

# **Table of contents**

1.	Install JovianDSS on physical server	2
	1.1. Booting Open-E JovianDSS Installer	2
	1.2. Initialize hardware	3
2.	Install JovianDSS as virtual machine	4
3.	Storage Configuration	8
	3.1. Preparing for the WebGUI administration	8
	3.2. Entering the product key and logging into Open-E JovianDSS	8
	3.3. Create zpools	8
	3.4. Creating iSCSI targets	16
	3.5. Exploring targets	20
	3.6. Creating Fibre Channel targets	21
	3.7. Creating SMB shares	28
	3.8. Using local Users and Groups with build-in Lightweight Directory Access Protocol (LDAP)	34
	3.9. Auto-Snapshots and Access to Previous versions	41
	3.10. Creating NFS shares	49

# 1. Install JovianDSS on physical server

Download and extract the ISO file with your favorite uncompressing/extracting software (for example: 7zip or WinZip<sup>®</sup> programs) to an empty USB Flash Drive. The ISO can be obtained from here: https://www.open-e.com/download/open-e-jovian-data-storage-software/

After extracting the ISO file on your USB Flash Drive, the root directory must contain ONLY the following directories: bxxxx, boot, and file mmenu\_upd.sh where the xxxx is the software build number.

- To make your USB Flash Drive bootable, enter the "boot" directory and run the "bootinst.exe" (For Windows) or "bootinst.sh" (For Linux). Follow the prompt then remove the USB Flash Drive.
- You can now boot your storage server installer with USB Flash Drive.

**NOTE** The prepared USB Flash Drive will run the software installer by default. If you desire to test or for nonmission critical or non-production usage, the USB Flash Drive can boot Open-E JovianDSS instead of running the software installer. To make this default change, run the "config.exe" from the boot directory and select "r" to remove the default boot of the software installer.

# 1.1. Booting Open-E JovianDSS Installer

#### **General Hardware requirements**

- The minimum size for the JovianDSS boot medium is 16GB. Since software version 1.0 up28, the installer creates up to 128GB boot medium partition size if bigger than16GB boot disk is present. A recommended JovianDSS boot medium uses an HDD or SSD device. The USB Flash Drive can be used as a JovianDSS boot medium for testing purposes or non-mission critical applications.
- Single node supports SATA hard disk drives, but SAS disks are recommended for performance.
- HA shared-storage cluster setup requires SAS-hard disks.
- Minimum of 8GB RAM plus 1GB per 1TB of pool space.
- Mirrored "Write Log" is recommended.
- Uninterruptible Power Supply (UPS) is strongly recommended.

Plug your installer media (USB Flash Drive) into the storage appliance.

The first boot menu will show the software version. You can press enter or it will skip and continue automatically within 5 seconds.

The second menu allows you to select to boot Open-E JovianDSS or to install the software on a writable boot media in your system using the interactive installer utility. Select "Run software installer" to install Open-E JovianDSS on a writable boot media in your system.

Please follow the instructions while running the installer. The installer optionally can install the system on a single disk or on mirrored disks (RAID1). If single disk is selected, it is still creating



degraded RAID1 on the single disk but system will not create error events about degraded RAID1. It will be possible to add a second disk and get redundant RAID1 anytime in the future. Once the boot media become redundant RAID1 the system will generate errors events if any disk of the mirror is failed.

Welcome to the software installer
Installation options
Please select system volume configuration
Single disk Mirrored disks (RAID-1) - recommended
HIPOPEd alsks (http=1) - reconnended
< Back > < Next >
Navigate: UP / DOWN / LEFT / RIGHT Confirm choice: ENTER

Finally, reboot your storage server from the new boot media (set your BIOS boot options back from USB to the medium where you installed the software).

NOTES: Open-E JovianDSS can be used for evaluation up to 60 days with the trial product key. The Trial Key can be downloaded after registration from:

https://www.open-e.com/partner-portal/partner-area/warehouse/jovian/

When you decide to purchase the full version, you can continue to use the software and all your data and settings will remain intact.

In order to convert the trial version to the full version, please enter your Open-E JovianDSS product key and storage capacity key in the WebGUI menu "about" section.

During boot-up, you have an option to run a memory test on the system by choosing "Run Memtest utility" in the first menu.

## 1.2. Initialize hardware

Before using Open-E JovianDSS you should have the hard disk drives connected to the SATA and SAS ports on the motherboard or SAS HBA, and the LAN Card and other NICs already in your server.

Connect the keyboard and monitor (they will be needed for setup only). Later you can run the server in "headless mode" (without keyboard and monitor).

**NOTE:** Please check the motherboard BIOS if the "headless mode" is enabled. In some cases, systems will not boot if the keyboard is not connected. You'll find more about the headless mode in the motherboard's BIOS manual.



# 2. Install JovianDSS as virtual machine

- In ESX host menu, select: New Virtual Machine and in the wizard click on "Next" button.
- Enter the VM name. In this example we have: JovianDSS TEST

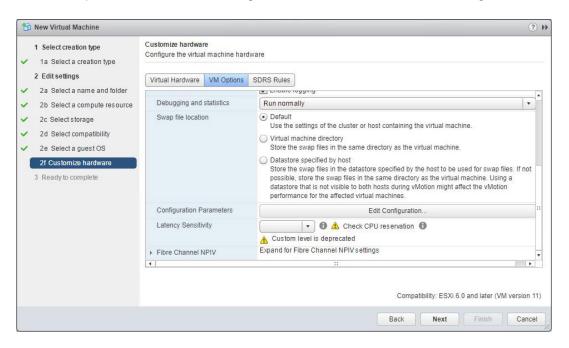
御	New Virtual Machine		
~	1 Select creation type 1a Select a creation type	Select a name and folder Specify a unique name and target location	
	2 Edit settings	Enter a name for the virtual machine.	
~	2a Select a name and folder	JovianDSS TEST	
~	2b Select a compute resource	Virtual machine names can contain up to 80 characters and they must be unique within each vCenter Server VM folder.	
	2c Select storage	Select a location for the virtual machine.	
	2d Select compatibility	Q Search	
	2e Select a guest OS	v 😰 vcenter-it. Ian	
	2f Customize hardware	D 📓 JB OECE	
	3 Ready to complete	Select a datacenter or VM folder to create the new virtual machine in.	
		Back Next Finish C	ancel

- Next, select destination host and next select the datastore for the VM.
- Next, confirm the compatibility with ESXi 6.0 or later.
- In guest OS step, please select Linux and Debian 7 (64bit)
- In the customize step (screenshot below), please use 2 CPU, enter 12 GB or more for Memory and 16GB or more for New Hard disk.

New Virtual Machine						(? <b>)</b>
<ul> <li>1 Select creation type</li> <li>1a Select a creation type</li> <li>2 Edit settings</li> </ul>	Customize hardware Configure the virtual machin Virtual Hardware VM Op					
<ul> <li>2a Select a name and folder</li> <li>2b Select a compute resource</li> <li>2c Select storage</li> <li>2d Select compatibility</li> </ul>	CPU  CPU  Memory  Memory  Mew Hard disk	2 12 16	• •	GB GB	•	
2e Select a guest OS     2f Customize hardware     3 Ready to complete	Guessian Controller      General State State      General State Sta	VMware Paravirtual VM Network Client Device Client Device Specify custom settin	gs			Connect
	Other Devices     New device:	Select			•	Add Compatibility: ESXI 6.0 and later (VM version 11) Back Next Finish Cancel



In VM Options -> Advanced -> Configuration Parameters, click on Edit Configuration



• Add Name: disk.EnableUUID and Value: TRUE

🔁 New	v Virtual Mach	Configura	ation Parameters						(X	(4 ®
	elect creation		y or add configuratic s will be removed (s			rimental features o	or as instructe	d by technical st	upport. Empty	
2 E	dit settings	Name				Value				
✓ 2a	Select a nam									
✓ 2b	Select a com									•
✓ 2c	Select storag									
✓ 2d	i Select comp									
✓ 2e	e Select a gue									
2f	Customize ha									r swap files. If not
3 R	eady to compl	Name:	disk.EnableUUID		Valu	TRUE			Add	vMotion
	Į			_		3	_	OK	Cancel	later (VM version 11)

Click on Add. Next click OK and click on the Next button. Next it move to: Ready to complete section.



• Click on the Finish button.

all second and second second		
1 Select creation type	Provisioning type:	Create a new virtual machine
1a Select a creation type	Virtual machine name:	JovianDSS TEST
2 Edit settings	Folder:	JB OECE
2a Select a name and folder	Host:	192.168.0.30
2b Select a compute resource	Datastore:	WEBINAR-00
2c Select storage	Guest OS name:	Debian GNU/Linux 7 (64-bit)
2d Select compatibility	CPUs:	2
2e Select a guest OS	Memory:	12 GB
2f Customize hardware	NICs:	1
3 Ready to complete	NIC 1 network:	NO CONNECTION
	NIC 1 type:	VMXNET 3
	SCSI controller 1:	VMware Paravirtual
	Create hard disk 1:	New virtual disk
	Capacity:	16.00 GB
	Datastore:	WEBINAR-00
	Virtual device node:	SCSI(0:0)
	Mode:	Dependent
		Compatibility: ESXi 6.0 and later (VM version 11

- Next, select Edit Settings at just created JovianDSS TEST Virtual Machine.
- Browse and select JovianDSS ISO image downloaded from the WEB.
- Next, enable the check-box "Connect At Power On" and click on OK button.

Virtual Hardware VM O	ptions SDRS Rules vApp Options	
CPU	2 • •	
Memory	12288 <b>•</b> MB <b>•</b>	
Ard disk 1	16 GB 👻	
SCSI controller 0	VMware Paravirtual	
Network adapter 1	NO CONNECTION	
· loo *CD/DVD drive 1	Datastore ISO File	
Status	Connect At Power On	
CD/DVD Media	[local.boot]/jdss1.0up28_b. Browse	
Device Mode	Passthrough CD-ROM	
Virtual Device Node	IDE 1 ▼ IDE(1:0) ▼	
Floppy drive 1	Client Device	
Video card	Specify custom settings	
WMCI device		
Other Devices		

• Next, power on the JovianDSS TEST VM and please follow the instructions while running the installer.



- Next steps are exactly the same as described in the <u>Booting Open-E JovianDSS installer</u> section.
- Once the JovianDSS TEST VM is up and running, you need to add drives for data storage as during the virtual machine creation only single boot-disk was configured.
- In Virtual machine Edit Settings, click on New device -> Select, select New Hard Disk and click on Add button.
- Here 4 disks are inserted. To confirm it, click on OK button.

Virtual Hardware VM C	ptions	SDRS Rules	٧A	pp Options			
CPU	2		-	0			
Memory	12288		*	MB	*		
🛄 Hard disk 1	16		*	GB	-	)	
SCSI controller 0	VMwar	e Paravirtual					
Network adapter 1	NO CO	ONNECTION			-	Connected	
CD/DVD drive 1	Datast	Connected					
Floppy drive 1	Client Device					Connected	
Video card	Specif	y custom setting	IS		-		
🚓 VMCI device							
Other Devices							
🔄 New Hard disk	16		*	GB	-	)	
🛄 New Hard disk	16		*	GB	-	)	
🛄 New Hard disk	16		*	GB	-		
🚐 New Hard disk	16		*	GB	-		
	(						
New device:		A New Har	d Di	sk	-	Add	

• Now the JovianDSS TEST must be ready for pool create.

# 3. Storage Configuration

## 3.1. Preparing for the WebGUI administration

After the boot process has finished, Open-E JovianDSS will show you information about all its network settings. The standard IP Address setting for Open-E JovianDSS is: IP address 192.168.0.220 and Netmask 255.255.255.0. This setting can be changed manually by entering the following key sequence: left "**Ctrl**" + left "**Alt**" + "**N**".

