NAS4Free Guide for creating an iSCSI target from a ZFS volume

My Setup

Here is my current setup: Intel(R) Core(TM) i7 CPU 960 @ 3.20GHz. 512MB of RAM. 4 x 2TB Hard drives. Running NAS4Free 9.0.0.1 Sandstorm - Beta (Revision 49) from VMware Workstation.

System mornidon	
Hostname	nas4free01.mzhome
Version	9.0.0.1 - Sandstorm - Beta (revision 49)
Built on	Thu Apr 5 00:26:44 CEST 2012
OS Version	FreeBSD 9.0-RELEASE (revision 199506)
Platform	x64-embedded on Intel(R) Core(TM) i7 CPU 960 @ 3.20GHz
System time	Thu Apr 5 21:48:59 CEST 2012
Uptime	28 minute(s) 22 second(s)
Last config change	Thu Apr 5 21:23:35 CEST 2012
CPU temperature	-1.0 °C -1.0 °C
CPU usage	0%
Memory usage	30% of 271MiB
Load averages	0.08, 0.13, 0.14 [Show process information]
Disk space usage	No disk configured

Copyright © 2012 NAS4Free. All rights reserved.

My 4 x 2 Terabyte drives are in no <u>HARDWARE RAID</u> configuration. This is important as ZFS employs its own RAID structure in its file system so the Mother Board BIOS had its RAID settings disabled (this is what worked for me).

Adding Discs to NAS4Free

1 - Pull down the "**DISKS**" Menu from the top navigation bar and then select "**MANAGEMENT**". See SUG Section 5.1 - Disks Management for details.

Last update: 2016/02/19 documentation:howto:create_iscsi_target_from_zfs_volume http://wiki.nas4free.org/doku.php?id=documentation:howto:create_iscsi_target_from_zfs_volume 10:33

Management 5.	.M.A.R.T. iSCSI In	itiator			1		
Di-la Circa							
DISK SIZE	Description	Device model	Serial number	Standby time	File system	Status	
Rescan disks							+

2 - Click the 🖶 this will load up the Disk Add Page.

System	Network	Disks	Services	Access	Status	Diagnostics	Advanced	Неф
Disks Manager	Managei ment 5.M./	ment 	Disk Add					
Disk			ad4: 1907730N	IB (WDC WD2	0EARS-00MV	WB0/50.0A850)	-	
Description			You may enter a	description he	ere for your r	eference.		
Transfer mo	de		Auto 💌] o set the trans	sfer mode for	ATA/IDE hard drive	s.	
Hard disk st	andby time		Always on Puts the hard dis	k into standby	v mode when	the selected amount	of time after the l	ast hard disk access has been elapsed.
Advanced P	ower Managem	ent	Disabled This allows you b	o lower the po	wer consump	ation of the drive, at	the expense of pe	rformance.
Acoustic lev	el		Disabled This allows you b	o set how loud	d the drive is	while it's operating.		
S.M.A.R.T.			Activate S.N	I.A.R.T. moni	toring for this	device.		
S.M.A.R.T.	extra options		Extra options (us	ually empty).	Please check	the documentation.		
Preformatte	ed file system		Unformated This allows you b	o set the file s	ystem for pre	eformatted hard disk	s containing data.	Leave 'Unformated' for unformated disks and format them using format menu.
Add C	ancel							

- 3 Using the drop down Menu, select the drive you are adding.
- 4 Give it a Description

5 - I left the following settings in their default positions, but depending on your configuration you can change them.

- A Transfer Mode at Auto.
- B Hard Disk Standby Time to "Always on".
- C Advanced Power Management to "Disabled".
- D Acoustic Level.
- E S.M.A.R.T NOT Ticked.

6 - Preformatted file System was left to Unformatted. By setting this to Unformatted we can use the format option in NAS4Free.

7 - Click the "**ADD**" Button.

3/18

anagemer	t S.M.A.R.T.	ISCSI Initiator					
	e configuration has be	een changed.					
() Yo	u must apply the chan	ges in order for them to take effect.					
Apply cha	u must apply the chan	ges in order for blen to take effect.					
Apply cha	inges Size	Description	Serial number	Standby time	File system	Status	

8 - Click the "APPLY CHANGES" Button.

