Title:

Configuring Control-M installation in Cloud environment.

Last Update: July 4th, 2018

Cause:

Cloud Services Background

Cloud Services is a collection of remote computing services that together make up a cloud computing platform, offered over the Internet by different vendors of Cloud environment.

Server platforms are created and maintained by the Cloud Services Management Console. In Cloud Services, providers use the Cloud Instance to allow users to rent virtual computers called “instances”. There are many features available for these virtual computer instances including, Auto-Scaling[1], Network and Storage management. This enables users to handle changes in infrastructure requirements that are normally affected by spikes and outages and reduces the need to forecast traffic.

Cloud Services uses templates which are special types of virtual appliances (e.g. Amazon Machine Images – AMI) that contain the software configuration (e.g. operating system, application server and applications). An instance can be launched from a preconfigured image, which is a copy of the running virtual server in the cloud.

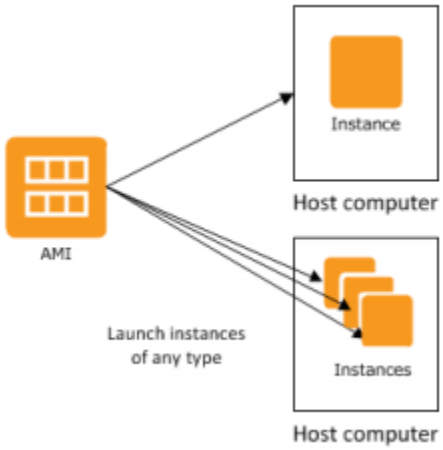

Figure ~~1~~ 0: AMI Instances

An instance of a virtual server in a cloud operates like a traditional host, and the user can interact with it as it is a normal computer. The administrator user will be provided with complete control of the instance(s) to perform administrative works on the instance(s).

By default, a cloud instance has two IP addresses at launch time: a private IP address and a public IP address that is mapped to the private IP address through network address translation (NAT). Every time an instance is restarted, the instance will get a new public hostname/IP address. The private hostname/IP address will stay the same until the instance is terminated. The way to keep a static Public hostname/IP address is to allocate an Elastic IP address and associate it with the instance. Public IP (An Elastic IP address (EIP), or Reserved IP) is a static Public IP address

[1] Amazon CLOUD INSTANCE auto-scaling

designed for dynamic cloud computing. For example, the failure of an instance or software can be masked by remapping the public address to another instance rapidly.

Note:

- The private IP address of the instance is not reachable from the Internet.
- Ensure that the hostnames used in the configuration files that need to be accessed externally resolve to the public IP address within the local network.

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Activities after recycling the AMI

Submit jobs to Control-M/Agents behind AWS Elastic Load Balancing

Preparation Activities

EC2 on Windows Platform

To install Control-M that will be highly availability, do the following to assign AMI a hostname in the format of 'ip-<hex Internal IP>', so the AMIs can communicate with each other by private hostname.

- Launch the "EC2 Service Properties"
- Select the "General" Tab
- Check the box for "Set Computer Name"

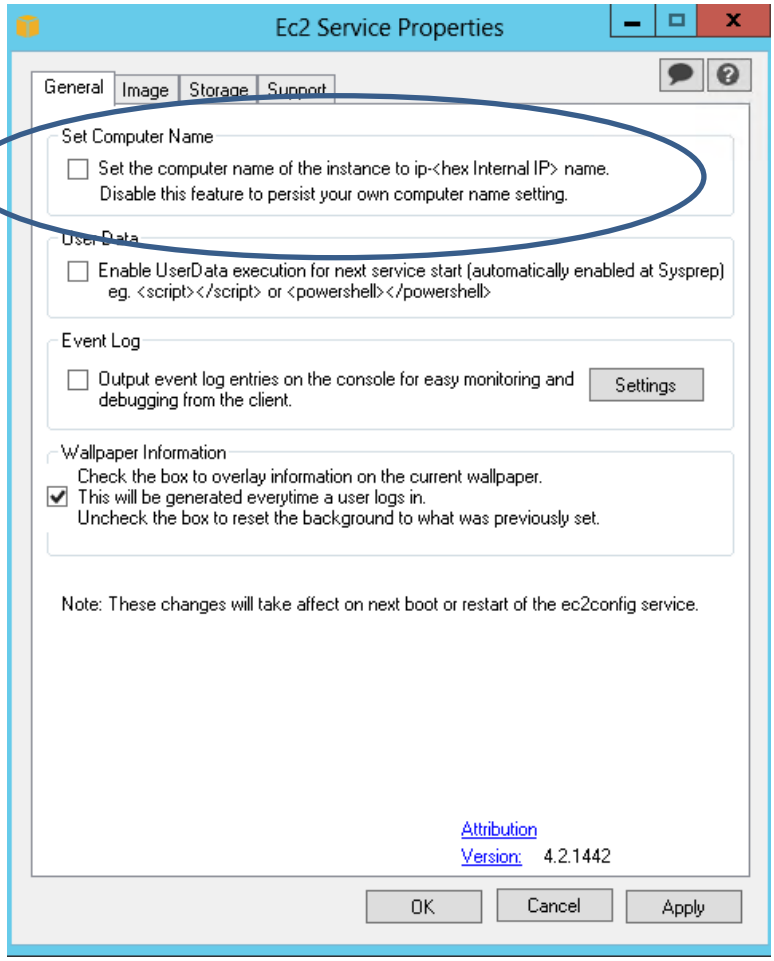


Figure 1: Enable 'Set Computer Name'

Installing Control-M on EC2 Unix/Linux Platform:

Below is the step by step procedure for creating a virtual server using AWS and for installing Control-M with RDS Oracle. As the creation of an instance is Cloud specific, do setup the cloud instance using the procedures specified by the Cloud vendor.

1) Create a Control-M supported UNIX / Linux OS instance (for example, Red Hat 6.5 or higher instance)

   a. In the Cloud Services Management Console, select the instance operating system as desired:

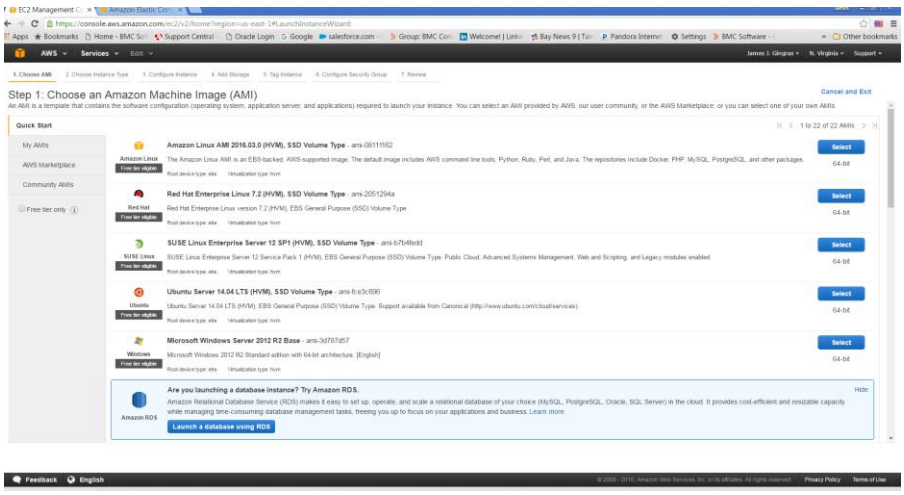


Figure 1: Choose an Amazon Machine Image (AMI)

   b. Choose the instance type:
   Note: Please avoid using t2 instance type whose default kernel setting in Linux platform is insufficient for Control-M

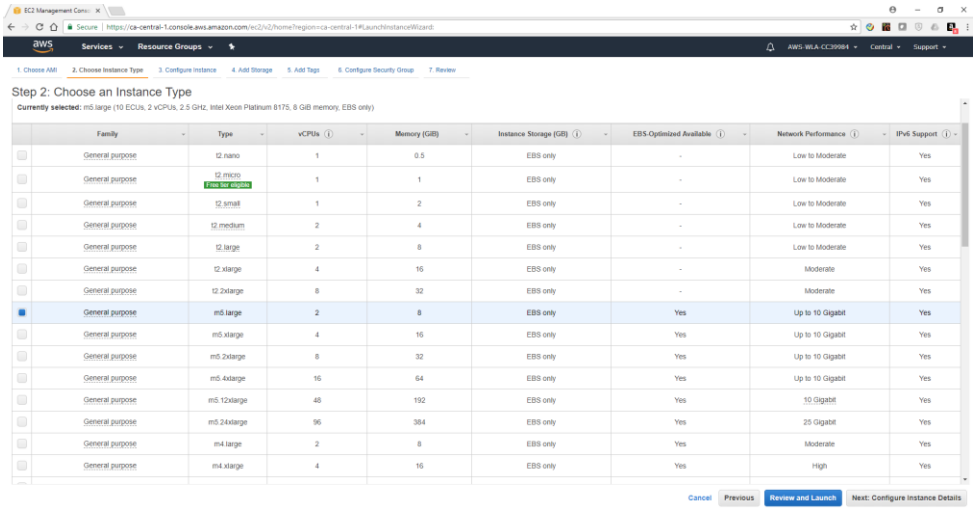


Figure 2: Choose an Instance Type

   c. Use the default configuration except for the following:

i. Select a supported Control-M OS with at least 4GB of RAM or as specified in the installation for hardware requirements for the components you will be installing.

ii. Add at least 30GB of storage or as specified in the installation guide for disk space require

