

Data Sheet

FUJITSU Software ServerView® Suite Virtual-I/O Manager Version 3.8.08

SERVERVIEW VIRTUAL-IO MANAGER DYNAMIZATION AND VIRTUALIZATION IN THE DATACENTER

Brief Description

Fujitsu ServerView Virtual-I/O Manager is a function extension for the ServerView Operations Manager. It simplifies the virtualization of the I/O links for the Fujitsu PRIMERGY BX900, BX400 and BX600 blade servers and for a variety of Fujitsu PRIMERGY rack/tower servers, thus enabling resources to be used more dynamically and efficiently.

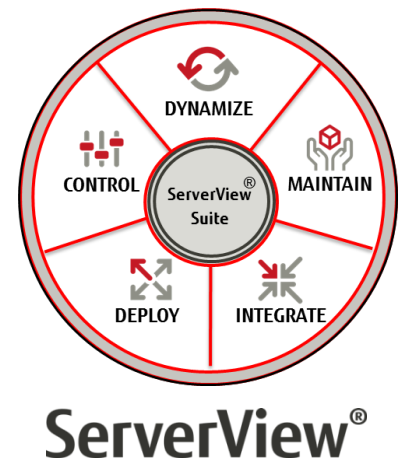
The ServerView Virtual-I/O Manager provides a central control instance, which enables the administration of a large number of PRIMERGY blade and rack/tower servers via virtualization and storage of the corresponding server I/O parameters (MAC addresses, WWNs, I/O connections and boot parameters) in a server profile, which is independent of the hardware.

This profile is used to easily allocate the servers in the managed pool irrespective of location. A failover to a spare server can be easily automated in conjunction with the software ServerView Resource Orchestrator Virtual Edition (ROR VE). This helps the administrator to construct a dynamic data center which can react automatically to events and thus always guarantee the required service level.

The customer is able to define profiles for all his applications and store them centrally in the profile store irrespective of the hardware, especially when used together with the remote boot function (PXE/SAN/iSCSI/FCoE).

The required application (boot image) can be started on the already defined network addresses (MAC, WWN and iSCSI-initiator, -target) without further configuration effort in LAN and SAN by simply assigning a specific profile (containing all the required parameters) to a rack/tower or blade server, or also as an extension to a blade server slot that is not used.

All this without any restrictions regarding the number of rack/tower servers, server blades or chassis. Generation-spanning profiles, which include BX900, BX400, BX600 blade and rack/tower servers, can also be created.



ServerView®

Resourceful Server Management

FUJITSU Software ServerView® Suite provides all the necessary elements for professionally managing server systems during their lifecycle.

For information on other ServerView products please visit www.fujitsu.com/fts/serverview