# 3.2. Entering the product key and logging into Open-E JovianDSS

Connect to Open-E JovianDSS via the network using any standard browser, and type the IP address to the URL entry line:

#### https://192.168.0.220

Next, a window for entering the product key will appear. If you already have one, please enter it and click the apply button. Log into Open-E JovianDSS by using the default password: "*admin*". Now you will be able to set all server parameters to get started.

**NOTE:** Be aware that the password is case-sensitive.

## 3.3. Create zpools

• To create a new zpool, please go to the "Storage" menu then Click the "Add zpool" button in the upper right corner to run the "Zpool wizard".

JovianDSS					(i) About	() Help	🖃 Logout
Storage	itorage					() Rescan	+ Add zpoo
User Management	No imported zpools	have been found in the	system. Import a zpool (if there are zpools a	vailable for import) or creat	e a new zpool by clicking	g "Add zpool" butto	n.::
Failover Settings	pools availab	le for import					
Storage Settings	) No external zpools	available for the import h	ave been found.				
Backup & Recovery	Unassigned	disks					
System Settings	Local disks	Remote disks					
Diagnostics	Search						
-	Name		Serial number	Size	Model		Blink
	1 sdb		8300A001FS44	136.98 GiB	MK1401GRRB		•
	2 sdc		2320A037FTR6	838.36 GiB	AL13SEB900		•
	3 sdd		13R0A0X9FTR6	838.36 GiB	AL13SEB900		•
	4 sde		2320A035FTR6	838.36 GiB	AL13SEB900		•
	5 sdf		2320A04JFTR6	838.36 GiB	AL13SEB900		•
	6 sdg		43G0A063TVL6	186.31 GiB	PX02SMF020		•
	7 sdh		84S0A00ETZQ1	186.31 GiB	PX03SNF020		•
	8 sdi		BTTV33120CVC100FGN	93.16 GiB	INTEL SSDSC2BA10		•
	9 sdj		BTTV2514044D100FGN	93.16 GiB	INTEL SSDSC2BA10		•
	10 sdk		83S0A01HFS44	136.98 GiB	MK1401GRRB		•
	11 sdl		9350A003FS44	136.98 GiB	MK1401GRRB		•
	10 adm		0270400//EC44	120.00 0:0	MILLANCODR		



- open-e 🦰 JovianDSS ? 🗙 Available disks please select disks on the list left, select redundancy type C Show only unused disks Rescan disks Data groups Size Name Id Size Blink wwn-0x50000394f82b7660 136.98 GiB 🌒 sdb wwn-0x500003949800ae90 sdc 838.36 GiB sdd wwn-0x5000039488303270 838.36 GiB 🛛 🌒 838.36 GiB . sde wwn-0x500003949800ae88 838.36 GiB wwn-0x500003949800af60 sdf sdg wwn-0x50000394bc888608 186.31 GiB sdh wwn-0x50000395bc8b3f74 186.31 GiB 🌒 Zpool storage capacity: 0.00 B Used licensed storage capacity: 0.00 B sdi wwn-0x55cd2e404b41a4a2 93.16 GiB 🌒 . sdj wwn-0x50015178f35a8666 93.16 GiB 🌒 Other groups Size . sdk wwn-0x50000394f838713c 136.98 GiB 🌑 0 sdl wwn-0x5000039508086c2c 136.98 GiB 🛛 ● 0 136 98 GiB sdm wwn-0x500003950809e87c . sdn wwn-0x50000395080a232c 136.98 GiB 🛛 🌒 • • . + Add group 0 X Cancel Next > • . Notifications 🔕 0 🔺 0 0 0
- After starting the "Zpool wizard" all available disks will be listed.

Next, select the disks and redundancy level and click on the "Add group" button.

Zpool wizard									+ Add zp
1. Add data group	Avai	lable disks					please select dis	Group to your zpool ks on the list on the dancy type and click	
2. Add write log	C) S	how only unuse	ed disks		🕑 Rescan	disks	"Add group" butto		
a second state		Name	Id		Size	Blink	Data groups	Size	
3. Add read cache		sdb	wwn-0x500	000394f82b7660	136.98 GiB	٠			
4. Add spare disks		sdc	wwn-0x500	1003949800ae90	838.36 GiB	٠			
		sdd	wwn-0x500	00039488303270	838.36 GiB	•			
5. Zpool properties		sde	wwn-0x500	0003949800ae88	838.36 GiB	٠			
6. Summary		sdf	wwn-0x500	0003949800af60	838.36 GiB	٠			
The second se		sdg	wwn-0x500	000394bc888608	186.31 GiB	•			
		sdh	wwn-0x500	000395bc8b3f74	186.31 GiB	•	Zpool storage capacity:	0.00 B	
		sdi	wwn-0x550	:d2e404b41a4a2	93.16 GiB	•	Used licensed storage of		
		sdj	wwn-0x500	015178f35a8666	93.16 GiB	•	Other groups	Size	
		sdk	wwn-0x500	000394f838713c	136.98 GiB	•			
		sdl	wwn-0x500	00039508086c2c	136.98 GiB	•			
		sdm	wwn-0x500	0003950809e87c	136.98 GiB	•			
		sdn	wwn-0x500	000395080a232c	136.98 GiB	•			
	Se	elect redundancy f	or group:	Mirror (single group)	+ Add g	roup			
							× Cance	Next >	
11 sdl									



• The created group will be displayed in the "Configuration preview" window on the right side.

Zpool wizard					Add
r Manager 1. Add data group	Available disks			Data groups	Size
over Sertin 2. Add write log	C Show only unused	d disks	C Rescan dist	ig suc	× .36 GiB
3. Add read cache	Name	ld	Size B	link S38	.36 GiB
3. Add read cache	sdb	wwn-0x50000394f82b7660	136.98 GiB	•	
4. Add spare disks	sde .	wwn-0x500003949800ae88	838.36 GiB	•	
every	🔲 sdf	wwn-0x500003949800af60	838.36 GiB	•	
5. Zpool properties tem Settin	sdg	wwn-0x50000394bc888608	186.31 GiB	•	
6. Summary	sdh	wwn-0x50000395bc8b3f74	186.31 GiB	•	
prositios	🗌 sdi	wwn-0x55cd2e404b41a4a2	93.16 GiB	Zpool storage capacity: 838.36	GiB
	🗌 sdj	wwn-0x50015178f35a8666	93.16 GiB	Used licensed storage capacity	838.36 GiB
	sdk	wwn-0x50000394f838713c	136.98 GiB	Other groups	Size
	🗌 sdl 👘	wwn-0x5000039508086c2c	136.98 GiB	•	
	sdm	wwn-0x500003950809e87c	136.98 GiB	•	
	sdn	wwn-0x50000395080a232c	136.98 GiB	•	
	Select redundancy fo		Add group	p	
				× Cancel	Next >
11. sti		9350A003FS44		136.98 GiB MK1401GRRB	_

- In this example we have 2 mirror groups added.
- The created 2 mirror groups will be displayed in the "Configuration preview" on the right side. After adding all groups click the "Next" button.

												Add:
User Manage	1. Add data group	Ava	ailable dis	sks					Data	a groups	Size	
Failover Settin	2. Add write log	0	Show only u	unused disks			C Rescan	disks	•	Mirror	838.36 GiB	×
			Name	Id			Size	Blink		i sdd	838.36 GiB	
Storage Settin			sdb	wwn-0x50	000394f82b7660		136.98 GiB	٠	₽	Mirror		×
Barleys &			sdg	wwn-0x50	1000394bc888608		186.31 GiB	•		- 🗑 sde	838.36 GiB	
Backup & Recovery			sdh	wwn-0x50	000395bc8b3f74		186.31 GiB	٠		- 🗑 sdf	838.36 GiB	
System Settin			sdi	wwn-0x55	cd2e404b41a4a2		93.16 GiB	•				_
			sdj	wwn-0x50	015178f35a8666		93.16 GiB	٠				
Diagnostics			sdk	wwn-0x50	1000394f838713c		136.98 GiB	•	Zpo	ol storage capa	city: 1.64 TiB	
			sdl	wwn-0x50	00039508086c2c		136.98 GiB	•	Use	ed licensed stor	age capacity: 1.64 Til	Blink
			sdm	wwn-0x50	0003950809e87c		136.98 GiB	•	Othe	er groups	Size	
			sdn	wwn-0x50	000395080a232c		136.98 GiB	•				
						~	+ Add g	roup				
		_					1 100 9	Toop				
										× Ca	ancel Next	>

www.open-e.com



In the next step you can create a write log (ZIL on SLOG).
 NOTE: Mirrored and fast SSD disks are strongly recommended for the random writes IOPS.

Zpool wizard					■ × + A	
1. Add data group	Available d	isks		Data groups	Size	
2. Add write log	C Show only	unused disks	O Rescan disks	Mirror     Sdc	838.36 GiB	
3. Add read cache	Name	ld	Size Blink	- 🗑 sdd	838.36 GiB	
5. Add fead cache	sdb	wwn-0x50000394f82b7660	136.98 GiB 🛛 ●	🖻 — Mirror	×	
4. Add spare disks	sdg	wwn-0x50000394bc888608	186.31 GiB 🌒	- 🗑 sde	838.36 GiB	
	sdh	wwn-0x50000395bc8b3f74	186.31 GiB	- 🗑 sdf	838.36 GiB	
5. Zpool properties	🗌 sdi	wwn-0x55cd2e404b41a4a2	93.16 GiB 🌑			
6. Summary	🗌 sdj	wwn-0x50015178f35a8666	93.16 GiB 🛛 ●			
	sdk	wwn-0x50000394f838713c	136.98 GiB 🌒	Zpool storage capac	ity: 1.64 TiB	
	🔲 sdl	wwn-0x5000039508086c2c	136.98 GiB 🛛 ●		ge capacity: 1.64 TiB	
	sdm	wwn-0x500003950809e87c	136.98 GiB	Other groups	Size	
	🗌 sdn	wwn-0x50000395080a232c	136.98 GiB 🌑			
	Select redur		✓ + Add group			0
				🗙 Cancel 🧹 Ba		0
						8
						0

• Select the fastest disks from the list on the left and create a mirror set for the redundancy level, then click the "Add group", and then the "Next" button.

Zpool wizard										× + Add
1. Add data group	Availa	ble disks						groups	Size	
2. Add write log	C) Sho	ow only unused disks	nused disks		Rescan	disks	0	Mirror	838.36 GiB	×
	Na	ame Id			Size	Blink		i sdd	838.36 GiB	
3. Add read cache	🗌 sd	ib wwn-0x	50000394f82b7660		136.98 GiB	٠	•	Mirror		×
4. Add spare disks	sd	lg wwn-0x	50000394bc888608		186.31 GiB	•		🗑 sde	838.36 GiB	
	sd	ih wwn-0x	50000395bc8b3f74		186.31 GiB	•		i sdf	838.36 GiB	
5. Zpool properties	🗹 sd	di wwn-0x:	55cd2e404b41a4a2		93.16 GiB	•				_
6. Summary	🗹 sd	dj wwn-0x:	50015178f35a8666		93.16 GiB	•				
	🗌 sd	ik wwn-0x	50000394f838713c		136.98 GiB	•	Zpod	l storage capa	city: 1.64 TiB	
	🗌 sd	di wwn-0xd	5000039508086c2c		136.98 GiB	•	Use	d licensed stor	agé capacity: 1.64 TiE	Blink
	Sd	im wwn-0x	500003950809e87c		136.98 GiB	•	Othe	r groups	Size	
	🗌 sd	In wwn-0x	50000395080a232c		136.98 GiB	•				
	Sele	ct redundancy for group:	Mirror	~	+ Add g	roup				
						×	Cance	el < E	Back Next	>



• The created "write log" will be displayed in the "Configuration preview" on the right side.

rage	Zpool wizard								+ Add
er Manager	1. Add data group	Ava	ailable dis	sks			Data groups	Size	
lover Settic	2. Add write log	D	Show only u	unused disks	C Rescan	disks	B- Mirror	× 838.36 GiB	
	3. Add read cache		Name	Id	Size	Blink	- 🗑 sdd	838.36 GiB	
rage Settin			sdb	wwn-0x50000394f82b7660	136,98 GiB	•	Mirror	×	
kup &			sdg	wwn-0x50000394bc888608	186.31 GiB	•	- 🗑 sde	838.36 GiB	
ikup & covery			sdh	wwn-0x50000395bc8b3f74	186.31 GiB	•	- 🗑 sdf	838.36 GiB	
tem Settin			sdk	wwn-0x50000394f838713c	136.98 GiB	•			-
			sdl	wwn-0x5000039508086c2c	136.98 GiB	•			
gnostics			sdm	wwn-0x500003950809e87c	136.98 GiB	•	Zpool storage cap	acity: 1.64 TiB rage capacity: 1.64 TiB	
			sdn	wwn-0x50000395080a232c	136.98 GiB	•			Blink
							Other groups	Size	
							Mirrored write	93.16 GiB	
							- (i) sdj	93.16 GIB	
							saj	55.16 GID	
					V + Add gr	oup			
						×	Cancel	Back Next >	
	11 sd.								