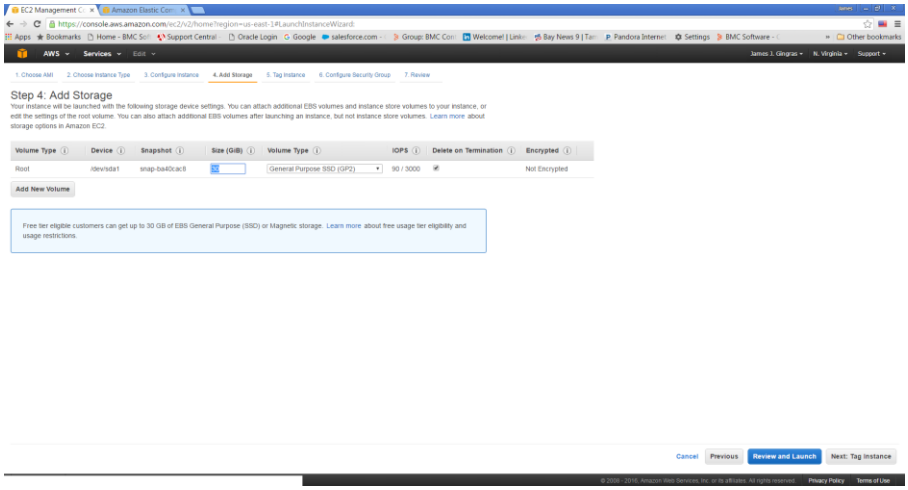


Figure 3: Add Storage

d. "Tag" the instance with a name for easy reference. E.G. **CONTROLM**

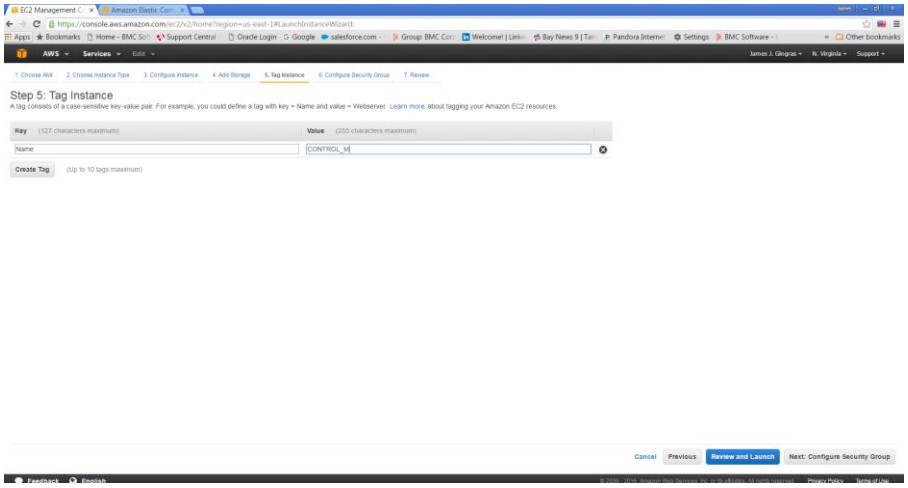


Figure 4: Tag Instance

e. Configure the Security Group as follows:

Control-M requires the following setting for the Security Group:

- TCP port 22 for SSH access to login to the server
- TCP port 13075 for Control-M EM CORBA Naming Service – (for V9.0.00 only)
- TCP ports 13076-13098 for Control-M EM components (or any range of 22 ports) – (for V9.0.00 only)
- TCP port 18080 for the Control-M EM Web Server
- TCP port 7105 for Control-M Agent-Server communication

- TCP port 7106 for Control-M Server-Agent communication
- TCP port 8443 for Control-M Automation API
- TCP port 2368 for Control-M/Server High Availability, communication between Primary and Secondary
- TCP port 2369 for Control-M/Server to Control-M EM Configuration Server communication
- TCP port 2370 for Control-M/Server to Control-M EM Gateway communication
- Open inbound traffic for RDS Oracle/PG/MSSQL ports

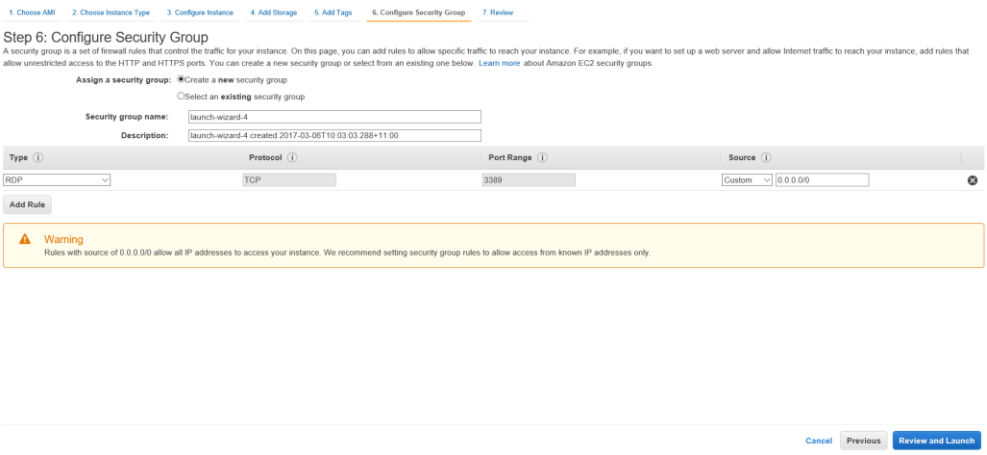


Figure 5: Configure Security Group

f. Review the instance configuration and launch the instance:

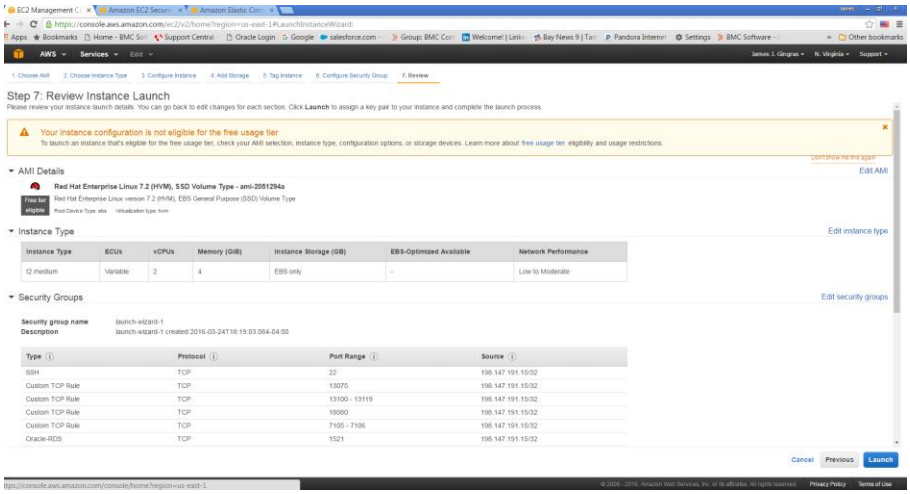


Figure 6: Review Instance Launch

g. Create and Store a Public/Private security key pair for logging in with SSH

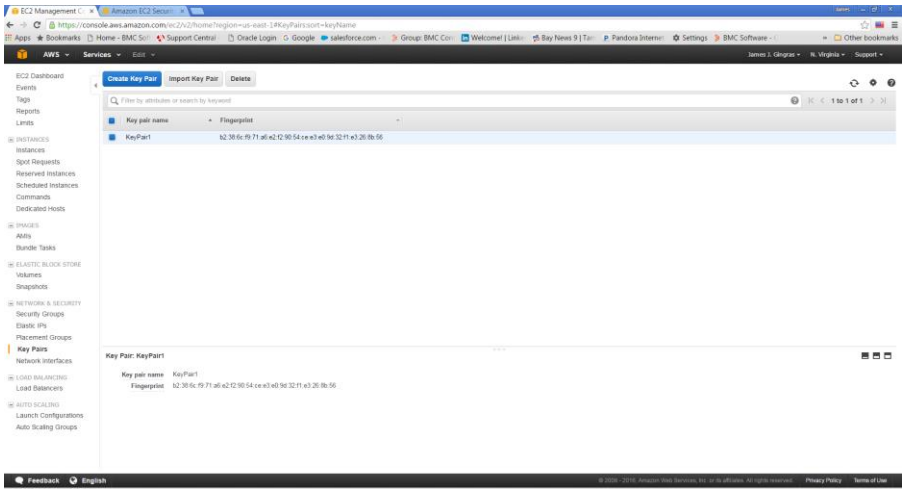


Figure 7: Creating Key Pair

h. In the Cloud Instance Network, create an Elastic IP address (Public IP) and associate it with your server instance

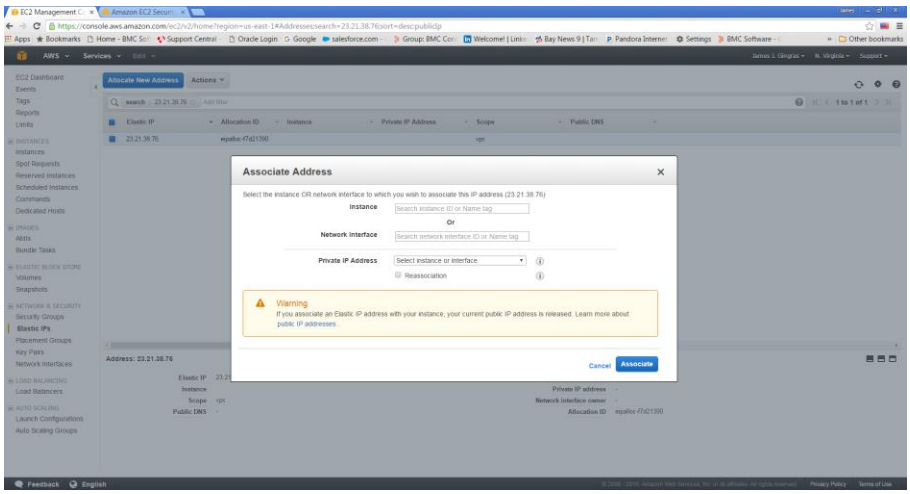


Figure 8: Associate Elastic IP Address

2) Login to the Cloud Services server using SSH

a. Login username is “Cloud Instance” user, not root.
b. SSH login format: ssh -i <path>/<private key file> <Cloud Instance user>@<public hostname>
c. Login as root: sudo su –

Note: you may not be able to SSH from within the company network to the Cloud Services instance. You may need to have IT open the Cloud Services instance IP address for SSH or access the Cloud Services instance from inside the company network.

3) Configure the cloud instance

a. Create the controlm unix group: *groupadd control*
Note: For Linux environment, it is recommended that Control-M Enterprise Manager and Control-M/Server are installed in its own individual OS accounts.

Using separate accounts
- Create the Control/EM unix user: *useradd –d /<home>/ctmem –g controlm –s /bin/csh ctmem*
- Create the Control/Server unix user: *useradd –d /<home>/ctmserv –g controlm –s /bin/csh ctmserv*

After installing Control-M/EM repeat steps 4 – 7 below for Control-M/Server.
Step 5 should be performed only once on a given machine.

Using OneInstall
- Create the controlm unix user: *useradd –d /<home>/ctm –g controlm –s /bin/csh ctm*
  Note: The Control-M OneInstall will install the Control-M/Enterprise Manager(64 bit), Control-M/Server(64 bit), Control-M/Agent(64 bit) and the CM's (64bit) under one Unix user. The OneInstall requires the unix user shell to be either csh or tcsh since these are the only shells all 3 products support. (Use OneInstall for trial purposes only.)

