How to configure Windows client in Ansible server and run Playbook

1. Login to Windows machine and create powershell file and past the below script in side the powershell file.

Vim test.ps1

```
#Requires -Version 3.0

# Configure a Windows host for remote management with Ansible
# -----------------------------------------------------------
#
# This script checks the current WinRM (PS Remoting) configuration and
makes
# the necessary changes to allow Ansible to connect, authenticate and
# execute PowerShell commands.
#
# All events are logged to the Windows EventLog, useful for unattended
runs.
#
# Use option -Verbose in order to see the verbose output messages.
#
# Use option -CertValidityDays to specify how long this certificate is valid
# starting from today. So you would specify -CertValidityDays 3650 to get
# a 10-year valid certificate.
#
# Use option -ForceNewSSLCert if the system has been SysPreped and a
new
# SSL Certificate must be forced on the WinRM Listener when re-running
this
# script. This is necessary when a new SID and CN name is created.
#
```

```
# Use option -EnableCredSSP to enable CredSSP as an authentication
option.
#
# Use option -DisableBasicAuth to disable basic authentication.
#
# Use option -SkipNetworkProfileCheck to skip the network profile check.
# Without specifying this the script will only run if the device's interfaces
# are in DOMAIN or PRIVATE zones.  Provide this switch if you want to
enable
# WinRM on a device with an interface in PUBLIC zone.
#
# Use option -SubjectName to specify the CN name of the certificate. This
# defaults to the system's hostname and generally should not be specified.

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#
# Version 1.0 - 2014-07-06
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# Version 1.5 - 2017-02-09
# Version 1.6 - 2017-04-18
# Version 1.7 - 2017-11-23
# Version 1.8 - 2018-02-23
```

```
# Support -Verbose option
[CmdletBinding()]

Param (
    [string]$SubjectName = $env:COMPUTERNAME,
    [int]$CertValidityDays = 1095,
    [switch]$SkipNetworkProfileCheck,
    $CreateSelfSignedCert = $true,
    [switch]$ForceNewSSLCert,
    [switch]$GlobalHttpFirewallAccess,
    [switch]$DisableBasicAuth = $false,
    [switch]$EnableCredSSP
)

Function Write-Log
{
    $Message = $args[0]
    Write-EventLog -LogName Application -Source $EventSource
-EntryType Information -EventId 1 -Message $Message
}

Function Write-VerboseLog
{
    $Message = $args[0]
    Write-Verbose $Message
    Write-Log $Message
}

Function Write-HostLog
{
    $Message = $args[0]
    Write-Output $Message
```

```
    Write-Log $Message
}

Function New-LegacySelfSignedCert
{
    Param (
        [string]$SubjectName,
        [int]$ValidDays = 1095
    )

    $hostnonFQDN = $env:computerName
    $hostFQDN =
[System.Net.Dns]::GetHostByName(($env:computerName)).Hostname
    $SignatureAlgorithm = "SHA256"

    $name = New-Object -COM
"X509Enrollment.CX500DistinguishedName.1"
    $name.Encode("CN=$SubjectName", 0)

    $key = New-Object -COM "X509Enrollment.CX509PrivateKey.1"
    $key.ProviderName = "Microsoft Enhanced RSA and AES Cryptographic
Provider"
    $key.KeySpec = 1
    $key.Length = 4096
    $key.SecurityDescriptor =
"D:PAI(A;;0xd01f01ff;;;SY)(A;;0xd01f01ff;;;BA)(A;;0x80120089;;;NS)"
    $key.MachineContext = 1
    $key.Create()

    $serverauthoid = New-Object -COM "X509Enrollment.CObjectId.1"
    $serverauthoid.InitializeFromValue("1.3.6.1.5.5.7.3.1")
    $ekuoids = New-Object -COM "X509Enrollment.CObjectIds.1"
    $ekuoids.Add($serverauthoid)
```

```
    $ekuext = New-Object -COM
"X509Enrollment.CX509ExtensionEnhancedKeyUsage.1"
    $ekuext.InitializeEncode($ekuoids)

    $cert = New-Object -COM
"X509Enrollment.CX509CertificateRequestCertificate.1"
    $cert.InitializeFromPrivateKey(2, $key, "")
    $cert.Subject = $name
    $cert.Issuer = $cert.Subject
    $cert.NotBefore = (Get-Date).AddDays(-1)
    $cert.NotAfter = $cert.NotBefore.AddDays($ValidDays)

    $SigOID = New-Object -ComObject X509Enrollment.CObjectId

$SigOID.InitializeFromValue(([Security.Cryptography.Oid]$SignatureAlgorit
hm).Value)

    [string[]] $AlternativeName  += $hostnonFQDN
    $AlternativeName += $hostFQDN
    $IAlternativeNames = New-Object -ComObject
X509Enrollment.CAlternativeNames

    foreach ($AN in $AlternativeName)
    {
        $AltName = New-Object -ComObject
X509Enrollment.CAlternativeName
        $AltName.InitializeFromString(0x3,$AN)
        $IAlternativeNames.Add($AltName)
    }

    $SubjectAlternativeName = New-Object -ComObject
X509Enrollment.CX509ExtensionAlternativeNames
    $SubjectAlternativeName.InitializeEncode($IAlternativeNames)
```

```
    [String[]]$KeyUsage = ("DigitalSignature", "KeyEncipherment")
    $KeyUsageObj = New-Object -ComObject
X509Enrollment.CX509ExtensionKeyUsage

$KeyUsageObj.InitializeEncode([int][Security.Cryptography.X509Certificate
s.X509KeyUsageFlags]($KeyUsage))
    $KeyUsageObj.Critical = $true

    $cert.X509Extensions.Add($KeyUsageObj)
    $cert.X509Extensions.Add($ekuext)
    $cert.SignatureInformation.HashAlgorithm = $SigOID
    $CERT.X509Extensions.Add($SubjectAlternativeName)
    $cert.Encode()

    $enrollment = New-Object -COM "X509Enrollment.CX509Enrollment.1"
    $enrollment.InitializeFromRequest($cert)
    $certdata = $enrollment.CreateRequest(0)
    $enrollment.InstallResponse(2, $certdata, 0, "")

    # extract/return the thumbprint from the generated cert
    $parsed_cert = New-Object
System.Security.Cryptography.X509Certificates.X509Certificate2

$parsed_cert.Import([System.Text.Encoding]::UTF8.GetBytes($certdata))

    return $parsed_cert.Thumbprint
}

Function Enable-GlobalHttpFirewallAccess
{
    Write-Verbose "Forcing global HTTP firewall access"
    # this is a fairly naive implementation; could be more sophisticated about
```

```
rule matching/collapsing
    $fw = New-Object -ComObject HNetCfg.FWPolicy2

    # try to find/enable the default rule first