I repeated this process (steps 2 – 8) for the remaining three drives. I DID NOT ADD MY USB stick as this holds the NAS4Free OS and I don't want that to be formatted by ZFS etc.

isks M	anagement					
Hanagemer	t S.M.A.R.T.	iSCSI Initiator				
Disk	Size	Description	Serial number	Standby time	File system	Status
ad4	1907730MB	WDC WD20EARS-	WD-WMAZA	Always on	Unknown or unformatted	ONLINE
ad6	1907730MB	WDC WD20EARS-	WD-WMAZA	Always on	Unknown or unformatted	ONLINE
ad8	1907730MB	WDC WD20EARS-	WD-WMAZA	Always on	Unknown or unformatted	ONLINE
ad10	1907730MB	WDC WD20EARS-	WD-WMAZA	Always on	Unknown or unformatted	ONLINE

All drives should now appear in the disc Management Page. All Drives should have a "**STATUS**" of "**ONLINE**"

Formatting Drives

When all the drives are added I now format them into ZFS.

1 - Pull down the "DISKS" Menu on the top Navigation Bar and select "FORMAT".

Last update: 2016/02/19 documentation:howto:create_iscsi_target_from_zfs_volume http://wiki.nas4free.org/doku.php?id=documentation:howto:create_iscsi_target_from_zfs_volume 10:33

Disks | Format

Disk	Must choose one
File system	
Don't Erase MBR	Don't erase the MBR (useful for some RAID controller cards)
Format disk	
Warning: UFS is the NATIVE file forma EXT3, or NTFS can result in	at for FreeBSD (the underlying OS of NAS4Free). Attempting to use other file formats such as FAT, FAT32, EXT2, unpredictable results, file corruption, and loss of data!

- 2 Select Drive which should now appear in the dropdown.
- 3 Select ZFS Storage Pool Device for the File System.
- 4 I erased my MBR so left the "Don't Erase MBR" Setting UNCHECKED.
- 5 Click the "FORMAT DISK" Button.

Repeat steps 2-5 for all additional drives that you have.

em Nel	work Disks	Services Ac	cess Status	Diagnostics	Advanced He	lp	
isks M	anagemen	ŧ					
lanageme	nt S.M.A.R.T.	iSCSI Initiator					
Disk	Size	Description	Serial number	Standby time	File system	Status	1
ad4	1907730MB	WDC WD20EAR	S- WD-WMAZA	Always on	ZFS storage pool devic	e ONLINE	٦,
ad6	1907730MB	WDC WD20EAR	S- WD-WMAZA	Always on	ZFS storage pool devic	e ONLINE	٦,
ad8	1907730MB	WDC WD20EAR	S- WD-WMAZA	Always on	ZFS storage pool devic	e ONLINE	٦,
ad10	1907730MB	WDC WD20EAR	S- WD-WMAZA	Always on	ZFS storage pool devic	e ONLINE	٦,
				-			
Rescan	lisks						

Pull down the "**DISKS**" Menu on the top Navigation Bar and then select "**MANAGEMENT**" again to <u>check that the formatting of all drives was successful</u>.

Creating a ZFS Virtual Device.

Once you have gotten NAS4Free to recognise, format and present your drives in the WebGUI, you will now proceed to create a virtual device consisting of these drives.

1 - Go to "DISKS" Tab at the top navigation bar and then select "ZFS".

2 - Click on the "Virtual Device" Tab.

Disks | ZFS | Pools | Virtual device

Pools	Datase	ts	Volumes	Snapsh	ots Con	iguration
Virtua	l device	Mai	nagement	Tools	Informat	on I/O
Nan	ıe		Туре		Desc	iption

3 - Click the +.

Disks ZFS Po	ools Virtual device Add
Pools Datasets	Configuration
Virtual device M	anagement Tools Information I/O statistics
Name	VD01
Туре	Single-parity RAID-5
Devices	ad4 (1907730MB, WDC WD20EARS-00MVWB0/50.0AB50) ad6 (1907730MB, WDC WD20EARS-00MVWB0/50.0AB50) ad8 (1907730MB, WDC WD20EARS-00MVWB0/50.0AB50) ad10 (1907730MB, WDC WD20EARS-00MVWB0/50.0AB50)
Advanced Format	Enable Advanced Format (4KB sector)
Description	Virtual Device 1 You may enter a description here for your reference.
Add Cancel	

- 4 Enter a Name (I called mine VD01).
- 5 Select a Type (I personally selected Single Parity Raid 5 which is RAIDz1 in ZFS speak).
- 6 Now select ALL the DEVICES SO THEY TURN BLUE!! OTHERWISE YOU WILL GET AN ERROR.
- 7 I didn't select Advanced Format.
- 8 Enter a Description.

