

# IBM System Storage Multilevel Grid Access Manager v2.1.3

## IBM Storage and Server Interoperability Matrix

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## Hardware Support Policy

This policy determines the length of time we will test a given piece of hardware with new levels of GAM code:

- Hardware interoperability introduced in any release of GAM will remain current and be tested for software upgrades for all new releases of GAM for at least three years. For example, hardware which first appears in this interoperability matrix in January 2007 will be tested for all releases of GAM in 2007, 2008, and 2009. Hardware that is still shipping and current will continue to be tested beyond this commitment.
- Hardware interoperability will be supported at the last tested software level, until the hardware's end of support date –or– Bycast's end of support for that software level or interoperability of that software level with the level of grid software the customer is running on other nodes. What this means is that a piece of hardware introduced in GAM version n which we do not test in GAM version n+3 (three releases after GAM version n) will nevertheless be supported running GAM n+2 for as long as Bycast supports GAM n+2, and there is still underlying hardware support available for the device.
- NOTE: Bycast currently supports interoperability of different software levels in the same grid only during an upgrade.

For example:

2007 = GAM n = hardware XYZ introduced

2008 = GAM n+1 = hardware XYZ retested, customer can upgrade GAM SW on existing HW

2009 = GAM n+2 = hardware XYZ retested, customer can upgrade GAM SW on existing HW

2010 = GAM n+3 = hardware XYZ NOT retested, but customer can continue to run on GAM n+2 SW on hardware XYZ for as long as GAM n+2 SW is supported by Bycast and hardware XYZ is supported by the hardware supplier.

So if hardware XYZ was purchased in 2007 it would be supported on the latest GAM software version until GAM n+3 becomes generally available in 2010, and beyond that for as long as GAM n+2 software is supported by Bycast. Devices like tape are not directly supported by GAM; rather they fall under TSM's SW support cycle and GAM merely talks to TSM. Nevertheless, longer-lived devices GAM does directly talk to would continue to be tested with new releases as long as they are shipping and current.

## **IBM BladeCenter Configurations**

## **BladeCenter Chassis**

### **BladeCenter Hardware/Firmware**

#### BladeCenter H Chassis

2 Multi-switch Interconnect Module for IBM BladeCenter

#### Ethernet Connectivity Options

Server Connectivity Module for IBM BladeCenter

Cisco Systems Intelligent GbE Switch Module for IBM BladeCenter

Cisco Systems Fiber Intelligent Gigabit Ethernet Switch Module

2 modules requires for all configurations

2 additional modules (total of 4) are required if any of the following node types will be installed in the chassis:

Admin Node

Admin/Gateway Node

Archive Node (only if node is communication with a TSM/SSAM server not on the grid network)

Gateway Node - Distributed

Gateway Node - High Availability

Gateway Node - Redundant

VMware Multiple Redundant Gateway Node

#### Fibre Channel Connectivity Options

2 Brocade 8GB SAN Switch Module for IBM BladeCenter

2 Cisco Systems 8GB Fibre Channel Switch Module

NOTE - the switch modules installed in the chassis must be a Vendor match to any external switch they will be connected to

NOTE - a sufficient number of SFPs are required for connection of external storage and/or ISLs

#### 4 Power Supply Modules

2 IBM BladeCenter KVM/Advanced Management Module

Advanced Management Module Firmware	v2.50c
Brocade 8GB SAN Switch Module Firmware	v6.2.0_bc2
Cisco Systems 8GB SAN Switch Module Firmware	
QLogic 8GB SAN Switch Module Firmware	v7.10.1.03.00
Server Connectivity Module Firmware	v1.1.3.0
Cisco Systems Intelligent GbE Switch Module	v12.2-50.SE1
Cisco Systems Fibre Intelligent Gigabit Ethernet Switch Module	v12.2-50.SE1

#### IBM BladeCenter H Chassis

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?taskind=2&brandind=500020&familyind=5297403&typeind=5297408&modelind=0&osind=0&psid=bm&continue.x=1&matrix=Y>

## **Admin Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Admin node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

- 1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array
- 2 300GB 15k FC or SAS HDDs, configured as a RAID 1 array on supported external storage for Audit Logs and the NMS DB

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>



## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix B  
Appendix C

## **Admin/Gateway Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Admin/Gateway node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

- 1 Quad-Core Intel Xeon Processor E5530 - 2.40GHz
- 4GB RAM
- QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter
- IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery
- 2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array
- 2 300GB 15k FC or SAS HDD, configured as a RAID 1 array on supported external storage for Audit Logs and the NMS DB
- 2-12 300GB 15k FC or SAS HDD (in increments of two), configured as a RAID 1/RAID10 array on supported external storage for the FSG Cache

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Refer to the following appendices for supported storage attachment options.

