a LAN *open-e*

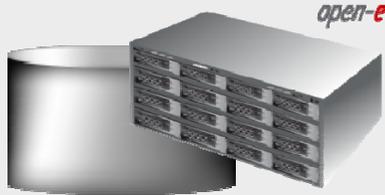


Data Server (DSS1)
Primary node
Address IP:192.168.0.220

8. Start Failover Service

At this point both nodes are ready to start the Failover service

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

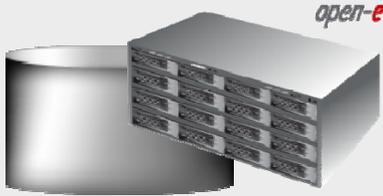
8. Start Failover Service

After clicking the **start** button configuration of both nodes will be complete

NOTE:

You can now connect via your iSCSI initiator and use your targets via the Virtual IP address e.g. 192.168.10.230 (For example, in a Microsoft Windows environment, download Microsoft iSCSI Initiator ver 2.0 or later).

Synchronous Volume Replication with Failover over a LAN *open-e*

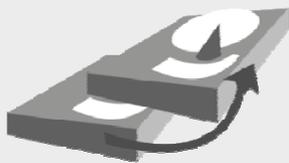


Data Server (DSS1)
Primary node
Address IP:192.168.0.220

8. Start Failover Service

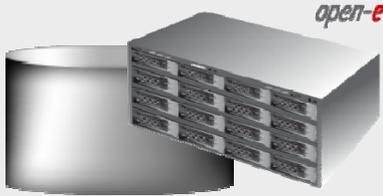
After start Failover, check the status in **Failover status** function. All must read OK. In the task status, the destination volume must be consistent

iSCSI Failover/Volume Replication



Names	Status
Global status	
Service running	ok
Node status	primary/active
Ping node	ok
Communication via:	
eth1	ok
bond0	ok
Task status	
Mirror_00	running
Connection:	Connected
Source info:	
Logical volume:	lv0000
Consistency:	Consistent
Destination info:	
Logical volume:	lv0000
Consistency:	Consistent
IP address:	192.168.1.221

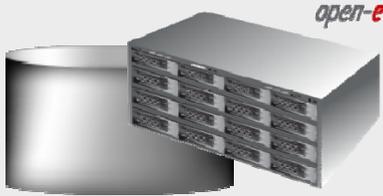
Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

9. Test Failover Function

Synchronous Volume Replication with Failover over a LAN *open-e*



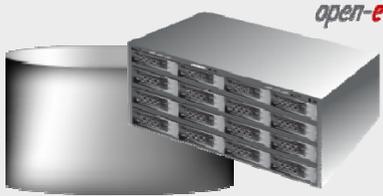
Data Server (DSS1)
Primary node
Address IP:192.168.0.220

9. Test Failover Function

The screenshot shows the open-e web interface for configuring ISCSI Failover. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The current page is 'ISCSI Failover' under 'network'. On the left, there are two panels: 'Interfaces' and 'ISCSI Failover', both listing 'eth0', 'eth1', 'eth2 (bond0)', 'eth3 (bond0)', and 'bond0'. The main content area shows a 'Failover manager' section with an 'Info' message: 'Server is in suspend mode.' Below this are 'start' and 'stop' buttons, and a 'Manual failover' button. A blue arrow points from a text box to the 'Info' message.

After clicking on the **Manual failover** button, primary node enters suspend mode

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

9. Test Failover Function

The Failover status function shows the Global status of the primary node. Status service is in **suspend** mode and the node is **inactive**.

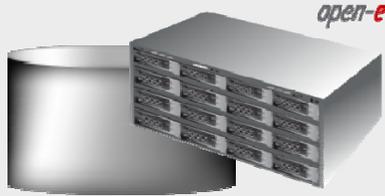
The screenshot displays the open-e web interface for iSCSI Failover configuration. The top navigation bar includes 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: SETUP > network > iSCSI Failover'. The interface is divided into several sections:

- Interfaces:** Lists network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0.
- iSCSI Failover:** Lists iSCSI interfaces: eth0, eth1, and bond0.
- Failover status:** A table showing the current status of the failover service and node.

Names	Status
Global status	
Service running	suspend
Node status	inactive
Ping node	ok
Communication via:	
eth1	unknown
bond0	unknown
Task status	
Mirror_00	stopped
- Failover configuration:** Contains an information box stating 'While a failover is turned on, you cannot make changes to its configuration.' and a checkbox for 'Enable iSCSI failover functionality'. Below this, there are radio buttons for 'Primary node on localhost' and 'Secondary node IP: 192.168.2.221', and a 'Ping node IP: 192.168.2.106' field. A 'Show advanced >>' link is also present.

At the bottom of the interface, there is an 'Event Viewer' icon, a status message 'Product is activated.', and a footer 'Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

9. Test Failover Function

In Failover status function
Global status shows the status
of the secondary node. The
service status is degraded and
Node status is active.

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

- Interfaces:** eth0, eth1, eth2 (bond0), eth3 (bond0), bond0
- ISCSI Failover:** eth0, eth1, bond0
- Failover status:**

Names	Status
Global status	
Service running	degraded
Node status	secondary/active
Ping node	ok
Communication via:	
bond0	failed
eth1	failed
Task status	
Mirror_00_reverse	stopped
- Failover configuration:**
 - Info: While a failover is turned on, you cannot make changes to its configuration.
 - Enable ISCSI failover functionality
 - Primary node on localhost
 - Secondary node IP:
 - Ping node IP:
 - Show advanced >>

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

10. Run Failback Function

In order to run Failback in Failover manager function click on the **Sync volumes** button first.

