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Fester's Very Basic One User/One Dataset Experimental Starter Share

Fester is still learning about shares and in particular share permissions.

As Fester learns more I will try to pass on what I have learned by adding to this section and creating additional guides for more “real world” share scenarios (if time permits).

This particular share will not be much use to most people, but it will get you going.

Don't forget the official FreeNAS guide has lots of information on shares. But for now, this will be a very basic share on a FreeNAS system and is designed to get you started so you can experiment with shares.

Share Scenario

This share is designed for one user who wants to access the same share from different client machines.

The client machines will mostly be running Windows (or Mac OS X).

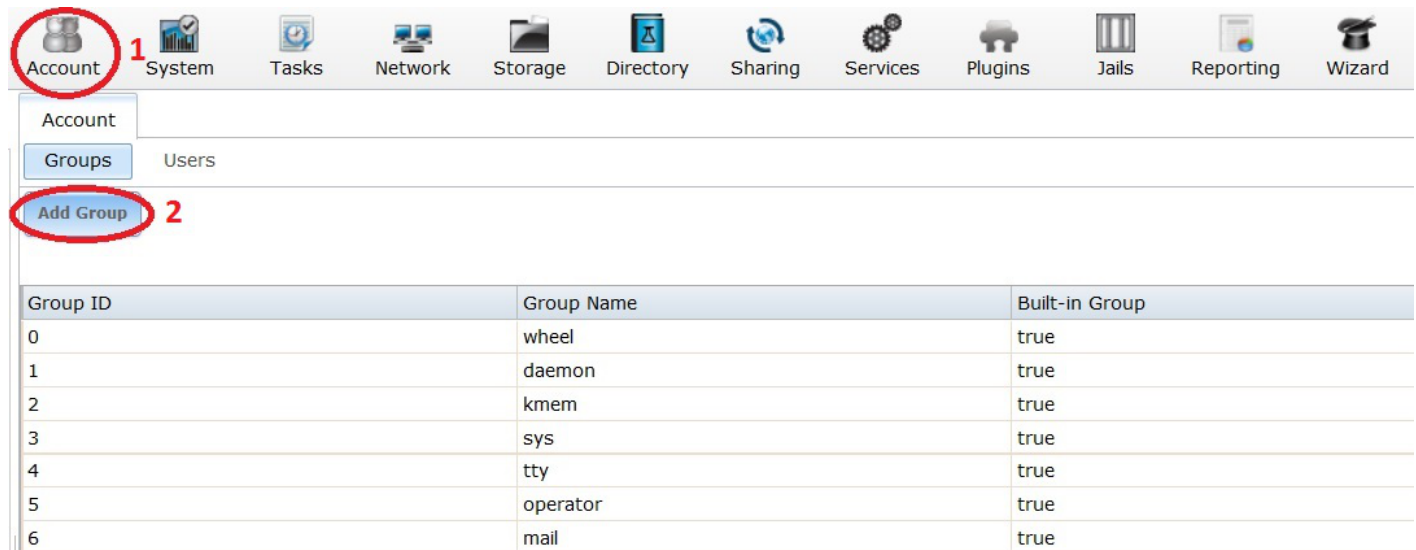
It will utilise one dataset and show you how to share it.

It is designed to get you started with shares so that you can experiment.

Share Creation and Configuration

User Creation

Go to the “Accounts” page (1) and click the “Add Group” button (2).



The screenshot shows the DokuWiki interface. At the top, there is a navigation bar with icons for various functions: Account, System, Tasks, Network, Storage, Directory, Sharing, Services, Plugins, Jails, Reporting, and Wizard. The 'Account' icon is circled in red and labeled with a red '1'. Below the navigation bar, there is a sub-menu with 'Account', 'Groups', and 'Users'. The 'Groups' tab is selected. Below the 'Groups' tab, there is a button labeled 'Add Group' which is circled in red and labeled with a red '2'. Below the 'Add Group' button, there is a table with three columns: 'Group ID', 'Group Name', and 'Built-in Group'.

Group ID	Group Name	Built-in Group
0	wheel	true
1	daemon	true
2	kmem	true
3	sys	true
4	tty	true
5	operator	true
6	mail	true

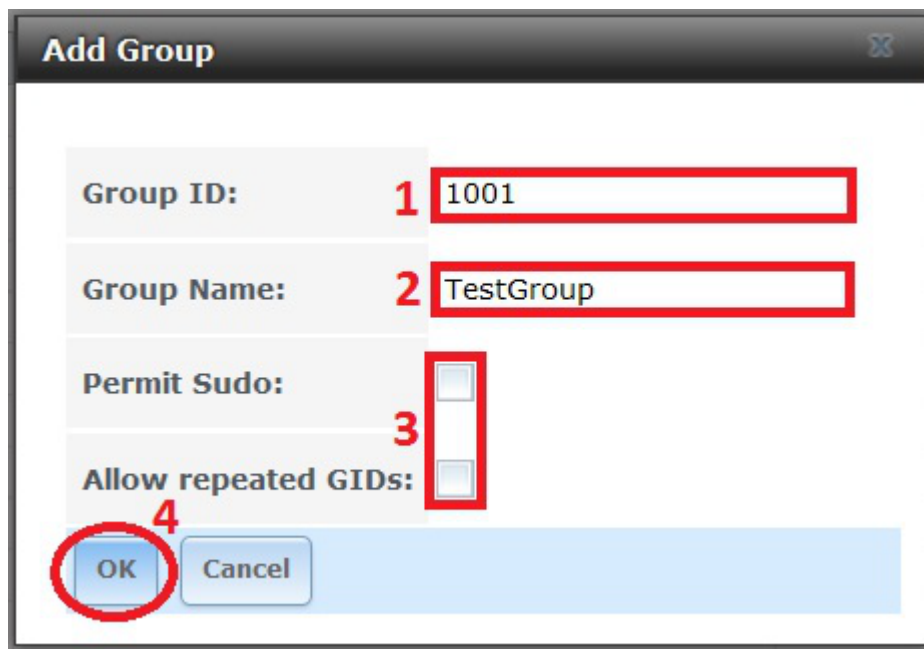
A new smaller window will pop up. Here we can create a new Group.

Leave the "Group ID:" at its default value of **1001** (1).

Now type in a name for the new group in the "Group Name:" text box (2) (because this is a starter share from which you can experiment, Fester used **TestGroup**).

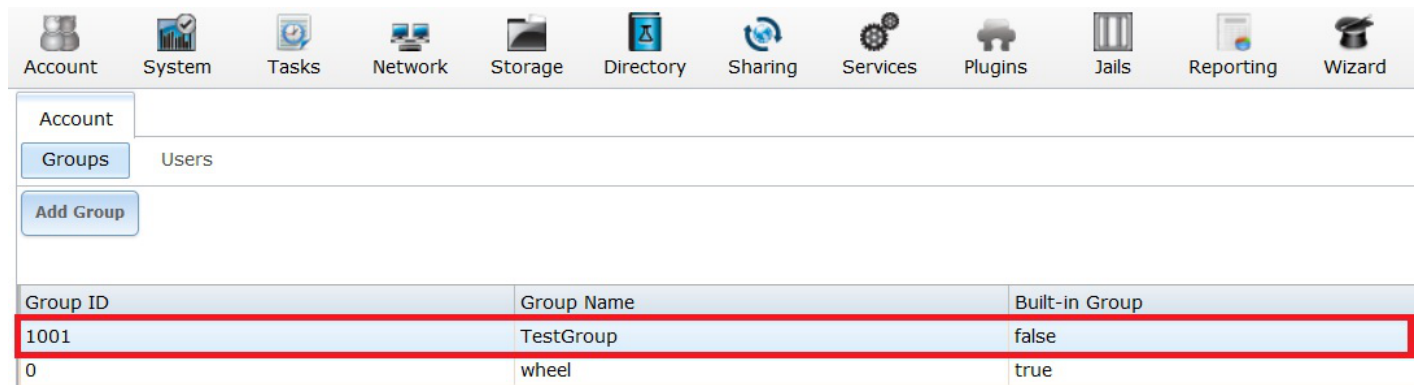
Do not tick the "Permit Sudo:" or "Allow repeated GIDs:" tick boxes (3).

Now click the "OK" button (4).



