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# Backing Up The FreeNAS Configuration File Nightly Using A Cron Job

This is entirely optional.

It is recommended that you have email notifications setup on the FreeNAS server before embarking on this subsection.

This is a guide for creating a Cron job to back-up the FreeNAS configuration file each night.

This file can be used for recovery purposes should your FreeNAS server encounter a problem of some sort (bloody ferrets!), so this is well worth doing.

### **Creating the Dataset**

The first thing to do is to create a dataset within which we can store the nightly backup of the FreeNAS configuration file. This will keep things neat and tidy.

Go to the "Storage" page.

ccount Syst	tem Tasks	Network	Storage	Directory	Sharing	Services	Plugins	Jails R	Reporting	Wizar
System										
nformation G	eneral Boot	Advanced	Email	System Dat	aset Tunable	s Update	CAs	Certificates	Support	
System Info Hostname		dit								
Build	FreeNAS-9.10-R	RELEASE (2def	∋c8)							
Platform	Intel(R) Xeon(R)	) CPU E5-2620	v3 @ 2.40	OGHz						
Memory	16248MB									
System Time										
Uptime										

Select "Tank1" or whatever you called the volume (1) by clicking on it (it should turn blue when selected).

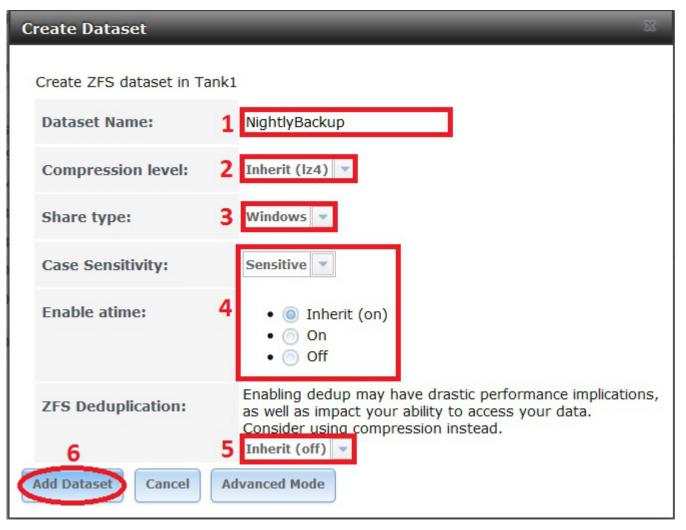
A series of buttons should appear on the bottom of the screen.

From these buttons click on one that creates a dataset (2).

Volume Manager Import Disk	Import Volume View Disks	
ame	Used	Available
Tank1 1	1.9 GiB (0%)	29.0 TiB
⊿ Tank1	1.4 GiB (0%)	20.0 TiB
Media	33.4 MiB (0%)	20.0 TiB
TestShare	33.4 MiB (0%)	20.0 TiB
⊿ jails	1013.3 MiB (0%)	20.0 TiB
jails/.warden-template- pluginjail	605.6 MiB (0%)	20.0 TiB
jails/plexmediaserver_1	407.4 MiB (0%)	20.0 TiB

A new smaller window will pop up for creating the dataset.

- In the "Dataset Name:" text box (1) give the share a name (because this is a backup dataset, Fester used **NightlyBackup**).
- Leave the "Compression level:" drop down selection box (2) set to Iz4.
- Set the "Share type:" to whatever suits the type of clients on your network (Fester has mainly Windows machines so I set this to **Windows**).
- Leave the "Case Sensitivity:" drop down selection box and "Enable atime:" at their default settings as shown (4).
- "ZFS Deduplication:" should be set to **off** in the drop down selection box (5) unless you understand this and you have plenty of memory.
- Now click the "Add Dataset" button (6).



The dataset will now be created and you should see something like this.

