USAP Assignment 2

Report

S3485566

Note: Instead of setting up Git to the RMIT servers, I instead set it up to github. I am with the understanding that this is acceptable. https://github.com/mupg/s3485566/tree/master/s3485566-usap-a2

Contents

User Management

```
#creating users and ssh key for wilma
class user {
require groups
  user { 'becca':
ensure     => 'present',
uid        => '10015566',
home       => '/home/becca',
managehome => true,
groups     => ['sysadmin', 'cars'],
shell      => '/bin/bash',
password   => '$1$jtzisBQI$G.T/fasLfFtbEMqvCYT2h0',
#plain text is my student number
}

user { 'fred':
ensure     => 'present',
uid        => '10025566',
home       => '/home/fred',
managehome => true,
#wheel sudo group
groups     => ['trucks', 'cars', 'wheel'],
shell      => '/bin/csh',
password   => '$1$jtzisBQI$G.T/fasLfFtbEMqvCYT2h0',

}

user { 'wilma':
ensure         => 'present',
uid            => '10035566',
home           => '/home/wilma',
managehome     => true,
groups         => ['trucks', 'cars', 'ambulances'],
shell          => '/bin/bash',
password       => '$1$jtzisBQI$G.T/fasLfFtbEMqvCYT2h0',
purge_ssh_keys => true,
}
#wilma's ssh key
ssh_authorized_key { 'wilmaKey' :
ensure => 'present',
user   => 'wilma',
type   => 'ssh-rsa',
key    => 'PuBlIcKeYWilMaAa',
}
}
```

Users are created in one file with the file first requiring groups so that the users can be assigned to them. The password is my student number encrypted by using openssl -1 passwd and being inserted into the file. Fred was given the wheel group for sudo rights. The format is in accordance with Puppet-lint.

```
/usr/local/bin/puppet agent -t
```
Command to initialise the code.

```
Notice: /Stage[main]/User/User[becca]/ensure: created
Notice: /Stage[main]/User/User[fred]/ensure: created
Notice: /Stage[main]/User/User[wilma]/ensure: created
Notice: /Stage[main]/User/Ssh_authorized_key[wilmaKey]/ensure: created
```

Users being created

```
[ec2-user@ip-172-31-4-249 puppetlabs]$ su becca
Password:
su: Authentication failure
[ec2-user@ip-172-31-4-249 puppetlabs]$ su fred
Password:
[fred@ip-172-31-4-249 puppetlabs]$
```

Example of incorrect password and correct password.

```puppet
#create groups
class groups {
group{'cars':
ensure => present,
gid     => '1004',
}

group{'sysadmin':
ensure => present,
gid     => '1005',
}

group{'trucks':
ensure => present,
gid     => '1006',
}

group{'ambulances':
ensure => present,
gid     => '1007',
}
}
```

Creation of groups with the group ID first being given by the system when creating user from the console. Ensure => Present creates groups.

```
Notice: /Stage[main]/Groups/Group[cars]/ensure: created
Notice: /Stage[main]/Groups/Group[sysadmin]/ensure: created
Notice: /Stage[main]/Groups/Group[trucks]/ensure: created
Notice: /Stage[main]/Groups/Group[ambulances]/ensure: created
Notice: /Stage[main]/Packageconf/Exec[runlevel]/returns: executed successfully
Notice: /Stage[main]/Packageconf/Exec[becca_sudo]/returns: executed successfully
Notice: /Stage[main]/User/User[becca]/groups: groups changed 'wheel' to ['cars', 'sysadmin', 'wheel']
Notice: /Stage[main]/User/User[fred]/groups: groups changed 'wheel' to ['cars', 'trucks', 'wheel']
Notice: /Stage[main]/User/User[wilma]/groups: groups changed '' to ['ambulances', 'cars', 'trucks']
```

Agent config

```
#agent configuration interval check and time stamp
class agentconfig {
#set interval to 20min
exec { 'sudo /usr/local/bin/puppet agent --runinterval 1200':
path => ['/usr/bin', '/usr/sbin','/usr/local/bin'],
}

#timestamp for login
file { '/etc/profile.d/agent_login.sh' :
ensure  => present,
mode    => '0777',
owner   => 'root',
group   => 'root',
content => 'time=`/bin/date +"%d-%m-%Y_%H.%M.%S"`; echo "Agent run starting at $time"',
}

}
```

Setting up the puppet agent to check in three times per hour by using puppets agent command to set the –runinterval to 1200 seconds.

