

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

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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			
	SC2000 Series: SCV2000 SCV2010 SCV2060	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
		iSCSI	vSphere	No	-	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	Dell Storage SC4620	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Dell Compellent SC8000	FC	vSphere (RDM)	No	-	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Fujitsu	ETERNUS DX90	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	
				Multi Path (DMMP)	YES	DMMP ARK		
Single Path (DMMP)				YES	No Multipath ARK			
ETERNUS: DX650 DX90 DX410 DX440 DX8100 DX8400 DX8700 DX90 S2 DX90 S2 DX410 S2 DX440 S2 DX8100 S2 DX90 S3 DX100 S3 DX200 S3 DX500 S3 DX600 S3 DX8700 S3 DX900 S3 DX200F AF250 AF500 DX90 S4 DX100 S4 DX200 S4		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 Limited.	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	YES	No Multipath ARK			
		iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.2		
			Single Path (DMMP)	YES	No Multipath ARK			
			Single Path (DMMP)	YES	No Multipath ARK			
Hitachi / Hitachi Data Systems		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 (HCLM)	YES	HCLM ARK		
				Single Path (HCLM)	YES	-		
	Hitachi Virtual Storage Platform	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Single Path (HCLM)	YES	-			
	Hitachi Virtual Storage Platform Mid Range Family: Hitachi Virtual Storage Platform F600 (VSP F600) Hitachi Virtual Storage Platform G600 (VSP G600) 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 (HCLM)	YES	HCLM ARK			
			Single Path (HCLM)	YES	-			
	Hitachi Unified Storage VM (HUS VM)	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Single Path (HCLM)	YES	-			
Hitachi Unified Storage 100 Series: Hitachi Unified Storage 110 (HUS 110) Hitachi Unified Storage 130 (HUS 130) Hitachi Unified Storage 110 (HUS 110)	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (HCLM)	YES	HCLM ARK				
		Single Path (HCLM)	YES	-				
Hitachi	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 HCLM (HCLM ARK) is not supported.	
			Single Path (DMMP)	No	-			
			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 HCLM (HCLM 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			
			Single Path (DMMP)	YES	No Multipath ARK			
	BR1550E BR1550S	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Single Path (HCLM)	YES	-			
	HPE	3PAR: 3PAR StoreServ 8200 3PAR StoreServ 8400 3PAR StoreServ 8440 3PAR StoreServ 8450	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
				Multi Path (DMMP)	YES	DMMP ARK		
				Single Path (DMMP)	No	-		
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	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			
			Single Path (DMMP)	No	-			
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			
			Single Path (DMMP)	No	-			
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			
			Single Path (DMMP)	No	-			
3PAR StoreServ 10400	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	No	-				
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				
		Single Path (DMMP)	No	-				
MSA: MSA2042	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	No	-				
MSA: MSA1040 MSA2040	SAS	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	No	-				
StoreVirtual (LeftHand) Series LeftHand OS version 12.6	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.2	offHand OS (SAN/iQ) version 12.6 is supported in HPE StoreVirtual (LeftHand) storage. All StoreVirtual series are supported, including HC350 / HC380 and StoreVirtual VSA as 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				
		Single Path (DMMP)	No	-				
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 HC350 / HC380 and StoreVirtual VSA as 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				
		Single Path (DMMP)	No	-				
HP P9500	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	YES	No Multipath ARK				
IBM	IBM SAN Volume Controller + IBM T242Storage Proven	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	YES	No Multipath ARK			
	IBM Storwize V7000	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	The IBM Storwize V7000 (Firmware Version 6.3.0.1) has been certified by partner testing using iSCSI (scsi-initiator-libs-6.3.0-872-34.el6.x86_64) with DMMP (device-mapper-1.02.06-6.el6, device-mapper-multipath-0.4.9-46.el6). 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/	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	IBM Storwize V1700	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	IBM XIV Storage System	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2	If you are creating more than 32 LU/s on an IBM XIV Storage System using LifeKeeper, please contact IBM for further details.	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	YES	DMMP ARK			
Lenovo	Lenovo Storage V3700 V2 Lenovo Storage V3700 V2 XP	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	IBM Storwize V3700	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	NEC (Storage): M10e M11e M100 M110 M200	iSCSI	vSphere (RDM)	No	-	v9.0 - v9.2	LifeKeeper for Linux v9.1 or later can be used for NEC Storage StoragePathSavior (NECSPS) Recovery Kit on RHEL7 environment.	
			Multi Path (NECSPS)	YES	NECSPS ARK			
			Single Path (NECSPS)	YES	NECSPS ARK			
	NEC (Storage): M310 M510 M710	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2		
			Multi Path (NECSPS)	YES	NECSPS ARK			
			Single Path (NECSPS)	YES	NECSPS ARK			
Pure Storage	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	No	-				
FlashArray/m Series //m10 //m20 //m50 //m70	FC	vSphere (RDM)	No	-	v9.0 - v9.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	YES	-				

(*1): EMC storage for use
LifeKeeper acquired the E.LAB 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 (HCLM)	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	Single path connection not using a specific multipath driver

(*3): Multipath Software
This 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.