Storage       Volumes       Periodic Snapshot Ta	sks Replication Tasks Scrubs	Snapshots VMware-Snapshot
Volume Manager Import Disk	Import Volume View Disks	
Name	Used	Available
Tank1	1.9 GiB (0%)	29.0 TiB
▲ Tank1	1.4 GiB (0%)	20.0 TiB
Media	33.4 MiB (0%)	20.0 TiB
NightlyBackup	204.8 KiB (0%)	20.0 TiB
TestShare	33.4 MiB (0%)	20.0 TiB
⊿ jails	1013.3 MiB (0%)	20.0 TiB
jails/.warden-template- pluginjail	605.6 MiB (0%)	20.0 TiB
jails/plexmediaserver_1	407.5 MiB (0%)	20.0 TiB

Remain on this screen and select the newly created dataset (1) if it is not selected already (in Fester's case this was NightlyBackup).

Now click on the change permissions button (2).

me		Used	Available	
Tank1		1.9 GiB (0%)	29.0 TiB	
Tank1		1.4 GiB (0%)	20.0 TiB	
Media 1		33.4 MiB (0%)	20.0 TiB	
Nightly	Backup	204.8 KiB (0%)	20.0 TiB	
TestSh	are	33.4 MiB (0%)	20.0 TiB	
⊿ jails		1013.3 MiB (0%)	20.0 TiB	
jails/. plugir	warden-template- njail	605.6 MiB (0%)	20.0 TiB	
jails/p	plexmediaserver_1	407.5 MiB (0%)	20.0 TiB	

A new window will pop up for changing the permissions of the new dataset.

I did not need to change any of the settings from their default value (1).

Now click the "Change" button (2).

Do not set the user and group to any of those you use for shares. This would be unwise. Only the **root** user and **wheel** group should be allowed to access this particular share.

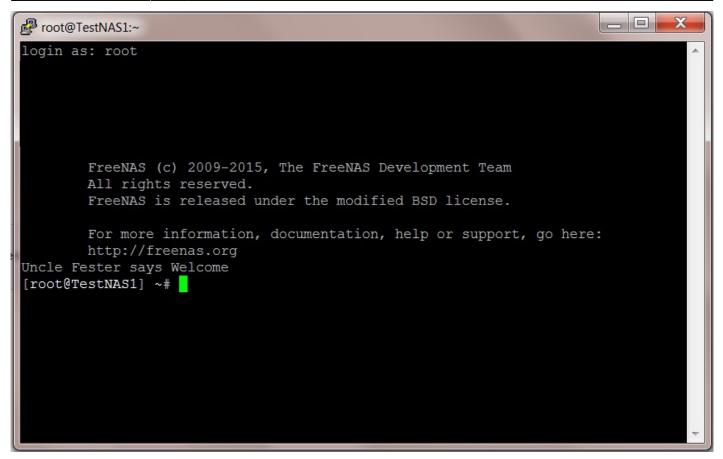
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Change permission	•
Change permission on /mnt/Ta	ank1/NightlyBackup to:
Apply Owner (user):	
Owner (user):	root
Apply Owner (group):	
Owner (group):	wheel
Apply Mode:	
Mode:	Owner Group Other Read I I I I I I I I I I I I I I I I I I I
Permission Type:	<ul> <li>O Unix</li> <li>Mac</li> <li>Windows</li> </ul>
Set permission recursively:	
Change Cancel	

### **Creating the Script**

We now need to create a file in the volume directory (in Fester's case this is Tank1).

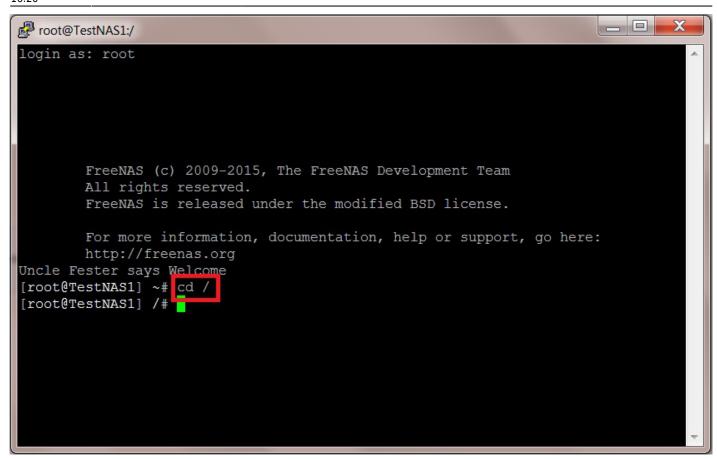
Open up an SSH session in PuTTY and log in as the root user. You should see a screen something like this.