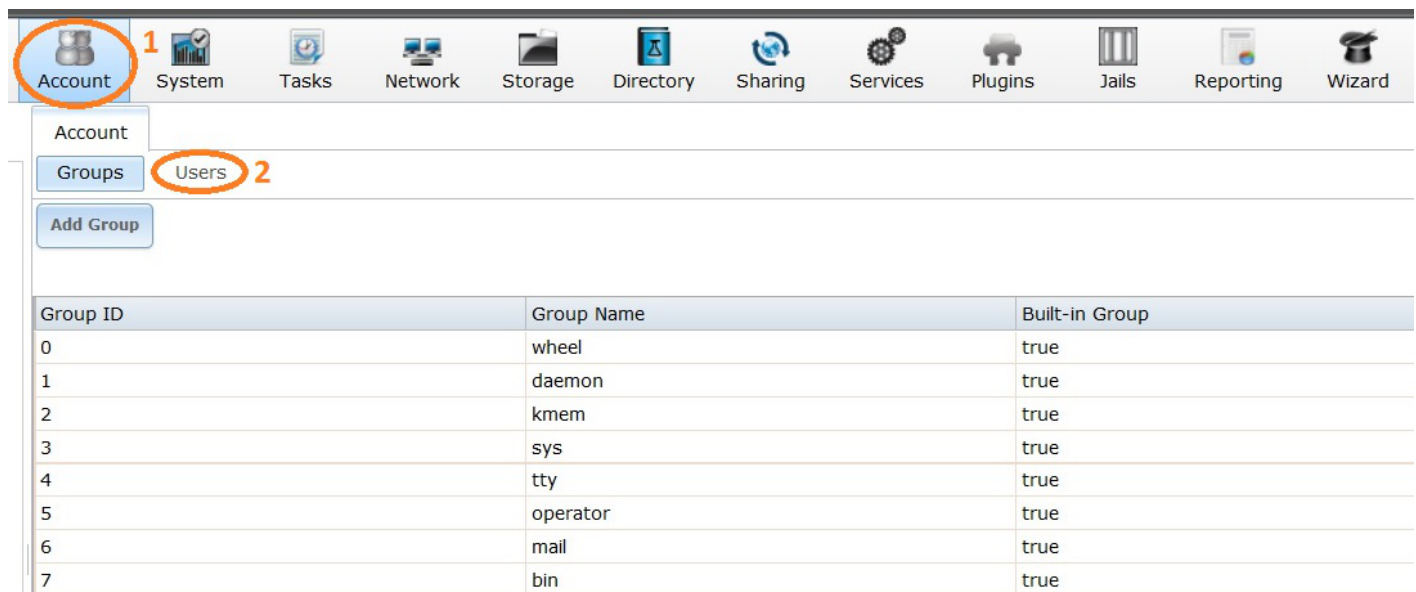
The screenshot shows the 'Add Group' dialog box. It has a title bar with the text 'Add Group' and a close button. Inside the dialog, there are four input fields and two buttons. The first field is 'Group ID:' with the value '1001' and is labeled with a red '1'. The second field is 'Group Name:' with the value 'TestGroup' and is labeled with a red '2'. The third field is 'Permit Sudo:' with an unchecked checkbox and is labeled with a red '3'. The fourth field is 'Allow repeated GIDs:' with an unchecked checkbox and is labeled with a red '3'. At the bottom, there are two buttons: 'OK' and 'Cancel'. The 'OK' button is circled in red and labeled with a red '4'.

If all goes well an entry should appear in the Account → Groups page. You should see something like this.



Group ID	Group Name	Built-in Group
1001	TestGroup	false
0	wheel	true

Now go to the “Accounts” page (1) and click the “Users” button (2).



Group ID	Group Name	Built-in Group
0	wheel	true
1	daemon	true
2	kmem	true
3	sys	true
4	tty	true
5	operator	true
6	mail	true
7	bin	true

A new window will pop up. Here we can create a new User.

Leave the “User ID:” at its default value of **1001** (1).

Now type in a name for the new user in the “Username:” text box (2) (because this is a starter share from which you can experiment, Fester used **TestUser**).

Untick the “Create a new primary group for the user:” tick box (3).

The “Primary Group:” drop down selection box (4) should now become active. The group we created earlier (i.e. TestGroup) should be available for selection.

Leave the “Create Home Directory In:” text box at the default **/nonexistent** (5).

Leave “Shell:” at its default setting (6).

Type in a name for the new user (7) (Fester chose **Test User**).

Create a password in the “Password:” text box and confirm it by retyping it in the “Password Confirmation:” text box (8) (because this is a starter share to experiment with Fester just used **test**).

Make sure you use a stronger and less predictable password when you create your real/final share(s).

Now scroll down.

The screenshot shows a web form titled "Add User". It contains several input fields and checkboxes. Red boxes with numbers 1 through 8 are placed over the following fields:

- 1: User ID: 1001
- 2: Username: TestUser
- 3: Create a new primary group for the user: ☐
- 4: Primary Group: TestGroup (dropdown menu)
- 5: Create Home Directory In: /nonexistent (text field) with a "Browse" button to its right.
- 6: Shell: csh (dropdown menu)
- 7: Full Name: Test User
- 8: Password and Password confirmation fields, both containing masked text (dots).

Other visible fields include "E-mail:" (empty), "Disable password login:" (checkbox), and "Lock user:" (checkbox). Information icons (i) are present next to the "Password confirmation:" and "Disable password login:" fields.

Do not tick the "Disable password login:" you will lock yourself out of the share.

Leave the "Lock user:" and "Permit Sudo:" at their default settings of unticked (9).

Fester will be accessing this account from a windows machine so I tick the "Microsoft Account:" tick box (10).

Now click the "OK" button (11).

The screenshot shows a user configuration dialog box with the following fields and options:

- E-mail:** Text input field.
- Password:** Password input field (masked with dots).
- Password confirmation:** Password input field (masked with dots) with an information icon.
- Disable password login:** Checkable option with an information icon.
- Lock user:** Checkable option, highlighted with a red box and labeled **9**.
- Permit Sudo:** Checkable option.
- Microsoft Account:** Checkable option, highlighted with a red box and labeled **10**.
- SSH Public Key:** Text input field.
- Auxiliary groups:** Group selection interface with "Available" and "Selected" lists. The "Available" list contains: TestGroup, _dhcp, _pflogd, audit, authpf, and avahi.
- Buttons:** "OK", "Cancel", and "Advanced Mode". The "OK" button is highlighted with a red circle and labeled **11**.

Dataset Creation

Now we need to create the dataset.

Go to the "Storage" page.

The screenshot shows the FreeNAS web interface. At the top, there is a navigation bar with icons for Account, System, Tasks, Network, Storage (highlighted with a red circle), Directory, Sharing, Services, Plugins, Jails, Reporting, and Wizard. Below this, the 'System' menu is expanded, showing sub-menus: Information (selected), General, Boot, Advanced, Email, System Dataset, Tunables, Update, CAs, Certificates, and Support. The main content area displays 'System Information' with a table of system details:

Hostname	[REDACTED]	Edit
Build	FreeNAS-9.10-RELEASE (2def9c8)	
Platform	Intel(R) Xeon(R) CPU E5-2620 v3 @ 2.40GHz	
Memory	16248MB	
System Time	[REDACTED]	
Uptime	[REDACTED]	
Load Average	0.00, 0.06, 0.13	

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 the one that creates a dataset (2).

Storage

Volumes Periodic Snapshot Tasks Replication Tasks Scrubs Snapshots VMware-Snapshot

Volume Manager Import Disk Import Volume View Disks

Name	Used	Available
▲ Tank1	443.0 MiB (0%)	29.0 TiB
▲ Tank1	312.0 MiB (0%)	20.0 TiB
jails	204.8 KiB (0%)	20.0 TiB

2 Create Dataset

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 starter share from which you can experiment, Fester used **TestShare**).

Leave the “Compression level:” drop down selection box (2) set to lz4.

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).

Create Dataset

Create ZFS dataset in Tank1

Dataset Name:

1 TestShare

Compression level:

2 Inherit (lz4)

Share type:

3 Windows

Case Sensitivity:

Sensitive

Enable atime:

4

- ☒ Inherit (on)
- ☐ On
- ☐ Off

ZFS Deduplication:

5 Inherit (off)

Enabling dedup may have drastic performance implications, as well as impact your ability to access your data. Consider using compression instead.

6 Add Dataset

Cancel

Advanced Mode

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

Storage			
Volumes	Periodic Snapshot Tasks	Replication Tasks	Scrubs Snapshots VMware-Snapshot
Volume Manager	Import Disk	Import Volume	View Disks
Name	Used	Available	Compression
▲ Tank1	443.7 MiB (0%)	29.0 TiB	-
▲ Tank1	312.3 MiB (0%)	20.0 TiB	lz4
TestShare	204.8 KiB (0%)	20.0 TiB	inherit (lz4)
jails	204.8 KiB (0%)	20.0 TiB	inherit (lz4)

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

Now click on the change permissions button (2).

Storage

Volumes Periodic Snapshot Tasks Replication Tasks Scrubs Snapshots VMware-Snapshot

Volume Manager Import Disk Import Volume View Disks

Name	Used	Available	Compression
▲ Tank1	443.7 MiB (0%)	29.0 TiB	-
▲ Tank1 1	312.3 MiB (0%)	20.0 TiB	lz4
TestShare	204.8 KiB (0%)	20.0 TiB	inherit (lz4)
jails	204.8 KiB (0%)	20.0 TiB	inherit (lz4)

2

Change Permissions

Key Laptop Server Rack Wrench Server Rack Server Rack

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

Leave the “Apply Owner (user):” tick box (1) at its default setting (with a tick).

In the “Owner (user):” drop down selection box (2) select the new user you created a moment ago (in Fester’s case this was TestUser).

Leave the “Apply Owner (group):” tick box (3) at its default setting (with a tick).

In the “Owner (group):” drop down selection box (4) select the new group you created a moment ago (in Fester’s case this was TestGroup).

Leave the “Apply Mode:” tick box (5) at its default setting (with a tick).

If you have chosen “Windows” as the Permission Type then the “Mode:” tick boxes (6) will be greyed out so you can not alter them. FreeNAS will prevent you from making alterations here and is correct to do so. This is because if you did you could break the share.

Set the “Permission Type:” radio button (7) to match the clients on your network (Fester has mostly Windows machines so I set this to **Windows**).

Put a tick in the “Set permission recursively:” tick box (8).

Now click the “Change” button (9).

