

<Supported Storage List of SIOS Protection Suite for Linux v9>

Last Updated: November 6, 2017

The table below is a list of supported storages by LifeKeeper for Linux v9. Please use this when considering hardware configuration for your environment.

[About Supported Storages]
Storages used as shared storage in LifeKeeper require certification depending on types.

You need to use supported storages for shared storages such as SCSI/FC/SCSI/SAS that refer to the same data from multiple nodes for which LifeKeeper's IO fencing with SCSI-2/3 Reservation is required.

Storages for which prerequisite is not to perform reservation with SCSI-2/3 using Quorum/Witness Server Kit also requires certification. Please check the table below.

[Configuration which does not require certification]
Following configuration doesn't require storage certification:

- NAS storage (requires NAS Recovery Kit)
- All disk devices that make up data replication by DataKeeper (both built-in and external)

[Unsupported hardware]
- Consumer storages that are connected via USB or IEEE1394 are not supported.

Vendor (*1)	Storage Model	Bus Type	Connect Type (*2)	Support Status	Required ARK(*3) (i.e. Multipath ARK)	Supported LK Version (*4)	Note	
DELL	Dell EqualLogic: P54100 P54110 P54210 P56100 P56110 P56210 P56610	iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2	With a large number of Luns (over 20), change the REMOTETIMEOUT setting in /etc/default/LifeKeeper to REMOTETIMEOUT=60s.	
			Single Path (DMMP)	YES	DMMP ARK			
	MD3800f MD3820f MD3860f	FC	vSphere (RDM)	No	-	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	MD3800i MD3820i MD3860i	iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2		
			Single Path (DMMP)	No	-			
	MD3400 MD3420 MD3460	SAS	vSphere (RDM)	No	-	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	SCV2000 Series: SCV2000 SCV2020 SCV2060	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Dell Storage SC4620	iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2		
			Single Path (DMMP)	No	-			
	Dell Compellent SC8000	FC	vSphere (RDM)	No	-	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	ETERNUS DX90	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Fujitsu	ETERNUS: DX60 DX90 DX410 DX440 DX8100 DX8400 DX8700 DX90 S2 DX90 S2 DX410 S2 DX440 S2 DX8100 S2 DX8700 S2 DX60 S3 DX100 S3 DX200 S3 DX800 S3 DX8900 S3 DX209f DX60 S4 DX100 S4 DX200 S4 DX500 S4 DX600 S4 AF250 AF550 AF250 S2 AF650 S2	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	When using the LifeKeeper DMMP ARK for multipath configurations it is necessary to set the following parameters in /etc/multipath.conf: prio_alua path_grouping_policy group_by_prio failback_immediate no_path_retry 10 path_checker tur * When using the ETERNUS Multipath Driver or the vSphere(RDM) for multipath configurations, no configuration parameters need to be set. * ETERNUS Storage Cluster is supported. For details on the target models and support requirements, please contact Fujitsu Storage.
				Multi Path (DMMP)	YES	DMMP ARK		
		Multi Path (EMPD)	YES	No Multipath ARK	v9.0 - v9.2			
			Single Path (EMPD)	YES			No Multipath ARK	
Multi Path (DMMP)		YES	DMMP ARK	v9.0 - v9.2				
		Single Path (DMMP)	No			-		
Multi Path (EMPD)		YES	No Multipath ARK	v9.0 - v9.2				
		Single Path (EMPD)	YES			No Multipath ARK		
Hitachi Virtual Storage Platform G1000 Hitachi Virtual Storage Platform G1500 Hitachi Virtual Storage Platform F1500		FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
Hitachi Virtual Storage Platform		iSCSI	Multi Path (HDLN)	No	-	v9.0 - v9.2		
			Single Path (HDLN)	No	-			
Hitachi Virtual Storage Platform Mid Range Family: Hitachi Virtual Storage Platform G800 (VSP G800) Hitachi Virtual Storage Platform G600 (VSP G600) Hitachi Virtual Storage Platform G400 (VSP G400) Hitachi Virtual Storage Platform G200 (VSP G200) Hitachi Virtual Storage Platform G100 (VSP G100)		FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
Hitachi Virtual Storage Platform Mid Range Family: Hitachi Virtual Storage Platform F800 (VSP F800) Hitachi Virtual Storage Platform F600 (VSP F600) Hitachi Virtual Storage Platform F400 (VSP F400)		iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2		
			Single Path (DMMP)	No	-			
Hitachi Unified Storage VM (HUS VM)		FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (HDLN)	YES	HDLN ARK			
Hitachi Unified Storage 100 Series: Hitachi Unified Storage 150 (HUS 150) Hitachi Unified Storage 130 (HUS 130) Hitachi Unified Storage 110 (HUS 110)		iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2		
			Single Path (DMMP)	No	-			
BR1200	iSCSI	Multi Path (DMMP)	No	-	v9.0 - v9.2	Both the single path and multipath configurations require the RDAC driver. Only the BR1200 configuration using the RDAC driver is supported. The BR1200 configuration using HDLM (HDLN ARK) is not supported.		
		Single Path (DMMP)	No	-				
BR1250	SAS	Multi Path (NECSPS)	YES	NEC SPS ARK	v9.0 - v9.2	Both the single path and multipath configurations require the NEC SPS ARK. The BR1250 configuration using HDLM (HDLN ARK) is not supported. LifeKeeper for Linux v9.1 or later can be used for NEC Storage StoragePathSavior (NECSPS) Recovery Kit on RHEL7 environment.		