We now need to navigate to the volume directory by typing in the following command into the command prompt. Don't forget to hit the "Return/Enter" key to execute the command.

cd /

You should now see a screen something like this.

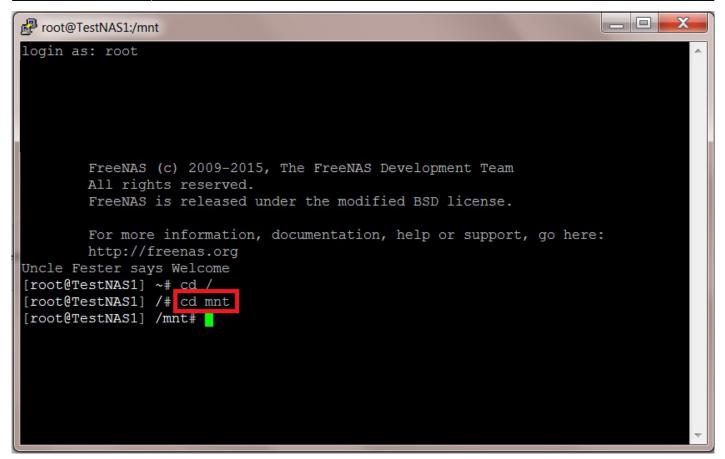


Now type into the command prompt the following command.

cd mnt

You should see a screen something like this.

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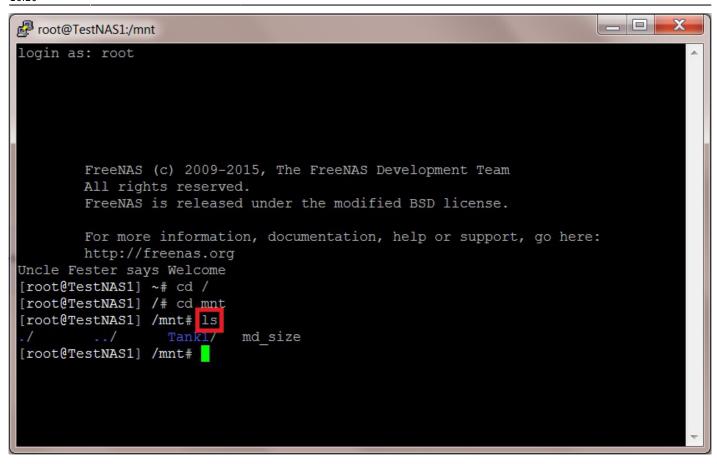


Now type in the following command at the command prompt to see your volume's name.

#### ls

You should see a screen that looks something like this.

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The name of the volume will be revealed at this point (in Fester's case it is the blue text "Tank1").

Now type into the command prompt the following command with your volume name. The volume name is case sensitive so make sure you observe this when typing in the command.

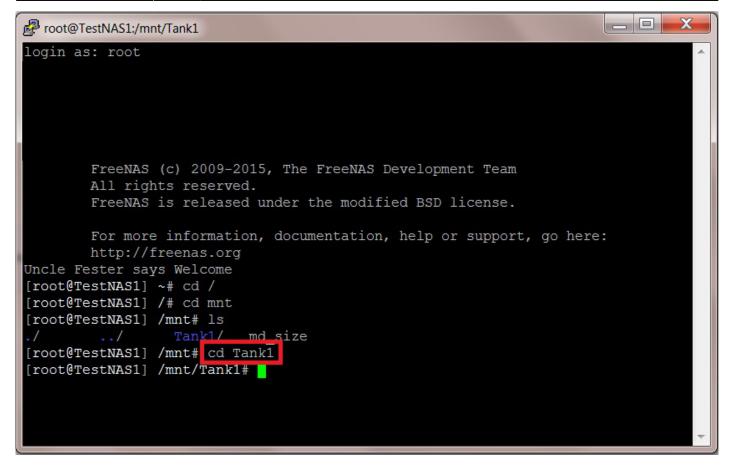
#### cd YourVolumeNameHere

In Fester's case the command would look like this:

#### cd Tank1

You should see a screen like this.