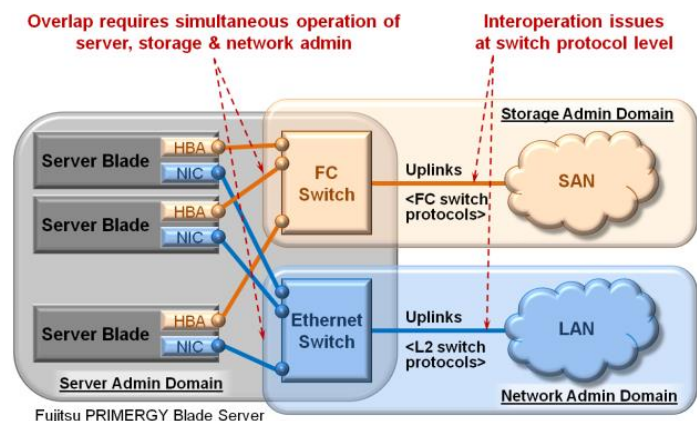
Features and Benefits

Main features	Benefits
<ul style="list-style-type: none">■ Separates server management from LAN and SAN management	<ul style="list-style-type: none">■ Significantly reduces administration effort, time and costs. Entire SAN and LAN pools are pre-configured only once and pre-assignment of I/O addresses make servers ready for "plug and go". Any operational changes of VIOM managed servers are now performed without involving LAN or SAN administration.
<ul style="list-style-type: none">■ Separates and virtualizes server I/O parameters in a hardware independent profile repository	<ul style="list-style-type: none">■ Minimizes administration effort, time and costs to deploy, maintain and recover VIOM managed servers
<ul style="list-style-type: none">■ Supports Fujitsu PRIMERGY rack/tower and blade servers	<ul style="list-style-type: none">■ Simplifies for a wide range of Fujitsu PRIMERGY servers the I/O virtualization enabling resources to be used more dynamically and efficiently
<ul style="list-style-type: none">■ Operates completely independent from operating system; transparent to any application, network, storage system	<ul style="list-style-type: none">■ Requires no certification: VIOM works with any operating system and hypervisor
<ul style="list-style-type: none">■ Comprises provisions to easily add servers to the VIOM managed environment prior to their actual availability.	<ul style="list-style-type: none">■ Speeds up deployment, saves effort, time and costs
<ul style="list-style-type: none">■ Reallocates application (images) by simply moving profiles between similar servers	<ul style="list-style-type: none">■ Increases server utilization, ensures flexibility and fast adaptation to business needs. Using the same hardware for different applications which are not required at the same time reduces costs and increases efficiency
<ul style="list-style-type: none">■ Simple spare server definition and manual failover function for server blades	<ul style="list-style-type: none">■ Supports an easy and secure recovery after server failure.
<ul style="list-style-type: none">■ Scales up to hundreds of rack/tower servers and server blades	<ul style="list-style-type: none">■ Increases administrator's efficiency and reduces costs
<ul style="list-style-type: none">■ Provides in blade server a pass-thru like connectivity / direct connection architecture	<ul style="list-style-type: none">■ Reduces costs and risk for failures by cable consolidation; ensures high throughput
<ul style="list-style-type: none">■ Supports Emulex Universal Multi-Channel (UMC) operation	<ul style="list-style-type: none">■ Enables and manages flexible bandwidth allocation of Converged Network Adapters (CNA) in a very comprehensive and comfortable manner

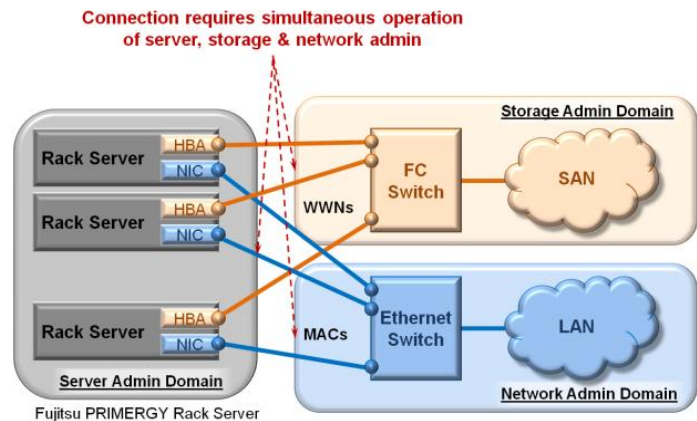
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Traditional I/O infrastructure – inflexible and costly

LAN and FC ports of individual servers are connected to the customer’s LAN and SAN infrastructure via switches, which are traditionally viewed as network components. This means that up to three administrators responsible for servers, LAN and SAN must coordinate their work when changing the configuration, for example when replacing a server due to a hardware problem – regardless, whether such switches are integrated in a blade server chassis:



or in case of rack/tower servers external switches are used:



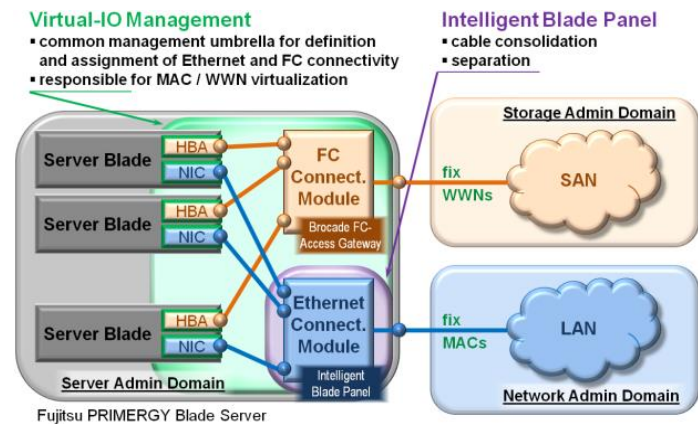
Another major issue is MAC addresses and WWNs, which are hard-coded in NICs and HBAs – regardless whether these are installed in a rack/tower or blade server. Whenever a server has to be replaced or an image or application needs to be moved to a different server, these hard-coded addresses require administrative changes in the server, LAN and SAN configurations.

I/O virtualization with Virtual-I/O Manager – dynamic and simple

ServerView Virtual-I/O Manager (VIOM) is a comprehensive and user-friendly application for administration of virtual addresses and the required LAN connection. All the parameters of a server blade or a rack/tower server are grouped together in a so-called server profile. As these profiles only contain virtual addresses, they can be relocated and assigned to any server blade in any chassis or to any rack/tower server, respectively, as long as the respective server is still connected to the required LAN and SAN networks.

ServerView Virtual-I/O Manager for Blade Server

In Fujitsu PRIMERGY blade server chassis BX900, BX400 and BX600 switches can be replaced with special I/O connection blades that offer a simple means of grouping specific server blade I/O channels (port grouping, cable consolidation), but which do not have the complexity of a switch. Different I/O connection blades are available for this purpose: The Fibre Channel Access Gateway (FC AG) to link storage systems and the Intelligent Blade Panel (IBP) for the LAN connection.