		Single Path (NECSPS)	YES	NEC SPS ARK				
BR1650E BR1650S	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (HDLN)	YES	HDLN ARK				
3PAR: 3PAR StoreServ 8200 3PAR StoreServ 8400 3PAR StoreServ 8440 3PAR StoreServ 8450	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
3PAR: 3PAR StoreServ 7400 3PAR StoreServ 7400c 3PAR StoreServ 7440c 3PAR StoreServ 7450 3PAR StoreServ 7450c	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	Note: 3PAR StoreServ 7400 returns a reservation conflict with the default path checker setting. To avoid this conflict, set the following parameter in "/etc/default/LifeKeeper": DMMP_REGISTRATION_TYPE=hba User friendly device mapping is not supported. Set the following parameter in "multipath.conf" "user_friendly_names no" * When using the vSphere(RDM) for multipath configurations, no configuration parameters need to be set.		
		Multi Path (DMMP)	YES	DMMP ARK				
3PAR: 3PAR StoreServ 7200 3PAR StoreServ 7200c	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	Note: 3PAR StoreServ 7200 returns a reservation conflict with the default path checker. To avoid this conflict, set the following parameter in "/etc/default/LifeKeeper": DMMP_REGISTRATION_TYPE=hba		
		Multi Path (DMMP)	YES	DMMP ARK				
3PAR: 3PAR StoreServ 20450 3PAR StoreServ 20800 3PAR StoreServ 20840 3PAR StoreServ 20850	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
3PAR StoreServ 10400	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
3PAR StoreServ 10800	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	Note: 3PAR StoreServ 10800 FC returns a reservation conflict with the default path checker setting. To avoid this conflict, set the following parameter in "/etc/default/LifeKeeper": DMMP_REGISTRATION_TYPE=hba User friendly device mapping is not supported. Set the following parameter in "multipath.conf" "user_friendly_names no" * When using the vSphere(RDM) for multipath configurations, no configuration parameters need to be set.		
		Multi Path (DMMP)	YES	DMMP ARK				
MSA: MSA2042	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
MSA: MSA1040 MSA2040	SAS	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
StoreVirtual (LeftHand) Series LeftHand OS version 12.6	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2	LeftHand OS (SAN/IQ) version 12.6 is supported in HPE StoreVirtual (LeftHand) storage. All StoreVirtual series are supported, including HC250 / HC380 and StoreVirtual VSA in the virtual storage appliance. See the release note of each version of LeftHand OS (SAN/IQ) to know the virtual storage appliance in detail.		
		Multi Path (DMMP)	YES	DMMP ARK				
StoreVirtual (LeftHand) Series LeftHand OS version 11.0 / 11.5 / 12.5	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	LeftHand OS (SAN/IQ) version 11.0 / 11.5 / 12.5 are supported in HPE StoreVirtual (LeftHand) storage. All StoreVirtual series are supported, including HC250 / HC380 and StoreVirtual VSA in the virtual storage appliance. See the release note of each version of LeftHand OS (SAN/IQ) to know the virtual storage appliance in detail.		
		Multi Path (DMMP)	YES	DMMP ARK				
HP P9500	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
IBM SAN Volume Controller * * IBM TotalStorage Proven	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
IBM Storwize V7000	iSCSI	Multi Path (DMMP)	YES	DMMP ARK Quorum/Witness Server Kit	v9.0 - v9.2	The IBM Storwize V7000 (Firmware Version 6.3.0.1) has been certified by partner testing using iSCSI (scsi-initiator-2006-2.0.0.870-38-06-06-164) with DMMP (device-mapper-1.02.66-6-06-164; device-mapper-multipath-0.4.9-46-06). The test was performed with LifeKeeper for Linux v7.5 using RHEL 6.2. Restriction: IBM Storwize V7000 must be used in combination with the Quorum/Witness Server Kit and STONITH. See the online documentation for the LifeKeeper version that you are using for more information. http://docs.us.sios.com/		
		Single Path (DMMP)	No	-				
IBM Storwize V3700	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
IBM XIV Storage System	iSCSI	vSphere (RDM)	No	-	v9.0 - v9.2	If you are creating more than 32 LUNs on an IBM XIV Storage System using LifeKeeper, please contact IBM for further details.		
		Multi Path (DMMP)	YES	DMMP ARK				
Lenovo Storage V3700 V2 Lenovo Storage V3700 V2 XP	iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2			
		Single Path (DMMP)	No	-				
IBM Storwize V3700	SAS	vSphere (RDM)	No	-	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
NEC (Storage): M104 M11e M100 M110 M300	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
NEC (Storage): M310 M500 M510 M700 M710	iSCSI	Multi Path (NECSPS)	YES	NECSPS ARK	v9.0 - v9.2	LifeKeeper for Linux v9.1 or later can be used for NEC Storage StoragePathSavior (NECSPS) Recovery Kit on RHEL7 environment.		
		Single Path (NECSPS)	No	-				
FA-400 Series	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
FlashArray/m Series //m10 //m30 //m50 //m70	FC	vSphere (RDM)	No	-	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				