The screenshot shows the open-e web interface for the Failover manager. The top navigation bar includes 'open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS' and 'DATA STORAGE SOFTWARE V6'. The main menu has 'SETUP', 'CONFIGURATION', 'MAINTENANCE', 'STATUS', and 'HELP'. The breadcrumb trail indicates the current location: 'You are here: SETUP > network > ISCSI Failover'. The interface is divided into several sections:

- Interfaces:** Lists network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0.
- ISCSI Failover:** Lists ISCSI interfaces: eth0, eth1, and bond0.
- Failover manager:** The active section, showing:
 - Info:** 'Your node is now active' with a checkmark icon.
 - Info:** 'When in secondary mode, the start and stop buttons control this node only. Please use the relevant buttons on the primary node to control both nodes.'
 - Buttons:** 'start' and 'stop' buttons.
 - Instructions:** 'In order to synchronize data from the secondary/active server to the primary server, click the Sync volumes button.'
 - Buttons:** 'Sync volumes' button (highlighted with a blue arrow).
 - Instructions:** 'Clicking the Failback button will return the active server state to the primary server, while the secondary server will return to passive mode. Please note this is only possible when the participating volumes are in sync. After the failback has been completed, the primary server is ready for another failover.'
 - Buttons:** 'Failback' button (highlighted with a blue arrow).

At the bottom, there is an 'Event Viewer' icon and the text 'Product is activated.' and 'Data Storage Software V6 - All rights reserved.'

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

10. Run Failback Function

The screenshot displays the open-e web interface for configuring iSCSI failover. The main content area is divided into several sections:

- Interfaces:** Lists network interfaces: eth0, eth1, eth2 (bond0), eth3 (bond0), and bond0.
- iSCSI Failover:** Lists iSCSI interfaces: eth0, eth1, and bond0.
- Failover status:** A table showing the current status of the failover configuration.

Names	Status
Global status	
Service running	degraded
Node status	secondary/active
Ping node	ok
Communication via:	
bond0	failed
eth1	failed
Task status	
Mirror_00_reverse	running
Connection: Connected	
Source info:	
Logical volume:	lv0000
Consistency:	Consistent
Destination info:	
Logical volume:	lv0000
Consistency:	Consistent
IP address:	192.168.1.220
- Failover configuration:** A section for configuring the failover settings.

The status bar at the bottom indicates "Product is activated." and "Data Storage Software V6 - All rights reserved."

After synchronization the task status of the destination volume must be **Consistent**

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS2)
Secondary node
Address IP:192.168.0.221

10. Run Failback Function

open-e | ENTERPRISE CLASS STORAGE OS for EVERY BUSINESS | **DATA STORAGE SOFTWARE V6**

SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: SETUP > network > iSCSI Failover

Interfaces

- eth0
- eth1
- eth2 (bond0)
- eth3 (bond0)
- bond0

iSCSI Failover

- eth0
- eth1
- bond0

Failover manager

Info
Volume replication process started. Please go to Failover Status to check the status of your tasks.

Info
When in secondary mode, the start and stop buttons control this node only. Please use the relevant buttons on the primary node to control both nodes.

start **stop**

In order to synchronize data from the secondary/active server to the primary server, click the Sync volumes button.

Sync volumes

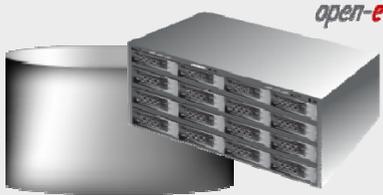
Clicking the Failback button will return the active server state to the primary server, while the secondary server will return to passive mode. Please note this is only possible when the participating volumes are in sync. After the failback has been completed, the primary server is ready for another failover.

Failback

Event Viewer: [icon] Product is activated.
Data Storage Software V6 - All rights reserved

In order to return the active server state to the Primary server click on the **Failback** button

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

10. Run Failback Function

After clicking on **Failback** button (in Failover manager function on Secondary node) Primary node is now active.

Synchronous Volume Replication with Failover over a LAN *open-e*



Data Server (DSS1)
Primary node
Address IP:192.168.0.220

10. Run Failback Function

Primary node is active again and ready for Failover.

iSCSI Failover/Volume Replication



The configuration and testing of iSCSI Failover/Failback is now complete.

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

- Navigation:** SETUP, CONFIGURATION, MAINTENANCE, STATUS, HELP. Breadcrumbs: You are here: SETUP > network > iSCSI Failover.
- Interfaces:** eth0, eth1, eth2 (bond0), eth3 (bond0), bond0.
- iSCSI Failover:** eth0, eth1, bond0.
- Failover status:**

Names	Status
Global status	
Service running	ok
Node status	primary/active
Ping node	ok
Communication via:	
eth1	ok
bond0	ok
Task status	
Mirror_00	running
- Failover configuration:**
 - Info: While a failover is turned on, you cannot make changes to its configuration.
 - Enable iSCSI failover functionality
 - Primary node on localhost
 - Secondary node IP: 192.168.2.221
 - Ping node IP: 192.168.2.106
 - Show advanced >>

- Footer:** Event Viewer: [icon] Product is activated. Data Storage Software V6 - All rights reserved.

Thank You!