

open-e

ENTERPRISE LEVEL STORAGE OS
for EVERY BUSINESS

Multipath with Virtual Iron and Open-E[®] DSS V6

*Configured and verified by Massimo Strina,
Share Distribuzione SRL (Italy)*



DSS V6
DATA STORAGE SOFTWARE

16 TB



Easy to use, GUI based management provides performance and security.



Reliable disk based backup and recovery, along with Snapshot capability enable fast and reliable backup and restore.



Easy to implement remote Replication, at block or volume level, enables cost-effective disaster recovery.



IP based storage management combines NAS and iSCSI functionality for centralized storage and storage consolidation.

Software Version: DSS ver. 6.00 up50

Presentation updated: July 2010

www.open-e.com

TO SET UP MULTIPATH WITH VIRTUAL IRON AND OPEN-E DSS, PERFORM THE FOLLOWING STEPS:

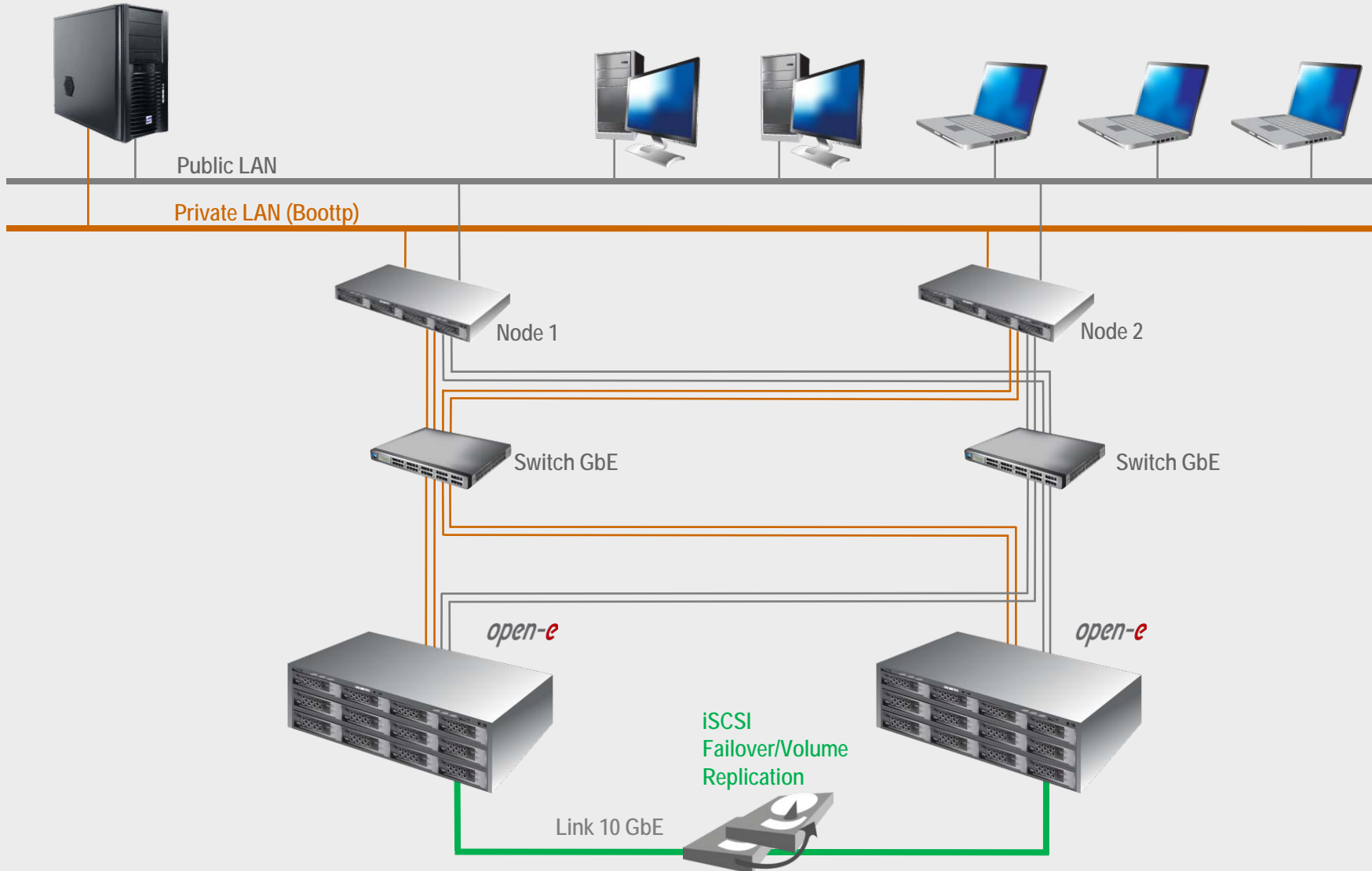
1. Hardware Configuration
2. Automatic Failover Configuration on the both Data Storage Servers
3. Edit `multipath.conf` file
4. Edit `iscsi.conf` file
5. iSCSI and Ethernet Tuning
6. Starting up Node Servers
7. Edit `iscsi_portal_list.xml` and `network_config_directives.xml` files
8. Starting Automatic Failover end restart Virtual Center Nodes

