**File System Exercise**

Please type your answers in **red** and submit this Word Document.

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1. Most of the standard Windows commands are actually aliases to PowerShell cmdlets.

For the eight standard commands (cd, copy, del, dir, mkdir, move, ren, rmdir):

a. What cmdlets are these commands aliases for?

cd = Set-Location;

copy = Copy-Item;

del = Remove-Item;

dir = Get-ChildItem;

move = Move-Item;

ren = Rename-Item;

rmdir = Remove-Item

b. Which one of these commands is not an alias?

Mkdir is not an alias – no alias was listed for that item

2. Look up the mode property online.

a. What are the six standard mode values?

d = directory;

a = archive;

r = read-only;

h = hidden;

s = system;

l = reparse point, symlink, etc

3. Go to C:\Windows\system32 and get the properties for xcopy.exe.

a. What are the property values for:

Name – xcopy.exe is the PSChildName

FullName – C:\windows\system32\xcopy.exe

BaseName - xcopy

Extension - .exe = executable

Directory – C:*\*windows\system32

Mode - “-a----” = archive

Attributes - Archive

b. What three time value properties does the file have?

CreationTime, LastAccessTime, LastWriteTime – then all of those with Utc, also.

4. Go to C:\Windows and get the properties for the system32 directory.

a. What are the property values for:

Name - system32 is the PSChildName

FullName – C:\windows\system32

BaseName - system32

Extension – blank – it’s a folder not a file

Directory – no Directory listed, but the system32 subdirectory is contained within the windows directory on the C: drive

Mode – “d-----” = directory

Attributes - Directory

b. Comparing xcopy to system32 what are some of the properties that files have, but directories do not have? Files will have extensions, length, and linktype, a listing for directoryName, Directory, and IsReadOnly. Directories don’t have any extension or length, nor do they contain ‘VersionInfo’.

5. Look up the select alias.

a. What is select an alias for? Select-Object

b. What is this command used for? Select specific properties of an object or set of object. Can use wildcards.

6. Find a standard user file on your system (like a text file, Word document, Excel spreadsheet, etc) and view its file permissions.

What are the property values for: index.htm

Owner - DOCOCK\JSWalley

Group - DOCOCK\NONE

AccessToString – NT AUTHORITY\SYSTEM Allow FullControl

BUILTIN\Administrators Allow FullControl

DOCOCK\JSWalley Allow FullControl

AreAccessRulesProtected - False

7. Now go to the C:\windows\system32 directory and view the file permissions for a windows system program.

What are the property values for: xcopy.exe

Owner – NT SERVICE \ TrustedInstaller

Group – NT SERVICE \ TrustedInstaller, also

AccessToString -

NT AUTHORITY\SYSTEM Allow ReadAndExecute, Synchronize

BUILTIN\Administrators Allow ReadAndExecute, Synchronize

BUILTIN\Users Allow ReadAndExecute, Synchronize

NT SERVICE\TrustedInstaller Allow FullControl

APPLICATION PACKAGE AUTHORITY\ALL APPLICATION PACKAGES

Allow ReadAndExecute, Synchronize

APPLICATION PACKAGE AUTHORITY\ALL RESTRICTED APPLICATION

PACKAGES Allow ReadAndExecute, Synchronize

AreAccessRulesProtected - True

8. Open the online help for the set-acl command.

Get-help set-acl -online

a. What type of object does this command use to set ACLs? Security Descriptor

b. What PS Providers can set-acl be used with? “It is supported by the PowerShell File System and Registry Providers” – per the Microsoft online help

c. What items can set-acl be used to change the security settings of? Files, Directories, or Registry Keys