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We now need create an empty file in this directory. You can call this file anything you like but remember its name as you will need it later.

At the command prompt type the following command (1).

touch YourFileNameHere.sh

In Fester's case the command looked like this.

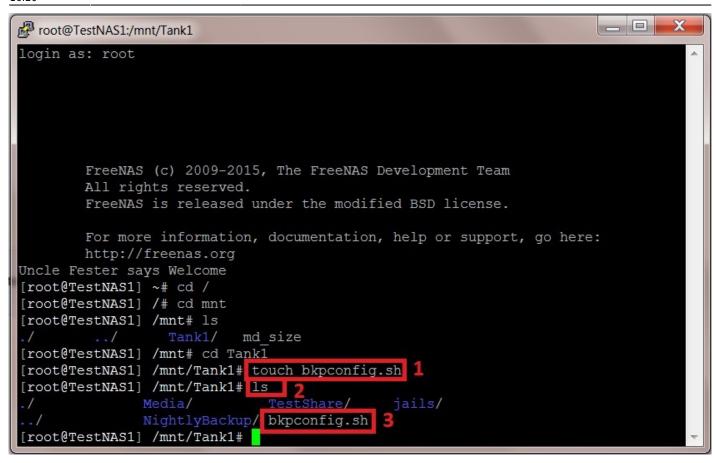
touch bkpconfig.sh

Now type in the following command to confirm the file was created (2).

ls

If all has gone well you should see the file listed in the SSH window (3).

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We now need to edit the file. At the command prompt type in the following command.

#### edit YourFileNameHere.sh

In Fester's case this command would look like this.

#### edit bkpconfig.sh

If all goes well you should see a screen like this.

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Proot@TestNAS1:/mnt/Tank1	
<pre>^[ (escape) menu ^y search prompt ^k delete line ^o ascii code</pre>	<pre>^n next li</pre>
file "bkpconfig.sh", 1 lines	

We now need to put in the text line that will run each evening when the Cron Job is activated.

Type into the edit window the following line of text (this is all one line).

cp /data/freenas-v1.db /mnt/YourVolumeNameHere/YourDatasetNameHere/`date
+%Y%m%d`.db

So in Fester's case this command would look like this.

cp /data/freenas-v1.db /mnt/Tank1/NightlyBackup/`date +%Y%m%d`.db

If you want the FreeNAS version tagged on to the backup file names then use this command instead. This is all one one line; do not press the Enter key to insert a line break:

```
cp /data/freenas-v1.db /mnt/YourVolumeNameHere/YourDatasetNameHere
/.scripts/ConfigBackups/`date %Y%m%d`_`cat /etc/version | cut -d'-' -f2`_`cat
/etc/version | cut -d'-' -f4`.db
```

(Please note the "`" character is not an apostrophe. This character on my keyboard is found at the top left hand side under the "Esc" key. Your keyboard may be different.)

When you are done the edit screen should look something like this.

