

# Multipath with Virtual Iron and Open-E<sup>®</sup> DSS<sup>™</sup>



## 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

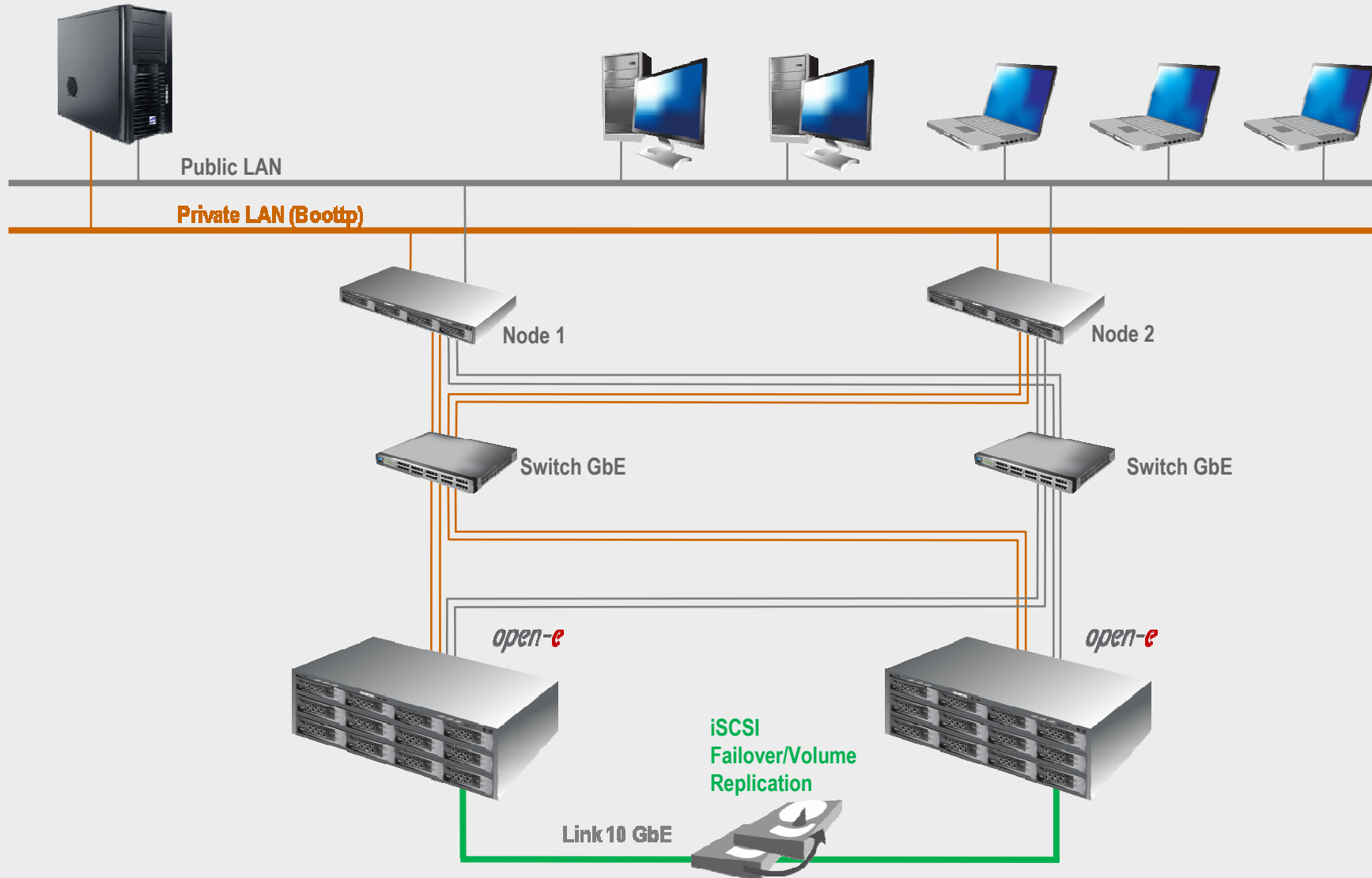
# Multipath with Virtual Iron and Data Storage Server

*open-e*

**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: **Open-E DSS Volume Replication with Failover over a LAN, December 2008.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_scsci_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!