Multipath with Virtual Iron and Data Storage Server

VirtualIron

Virtual Center

1. Hardware Configuration



2. Automatic Failover Configuration on the both Data Storage Servers

- Configuration of the Secondary Server
 - Create a Volume Group and iSCSI Volume
 - Set Volume Replication mode as destination mode and set mirror IP address
- Configuration of the Primary Server
 - Create a Volume Group and iSCSI Volume
 - Set Volume Replication mode as source mode and settings mirror IP address,
 - Create Volume Replication task and start the replication task.
- Create new target on Secondary Server
- Create new target on Primary Server
- Configure Auxiliary connections and set Virtual IP for all Port . For example:
 - 172.16.0.1
 - 172.16.1.1
 - 172.16.2.1
 - 172.16.3.1

NOTE:

In this moment do not start Automatic Failover!

Detailed describes of Automatic Failover Configuration please find in product presentation:

[Synchronous Volume Replication with Failover over a LAN with broadcast.pdf](#)

3. Edit `multipath.conf` file

- Open folder `C:\Program File\VirtualIron\VirtualizationManager\bootfiles\boot\templates`
- Edit `multipath.conf` and uncomment the following line:

```
selector          "round-robin 0"
```

- Then insert multipath device definition for DSS:

```
#
#
#   SHARE OpenStor powered by OPEN-E :: Active-Active
#   Verified @ Massimo Strina, Share Distribuzione SRL (Italy)
#
device
{
    vendor          "iSCSI"
    product         "*"
    path_grouping_policy  multibus
    path_checker    tur
    features        "1 queue_if_no_path"
    failback        immediate
    rr_min_io       100
}
```

3. ...Continue

- Next, paste under device section after "ATA" vendor following script:

```
devices {  
  
    # Local non-SCSI drives (SATA and IDE) need a code page 0x80 to include the  
    # serial number in the uid, otherwise duplicate model drives won't be unique.  
    device {  
        vendor          "ATA*"  
        product         "*" "  
        getuid_callout  "/sbin/vi_scsi_id --scsi_id_args -p 0x80 -g -u -s /block/%n"  
    }  
    # SHARE OpenStor powered by OPEN-E :: Active-Active  
    # Verified @ Massimo Strina, Share Distribuzione SRL (Italy)  
    device {  
        vendor          "iSCSI"  
        product         "*" "  
        path_grouping_policy  multibus  
        path_checker        tur  
        features           "1 queue_if_no_path"  
        failback            immediate  
        rr_min_io          100  
    }  
    # Adaptec RAID controller
```

- Save `multipath.conf` file.

4. Edit `iscsi.conf` file

- Edit `iscsid.conf` file and modify the parameters as follow:

```
node.session.iscsi.FirstBurstLength = 524288
```

```
node.session.iscsi.MaxBurstLength = 16776192
```

```
node.conn[0].iscsi.MaxRecvDataSegmentLength = 262144
```

```
discovery.sendtargets.iscsi.MaxRecvDataSegmentLength = 262144
```

- Save `iscsid.conf`

5. iSCSI and Ethernet Tuning

- On the DSS console press hot-hey ctrl-alt-w then select Tuning Options -> iSCSI daemon option -> Target option -> (for all targets):

```
MaxRecvDataSegmentLength = 262144
MaxBurstLength = 16776192
MaxXmitDataSegmentLength = 262144
FirstBurstLength = 524288
InitialR2T = No
ImmediateData = Yes
```

- Then go to Hardware Configuration Menu -> Tuning options ->Jumbo Frames config
- Please set Jumbo Frames value to 4200 for all ports.

NOTE:

4200 is optimized for this example system. Some other Switches can work better with Jumbo Frame set to 6000 or 9000.