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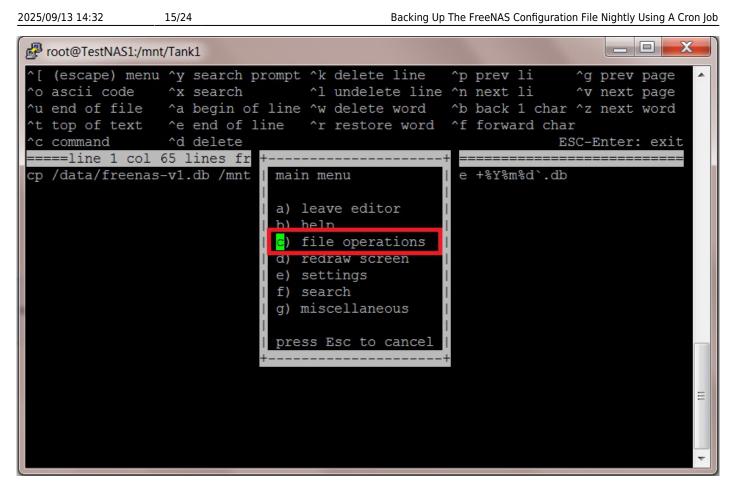
fester:additional\_configbackup https://familybrown.org/dokuwiki/doku.php?id=fester:additional\_configbackup&rev=1498321213

Proot@TestNAS1:/mn	t/Tank1			
<pre>^o ascii code ^u end of file ^t top of text ^c command</pre>	<pre>^y search prompt ^x search ^a begin of line ^e end of line ^d delete char 65 lines from top</pre>	<pre>^l undelete line ^w delete word ^r restore word ^j undelete char</pre>	^n next li ^b back 1 char ^f forward char	^v next page ^z next word
	-v1.db /mnt/Tank1/		ate +%Y%m%d`.db	
				4

Now hit the "Esc" key.

You should be presented with a series of options at this point.

Press the "c" key or navigate to the c option using the " $\uparrow \downarrow$ " keys and press the "Return/Enter" key.



Now press the "c" key again or navigate to the c option using the " $\uparrow \downarrow$ " keys and press the "Return/Enter" key.

Last update: 2017/06/24 fester:additional\_configbackup https://familybrown.org/dokuwiki/doku.php?id=fester:additional\_configbackup&rev=1498321213 16:20

Proot@TestNAS1:/mnt/Tank1	
<pre>^[ (escape) menu ^y search prompt ^k delete line ^p prev li ^o o ascii code ^x search ^l undelete line ^n next li ^o ^u end of file ^a begin of line ^w delete word ^b back 1 char ^: ^t top of text ^e end of line ^r restore word ^f forward char ^c command ^d delete ESC =====line 1 col 65 lines cp /data/freenas-v1.db /m file menu a) read a file b) write a file b) write a file c) save file d) print editor contents press Esc to cancel the second se</pre>	7 next page

The text line in the editor will now be saved to the file.

Press the "Esc" key again.

Now press the "a" key or navigate to the a option and press the "Return/Enter" key.

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Backing Up The FreeNAS Configuration File Nightly Using A Cron Job

Proot@TestNAS1:/mnt/Tank1	
<pre>^[ (escape) menu ^y search prompt ^k delete line ^p pr ^o ascii code ^x search ^l undelete line ^n ne ^u end of file ^a begin of line ^w delete word ^b ba ^t top of text ^e end of line ^r restore word ^f fo ^c command ^d delete</pre>	ext li ^v next page ack 1 char ^z next word
<pre>====line 1 col 65 lines fr cp /data/freenas-v1.db /mnt a) leave editor b) nelp c) file operations d) redraw screen e) settings f) search g) miscellaneous press Esc to cancel</pre>	łY%m%d`.db
	II

This will take you out of the editor and return the command prompt.

You should see a screen something like this.

Last update: 2017/06/24 fester:additional\_configbackup https://familybrown.org/dokuwiki/doku.php?id=fester:additional\_configbackup&rev=1498321213 16:20

Proot@TestNAS1:/m	nt/Tank1			_ <b>_ X</b>
<pre>^o ascii code ^u end of file ^t top of text ^c command =====line 1 col</pre>	^x search ^a begin of line ^e end of line ^d delete	^w delete word ^r restore word	ESC-Er	
[root@TestNAS1]	/mnt/Tank1#			H III

Now type the following command to leave the SSH console.

exit

### **Creating the Cron Job**

Now go to the FreeNAS GUI and log in if needed.