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## **Archive Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1
IBM TSM/SSAM Client Software	v5.5 or v6.1

### **Blade Hardware/Firmware**

The Archive node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter (required only if node is communicating with a TSM/SSAM server not on the grid network)  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

IBM TSM Server	v5.5 or later
IBM SSAM	v5.5 or later

## **Control Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Control node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

- 1 Quad-Core Intel Xeon Processor E5530 - 2.40GHz
- 4GB RAM
- QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter
- IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery
- 2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array
- 4 300GB 15k FC or SAS HDD, configured as a RAID 10 array on supported external storage for the CMS DB

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

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## **Control/Storage Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Control/Storage node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 - 2.40GHz  
4GB RAM

QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

4 300GB 15k FC or SAS HDD, configured as a RAID 10 array on supported external storage for the CMS DB

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

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## **Gateway Node - Distributed**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.34
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1
GPFS	3.2.1-15

### **Blade Hardware/Firmware**

The Gateway node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM

QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

4 300GB 15k FC HDD, configured as two RAID 1 arrays on two separate supported external storage systems for fsgsys

300GB 15k FC HDD, configured as 5x300GB RAID 5 arrays on two separate supported external storage systems for FSG Cache

**-OR-**

1TB SATA HDD, configured as 5x1TB RAID 5 arrays on two separate supported external storage systems for FSG Cache

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System Storage Multilevel Grid Access Manager v2.1.3  
IBM Storage and Server Interoperability Matrix

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix C

## **Gateway Node – High Availability**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Gateway node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM

QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

4-12 300GB 15k FC or SAS HDD (in increments of two), configured as a RAID 10 array  
on supported external storage for the FSG Cache

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix B

Appendix C

## **Gateway Node - Redundant**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Gateway node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM

QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

4-12 300GB 15k FC or SAS HDD (in increments of two), configured as a RAID 10 array  
on supported external storage for the FSG Cache

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

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Appendix C

## **Storage Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Blade Hardware/Firmware**

The Storage node is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 - 2.40GHz  
4GB RAM  
QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix B  
Appendix C  
Appendix D

## **VMware Multiple Redundant Gateway**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
VMware ESX Server	v3.5 update 4

### **Blade Hardware/Firmware**

The VMware Multiple Redundant Gateway node supports up to 6 Gateway node images per server. This is supported when installed on the IBM BladeCenter HS22 with the minimum configuration below.

2 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
16GB RAM

QLogic Ethernet and 8Gb Fibre Channel Expansion Card (CFFh) for IBM BladeCenter  
IBM ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter with Battery  
2 73GB SAS 15k 2.5 inch SFF Slim-HS HDD, configured as 1 RAID 1 array

2-12 300GB 15k FC or SAS HDD, configured as 2x300GB RAID 1 array for each gateway node image on supported external storage for FSG Cache, up to six images total

IBM BladeCenter HS22 UEFI	v1.04 or later
IBM BladeCenter HS22 IMM Firmware	v1.05 or later
ServeRAID MR10ie Firmware	v11.0.1-0014
ServeRAID MR10ie Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Firmware	vf5.02.00-b08-e16 or later
QLogic Ethernet and 8GB Fibre Channel Expansion Card (CFFh) Driver	SLES10 SP2 distribution driver or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM BladeCenter HS22

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375180&typeind=5375184&osind=0&brandind=5000020&oldbrand=5000020&oldfamily=5375180&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Refer to the following appendices for supported storage attachment options.



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## **IBM System X Configurations**

## **Admin Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Admin node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
4 73GB 15K 2.5 inch Slim Hot-Swap SAS HDD, configured as two RAID 1 arrays  
2 146GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Not Applicable

## **Admin/Gateway Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Admin/Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15K 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 arrays  
4 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as two RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Not Applicable

## **Admin/Gateway Node with External Disk for FSG Cache**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Admin/Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
4 73GB 15K 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 arrays  
2 146GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as two RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

2-12 300GB 15k SAS HDD (in increments of two), configured as a RAID 1/RAID 10 array on supported external storage for the FSG Cache

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Appendix A  
Appendix B

## **Admin/Gateway/Control/Storage Node (GMAS-L only)**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Admin/Gateway/Control/Storage node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
6 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array and one RAID 10 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

2 450GB 15k SAS HDD, configured as a RAID 1 array on supported external storage for the FSG Cache