9 - Click the "**ADD**" Button. After clicking the "**ADD**" Button you will be returned to the Virtual Device page in ZFS.

update: 2016/02/19 10:33

System	Network	Disks	Services	Access	Statu	s Diagnostics	Advanced	Help
Disks	ZFS PC	ools Vi	rtual de	vice				
Pools	Datasets	Configu	ration					
Virtua	I device M	anagemen	t Tools	Information	1/0	statistics		
Nan	ie				Туре	Description		
VD01	l				raidz1	Virtual Device 1	d 💢	
							+	

Now the drives have been added to NAS4Free they still have to be made available for NAS4Free to manage.

Hostname	nas4free01.mzhome					
Version	9.0.0.1 - Sandstorm - Beta (revision 49)					
Built on	Thu Apr 5 00:26:44 CEST 2012					
O5 Version	FreeBSD 9.0-RELEASE (revision 199506)					
Platform	x64-embedded on Intel(R) Core(TM) i7 CPU 960 @ 3.20GHz					
System time	Thu Apr 5 21:48:59 CEST 2012					
Uptime	28 minute(s) 22 second(s)					
Last config change	Thu Apr 5 21:23:35 CEST 2012					
CPU temperature	-1.0 °C -1.0 °C					
	0%					
CPU usage	0%					
Memory usage	30% of 271MiB					
Load averages	0.08, 0.13, 0.14 [Show process information]					
Disk space usage	No disk configured					

Pull down the "**STATUS"** Menu on the top navigation bar and select "**SYSTEM**", you will see the Disc you have been setting up are still not here "No Disc Configured".

Adding device to ZFS Management page

1 - Pull down the "**DISKS**" Menu on the top Navigation Bar and select "**ZFS**". This will load up the management page.

System	Network	Disks	Services	s A	ccess	Status	Diagnost	ics Advanced	l Help
Disks	S ZFS P	ools Ma	anage	men	t				
Pools	Datasets	Configur	ation						
Virtua	l device M	lanagement	Tools	Inf	formation	I/0 sta	tistics		
					a 1				
Nan	1e	512	e Used	Free	Capacity	Health	AltRoot	4	
								Ŧ	

2 - Click the + .

Disks ZFS Pools Management Add	
Pools Datasets Configuration	
Virtual device Management Tools Information I/O statistic	s
Name	VD01
Virtual devices	VD01 (raidz1, Virtual Device 1)
Root	Creates the pool with an alternate root.
Mount point	Sets an alternate mount point for the root dataset. Default is /mnt.
Description	Virtual Device 1 You may enter a description here for your reference.
Add Cancel	

- 3 Enter a Name (I gave mine the exact same name as what I gave the Virtual Device: VD01)
- 4 SELECT THE VIRTUAL DEVICE SO IT IS TURNED BLUE!!! AGAIN THIS HAS TO BE SELECTED.
- 5 I kept these options as default:
 - A Root.
 - B Mount Point.

6 - I entered a name for the Description. Click the "**ADD**" Button. You will then be returned to the Management Page.

Last update: 2016/02/19 documentation:howto:create_iscsi_target_from_zfs_volume http://wiki.nas4free.org/doku.php?id=documentation:howto:create_iscsi_target_from_zfs_volume 10:33

Disks ZFS Pools Management									
Pools Datasets Configuration									
Virtual device	Management	t Tools	Inform	iation 1	[/0 statistic	s			
The cont You mus	The configuration has been changed. You must apply the changes in order for them to take effect. Apply changes								
Name	Size	Used	Free	Capacity	Health	AltRoot			
VD01	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	47 💢		
							+		

Everything is listed as UNKNOWN. DO NOT WORRY. YOU MUST APPLY THE CHANGES!

