

Topic : **Accessing the Linux Command-line on
Cache-A Archive Appliances**

Reference Release: v1.3

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Summary:

Cache-A Archive Appliances run industry standard Linux and certain actions can only be accomplished via the Linux command-line interface. Cache-A provides secure shell (ssh) access to this command-line to allow users complete control over their systems.

This paper outlines three possible methods for accessing this command-line. Whether you are a Linux-savvy professional or a novice accessing this command-line under the directions of our support staff, ***proceed with caution: you will be logged in as root (superuser) and can do damage if you execute the wrong command via mistype!***

The three methods available are:

1. Connecting from a Mac OS system with Terminal
2. Connecting from a Windows OS system with PuTTY
3. Connecting via the Maintenance Terminal directly attached to the system

Mac OS Procedure:

1. Locate and launch the Macintosh Terminal application – it is by default in the Applications: Utilities folder
2. In the terminal window, a last login date will appear followed by your Mac's prompt of the form:

`system_name:~ user_name$`

3. Log into your Cache-A system with username **root** by typing the following:
`ssh root@archiveXX.local` then press enter
(replace XX with last 2 digits of your serial number)

If you changed the host name from the default, substitute the new *hostname.local*
If you don't know the host name or are having trouble, you can alternatively use the system's IP address:

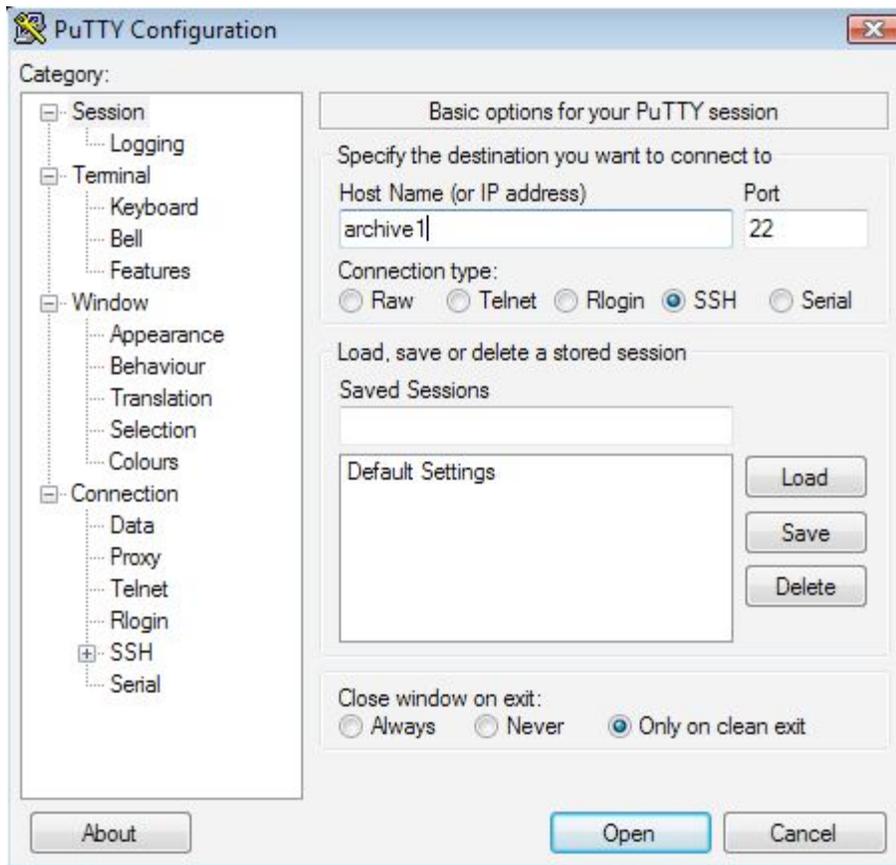
`ssh root@CACHE-A_IP_ADDRESS`

4. If requested, type **yes** at the RSA continue connecting prompt then press enter
5. Type the password at the password prompt then press enter: **cache123**
Note that you will see no characters displayed as you type the password, this is normal

You can confirm that you are correctly connected by observing the new prompt
[root@archiveXX ~]#

Windows OS Procedure:

1. Obtain an SSH client application and install it on your computer.
We recommend the free application **PuTTY.exe** available from www.putty.org
2. Launch the PuTTY Terminal program installed in step one
3. Enter in the hostname of your unit (Unless you have changed it, the hostname is archiveXX by default, where XX is last 2 digits of your serial number) into the dialog presented as shown below then press enter (the .local is not used in Windows environments)
If you don't know the host name or are having trouble, you can alternatively use the system's IP address