6. Starting up Node Servers

- Start up both node servers when discovery is complete, create iSCSI Network in Resource Center -> Network Tab,
- Assign ONLY the first Ethernet port of both nodes and configure IP as follow:
 - ✓ 172.16.0.2 for node 1
 - ✓ 172.16.0.3 for node 2
- The Virtual Iron wizard step ask you to configure target and you must put ONLY the IP of the first port of the storage (first virtual IP) as follow:
 - ✓ 172.16.0.1
- After this both nodes prompts Yellow Warning state and request reboot.

NOTE:

Do not reboot nodes !

7. Edit `iscsi_portal_list.xml` and `network_config_directives.xml` files.

- Open folder `C:\Program File\VirtualIron\VirtualizationManager\bootfiles\boot\` and you can find 2 new directories named with Mac address of both nodes,
- Open the **first folder** named for example `00-30-48-66-CE-6E`,
- Edit `iscsi_portal_list.xml` file, you will find this configuration:

```
<?xml version="1.0" encoding="UTF-8"?>
<ISCSIportalList>
  <ISCSIportal>172.16.0.1:3260</ISCSIportal>
</ISCSIportalList>
```

- Please add following lines:

```
<?xml version="1.0" encoding="UTF-8"?>
<ISCSIportalList>
  <ISCSIportal>172.16.0.1:3260</ISCSIportal>
  <ISCSIportal>172.16.1.1:3260</ISCSIportal>
  <ISCSIportal>172.16.2.1:3260</ISCSIportal>
  <ISCSIportal>172.16.3.1:3260</ISCSIportal>
</ISCSIportalList>
```

- Edit the `network_config_directives.xml` file,
- You will find this configuration:

```
<?xml version="1.0" encoding="UTF-8"?>
<NetworkCfgDirectives>
  <CfgNICmtu>00:15:17:63:75:A5|4200</CfgNICmtu>
  <CfgNICstatic>
    <Interface>00:15:17:63:75:A5</Interface>
    <StaticIP>172.16.0.2</StaticIP>
    <StaticIPmask>255.255.255.0</StaticIPmask>
  </CfgNICstatic>
</NetworkCfgDirectives>
```

7. ...Continue

- Copy the section from `<CfgNICmtu>` to `</CfgNICstatic>` and paste it 3 times,
- Then modify MAC address and IP address accordingly.
- You will find the Mac address in Virtual Center -> Hardware -> Managed Nodes -> Specific Node -> Ethernet Port.

```
<?xml version="1.0" encoding="UTF-8"?>
<NetworkCfgDirectives>
  <CfgNICmtu>00:15:17:63:75:A5 | 4200</CfgNICmtu>
  <CfgNICstatic>
    <Interface>00:15:17:63:75:A5</Interface>
    <StaticIP>172.16.0.2</StaticIP>
    <StaticIPmask>255.255.255.0</StaticIPmask>
  </CfgNICstatic>
  <CfgNICmtu>00:15:17:63:75:A4 | 4200</CfgNICmtu>
  <CfgNICstatic>
    <Interface>00:15:17:63:75:A4</Interface>
    <StaticIP>172.16.1.2</StaticIP>
    <StaticIPmask>255.255.255.0</StaticIPmask>
  </CfgNICstatic>
  <CfgNICmtu>00:15:17:63:75:A7 | 4200</CfgNICmtu>
  <CfgNICstatic>
    <Interface>00:15:17:63:75:A7</Interface>
    <StaticIP>172.16.2.2</StaticIP>
    <StaticIPmask>255.255.255.0</StaticIPmask>
  </CfgNICstatic>
  <CfgNICmtu>00:15:17:63:75:A6 | 4200</CfgNICmtu>
  <CfgNICstatic>
    <Interface>00:15:17:63:75:A6</Interface>
    <StaticIP>172.16.3.2</StaticIP>
    <StaticIPmask>255.255.255.0</StaticIPmask>
  </CfgNICstatic>
</NetworkCfgDirectives>
```

7. ...Continue

- Now , open **the second folder** named with second node MAC address name under C:\Program File\VirtualIron\VirtualizationManager\bootfiles\boot\ and repeat the above procedure accordingly.

8. Starting Automatic Failover end restart Virtual Center Nodes

- On the WEB console Data Storage Server, choose „**SETUP**” and **network** from the menu, and select **iSCSI Failover**
- Next, in the **Failover manager** function, click on „**start**” button to start the Automatic Failover on the Primary Data Storage Server
- In Virtual Center Restart Nodes.

The configuration Multipath with Virtual Iron and Data Storage Server is now complete.

Thank you!