The screenshot shows a 'Change permission' dialog box for the path /mnt/Tank1/TestShare. It contains several fields and checkboxes, with red boxes and numbers 1 through 9 highlighting specific elements:

- 1**: Checkmark for 'Apply Owner (user):'
- 2**: 'Owner (user):' dropdown menu showing 'TestUser'
- 3**: Checkmark for 'Apply Owner (group):'
- 4**: 'Owner (group):' dropdown menu showing 'TestGroup'
- 5**: Checkmark for 'Apply Mode:'
- 6**: Permission table for 'Mode:'
- 7**: 'Permission Type:' radio buttons for Unix, Mac, and Windows (Windows is selected)
- 8**: Checkmark for 'Set permission recursively:'
- 9**: 'Change' button

	Owner	Group	Other
Read	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Write	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Execute	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Permission Type:

- ☒ Unix
- ☐ Mac
- ☒ Windows

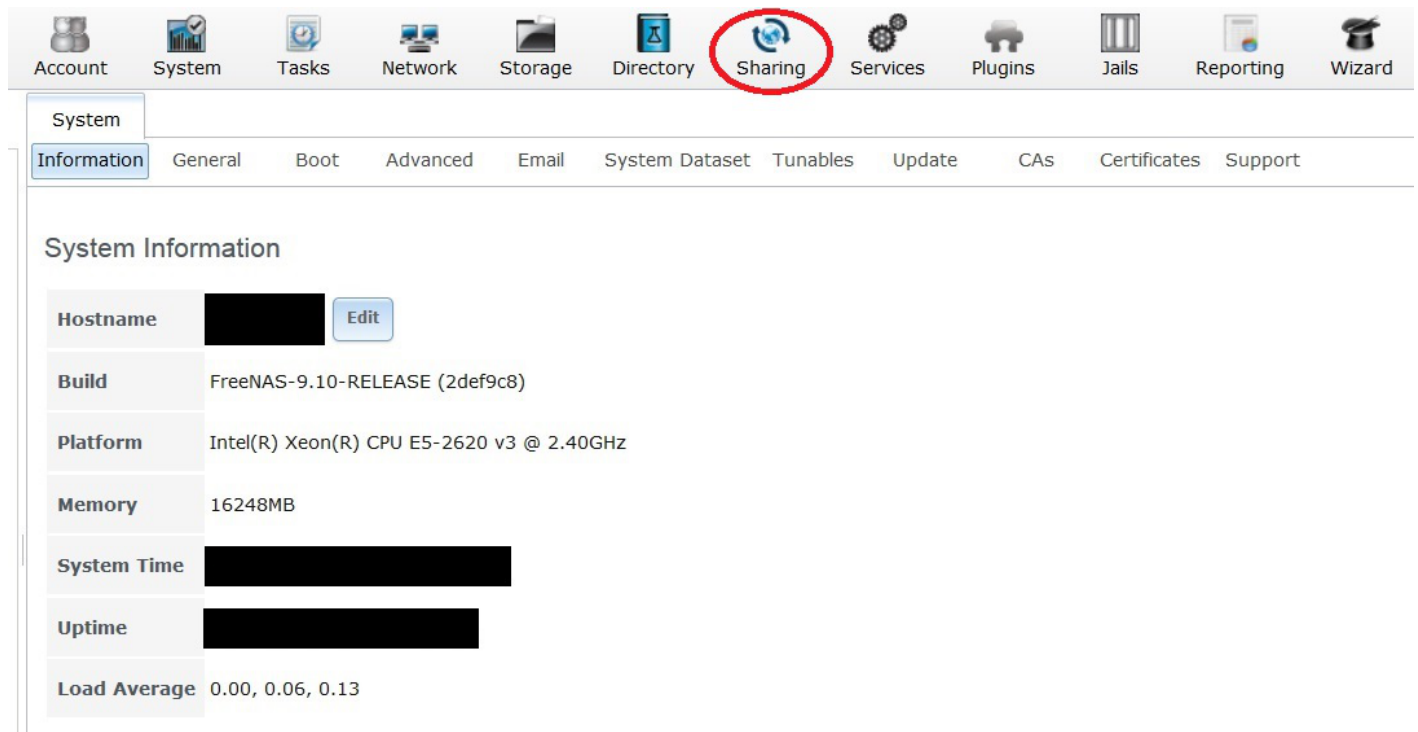
Set permission recursively: ☒

Change Cancel

Share Creation

Now we need to create a CIFS share. On a network that utilises predominately Windows clients this is a good choice.

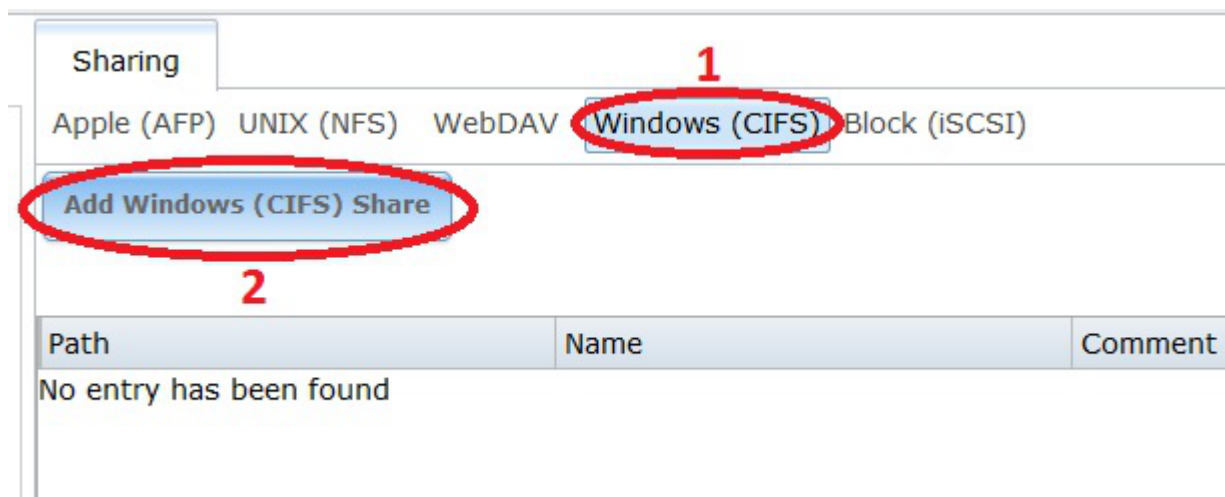
Go to the “Sharing” page.



The screenshot shows the FreeNAS web interface. The top navigation bar includes icons for Account, System, Tasks, Network, Storage, Directory, Sharing (circled in red), Services, Plugins, Jails, Reporting, and Wizard. The left sidebar has a 'System' menu with 'Information' selected. The main content area is titled 'System Information' and displays various system details in a table-like format.

Hostname	[REDACTED]	Edit
Build	FreeNAS-9.10-RELEASE (2def9c8)	
Platform	Intel(R) Xeon(R) CPU E5-2620 v3 @ 2.40GHz	
Memory	16248MB	
System Time	[REDACTED]	
Uptime	[REDACTED]	
Load Average	0.00, 0.06, 0.13	

Now click the “Windows (CIFS)” button (1) and then click the “Add Windows (CIFS) Share” button (2).

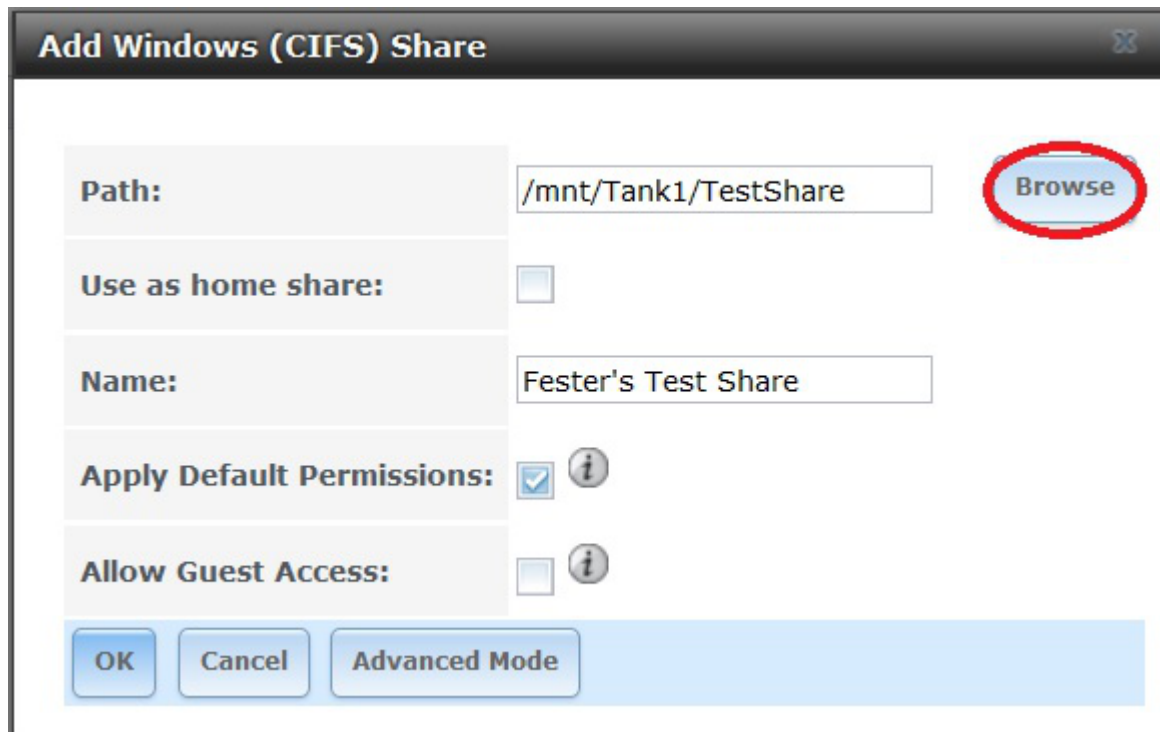


The screenshot shows the 'Sharing' section of the FreeNAS web interface. It features a horizontal list of sharing protocols: Apple (AFP), UNIX (NFS), WebDAV, Windows (CIFS) (circled in red and labeled with a red '1'), and Block (iSCSI). Below this list is a button labeled 'Add Windows (CIFS) Share' (circled in red and labeled with a red '2'). At the bottom, there is a table with columns 'Path', 'Name', and 'Comment', which currently contains the text 'No entry has been found'.