7 - Click the "APPLY CHANGES" Button!

Disks ZFS Pools Management							
Pools Datasets Configuration							
Virtual device	Managem	ent	Tools	Informatio	on I/O	statistics	
(!) The ch	The changes have been applied successfully.						
Name	Size	Used	Free	Capacity	Health	AltRoot	
VD01	7.257	103K	5.34T	0%	ONLINE	-	d 🗱
							÷

8 - Now all the values should have changed and the virtual device is now online. Just to make sure, Pull down the "**STATUS"** Menu on the top navigation bar and select "**SYSTEM**", you should now see the Disc.

Disk space usage	VD01 0% of 7.25TB	
		Total: 7.25T Used: 103K Free: 5.34T State: ONLINE

9 - Take note of the FREE space! You will need this value for later.

Create an iSCSI target

Now with the disc managed and configured correctly in ZFS we are now going to create an iSCSI Target.

1 - Pull down the "SERVICES" Menu on the top Navigation Bar and select "iSCSI target".

9/18

ttings Targets Portals I	nitiators Auths Media
SCSI Target	🖉 Ena
Base Name	iqn. 2007-09. jp.ne. peach. istgt
	The base name (e.g. iqn.2007-09.jp.ne.peach.istgt) will append the target name that is not starting with 'iqn.'.
Discovery Auth Method	Auto
Discovery Auth Group	None None
Advanced settings	
I/O Timeout	30
	I/O timeout in seconds (30 by default).
NOPIN Interval	20
	NOPIN sending interval in seconds (20 by default).
Max. sessions	16
	Maximum number of sessions holding at same time (16 by default).
Max. connections	4
	Maximum number of connections in each session (4 by default).
Max. pre-send R2T	32
	Maximum number of pre-send R2T in each connection (32 by default). The actual number is limited to QueueDepth of the target.
FirstBurstLength	262144
	iSCSI initial parameter (262144 by default).
MaxBurstLength	1048576
	iSCSI initial parameter (1048576 by default).
MaxRecvDataSegmentLength	262144
	iSCSI initial parameter (262144 by default).
MaxOutstandingR2T	16
	iSCSI initial parameter (16 by default).
DefaultTime2Wait	2
	iSCSI initial parameter (2 by default).
DefaultTime2Retain	60
	iSCSI initial parameter (60 by default).
SCSI Target Logical Unit Controlle	er 🖉 Ena

2. Click the "**ENABLE**" checkbox for iSCSI Target in the upper right corner of the page.

Last update: 2016/02/19 10:33

3. Leave everything else alone, change nothing.

4. Click the "Save and Restart" Button.

Adding a Portal

This will allow you to configure how the iSCSI target will be seen or reported on the network.

Now click the "PORTALS" tab.

Services	s iSC	SI Targe	t Portal	Group			
Settings	Targe	ts Portals	Initiators	Auths	Media		
Portal G	roups	_	_	_			
Portal Gro	pup	Tag	Pe	ortals			
	A Portal Group contains IP addresses and listening TCP ports to connect the target from the initiator.						

1 - Click the +.

2 - For the benefit of this document I left it at its default which is to allow it to be accessed VIA any IP address that the NAS4Free server is configured with.

Services is	SCSI Target Portal Group Add
Settings Tar	rgets Portals Initiators Auths Media
Tag number	1 Numeric identifier of the group.
Portals	0.0.0.3260 The portal takes the form of 'address:port'. for example '192.168.1.1:3260' for IPv4, '[2001:db8:1:1::1]:3260' for IPv6. the port 3260 is standard iSCSI port number. For any IPs (wildcard address) use '0.0.0.0:3260' and/or '[::1]:3260'
Comment	Do not mix wildcard and other IPs at same address family.
Comment	You may enter a description here for your reference.
Add Canc	zel

3 - Click the "**ADD**" Button.

Services iS	CSI Targe	t Portal	Group		
Settings Tar	gets Portals	Initiators	Auths	Media	
1 The co You mu	nfiguration has been ust apply the change	n changed. es in order for t	nem to take	effect.	
	_				
Apply change	25				
Portal Groups					
Portal Group	Tag	Po	rtals		
	1	0.0	.0.0:3260		\$° 💢
	A Portal Group co	ntains IP addres	sses and list	tening TCP ports to connect the target from the initiator.	+

4 - Click the "**Apply Changes**" Button in the Portal Group Page.