• In the next step you will want to create the read cache. Select the disks from the list on the left and select redundancy "Read Cache", type and click "Add group", and then the "Next" button.

**NOTE:** For fast random read IOPS it is recommended to use SSD disks.

Zpool wizard											+ Add 2
1. Add data group	Av	ailable dis	sks					Data g		Size	
2. Add write log	C	Show only u	inused disks			C Rescan	disks		lirror	× 838.36 GiB	
		Name	Id			Size	Blink	-6	ii sdd	838.36 GiB	
3. Add read cache		sdb	wwn-0x50	000394f82b7660		136.98 GiB	٠	B M	lirror	×	
4. Add spare disks		sdg	wwn-0x50	000394bc888608		186.31 GiB	•	-6	sde	838.36 GiB	
- 15	2	sdh	wwn-0x50	000395bc8b3f74		186.31 GiB	•	-6	)) sdf	838.36 GiB	
5. Zpool properties		sdk	wwn-0x50	000394f838713c		136.98 GiB	•				
6. Summary		sdl	wwn-0x50	00039508086c2c		136.98 GiB	٠				
5. Summary		sdm	wwn-0x50	0003950809e87c		136.98 GiB	•	Zpool s	storage capacity:	1.64 TiB	
		sdn	wwn-0x50	000395080a232c		136.98 GiB	•	Used li	icensed storage of	capacity: 1.64 TiB	Blink
								Other g		Size	
									lirrored write log		
									) sdi	93.16 GiB	
								-6	i) sdj	93.16 GiB	
		Select redund:	ancy for group:	Single	~	+ Add g	roup				
								<	1		<b>`</b>
							×	Cancel	< Back	Next >	
11 sdl				9350A003F844			164	98 GIB	MK1401GRRB		



• The created "read cache" will be displayed in the "Configuration preview" on the right side.

ge Zpool wi	rd				• ×
Manager 1. Add data	oup Available di	sks		Data groups	Size
ver Settin 2. Add write	g C Show only	unused disks	O Rescan disks	Mirror     sdc	× 838.36 GiB
ge Settir 3. Add read	Name	Id	Size Blink		838.36 GiB
	sdb	wwn-0x50000394f82b7660	136.98 GiB	Mirror     sde	838.36 GiB
4. Add spare		wwn-0x50000394f838713c	136.98 GiB	- 🗑 sdf	838.36 GiB
5. Zpool pro	rties sdm	wwn-0x5000039508086c2c wwn-0x500003950809e87c	136.98 GiB •		
m Settin 6. Summary	sdn	wwn-0x50000395080a232c	136.98 GiB		
	Stiedredun		✓ + Add group	Cose incluses solutions Other groups Mirrored write Solid Solid Read cache Solid	agé capacity: 1.64 T/B Size log 93.16 G/B 93.16 G/B 186.31 G/B 186.31 G/B
				X Cancel < E	Back Next >

• In the "Add spare disks" please select the disk from the available disks" list, click "Add group", and the "Next" button.

**NOTE:** "Spare disks" are optional. If no disks are tagged as spare disk, it is still possible to replace a faulty disk with any unassigned disk. You can skip this step clicking "Next".

Zpool wizard										1	×	- Add 2
1. Add data group	Ava	ailable dis	sks					Data grou	ıps	Size		
2. Add write log	C	Show only u	inused disks			O Rescan	disks	8 Mirri - 🗑 s		838.36 GiB	×	
3. Add read cache		Name sdb	Id	000394f82b7660		Size 136.98 GiB	Blink	- 🗐 s 🖂 — Mirri		838.36 GiB	×	
4. Add spare disks		sdk	wwn-0x50	000394f838713c		136.98 GiB	•	- 10 s		838.36 GiB 838.36 GiB		
5. Zpool properties		sdl sdm		00039508086c2c 0003950809e87c		136.98 GiB 136.98 GiB	•		u	030.36 GIB	1	
6. Summary		sdn	wwn-0x50	000395080a232c		136.98 GiB	•	Zpool sto Used lice	rage capacity: nsed storage c	1.64 TiB apacity: 1.64 TiE		
								Other gro	ups	Size		
								- 🗑 s	idj d cache idg	93.16 GiB 93.16 GiB 186.31 GiB 186.31 GiB	×	• • • • •
		Select redund	ancy for group:	Single	$\checkmark$	+ Add g	roup					•
							×	Cancel	< Back	Next	>	



• The created "spare disks" will be displayed in the "Configuration preview" on the right side. Now click the "Next" button.

Zpool wizard			• •	
1. Add data group	Available disks		Data groups Size	
2. Add write log	C Show only unused disks	O Rescan disks	- 🗑 sdc 838.36 GiB	
3. Add read cache 4. Add spare disks	Name         Id           sdk         wwn-0x50000394f838713c           sdl         wwn-0x5000039508086c2c	Size Blink 136.98 GiB • 136.98 GiB •	sdd         838.36 GiB           Mirror         X           sde         838.36 GiB	
5. Zpool properties	sdm wwn-0x500003950809e87c sdn wwn-0x50000395080a232c	136.98 GiB ● 136.98 GiB ●	- 🗑 sdf 838.36 GiB	
	Seléd redundancy for group: Single	Add group	Zpool storage capacity: 1.64 TiB Used licensed storage capacity: 1.64 TiB Other groups Size Minrored write lo × sid 93.16 GB Read cache × sidg 186.31 GB sh 186.31 GB Spare × sob 136.98 GB ×	Blink
11 sdi	9350A003F644		Cancel Ca	•

• In the next step, enter the zpool name and click the "Next" button.

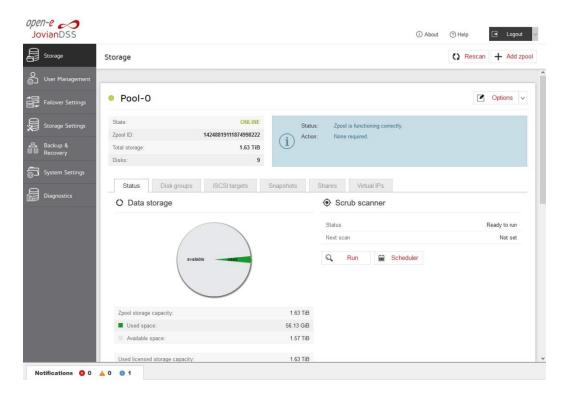
n-e 📣 ivianDSS					🖻 Logout
	Zpool wizard			01	× + Add zpo
	1. Add data group	Please set properties	for zpool:		
	2. Add write log	Zpool name:	Pool-0		
	3. Add read cache		Zpool name: Defines name of the zpool in the system	n.	
	4. Add spare disks				
	5. Zpool properties				
	6. Summary				
					Blink
				X Cancel K Back Next	
	tt sdl	-	9350A003FS44	135.98 G/B MK1401GRRB	



 In "Summary" you are able to see an overview of the zpool configuration. If the settings need to be modified, click the "Back" button and make the required changes. If it is correct click the "Add zpool".

-e 📈 ianDSS						🖻 Logout
	Zpool wizard					Add zy
	1. Add data group	Zpool configuration				^
	2. Add write log	Data groups		Redundancy	Size	
	3. Add read cache	Mirror		Mirror		
	4. Add spare disks	⊞— Mirror		Mirror Data	group total capacity: 2 TiB storage capacity: 1.64 TiB	-
	5. Zpool properties	Other groups		Redundancy	Size	
	6. Summary	Mirrored write log     Read cache		Mirror	2 2	-
		⊞— Spare				Blink
		Zpool properties				
		Zpool name:	Pool-0			
				X Cancel <	Back 🗸 Add zpool	
	11 . sd					

• At this point you have configured a new zpool (you can add more zpools if required).

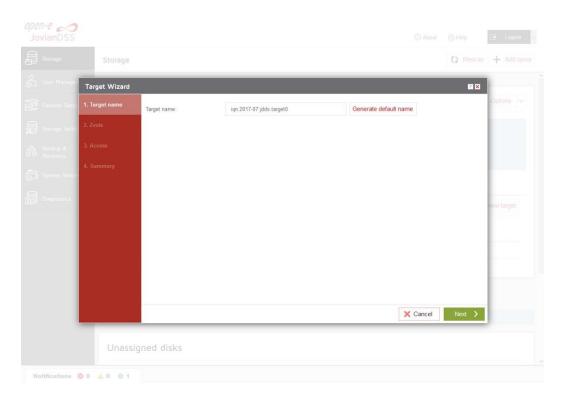


# 3.4. Creating iSCSI targets

- After creating a zpool, the GUI shows pool status of just created zpool. In order to access pool **setup menu**, click on down arrow button in the middle bottom of the pool status section.
- Next, select "iSCSI targets" and click the "Add new target" button.

JovianDSS		(i) About	(?) Help	🕒 Logout 🗸
Storage	Storage		() Rescan	+ Add zpool
O User Management				
Failover Settings	Pool-O			Options v
Storage Settings	State:         OHLINE         Status:         Zpool is functioning correctly.           Zpool ID:         14248819111874998222         Iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii			
Backup & Recovery	Total storage: 1.63 TiB Disks: 9			
System Settings	Status Disk groups ISCSI targets Snapshots Shares Virtual IPs			
Diagnostics	C iSCSI targets No targets found.		+ Add	new target
	✓ Zvois not attached to targets — zvois. 0			
	Zpools available for import			
	① No external zpools available for the import have been found.			
	Unassigned disks			
Notifications 🔕 0	<u>▲ 0 0 1</u>			

In the "Target Wizard", you can enter a new "Target name". If the default target name is OK, click the "Next" button only.

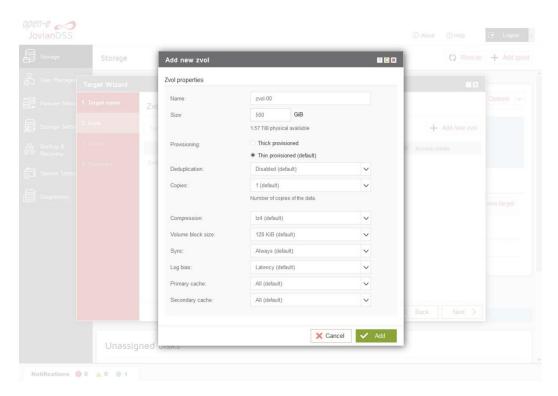




• In the Zvols step, click "Add new zvol". iSCSI Volumes are called zvols.