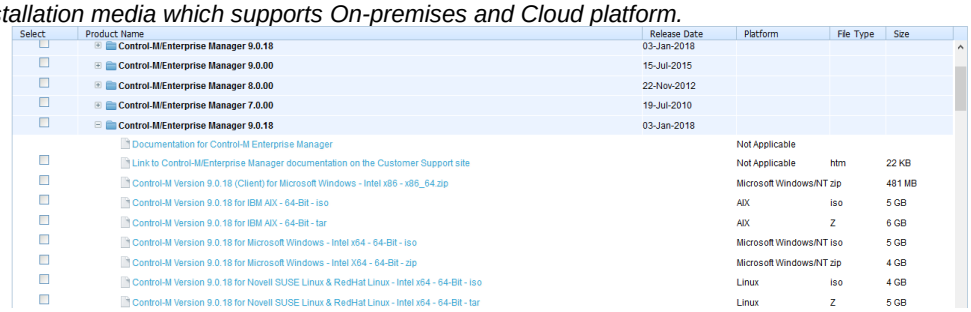
b. Change permission on the Control-M EM and Control-M/Server home directory to 755:
chmod 755 /<home>/ctm

4) sftp the Control-M installation image to the Cloud Services server

a. Post Cloud Services only supports sftp and not ftp, however the BMC EPD does not support sftp
b. Use ftp to transfer the Control-M installation image to a on premises server
c. Use sftp to transfer the Control-M image to the Cloud Services server

Note:

- *For Control-M V9.0.18 and higher installation, please choose the regular Control-M Version 9.0.18 installation media which supports On-premises and Cloud platform.*



Select	Product Name	Release Date	Platform	File Type	Size
	Control-M/Enterprise Manager 9.0.18	03-Jan-2018			
	Control-M/Enterprise Manager 9.0.00	15-Jul-2015			
	Control-M/Enterprise Manager 8.0.00	22-Nov-2012			
	Control-M/Enterprise Manager 7.0.00	19-Jul-2010			
	Control-M/Enterprise Manager 9.0.18	03-Jan-2018			
	Documentation for Control-M Enterprise Manager		Not Applicable		
	Link to Control-M/Enterprise Manager documentation on the Customer Support site		Not Applicable	htm	22 KB
	Control-M Version 9.0.18 (Client) for Microsoft Windows - Intel x86 - x86_64.zip		Microsoft Windows/NT	zip	481 MB
	Control-M Version 9.0.18 for IBM AIX - 64-Bit - iso		AIX	iso	5 GB
	Control-M Version 9.0.18 for IBM AIX - 64-Bit - tar		AIX	Z	6 GB
	Control-M Version 9.0.18 for Microsoft Windows - Intel x64 - 64-Bit - iso		Microsoft Windows/NT	iso	5 GB
	Control-M Version 9.0.18 for Microsoft Windows - Intel X64 - 64-Bit - zip		Microsoft Windows/NT	zip	4 GB
	Control-M Version 9.0.18 for Novell SUSE Linux & RedHat Linux - Intel x64 - 64-Bit - iso		Linux	iso	4 GB
	Control-M Version 9.0.18 for Novell SUSE Linux & RedHat Linux - Intel x64 - 64-Bit - tar		Linux	Z	5 GB

- *For Control-M V9.0.00 installation, it offers two types of images. If the database is an AWS Relation Database Service (RDS) databases, then please use the Control-M Version 9.0.00 with cloud support media. Otherwise, choose the regular Control-M Version 9.0.00 installation media.*

Figure 10: Choose Control-M Installation Media

5) Run check_req.sh on Unix image to verify server kernel and account settings

a. Copy the file check_req_tar.Z from the installation media.
b. Ensure Korn shell is installed on the system. If not, install Korn shell as below:
   - Run: *yum install ksh*
     The Korn shell will be needed later for installing fixpacks
c. Ensure csh, psmisc, bc, flex, io libraries are install. If not, install the libraries as below
   - yum install csh
   - yum install psmisc
   - yum install libaio
   - yum install bc
   - yum install flex

NOTE:

- If the following check_req error occurs “Not enough free swap space. At least 4GB free swap is required.”, then the following steps will create a 6GB swap space file but for production systems you should allocate a swap device instead
  i. Create the swap file: *dd if=/dev/zero of=/swapfile bs=1024 count=6291456*
  ii. Change the permission of the new swap file: *chmod 0600 /swapfile*
  iii. Setup the swap file with the command: *mkswap /swapfile*
  iv. enable the swap file: *swapon /swapfile*
  v. Enable it at boot time- edit /etc/fstab to include: */swapfile swap swap defaults 0 0*
  vi. Verify the swap file space: *cat /proc/swaps* or free
- If the following check_req error occurs “Change the kernel.sem (semmni) value to higher or equal to 500”
  - To view current settngs run: *cat /proc/sys/kernel/sem*
  - To change settngs run: *sysctl –w kernel.sem=”250 32000 100 500”*

6) Run the Control-M V9.0.00 Setup logged in to Control-M account

Note: This procedure is based on V9.0.00, it applies to V9.0.18 and higher too.

a. run *setup.sh*

b. Select custom install:

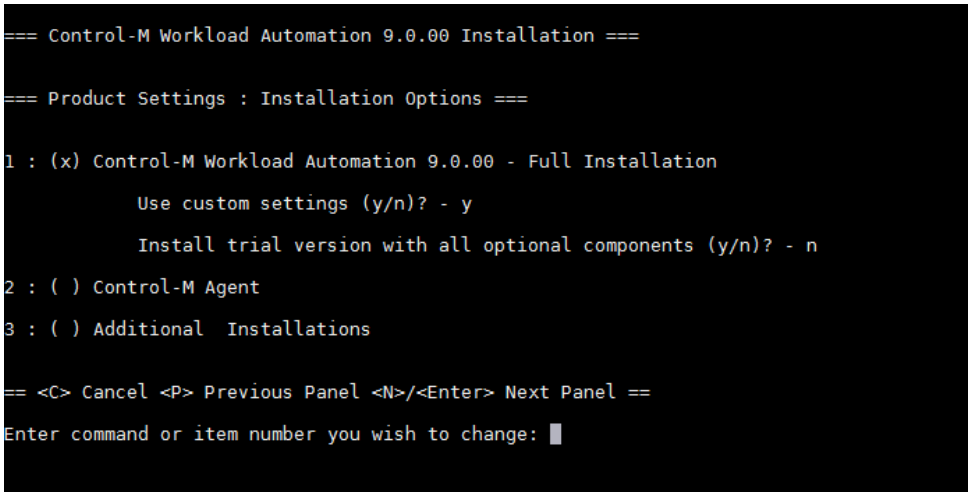


Figure 11: Select Custom Install

c. Choose “Database Server Type” as Oracle and set “Using AWS RDS Database Server” as Y:

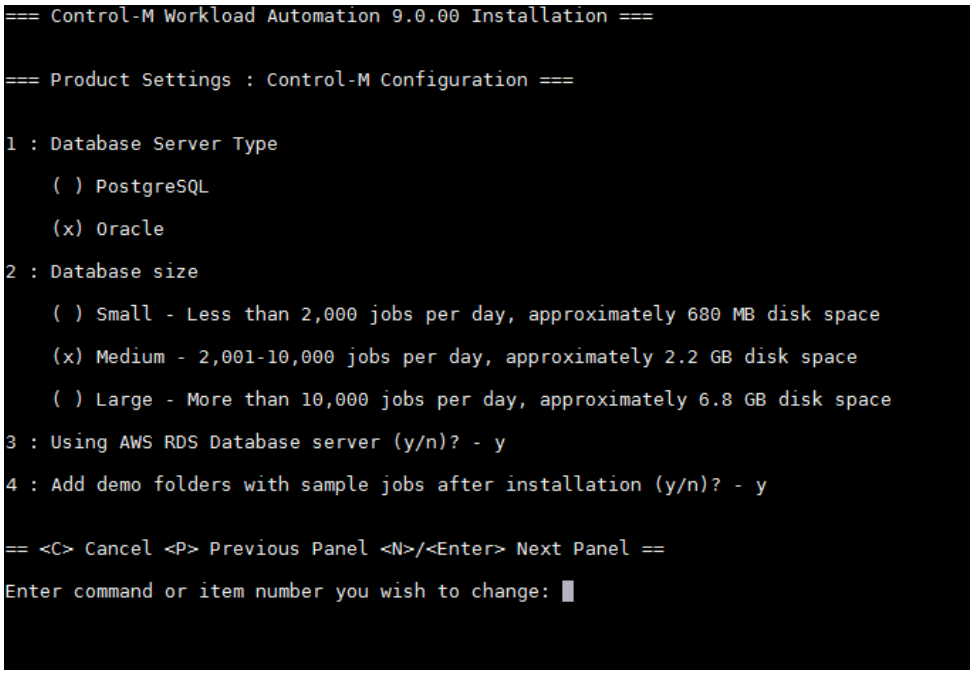


Figure 12: Choose Database Type

d. Fill out the Oracle RDS connection

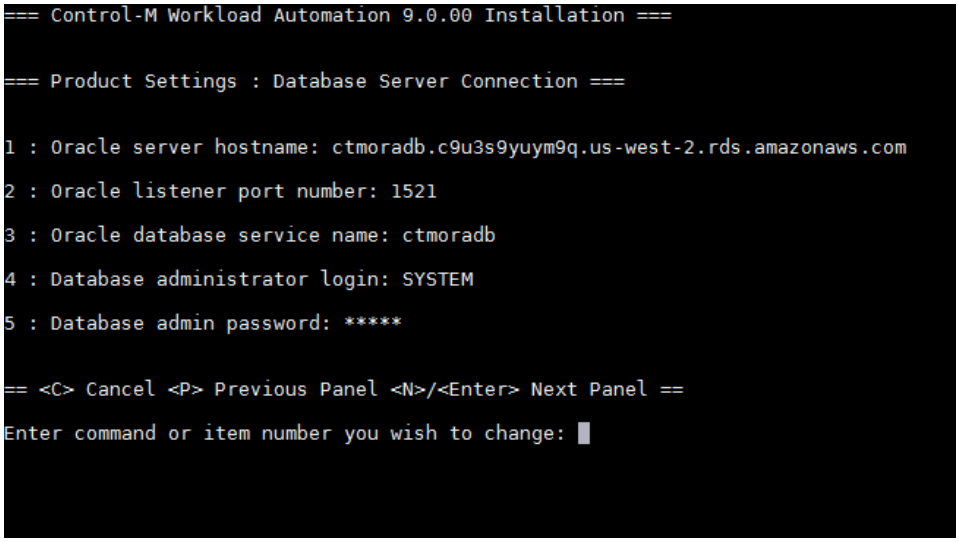


Figure 19: Fill out Oracle Details

e. Setup the Database Properties

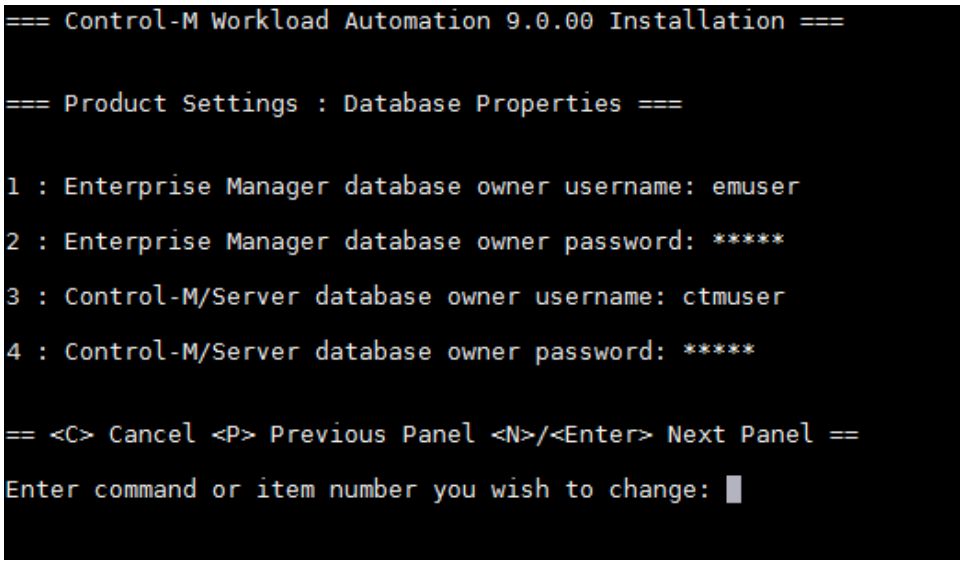


Figure 14: Setup Database Properties

f. Follow the prompt and finish the installation

7) Install the latest fixpacks for Control-M/EM, Control-M/Server and Control-M/Agent