In PRIMERGY BX900 and BX400 these are not different hardware modules, but simply an additional FW mode, providing the flexibility to use the connection modules either in traditional switch-mode or in AG and IBP mode. In the first case the administrator is responsible for managing the I/O connections; in the latter case VIOM manages the I/O connectivity as part of the profile.

Instead of hard-coded MAC addresses and WWNs, virtual, customer-defined addresses are used which can be individually assigned to specific server blades and can retain the same slot assignment even if the server blade has been removed.

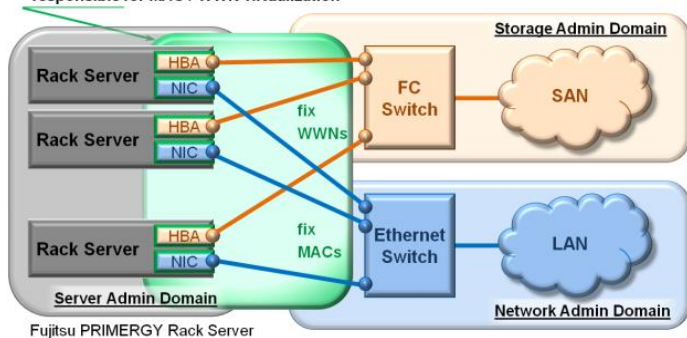
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ServerView Virtual-I/O Manager for rack/tower server

For a range of Fujitsu PRIMERGY rack/tower servers the same well-proven principle of I/O virtualization is now available. In the same way as with PRIMERGY blade servers, virtual, customer-defined addresses are used instead of hard-coded MAC addresses and WWNs:

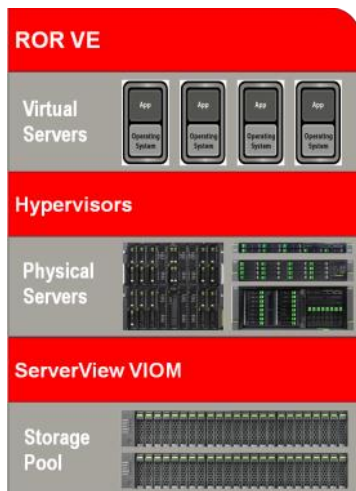
Virtual-I/O Management

- common management umbrella for definition and assignment of Ethernet and FC connectivity
- responsible for MAC / WWN virtualization



ServerView Virtual-I/O Manager – Building block for a Dynamic Infrastructures environment

Fujitsu recommends the use of ServerView Resource Orchestrator VE (ROR VE) as supplement in order to complete the dynamization of a data center environment and to use all the VIOM options. ROR VE works very closely together with VIOM. It helps administrators to automate many of their tasks, which simplifies daily life-cycle operations in consolidated server infrastructures. For example, the automatic server failover capability in case of hardware failures provides a very cost-efficient way for customers, who don't want to pay a fortune for high-availability solutions.



Management concept and function features

1. PRIMERGY Blade Server Chassis configuration

- With ServerView Virtual-I/O Manager (VIOM), compatible BX900, BX400 and BX600 blade server chassis can be identified via the standard discovery service of ServerView Operations Manager.
- After successful identification all chassis compatible with VIOM can be easily imported into VIOM. Each server blade configuration is checked for VIOM compliance and the user can select those to be run under VIOM control.
- With PRIMERGY BX900, BX400, the LAN switches CB18/6, CB36/12, CB36/8+2 and CB18/8 can be operated as required in IBP or switch mode; the role can be switched via the firmware command at any time.
- When using IBP: Definition of all external LAN connections for each VIOM-controlled chassis.
- The network connections (including VLAN connections) for the individual chassis and uplinks of the integrated LAN I/O connection blade (IBP) have already been defined by the server and LAN administrators during the hardware installation. These network connections are documented in VIOM by assigning symbolic names, which are used to define LAN links in server profiles.

2. PRIMERGY rack/tower server configuration

- With ServerView Virtual-I/O Manager (VIOM), compatible rack/tower servers can be identified via the standard discovery service of ServerView Operations Manager.
- After successful identification all rack/tower servers compatible with VIOM can be easily imported into VIOM. Each rack/tower server configuration is checked for VIOM compliance and the user can select those to be run under VIOM control.

3. Profile definition

- A profile is a quantity of data for a specific server blade or rack/tower server, consisting of the virtual MAC addresses and WWNs, the boot parameters (up to 4 boot devices) and the LAN connections of all I/O channels of a server blade, if connected to a connection blade running in IBP mode.
- All profiles are held in a data memory (independent of the installed hardware), which is located in the Central Management Station (CMS). For each profile individual IDs can be defined which, for example, provide information about the application or the service provided by the respective profile.
- Profiles may be created, copied, removed and assigned to a server.

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4. Profile assignment

- **Defining / cancelling the profile assignment** to a slot in a VIOM-controlled chassis or to a VIOM-controlled rack/tower server.

