

Datasheet

FUJITSU Software

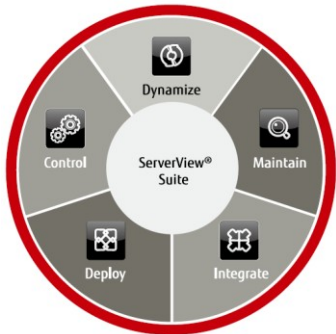
ServerView Resource Orchestrator V3.4

DR Option

Protect the continuity of IT services with automated disaster recovery operations

Enterprises today are facing a number of external and internal risks that endanger their business operations. Besides the recently increasing occurrence of natural disasters like earthquakes, hurricanes and tornados, there is also danger from system failures, human error or terrorism. In a world where businesses increasingly rely on IT, long period of downtime significantly impact revenue or lead to a decrease in customer confidence and satisfaction. In some cases the loss of a complete data center location can even force enterprises into bankruptcy. Therefore, organizations need to be prepared and take counter measures to avoid damage from disasters. These counter measures should not only cover data but the entire IT infrastructure.

ServerView Resource Orchestrator Cloud Edition DR option ('DR option') is a separately licensed option available with the ServerView Resource Orchestrator Cloud Edition. It enables IT organizations to implement efficient disaster recovery configurations according to their business needs. In order to achieve fast recovery the DR options applies maximum automation to all tasks involved in the recovery process. As a result, recovery time can be reduced from days to hours.



Main features	Benefits
■ Automation of recovery processes ■ Defined scope of resources required for switch-over to the backup site ■ Tenant-specific switch-over ■ Physical server and multi-hypervisor (VMware and Hyper-V) support ■ Active-active or active-standby configuration ■ Simulation of disaster recovery process.	■ Reduces effort and operational mistakes during a disaster resulting in significant shorter recovery times ■ Run backup site with fewer resources; reduce costs ■ IT organizations can offer tenant-specific service-levels ■ Offers customers the choice to select the most cost-efficient platform according to their application needs ■ Delivers a high level of business continuity by further reducing downtime ■ Enables testing of recovery plans to ensure a working recovery process in case of a disaster

Topics

Positioning

Disaster Recovery (DR) is an operation that restores ICT resources and applications according to an enterprise's Business Contingency Plan (BCP). A BCP is the outcome of a holistic Business Continuity Management (BCM)¹ process that identifies potential threats to an organization and the impacts to business operations. Often the main causes for data center failure are natural disasters, software corruption, hardware failures, viruses or even human error. Some of these threats can be avoided by implementing local on-site high-availability measures; however in many cases these local measures are not sufficient enough and require an additional remote backup site.

Challenges

Manually restoring a complete ICT stack (hardware, virtualization software and applications) following a disaster involves a lot of admin effort, can be error-prone and time consuming. Moreover, it is uncertain that people who have the appropriate skills are available to be present at the disaster site.

Reduce recovery from days to hours

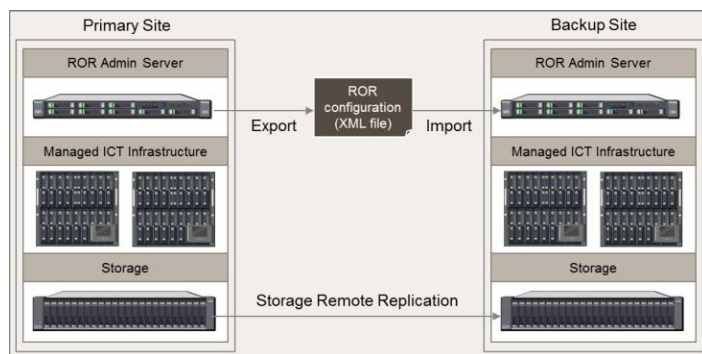
The ROR DR Option automates many of the administrative tasks involved in moving ICT resources to the backup site. For all ICT resources that should be DR protected, ROR regularly saves the configuration information in an xml-file. If a disaster occurs the information from the xml-file can be imported by the ROR manager to restore the configuration.

In combination with remote storage replication technology it is now possible to reduce recovery times from days to just a few hours.

Replication of storage is done in cooperation with 3rd-party software that controls the storage devices. The following storage software is supported.

- ETERNUS SF AdvancedCopy Manager Copy Control Module (for ETERNUS DX series)
- SnapMirror (for NetApp, Fujitsu ETERNUS NR1000F)²
- NaviSphere (for EMCCLARiiON)
- Solution enabler (for EMC Symmetrix)

Please refer to the ROR support matrix for details.



