

Multipath with Virtual Iron and Open-E® DSS™



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

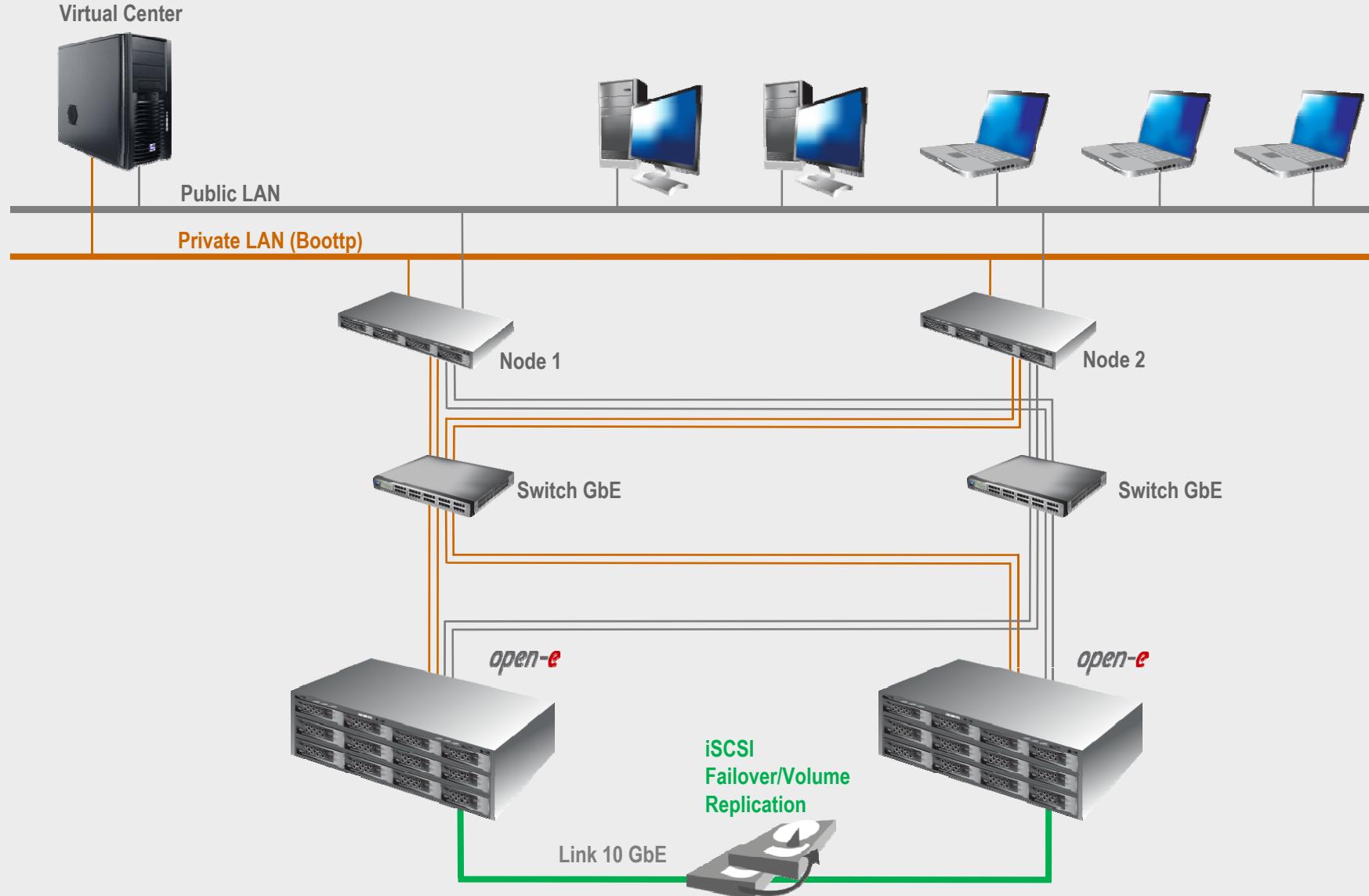
1. Hardware Configuration
2. Automatic Failover Configuration on the both Data Storage Servers
3. Edit **multipath.conf** file
4. Edit **iscsi.conf** file
5. iSCSI and Ethernet Tunning
6. Starting up Node Servers
7. Edit **iscsi_portal_list.xml** and **network_config_directives.xml** files
8. Starting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

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1. Hardware Configuration



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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**

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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"  
    fallback        immediate  
    rr_min_io      100  
}  
}
```

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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"
        fallback        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 deamon 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 !

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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>
```

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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!