8) (Optionally) if you need to add a storage volume

a. Create the storage volume in Cloud Instance
b. Associate it with the Instance
c. Login to the server and create the partition on it using fdisk: fdisk
d. Create the file system using mkfs: mkfs -t ext4 /dev/xvdb

e. Mount it to a directory: mount -t ext4 /dev/xvdb /media/controlm
f. Add it to the /etc/fstab file so it automatically mounts on reboot.
   For example, /dev/xvdf /media/controlm ext4 defaults 1 2

Installing Control-M on Windows Platform:

Below is the step by step procedure for using AWS to create a Windows virtual server and for installing Control-M with RDS PostgreSQL. This procedure is based on V9.0.00, and it applies to V9.0.18 and higher too.

1) Create a Control-M Supported Windows Operating system (for example Windows 2012 Server instance). For the procedure, please refer to the Step (1) of Installing Control-M on EC2 Unix/Linux Platform and select desired Windows OS instead.

2) Download Remote Desktop File for Windows instance

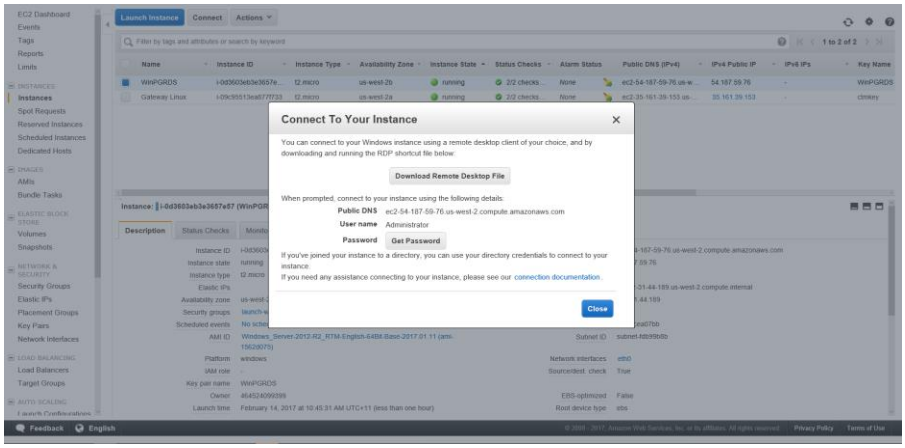


Figure 15: Download Remote Desktop File

3) Get Password

a. Click Get Password button

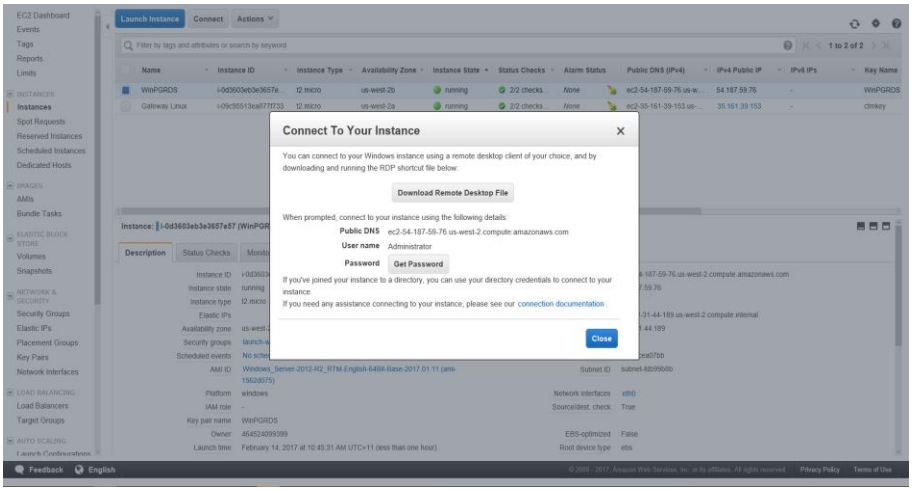


Figure 16: Click Get Password

b. Browse the PEM file and Decrypt password

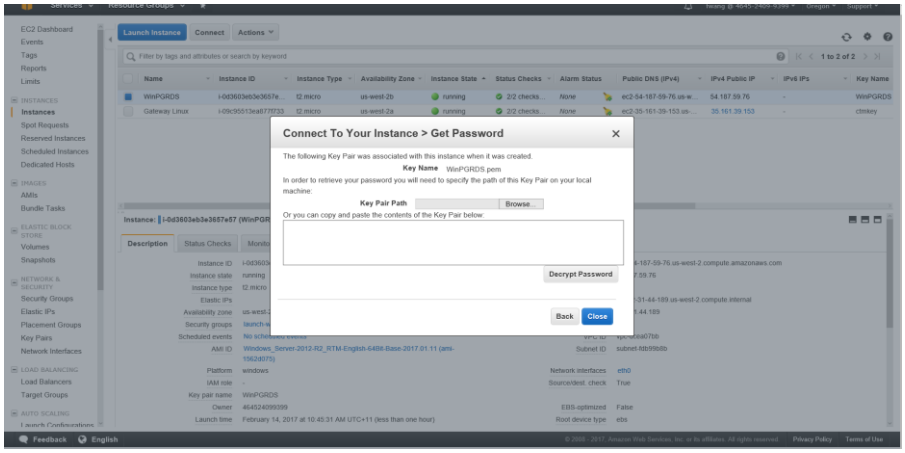


Figure 17: Click Get Password

4) Login to the Windows Image using Remote Desktop File

   a. Launch the downloaded RDP file
   b. Key in the username/password

5) sftp the Control-M installation image to the Cloud Services server

   a. Post Cloud Services only supports sftp and not ftp, however the BMC EPD does not support sftp
   b. Use ftp to transfer the Control-M V9.0.00 installation image to a server
   c. Use sftp to transfer the Control-M V9.0.00 image to the Cloud Services server