Path	Name	Comment
No entry has been found		

A new smaller window will pop up.

In the “Path:” section click the “Browse” button.





Add Windows (CIFS) Share

Path: **Browse**

Use as home share: ☐

Name:

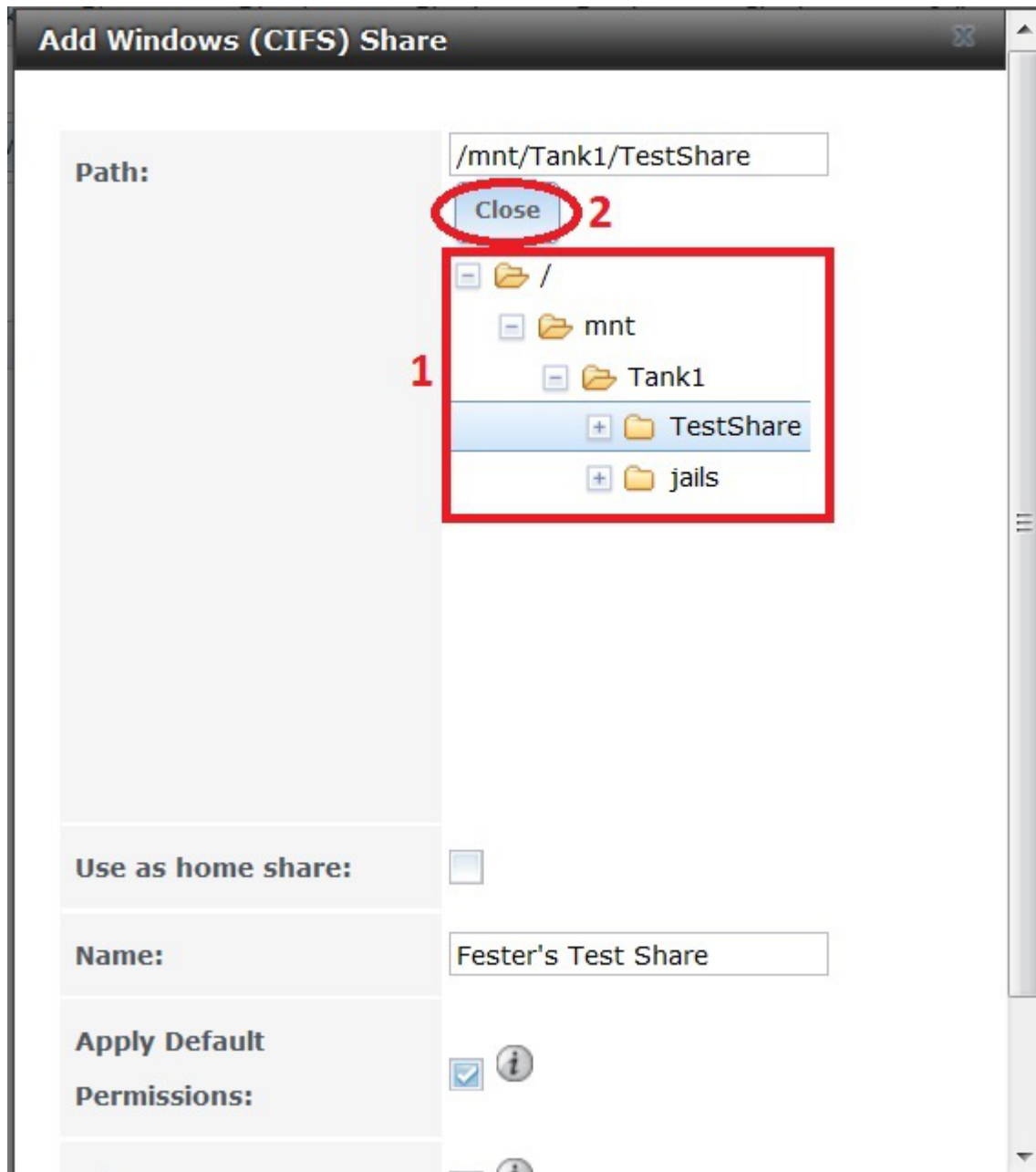
Apply Default Permissions: ☒ 

Allow Guest Access: ☐ 

OK **Cancel** **Advanced Mode**

The window should now expand a little and allow you to navigate to the newly created dataset (1).

When you have it selected click the “Close” button (2).



The "Path:" text box (1) should now display the chosen dataset.

Do not tick the "Use as home share:" tick box (2) at the moment.

Give the share a name in the "Name:" text box (3).

Put a tick in the "Apply Default Permissions:" tick box (4) if a tick is not present.

Do not tick the "Allow Guest Access:" tick box (5).

Now click the "OK" button (6).

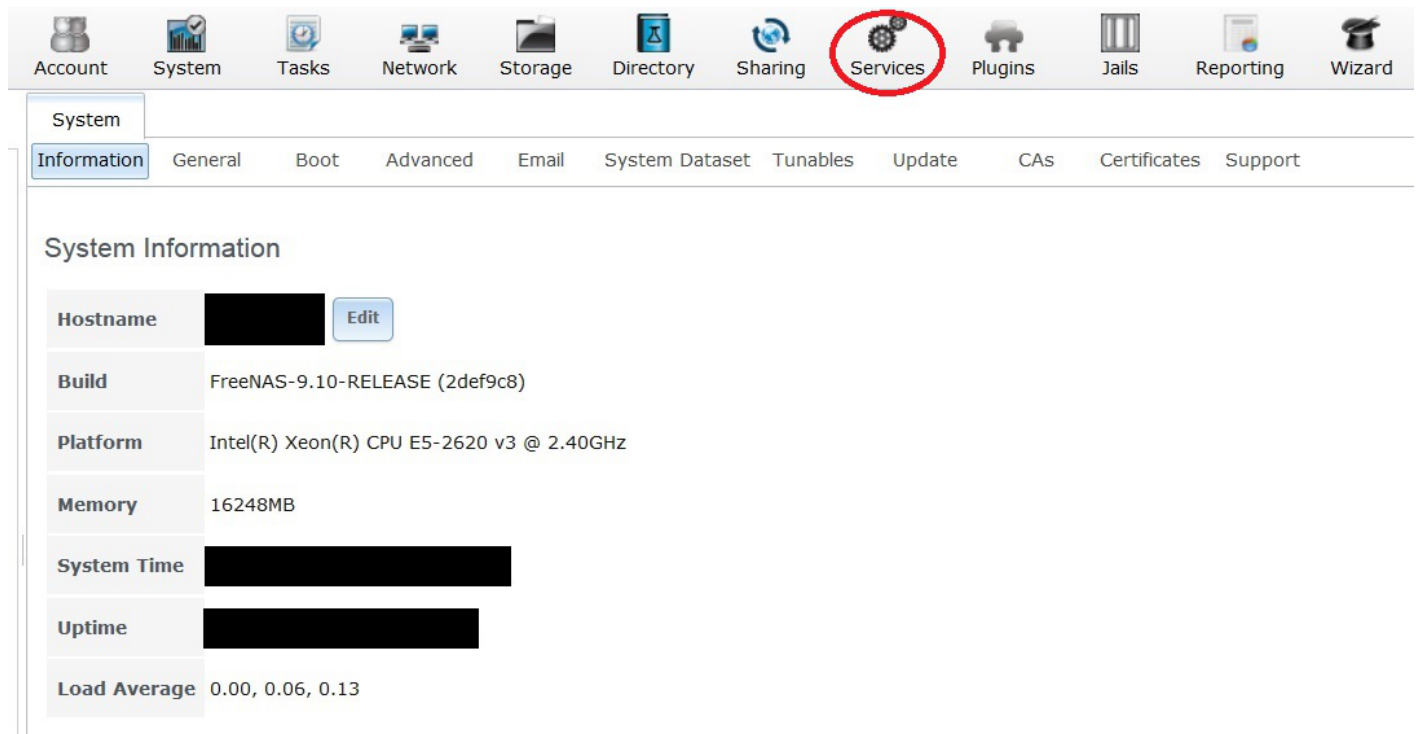
If all goes well you will see the newly created CIFS share entry (1).

You will now be asked if you wish to enable the CIFS share service.

Click the “No” button (2).

CIFS/SMB Configuration

Now go to the “Services” page.