Storage					
				Q Reso	can + Add zpool
arget Wizard					×
Target name	Zvols available for target				Options 🖂
Zvols	Search			+ Add new zv	ol
Access	Name	Type Logical size	e SCSLID I	LUN Access mode	
Summary	Zvols available for target				
					new target
			× Cancel	K Back Next	>
Unassign	ed disks				
1	Zvois Access Summary	Zvois available for target Zvois Search Access Name	Zvois available for target       Zvois       Search       Access       Name       Type       Logical size	Zvois available for target         Search         Access         Name         Zvois available for target         Zvois available for target	Zvois       Search <ul> <li>Add new zw</li> <li>Access</li> <li>Name</li> <li>Type</li> <li>Logical size</li> <li>SCSI ID</li> <li>LUN</li> <li>Access mode</li> <li>Zvois available for target</li> <li>Xvois available for target</li> <li>X Cancel</li> <li>X Back</li> <li>Next</li> <li>X</li> <li>X Cancel</li> <li>X Back</li> <li>Next</li> <li>X</li> <li>X Cancel</li> <li>X Back</li> <li>X Explored</li> <li>X Explo</li></ul>

 In "Zvol properties" enter the name of a new Zvol and the appropriate size and click "Add" button.

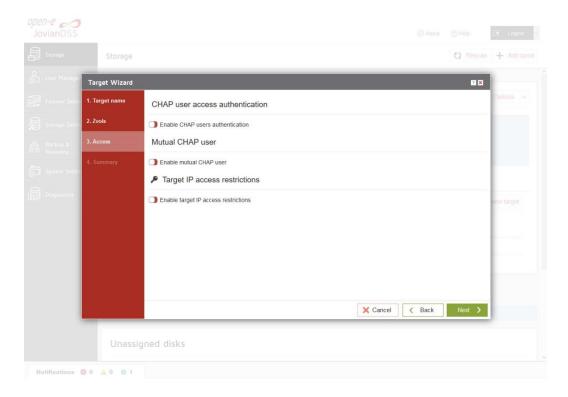




• After creating the new Zvols, click the "Next" button.

Storage							() Rescan	+ Add zpoo
Target Wizard								-
1. Target name	Zvols available for target							Options 🗸
2. Zvols	Search					+	Add new zvol	
3. Access	Name	Туре	Logical size	SC SI ID	LUN	Access me	ode	
4. Summary	✓ zvol-00	zvol	500.00 GiB	HsMPNw6KzBn	0	Read-write	(default)	
								new target
				🗙 Cancel	<	Back	Next >	
Unassio	gned disks							

• In the "Access" step, you can change the security options of the targets. After making these changes click the "Next" button.





• In "Summary" you are able to see an overview of the configuration of the target. If the settings need to be modified, click the "Back" button and make the required changes. If it is correct, click "Add".

Patienti Sets       1. Target name       Target name       Policies         Storage Sets       2. Zvols       Name:       ign 2017/07 jdds target0       Image: Ign 2017/07 jdds target0 <th>Target Wizard</th> <th>_</th> <th>_</th> <th>_</th> <th></th> <th>_</th> <th>P ×</th> <th></th>	Target Wizard	_	_	_		_	P ×	
Storage Support 2. Zvols   Storage Support 3. Access   Storage Support 3. Access   A. Summary Zvols attached to target.   Name SCS1 ID   LUN Access mode   zol-00   HsMPNw6KzBnWVGi4 0. Read-write (default)   CHAP users   CHAP user access authentication is disabled.   Mutual CHAP user is disabled.   Target IP access restrictions		Target name					^	Options 🗸
Bactory       A. Summary       Image: Signal state st	2. Zvols	Name:	iqn.2017-07:jdds.target0				2	
4. Summary     Name     SCS1 ID     LUN     Access mode       Zol-00     HsMPNw6K2BiWVGI4     0     Read-write (default)       CHAP users     CHAP user access authentication is disabled.     Image: CHAP user is disabled.       Mutual CHAP user is disabled.     Image: CHAP user is disabled.     Image: CHAP user is disabled.	3. Access	Zvols attached to	target					
Zxol-00     HsMPRw6K2BnWVG4     0     Read-write (default)       CHAP users     CHAP user access authentication is disabled.     Image: CHAP user access authentication is disabled.       Mutual CHAP user is disabled.     Image: CHAP user is disabled.       Target IP access restrictions	4. Summary	Name		SCSI ID	LUN	Access mode		
CHAP user access authentication is disabled.  CHAP user  Mutual CHAP user  Mutual CHAP user is disabled.  Target IP access restrictions		zvol-00		HsMPNw6KzBnWVGi4	0	Read-write (default)		
CHAP user access authentication is disabled.  Mutual CHAP user  Mutual CHAP user is disabled.  Target IP access restrictions		CHAP users						new target
Mutual CHAP user is disabled. Target IP access restrictions		CHAP user acce	ss authentication is disabled.					
Mutual CHAP user is disabled. Target IP access restrictions		Mutual CHAP use	er					
		Mutual CHAP us	er is disabled.					-
		Target IP access	restrictions					-
							2	
Cancel Cancel Add					🗙 Cancel	K Back	/ Add	

• After completion of the "Target wizard" return to the "Storage". Below you will see the "iSCSI targets" you are able to see and overview of the configuration targets.

JovianDSS				(i) About	(?) Help	🕒 Logout
Storage	Storage				() Rescan	+ Add zpool
O User Management						
Failover Settings	Pool-0					Options v
Storage Settings	State: Zpool ID: Total storage:	ONLINE 14248819111874998222 1.63 TIB	Status: Zpool is functi Action: None required	oning correctly.		
E Recovery	Disks:	9				
System Settings	Status Disk groups	iSCSI targets Snapshots	Shares Virt	ual IPs		
Diagnostics	O iSCSI targets	- Status: Active - Zvols: 1			+ Add	new target
	Search					Options v
	Name	Type SCSI ID	LUN Logical size	Physical size Compres		-
	1 zvol-00	zvol HsMPNw6KzBnW	0 500.00 GiB	64.00 KiB	1.00 thin	
	<ul> <li>Zvols not attached to targe</li> </ul>	ets — Zvois: 0 ————				
			^			
	Zpools available for im	port				

## 3.5. Exploring targets

It is now time for you to connect with your iSCSI initiator and use your targets.

Example (Microsoft Windows environment).

Run the Microsoft iSCSI Initiator and follow the instructions:

- Start the software, add the targets in the "Discovery" menu and enter the IP Address of Open-E JovianDSS and Port (default 3260).
- From the "Targets" menu "Log on" to a target.
- Now access the Windows "Computer Management" feature and start the Disk Manager function, where you will be able to partition and format the new iSCSI drives for your operating system.

open-e

### 3.6. Creating Fibre Channel targets

Fibre Channel HA Cluster uses Asymmetric Logical Unit Access (ALUA) to configure the paired targets. LUNs are visible on both configured targets by the initiator that has access to those LUNs by paths. Depending on the path status, the initiator knows which path should be used to access LUNs. The initiator accesses LUNs by using an active path, while standby path is used for a target that does not have access to LUNs. An active path is set for a target when the pool is present on the same node where the target is. A standby path is used for a target when a pool is present on the other node.

It is required to register SCST devices with VMW\_SATP\_DEFAULT\_AP plugin in ESX root console.

• Login to ESX console and add new rules for SCST file I/O and block I/O devices:

esxcli storage nmp satp rule add -s VMW\_SATP\_DEFAULT\_AP -V "SCST\_FIO" -M "Storage" -c tpgs\_on -P VMW\_PSP\_MRU -e "SCST\_FIO Storage Device" -o enable\_action\_OnRetryErrors

esxcli storage nmp satp rule add -s VMW\_SATP\_DEFAULT\_AP -V "SCST\_BIO" -M "Storage" -c tpgs\_on -P VMW\_PSP\_MRU -e "SCST\_BIO Storage Device" -o enable\_action\_OnRetryErrors

- execute:
   esxcli storage core claimrule load
- check if new rule is listed in: esxcli storage nmp satp rule list
- reboot the VMware server
- check if correct plugin is used for SCST devices: esxcli storage nmp satp rule list | grep SCST The Storage Array Type should be set to VMW\_SATP\_DEFAULT\_AP

#### Setting Fibre Channel target as single node for ESX:

 Go to menu Storage Settings. In the Options drop-down menu select Properties and enter Alias name. In this example aliases are dd-40 and dd-41.

Storage	Storage Settings					
₽ Failover Settings	Access protocols Discove	ery CHAP user access	Fibre Channel			
Storage Settings	^ Fibre Channel ports ───					? 🖒
3 Storage Settings	WWN	Alias	Mode	Туре	Status	Options
Backup & Recovery	- 🗑 21:00:00:0e:1e:2c:dd:40	dd-40	Target	Physical	OK	Options 🗸
Recovery	21:00:00:0e:1e:2c:dd:41	dd-41	Target	Physical	OK	Options 🗸
System Settings						



• From Storage Adapters in VMware please select the text, and then use the pop-up menu to copy the selected text to the clipboard.

▼ Storage ▲	Storage Ada	oters						
Storage Adapters Storage Devices	+ Add Software Adap		n Rescan Storage	e   🗟 Rescan Adapter				
Host Cache Configur.	Adapter 🔫	Туре 🔻	Status 🔻	Identifier	τ	Targets 👻	Devic 🔻	Paths 🔻
Protocol Endpoints	A Model: 2600 Serie	s 16Gb Fibre Chann	el to PCI Express	HBA				-
I/O Filters	🚱 vmhba3	Fibre Channel	Online	20:00:00:0e:1e:2a:81:e0 21:00:00:0	:1e:2a:81:e0	0	0	0
<ul> <li>Networking</li> <li>Virtual switches</li> </ul>	S vmhba4	Fibre Channel	Online	20:00:00:0e:1e:2a:81:e1 21:00:00:	Сору			Ctrl+C
VMkernel adapters	A Model: Fusion-MP	T 12GSAS SAS3008	PCI-Express		Search Google for	r "21:00:00:0e:	1e:2a:81:e0"	
Physical adapters	🚱 vmhba2	SAS	Unknown	-	Print			Ctrl+F
TCP/IP configuration Virtual Machines	<ul> <li>Model: Patsburg 6</li> </ul>	Port SATA AHCI Cor	ntroller		Inspect			Ctrl+Shift+I

• In Add Initiator please paste the previously saved text from the clipboard into the Initiator WWN field, and enter the Alias initiator. Next, click the Apply button.

Storage			0.6	Rescan 🕂 Add zpool
	Add initiator		<b>1</b> 11 E	a
	Add new initiato	r		_
	Initiator WWN:	21:00:00:0e:1e:2a:81:e0		
	Alias:	vmhba3		
O Fibre			🗙 Cancel 🗸 Apply	+ Add group
	proup Targets 0	Zvols 0 Status Active		

• Initiators have been added.

Storage		Storage					() Rescan	+ Add zpor
🖉 User Mai	nagement	State:	ONLINE	Status:	Zpool is functioning correctly.			
Failover	Settings	Zpool ID: Total storage:	12199181236699342582 544.00 GiB	(i) Action:	None required.			
Storage	Settings	Disks:	10					
Backup &	& V	Status Disk group	is iSCSI targets	Fibre Channel	Shares Snapshots	Virtual IPs		
System S	- Settings	C Fibre Channel gr		Status: Active			+	Add group
Diagnost	tics	<ul><li>Zvols available to be a</li><li>O Targets and initia</li></ul>						10
		<ul> <li>Fibre Channel targets</li> </ul>						10
		<ul> <li>Fibre Channel initiator</li> </ul>	s					?0
		Search					+ 4	dd initiator
		Alias		WWN			Op	itions
		vmhba3		21:00:00:	0e:1e:2a:81:e0		C	ptions 🗸
		vmhba4		21:00:00:	0e:1e:2a:81:e1		C	ptions 🗸
				~				



• In Add Fibre Channel group wizard, in Properties step, please enter the name of Group alias. To confirm this name, click the Next button.

