Fujitsu software

ServerView
Resource Orchestrator
DR Option

Introduction
Contents

◆ Overview
◆ Features and benefits
◆ System structures & requirements
◆ License
Overview
What is DR Option

ServerView Resource Orchestrator DR Option provides disaster recovery protection of the ROR environment. It reduces the time to recover a ROR environment in the case of system failure.

1. In production

2. Storage Replication
   - Replicate all necessary data to start the same ROR configuration on 2nd site

3. Disaster

4. Fail over

5. Semi-automatic Recovery
   - Distant site for recovery from disaster
Product information

◆ Product name: "Fujitsu ServerView Resource Orchestrator DR option"

◆ DR Option is available only in ROR Cloud Edition.

◆ DR Option is a “Right To Use” license; there is no dedicated Media Kit for this option.

◆ There is a different license structure for each DR system type: see page 13.
Basic ideas of DR option

- There are two sites – the **Primary site** for production and the **Backup site** for backup.
- Usually the backup site can be used for a different purpose.
- Use storage replication function to keep the primary and the backup site data in sync.
- On the primary site, use ROR DR tools to export ROR configuration. Exported configuration file is automatically copied to the "backup site".
- When a disaster strikes at the primary site, use ROR DR Tools to import and restore the primary site's ROR configuration into the Backup site.
Features and benefits
Features and benefits (1/4)

Simple recovery operation

Simple recovery operation eliminates the risk of operation mistakes and shortens recovery time

<table>
<thead>
<tr>
<th>Recovery time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Without DR option</strong></td>
</tr>
<tr>
<td>Decision to start recovery action on Backup site</td>
</tr>
<tr>
<td>Rebuild ROR environment including</td>
</tr>
<tr>
<td>- SAN configuration</td>
</tr>
<tr>
<td>- ROR manager setup</td>
</tr>
<tr>
<td>- OS installation</td>
</tr>
<tr>
<td>3 days</td>
</tr>
</tbody>
</table>

| **With DR option** |
| Decision to start recovery action on Backup site | Down |
| Run rxe-recovery command | Start L-Servers |
| Few hours(*1) |
| Recover a ROR environment in few hours |

*1: Recovery time depends on system structure
Features and benefits (2/4)

- DR option recovers not only VM L-Servers but also Physical L-Servers.
- DR option supports various failover scopes.
  - Whole site
  - Specific tenants
- DR option supports the following server types.
  - Blade Servers
- DR option supports multiple VM platforms.
  - VMware vSphere 4, 4.1, 5
  - Hyper-V (Windows Server 2008 R2 Enterprise/Datacenter)
- DR option supports multiple switchover methods
  - Physical L-Server switchover (physical OS)
  - Physical/virtual L-Server switchover (VM host/VM guest)
  - Virtual L-Server switchover (VM guest)
Features and benefits (3/4)

- DR option supports multiple vendor storage with their replication software.
  - Fujitsu ETERNUS Advanced Copy Manager
  - NetApp SnapMirror
  - EMC Solutions Enabler (Symmetrix)
  - EMC MirrorView (CLARiiON)
  - As for the other vendor’s storage, please contact Fujitsu.

- DR option supports ETERNUS dynamic LUN mirroring function which simplifies LUN replication settings.
Effective utilization of backup site

- The backup site can be utilized for development and test or other lower priority production until DR fail over is done.
- Backup site can come back to its original configuration after Primary site recovers.
System Structures and Requirements
Types of DR system structures

- **Active - Standby**
  This means that an idle or a test environment is running on the backup (Standby) site.
  During failover, any idle or test environment running in the backup site is being shutdown and will completely be replaced by the primary site’s environment.

- **Active - Active**(*1)
  This indicates both sites are running active production environments.
  The configurations of both environments will be merged if a failover occurs.