Click on the little spanner next to the “CIFS” service (1).

A new window will pop up.

The NetBIOS name will already be present in the “NetBIOS Name:” text box (2).

In the “Workgroup” text box (3) type in the name of the workgroup you want to use on the client machines (Fester used **T ESTWORKGROUP** because it is an experimental starter share). If you don’t know your Workgroup then skip to the relevant section on how to do this.

Type in a good name for the CIFS share in the “Description:” text box (4).

Do not alter the default values of the “DOS charset:”, the “Unix charset:” and the “Log level:” (5).

Leave the “Use syslog only:” (6) at its default (no tick).

Make sure the “Local Master:” tick box (7) is ticked.

Leave “Domain logons:” (8) unticked.

Leave “Time Server for Domain:” (9) ticked.

Leave “Guest account:” (10) at **nobody**.

Services

- AFP: OFF
- CIFS: OFF** (1)
- Domain Controller: OFF
- Dynamic DNS: OFF
- FTP: OFF
- iSCSI: OFF
- LLDP: OFF
- NFS: OFF
- Rsync: OFF
- S.M.A.R.T.: ON
- SNMP: OFF
- SSH: ON
- TFTP: OFF
- UPS: OFF
- WebDAV: OFF

CIFS Settings

NetBIOS name: 2 TestNAS1

Workgroup: 3 TESTWORKGROUP

Description: 4 Fester's Server Share

DOS charset: CP437

UNIX charset: 5 UTF-8

Log level: Minimum

Use syslog only: 6 ☐

Local Master: 7 ☒

Domain logons: 8 ☐

Time Server for Domain: 9 ☒

Guest account: 10 nobody

Do not put anything in the “File mask:” and “Directory mask:” text boxes (11) unless you really understand UNIX permissions (Fester can’t help you here).

Do not tick the “Allow Empty Password:” tick box (12) as this weakens the security of the share.

Leave the “Unix Extensions:” and “Zeroconf share discovery:” tick boxes (13) as they are.

Untick the “Hostnames lookups:” tick box (14) otherwise you will keep getting a name mismatch error.

Set the “Server maximum protocol:” (15) to SMB2.

Leave the “Allow execute always:” tick box (16) in its default setting (with a tick).

The screenshot shows a Samba configuration window with the following settings highlighted:

- File mask:** (11) - A text input field.
- Directory mask:** (11) - A text input field.
- Allow Empty Password:** (12) - A checkbox that is unchecked.
- Auxiliary parameters:** - A large text area.
- Unix Extensions:** (13) - A checkbox that is checked.
- Zeroconf share discovery:** (13) - A checkbox that is checked.
- Hostnames lookups:** (14) - A checkbox that is unchecked.
- Server minimum protocol:** - A dropdown menu showing "-----".
- Server maximum protocol:** (15) - A dropdown menu showing "SMB2".
- Allow execute always:** (16) - A checkbox that is checked.

Fester has no idea what the "Obey pam restrictions:" setting (17) actually does. I just leave it ticked, but I have no idea how it should be set.

Don't tick any of the IP address text boxes (18) in the "Bind IP Addresses:" section.

The "Idmap Range Low:" and "Idmap Range High:" settings (19) Fester does not touch as I don't know what they do.

Now click on the "OK" button (20).

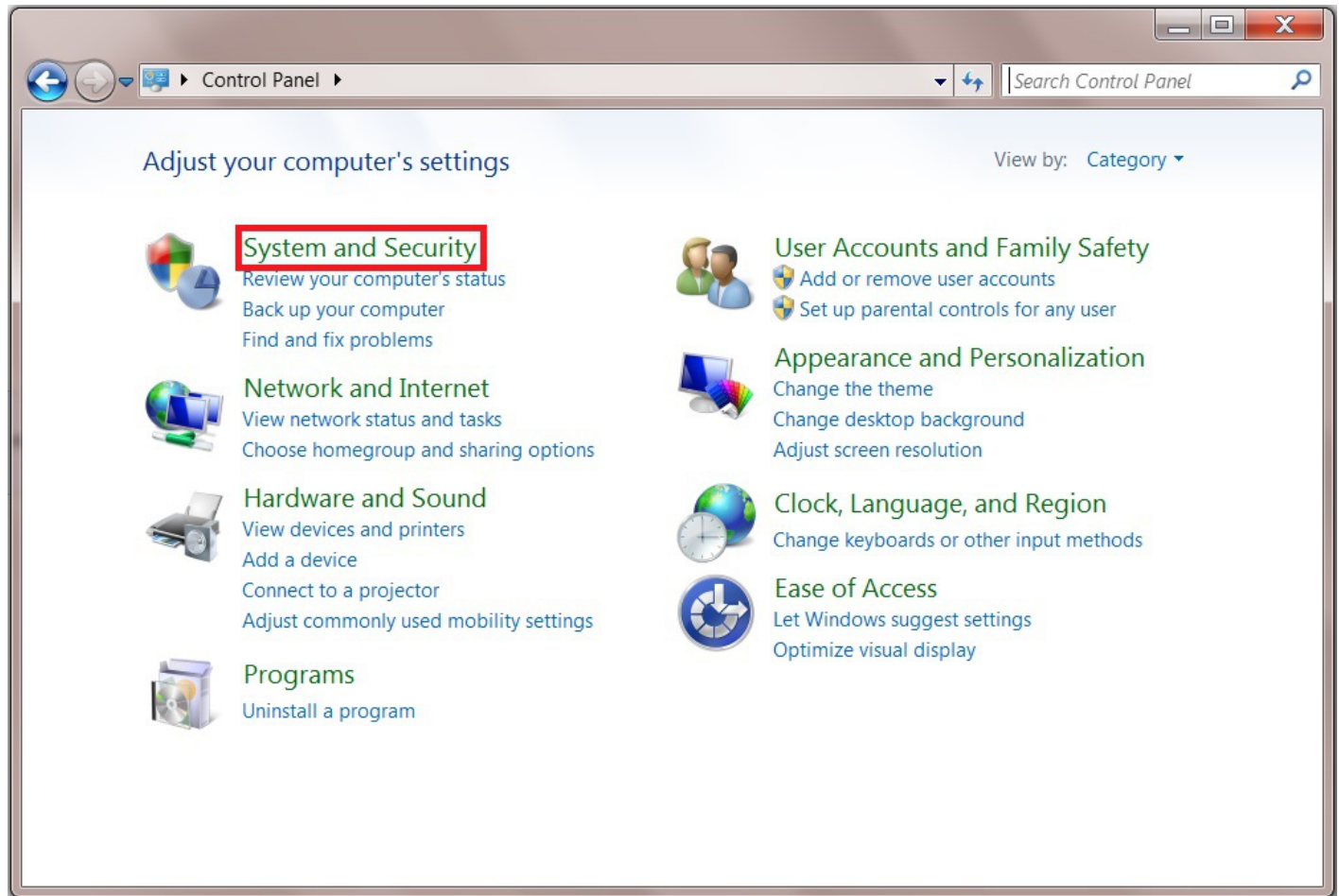
The screenshot shows the Samba configuration window with the following settings and annotations:

- discovery:** ☒ (Annotation: 17)
- Hostnames lookups:** ☐ (Annotation: 18)
- Server minimum protocol:** [-----] (Annotation: 18)
- Server maximum protocol:** [SMB2] (Annotation: 18)
- Allow execute always:** ☒ (Annotation: 17)
- Obey pam restrictions:** ☒ (Annotation: 17)
- Bind IP Addresses:**
 - ☐ 192.168.0.5
 - ☐ 192.168.0.6
 - ☐ 192.168.0.7
 - ☐ 192.168.0.8 (Annotation: 18)
- Idmap Range Low:** [90,000,001] (Annotation: 19)
- Idmap Range High:** [100,000,000] (Annotation: 19)
- Buttons:** [OK] [Cancel] (Annotation: 20)