In many cases not all systems need to be DR protected. For that reason, it is necessary to define upfront in a Disaster Recovery Plan which ICT resources should be protected and moved to the backup site. The ROR DR option enables IT administrators to limit the range of ICT resources that are supported by the backup site to selected tenants, dedicated physical or virtual servers.

The ROR DR Option supports the following DR configurations:

- **Active – Active**
Both sites, primary and backup, are running active production environments. The configurations of both environments will be merged if a failover occurs
- **Active – Standby**
An idle or a test environment is running on the backup (standby) site. During failover any idle or test environment running on the backup site is shut down and completely replaced by the primary (active) site environment

1) For details, please see ISO 22301 Business Continuity Management standard and NIST Special Publications SP 800-34 "Contingency Planning Guide for Federal Information Systems"

2) ETERNUS NR100F is for Japan market only.

Technical details

Admin Client

Hardware		FUJITSU PRIMERGY RX, BX and TX server or PC
Operating Systems	Microsoft	Microsoft Windows Server 2016 SE/DCE ¹ Microsoft Windows Server 2012, 2012 R2 SE/DCE ¹ Microsoft Windows 7 Professional, Ultimate, Enterprise Microsoft Windows 8.1 Pro, Enterprise Microsoft Windows 10 Pro, Enterprise
Other software prerequisites		Microsoft Internet Explorer 8, 9, 10, 11 Firefox ESR17, ESR24, ESR31, ESR 38, ESR 45, ESR 52, ESR 60 Java 2 runtime environment 1.5 or later Adobe Flash Player 10.3.183.5 or later

Admin Server

Hardware		FUJITSU PRIMERGY RX, BX and TX server
	Notes	At least dual core CPU and 12 GB of memory; 7.6 GB free disk space or more
Operating Systems	Microsoft	Microsoft Windows Server 2016 SE/DCE ^{1,6} Microsoft Windows Server 2012, 2012 R2 SE/DCE ^{1,6} Microsoft Hyper-V on Windows Server 2016 SE/DCE ⁶ Microsoft Hyper-V on Windows Server 2012 R2 SE/DCE ⁶ Microsoft Hyper-V on Windows Server 2012 SE/DCE ⁶
	Red Hat	Red Hat Enterprise Linux 6.2, 6.3, 6.4, 6.5, 6.8, 6.9, 6.10 (x64) ⁶
	VMware	VMware vSphere 6.0, 6.5 ESXi ⁶ VMware vSphere 5.0, 5.1, 5.5 ESXi ⁶
	Notes	When running the admin server on a hypervisor product, installation is only supported in a VM guest running one of the operating systems listed above. For admin server high-availability, only installation on a Hyper-V cluster configuration is supported
Other software prerequisites		FUJITSU ServerView Operations Manager (Windows) V5.50 or later
Software options	Server Management	FUJITSU ServerView Virtual-I/O Manager (VIOM) 3.0 or later (for VIOM based I/O virtualization) ¹⁰ FUJITSU Software Infrastructure Manager (ISM) 2.2 or later (for ISM based I/O virtualization) ¹⁰ ServerView Resource Orchestrator I/O Virtualization option when using VIOM, ISM
	Hypervisor Management	VMware vCenter Server 5.x, 6.0, 6.5, 6.7 VMware vCenter Server Appliance 6.0, 6.5, 6.7 Microsoft System Center Virtual Machine Manager 2008 R2, 2012, 2012 R2, 2016 Oracle VM Manager 3.2.2, 3.2.3, 3.2.4, 3.2.6, 3.2.7, 3.2.8 BladeLogic Server Automation 8.3
	Storage Management	FUJITSU ETERNUS SF Storage Cruiser 14.2, 15.0, 15.1, 15.2, 16.0, 16.1, 16.2, 16.3, 16.4, 16.5, 16.6 ¹⁰ FUJITSU ETERNUS multipath driver V2.0L10 (for Windows), V2.0L02 (for RHEL) ¹⁰ NaviSphere Manager 6.29, NavisecCLI 7.30-7.33.8 ¹⁰ EMC Solution Enabler 7.1.2, 7.3, 7.4.0, 7.5.1, 7.6.1, 7.6.2, 8.0.1, 8.0.2 (for EMC Symmetrix, Fibre Channel connectivity on server is mandatory) ¹⁰ EMC PowerPath 5.3 ¹⁰ NetApp Data ONTAP DSM 3.2R1 ¹⁰
	Virtual Desktop Management	VMware Horizon View 5.2, 5.3, 6.0, 6.1, 6.2 (support for VMware vSphere > 5.0)