On allocation, VIOM checks whether the number and the I/O channel concepts match that of the installed server blade or rack/tower server and whether the required LAN connections are provided by the IBP uplinks on the chassis.

With blade servers a server blade pre-assignment can be made by allocating the profiles to empty slots.

As the profile assignment is server specific and includes all "individual server parameters", failed server blades or rack/tower servers can then be replaced without incurring any problems or making any configuration changes.

- **Switching the server on / off** (boot / shutdown)
- **Failover configuration (within a blade server chassis)**
Individual server blades can be defined as "spare servers" so that in the event of a fault the failover command can be used to simply and securely replace a failed server with a similar spare server.

5. Command Line Interface (CLI)

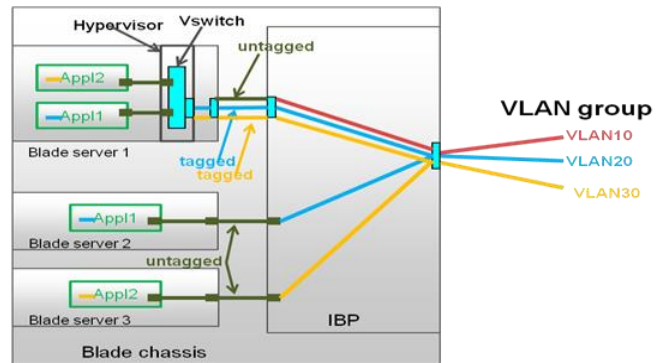
All the important VIOM functions can also be used via a command interface. This provides the customer with the option of running self-written scripts and the systems can be distributed or deactivated according to current requirements or in order to reduce costs. Day/night operation can thus be easily implemented.

6. XML Import / Export of VIOM profile definitions

In both user interfaces GUI and CLI there are functions to export and import the VIOM profile definition in/from a text file in XML format. This supports user in effective creation and maintaining larger amounts of profiles.

7. Support of Multiple VLAN Groups in „tagged“ Mode

VIOM supports VLAN groups of the Intelligent Blade Panels (IBP) in "tagged" mode. This allows running applications simultaneously at a Hypervisor and a physical Blade Server in one chassis using the same VLAN (concurrent operation of a VLAN on different downlinks, tagged and untagged).



IBP: Untagged VLAN group

8. Support of iSCSI Data Center Bridging (DCB) Settings

VIOM supports the optional setting of the iSCSI DCB parameter for loss-less iSCSI operation. For this the SBAX iSCSI configuration can be set via VIOM.

9. Support of BROCADE VDX 2730 and AMPP

In PRIMERGY blade server BX900 and BX400 the Ethernet Fabric Switch 10Gbit/s 18/6+6 (BROCADE VDX 2730) is released. This switch allows (AMPP) Automatic Migration of Port Profiles, a function which is supported by VIOM from version 3.2.

10. VIOM upgrade to newer version

When upgrading the VIOM software on the Management Station any running servers are not affected and need not to be rebooted. The newer VIOM version supports the existing BIOS and FW versions of the blade and rack/tower server components to ensure uninterrupted operation¹⁾.

1) Important Note:

ServerView Virtual-I/O Manager Version 3.8.08 usage on CNA may require a blade server BIOS update; for further details please refer to the tables below.

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TECHNICAL DETAILS

1. MANAGEMENT STATION

1.1. Released Operating Systems on Management Station

Operating System for Virtual-I/O Manager and VIOM CLI
Microsoft Windows Server® 2008 x64 (SP2)
Microsoft Windows Server® 2008 R2 (SP1)
Microsoft Windows Server® 2012
Microsoft Windows Server® 2012 R2
Microsoft Windows Server® 2016
Microsoft Windows Server® 2019
Red Hat Enterprise Linux (RHEL) 6. 10
Red Hat Enterprise Linux (RHEL) 7.x (7.4 / 7.5 / 7.6)
Novell SUSE® Linux Enterprise Server (SLES) 11 (SP4)
Novell SUSE® Linux Enterprise Server (SLES) 12 (SP3 / SP4)
Novell SUSE® Linux Enterprise Server (SLES) 15

1.2. High Availability (HA) Support

Operating System for Management Station in Virtual Machines (VM) for VIOM Manager and VIOM CLI
Microsoft Windows Server® 2008 x64 (SP2)
Microsoft Windows Server® 2008 R2 (SP1)
Microsoft Windows Server® 2012
Microsoft Windows Server® 2012 R2

ServerView Suite Management Station running as Virtual Machine (VM) in

- Microsoft Windows Hyper-V Cluster, or
- VMware Cluster supported with VMware Infrastructure 3 or higher, or
- VMware Cluster supported with vSphere.