Add Fibre Chann	el group				1.29
1. Properties	Group allas:	Group1			1
2. Targets					
3. Initiators WWN					
4. Zvols					
5. Summary					p.
					2
					10
					0
					0
			🗙 Cancel	Next >	Dr.
Allan		924/N		Options	

• In the Targets step please Select proper WWNs and click the Next button.

Add Fibre Chann	nel group					ei zpo
1. Properties	Select targets					
2. Targets	WWN	Alias	Mode	Туре	Status	
3. Initiators WWN	21:00:00:0e:1e:2c:dd:40	dd-40	Target	Physical	ок	
1000	21:00:00:0e:1e:2c:dd:41	dd-41	Target	Physical	ок	
4. Zvols						Ι.
5. Summary						
						0
						10
						0
			× Ca	ancel < Ba	ck Next >	1
Anas		WWW			Options	



• In the Initiators WWN step please select proper Aliases and click the Next button.

Add Fibre Cha	nnel group		? 🗙
agement 1. Properties	Select WWN initiators		
2. Targets	Search		+ Add initiator
3. Initiators WWN ettings	Alias	WWN	Options
4. Zvols	vmhba3	21:00:00:0e:1e:2a:81:e0	Options 🗸
5. Summary	vmhba4	21:00:00:0e:1e:2a:81:e1	Options 🗸
ettings			
ettings			
		× Cancel <	Back Next >
Attas		WWN	Options

• In Zvols step please click the Add zvol button.

Add Fibre Chan	nel group						
ement 1. Properties	Select Zvo	ols					
2. Targets	Search					-	- Add zvol
3. Initiators WWN	Name	Туре	Logical size	SCSI ID	LUN	Access mode	
4. Zvols	No zvols found						
5. Summary							
ings							
					🗙 Cancel	< Back	Next 💙
Allas				WWN			Options



• In Add new zvol, enter the name of a new Zvol and the appropriate size and click Add button.

	Add Fibre Chann						
	1. Properties	Add new zvol Zvol properties			7 C X		
	2. Targets	Name:	zvol00			+ Add.zvol	
	3. Initiators WWN	Size:	1024	GiB		Access mode	
	.4. Zvols		522.87 GiB physi				
	S. Somoory	Provisioning:	<ul> <li>Thick provisi</li> <li>Thin provisio</li> </ul>				
		Deduplication:	Disabled (defa	sult)	$\sim$		
		Number of the data copies:	1 (default)		~		
		Compression:	Iz4 (default)		~		
		Volume block size:	128 KiB (defa		~		
		Write cache logging (Sync):	Always (defau		~		
		Write cache logging (Log bias): Primary cache:	Write log devi All (default)	ce (Latency)	~		
		Secondary cache:	All (default)		~	ef < Back Next 🗦	
	Allas					Options	
	vmhba3					Options	
	vmhba4			X Cancel	🖌 Add	Options	

• After creating new Zvols click the Next button.

Add Fibre Chann	iel group						<b>?</b> ×
1. Properties	Select Zve	ols					
2. Targets	Search						- Add zvol
2 Initiatore WMA		-		00010			Add 2voi
4. Zvols	Name	Type	Logical size	SCSI ID Auto	LUN	Access mode Write-through (c	lofault)
4. 20015	21000	2101	1.00 110	1000	Auto	vinte-anough (c	leiduit)
5. Summary							
					X Cano	cel < Back	Next >
Allas				WWN			Options



• In Summary you are able to see an overview of the configuration of the Fibre Channel Group. If the settings need to be modified, click the Back button and make the required changes. If it is correct, click Add.

Add Fibre Chan	nel group							1	×
1. Properties	WWN		Alias	1 :	Mod	е Туре	9 5	Status	^
	21:00:00:	0e:1e:2c:dd:4	0 dd-4	0	Targ	et Phys	sical (	ЭК	
2. Targets	21:00:00:	0e:1e:2c:dd:4	1 dd-4	1	Targ	et Phys	sical (	Ж	
3. Initiators WWN	WWN Initia	ators							
4. Zvols									1
5. Summary	WWN				Alias				
	21:00:00:	0e:1e:2a:81:e	0		vmhba3				
	21:00:00:	0e:1e:2a:81:e	1		vmhba4				
	Zvols								
	Name	Туре	Logical size	SC SI ID	LUN		Access mod	le	
	zvol00	zvol	1.00 TiB	Auto	Auto		Write-through	n (default)	
						X Cancel	< Back	🗸 Add	
Aflas				WWN				Option	s

• In Storage Adapters, you can check the connection of both remote ports for rescan.

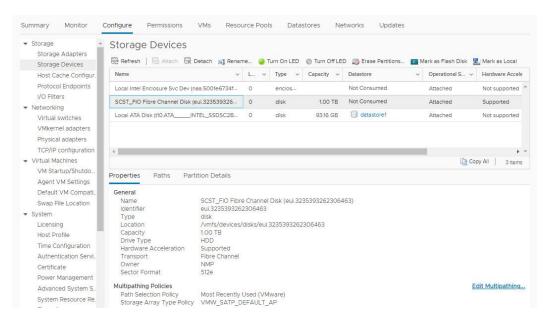
<ul> <li>Storage</li> </ul>	Storage Adap	ters					
Storage Adapters	J 1						
Storage Devices	+ Add Software Adapte	r Ed Refresh	Rescan Storag	e 🛛 🔍 Rescan Adapter			
Host Cache Configur.	Adapter 🔻	Туре 👻	Status 1	Rescans all storage adapters on the host to discover new	ly added stor	age devices and	d/or VMFS volun
Protocol Endpoints	A Model: 2600 Series	16Gb Fibre Channe	to PCI Express	НВА			
I/O Filters	🚱 vmhba3	Fibre Channel	Online	20:00:00:0e:1e:2a:81:e0 21:00:00:0e:1e:2a:81:e0	4	1	4
<ul> <li>Networking</li> <li>Virtual switches</li> </ul>	Vmhba4	Fibre Channel	Online	20:00:00:0e:1e:2a:81:e1 21:00:00:0e:1e:2a:81:e1	4	1	4
VMkernel adapters	A Model: Fusion-MPT	12GSAS SAS3008 P	CI-Express				
Physical adapters	🚱 vmhba2	SAS	Unknown				16

• After the rescan, the new device (SCST\_FIO) is listed below.

Storage Adapters     Storage Devices	Storage Adap + Add Software Adapte		Rescan Store	ige	🖉 Rescan Ada	apter				
Host Cache Configur.	Adapter 👻	Туре у	Status y	Ident	ifier		т	Targets 👻	Devic 🔻	Paths 👻
Protocol Endpoints	A Model: 2600 Series	16Gb Fibre Channel	to PCI Expres	s HBA						
I/O Filters	🚱 vmhba3	Fibre Channel	Online	20:0	0:00:0e:1e:2a:8	II:e0 21:00:00:0e:1e	:2a:81:e0	4	1	4
<ul> <li>Networking</li> <li>Virtual switches</li> </ul>	🔄 vmhba4	Fibre Channel	Online	20:0	0:00:0e:1e:2a:8	11:e1 21:00:00:0e:1e:	2a:81:e1	4	1	4
VMkernel adapters	<ul> <li>Model: Fusion-MPT</li> </ul>	12GSAS SAS3008 P	CI-Express							
Physical adapters	🚱 vmhba2	SAS	Unknown	-				1	1	1
TCP/IP configuration Virtual Machines	<ul> <li>Model: Patsburg 6 F</li> </ul>	Port SATA AHCI Cont	roller							
VM Startup/Shutdo									Copy A	All   5 Items
Agent VM Settings	Properties Device	s Paths								
Default VM Compati Swap File Location	Refresh   🗟 Attac	h 民 Detach 📷	Rename 🧯	) Turn O	n LED 🔘 Turr	n Off LED 🛛 🖉 Eras	e Partitions 📭	Mark as Flash	n Disk 🛛 🔜 N	Mark <mark>as</mark> Local
System	Name	~	LUN 🗸	Type 🗸	Capacity 🗸	Datastore 🗸	Hardware Accel	era 🗸 Dri	ve T 🗸	Transport
Licensing Host Profile	SCST_FIO Fibre Channe	el Disk (eui.32353	0	disk	1.00 TB	Not Consumed	Supported	HC	D	Fibre Channel



• Next, go to Storage Devices and please click Edit Multipath.



• In Edit Multipathing Policies select Round Robin (VMware) and click the OK button.

Host Cache Configur.	Name	Attach <table-cell> Detach 📷 Rename</table-cell>	<ul> <li>Type</li> <li>Capacity</li> </ul>			Operational S	
Protocol Endpoints	Local Intel Enci	osure Svc Dev (naa.5001e6734f 0	enclos	Not Consumed		Attached	Not suppo
	ing all moders the st					Attached	Supported
Edit Multipa	thing Polic	eui.3235393262306463			$\times$	Attached	Not suppo
Path selection policy:							
Most Recently Used					~		
Most Recently Used							
Round Robin (VMw							Copy All   3
Fixed (VMware)	Charles	- Yeard	100				
Runtime Name 🗸	Status ~	Target	LUN - Preferre				
vmhba4:C0:T0:L0	Standby	20:00:00:0e:1e:28:c4:e0 21:00:00:	0		A.		
vmhba3:C0:T1:L0	o Active	20:00:00:0e:1e:2c:dd:40 21:00:00:	0				
	O Standby	20:00:00:0e:1e:28:c4:e0 21:00:00:	(O))				
vmhba3:C0:T0:L0		20:00:00:0e1e:28:c4:e1:21:00:00:					
vmhba3:C0:T0:L0 vmhba4:C0:T3:L0	<ul> <li>Standby</li> </ul>	20:00:00:0ene:28:c4:e1 21:00:00:					
	O Standby	20:00:00:0ene:28:64:e1 21:00:00:		🗅 Copy All 📔 8 ite	*		

Now, the FC target configuration is completed.

# 3.7. Creating SMB shares

• In the Pool menu select the "Shares" tab. Click on the "Add dataset" button in order to create a new NAS-volume. NAS-volumes are called "datasets".

open-e JovianDSS		(i) About	() Help	🕒 Logout 🗸
Storage	Storage		() Rescan	+ Add zpool
OUser Management				
Failover Settings	• Pool-O			Options v
Storage Settings	State: ONLINE Status: Zpool is functioning correctly.			
🚑 Backup &	Zpool ID: 14248819111874998222 (i) Action: None required.			
Backup & Recovery	Total storage: 1.63 TiB			
👼 System Settings	Diaks: 9			
<b>a</b>	Status Disk groups iSCSI targets Snapshots Shares Virtual IPs			
Diagnostics	O Shares		+ /	Add dataset
	No datasets found.			
	Zpools available for import			
	() No external zpools available for the import have been found.			
	Unassigned disks			
	Local disks Remote disks			
	Search			
Notifications 😣 0	▲ 0 <b>0</b> 1			

• In the "Add new dataset" window, enter the dataset (volume) name and click on "Apply" button.

				🗇 Help 📄 E Logout
Storage	Add new dataset		11 C 🛛	Q Rescan + Add zpod
	Dataset properties			
Pool-0	Name:	vol00		Coptions v
State:	Deduplication:	Disabled (default)	~	
Zpool ID	Copies:	1 (default)	~	
Total storage.		Number of copies of the data.		
Dinks:	Compression:	Iz4 (default)	~	
Status	Sync:	Always	~	
O Shares	Log bias:	Latency (default)	~	+ Add dataset
No datasets found	Primary cache:	All (default)	~	
	Secondary cache:	All (default)	~	
	Access time:	Disabled (default)	~	
Zpools availat				
<ol> <li>No external zpool:</li> </ol>	Enable quota			
	Enable reservation			
Unassigned				
Local disks		🗙 Ca	ncel 🗸 Apply	



• Next select the created dataset. Next click on "Option" button and from drop-down menu click on the "Add share" button.