    $add_rule = $false
    $matching_rules = $fw.Rules | ? { $_.Name -eq "Windows Remote
Management (HTTP-In)" }
    $rule = $null
    If ($matching_rules) {
        If ($matching_rules -isnot [Array]) {
            Write-Verbose "Editing existing single HTTP firewall rule"
            $rule = $matching_rules
        }
        Else {
            # try to find one with the All or Public profile first
            Write-Verbose "Found multiple existing HTTP firewall rules..."
            $rule = $matching_rules | % { $_.Profiles -band 4 }[0]

            If (-not $rule -or $rule -is [Array]) {
                Write-Verbose "Editing an arbitrary single HTTP firewall rule
(multiple existed)"
                # oh well, just pick the first one
                $rule = $matching_rules[0]
            }
        }
    }

    If (-not $rule) {
        Write-Verbose "Creating a new HTTP firewall rule"
        $rule = New-Object -ComObject HNetCfg.FWRule
        $rule.Name = "Windows Remote Management (HTTP-In)"
        $rule.Description = "Inbound rule for Windows Remote Management
via WS-Management. [TCP 5985]"
```

```
        $add_rule = $true
    }

    $rule.Profiles = 0x7FFFFFFF
    $rule.Protocol = 6
    $rule.LocalPorts = 5985
    $rule.RemotePorts = "*"
    $rule.LocalAddresses = "*"
    $rule.RemoteAddresses = "*"
    $rule.Enabled = $true
    $rule.Direction = 1
    $rule.Action = 1
    $rule.Grouping = "Windows Remote Management"

    If ($add_rule) {
        $fw.Rules.Add($rule)
    }

    Write-Verbose "HTTP firewall rule $($rule.Name) updated"
}

# Setup error handling.
Trap
{
    $_
    Exit 1
}
$ErrorActionPreference = "Stop"

# Get the ID and security principal of the current user account
$myWindowsID=[System.Security.Principal.WindowsIdentity]::GetCurrent()
$myWindowsPrincipal=new-object
System.Security.Principal.WindowsPrincipal($myWindowsID)
```

```
# Get the security principal for the Administrator role
$adminRole=[System.Security.Principal.WindowsBuiltInRole]::Administrator

# Check to see if we are currently running "as Administrator"
if (-Not $myWindowsPrincipal.IsInRole($adminRole))
{
    Write-Output "ERROR: You need elevated Administrator privileges in
order to run this script."
    Write-Output "       Start Windows PowerShell by using the Run as
Administrator option."
    Exit 2
}

$EventSource = $MyInvocation.MyCommand.Name
If (-Not $EventSource)
{
    $EventSource = "Powershell CLI"
}

If ([System.Diagnostics.EventLog]::Exists('Application') -eq $False -or
[System.Diagnostics.EventLog]::SourceExists($EventSource) -eq $False)
{
    New-EventLog -LogName Application -Source $EventSource
}

# Detect PowerShell version.
If ($PSVersionTable.PSVersion.Major -lt 3)
{
    Write-Log "PowerShell version 3 or higher is required."
    Throw "PowerShell version 3 or higher is required."
}
```

```
# Find and start the WinRM service.
Write-Verbose "Verifying WinRM service."
If (!(Get-Service "WinRM"))
{
    Write-Log "Unable to find the WinRM service."
    Throw "Unable to find the WinRM service."
}
ElseIf ((Get-Service "WinRM").Status -ne "Running")
{
    Write-Verbose "Setting WinRM service to start automatically on boot."
    Set-Service -Name "WinRM" -StartupType Automatic
    Write-Log "Set WinRM service to start automatically on boot."
    Write-Verbose "Starting WinRM service."
    Start-Service -Name "WinRM" -ErrorAction Stop
    Write-Log "Started WinRM service."

}

# WinRM should be running; check that we have a PS session config.
If (!(Get-PSSessionConfiguration -Verbose:$false) -or (!(Get-ChildItem
WSMan:\localhost\Listener)))
{
  If ($SkipNetworkProfileCheck) {
    Write-Verbose "Enabling PS Remoting without checking Network profile."
    Enable-PSRemoting -SkipNetworkProfileCheck -Force -ErrorAction Stop
    Write-Log "Enabled PS Remoting without checking Network profile."
  }
  Else {
    Write-Verbose "Enabling PS Remoting."
    Enable-PSRemoting -Force -ErrorAction Stop
    Write-Log "Enabled PS Remoting."
  }
}
```

```
Else
{
    Write-Verbose "PS Remoting is already enabled."
}

# Make sure there is a SSL listener.
$listeners = Get-ChildItem WSMan:\localhost\Listener
If (!($listeners | Where {$_.Keys -like "TRANSPORT=HTTPS"}))
{
    # We cannot use New-SelfSignedCertificate on 2012R2 and earlier
    $thumbprint = New-LegacySelfSignedCert -SubjectName $SubjectName
-ValidDays $CertValidityDays
    Write-HostLog "Self-signed SSL certificate generated; thumbprint:
$thumbprint"

    # Create the hashtables of settings to be used.
    $valueset = @{
        Hostname = $SubjectName
        CertificateThumbprint = $thumbprint
    }

    $selectorset = @{
        Transport = "HTTPS"
        Address = "*"
    }

    Write-Verbose "Enabling SSL listener."
    New-WSManInstance -ResourceURI 'winrm/config/Listener' -SelectorSet
$selectorset -ValueSet $valueset
    Write-Log "Enabled SSL listener."
}
Else
{
```

```
    Write-Verbose "SSL listener is already active."

    # Force a new SSL cert on Listener if the $ForceNewSSLCert
    If ($ForceNewSSLCert)
    {

        # We cannot use New-SelfSignedCertificate on 2012R2 and earlier
        $thumbprint = New-LegacySelfSignedCert -SubjectName
$SubjectName -ValidDays $CertValidityDays
        Write-HostLog "Self-signed SSL certificate generated; thumbprint:
$thumbprint"

        $valueset = @{
            CertificateThumbprint = $thumbprint
            Hostname = $SubjectName
        }

        # Delete the listener for SSL
        $selectorset = @{
            Address = "*"
            Transport = "HTTPS"
        }
        Remove-WSManInstance -ResourceURI 'winrm/config/Listener'
-SelectorSet $selectorset

        # Add new Listener with new SSL cert
        New-WSManInstance -ResourceURI 'winrm/config/Listener'
-SelectorSet $selectorset -ValueSet $valueset
    }
}

# Check for basic authentication.
$basicAuthSetting = Get-ChildItem WSMan:\localhost\Service\Auth |
```