Adding an Initiator

Initiators are systems that can access an iSCSI target (in this case the ZFS storage we created above) here you can specify which machines via IP can initiate a communication with the iSCSI target.

1 - Click on the "Initiators" Tab.

Services iSCSI Target Initiator Group								
Settings Targe	ts Portals	Initiators	Auths	Media				
Initiator Groups		_						
Initiator Group	Tag	I	initiators		Networks			
	A Initiator Grou	up contains autho	orised initia	tor names and networks to	access the targ	🛖 get.		

2 - Click the +.

Services iSCSI	Target Initiator Group Add
Settings Targets	Portals Initiators Auths Media
Tag number	1 Numeric identifier of the group.
Initiators	ALL Initiator authorised to access to the iSCSI target. It takes a name or 'ALL' for any initiators.
Authorised network	ALL Network authorised to access to the iSCSI target. It takes IP or CIDR addresses or 'ALL' for any IPs.
Comment	You may enter a description here for your reference.
Add Cancel	

3 - Here again I left all settings at their defaults and clicked the "**ADD**" Button. (Anything can access it).

Services iSC	SI Ta	arget I	nitiator Gro	up			
Settings Targe	ts Po	ortals Ini	tiators Auths	Media			
The confi You must Apply changes Initiator Groups	guration l apply the)	has been char e changes in o	nged. rder for them to take	effect.			
Initiator Group	Tag	Initiators	Networks				
	1	ALL	ALL		4 💢		
A Initiator Group contains authorised initiator names and networks to access the target.							

4 - Click the "Apply Changes" Button.

Create an Extent

To create an iSCSI Target you must create an Extent first.

1 - Go to the "**Targets**" Tab.

Service	s iSCS	I Targe	t Target						
Settings	Targets	Portals	Initiators	Auths	Media				
Targets									
Extent	Name	Path		Size					
	Extents m	ust be defined	d before they ca	n be used,	and exten	ts cannot be	used more tha	n once.	÷
Target	Name	Flags	LUNs	PG		IG	AG		
	At the highest level, a target is what is presented to the initiator, and is made up of one or more extents.								
Note: To configu Portal Grou Initiator Gr Auth Grou defines au	At the highest level, a target is what is presented to the initiator, and is made up of one or more extents. Note: To configure the target, you must add at least Portal Group and Initiator Group and Extent. Portal Group which is identified by tag number defines IP addresses and listening TCP ports. Initiator Group which is identified by tag number defines authorised initiator names and networks. Auth Group which is identified by tag number and is optional if the target does not use CHAP authentication defines authorised users and secrets for additional security. Extent defines the storage area of the target.								

2 - Click the 💠 for creating an Extent.

Services iS	CSI Target Extent Add
Settings Tar	gets Portals Initiators Auths Media
Extent Name	extent0 String identifier of the extent.
Туре	File Type used as extent.
Path	File path (e.g. /mnt/sharename/extent/extent0) used as extent.
File size	MiB Size offered to the initiator. (up to 8EiB=8388608TiB. actual size is depend on your disks.)
Comment	You may enter a description here for your reference.
Add Canc	el

3 - Give the Extent a name I left mine as "extent0".

4 - In 0.7.2 of NAS4Free with ZFS the "TYPE", "ZFS Volume" option in the Drop-down Menu did not

work for me! SO KEEP IT AS "File".

5 - Click on the Button at the end of the Path text box. This will bring up a simple file system browser. Since we cannot use the ZFS volume, we have to point to the correct directory and create a file which will essentially be the drive you will be writing to.

😢 filechooser - Googl	e Chrome			
http://192.168.0.175/fi	lechooser.php?p	o=&sd=/	/mnt	
/mnt				Ok Cancel
Name	Size	Туре	Last Modified	
Parent Directory VD01	-	Folder	August 08, 2010	1:47 PM
	0 bytes			

6 - Earlier we created a device called VD01 which is presented here as a folder. Select VD01 or the name of your Virtual Device.

filechooser - Google Chr	ome		
http://192.168.0.175/filecho	oser.php?p=/mnt/	VD01/	
/mnt/VD01/			Ok Cancel
Name	Size	Туре	Last Modified
« Parent Directory			
	0 bytes		

7 - This will change the path from /mnt/ to /mnt/VD01/ in the address bar at the top. Click the "**OK**" Button once you have selected the path.