JovianDSS		(i) About	Help	🕒 Logout
Storage	Storage		() Rescan	+ Add zpool
O User Management				
Failover Settings	Pool-0			Options v
Storage Settings	State:         ONLINE         Status:         Zpool is functioning correctly.           Zpool ID:         14248819111874998222         Action:         None required.			
Backup & Recovery	Total storage: 1.63 TiB Disks: 9			
System Settings				
Diagnostics	Status     Disk groups     iSCSI targets     Snapshots     Shares     Virtual IPs       O     Shares       ^ vol00     —     Shares: 0     —     All active		+ /	udd dataset
	Share name         Path         Access protocr Comments           No shares found.         Image: Comment State Stat	2	Add share Edit dataset Delete datase	Dptions v
	Zpools available for import	≅  ≠		retention-interval p&Recovery task
	① No external zpools available for the import have been found.			
	Unassigned disks			
Notifications 🔕 0	<u>▲</u> 0 <b>0</b> 1			

• In the "Share wizard" as a first step, enter the share name. Optionally you can enter the subdirectory name in the dataset. If the subdirectory is not entered, the share will be pointed directly to the dataset. The comment field is also optional. Continue with "Next".

open-e JovianDSS						🕑 Logout 🗸	
	Storage				() Rescan	+ Add zpool	
Sur Manager	Share wizard					-	
Fallover Settin	1. Share properties	Share properties				Options 🐱	
Storage Settin	2. Access protocols 3. User/group	Name:	share-smb				
Backup & Recovery	access	Path:	vol00/ share-smb				
Diagnostics	4. Summary	Comment:					
1129						dd dataset	
						ptions 🐱	
						ons	
			×	Cancel	Next 📏		
	Unassigr	ned disks					
Notifications	0 40 01						



• In order to create the share, confirm with "Yes".

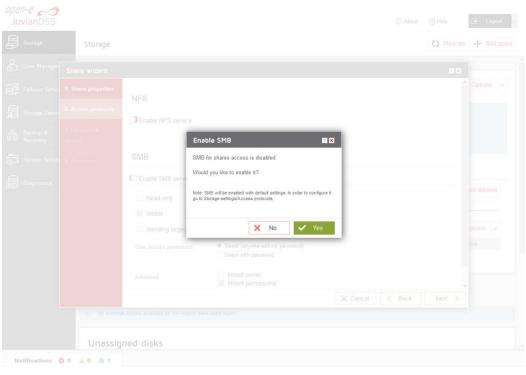
Storage		Q Rescan	+ Add zpoo
		vol00/ share-smb	
		Add share Specified path: vol00/share-smb does not exist.	
		Would you like to create it?	
		X No VYes	
Usersia	ned disks		

• In "Access protocols" step, check the "Enable SMB service".

open-e 20 JovianDSS				🖻 Logout 🗸
	Storage		() Rescan	+ Add zpool
©_ User Manager	Share wizard			-
Falover Setter	1. Share properties	NFS		Options 🔍
Storage Settin Backup & Recovery	2. Access protocols 3. User/group	Enable NFS service		
System Settin	access 4. Summary	SMB		
Diagnostics		Enable SMB service		dd dataset
				ptions 🗸
		X Cancel A Back	Next >	
	Unassign	zpodo unalitate for the import have been found		
Notifications (	0 40 01			



• Confirm with the "Yes" button and continue with "Next".



Storage	Storage			0	Rescan + Add z
Ver Heneye	Share wizard				
	. Share properties	NFS			Options
Backup & 3	Access protocols . User/group .ccess	Enable NFS service			
System Setting 4	. Summary	SMB			
Diagnostics :		C Enable SMB service			_
		Read only			dd dataset
		Visible			
		Handling large directories	S		ptions 🗸
		User access permisions:	<ul> <li>Guest (anyone without password)</li> <li>Users with password</li> </ul>		005
		Advanced:	Inherit owner Inherit permissions		
				X Cancel < Back	Next >
	() No externa	I zpools evallable for the import have	been found		



• In the "Users/groups access" step continue with the "Next" button.

<i>pen-e "</i> JovianDSS					🔄 Logout 🗸
	Storage			() Resci	in + Add zpool
S User Manager	Share wizard				
🛱 Fallover Settin	1. Share properties	∧ User access ——————————————————————————————————		70	Options 🗸
Storage Settin	2. Access protocols	Guest user access enabled User access configuration is not available	because Guest user access is enabled for SMB protocol.		
Backup & IO Recovery	3. User/group access	Name			
System Settin		Results to engel 10 - 50			
Diagnostics		Group access     Guest user access enabled     Group access configuration is not availab	e because Guest user access is enabled for SMB protoco		d dataset
					ptions 🐱
		Name			ons
		Bartash par anna  (1) 😒			
			× Cancel <	Back Next >	d - 1
	() No extern	al zpools available for the Import have been found			
	Unassig	ned disks			
Notifications (	0 40 02				

• In the "Summary" step click the "Add" button. Now the SMB share is ready to use.

Storage					() Rescan	+ Add zpo
Share wizard						-
1. Share properties	Properties				^	Options 🗸
2. Access protocols						
3. User/group access	Name Path Comment	share-smb vol00/share-smb				
4. Summary						
	NFS					
	NFS service disabled				2	dd dataset
	SMB					ptions 🗸
	Read only	×				ons
	Visible	~				
	Handling large directories	×				
	User access permisions	Guest (anyone without password)	X Cancel	K Back	🖌 Add	
① No externa	I zpools available for the import have b	een found				
Unassig	ned disks					



• In order to change the SMB share settings, click on the "Options" drop-down menu of sharesmb and select "Protocols".

JovianDSS	① About	Help	🕒 Logout 🗸
Storage	Storage	() Rescan	+ Add zpool
User Management			
Failover Settings	• Pool-O		Options v
Storage Settings	State:         ONLINE         Status:         Zpool is functioning correctly.           Zpool ID:         14248819111874998222         Action:         None required.		
Backup & Recovery	Total atorage: 1.63 TiB Disks: 9		
System Settings			
Diagnostics	Status Disk groups iSCSI targets Fibre Channel Shares Snapshots Virtual IPs		
	O Shares		+ Add dataset
	Vol00 — Shares: 1 — All active —     Gearch		+ Add dataset Options
	vol00 — Shares: 1 — All active —	Status	
	voil00 Shares: 1 All active		Options v
	<ul> <li>vol00 — Shares: 1 — All active</li> <li>Bearch</li> <li>Share name Path Access protocol: Comments</li> <li>1 share-smb / SMB</li> <li>Results per page: 10 ∨</li> <li>K &lt;</li> </ul>	Status Active	Options V Options V Edt share Properties
	<ul> <li>◇ vol00 — Shares: 1 — All active</li> <li>Bearch</li> <li>Share name Path Access protocol: Comments</li> <li>1 share-smb SMB</li> <li>Results per page: 10 ✓</li> </ul>	Status Active	Options V Options V Edt share Properties Protocols
	<ul> <li>vol00 — Shares: 1 — All active</li> <li>Bearch</li> <li>Share name Path Access protocol: Comments</li> <li>1 share-smb / SMB</li> <li>Results per page: 10 ∨</li> <li>K &lt;</li> </ul>	Status Active	Options V Options V - Edt share Properties Protocols Vser/group ac
	<ul> <li>◇ vol00 — Shares: 1 — All active</li> <li>Bearch</li> <li>Share name Path Access protocol: Comments</li> <li>1 share-smb SMB</li> <li>Results per page: 10 ✓</li> </ul>	Status Active	Options V Options V Edt share

## 3.8. Using local Users and Groups with build-in Lightweight Directory Access Protocol (LDAP)

• In order to enabling local Users and Groups, please go to "User Management" menu and in Lightweight Directory Access Protocol (LDAP) please click on "Enable protocol"

O の User Management						
Failover Settings	Share users/groups         CHAP users           Authorization protocols         Image: Chap users					
8.						
Storage Settings	Only one authorization protocol can be enabled in the same time. Changing the protocol will result in the loss of saved data.					
Backup &						
System Settings	Enable protocol     Apply					
	• сърлу					
Wo <sup>2</sup>	Lightweight Directory Access Protocol (LDAP)					
	Enable protocol     LDAP settings					
	LDAP domain name:	dc=internal,dc=lan				
	Password:					
	Password confirmation:					
	Apply Share users and grou	25				
	onare users and grou	və				
Notifications 🔕 0 🔺	1 0 3					

• Next, confirm this action by clicking the "Yes" button.

User Management	
Lightweight Directory Access Protocol (LDAP)     Directory Access Protocol (LDAP)     Directory Access Protocol	
EDAP domain n Enable Lightweight Directory Access Protocol (LDAP)	
Password Password config	
Passwert confine Apply Do you want to continue?	
Share users a Yes	



• Next, in "Share users" click on the "Add user" button in order to create a new user. Please enter name of new user and password, then click Apply button.

User Management Reset to defaults	
Add user	1
User settings	
Name: Administrator	
Password confirmation:	
User groupsTC	+ Add user
Name	Options
A Verse Vers	Options v
Results per page: 10 V K K Page 1 of 1 > X Q	
X Cancel V Apply	+ Add group
Mana Densile Uses	opnons -

• After this action new user is already added.

Storage	User Management	
O User Management	✓ Apply	
Failover Settings	Reset to defaults	
Storage Settings	To restore default settings and delete current database from local node use the "Reset" button below. It will also remove user and group assignments with shares.	
Backup &	Reset	
System Settings	Share users and groups	
	↑ Share users	
	Search	+ Add user
	Name	Options
	Administrator	Options 🗸
	Results per page: 10 🗸 K < Page 1 of 1	o k <
	Share groups	70
	Search	+ Add group
	Name	Options
	Domain Users	
	Results per page: 10 V K < Page 1 of 1	> > Q



• In the Pool menu select the "Shares" tab. On the required share, (in this example" data") click on the "Option" button.

**NOTE**: How to create a new share is described in subsection 3.7 "Creating SMB shares" in this document.

 Next click on "Option" button and from drop-down menu and next click on the "Protocols" button.

Storage	Storage			0	Rescan 🕂 Add zpool
O User Management					î
Failover Settings	Pool-O				Options v
Storage Settings	State: Zpool ID:	ONLINE 8994287197033934590	Status: Zpool is functioning corre Action: None required.		
	Total storage: 272.00 GiB Resilvering: Last resilvering finished with 0 errors on 5.02.2019, 08.				08:52:36.
System Settings	Disks:	5			
Diagnostics	Status Disk groups     O Shares     vol00 - Shares: 1 -	All active	Fibre Channel Shares Snapshots	Virtual IPs	+ Add dataset
	Search				Options 🗸
	Share name Path		Access pro Comments	Status	Options
	1 data /		SMB	Active	Options 🗸
	Results per page: 10	~		K K Page 1 K	of 1 - Edit share Properties
			~		Protocols
					User/group access
	Pool-1				Deactivate     Delete
	State:	ONLINE	Status: Zpool is functioning corre	ctly.	

• In "Edit share protocols, please click "Enable SMB service", and in User access permissions, change option "Guest (anyone without password) to "Users with password". Next, click Apply button.

Storage	() Rescan + Add zpool
Edit share protocols	🕑 Options 🗸
Star Access protocols	
Zpr To Enable NFS service	019, 08, 52, 36
Die CEnable SMB service	
Read only	
Visible     Handling large directories	+ Add dataset
User access permisions: Guest (anyone without password)	
Users with password	Options v
Advanced Inherit owner	ve Options 🗸
🗙 Close 🗸 Apply	1 of 1 5 3 0
0.000 V 2001	
Pool-1	🕑 Options 🗸



• Again in "Option" drop-down menu, please select "User/group access"

Storage	Storage		() Rescan + Add zpool									
O User Management												
← → Failover Settings	Pool-O		Options v									
Storage Settings	State:         ONLINE           Zpool ID:         8994287197033934590	Action: None required.										
<ul> <li>Backup &amp;</li> <li>Recovery</li> </ul>	Total storage: 272.00 GiB		2019, 08:52:36.									
System Settings	Disks: 5											
Diagnostics	Status     Disk groups     iSCSI targets     Fibre Channel     Shares     Snapshots     Virtual IPs       O     Shares     + Add dataset       ^ vol00     Shares: 1     - All active											
	Search		Options v									
	Share name Path	Access pro Comments Sta	tus Options									
	1 data /	SMB Act	ive Options v									
	Results per page: 10 🗸		1 of 1 - Edit share Properties									
		<u>^</u>	Protocols									
			User/group access									
	Pool-1		Deactivate									
	State: ONLINE	Status: Zpool is functioning correctly.	X Delete									

• In "User access" ", please check the box with user name (in this example Administrator), and click Apply button.