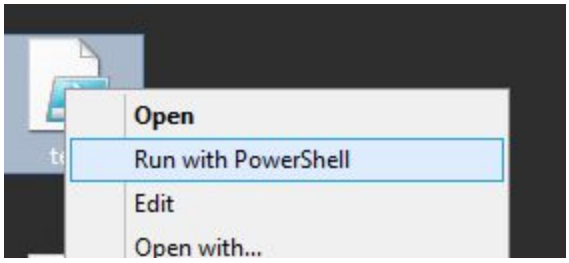
```
Where-Object {$_.Name -eq "Basic"}

If ($DisableBasicAuth)
{
    If (($basicAuthSetting.Value) -eq $true)
    {
        Write-Verbose "Disabling basic auth support."
        Set-Item -Path "WSMan:\localhost\Service\Auth\Basic" -Value $false
        Write-Log "Disabled basic auth support."
    }
    Else
    {
        Write-Verbose "Basic auth is already disabled."
    }
}
Else
{
    If (($basicAuthSetting.Value) -eq $false)
    {
        Write-Verbose "Enabling basic auth support."
        Set-Item -Path "WSMan:\localhost\Service\Auth\Basic" -Value $true
        Write-Log "Enabled basic auth support."
    }
    Else
    {
        Write-Verbose "Basic auth is already enabled."
    }
}

# If EnableCredSSP if set to true
If ($EnableCredSSP)
{
    # Check for CredSSP authentication
```

```
    $credsspAuthSetting = Get-ChildItem WSMan:\localhost\Service\Auth |
Where {$_.Name -eq "CredSSP"}
    If (($credsspAuthSetting.Value) -eq $false)
    {
        Write-Verbose "Enabling CredSSP auth support."
        Enable-WSManCredSSP -role server -Force
        Write-Log "Enabled CredSSP auth support."
    }
}

If ($GlobalHttpFirewallAccess) {
    Enable-GlobalHttpFirewallAccess
}

# Configure firewall to allow WinRM HTTPS connections.
$fwtest1 = netsh advfirewall firewall show rule name="Allow WinRM
HTTPS"
$fwtest2 = netsh advfirewall firewall show rule name="Allow WinRM
HTTPS" profile=any
If ($fwtest1.count -lt 5)
{
    Write-Verbose "Adding firewall rule to allow WinRM HTTPS."
    netsh advfirewall firewall add rule profile=any name="Allow WinRM
HTTPS" dir=in localport=5986 protocol=TCP action=allow
    Write-Log "Added firewall rule to allow WinRM HTTPS."
}
ElseIf (($fwtest1.count -ge 5) -and ($fwtest2.count -lt 5))
{
    Write-Verbose "Updating firewall rule to allow WinRM HTTPS for any
profile."
    netsh advfirewall firewall set rule name="Allow WinRM HTTPS" new
profile=any
    Write-Log "Updated firewall rule to allow WinRM HTTPS for any profile."
```