1.3. Released Web-Browser

Operating System	Web Browser
Windows	as delivered by Operating System
Red Hat LINUX	as delivered by operating system
Novell SUSE® Linux	as delivered by operating system

1.4. Software Dependencies on Management Station

Operating System	Software Product	Version
Windows	ServerView Operations Manager Java Runtime	v8.41.01, JRE ≥ 1.8.0_172
Windows	ServerView Operations Manager Java Runtime	v8.50.02 for Windows 2019, JRE ≥ 1.8.0_191
LINUX	ServerView Operations Manager Java Runtime	v8.41.01, JRE ≥ 1.8.0_172

- In 64 bit Operating Systems both Java Runtime (x32 & x64) has to be installed.
- After Java Update it is absolute necessary to clear the Java Cache.

2. SUPPORTED HARDWARE - Fujitsu PRIMERGY Blade Server

2.1. PRIMERGY BX900 S1 / BX900 S2 / BX400 S1

System / Component	
Fujitsu PRIMERGY BX400 S1 with MMB S1	#1
Fujitsu PRIMERGY BX900 S1/S2 with MMB S1	#1

1.5. PRIMERGY BX Server Blades

Server Blades			
- BX920 S1		D2860	1.21
- BX960 S1	#2	D2873	3C20
- BX920 S2		D3030	3D99
- BX922 S2		D2861	3D99
- BX924 S2		D2952	3D99
- BX920 S3		D3142 A1	v4.6.5.3
- BX924 S3		D3143 A1	v4.6.5.3
- BX920 S4		D3142 B1	v4.6.5.4
- BX924 S4		D3143 B1	v4.6.5.4
- BX2560 M1		D3320 A1	v5.0.0.9
- BX2580 M1		D3321 A1	v5.0.0.9
- BX2560 M2		D3320 B1	v5.0.0.11
- BX2580 M2		D3321 B1	v5.0.0.11

Onboard Controller		
- 4x 1 GbE	#3	Intel®: ZOAR / KAWELA
- 2x 10 GbE	#3	Intel®: NIANTEC
- CNA LoM "OCI11102"		Emulex (BE3)
- CNA LoM "OCI14102"		Emulex (Skyhawk)

Daughter Cards (Mezzanine)		
- LAN Mezz.Card 4x 1 GbE	#3	Intel®: ZOAR / KAWELA
- LAN Mezz.Card 2x 10 GbE	#3	Intel®: NIANTEC
- FC Mezz.Card 2x 8Gb		Emulex: MC-FC82E
- FC Mezz.Card 2x 16Gb		Emulex: MC-FC162E
- CNA Mezz.Card 10Gb 2 Port		Emulex: MC-CNA102E
- CNA Mezz.Card 10Gb 2 Port		Emulex: MC-CNA112E

2.2. PRIMERGY BX Connection Blades

LAN Connection Blades			
- PY CB ETH Switch/IBP 1Gb 18/6	SB6		
- PY CB ETH Switch/IBP 1Gb 36/12	SB11a	#2	
- PY CB ETH Switch/IBP 1Gb 36/8+2	SB11	#1	#2
- PY CB ETH Switch/IBP 10Gb 18/8	SBAX2	#3	
- PY CB DCB Switch 10Gb 18/8+2	SBAX3	#4	
- PY CB Eth Pass Thru 10Gb (18/18)	LAN Pass Thru		
- PY CB 10Gb FEX Nexus B22F (16/8)	Cisco FEX		
- PY CB 10Gb DCB VDX2730 (18/6+6)	BROCADE	#5	
FC Connection Blades			
- PY CB 8GB FC Connection Blade (Brocade 5450)	BROCADE		
- PY CB Fibre Channel 16GB (Brocade 6545)	BROCADE		

Note:

- Older BIOS and Firmware support only SV-VIOM 2.1 features (Please have a look in the SV-VIOM Readme)
- SMUX setting support via VIOM profile has specific requirements for BIOS, iRMC firmware and MMB firmware.
- #1 Only on BX900: support of SB11 Stacking feature (SB11) using of IBP FW ≥ 2.18 and Switch FW ≥ 2.14 is necessary!
- #2 SB-PRI-11018 – PRIMERGY BX900 CB SB11(a) losing telnet access after update
- #3 only plain port-groups and extended vLANs groups should be used for DCB Config
- #4 C-FABRIC mode supported but can't be managed by SV-VIOM (shown as supported component)
- #5 Supported but can't be managed by SV-VIOM (shown

Note:

- **Certain firmware dependencies might apply; please contact us for details** (support.ts.fujitsu.com)
- SMUX setting support via VIOM profile has specific requirements for BIOS, iRMC firmware and MMB firmware.
- #1 The MAC and WWN Virtualization feature strongly depends on corresponding features in MMB, Server Blades and Mezz.Cards.
- #2 No support for CNA Mezz.Card (MC-CNA102E/MC-CNA112E)
- #3 Not supported with PY CB DCB VDX 2730 (Brocade)