Managed Servers

Hardware	FUJITSU PRIMERGY BX	BX900: BX920 S1/S2/S3/S4 ¹⁷ , BX922 S2, BX924 S2/S3/S4 ¹⁷ , BX960 S1, BX2560 M1/M2, BX2580 M1/M2, BX600: BX620 S4/S5/S6 ⁷ BX400: BX920 S2/S3/S4 ¹⁷ , BX922 S2, BX924 S2/S3/S4 ¹⁷ BX2560 M1/M2, BX2580 M1/M2
	FUJITSU PRIMERGY RX	RX100 S5/S6/S7/S8 ⁷ , RX200 S4/S5/S6/S7/S8, RX300 S4/S5/S6/S7/S8, RX500 S7 RX600 S4/S5/S6, RX2520 M1/M4, RX2530 M1/M2/M4, RX2540 M1/M2/M4, RX4770 M1/M2/M3/M4
	FUJITSU PRIMERGY TX	TX150 S6/S7, TX200 S4/S5/S6, TX300 S4/S5/S6 ^{7,9}
	FUJITSU PRIMERGY CX	CX1000: CX122 S1 ^{7,9} CX400: CX210 S1, CX250 S1/S2, CX270 S1/S2 ^{7,9} CX2550 M1/M2/M4, CX2570 M1/M2/M4
Operating Systems	Microsoft	Microsoft Windows Server 2016 SE/DCE ^{1,8} Microsoft Windows Server 2012, 2012 R2 SE/DCE ^{1,8} Microsoft Hyper-V on Windows Server 2016 SE/DCE ^{4,8} Microsoft Hyper-V on Windows Server 2012, 2012 R2 SE/DCE ^{4,8}
	Red Hat	Red Hat Enterprise Linux 6.0, 6.1 incl. KVM (x86, x64) ⁷ Red Hat Enterprise Linux 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10 incl. KVM (x86, x64) ⁸ Red Hat Enterprise Linux 7.0 (x64) Red Hat Enterprise Linux 7.4, 7.5 (x64) ¹⁹
	Oracle	Oracle Enterprise Linux 6.0 (x86, x64) ^{7,8} Oracle Enterprise Linux 6.7, 7.2 (x86, x64) ⁸ Oracle VM 3.2.2, 3.2.3, 3.2.4, 3.2.6, 3.2.7, 3.2.8, 3.3.1, 3.3.2, 3.3.3, 3.3.4 (x86, x64) ⁸ Solaris 10 including zones for SPARC Enterprise Servers ²¹ Solaris 11, 11.2, 11.3 including Oracle VM for SPARC Enterprise Servers ²¹
	VMware	VMware vSphere 5.0, 5.1, 5.5 ESXi ^{3,4,5,8} VMware vSphere 6.0, 6.5 ESXi ^{3,4,5,8}
	Citrix	XenServer 6.0, 6.1, 6.2 ^{3,4,8}
Other software prerequisites		FUJITSU ServerView agent (Windows/Hyper-V) V4.50.05 or later FUJITSU ServerView agent (Linux) V4.90.14 or later FUJITSU ServerView agent (VMware) V4.30.20 or later Network Management: IntelPROset 15.5.56.0, 18.3.72.0 10 Linux bonding of Red Hat Enterprise Linux5, 6 Novell SUSE Linux Enterprise Server 11 SP2 ¹⁰ Emulex OneCommand NIC Teaming and VLAN Manager V2.7 Windows Server 2012 NIC Teaming (LBFO)