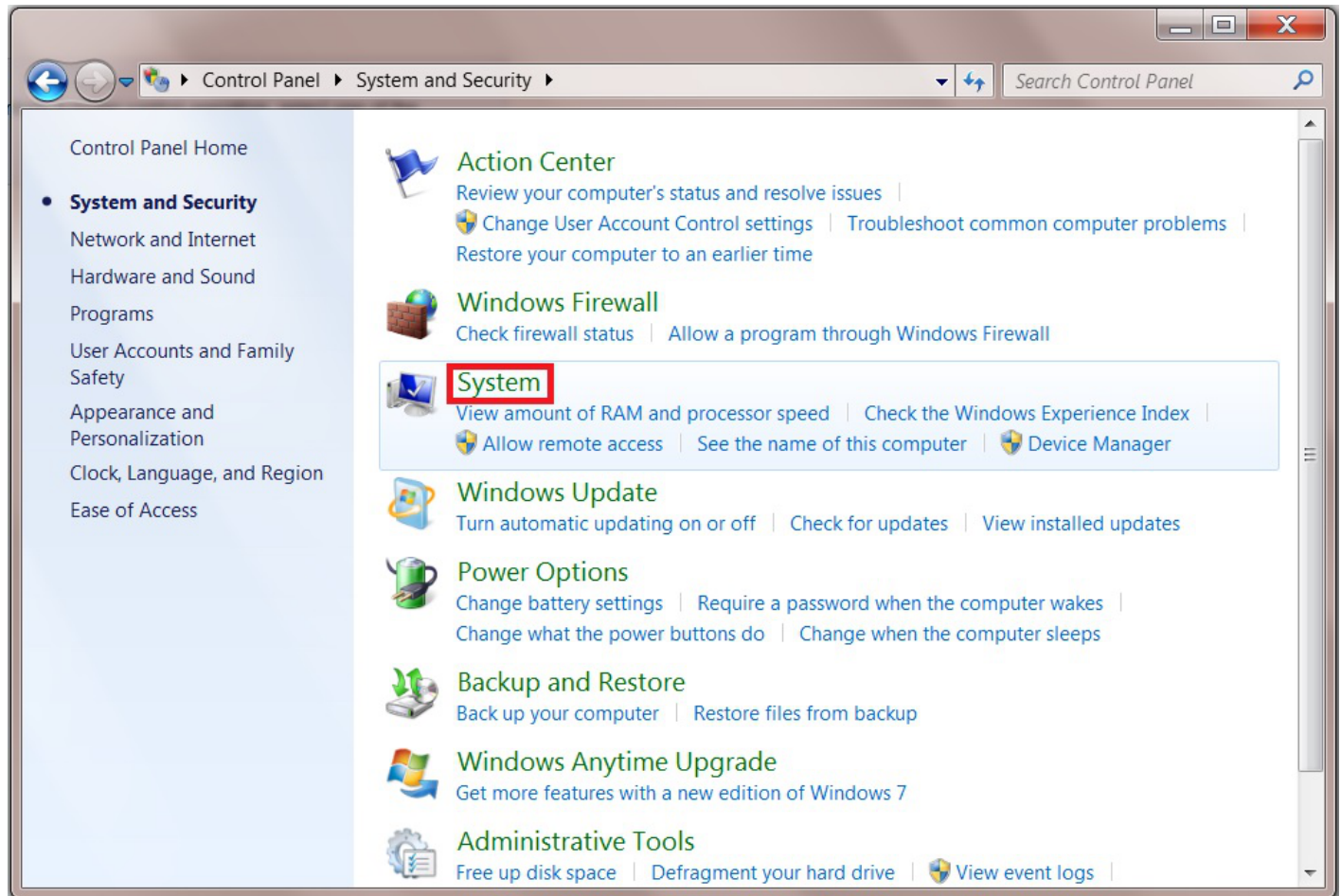
Do not turn on the CIFS share service yet. We first need to check if the Workgroup on the Windows client is set correctly.

Windows Client Configuration

Click on the “Start” button and go into the “Control Panel” in Windows and select “System and Security” (this was on a Windows 7 machine).



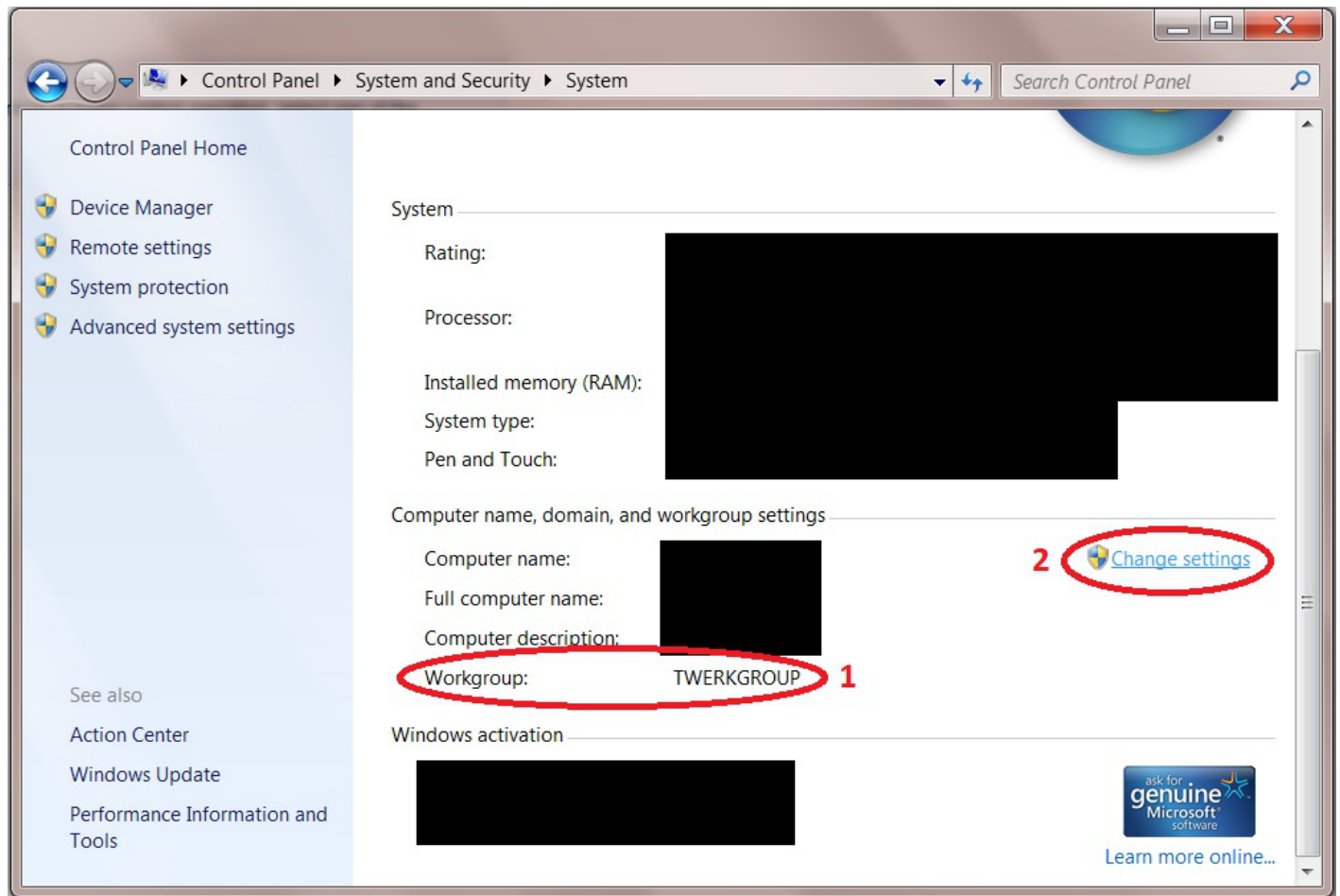
Now click on "System".



In the “System” page we can see the Workgroup is set to **TWERKGROUP** (1). This must be changed to match the Workgroup name you created in the CIFS settings a moment ago (in Fester’s case this was TESTWORKGROUP).

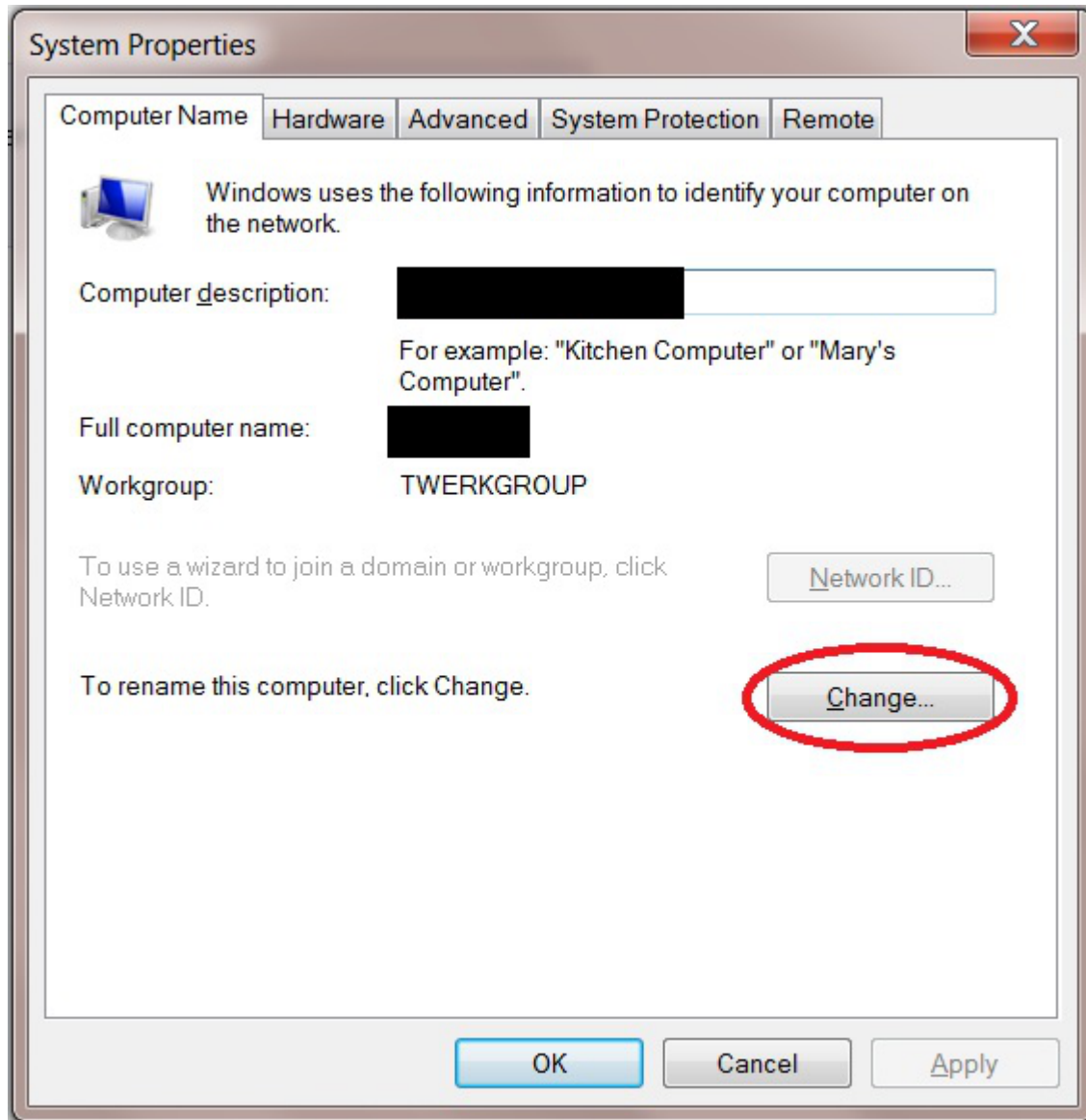
Click on “Change settings” blue text (2) to access the screen where we can change the Workgroup name.