Storage	() Rescan + Add zpool
Edit share user/group access	
User/group access	🛛 Options 🗸
Search Users with granted access	
Name	
Administrator	
Results per page: 10 V K < Page 1 of 1 > X Q	+ Add dataset
Group access	
Search Groups with granted access	
Name	
Domain Users	
Results per page: 10 V K K Page 1 of 1 > X 3	
Close V Apply	
Pool-1	🕑 Options 🗸



• In "File explorer" in Windows system, please open Share folder window.

	Storage	Storage						() Rescan	+ Add zpool
<u>ي</u>	User Manag			10.15.0.51		_	o x		
	Failover Set	File Home Share	View twork > 10.15.0.51 >			✓ C Search 10.15.0.51	¥ 🚱 م		Options v
	Storage Set	🔆 Favorites 🔳 Desktop	Julia data						
8	Backup & Recovery	Downloads						2019, 08:52:36	
9	System Sett	Market Sec Market Sec Market Sec							
<u>an</u>	Diagnostics	Documents Downloads Music Pictures Videos							dd dataset
		🙀 Network						opt tatus Opt	ions v
								ctive Or 1 of 1 >	N Q
		1 item 1 item selected					## <b>#</b>		Options v
		State:		ONLINE	Status:	Zpool is functioning correctly.			

• Next, please check if there is access to the share (e.g. by creating a new folder)

	Storage	Storage								() Rescan	+ Add zpool
<b></b>	User Manage	nont 1 1 ⊋ 🚹 🖘 l			data				x		
	Failover Set	File Home Sha	are View Network > 10.15.0.51 > data	•			~ C	Search data	<b>9</b> ب		Options 🗸
	Storage Sett Backup &	Favorites	Name *		Date modified 2/6/2019 8:29 AM	Type File fol	Size			2019, 08:52:36.	
9 1	Recovery System Sett	둘 Recent places 🐖 This PC 📔 Desktop									
ELO	Diagnostics	Documents Downloads Music Pictures Videos Local Disk (C:)		View Sort by Group by Refresh Customize t	his folder	*				s + A	dd dataset
		Vetwork		Paste Paste shorto Undo New	ut Ctri-	z				Opt tatus Opt	ions 🗸
				Properties			Folder Shortcut Bitmap image Contact Iometer Configura Rich Text Document Text Document			ctive Op	itions v メ Q
		1 item State:		ON	LINE	Statu	Compressed (zipp	ed) Folder	iii E		Options v



• Then, go back to the "Pool" menu in "Storage". Click on "Shares" tab.

Storage	Storage			() Reso	an 🕂 Add zpool
O User Management					
Failover Settings	Pool-O				Options 🗸
Storage Settings	State: Zpool ID:	ONLINE 8994287197033934590	Status: Zpool is functioning correctly. Action: None required.		
Backup &	Total storage:	272.00 GiB	(i) Resilvering: Last resilvering finished with 0 errors on	5.02.2019, 08:52:	6.
System Settings	Disks:	5			
Diagnostics	Status Disk groups O Shares	iSCSI targets	Fibre Channel Shares Snapshots Virtue		<ul> <li>Add dataset</li> </ul>
	<ul> <li>vol00 — Shares: 1</li> <li>Search</li> </ul>	— All active —			Options v
	Share name Path		Access pro Comments		Options
	1 data /		SMB	Active	Options V Edit share
	Results per page: 10	~			Properties Protocols
	Pool-1				User/group access
	State:	ONLINE	Status: Zpool is functioning correctly.	1	X Delete

• In "Options" drop-down menu, select "Users/group access", and in "User access" uncheck the check the box with "Administrator" user, and confirm by clicking the Apply button.

Storage	() Rescan + Add zpool
Edit share user/group access	
User/group access	🗹 Options 🗸
	019; 00:52:36
To Search Users with granted access Din Name	
Administrator	
Results per page: 10 V K < Page 1 of 1 > X Q	+ Add dataset
∧ Group access1C	
Search Groups with granted access	Options v
Name Domain Users	re Options
Results per page: 10 🗸 K < Page 1 of 1 > 3 O	1 all > × Q
X Close V Apply	
Pool-1	Coptions 🗸



• Next, go back to the Windows system and check if you still have access to Share data. As shown below, access to the share "data" is disabled because the Windows Security prompts for user credentials.

	Storage	Storage		() Rescan + Add zpool
<b></b>	User Manager	nant ▶   ⊇ 🚯 ╤	data 📃 🗖 🗴	î
ţ 101	Failover Set	File Home Sha	re View	C Options V
	Storage Sett	🚖 Favorites 🔲 Desktop	Name Date modified Type Size This folder is empty.	2019. 08:52:36.
8	Backup & Recovery	Downloads	Windows Security	2019, 06:52:36.
9	System Sett	PC This PC	Enter network credentials Enter your credentials to connect to: 10.15.0.51	s
<u>an</u>	Diagnostics	Downloads Music Pictures Videos Local Disk (C:)	User name           Password	+ Add dataset
		🙀 Network	Domain: LAB  Remember my credentials	Options v
			Connect a smart card	ctive Options V
			Access is denied.	1 of1 > >
		0 items	OK Cancel	C Options v
		State:	ONLINE Status: Zpool is functioning correctly.	

# 3.9. Auto-Snapshots and Access to Previous versions

Use Windows Previous Versions to go back in time and access or restore previous versions of files and folders. Windows allows restoring previous versions of a file that was modified or even deleted. Anyone who has ever changed a file and realizes that the previous content was better as it was before, will appreciate the value of being able to retrieve a previous version of a file. Previous versions need auto-snapshot. The auto-snapshot can be set via the GUI.

• To create new auto-snapshots plan, please go to the "Backup & Recovery" menu then Click the "Add replication task" button in the bottom right corner to run the "Backup task wizard".

open-e JovianDSS		(i) About	⊘ Help 💽 Logout 🗸
Storage	Backup & Recovery		
O User Management			
Failover Settings	Tasks Destination servers vCenter / vSphere server		-
Storage Settings	Search Source Source retention Destination path Destination retentio Description VMware int.		+ Add replication task Status
Backup & Recovery	No tasks found. Results per page: 10 🗸 K	¢ Dava	0 - 10 - X - X
System Settings	rossons per page. 10 V	< Page	0 of0 > > ⊅
Diagnostics			
Notifications 😋 0	▲ 0 0 2		

 After starting the "Backup task wizard" will be listed default "Retention-Interval plan for source".

Backup task wiz	ard											7 🗙	
1. Source configuration	Source												
	Resource path:							Bro	owse				cation task
2. Destination configuration													
3. vCenter / vSphere	Retention-Interval plan	for sou	irce										1 0
server integration Snapshols from source will be sent every 5 minutes (i.e. the shortest interval from the source retention rules)													
4. Task properties	Retention rules:												
5. Summary	A snapshot taken every												
a. automaty	A snapshot taken every										×		
	A snapshot taken every				~					×	×		
	+ Add another r	ule											
										Ĵ	Restor	e to default	
										XC	ancel	Next >	1



• In the "Source configuration" click "Browse".

<i>open-e "</i> JovianDSS				🔄 Logout 🖂
	Backup & R	ecovery		
		Resource path. Browse		
		Browse Zvois Datasets		
		Search		
		Resource name No zvols found		
		Results per page: 10 V K < Page 0 of 0 > X Q	×	
		X Cancel Apply	×	
			3 Restore to default	
Notifications 🤇	30 🔥 0 2			

• In the "Browse" please select "Datasets" tab, and choose a resource name. Next click on "Apply" button.

open-e JovianDSS					🖻 Logout 🗸
	Backup & F				
		Browse			
		Zvols Datasets Search			
		Resource name Pool-0/vol00	•		
		Results per page: 10 🗸 K K	Page 1 of 1 > > 0	×	
			X Cancel V Apply	×	
Notifications (	0 🔺 0 🛛 2				



• After the end selecting "Resource path" please click on "Next" button.

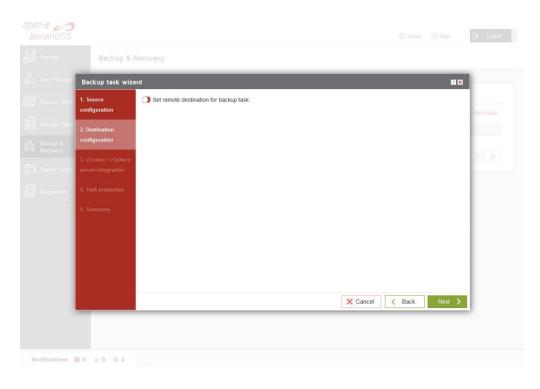
Manager	Backup task wiza												12 ×	
ver Siett	configuration	Source												cation ta
ge Seni i		Resource path:		F	00lov/0-loo				Bro	wse				
up & very		Retention-Interval plan	for so	urce										
m Source	b. vCenter / vSphere Snapshots from source will be sent every 5 minutes (i.e. the shortest interval from the source retention rules) erver integration													2
		Retention rules:												
10.01104		A snapshot taken every	5	~	minute(s)	~	should be kept for	1	^	hour(s)	~			
		A snapshot taken every	15	-	minute(s)	~	should be kept for	3	^	day(s)	~	×		
		A snapshot taken every	1	*	hour(s)	~	should be kept for	2	*	week(s)	~	×		
		+ Add another r	ule											
											Ċ	Resto	re to default	
													_	
											×c	ancel	Next >	

In "Destination configuration" please disable "Set remote destination for backup task" option.
 NOTE: If backup need to be configured, you can just continue with the wizard and provide destination volume accordingly.

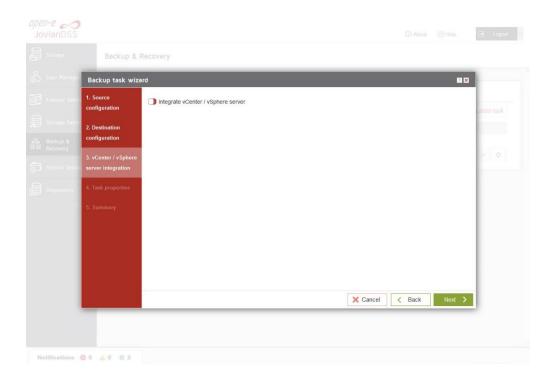
Backup task wiza	ərd									? 🗙	<u> </u>
1. Source configuration	<ul> <li>Set remote destinat</li> <li>Destination 1 —</li> </ul>	ion for back	up task								cation task
2. Destination configuration							×	Remov	e resourc	e	
3. vCenter / vSphere server integration	Destination server and Destination server:	resource pa	ath		~						× 0
4. Task properties	Resource path:					Brows					
5. Summary	Retention-Interval plan	or destinati	on							ł	
	Snapshots from source (										
	Retention rules. A snapshot taken every			× 5			~				
	A snapshot laken every			V s		X Car	 < в		Next	t >	



• Next, please click on "Next" button.



• In "vCenter / vSphere server integration" please click on "Next" button





• In "Task properties" please enter task description, and click on "Next" button.