6) Run the Control-M V9.0.00 Setup as described below

   a. Launch the setup.exe

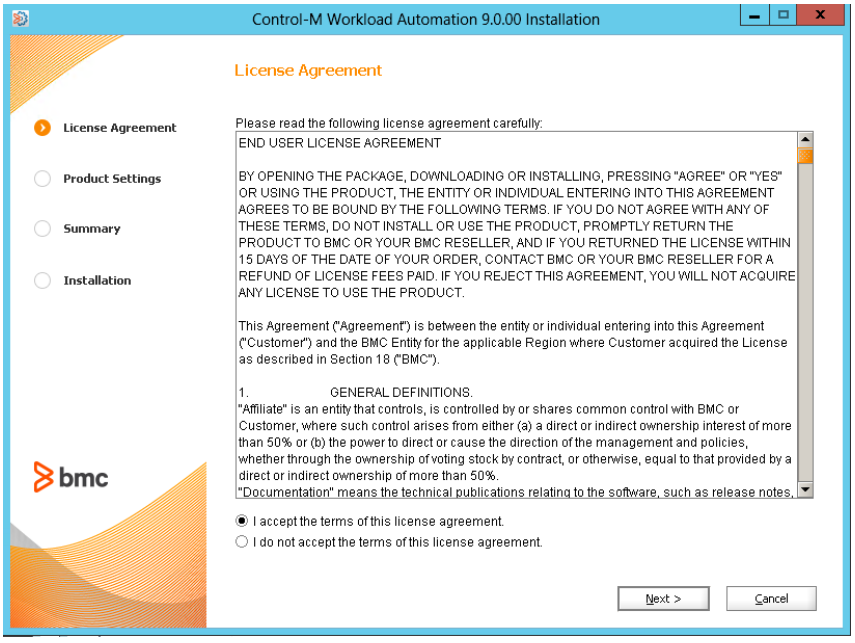


Figure 18: Launch Setup.exe

b. Select Use Custom Settings

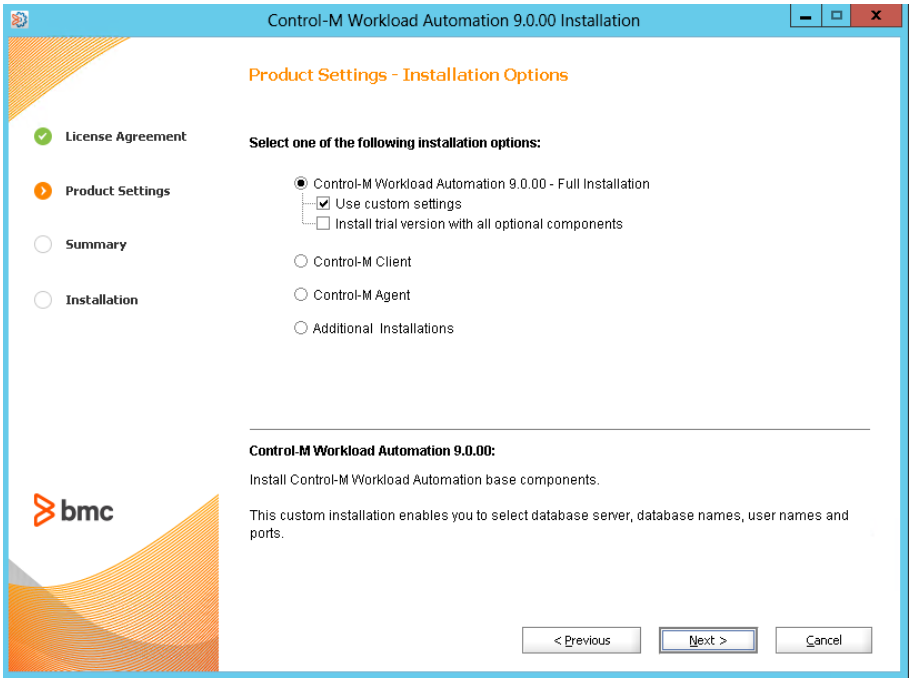


Figure 19: Choose Custom Settings

c. Check Using AWS RDS Database Server

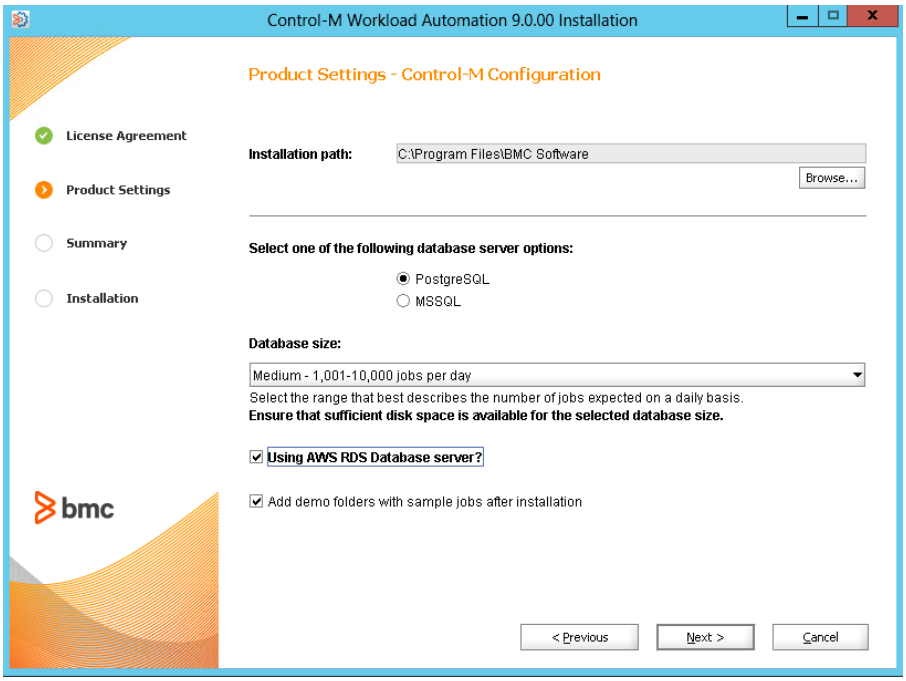


Figure 20: Choose Database Type

d. Fill in your RDS PostgreSQL server details

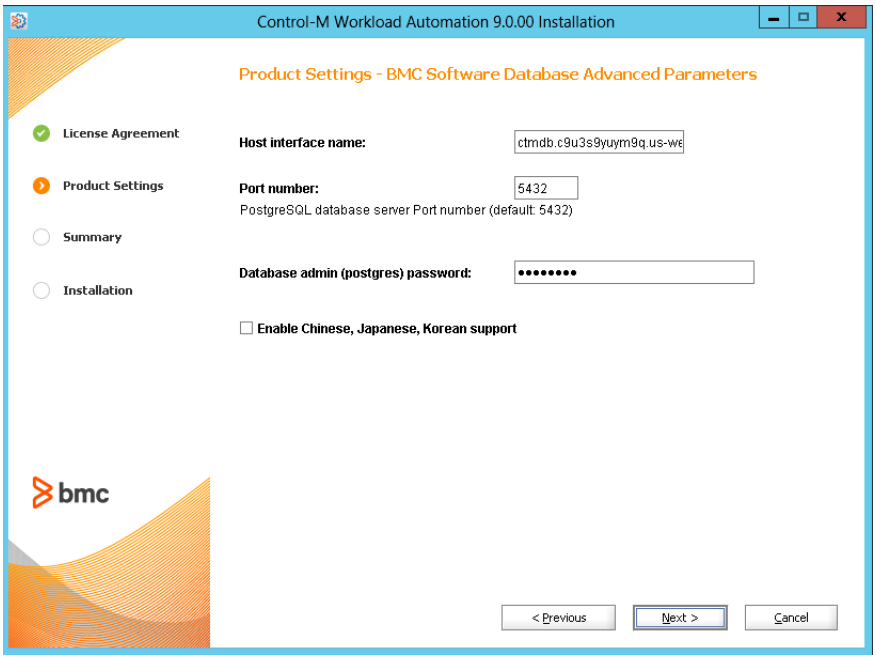


Figure 21: RDS PostgreSQL detail

e. Set your Database Properties

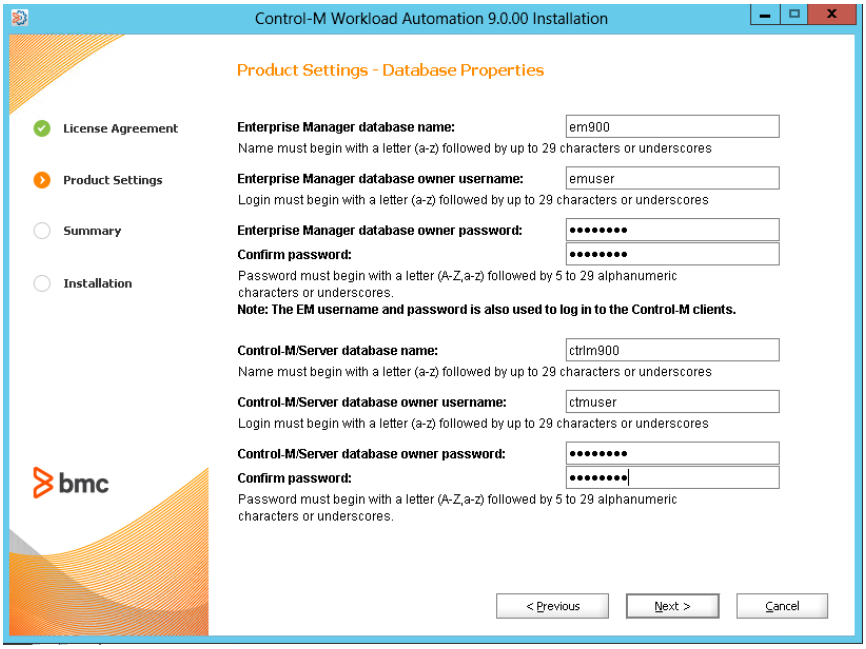


Figure 22: Set Database Property

f. Follow the prompt and Install

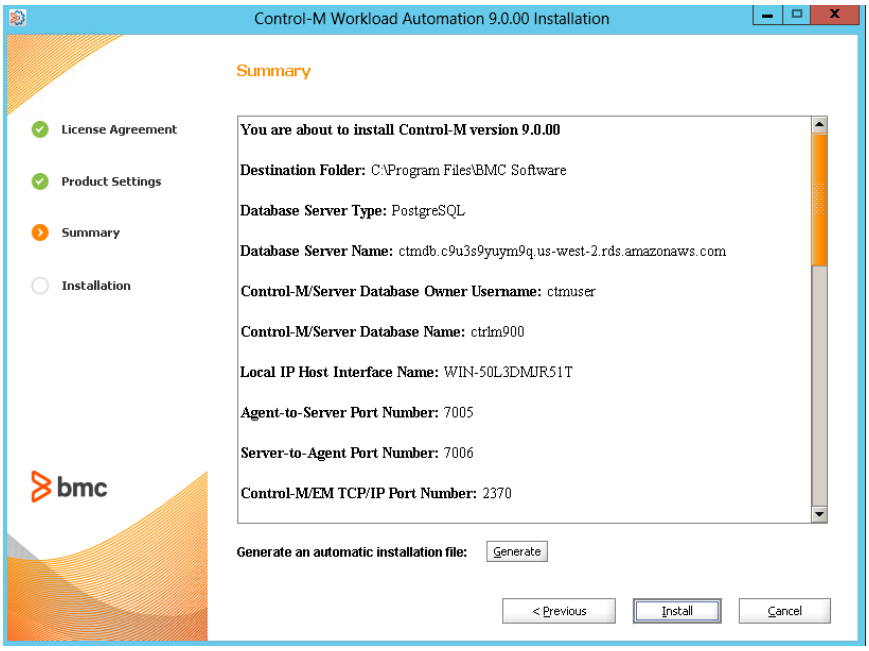


Figure 23: Control-M Workload Automation Installation

7) Logon the CCM then create GUI server, GCS, Web Server and Control-M/Server

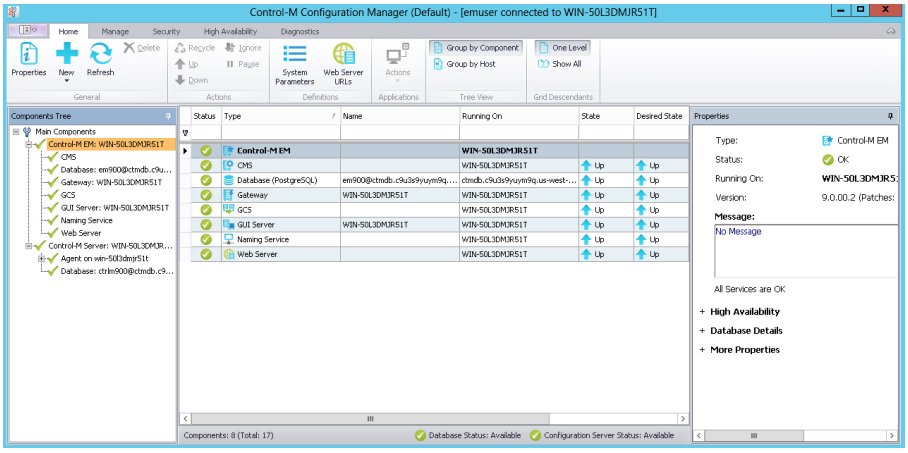


Figure 24: Create the Control-M/EM Components and Control-M/Server

Installing Control-M from AWS Marketplace

Below is step by step procedure creating a Linux based Control-M V9.0.00 environment from the AWS Marketplace, and this procedure applies to V9.0.18 and higher too.

Note:

- The public DNS name must be available for AMI, so the Control-M can be installed
- Control-M for AWS Marketplace is not available for all AWS regions. If it is not available for your region, please consider other regions.