*1: Not yet supported
## System Requirement

<table>
<thead>
<tr>
<th>Category</th>
<th>Conditions/Supported models</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server Models</strong></td>
<td>PRIMERGY BX</td>
<td>BX600 is supported only in virtual L-Server switchover.</td>
</tr>
<tr>
<td></td>
<td>PRIMERGY RX</td>
<td>Supported only in virtual L-Server switchover.</td>
</tr>
<tr>
<td></td>
<td>PRIMERGY CX</td>
<td>Supported only in virtual L-Server switchover.</td>
</tr>
<tr>
<td><strong>LAN switch Models</strong></td>
<td>LAN Switch blade for BX900/BX400</td>
<td>- Switch mode and End host mode are supported. IBP mode is not supported.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The other LAN switches may request manual operation during DR failover.</td>
</tr>
<tr>
<td><strong>Disk resource type</strong></td>
<td>Predefined LUN</td>
<td>ETERNUS√</td>
</tr>
<tr>
<td></td>
<td>NetApp SR</td>
<td>SnapMirror is supported as SR. MetroCluster is not supported.</td>
</tr>
<tr>
<td></td>
<td>EMC √</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dynamic LUN</td>
<td>ETERNUS√</td>
</tr>
<tr>
<td></td>
<td>NetApp --</td>
<td>DLM (Dynamic LUN Mirroring) is supported on ETERNUS DX S2 or later model.</td>
</tr>
<tr>
<td></td>
<td>EMC --</td>
<td></td>
</tr>
<tr>
<td><strong>Storage vendor and replication software</strong></td>
<td>ETERNUS (ACM-CCM)</td>
<td>SR support</td>
</tr>
<tr>
<td></td>
<td>EMC DMX, VMAX (SRDF)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EMC CX, VNX (MirrorView)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NetApp (SnapMirror)</td>
<td></td>
</tr>
<tr>
<td><strong>Connection[3]</strong></td>
<td>FC</td>
<td>Supported only in virtual L-Server switchover. (see attachment for virtual L-Server switchover method)</td>
</tr>
<tr>
<td></td>
<td>iSCSI</td>
<td>Supported only in virtual L-Server switchover.</td>
</tr>
<tr>
<td></td>
<td>NAS</td>
<td></td>
</tr>
<tr>
<td><strong>Physical OS</strong></td>
<td>All supported native OS</td>
<td></td>
</tr>
<tr>
<td><strong>Virtual OS</strong></td>
<td>VMware</td>
<td>- VMware: Physical/virtual L-Server switchover supported.</td>
</tr>
<tr>
<td></td>
<td>Hyper-V</td>
<td>Virtual L-Server switchover supported for ESXi 5.x.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Hyper-V: Physical/virtual L-Server switchover supported.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- OVM, KVM, SPARC Solaris containers are not supported</td>
</tr>
</tbody>
</table>

*For latest information refer Support Matrix on PRIMEWEB site

*As of 30th May, 2013*
License
To use the ROR Disaster Recovery function, **DR Option licenses are required**

- All physical servers including spare servers in the primary and backup site must be licensed with the ROR Cloud Edition Server License.

- To use the Disaster Recovery function, an additional DR option license is required for each managed physical servers in the primary site which will be configured for DR Failover to the backup site.

- DR Option is a “Right To Use” license; there is no dedicated Media Kit for this option.

- There is a different license structure for each DR system type: see next page.
## License (2)

<table>
<thead>
<tr>
<th>System Type</th>
<th>License</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary Backup</td>
<td></td>
</tr>
<tr>
<td><strong>Active – Standby</strong></td>
<td>CE+DR option</td>
<td>ROR CE licenses are needed for servers both in the Primary and Backup site including any spare servers. DR option licenses are needed only for servers in the Primary site which are configured for DR. <strong>No additional DR Option licenses are required for the Backup site including the failback operation.</strong></td>
</tr>
<tr>
<td></td>
<td>CE</td>
<td></td>
</tr>
<tr>
<td><strong>Active – Active</strong></td>
<td>CE+DR option</td>
<td>ROR CE licenses are needed for all the servers, including spare servers in both Primary and Backup site. DR option licenses are needed for the servers both in Primary and Backup site that are configured for DR Failover, mutual site backup.</td>
</tr>
<tr>
<td></td>
<td>CE+DR option</td>
<td></td>
</tr>
</tbody>
</table>
Example: Active-Standby configuration

Primary site (Active)
- Admin server (RX200S6)
- Guest OS
  - ROR-M/SVOM/VIOM/
  - Storage Cruiser/ACM

Backup site (Standby)
- Admin server (RX200S6)
- Guest OS
  - ROR-M/SVOM/VIOM/
  - Storage Cruiser/ACM

Blade Chassis (BX900)
- (ESXi)
- (vCenter)

SAN Boot

Storage#1 (ETERNUS DX90S2)
- Bkup1
- OS1
- OS2
- datastore

Storage#2 (ETERNUS DX90S2)
- Bkup1
- OS1
- OS2
- datastore

Remote Replication

Copyright 2013 FUJITSU LIMITED
Example: Active-Active configuration

Primary site (Active)

Admin server (RX200S6)

Guest OS
ROR-M/SVOM/VIOM/
Storage Cruiser/ACM

Blade Chassis (BX900)

SAN Boot

Storage#1 (ETERNUS DX90S2)

OS1

OS2

Backup site (Active)

Admin server (RX200S6)

Guest OS
ROR-M/SVOM/VIOM/
Storage Cruiser/ACM

Blade Chassis (BX900)

SAN Boot

Storage#2 (ETERNUS DX90S2)

OS1

OS2

Remote Replication

Remote Replication

Datastore

Datastore

Bkup1

Bkup2

Bkup1

Bkup2

Windows 2008 R2 E
ROR V3.1 SI 09
SVOM S2 55107
VIOM V3.0.08
SC V15.0B
ACM V15.0B
vCenter V5.0.0
ESXi V5

Copyright 2013 FUJITSU LIMITED
shaping tomorrow with you
Switchover Methods

1. Physical L-Server Switchover (Physical OS): Switch over of a physical L-Server in which a physical OS is installed.

2. Physical/Virtual L-Server Switchover (VM Host/VM Guest): Switch over of a physical L-Server in which a VM host is installed, or a virtual L-Server (VM) which operates on a VM host.

3. Virtual L-Server Switchover (VM Guest): Create the VM host for each site, and only switch over a virtual L-Server operating on the VM host.