2.3. PRIMERGY BX600 S3

System / Component	
Fujitsu PRIMERGY BX600 S3 with MMB S3 #1	
Server Blades:	
- BX620 S4	D2571
- BX620 S5	D2686
- BX620 S6	D3051
- BX630 S2	D2537 / D2931
Daughter Cards (Mezzanine):	
- 2x FC 4Gb PCIe	Emulex: MC FC42E
LAN Switch Blades:	
- BX600 IBP 10/6	SB9v
- BX600 IBP 30/12	SB9i
- BX600 GbE 10/6	SB9/SB9a
- BX600 GbE 30/12	SB9f
- BX600 LAN Pass-Thru Blades	LAN PassThru
FC Switch Blades:	
- BX600 4GB FC Switch (BROCADE)	SW4016-D4
- BX600 4Gbit FC Pass-Thru Blade	FC PassThru

Note:

#1 certain firmware dependencies might apply; please contact us for details (support.ts.fujitsu.com)

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2.4. Supported Boot Methods

2.4.1. Legacy mode

Server Blades PRIMERGY	Onboard	
	Intel®	
	PXE	iSCSI #1
- BX620 S4 (D2571)	✓	-
- BX620 S5 (D2686)	✓	-
- BX620 S6 (D3051)	✓	✓
- BX630 S2 (D2537)	✓	-
- BX630 S2 (D2931)	✓	-

Daughter Cards (Mezzanine)					
LAN		BE2			FC
PXE	iSCSI	PXE	FCoE	iSCSI	
✓	-	-	-	-	✓
✓	-	-	-	-	✓
✓	-	-	-	-	✓
✓	-	-	-	-	✓
✓	-	-	-	-	✓

Server Blades PRIMERGY	Onboard	
	Intel®	
	PXE	iSCSI
- BX920 S1 (D2860)	✓	✓
- BX920 S2 (D3030)	✓	✓
- BX922 S2 (D2861)	✓	✓
- BX924 S2 (D2952)	✓	-
- BX960 S1 (D2873)	✓	✓ #3

PCIe					
LAN		BE2			FC
PXE	iSCSI	PXE	FCoE	iSCSI	
✓	-	✓	-	-	✓
✓	-	✓	✓	-	✓
✓	-	✓	✓	-	✓
✓	-	✓	✓	-	✓
✓	-	-	-	-	✓

Server Blades PRIMERGY	Onboard		
	BE3 #2		
	PXE	FCoE	iSCSI
- BX920 S3 (D3142)	✓	✓	✓
- BX920 S4 (D3142B)	✓	✓	✓
- BX924 S3 (D3143)	✓	✓	✓
- BX924 S4 (D3143B)	✓	✓	✓

PCIe					
LAN		BE3			FC
PXE	iSCSI	PXE	FCoE	iSCSI	
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓

Server Blades PRIMERGY	Onboard		
	Skyhawk #2		
	PXE	FCoE	iSCSI
- BX2560 M1 (D3320)	✓	✓	✓
- BX2580 M1 (D3321)	✓	✓	✓
- BX2560 M2 (D3320B)	✓	✓	✓
- BX2580 M2 (D3321B)	✓	✓	✓

PCIe					
LAN		BE3			FC
PXE	iSCSI	PXE	FCoE	iSCSI	
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓
✓	-	✓	✓	✓	✓

Note:

- iSCSI boot support for LAN ports on this mezzanine card must be checked in BIOS release notes.
- #1 Only W2K3 SP2 / R2 SP2 (x86/x64); W2K8 SP2 (x86/x64); W2K8 Core SP2; RHEL5.5; SLES10 SP3; SLES 11 SP1 are supported!
- #2 iSCSI Boot only in CNA/UMC Mode of EMULEX CNA (BE3) Onboard OCI11102-LOM (no iSCSI Boot in CNA 1GB Mode)
- #3 please refer to Service documentation SB-PRI-12078: Workaround is necessary!

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SUPPORTED HARDWARE - Fujitsu PRIMERGY Blade Server (continued) Supported Boot Methods

2.4.2. UEFI mode

Server Blades PRIMERGY	Onboard			PCIe					
	Skyhawk #2			LAN		BE3			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
- BX2560 M1 (D3320)	✓	✓	✓	✓	-	✓	✓	✓	✓
- BX2580 M1 (D3321)	✓	✓	✓	✓	-	✓	✓	✓	✓
- BX2560 M2 (D3320B)	✓	✓	✓	✓	-	✓	✓	✓	✓
- BX2580 M2 (D3321B)	✓	✓	✓	✓	-	✓	✓	✓	✓

Note:

- Boot with iSCSI software initiator is not supported in UEFI mode

#2 iSCSI Boot only in CNA/UMC Mode of EMULEX CNA (BE3) Onboard OCI11102-LOM (no iSCSI Boot in CNA 1GB Mode)

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3. SUPPORTED HARDWARE - Fujitsu PRIMERGY Rack / Tower Server