Go to the "Tasks" page.

25/09/13 14:32	19/24				Backing	Up The Free	eNAS Configu	uration File	e Nightly Using	A Cron J
Account Syste		Network	Storage	Directory	(Sharing	Services	Plugins	Jails	Reporting	<b>S</b> Wizard
System										
Information Ger	neral Boot	Advanced	Email	System Dat	aset Tunab	es Updat	e CAs	Certific	ates Support	
Hostname Build	FreeNAS-9.10-RE		f9c8)							
Build	FreeNAS-9.10-RE	ELEASE (2de	f9c8)							
Platform	Intel(R) Xeon(R)	CPU E5-2620	0 v3 @ 2.40	GHz						
Memory	16248MB									
System Time										
Protocol Martin										
Uptime										

Click on the "Cron Jobs" button (1) if it is not selected already.

Now click on the "Add Cron Job" button (2).

Tasks				
Cron Jobs I	nit/Shutdown Scripts	Rsync Tasks S.M.A.R.	T. Tests	
Add Cours July	2			
Add Cron Job	24			
Add Cron Job				
User	Command	Short description	Minute	

A new window will pop up that should allow you to configure the Cron job.

In the "User:" drop down selection box (1) chose root as the user.

In the "Command:" text box (2) type in the following command.

sh /mnt/YourVolumeNameHere/bkpconfig.sh

So in Fester's case this would look like this.

sh /mnt/Tank1/bkpconfig.sh

In the "Short description:" text box (3) give the Cron job a meaningful name.

Fester wants this Cron job to run every day, of every month at midnight (if you run this Cron job at midnight while repeating a special incantation that only certain SysAdmin's know it will give your FreeNAS system the ability emulate a Sinclair ZX Spectrum when there is a full moon!).

To run the Cron job every day at midnight set the "Each selected minute" setting of the "Minute:" section to 00 (4).

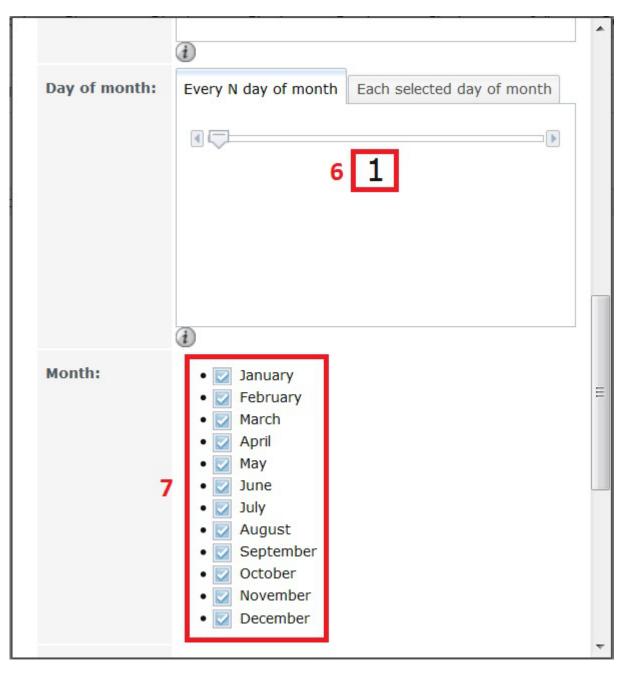
Set the "Each selected hour" of the "Hour:" section to 00 (5).

User:	root	*
Command:	sh /mnt/Tank1/bkpconfig.sh	
Short description:	Nightly backup of config file.	III
Minute:	Every N minute       Each selected minute         00       01       02       03       04       05       06       07       08         09       10       11       12       13       14       15       16       17         18       19       20       21       22       23       24       25       26       =         27       28       29       30       31       32       33       34       35         36       37       38       39       40       41       42       43       44         45       46       47       48       49       50       51       52       53       T	
Hour:	Every N hour       Each selected hour         00       01       02       03       04       05       06       07       08         09       10       11       12       13       14       15       16       17         18       19       20       21       22       23	4

Now scroll down.