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix A



## **Archive Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1
IBM TSM/SSAM Client Software	v5.5 or v6.1

### **Server Hardware/Firmware**

The Archive node is supported when installed on the IBM System X x3550 M2 with the following minimum configuration:

- 1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz
- 4GB RAM
- Dual port 1Gb Ethernet Daughter Card (only required if node is communicating with a TSM/SSAM server not on the grid network)
- Storage Adapter Card – refer to the Storage Options section below for specifics
- IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option
- 2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array
- Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

IBM TSM Server	v5.5 or later
IBM SSAM	v5.5 or later

## **Control Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Control node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
4 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 10 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Not Applicable

## **Control/Storage Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Control/Storage node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
4 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 10 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix A  
Appendix B  
Appendix C  
Appendix D

## **Gateway Node - Distributed**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.34
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1
GPFS	3.2.1-15

### **Server Hardware/Firmware**

The Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 - 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

#### Optional Supported Components

Remote present hardware key

4 300GB 15k FC HDD, configured as two RAID 1 arrays on two separate supported external storage systems for fsgsys  
300GB 15k FC HDD, configured as 5x300GB RAID 5 arrays on two separate supported external storage systems for FSG Cache

**-OR-**

1TB SATA HDD, configured as 5x1TB RAID 5 arrays on two separate supported external storage systems for FSG Cache  
2 4GB or better IBM B-type or Cisco Fibre Channel SAN switches

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System Storage Multilevel Grid Access Manager v2.1.3  
IBM Storage and Server Interoperability Matrix

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix E

## **Gateway Node – High Availability**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
1 PRO/1000 PT Dual Port Server Adapter by Intel – PCI-E  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
4 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Not Applicable

## **Gateway Node with External Disk for FSG Cache – High Availability**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
1 PRO/1000 PT Dual Port Server Adapter by Intel – PCI-E  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

4-12 300GB 15k SAS HDD (in increments of two), configured as a RAID 10 array on supported external storage for the FSG Cache

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

[https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typ\\_eind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtyp\\_e=0&taskind=2&matrix=Y&psid=dm](https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typ_eind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtyp_e=0&taskind=2&matrix=Y&psid=dm)



## **Storage Options**

Appendix A  
Appendix B

## **Gateway Node - Redundant**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
4 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

### **Storage Options**

Not Applicable

## **Gateway Node with External Disk for FSG Cache – Redundant**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Gateway node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

4-12 300GB 15k SAS HDD (in increments of two), configured as a RAID 10 array on supported external storage for the FSG Cache

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Appendix A  
Appendix B

## **Gateway/Control/Storage Node (GMAS-L only)**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Gateway/Control/Storage node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
6 300GB 10k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array and one RAID 10 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

2 450GB 15k SAS HDD, configured as a RAID 1 array on supported external storage for the FSG Cache

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix A

## **Storage Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
LSI MR Provider	v00.05.0504-1

### **Server Hardware/Firmware**

The Storage node is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

1 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
4GB RAM  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix A  
Appendix B  
Appendix C  
Appendix D



## **VMware Multiple Redundant Gateway Node**

### **Software**

SUSE Linux Enterprise Server 10 SP2 Kernel	2.6.16.60-0.21
IBM System Storage Multilevel Grid Access Manager Software	v2.1.3_8.1.0
Bycast Enablement Layer Software	v3.5.0
IBM System Storage Multilevel Grid Access Manager Software Service Pack	v2.1.3.1_8.1.1
Bycast Enablement Layer Software Service Pack	v3.5.1
IBM Director Common Agent	v6.1
VMware ESX Server	v3.5 update 4

### **Server Hardware/Firmware**

The VMware Multiple Redundant Gateway node supports up to 6 Gateway node images per server. This is supported when installed on the IBM System X x3550 M2 with the minimum configuration below.

2 Quad-Core Intel Xeon Processor E5530 – 2.40GHz  
16GB RAM  
Dual port 1Gb Ethernet Daughter Card  
Storage Adapter Card – refer to the Storage Options section below for specifics  
IBM ServeRAID-MR10i SAS Controller with Li-Ion battery option  
2 73GB 15k 2.5 inch Slim Hot-Swap SAS HDD, configured as one RAID 1 array  
Dual Power Supplies

Optional Supported Components  
Remote present hardware key

2–12 300GB 15k FC or SAS HDD, configured as 2x300GB RAID 1 array for each gateway node image on supported external storage for FSG Cache, up to six images total

IBM BladeCenter x3550 M2 UEFI	v1.03
IBM BladeCenter x3550 M2 IMM Firmware	v1.05
ServeRAID MR10i Firmware	v11.0.1-0014
ServeRAID MR10i Driver	00.00.03.23 or later
Broadcom NIC Firmware	v2.1.0a or later
Broadcom NIC Driver	v1.8.2b or later
IBM SAS Hard drive Update	v1.05 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System X x3550 M2

<https://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?familyind=5375176&typeind=0&osind=0&brandind=5000008&oldbrand=5000008&oldfamily=5376096&oldtype=0&taskind=2&matrix=Y&psid=dm>

## **Storage Options**

Refer to the following appendices for supported storage attachment options.