3.1. PRIMERGY RX/TX System / Component

PRIMERGY RX/TX server	
- RX200 S7	D3032
- RX300 S7	D2939
- RX350 S7 / TX300 S7	D2949
- RX100 S8	D3229
- RX200 S8	D3302
- RX300 S8	D2939 B1
- RX350 S8 / TX300 S8	D2949 B1
- RX1330 M1 / RX1330 M2 / RX1330 M3	D3229 / D3375 / D3375
- RX2520 M1	D3169
- RX2530 M1 / RX2530 M2 / RX2530 M4	D3279 A1/ D3279 B1 / D3383 A1
- RX2540 M1 / RX2540 M2 / RX2540 M4	D3289 A1/ D3289 B1 / D3384 A1
- RX2560 M1 / TX2560 M1 / RX2560 M2	D3289 A1/ D3289 A1/ D3289 B1
- RX4770 M1 / RX4770 M2 / RX4770 M3	D3342 / D3349 / D3749
Controller	
Fibre Channel	
- Emulex 32/16Gb FC 1-port HBA	LPe32000 / LPe31000
- Emulex 32/16Gb FC 2-port HBA	LPe32002 / LPe31002
- Emulex 16Gb FC 1-port HBA #2	LPe16000
- Emulex 16Gb FC 2-port HBA #2	LPe16002
- Emulex 8Gb FC HBA	LPe12002 / LPe1250
- QLogic 2x32 Gb FC HBA	QLE 2740/2 1/2
- QLogic 2x16 Gb FC HBA	QLE 2690/2 1/2
LAN #1	
- INTEL PLAN EP 4x10Gbit	X710-DA4 ¹⁾
- INTEL PLAN EP 2x10Gbit	X710-DA2 ¹⁾
- INTEL PLAN EP 2x25Gbit	XXV710-DA2 ¹⁾
- INTEL PLAN EP 4x10Gbit	X710-T4 ¹⁾
- INTEL 2-port 10GbE	X550-T2 ¹⁾ / X540-T2 ¹⁾
- Emulex PLAN EP 2x 10 Gb	OCe14102 ¹⁾
- INTEL PLAN CP 2x1Gbit	I350-T2 ¹⁾
- INTEL PLAN CP 4x1Gbit	I350-T4 ¹⁾
- INTEL 2-port 1GbE	D2735 ¹⁾
- INTEL 2-port 10GbE	D2755 ¹⁾
- INTEL 4-port 1GbE	D2745 ¹⁾
- INTEL 2-port 1GbE	D3035 ¹⁾
- INTEL 4-port 1GbE	D3045 ¹⁾
- Mellanox 25/40/100 Gbit	MCX4 ¹⁾
¹⁾ It is recommended to disable the virtualization on the NIC and to reset it to factory defaults before reusing it in any other system which does not support VIOM.	
CNA	
- Emulex PCNA 10GbE (BE2)	OCe10102
- Emulex PCNA 10GbE (Skyhawk)	OCe14102
- Emulex PCNA 40GbE (Skyhawk)	OCe14401
Onboard Controller	
- Emulex 10GbE (Skyhawk)	OCI14000
- PLAN EM 4x1Gb T OCP	Intel OCP I357-T4
- PLAN EM 2x10Gb T OCP	Intel OCP X557-T2
- PLAN EM 2x10Gb SFP+ OCP	Intel OCP X557-DA2

- PLAN EM 4x10Gb SFP+ OCP	Intel OCP X557-DA4
- PLAN EP XXV710-DA2 25Gb 2p SFP28 OCP	Intel OCP
- PLAN EP MCX4-LX 25Gb 2p SFP28 OCP	Mellanox OCP

Note:
 - **Certain firmware dependencies might apply; please contact us for details** (support.ts.fujitsu.com)
 #1 iSCSI software boot is not supported for LAN PCIe Controller!
 #2 Support LP16k (FW ≥ 1.1.35.0) with RX200 S7 (needs BIOS ≥ R2.21.0) and RX300 S7, RX350 S7, TX300 S7 (needs BIOS ≥ R1.24.0)
 RX2530 M1 / RX2540 M1: Adapter-FW 10.2.405.13 necessary

3.2. Supported Boot Methods

3.2.1. Legacy mode

PRIMERGY		Onboard Intel®			PCIe					
		LAN			LAN		BE2			FC
		PXE		iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX100 S8	D3229	✓		✓	✓	-	✓	✓	✓	✓
RX1330 M1	D3229	✓		✓	✓	-	✓	✓	✓	✓
RX1330 M2	D3375	✓			✓		-			✓
RX1330 M3	D3375	✓			✓		-			✓
RX200 S7	D3032	✓		✓	✓	-	✓	✓	✓	✓
RX200 S8	D3302	✓		✓	✓	-	✓	✓	✓	✓
RX2520 M1	D3169	✓		✓	✓	-	✓	✓	✓	✓
RX300 S7	D2939	✓		✓	✓	-	✓	✓	✓	✓
RX300 S8	D2939B	✓		✓	✓	-	✓	✓	✓	✓
RX350 S7	D2949	✓		✓	✓	-	✓	✓	✓	✓
RX350 S8	D2949B	✓		✓	✓	-	✓	✓	✓	✓
TX300 S7	D2949	✓		✓	✓	-	✓	✓	✓	✓
TX300 S8	D2949B	✓		✓	✓	-	✓	✓	✓	✓