HBA Address Rename Server		(Same as ServerView Resource Orchestrator V3.4 Cloud Edition)
Hardware		FUJITSU PRIMERGY RX, BX and TX server or PC
Operating Systems	Microsoft	Microsoft Windows Server 2016 SE/DCE ^{1,6} Microsoft Windows Server 2012, 2012 R2 SE/DCE ^{1,6} Microsoft Hyper-V on Windows Server 2016 SE/DCE ⁶ Microsoft Hyper-V on Windows Server 2012, 2012vR2 ⁶ Microsoft Windows 7 Professional, Ultimate, Enterprise ⁶ Microsoft Windows 8.1 Pro, Enterprise ⁶
	Red Hat	Red Hat Enterprise Linux 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10 (x86, x64) ⁶
	VMware	VMware vSphere 5.0, 5.1, 5.5 ESXi ⁶ VMware vSphere 6.0, 6.5 ESXi ⁶
Other Hardware Requirements – FC Connectivity		(Same as ServerView Resource Orchestrator V3.4 Cloud Edition)
FC Connectivity HBA	FUJITSU PRIMERGY BX600	FC Module 2 port (4 Gbps): BX600-FC42E
	FUJITSU PRIMERGY BX900	FC Module 2 port (8 Gbps): Emulex MC-FC82E
	FUJITSU PRIMERGY RX/TX	FC Ctrl Emulex LPe1150/LPe1150L MMF LC LP (4Gbps) FC Ctrl Emulex LPe1250 MMF LC (8Gbps) FC Ctrl 2 port Emulex LPe12002 MMF LC (8Gbps)
	FUJITSU SPARC ENTERPRISE	LPe12000, LPe12002, QLE2560, QLE2562, SE0X7F11F, SE0X7F12F
	Notes	When using HBA Address Rename Service the I/O virtualization (FC) option is required for SAN boot.
FC Connectivity Switch	FUJITSU PRIMERGY BX400	FC Pass-Thru blade 8Gbps 18/18 FC Switch 8Gbps 18/8 (Brocade BR5450)
	FUJITSU PRIMERGY BX600	FC Pass-Thru blade 4Gbps 10/10 FC Switch 4Gbps 10/6 (Brocade SW-4016 D4)
	FUJITSU PRIMERGY BX900	FC Pass-Thru blade 8Gbps 18/18 FC Switch 8Gbps 18/8 (Brocade BR5450)
	External FC switches	External FC switches supported in FUJITSU ETERNUS environments: FUJITSU ETERNUS SN200 series and Brocade series
	Notes	When using FUJITSU ServerView Virtual-IO Manager software for I/O virtualization (BX only), the BX FC switch must be set to FC Access Gateway mode. The external SAN switch must support NPIV for ServerView Virtual-IO Manager operation (e.g. Brocade Silkworm SW4101).
Other Hardware Requirements – LAN Connectivity		(Same as ServerView Resource Orchestrator V3.4 Cloud Edition)
LAN Connectivity NIC		Depends on each server's support
LAN Connectivity Switches	FUJITSU PRIMERGY BX400/BX900	Ethernet Switch/IBP 1Gbps 36/12 (SB11a) ² Ethernet Switch/IBP 1Gbps 36/8+2 (SB11) ² Ethernet Switch/IBP 1Gbps 18/6 (SB6) ² Ethernet Switch/IBP 10Gbps 18/8 (SBAX2) ² Ethernet Converged Fabric Switch10 Gbps 18/8+2 (SBAX3) Ethernet DCB Switch10Gbps 18/6/6 (VDX2730) Ethernet FEX 10Gbps 16/8 (B22F)

Other Hardware Requirements – LAN Connectivity (Cont'd)

LAN Connectivity Switches FUJITSU PRIMERGY BX600	Ethernet Switch 1Gbps 10/6 (SB9A) ⁷ Ethernet Switch 1Gbps 10/6+2 (SB9) ⁷ Ethernet Switch 1Gbps 30/12 (SB9F) ⁷ Ethernet Switch 1Gbps 10/6 (Cisco Catalyst Blade Switch 3040) ⁷
LAN Connectivity External Switches (controlled by ServerView Resource Orchestrator)	FUJITSU Network System SR-X 300, SR-X 500 (firmware version: V01 or later) ⁹ FUJITSU Converged Fabric CFX2000 (TAX3) ¹⁵ Cisco Catalyst series: 2900, 2918, 2928, 2940, 2950, 2955, 2960, 2970, 2975 Cisco Catalyst series: 3500, 3550, 3560, 3750(IOS 12.2(40) or later) Cisco Nexus series: 2000, 5000 (firmware version: NX-OS V5.2) Brocade VDX series: 6710, 6720, 6730 (firmware version:NOS 2.0 or later) ExtremeSwitching VDX series: 6740, 6740T, 6940 (firmware version: NOS 2.0 or later)
LAN Connectivity External Switches (not controlled by ServerView Resource Orchestrator)	Any
Firewalls (controlled by ServerView Resource Orchestrator)	FUJITSU Network System IPCOM EX IN and SC series (software version E20L10 or later) ¹⁵ FUJITSU Network System IPCOM VX series (software version E10L11 or later) ¹⁵ FUJITSU Network System IPCOM VA SC series (software version E20L21NF0301 or later) ¹⁵ Cisco ASA 5500 series (software version 8.3 or later) ¹⁴
Firewalls (not controlled by ServerView Resource Orchestrator)	Any
Server Load Balancers (controlled by ServerView Resource Orchestrator)	FUJITSU Network System IPCOM EX IN and LB ¹⁶ series (software version E20L10 or later) ¹⁵ FUJITSU Network System IPCOM VX series (software version E10L11 or later) ¹⁵ FUJITSU Network System IPCOM VA LB series (software version E20L21NF0301 or later) ¹⁵ F5 BIG-IP LTM series (software version BIG-IP V11.2)
Server Load Balancers (not controlled by ServerView Resource Orchestrator)	Any