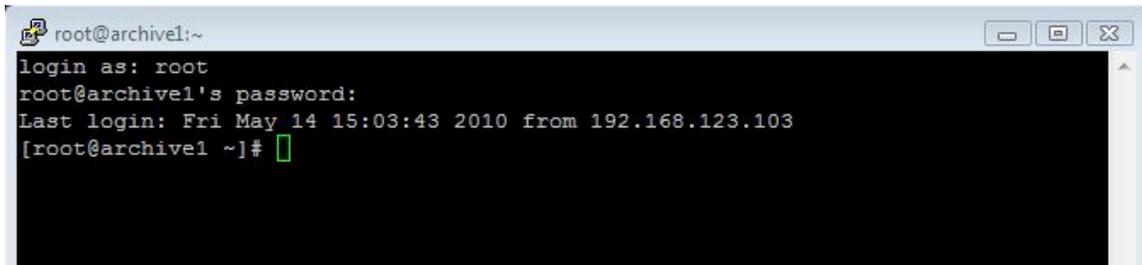


Enter the hostname or IP in the PuTTY Configuration screen

4. If requested, click yes on the RSA continue connection box
5. At the “Log in as” prompt, enter the username: **root**, followed by the password: **cache123**, pressing enter after each

Note that you will see no characters displayed as you type the password, this is normal

You should now be connected as shown below



```
root@archive1:~  
login as: root  
root@archive1's password:  
Last login: Fri May 14 15:03:43 2010 from 192.168.123.103  
[root@archive1 ~]#
```

The PuTTY Terminal

Maintenance Terminal Procedure:

1. To access the Maintenance Terminal functions, connect any monitor to the VGA port and any mouse and keyboard via the PS2 mouse/keyboard ports or via any of the system USB ports.
2. Log into your Cache-A by typing: **root** at the login prompt then pressing enter
3. Type the password at the password prompt: **cache123**, then press enter
Note that you will see no characters displayed as you type the password, this is normal
4. This will bring up the maintenance menu UI - click on the “Console” icon to open a terminal window

Note: if you do not see the maintenance menu icons and Cache-A logo, you may have logged in incorrectly as user “**cache**” – to get back to the correct prompt type “**exit**” and try logging in again as user “**root**”

Notes:

Now that you are here, Cache-A has a number of additional Technical Briefs to help you accomplish a variety of tasks from the command-line.

Two situations often arise where terminal commands are very helpful; these are removing files and repairing permissions, both of which are covered in the following sections.

Basic Terminal Commands:

If you are new to the command line, there are a number of commands you can run without any risk of changing anything, note that you will need to press enter after each command to submit it:

- The Cache-A share which includes the VTAPE folder can be found by running the ‘**change directory**’ command “cd” followed by a space and then the path to /media/vtape


```
cd /media/vtape
```
- Run the ‘**present working directory**’ command “pwd” to verify that you are now in the directory /media/vtape
- The ‘**list directory**’ command “ls -la” will list all the folders and their permissions in your current directory
 - “ls” is the list command, the “-” specifies options, the “l” means long listing (shows more information about each file) and the “a” means list all including hidden files
 - This will ALWAYS show two files named ‘.’ and ‘..’ by themselves, these represent current directory . and parent directory .. and cannot be deleted
 - The 6 character text rwxrwxrwx shows read, write and execute permissions for file’s owner, group and everyone in that order
 - If you want a basic listing of files you can leave out the “l”
- You can also see the size of the contents of any directory with the command “du -sh” just typing this followed by an enter will show how large all files and folders are in the current directory; you can also type a path, so for example, “du -sh /media/vtape” would show how much data is in the entire Cache-A share – you can leave the s off to show the size of all subdirectories and/or leave the h off to view a full byte count
- Run the command “top” to see a listing of the top processes taking up CPU resources on your system – if you see **tapemgr** high on the list, you will know your system is busy managing the tape. Type the ‘q’ key to exit.
- Your keyboard “up” and “down” arrow keys allow you to access your command history so that you can easily scroll to repeat earlier commands – use the left and right arrow keys to navigate back and forth within a command to edit them (typing is inserted, backspace or delete to remove letters)
- Your keyboard “tab” key will auto-complete anything that matches uniquely (i.e. if you wanted cd /media, you could type cd /me[tab] – the system will beep if nothing or more than one thing matches – if you tab and get a beep but know there should be a match, hit the tab a second time to see all possible matches – i.e. cd /me[tab][tab] the terminal will list all items starting with /me.

The Power to Remove Items and Change Permissions with the Command Line:

Using the remove command “rm” to get rid of unwanted files is a powerful, simple and fast tool. However, note that it is one of the most dangerous commands available if used carelessly, potentially deleting everything on your system, so USE WITH CAUTION!