Modified the agent_login.sh file but giving them 777 permissions and root privilege and then getting the time from /bin/date and formatting it.

```
[s3485566@csitprdap01 ~]$ ssh assignment
Last login: Sat Oct 21 16:12:03 2017 from coreteaching01.csit.rmit.edu.au
Agent run starting at 22-10-2017_07.29.35
[ec2-user@ip-172-31-4-249 ~]$
```

Package Creation

```
exec { 'getDeps' :
onlyif  => '/usr/bin/yum-config-manager',
command => '/usr/bin/yum-config-manager --enable rhui-REGION-rhel-server-optional',
}
$packages = [
'csh','openssh-server', 'httpd', 'mysql','tigervnc-server',
'tmux', 'lynx', 'gcc','gdb', 'vim', 'emacs', 'wget','glib*','fuse*',
]
package { $packages :
ensure  => 'installed',
provider => 'yum',
}
package { 'libxml2.so.2' :
ensure => installed,
}
package { 'dia2code' :
ensure  => 'installed',
source  => 'https://downloads.sourceforge.net/project/dia2code/dia2code/0.8.3/dia2code-0.8.3-3.1.i586.rpm?r=http%3A%2F%2Fdia2code.sourceforge.net%2Fdownload.html&ts=15
07292790&use_mirror=ncu',
provider => 'rpm',
}
package { 'mysql-server' :
ensure  => 'installed',
source  => 'https://dev.mysql.com/get/mysql57-community-release-el7-11.noarch.rpm',
provider => 'rpm',
}
package { 'cgdb' :
ensure  => 'installed',
source  => 'ftp://mirror.switch.ch/pool/4/mirror/epel/7/x86_64/c/cgdb-0.6.8-1.el7.x86_64.rpm',
provider => 'rpm',
}
package { 'fuse-sshfs' :
ensure  => 'installed',
source  => 'ftp://195.220.108.108/linux/dag/redhat/el7/en/x86_64/dag/RPMS/fuse-sshfs-2.5-1.el7.rf.x86_64.rpm',
provider => 'rpm',
}
~
```

Yum is limited in its packages so it was required to download a dependecy so that all downloads work properly. All packages that could be installed with yum were put into an array and installed first. Packages dia2code, mysql, cgdb and sshfs don't exist on yum so external sources had to be found with some depencies required and all installed with rpm.

```
Notice: /Stage[main]/Main/Exec[getDeps]/returns: executed successfully
Notice: /Stage[main]/Main/Package[glib*]/ensure: created
Notice: /Stage[main]/Main/Package[fuse*]/ensure: created
```

Package Management

```
#package configuration q1-8
class packageconf {
#packages at run level 5
exec { 'runlevel' :
command => '/usr/bin/systemctl set-default multi-user.target',
}
#enable ssh and subscribe
file { '/etc/ssh/sshd_config':
ensure  => present,
mode    => '0777',
owner   => 'root',
group   => 'root',
source  => '/etc/puppetlabs/code/environments/production/manifests/s3485566-usap-a2/sshd_config',
require => Package['openssh-server'],

service { 'sshd' :
ensure   => running,
enable   => true,
require  => Package['openssh-server'],
subscribe => File['/etc/ssh/sshd_config'],
}
#Document root changed
file {'/var/www/s3485566':
ensure => 'directory',
owner  => 'root',
mode   => '0644',
}
#Sudo privileges for becca
exec { 'becca_sudo' :
command => '/usr/sbin/usermod -aG wheel becca',
}
#/usr/local/bin in everyones path
file {'/etc/profile.d/setuserbin.sh' :
owner   => 'root',
mode    => '0644',
content => 'PATH=$PATH:/usr/local/bin',
}
#mount titan directory over sshfs
exec { 'mount_becca_titan' :
command => '/usr/bin/mkdir -p /home/becca/titan; echo "$(cat /etc/puppetlabs/code/environments/production/manifests/s3485566-usap-a2/password)" | /usr/bin/sshfs -o Stri
ctHostKeyChecking=no -o password_stdin  s3485566@titan.csit.rmit.edu.au:/home/sh6/s3485566/ /home/becca/titan',
unless  => '/usr/bin/find /home/becca/titan -mindepth 1 | /usr/bin/read',
}

#Host Records for rmit servers set up
host{'titan.csit.rmit.edu.au':
ip            => '131.170.5.132',
host_aliases => 'titan',
}
host{'saturn.csit.rmit.edu.au':
ip            => '131.170.5.132',
host_aliases => 'saturn',
}
host{'jupiter.csit.rmit.edu.au':
ip            => '131.170.5.135',
host_aliases => 'jupiter',
}
#Httpd run on boot and subscribes
file { '/etc/httpd/conf/httpd.conf' :
ensure  => present,
mode    => '0644',
owner   => 'root',
group   => 'root',
source  => '/etc/puppetlabs/code/environments/production/manifests/s3485566-usap-a2/httpd.conf',
require => Package['httpd'],
}


service { 'httpd' :
ensure   => running,
enable   => true,
subscribe => File['/etc/httpd/conf/httpd.conf'],
}
}
```

