

<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 prerequisites 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(*) (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 - v9.1.2	With a large number of Luns (over 20), change the REMOTETIMEOUT setting in /etc/default/LifeKeeper to REMOTETIMEOUT=600.	
			Single Path (DMMP)	YES	DMMP ARK			
	H03800F H03820F H03860F	FC	vSphere (RDM)	No	-	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	H03800 H03820 H03860	iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.1.2		
			Single Path (DMMP)	No	-			
	H03400 H03420 H03460	SAS	vSphere (RDM)	No	-	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	SCV2000 Series: SCV2000 SCV2020 SCV2080	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Dell Storage SC4200	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Dell Compellent SC8000	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
	Fujitsu	ETERNUS DX90	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	
				Multi Path (DMMP)	YES	DMMP ARK		
				Multi Path (EMPD)	YES	No Multipath ARK		
		ETERNUS: DX60 DX80 DX140 DX160 DX8100 DX8700 DX8700 S2 DX8700 S3 DX150 S2 DX150 S3 DX200 S2 DX200 S3 DX650 S2 DX650 S3 DX8700 S3 DX200F AF220 AF450 DX650 S4 DX150 S4 DX200 S4	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	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 pathack immediate no_path_retry 10 path_checker tur * When using the ETERNUS Multipath Driver or using 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 support.
				Multi Path (DMMP)	YES	DMMP ARK		
				Multi Path (EMPD)	YES	No Multipath ARK		
Single Path				YES	No Multipath ARK			
Multi Path (DMMP)				YES	DMMP ARK			
Multi Path (EMPD)				YES	No Multipath ARK			
ETERNUS: DX60 DX80 DX140 DX160 DX8100 DX8700 DX8700 S2 DX8700 S3 DX150 S2 DX150 S3 DX200 S2 DX200 S3 DX650 S2 DX650 S3 DX8700 S3 DX200F AF220 AF450 DX650 S4 DX150 S4 DX200 S4		iSCSI	Multi Path (DMMP)	YES	DMMP ARK	v9.0 - v9.1.2		
			Multi Path (EMPD)	YES	No Multipath ARK			
			Single Path	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 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (HCLM)	YES	-			
	Hitachi Virtual Storage Platform	iSCSI	Multi Path (HCLM)	No	-	-		
			Single Path (HCLM)	No	-			
			Single Path	No	-			
	Hitachi Virtual Storage Platform Mid Range Family: Hitachi Virtual Storage Platform G800 (VSP G800) Hitachi Virtual Storage Platform G200 (VSP G200) Hitachi Virtual Storage Platform G200 (VSP G200) Hitachi Virtual Storage Platform G100 (VSP G100)	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			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	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Multi Path (DMMP)	YES	DMMP ARK			
	Hitachi Unified Storage V4 (HUS V4)	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Multi Path	YES	No Multipath 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	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (HCLM)	YES	HCLM ARK			
			Single Path	No	-			
	Hitachi	BR1200	iSCSI	Multi Path (HCLM)	No	-	-	
				Multi Path (DMMP)	No	-		
Single Path				No	-			
BR1250		SAS	Multi Path (RDAC)	YES	No Multipath ARK	v9.0 - v9.1.2	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.	
			Multi Path (HCLM)	No	-			
			Single Path	No	-			
BR1650E BR1650S		FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	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.	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path	No	-			
HPE		3PAR: 3PAR StoreServ 8200 3PAR StoreServ 8400 3PAR StoreServ 8440 3PAR StoreServ 8450	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	
				Multi Path (DMMP)	YES	DMMP ARK		
				Single Path	No	-		
	3PAR: 3PAR StoreServ 7400 3PAR StoreServ 7400c 3PAR StoreServ 7440c 3PAR StoreServ 7450c	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	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=liba * 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	No	-			
	3PAR: 3PAR StoreServ 7200 3PAR StoreServ 7200c	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	Note: 3PAR StoreServ 7400 iSCSI returns a reservation conflict. To avoid this conflict, set the following parameter in "/etc/default/LifeKeeper": DMMP_REGISTRATION_TYPE=liba * 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	No	-			
	3PAR: 3PAR StoreServ 20450 3PAR StoreServ 20800 3PAR StoreServ 20840 3PAR StoreServ 20850	FC	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path	No	-			
3PAR StoreServ 10400	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	No	-				
3PAR StoreServ 10800	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	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=liba * 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	No	-				
MSA: MSA2042	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.1.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	No	-				
MSA: MSA1040 MSA2040	SAS	vSphere (RDM)	YES	No Multipath ARK	v9.1 - v9.1.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	No	-				
StoreVirtual (LeftHand) Series LeftHand OS version 12.6	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	LeftHand OS (SAN/Q) 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/Q) to know the virtual storage appliance in detail.		
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	No	-				
StoreVirtual (LeftHand) Series LeftHand OS version 11.0 / 11.5 / 12.5	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	LeftHand OS (SAN/Q) 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/Q) to know the virtual storage appliance in detail.		
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	No	-				
HP P9500	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path	YES	No Multipath ARK				
IBM	IBM SAN Volume Controller * * IBM TotalStorage Proven	FC	vSphere (RDM)	No	-	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	YES	No Multipath ARK			
	IBM Storwize V7000	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	The IBM Storwize V7000 (Firmware Version 6.3.0.1) has been certified by partner testing using (SCSI-Initiator-ut6-5.2.0.872-34.a65.a85.a4) with DMMP (device-mapper-1.02.66-6465, device-mapper-multipath-0.4.9-46.a65). The test was performed with LifeKeeper for Linux v7.3 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://ibm.com/docs/	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
IBM Storwize V3700	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2			
		Multi Path (DMMP)	YES	DMMP ARK				
		Single Path (DMMP)	No	-				
IBM Storwize V3700	SAS	vSphere (RDM)	No	-	-			
		Multi Path (DMMP)	No	-				
		Single Path (DMMP)	No	-				
IBM XIV Storage System	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	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				
		Single Path (DMMP)	YES	DMMP ARK				
Lenovo	Lenovo Storage V3700 V2 Lenovo Storage V3700 V2 XP	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
	IBM Storwize V3700	SAS	vSphere (RDM)	No	-	-		
			Multi Path (DMMP)	No	-			
			Single Path (DMMP)	No	-			
NEC	NEC Storage: M10e M11e M110 M110 M300	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2	LifeKeeper for Linux v9.1 or later can be used for NEC Storage StoragePathSavior (NECSPS) Recovery Kit on RHEL7 environment.	
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	YES	No Multipath ARK			
	NEC Storage: M310 M500 M510 M710 M710	iSCSI	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path (DMMP)	No	-			
Pure Storage	FA-400 Series	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path	No	-			
	FlashArray//m Series //m10 //m20 //m50 //m70	FC	vSphere (RDM)	YES	No Multipath ARK	v9.0 - v9.1.2		
			Multi Path (DMMP)	YES	DMMP ARK			
			Single Path	No	-			

(*1) EMC storage for use
LifeKeeper acquired the E-Lab certification. See the matrix below for the EMC storage support.
http://www.emc.com/intertoperability

(*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.

(*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 Dynamic 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 Storage 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

(*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.