On your Cache-A device, pretty much the only things you’ll want to delete are stuck files in the VTAPE or on the Cache-A share. So for safety’s sake, always make sure you execute these commands from within that area of the Cache-A hard disk by first typing:

```
cd /media/vtape/
```

- Verify this with “pwd” make sure it returns something that starts with /media/vtape and then make sure your prompt says something similar to [root@archiveXX vtape]# where “vtape” either says vtape, or the name of a folder you intend to be in
- If the data you are trying to get to is not located directly in the /media/vtape folder, you can use the “cd” command to go forwards and backwards to get to where you need to go
- For example, type “cd mytape” (or “cd /media/vtape/mytape”) to actually go to the VTAPE area for a tape called “mytape”, (substitute “mytape” with where you need to go)
- If you have cd’d into a folder and you want to go back a level, for example you are in /media/vtape/mytape and you want to go back to /media/vtape running the “cd” command followed by a space and two periods will take you back up one level
“cd ..”
- Remember you can run “pwd” at any time to see your current directory and “ls” at any time to see what is in the current directory – there are never any risks from running these

Remove Single File Example:

If you want to delete a file called “my.file” which is located in a folder named “stuff” on the Cache-A share, you can get to that directory by either typing:

- cd /media/vtape/stuff

or

- cd /media/vtape

followed by

```
cd stuff
```

- running `pwd` at this point will return `“/media/vtape/stuff”`
- you can go back a level by typing

```
cd ..
```

which would put you back at `/media/vtape`

- going back to `/media/vtape/stuff` you could then run `“rm”`

```
rm my.file
```

which would delete the `my.file` from the `stuff` folder (you may need to confirm with a `“y”` if prompted)

Note that `“rm”` used this way will not delete folders – to get rid of the `“stuff”` folder you would have to go up one level using `“cd ..”` and then use the recursive force options explained below

Using the `“rm”` command alone allows removal of one file at a time, but that would be inefficient if there are more than a few files, plus you have to explicitly deal with any subfolders. Adding the options `“-rf”` (recursively force) to the remove command allows it to remove absolutely everything (both files and folders) contained within a folder as well as the folder itself, which makes it very powerful but also very dangerous.

To force remove a file or a complete folder and all of it’s contents, type the following:

```
rm -rf NAMEOFFOLDER_OR_FILE
```



Warning

Due to the use of the `“force”` option above, There will be **no** confirmation or `“are you sure”` prompt to follow, anything you have written in the `NAMEOFFOLDER_OR_FILE` portion of the command, and all of the contents within will be removed. There will be no way to get it back once you press enter. You can leave off the `“f”` portion from the above command, and this will prompt you for a confirmation on every single file, if you have hundreds of files, this would be very time consuming, but the choice of leaving it off is there if you want to review each file before its deletion.

This `“rm -rf”` command can take a bit of time for large numbers of files, sometimes more than 30 minutes to an hour if you are dealing with a full VTape. Just let it sit there until it finishes, It will return to another prompt ending with `#` when it is complete.

If your file or folder name includes spaces and/or unusual characters, they will need to be escaped. That means each unusual character will need to be preceded by a backslash `“\”`

OR the entire file or folder name will need to be enclosed in quotes. For example, a folder named:

My Folder

would need to be type as either

My\ Folder

or

"My Folder"

Using [tab] to auto-complete file names will cause backslashes to be automatically inserted as needed.

Using Terminal to Fix Permissions:

Sometimes you just want to be able to use files but your client computer tells you that you don't have sufficient privileges or just don't have permission (usually this problem arises with Macs but *can* happen with Windows and certainly with other Linux/Unix clients).

To examine the current permissions for the files or directories within any directory, first "cd" to that directory and then run a long listing by typing "ls -l" (or "ls -ld" to also view hidden files, which are files starting with a dot).

In the resulting listing, note the name of the folder containing the data you need permissions changed on (if you don't see it, run "pwd" and verify that it returns either /media/vtape or the specific folder you want to be in).

To open up the permissions for any file or folder (and the files it contains) run the following commands

```
chmod -R 777 NAMEOFFOLDER_OR_FILE
chown -R cache.users NAMEOFFOLDER_OR_FILE
```

and of course, substitute the name of the file or folder you want to modify for NAMEOFFOLDER_OR_FILE. Note that the same rules apply for spaces or special characters in folder or file names as for the remove command.

Note: don't forget that you can hit the first couple characters followed by [tab] to have it auto-complete the rest of the file or folder name. Also make sure you didn't bypass any of the useful tips written above this section.



Warning

Use the “chmod” command only within the `/media/vtape` area. Using this command on other paths in your system can irretrievably damage your system and void your warranty.