Lab 8 Bootstrap Node

Configure the firewall to accept remote WinRM connections

In the next part, you'll bootstrap your Windows Server node remotely from your workstation over the WinRM protocol.

By default, the Windows firewall permits inbound traffic on port 5985 (WinRM) only from systems in the same local domain. Let's make sure that the firewall is configured to accept inbound connections from any remote address.

Run this command to change the default rule to enable inbound traffic from any remote address.

```
Get-NetFirewallPortFilter | ?{$_.LocalPort -eq 5985 } | Get-NetFirewallRule | ?{ $_.Direction –eq "Inbound" -and $_.Profile -eq "Public" -and $_.Action –eq "Allow"} | Set-NetFirewallRule -RemoteAddress "Any"
```

In practice, your firewall settings depend on your environment. For example, if each node in your network is joined to the same domain, you might use the default firewall settings.

Verify the configuration

From your workstation, you can verify that your Windows Server node can receive network traffic on port 5985 and through the firewall. You don't have to do this every time you bootstrap a node, but verifying that your node is connectable will help ensure that the bootstrap process succeeds.

To verify the connection, you can use the `knife wsman test` command, which is provided by the `knife-windows` plugin. This command provides functionality that's similar to PowerShell's Test-WSMan cmdlet, but is available from any operating system that can run Chef DK, including Windows, Mac OS, and Linux.

From the `~/learn-chef` directory on your workstation, run the following command, replacing `HOSTNAME` with your node's hostname or IP address.

```
knife wsman test HOSTNAME --manual-list
```

Here's an example:

```
knife wsman test 52.201.225.210 --manual-list
Connected successfully to 52.201.225.210 at http://52.201.225.210:5985/wsman.
```

Bootstrap your node

Now that you've verified that you can connect to your node over WinRM, you're now ready to bootstrap it.

First, from your workstation, make sure you're in the `~/learn-chef` directory.

```
cd ~/learn-chef
```

Run this command to bootstrap your node. Replace `ADDRESS` with your remote node's external address, `USER` with your username, and `PASSWORD` with your password.

```
knife bootstrap windows winrm ADDRESS --winrm-user USER --winrm-password
'PASSWORD' --node-name node1 --run-list 'recipe[learn_chef_iis]'
```

Here's an example.

`node1` to bootstrap a different node, you'll need to choose a different name or remove the previous node.

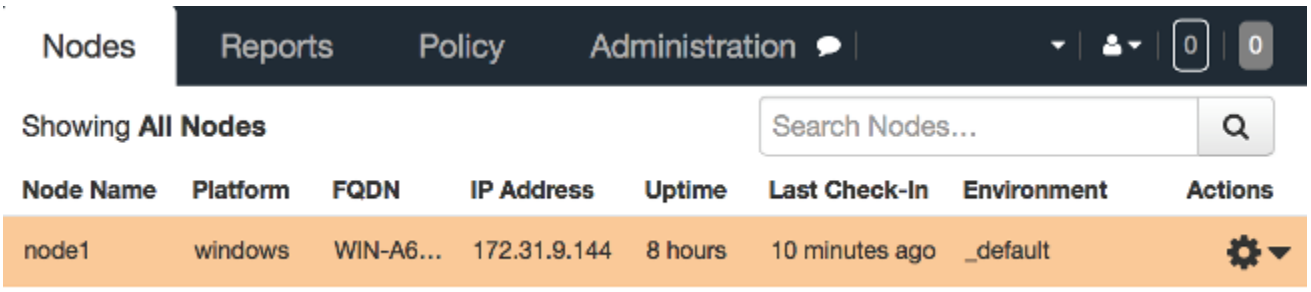
By default, the bootstrap process uses Negotiate authentication and encryption, which helps protect your password and other sensitive information.

Troubleshooting

Confirm the result

Two things just happened.

First, your node was associated with your hosted Chef account. To verify this, navigate to the Chef management console. From the **Nodes** tab, you'll see an entry for the node you just bootstrapped.



You can also verify that the node successfully bootstrapped by running the `knife node list` command.

knife node listnode1

You can use the `knife node show` command to view data about your node.

Add template code to your HTML

On the local workstation copy of your `learn_chef_iis` cookbook, change `Default.htm.erb` to look like this.

```
<html>
  <body>
    <h1>hello from <%= node['fqdn'] %></h1>
  </body>
</html>
```

2. Upload your cookbook to the Chef server

Run `knife` to upload the updated cookbook to the Chef server.

knife cookbook upload learn_chef_iis

3. Run the cookbook on your node

Run `knife winrm` to run your cookbook on your node. Replace `ADDRESS`, `USER`, and `PASSWORD` with your values.

knife winrm ADDRESS chef-client --manual-list --winrm-user USER --winrm-password 'PASSWORD'

Here's an example.

knife winrm 52.201.225.210 chef-client --manual-list --winrm-user Administrator --winrm-password 'HhrQCP&e

The `knife winrm` command takes the command to run on your node. Here we specify `chef-client`, which causes the node to check-in with the Chef server to obtain the latest cookbooks and then apply them.

In practice, you might instead configure `chef-client` to run automatically on a regular basis or in response to some event or trigger, such as when code is checked in to your repository.

4. Confirm the result

Open a web browser from your workstation and navigate to your web server.

Chef discovers and adds the FQDN for you automatically!