PRIMERGY		Onboard Intel®			PCIe					
		LAN			LAN		Skyhawk			FC
		PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX4770 M1	D3342	✓	-	-	✓	-	✓	✓	✓	✓
RX4770 M2	D3349	✓	-	-	✓	-	✓	✓	✓	✓
RX4770 M3	D3749	✓	-	-	✓	-	✓	✓	✓	✓

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PRIMERGY	Onboard			PCIe					
	Skyhawk			LAN		Skyhawk			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX2530 M1 D3279	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2530 M2 D3279B	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2530 M4 D3383A	✓	-	-	✓	-	✓	✓	✓	-
RX2540 M1 D3289	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2540 M2 D3289B	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2540 M4 D3384A	✓	-	-	✓	-	✓	✓	✓	-

PRIMERGY	Onboard			PCIe					
	Skyhawk			LAN		Skyhawk			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX/TX2560 M1 D3289	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX/TX2560 M1 D3289B	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓

Note:

- iSCSI boot support for LAN ports on this mezzanine card must be checked in BIOS release notes.
- PXE & iSCSI supported for Linux operating system (incl. VMware ESX4.1 and ESX5)

3.2.2. UEFI mode

PRIMERGY	Onboard			PCIe					
	Skyhawk #2			LAN		Skyhawk #2			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX2530 M1 D3279	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2530 M2 D3279B	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2530 M4 D3383A	✓	-	-	✓	-	✓	✓	✓	-
RX2540 M1 D3289	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2540 M2 D3289B	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX2540 M4 D3384A	✓	-	-	✓	-	✓	✓	✓	-

Note:
 - Boot with iSCSI software initiator is not supported in UEFI mode
 #2 UEFI boot mode from Skyhawk is only supported with one LAN and one Storage function (excludes UMC and custom mode).

PRIMERGY	Onboard			PCIe					
	Skyhawk #2			LAN		Skyhawk #2			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX/TX2560 M1 D3289	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓
RX/TX2560 M2 D3289 B1	-	-	-	✓	-	✓	✓	✓	✓
+ D3245 (2 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3255 (4 x 1Gb)	✓	-	-	✓	-	✓	✓	✓	✓
+ D3265 (2 x 10Gb SFP+)	✓	✓	✓	✓	-	✓	✓	✓	✓
+ D3275 (2 x 10Gb - T)	✓	-	-	✓	-	✓	✓	✓	✓

PRIMERGY	Onboard Intel®			PCIe					
	LAN			LAN		Skyhawk #2			FC
	PXE	FCoE	iSCSI	PXE	iSCSI	PXE	FCoE	iSCSI	
RX4770 M1 D3342	✓	-	-	✓	-	✓	✓	✓	✓
RX4770 M2 D3349	✓	-	-	✓	-	✓	✓	✓	✓
RX4770 M3 D3749	✓	-	-	✓	-	✓	✓	✓	✓
RX1330 M2 D3375	✓	-	-	✓	-	✓	✓	✓	✓
RX1330 M3 D3375	✓	-	-	✓	-	✓	✓	✓	✓

Note:
 - Boot with iSCSI software initiator is not supported in UEFI mode
 #2 UEFI boot mode from Skyhawk is only supported with one LAN and one Storage function (excludes UMC and custom mode).

DISTRIBUTION; IMPLEMENTATION; DOCUMENTATION & SUPPORT

User Interface	English
Installation	VIOM - as other ServerView Suite modules - can easily be installed by the customer; optionally an installation service can be provided by Fujitsu professional service.
Documentation	User manuals can be downloaded from manuals.ts.fujitsu.com/serverbooks/serverview-suite
User Skills	Basic knowledge of Windows/LINUX and Fujitsu Blade and Rack/tower server administration is presumed.
Conditions	This software product is supplied under conditions described in our current license agreement.
Warranty	Class: A Purchase of a Service and Support Pack available from Fujitsu Technology Solutions is mandatory.
Media	The ServerView Suite DVD contains all necessary software components.
Ordering and Delivery	ServerView Virtual-I/O Manager Right-to-Use licenses have to be purchased on a per server base to be managed by VIOM. Besides a single server license (U15000-C311) also two bundles are available for 8 or 18 servers (8 licenses: U15000-C312; 18 licenses: U15000-C313). Purchase of a Service and Support Pack available from Fujitsu Technology Solutions is mandatory.

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2019-04-12 CE-EN

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