Path	/mnt/VD01/	
	File path (e.g. /mnt/sharename/extent/extent0) used as extent.	

This will appear in the Target Add page.

8 - Add to the path field "extent0"

Path	/mnt/VD01/extent0	
	File path (e.g. /mnt/sharename/extent/extent0) used as extent.	

9 - File Size: Here is the big problem <u>DO NOT USE AUTO</u> it does not work with ZFS. You will get an:

Error: The changes could not be applied (error code 1).

message later on when trying to "**Apply Changes**" and in the logs (Top Pull Down Menu Diagnostics > Logs) you will get messages such as:

Apr 4 15:13:37	nas4free	root: Failed to restart service iscsi_target
Apr 4 15:13:37	nas4free	istgt[19293]: istgt.c:1618:main: ***ERROR***
<pre>istgt_lu_init()</pre>	failed	
Apr 4 15:13:37	nas4free	istgt[19293]: istgt_lu.c:1863:istgt_lu_init:
ERROR lu_a	dd_unit()	failed
Apr 4 15:13:37	nas4free	<pre>istgt[19293]: istgt_lu.c:1604:istgt_lu_add_unit:</pre>
ERROR LU1:	LUN0: Aut	o size error (/mnt/VD01/extent0)
Apr 4 15:13:37	nas4free	<pre>istgt[19293]: istgt version xxxxxxxxxx (xxxxxxxx)</pre>
Apr 4 15:13:37	nas4free	<pre>istqt[19165]: istqt version xxxxxxxxxx) exiting</pre>

You must put in an approximate size. So do you remember earlier, when I asked you to note down the free space in the Status System Page?

	Disk space usage	VD01 0% of 7.25TB Total: 7.25T Used: 103K Free: 5.34T State: ONLINE
--	------------------	---

Here I have 5.34T which is 5.34 TB of free space, this is what we will present to the iSCSI Initiators as free space.

10- In "**File Size**" as it only accepts whole numbers and no Decimal points, enter the value as a whole number with the correct units attached. I cannot add 5.34TB so I added 5468GB (5.34 x 1024(number of GB in a TB), I might lose a tiny bit of space but for this document I will allow it.

Path	/mnt/VD01/extent0 File path (e.g. /mnt/sharename/extent/extent0) used as extent.
File size	5468 GiB Size offered to the initiator. (up to 8EiB=8388608TiB. actual size is depend on your disks.)

11- Add a comment, then click the "Save" Button

12- Click "Apply Changes" on the **Services**| **iSCSI Target** | **Target** page.

Last

update: 2016/02/19 documentation:howto:create_iscsi_target_from_zfs_volume http://wiki.nas4free.org/doku.php?id=documentation:howto:create_iscsi_target_from_zfs_volume 10:33

Services Settings	iSCSI	Farget Portals I	Target	Auths	Media			
(!)	The changes ha	ve been applie	ed successfully.					
Targets								
Extent	Name	Path			Size			
	extent0	/mnt/VD01/e	extent0		5468GiB			
	Extents mus	xtents cannot	be used more t	than once				+
Target	Name		Flags	LUNs	PG	IG	AG	
	At the higher	st level, a targ	jet is what is pr	esented t	o the initiator,	and is made up of	fone or more extents	÷.
Note: To configur Portal Grou Initiator Grou Auth Group defines aut	e the target, yo p which is ident oup which is ide which is identif horised users a	ou must add a ified by tag nu ntified by tag fied by tag nur	it least Portal G umber defines I number defines mber and is opt	roup and i P address s authoris ional if the	Initiator Group es and listenin ed initiator nar e target does i	and Extent. Ig TCP ports. Thes and networks. Not use CHAP auth	nentication	

Adding a Target

All that is left is to add a target.