1.Execute a command to change the run level to 3 which for red hat is mult-user.target. 2.The SSH file is provided to us and we give it root permissions to enable it. Then we subscribe it start on system boot and restart when changes are made to the file. 3.Create the directory for document root to be changed too. 4.Becca was given sudo privileges by using the usermod command. 5.The path /usr/local/bin was added to all users. 6.My student directory on the RMIT network was mounted to Becca's home directory using SSHFS. To make this work the code reads a file made on the server with my password using the -o password_stdin option for SSHFS.

Host records were created for the internal DNS address for Titan, Jupiter and Saturn.

The Httpd.conf file is given root privileges. Httpd is then set to ensure it is running and subscribed to the httpd.conf file.

Nmap command was done on the localhost to show the services running on each port.

```
Starting Nmap 6.40 ( http://nmap.org ) at 2017-10-22 02:58 UTC
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
RTTVAR has grown to over 2.3 seconds, decreasing to 2.0
Nmap scan report for localhost (127.0.0.1)
Host is up (0.00036s latency).
Other addresses for localhost (not scanned): 127.0.0.1
Not shown: 992 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
25/tcp    open  smtp
80/tcp    open  http
443/tcp   open  https
5432/tcp  open  postgresql
8008/tcp  open  http
8080/tcp  open  http-proxy
8081/tcp  open  blackice-icecap
Device type: general purpose
Running: Linux 3.X
OS CPE: cpe:/o:linux:linux_kernel:3
OS details: Linux 3.7 - 3.9
Network Distance: 0 hops

OS detection performed. Please report any incorrect results at http://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 1.68 seconds
```

```
Notice: /Stage[main]/Packageconf/File[/var/www/s3485566]/ensure: created
```

```
Notice: /Stage[main]/Packageconf/Host[titan.csit.rmit.edu.au]/ensure: created
Info: Computing checksum on file /etc/hosts
Notice: /Stage[main]/Packageconf/Host[saturn.csit.rmit.edu.au]/ensure: created
Notice: /Stage[main]/Packageconf/Host[jupiter.csit.rmit.edu.au]/ensure: created
```

```
Notice: /Stage[main]/Packageconf/Exec[becca_sudo]/returns: executed successfully
```
```
Notice: /Stage[main]/Packageconf/Exec[runlevel]/returns: executed successfully
```

```
Notice: /Stage[main]/Packageconf/File[/etc/httpd/conf/httpd.conf]/ensure: defined content as '{md5}c4f61bf27513eb525
Info: /Stage[main]/Packageconf/File[/etc/httpd/conf/httpd.conf]: Scheduling refresh of Service[httpd]
Notice: /Stage[main]/Packageconf/Service[httpd]/ensure: ensure changed 'stopped' to 'running'
Info: /Stage[main]/Packageconf/Service[httpd]: Unscheduling refresh on Service[httpd]
Info: Stage[main]: Unscheduling all events on Stage[main]
```