(*1): EMC storage for use

LifeKeeper acquired the E-Label certification. See the matrix below for the EMC storage support.
http://www.emc.com/interoperability

(*2): Connecting Configurations

vSphere (RDM)	Connected a shared disk using Raw Device Mapping (RDM) on the VMware ESX server
Multi Path (DMMP)	Multipath configuration of the shared disk using the Device Mapper Multipath driver
Multi Path (EMPD)	Multipath configuration of the shared disk using the ETERNUS Multipath Driver
Multi Path (HDLN)	Multipath configuration of the shared disk using the Hitachi Dynamic Link Manager driver
Multi Path (RDAC)	Multipath configuration of the shared disk using the IBM Redundant Disk Array Controller driver
Multi Path (NECSPS)	Multipath configuration of the shared disk using the iStorage StoragePathSavior driver
Single Path (DMMP)	Single path configuration of the shared disk using the Device Mapper Multipath driver
Single Path (RDAC)	Single path configuration of the shared disk using the IBM Redundant Disk Array Controller
Single Path (RDM)	Single path connection not using a specific multipath driver

(*3): Multipath Software

The support information by maker must be referred about the connectivity information of each Multipath software.
Please refer to the release notes for the details about Multipath software support by LifeKeeper.

(*4): Supported version of LifeKeeper

This document is written for LifeKeeper for Linux v9. If you are using a previous version of LifeKeeper, you must refer to the Release Notes for that version for the supported storage list.