Creating instance from AWS Marketplace

1) Logon the AWS Marketplace, and search by keyword of BMC

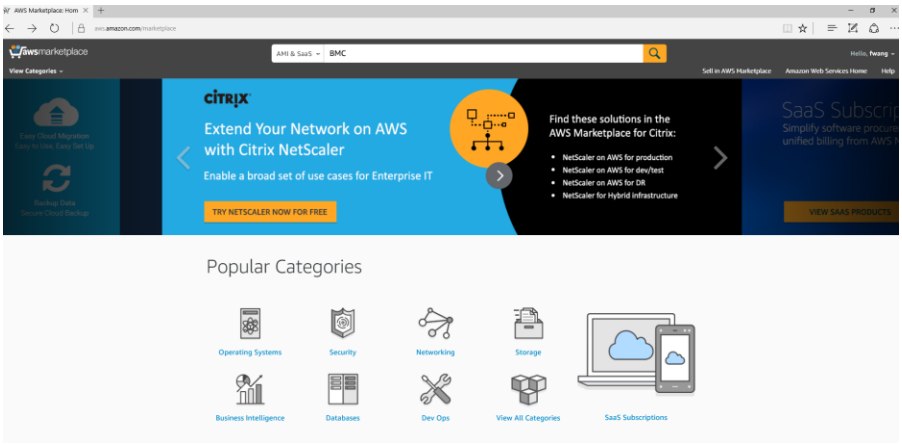


Figure 25: Logon AWS Marketplace

2) Select the Control-M Workload Automation(BYOL)

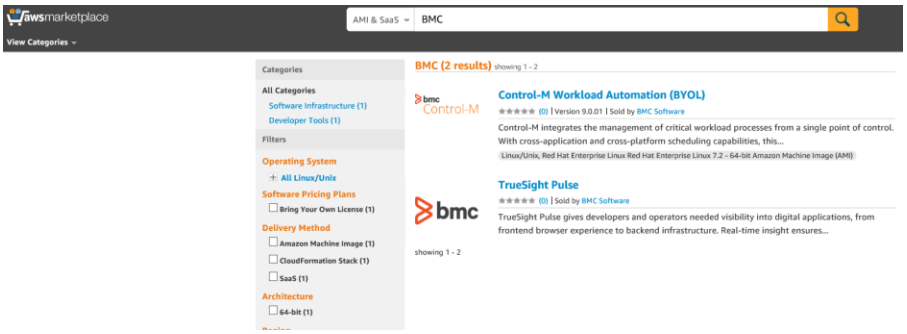


Figure 26: Search BMC

3) Read the product description and click Continue

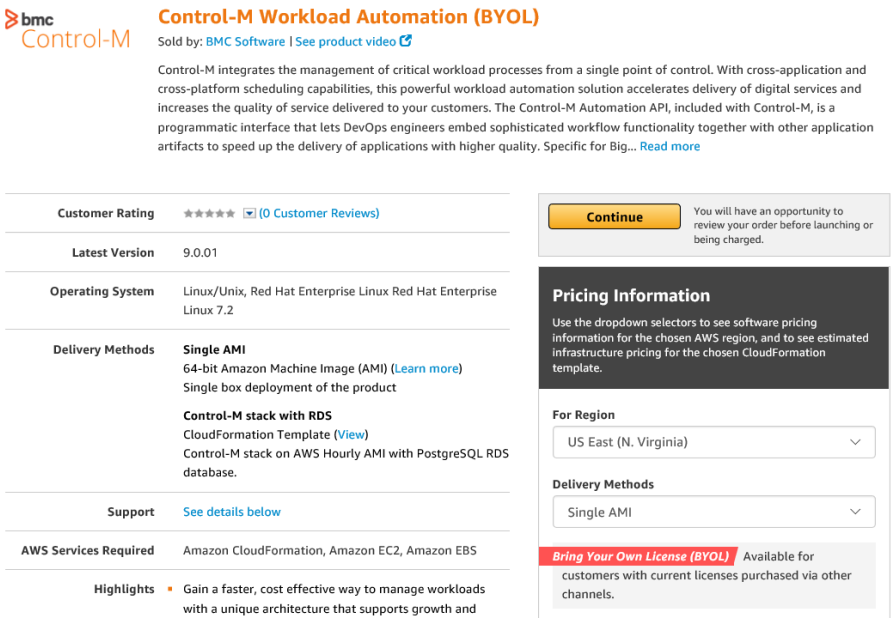


Figure 27: Find Control-M Workload Automation

4) Launch by '1-Click Launch' or 'Manual Launch'

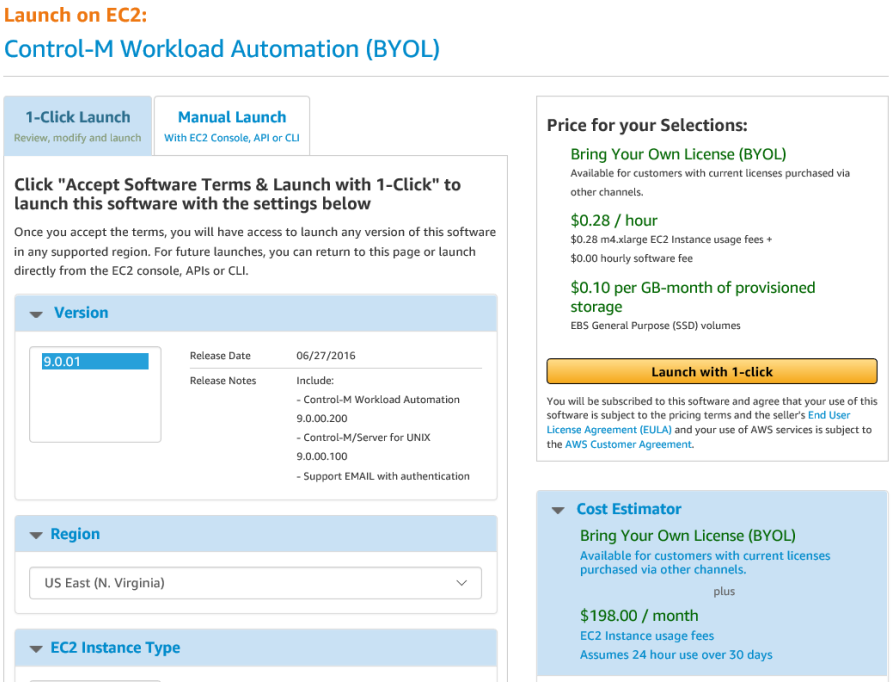


Figure 28: Choose Launch Type

5) Launching the Product

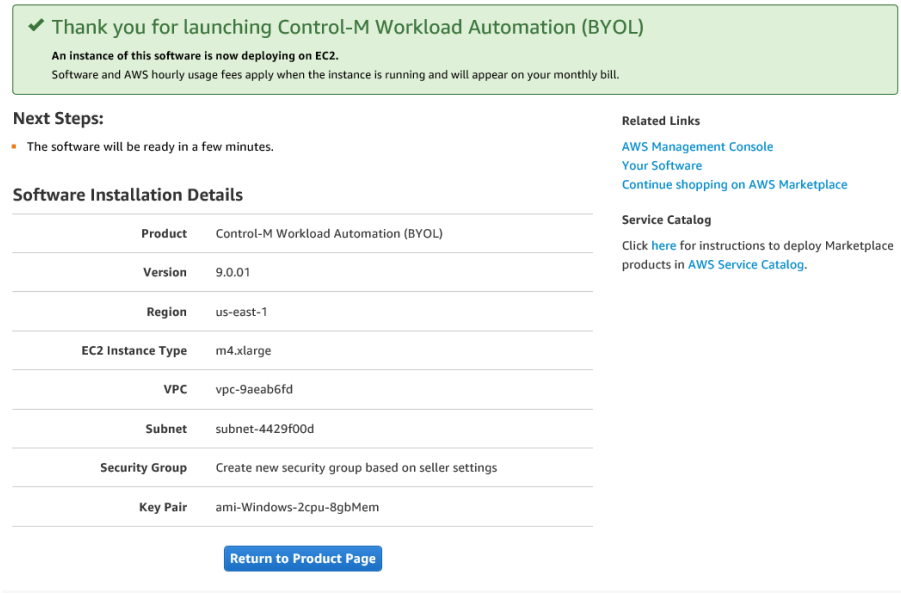


Figure 29: Launch Product

6) Navigate to 'Your Software Subscriptions, and Click 'View Instances'

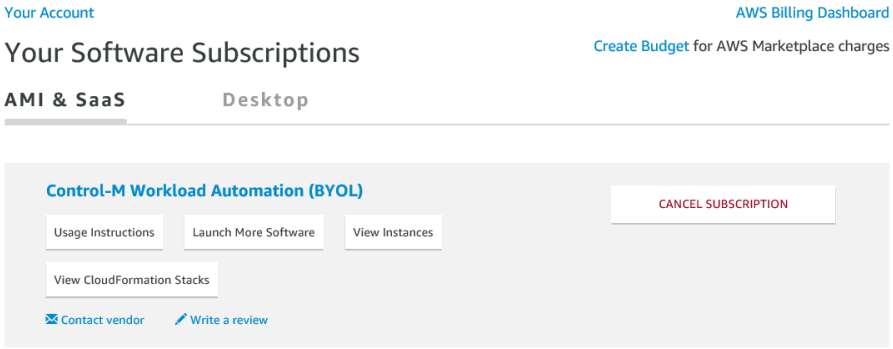


Figure 30: View Subscriptions

7) Find your AWS instance, and click ‘Manage in AWS Console’

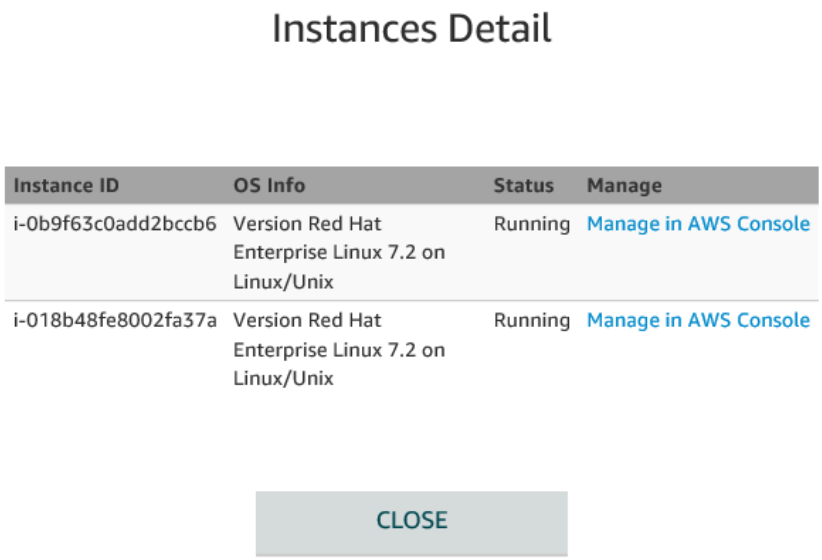


Figure 31: View Instances

8) Now, Control-M Workload Automation (BYOL) instance is manageable in AWS Console