In the "Every N day of month" setting of the "Day of month:" section set this to 1 (6).

Put a tick next to every month in the "Month:" section (7).

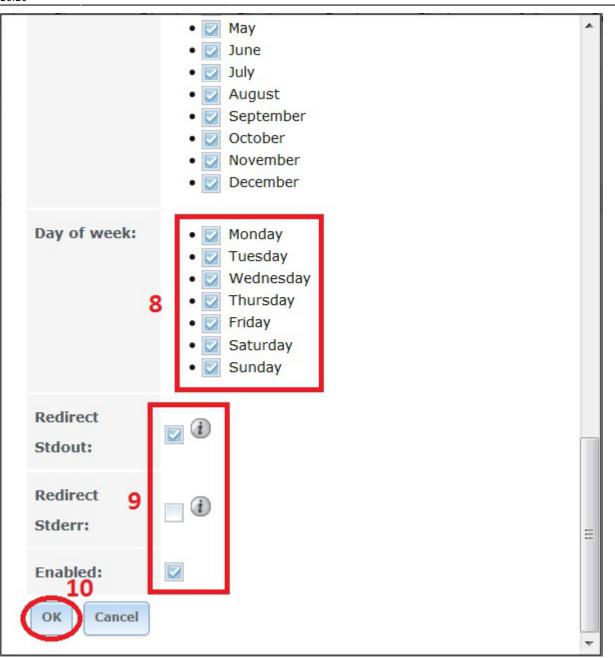


Now scroll down.

Put a tick next to every day in the "Day of week:" section (8).

Fester leaves the "Redirect Stdout:" and "Redirect Stderr:" at their default values as I don't know what they do. The "Enabled:" tick box needs to be ticked (9).

Now click the "OK" button (10).



If all goes well you should see an entry for the newly created Cron job. It should look something like this.

Tasks							
Cron Jobs I	nit/Shutdown Scripts R	sync Tasks S.M.A.R.	T. Tests				
Add Cron Job							
	_						
	_						
User	Command	Short description	Minute	Hour	Day of month	Month	Day of week

### **Testing the Cron Job**

We now need to test that the Cron job actually works.

Select the newly created Cron job by clicking on it (it will turn blue when selected) (1).

Now click the "Run Now" button (2).

If this worked then a file should have been created in the dataset you made for this (in Fester's case this was the "NightlyBackup" data set). We now need to go and check the file was created.

Open up an SSH session in PuTTY and log in as the root user. You should see a screen something like this.

We now need to navigate to the dataset you created to hold the nightly backups by typing in the following command into the command prompt. Don't forget to hit the "Return/Enter" key to execute the command.

cd /

You should now see a screen something like this.

Now type into the command prompt the following command.

cd mnt

You should see a screen something like this.

Now type in the following command at the command prompt to see your volume's name.

ls

You should see a screen that looks something like this.

The name of the volume will be revealed at this point (in Fester's case it is the blue text "Tank1").

Now type into the command prompt the following command with your volume name. The volume name is case sensitive so make sure you observe this when typing in the command.

cd YourVolumeNameHere

In Fester's case the command would look like this.

cd Tank1

You should see a screen like this.

Now type in the following command at the command prompt to see your dataset's name.

ls

You should see a screen that looks something like this.

The name of the dataset will be revealed at this point (in Fester's case it is the blue text "NightlyBackup").

Now type into the command prompt the following command with your dataset name. The dataset name is case sensitive so make sure you observe this when typing in the command.

cd YourDatasetNameHere

In Fester's case the command would look like this.

cd NightlyBackup

You should see a screen like this.

Now type in the following command at the command prompt.

ls

You should see a screen showing a file with the date for its name starting with the year, then the month and then the day. If you get something that resembles the following then it has worked.

So the "20160517.db" file in the screen shot was created on the 17/05/2016.

That's the nightly backup of the FreeNAS configuration file done.

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