You will probably be asked for the administrator’s password at this point.



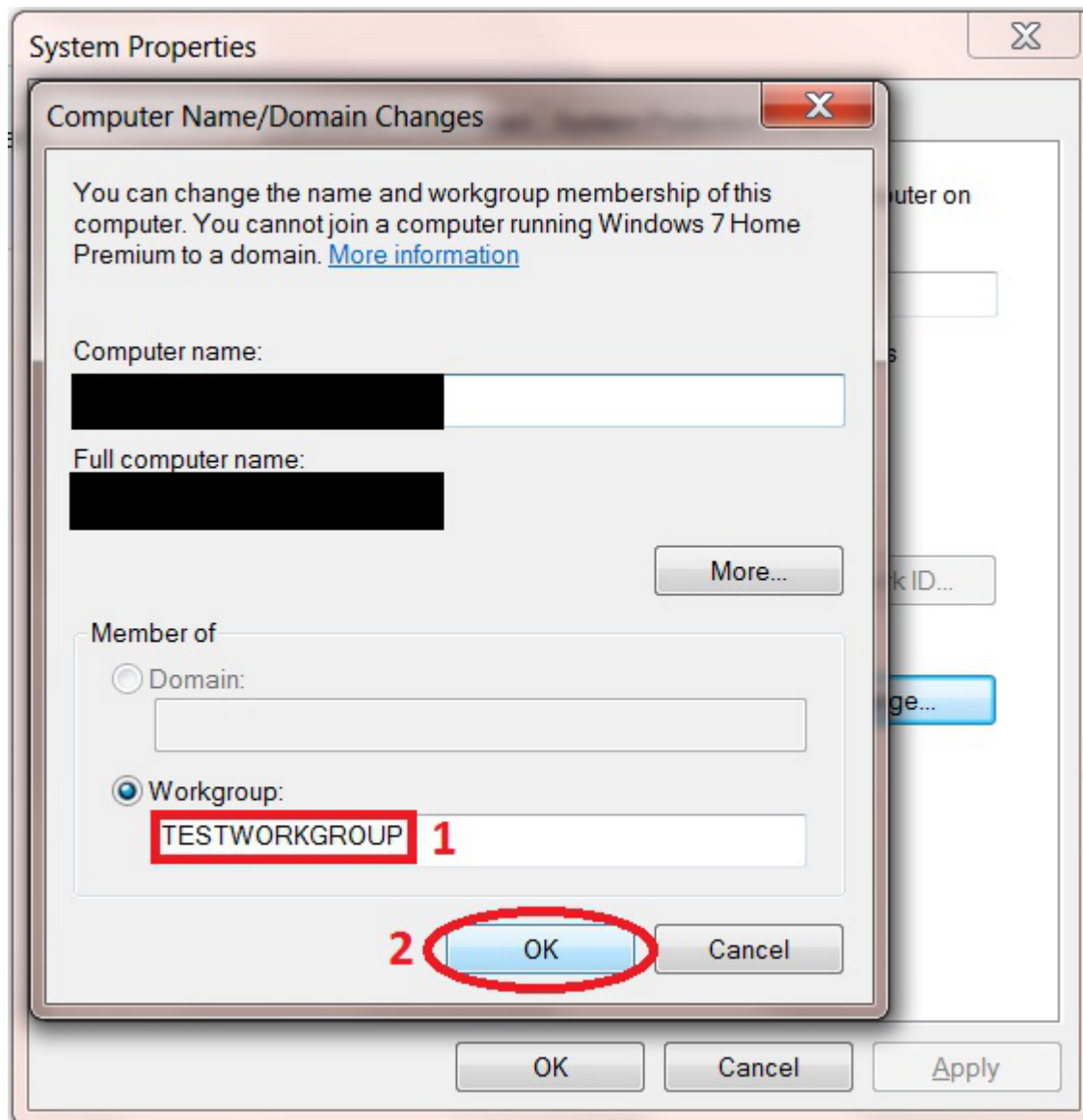
A smaller window will now pop up.

Click on the "Change" button.



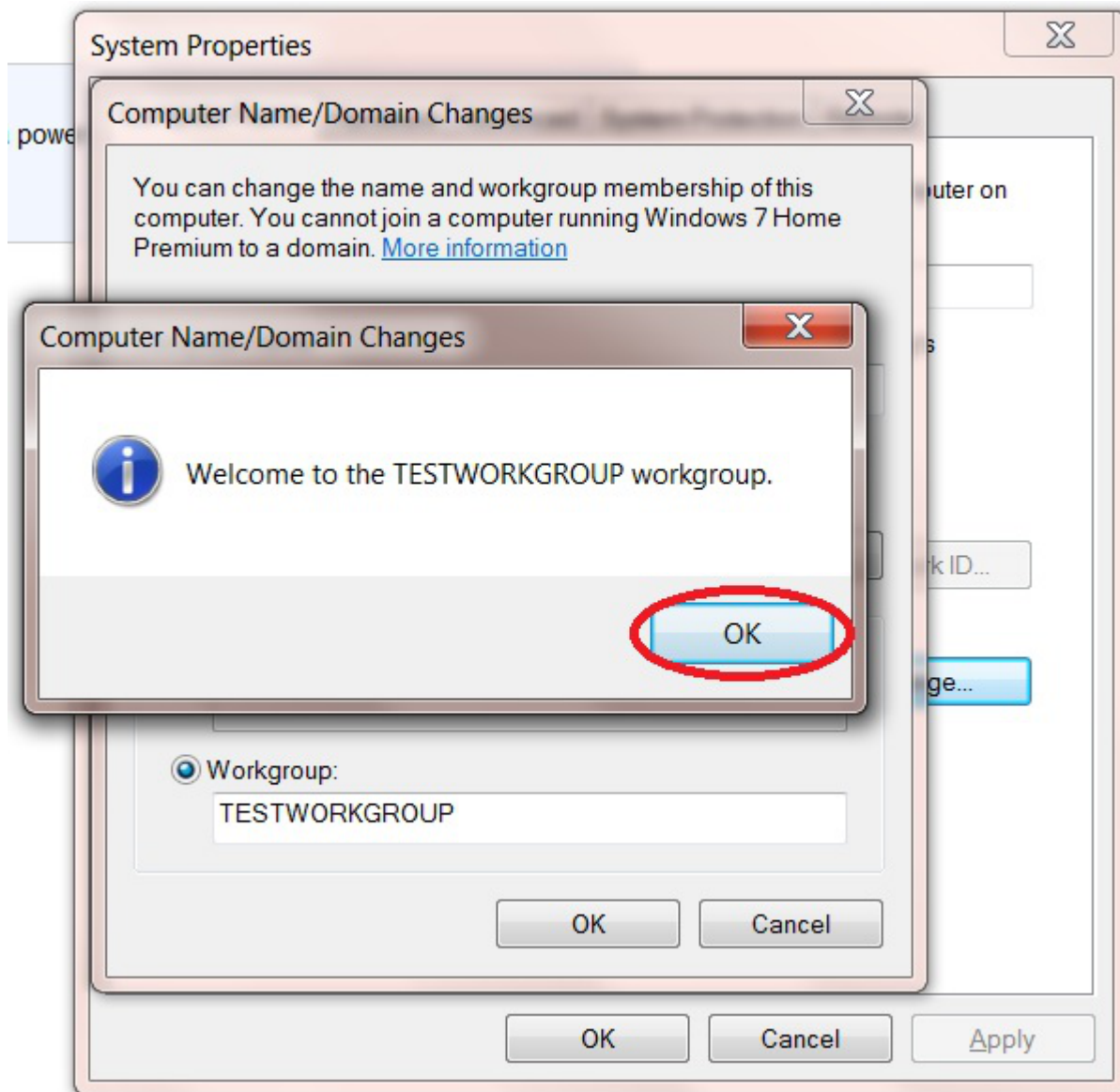
Another window will now pop up.

Change the text in the Workgroup text box (1) to the one you created in the CIFS settings page (in Fester's case this was **TESTWORKGROUP**) and click the "OK" button (2).