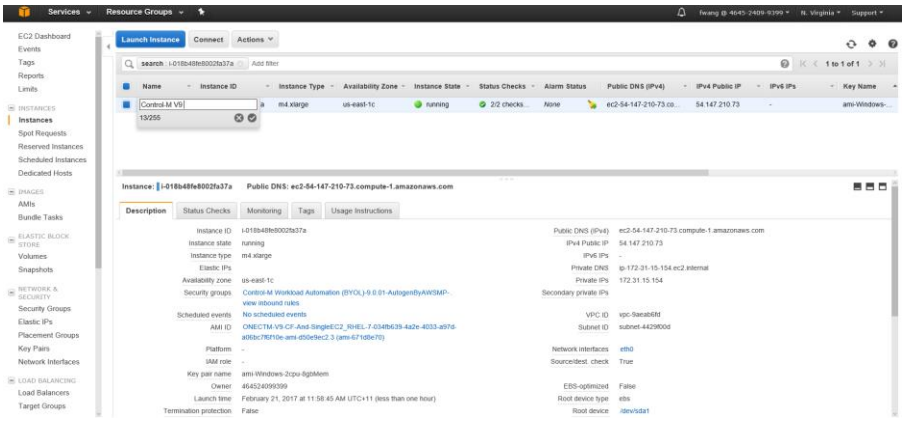


Figure 32: Manage instances in EC2 Console

Creating instance from AWS Marketplace under EC2 Console

Rather than creating Control-M instance from regular AWS Marketplace, Control-M instance can be created from AWS Marketplace under EC2 Console. This option allows instance customization which has the option to assign an existing security group and create brand new pem key file.

1) Logon the EC2 Console

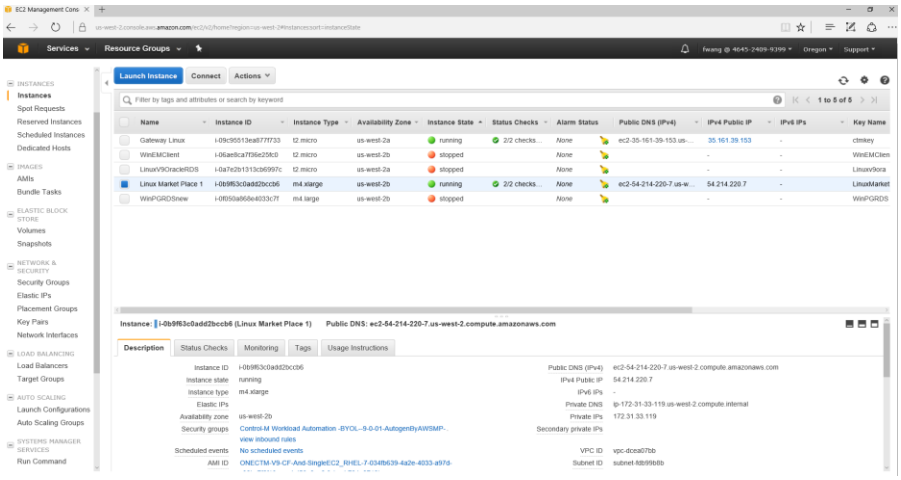


Figure 33: Logon EC2 Console

2) Choose AWS Marketplace

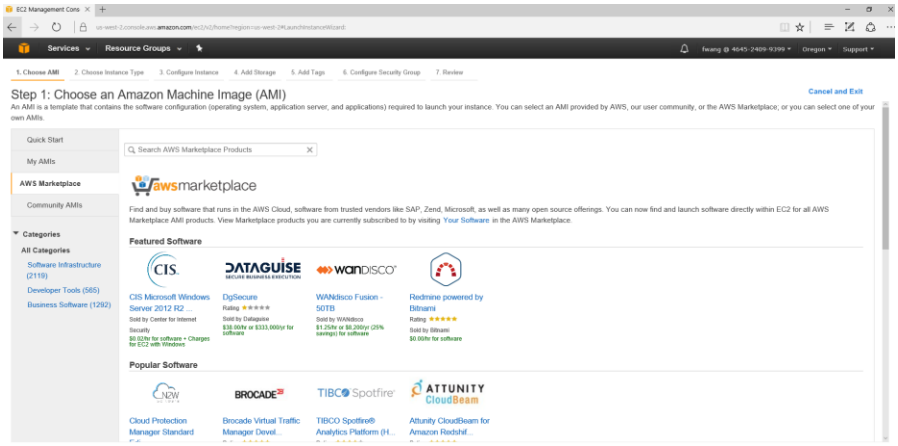


Figure 34: Choose Marketplace Option

3) Find Control-M Workload Automation by searching BMC

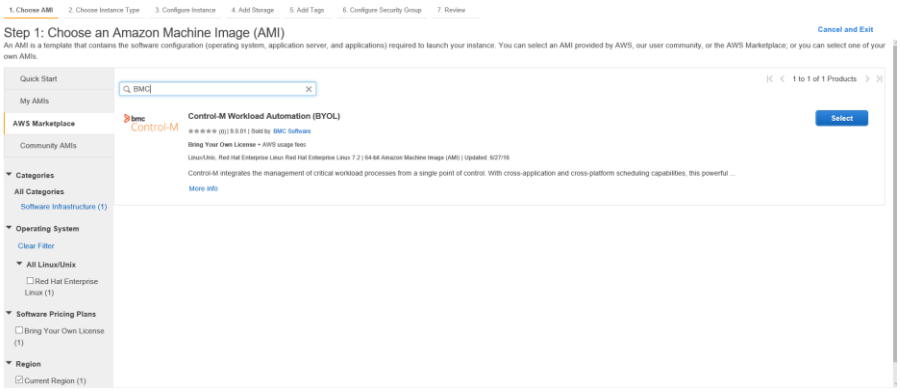


Figure 35: Find Control-M

4) Choose Instance Type

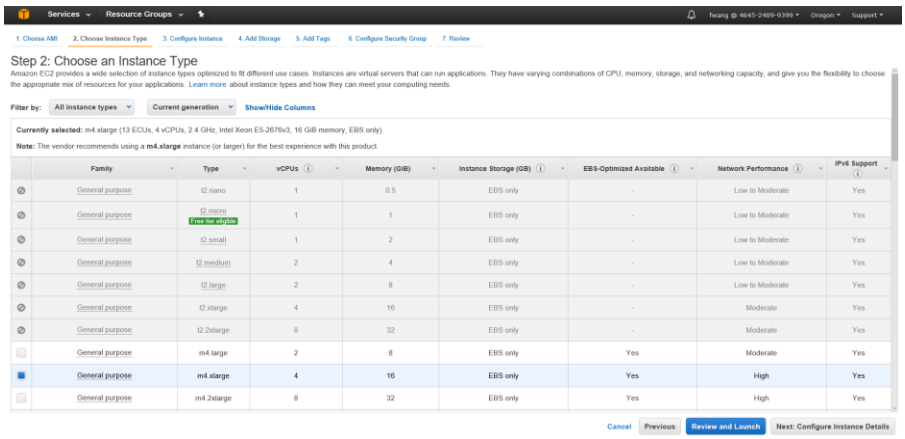


Figure 36: Choose Instance Type

4) Configure Instance Details

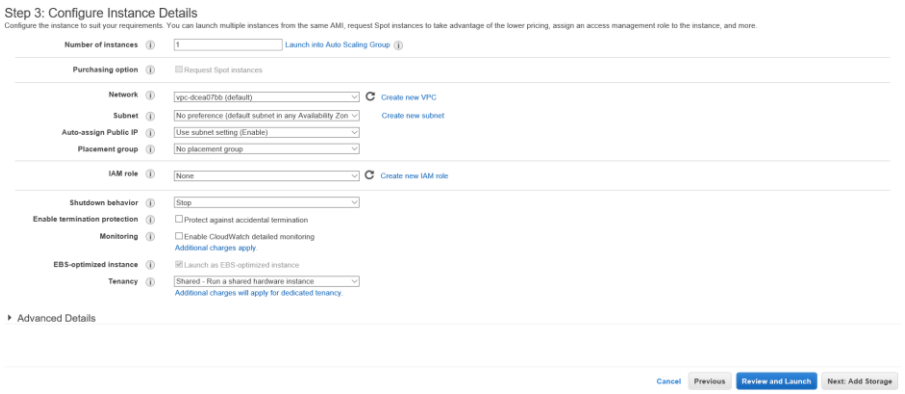


Figure 37: Choose Instance Details

5) Add Storage

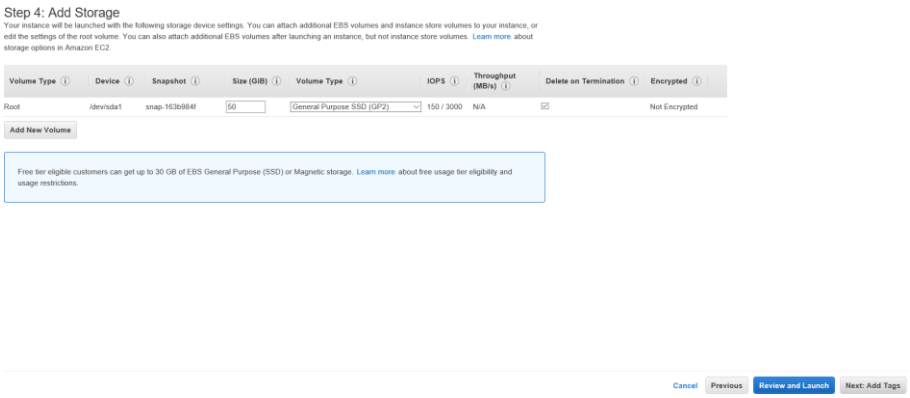


Figure 38: Add Storage

6) Add Tags

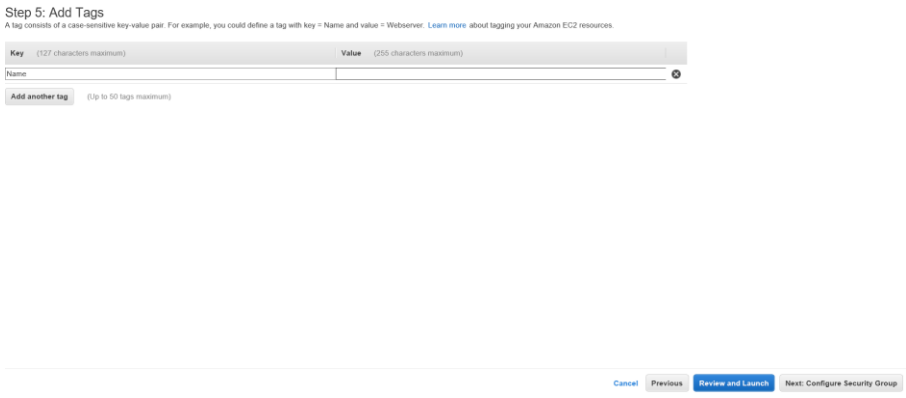


Figure 39: Add Tags

7) Configure Security Group
You can choose to either create a new security group or select an existing one