Other Hardware Requirements – Storage

Supported FC systems	Fibre Channel and iSCSI ¹¹ boot is supported.
Fujitsu	ETERNUS DX60/DX60 S2, DX80/DX80 S2, DX90/DX90 S2, DX400/DX400 S2 ETERNUS DX8000/DX8000 S2 ETERNUS DX60/DX100/DX200/DX500/DX600/DX8700/DX8900 S3 ETERNUS DX200F ETERNUS 2000/4000(except model 80 and 100)/8000 series ETERNUS TR series ETERNUS VX700 series (iSCSI only) ⁹
NetApp	NetApp FAS6000/6200/3100/3200/2000/2200 series NetApp V6000/6200/3100/3200 series (NetApp models with Data ONTAP 7.3.3/8.0.1 7-mode)
EMC	EMC CLARiiON CX4-120/240/480/960 EMC CLARiiON CX3-10/20/40/80 EMC VNX 5100/5300/5700/7500 EMC Symmetrix DMX-3/-4 EMC Symmetrix VMAX/VMAX 100K
FalconStor	FalconStor NSS 7.0

Distribution, Implementation, Documentation & Support	(Same as ServerView Resource Orchestrator V3.4 Cloud Edition)
User Interface	English, Japanese
User Skills	Basic knowledge of administration of operating systems (Windows, Linux, Solaris) and hypervisors (VMware vSphere, Microsoft Hyper-V, Oracle VM, Citrix XenServer, RedHat KVM) is presumed. Installation, configuration and implementation require detailed knowledge of FUJITSU ServerView Resource Orchestrator and the supporting software components and must be done by Fujitsu professional service or certified consultants.
Installation	By consultants specifically instructed by Fujitsu only.
Documentation	User manuals are contained in machine readable form in the media pack or can be downloaded from http://manuals.ts.fujitsu.com
Media	The media packs contain all software components and manuals in PDF format.
Conditions	This software product is supplied under conditions described in our current license agreement.
Warranty	Class: C
Maintenance & Support	Closure of a software maintenance contract is mandatory.
Ordering and delivery	FUJITSU ServerView Resource Orchestrator Right-to-Use licenses and the DVD media pack are available from our local sales representative/regional office. The right-to-use and media kits of the operating environment of the manager nodes and the managed nodes as well as supporting software like FUJITSU ServerView Virtual-IO Manager, FUJITSU ETERNUS Storage Cruiser or hypervisor management software have to be obtained separately since they are not included in FUJITSU ServerView Resource Orchestrator package.

For additional technical details, dependencies and restrictions, please consult the ServerView Resource Orchestrator support matrix available from your sales representative.

- 1) Server Core installation option not supported
- 2) Operating the LAN switch in IBP mode is project-specific
- 3) Cloning of hypervisor hosts is not supported
- 4) For backup & restore, hypervisor snapshot technology is used
- 5) Sharing of spare servers with Windows Server or Hyper-V Server is not supported
- 6) English, Japanese and German are supported
- 7) Project-specific
- 8) English, German, Japanese and Chinese are supported
- 9) Only supported in virtualized environments
- 10) For higher versions, support status depends on compatibility to versions mentioned in this data sheet

- 11) iSCSI boot support only on FUJITSU PRIMERGY BX900/BX400 servers with FUJITSU ServerView Virtual-IO Manager software
- 12) Not supported with redundant admin server
- 13) N.A.
- 14) Cisco ASA5505 is not supported
- 15) Japan market only
- 16) ServerView Resource Orchestrator doesn't provide sample script for automatic configuration.
- 17) Universal multichannel is not supported
- 18) Monitoring only
- 19) SELinux must be disabled
- 20) Combination with VMware vSAN is not possible
- 21) Solaris 10, 11, 11.2, 11.3 are not supported

More information

Fujitsu platform solutions

In addition to FUJITSU ServerView Resource Orchestrator DR Option, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing products

www.fujitsu.com/global/services/computing/

- PRIMERGY: Industrial standard server
- PRIMEQUEST: Mission-critical IA server
- SPARC Enterprise: UNIX server
- ETERNUS: Storage systems

Software

www.fujitsu.com/software/

- ServerView Resource Orchestrator: Cloud infrastructure management software
- Systemwalker: System management software
- Interstage: Application infrastructure software

More information

To learn more about FUJITSU ServerView Resource Orchestrator DR Option, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website. www.fujitsu.com/software

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at: www.fujitsu.com/global/about/environment/



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