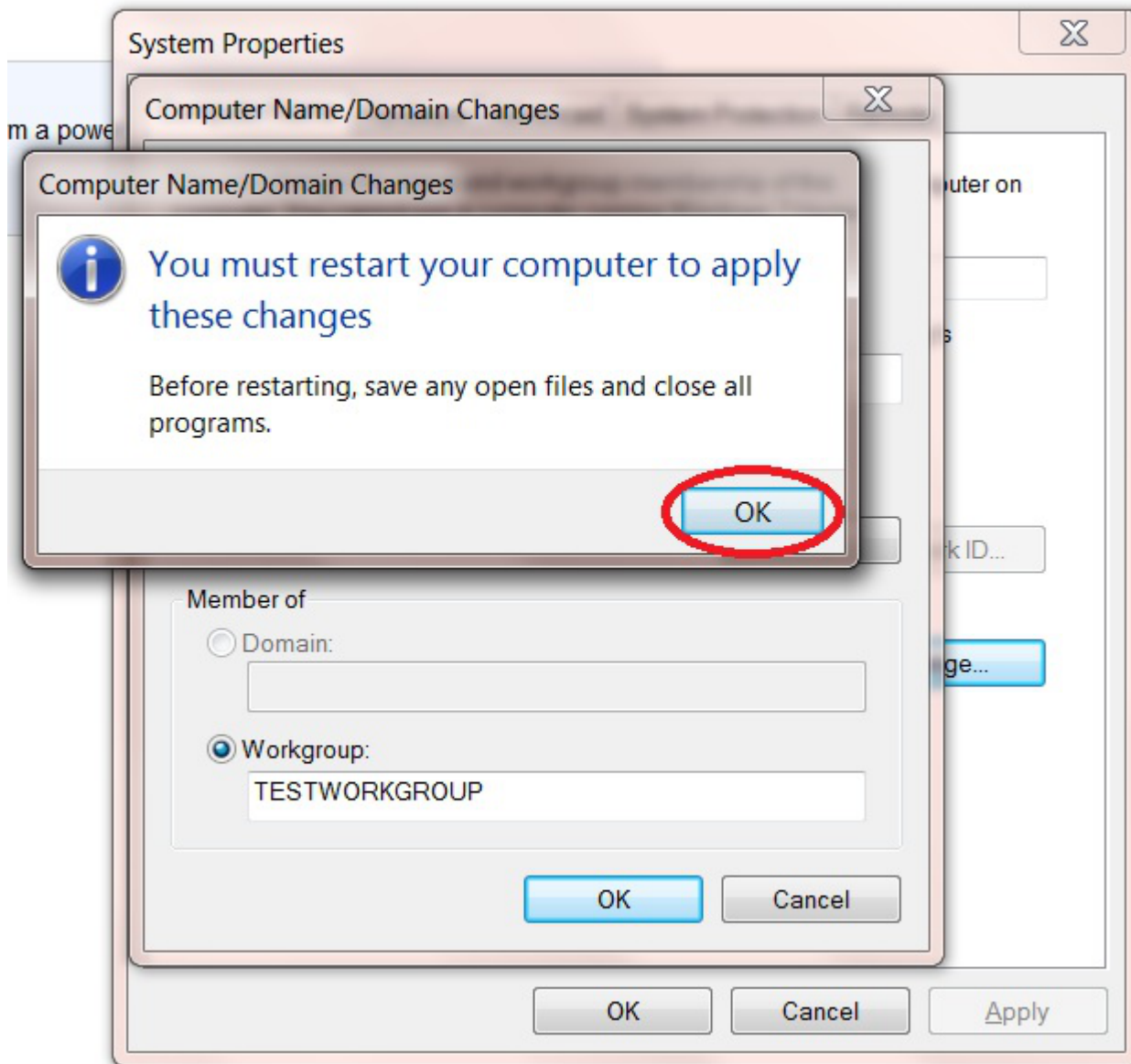
Yet another window will pop up showing the Workgroup has now been changed.

Click the “OK” button.



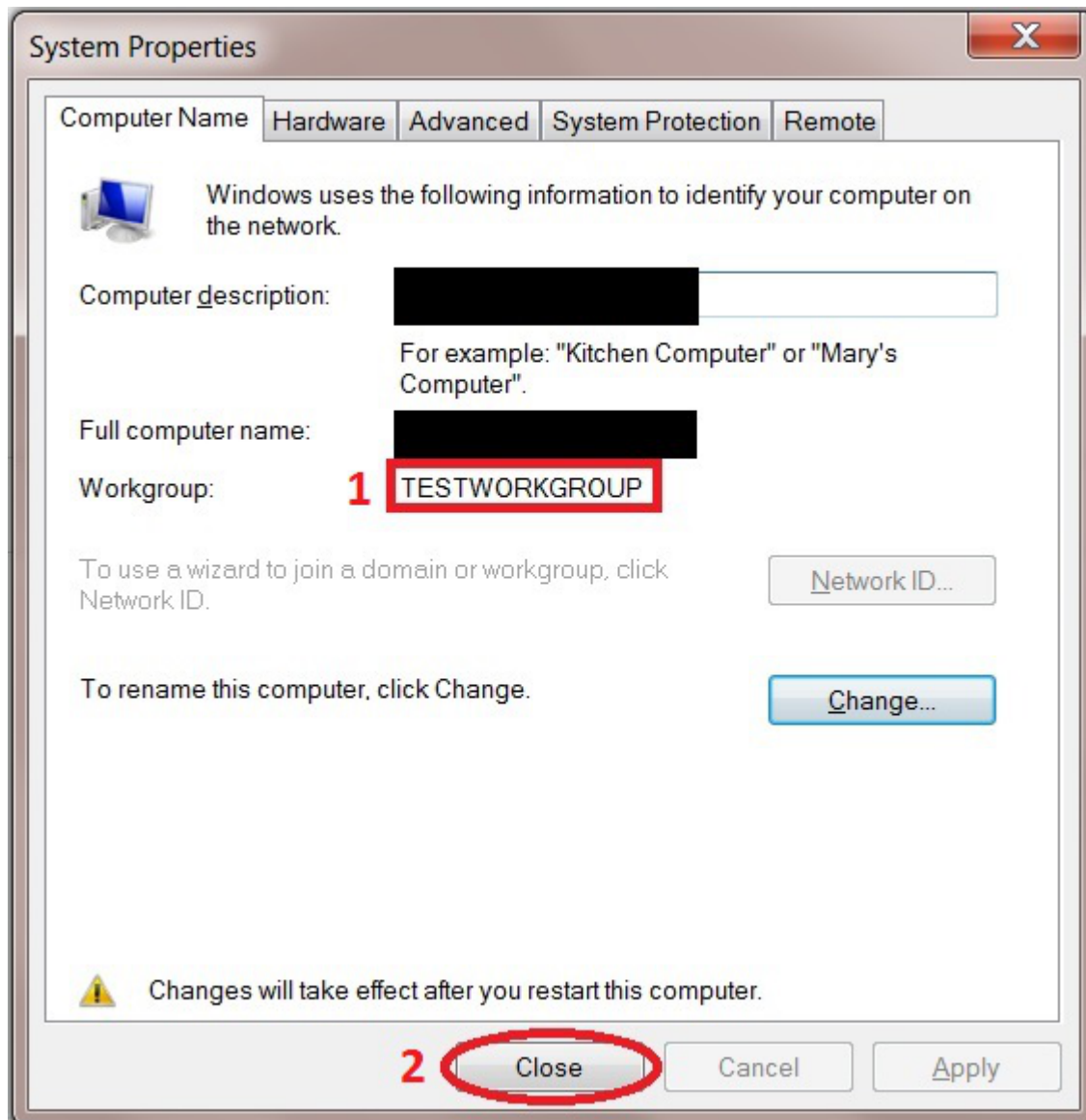
A message window will now appear telling you the changes will be implemented when the computer is restarted.

Click the "OK" button.



As can be seen from the next screen shot the Workgroup has been changed to "TESTWORKGROUP" (1).

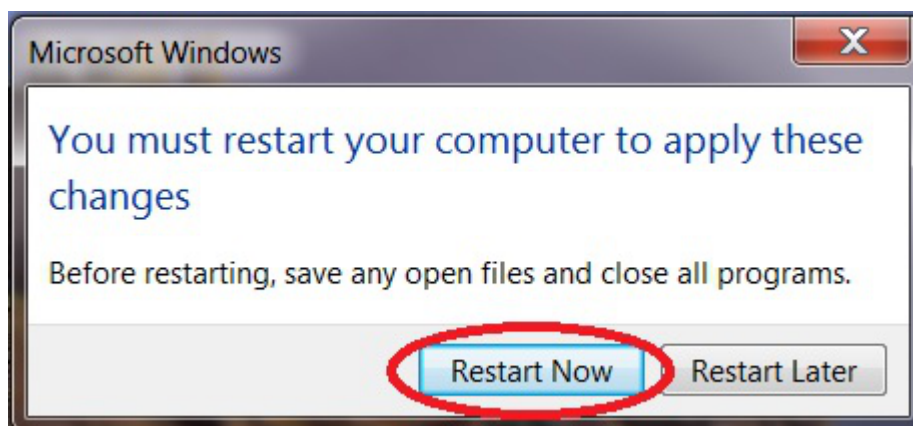
Click the "Close" button (2).



The system will now ask to be restarted. This must be done before going any further.

Close any open windows, save and close any open programs, etc.

Now click on the "Restart Now" button.



That's the Windows Workgroup configured.

The client computer will now reboot, when it does log back into the FreeNAS GUI.

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