Backup task wiza	ard		
1. Source configuration	Task description		cation tas
2. Destination	Description:	auto-snap	
configuration	mbuffer		
3. vCenter / vSphere server integration	Enable mbuffer		91.19
4. Task properties			
5. Summary			

• Next, in "Summary" please click on the "Add" button

Backup task wizz				
Buckop tosk with	ard			
configuration	Properties			ce tati
2. Destination	Resource path: Source retention:	Pool-0/vol00 1h every 5min		
3. vCenter / vSphere		3d every 15min 2w every 1h		2
4. Task properties	vCenter / vSphere server int	egration		
5. Summary	vCenter / vSphere:	disabled		
	Task properties			
	Description: mbuffer size:	auto-snap disabled		
			X Cancel K Back	Add



• After completion of the "Backup task wizard" return to the "Backup & Recovery". Below you will see the "Task" you are able to see that is "Enabled".

open-e JovianDSS	⊙ About ③ Help 🕞 Legout ∨
Storage	Backup & Recovery
O O User Management	^
Failover Settings	Tasks         Destination servers         vCenter / vSphere server
Storage Settings	Search + Add replication task Source Source retention Destination path Destination retentic Description VMware int. Status
Backup & Backup & Recovery	Pool-0xel00 1h every 5min auto-snap Enabled Options v 3d every 15min
System Settings	2w every th Results per page: 10 V K < Page 1 of 1 > X Q
Notifications 🙁 0	▲ 0 0 2

• Next, go to the "Storage" menu. Now auto-snapshots are created accordingly to a provided retention-interval plan and can be viewed in pool-menu in "Snapshots" tab.

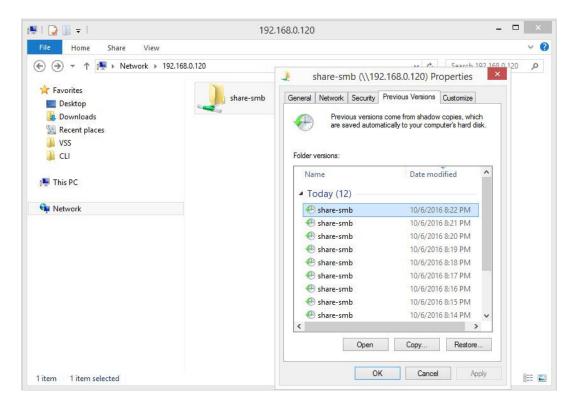
JovianDSS		(i) About	() Help	🕒 Logout 🗸
Storage	Storage		() Rescan	+ Add zpool
O User Management	Total storage: 143.00 GIB Disks: 9			^
Failover Settings	Status Disk groups iSCSI targets Snapshots	s Shares Virtual IPs		
Storage Settings	O Snapshots			
Backup &	∧ Snapshots of zvols			
System Settings	Search Name			
	No snapshots found.			
	Snapshots of datasets  Search			_
	Name			
	e vol00		Options	~
	vol00@autosnap_2017-08-14-184500		Options	~
	Zpools available for import	^		
	(i) Rescan required Click Rescan button above to scan disks for new zpools.			
Notifications 😵 0	▲ 0 <b>0</b> 2			v



 In the event of a file being renamed or deleted, you can view the previous version of the containing folder. Just right-click on some white space in the folder and select the "Properties" option. You can also right-click on the folder itself and select the "Properties" option as shown on the screenshot below.

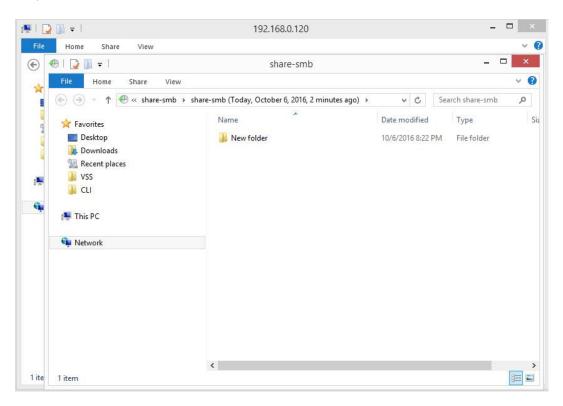
🖳   🔂 🗻 = I	192.168.0.120 – 🗆	×
File Home Share View		~ ()
	20 ►	P
<ul> <li>Favorites</li> <li>Desktop</li> <li>Downloads</li> <li>Recent places</li> <li>VSS</li> <li>CLI</li> <li>This PC</li> <li>Network</li> </ul>	share-smb Open Open in new window Restore previous versions Pin to Start Map network drive Copy Create shortcut Properties	
1 item 1 item selected	l≣=	

• In the "Previous Versions" tab, all auto-snapshots are listed.





• By double-clicking on a folder in the list, it will show the contents of the folder at the time the snapshot was made.



# 3.10. Creating NFS shares

• In the Pool menu select "Shares" tab. Click on the "Add dataset" button in order to create new NAS-volume.

				<ol> <li>About</li> <li>He</li> </ol>	lp 🕒 Logout
Storage	Storage			0	Rescan + Add zpoo
User Management	-				
Failover Settings	Pool-0				Options v
Storage Settings	State:	ONLINE	Status: Zpool is functioning correctl	V.	
	Zpool ID:	14248819111874998222	Action: None required.		
Backup & Recovery	Total storage:	1.63 TIB	$(\mathbf{I})$		
necovery	Disks:	9			
System Settings					
	Status Disk groups	s iSCSI targets	Snapshots Shares Virtual IPs		
Diagnostics	O Shares				+ Add dataset
	∧ vol00 — Shares: 1	All active			
	Since Shares.	Anactive			
					C Options V
	Share name Path		Access protocc Comments	Status	Options
	1 share-smb /share-sm	ıb	SMB	Active	Options 🗸
			~		
	Zecols available for	imaart			
	Zpools available for	import			
	(i) Rescan required Click Rescan button abov	e to scan disks for new zpools.			

• In the "Add new dataset" window enter the dataset name and click on "Apply" button.

Storage	Add new dataset		2 C X	0	Rescan + Add zpo
	Dataset properties				
Pool-O	Name:	vol01			🗹 Options 🗸
	Deduplication:	Disabled (default)	~		
	Copies:	1 (default)	~		
		Number of copies of the data.			
	Compression:	lz4 (default)	~		
	Sync:	Always	~		
O Shares	Log bias:	Latency (default)	~		+ Add dataset
	Primary cache:	All (default)	~		
	Secondary cache:	All (default)	~		Options V
	Access time:	Disabled (default)	~	Status	
				Active.	
	Enable quota			_	
Zpools availat	Enable reservation				
		×c	ancel 🗸 Apply		



 Next, select the created dataset and click on the "Add share" button. Enter the share name. Optionally you can enter the subdirectory name in the dataset. If the subdirectory is not entered the share will be pointed directly to the dataset. In order create share click "Next" and confirm this action by clicking the "Yes" button.

	n-e						💌 Logout 🗸
		Storage				() Rescan	+ Add zpool
		Share wizard					^ ^
		1. Share properties	Share properties				
		2. Access protocols	Name:	share-nfs			
		3. User/group access	Path:	vol01/ share-nfs If you want to share whole dataset leave this input empty.			
		4. Summary	Comment:	n you wan to anare whole oalaase leave ana mput empty.			
				X	Cancel		dd dataset
N	otifications (	0 40 02					

Storage	() Rescan	+ Add zpool
	vol01/ share-rds	
	Add share Specified path: vol01/share-offs does not exist. Would you like to create it? No Ves	



• In the "Access protocols" step, click on "Enable NFS service" confirm this action by clicking the "Yes" button and continue with "Next" button.

Storage		() Rescan	+ Add zpoo
storoge			
Share wizard		7 🗙	
1. Share properties	NFS		Options V
2. Access protocols	Enable NFS service		
3. User/group access	C Enable NFS Service		
4. Summary	SMB		
	Enable SMB service		
			dd dataset
			ptions 🐱
			bons v
	X Cancel X Back	Next >	ptions 🐱
No strates	bind		Mrs.

• Confirm this action by clicking the "Yes" button and continue with "Next" button.

Storage			Q Res	an 🕂 Add zpo
	NFS			
	NFS path		8	
		NFS service for shares access is disabled.	clude correct server name or IP address (see	
	Read access (Pa;	Would you like to enable it? Note: NFS service will be enabled with default settings. In order to configure it go to Storage settings/Share access.		
	Read/write access IP.	🗙 No 🗸 Yes		



Storage				() Rescan	+ Add zp
Share wizard					
1. Share properties	NFS				Options V
2. Access protocols	C Enable NFS service				
3. User/group access	NFS path:	/Pools/Pool-0/vol01/share-nfs			
Setter 4. Summary In order to get access to the share please make sure to include correct server name or IP address (see Help for more information)					
	Read access IPs:	Read access allowed for all IPs			dd dataset
	Read/write access IPs:	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx			
	Redurinite access ins.	xxx xxx xxx xxx xxx xxx xxx xxx xxx xx			ptions 🐱
	Additional options:	Insecure connections Synchronous data record Insecure lock requests All squash No root squash			ons v
			X Cancel < Back	Next >	iptions 🗸
No stiares	found.		hanness and a second second	Sinna Ab	ins

• In the "Users/groups access" step, continue with "Next" button.

open-e 🦰 JovianDSS						🖻 Logout 🗸
	Storage				() Resc	an + Add zpool
👶 User Manager	Share wizard					×
Fallover Settin	1. Share properties	∧ User access —			?	Options V
Storage Settin	2. Access protocols	(1) SMB service disabled User access configuration is no	t available because SMB service is disab	led.		
	3. User/group access	Name				
53 System Settin	4. Summary					
Diagnostics		Group access				G dd dataset
		(i) SMB service disabled Group access configuration is n	not available because SMB service is disa	bled.		
						ptions
						ons
						ions 🗸
				X Cancel < Ba	ck Next >	iptions 🗸
	No shares	found.				
Notifications (	<b>9 0 🔺 0 ()</b> 3					



• In the "Summary" step, to complete click the "Add" button. Now the NFS share is ready to mount.

Storage				() Resci	an + Add zpod
Share wizard					
1. Share properties	Properties				▲ Options ↓
2. Access protocols	Name	share-nfs			
3. User/group access	Path Comment	vol01/share-nfs			
4. Summary					
	NFS				
	Read access IPs				dd dataset
	Read/write access IPs	Insecure connections			
	Additional options	Insecure connections Synchronous data record	×		ptions 🗸 🗸
		Insecure lock requests	×		005
		No root squash	×		bons 🗸
		All squash	×		
			X Cancel K Back	🗸 Add	ptions 🗸
No stiares	s found.		oricosas humana esterminenta	- Aller - A	appending a

• In order to change the NFS share settings, click on the share "Options" drop-down menu. In order to change the dataset setting, click on the "Edit dataset" in dataset "Options" drop-down menu.

lovianDSS		① Abou	t ⑦ Help	🕒 Logout
Storage	Storage		() Rescan	+ Add zpool
User Management				
Failover Settings	Pool-O			Options v
Storage Settings	Zoool ID: 14248819111874998222	Status: Zpool is functioning correctly.		
Backup & Recovery	Total storage: 1.63 TIB			
System Settings	Disks: 9			
Diagnostics	Status Disk groups iSCSI targets Snapshots O Shares	Shares Virtual IPs	+	Add dataset
	∧ vol00 — Shares: 1 — All active —			Options v
	Share name Path	Access protocc Comments		ions
	1 share-smb /share-smb	SMB		ptions v
	∧ vol01 — Shares: 1 — All active —			
				Options 🗸
	Share name Path	Access protocc Comments	Status Op	ions
	1 share-nfs /share-nfs	NFS	Active O	ptions v
		~		



## Copyright

(c) 2004 - 2020 Open-E, Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Open-E, Inc.

### Trademarks

The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

### Disclaimer

Open-E, Inc. assumes no responsibility for errors or omissions in this document, and Open-E, Inc. does not make any commitment to update the information contained herein.