Services	s iSCS	I Targe	t Target					
Settings	Targets	Portals	Initiators	Auths	Media			
Targets								
Extent	Name	Path		Size				
	Extents m	ust be define	d before they ca	n be used,	and extents	cannot be used	more than once.	+
Target	Name	Flags	LUNs	PG	IG		AG	
	At the hig	hest level, a t	target is what is p	presented	o the initiato	r, and is made u	p of one or more	extents.
Note: To configure Portal Group Initiator Group Auth Group defines aut	e the target p which is id oup which is which is ide horised user	;, you must ac entified by ta identified by ntified by tag 's and secrets	dd at least Portal g number define: tag number defir number and is o s for additional se	Group and s IP addres nes authori ptional if the curity. Ex	Initiator Gro ses and lister sed initiator n te target doe tent defines t	up and Extent. hing TCP ports. hames and netwo s not use CHAP the storage area	orks. authentication a of the target.	

1. Click the + to add a target.

17/18

Services iSC	SI Target Target Add
Settings Targe	ts Portals Initiators Auths Media
iSCSI Target	
Target Name	disk0 Base Name will be appended automatically when starting without 'iqn.'.
Target Alias	Optional user-friendly string of the target.
Туре	Disk Logical Unit Type mapped to LUN.
Flags	Read/Write (rw)
Portal Group	Tag1 The initiator can connect to the portals in specific Portal Group.
Initiator Group	Tag1 The initiator can access to the target via the portals by authorised initiator names and networks in specific Initiator Group.
Comment	You may enter a description here for your reference.
LUNO	
Storage	extent0 (/mnt/VD01/extent0) The storage area mapped to LUN0.
Advanced settings	
Auth Method	Auto
Auth Group	None The initiator can access to the target with correct user and secret in specific Auth Group.
Initial Digest	Auto The initial digest mode negotiated with the initiator.
Queue Depth	0 0=disabled, 1-255=enabled command queuing with specified depth. The recommended queue depth is 32.
Inquiry Vendor	You may specify as SCSI INQUIRY data. Empty as default. (up to 8 ASCII chars)
Inquiry Product	You may specify as SCSI INQUIRY data. Empty as default. (up to 16 ASCII chars)
Inquiry Revision	You may specify as SCSI INQUIRY data. Empty as default. (up to 4 ASCII chars)
Inquiry Serial	You may specify as SCSI INQUIRY data. Empty as default. (up to 16 ASCII chars)
Logical Block Length	5128 / block

- 1. Give it a Target Name if you want to, I called mime LUN0 or you can leave it as disk0.
- 2. Leave all settings at their defaults and click the "ADD" Button at the bottom.

services	iSCSI	Target Target						
Settings	Targets	Portals Initiators	Auths	Media				
(!) ^T	he configurat ou must apply	ion has been changed. / the changes in order for t	nem to take	effect.				
Apply ch	anges							
Targets								
Extent	Name	Path	Size					
	extent0	/mnt/VD01/extent0	5468GiB					4
	Extents mus	t be defined before they ca	an be used,	and extents cannot be used r	nore t	han or	nce.	*
Target	Extents mus	t be defined before they ca	an be used, Flags	and extents cannot be used r	nore t	han or	nce. AG	*
Target	Extents mus	t be defined before they ca 9.jp.ne.peach.istgt:LUN0	an be used, Flags rw	and extents cannot be used r LUNs LUN0=/mnt/VD01/extent0	nore ti PG	han or IG 1	AG none	*
Target	Extents mus	st be defined before they ca 19.jp.ne.peach.istgt:LUN0 est level, a target is what is	n be used, Flags rw presented t	and extents cannot be used r LUNs LUN0=/mnt/VD01/extent0 to the initiator, and is made up	PG 1	IG 1	AG none	♣ ₽¥ €ents.

1. Click the "Apply Changes" Button.

That is it! All that is left is connecting to the iSCSI Target. There is a wealth of information on this, so I will leave you to Google that one.

Cheers again.

References

YouTube: Preview of ZFS on FreeNAS 0.7 Server : Author - learnfreenas (Gary Sims)

Articles: Setting-Up iSCSI Drives Using FreeNAS : Posted by Oliver Hewitt

From: http://wiki.nas4free.org/ - Wiki NAS4Free

Permanent link: http://wiki.nas4free.org/doku.php?id=documentation:howto:create_iscsi_target_from_zfs_volume

Last update: 2016/02/19 10:33