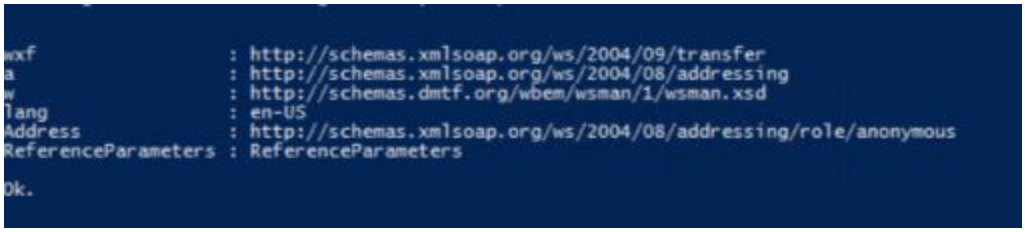
```
}
Else
{
    Write-Verbose "Firewall rule already exists to allow WinRM HTTPS."
}

# Test a remoting connection to localhost, which should work.
$httpResult = Invoke-Command -ComputerName "localhost" -ScriptBlock
{$env:COMPUTERNAME} -ErrorVariable httpError -ErrorAction
SilentlyContinue
$httpsOptions = New-PSSessionOption -SkipCACheck -SkipCNCheck
-SkipRevocationCheck

$httpsResult = New-PSSession -UseSSL -ComputerName "localhost"
-SessionOption $httpsOptions -ErrorVariable httpsError -ErrorAction
SilentlyContinue

If ($httpResult -and $httpsResult)
{
    Write-Verbose "HTTP: Enabled | HTTPS: Enabled"
}
ElseIf ($httpsResult -and !$httpResult)
{
    Write-Verbose "HTTP: Disabled | HTTPS: Enabled"
}
ElseIf ($httpResult -and !$httpsResult)
{
    Write-Verbose "HTTP: Enabled | HTTPS: Disabled"
}
Else
{
    Write-Log "Unable to establish an HTTP or HTTPS remoting session."
    Throw "Unable to establish an HTTP or HTTPS remoting session."
```

}
Write-VerboseLog "PS Remoting has been successfully configured for Ansible."