Appendix A

Appendix B

Appendix C

## Appendix A – IBM System Storage DS3200 Storage Option

### IBM System Storage DS3200

Storage Adapter Options – IBM System X servers only

- 1 IBM 3Gb SAS HBA Controller v2 (for single controller configurations)
- 2 IBM 3Gb SAS HBA Controller v2 (for dual controller configurations)

IBM 3Gb SAS HBA Controller v2 Firmware	v2.62 or later
IBM 3Gb SAS HBA Controller v2 Driver	v4.16.80.01 or later
IBM System Storage DS3200 Firmware	07.35.41.02 or later
IBM System Storage DS3000 EXP3000 Firmware	v1.96 or later
IBM System Storage DS3000 RDAC <sup>1</sup>	v09.03.0c05.0030 or later
IBM System Storage DS3000 SAS/SATA Hard drive update	v4.5 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System Storage DS3200

<https://www-304.ibm.com/systems/support/supportsite.wss/selectproduct?taskind=2&brandind=5000028&familyind=5348412&typeind=0&modelind=0&osind=0&psid=sr&continue.x=1&matrix=Y>

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<sup>1</sup> Only required when using a dual controller configuration

## Appendix B – IBM System Storage DS3400 Storage Option

### IBM System Storage DS3400

Storage Adapter Options – IBM System X servers only  
1 QLogic 8GB FC Dual Port PCIe HBA

QLogic 8Gb FC Dual Port PCIe HBA Firmware	v2.01 or later
QLogic 8Gb FC Dual Port PCIe HBA Driver	SLES10 SP2 distribution driver or later
IBM System Storage DS3400 Firmware	07.35.41.02 or later
IBM System Storage DS3000 EXP3000 Firmware	v1.96 or later
IBM System Storage DS3000 RDAC <sup>2</sup>	v09.03.0c05.0030 or later
IBM System Storage DS3000 SAS/SATA Hard drive update	v4.5 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System Storage DS3400

<https://www-304.ibm.com/systems/support/supportsite.wss/selectproduct?brandind=5000028&familyind=5348409&osind=0&oldbrand=5000028&oldfamily=5356498&oldtype=0&taskind=2&matrix=Y&psid=dm>

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<sup>2</sup> Only required when using a dual controller configuration

## Appendix C – IBM System Storage DS4000 Storage Option

### IBM System Storage DS4700 Express

Storage Adapter Options – IBM System X servers only  
1 QLogic 8GB FC Dual Port PCIe HBA

QLogic 8Gb FC Dual Port PCIe HBA Firmware	v2.01 or later
QLogic 8Gb FC Dual Port PCIe HBA Driver	SLES10 SP2 distribution driver or later
IBM System Storage DS4700 Firmware	07.36.17.00 or later
IBM System Storage DS4000 EXP810 Firmware	v1.62 or later
IBM System Storage DS4000 RDAC	v09.03.0C05.0042 or later

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM System Storage DS4700 Express

<https://www-304.ibm.com/systems/support/supportsite.wss/selectproduct?brandind=5000028&familyind=5329827&osind=0&oldbrand=5000028&oldfamily=5345919&oldtype=0&taskind=2&matrix=Y&psid=dm>

## Appendix D – IBM XIV Storage System Option

### IBM XIV Storage System

Storage Adapter Options – IBM System X servers only  
1 QLogic 8GB FC Dual Port PCIe HBA

QLogic 8Gb FC Dual Port PCIe HBA Firmware	v2.01 or later
QLogic 8Gb FC Dual Port PCIe HBA Driver	SLES10 SP2 distribution driver or later
IBM XIV Storage System Code Level	v10.1 or later
SLES10 SP2 Device Mapper Multipath driver	SLES10 SP2 distribution version

For the latest support levels of hardware and firmware and to download the appropriate drivers and firmware, please review the following links

IBM XIV Storage System

<http://www-947.ibm.com/systems/support/supportsite.wss/selectproduct?taskind=1&brandind=5000028&familyind=5368932&typeind=0&modelind=0&osind=0&psid=sr&continue.x=1>