2. Run the powershell script , below is sample example



Note : you can see output like below “OK”



3. Once done from windows machine ,go back to Ansible server(which is Linux server) and install Ansible, python-pip and pywinrm packages

- sudo apt-add-repository ppa:ansible/ansible
- sudo apt-get update
- sudo apt-get install ansible
- apt-get install python-pip
- pip install pywinrm

4. Once you installed required packages on Ansible server , set the inventory file for windows host

- vim /etc/ansible/hosts (which is default inventory file)

```
[win]
52.27.212.150
[win:vars]
ansible_user=Administrator
ansible_password=hJz=YD7DmN
ansible_connection=winrm
ansible_winrm_server_cert_validation=ignore
```

Note: Change the credentials , ip addresses based on your server and save it.

5. Check the connection by running ping module.

```
root@ip-172-31-81-220:/etc/ansible# ansible win  -m win_ping
52.27.212.150 | SUCCESS => {
    "changed": false,
    "ping": "pong"
}
```

Note: So it got connected and getting response from windows client

6. Run sample powershell script on windows machine using win_shell module in ansible

Note: FYI..you have powershell script already existed in your windows server Desktop location with below script content(this will create folders in C drive)

Vim test1.ps1

```
$path = "C:\fso","C:\fso1","C:\fso2"

md $path -Force
```

In Ansible server , write a playbook to execute that script

Vim test.yml

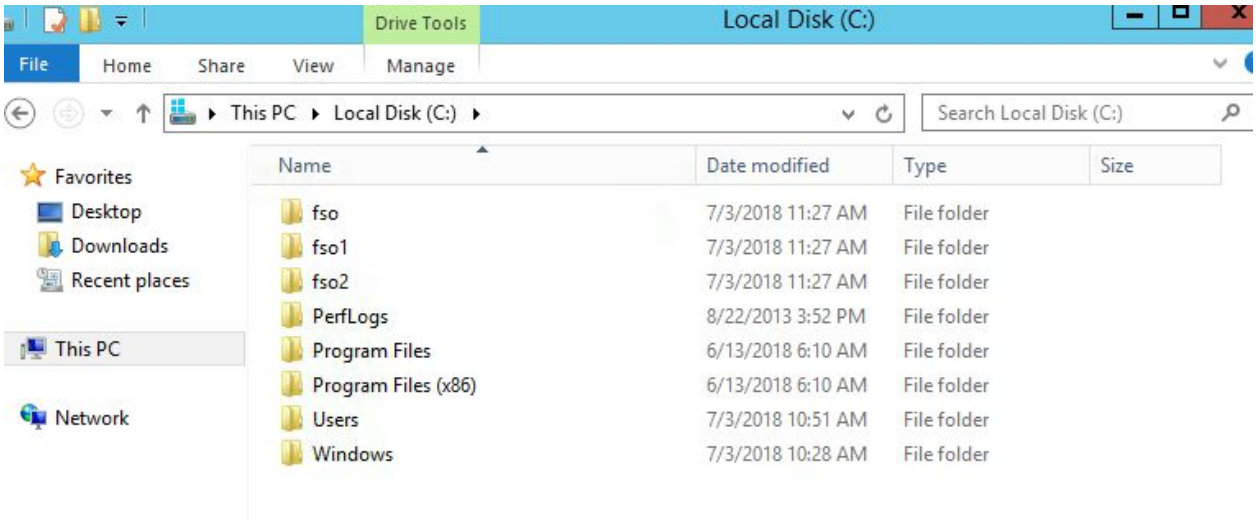
```
---
- name: running script on windows machine
  hosts: win
  tasks:
     - name: running power shell script on windows
       win_shell: C:\Users\Administrator\Desktop\test1.ps1
```

Execute the playbook(below is sample output)

```
root@ip-172-31-81-220:/etc/ansible# ansible-playbook test.yml

PLAY [running script on windows machine]
**********************************************************************************
******************

TASK [Gathering Facts]
**********************************************************************************
***********************************
ok: [52.87.213.150]

TASK [running power shell script on windows]
**********************************************************************************
**************
changed: [52.87.213.150]

PLAY RECAP
**********************************************************************************
************************************************
52.87.213.150              : ok=2    changed=1    unreachable=0    failed=0

root@ip-172-31-81-220:/etc/ansible#
```

Verification:

Go to windows server and check in C drive



So it was created.

Thant’s it!!!!!!!