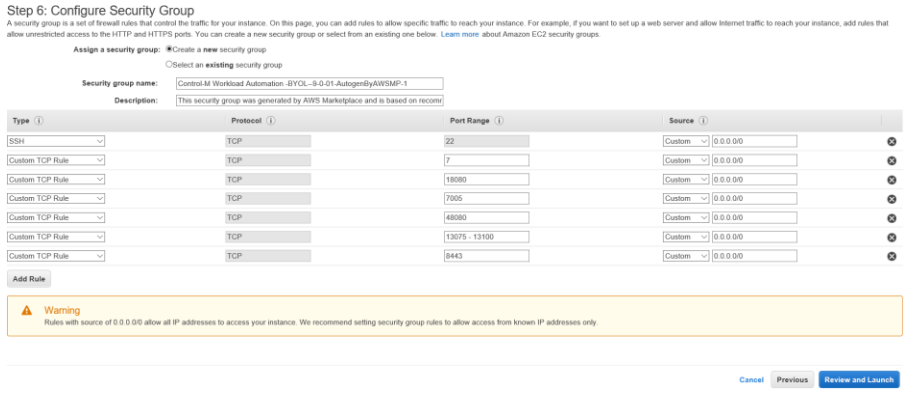


Figure 40: Configure Security Group

8) Click Launch and Select key pair
You can choose either to use the existing key pair or create a new one

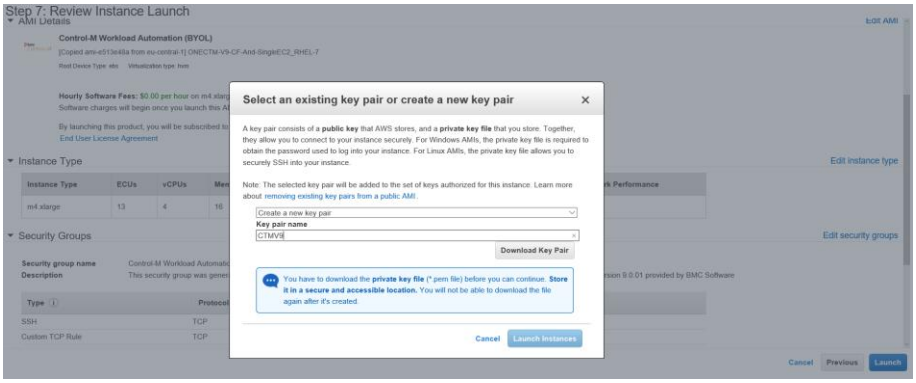


Figure 41: Select Key Pair

9) Launch Control-M Instance

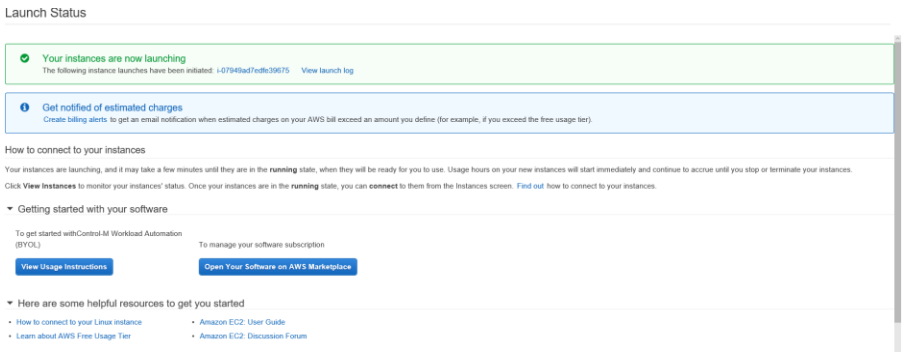


Figure 42: Launch Control-M

Post Procedure – Activate Control-M

Below procedure demonstrates how to activate Control-M after the Control-M Instance has been created under either regular AWS Marketplace or AWS Marketplace EC2 Console:

1) Connect to the created Linux platform, and below welcome information will be prompted

```
[ec2-user@ip-172-31-28-189 ~]$ ssh -i "LinuxMarketplace.pem" ec2-user@ec2-54-202-251-170.us-west-2.compute.amazonaws.com
The authenticity of host 'ec2-54-202-251-170.us-west-2.compute.amazonaws.com (172.31.33.119)' can't be established.
ECDSA key fingerprint is d7:59:9e:dc:8c:e1:11:6b:8e:12:5c:2b:19:60:a7:71.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-54-202-251-170.us-west-2.compute.amazonaws.com,172.31.33.119' (ECDSA) to the list of known h
osts.
Last login: Tue Aug  2 16:27:27 2016 from 52.59.60.173
Welcome to Control-M installation.

To install Control-M, you need to define the following:
1.      Database Admin ('postgres') password for the Local PostgreSQL server that is used by Control-M.
2.      Control-M/EM database owner name (Also used to log in to Control-M Workload Automation clients, web and API).
3.      Control-M/EM database owner password.
4.      Control-M/Server database owner name.
5.      Control-M/Server database owner password
NOTE: If you want to complete at another time run  ./.init_ctm from the ecs2-user home directory.
Do you want to continue (Y/N)? :
```

Figure 43: Connect to Control-M Instance

2) Follow the prompt to setup the required username/password

```
To install Control-M, you need to define the following:
1.      Database Admin ('postgres') password for the Local PostgreSQL server that is used by Control-M.
2.      Control-M/EM database owner name (Also used to log in to Control-M Workload Automation clients, web and API).
3.      Control-M/EM database owner password.
4.      Control-M/Server database owner name.
5.      Control-M/Server database owner password
NOTE: If you want to complete at another time run  ./.init_ctm from the ecs2-user home directory.
Do you want to continue (Y/N)? : Y
Do you want to continue (Y/N)? : Y
PostgerSQL database Administrator password :
Please retype password :
Control-M/EM Database Owner/ login username : emuser
Password :
Please retype password :
Control-M/Server Database Owner username : ctmuser
Password :
Please retype password :

Do you want to continue (Y/N)? : Y
>>>> Configuring local database server
>>>> Updating files
>>>> Updating EM template and xml files with public name ec2-54-202-251-170.us-west-2.compute.amazonaws.com
>>>> Updating CORBA configuration file with public name
>>>> Creating SSL certificate based on public name
>>>> Creating Ctm/Server database
>>>> Creating EM/Server database
>>>> Starting Control-M/Agent
>>>> Starting Control-M/Server configuration agent (CA)
>>>> Starting Control-M/Server
>>>> Starting Control-M/EM components
>>>> Creating basic EM components
>>>>
>>>> URL to start working with this Control-M instance: http://ec2-54-202-251-170.us-west-2.compute.amazonaws.com:18080
>>>>
>>>> Waiting for Control-M/Enterprise Manager gateway to connect to the local Cobtrol-M/Server
.................>>>> Done
[ec2-user@ip-172-31-33-119 ~]$
```

Figure 44: Configure Control-M Details

3) Connect to the Control-M website

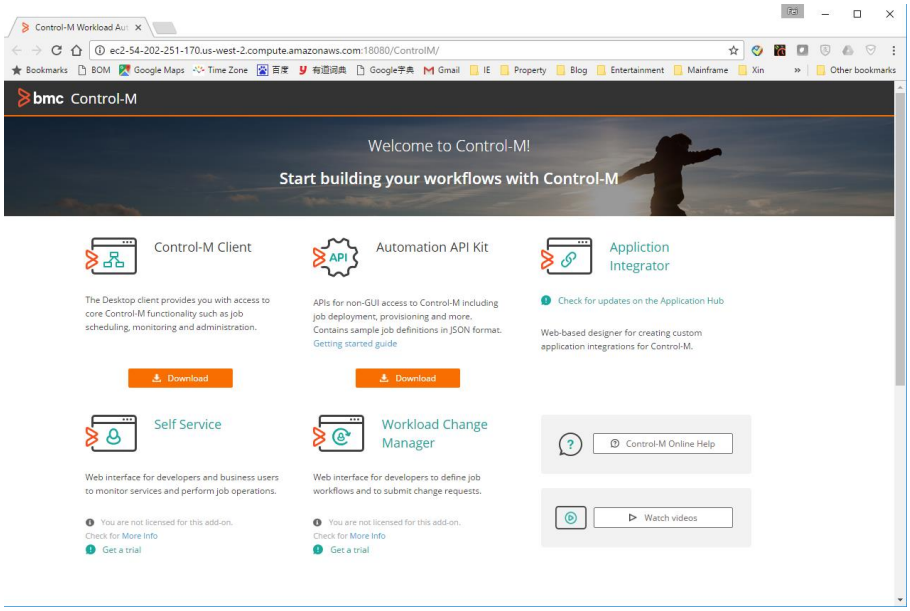


Figure 45: Connect to Control-M Website

Note: Ensure that the connection to Control-M/EM Web Server port at 18080 can be established

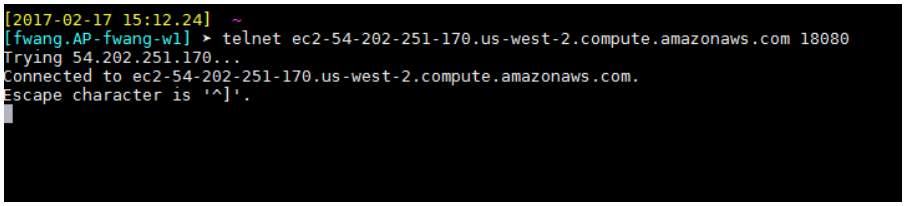


Figure 46: Ensure Control-M/EM Web Server port 18080 is reachable

4) Download the Workload Automation Client

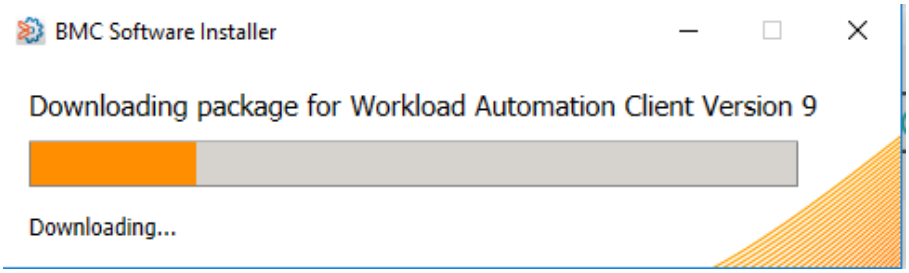


Figure 47: Download Control-M Client Installation File

5) Install the Workload Automation Client

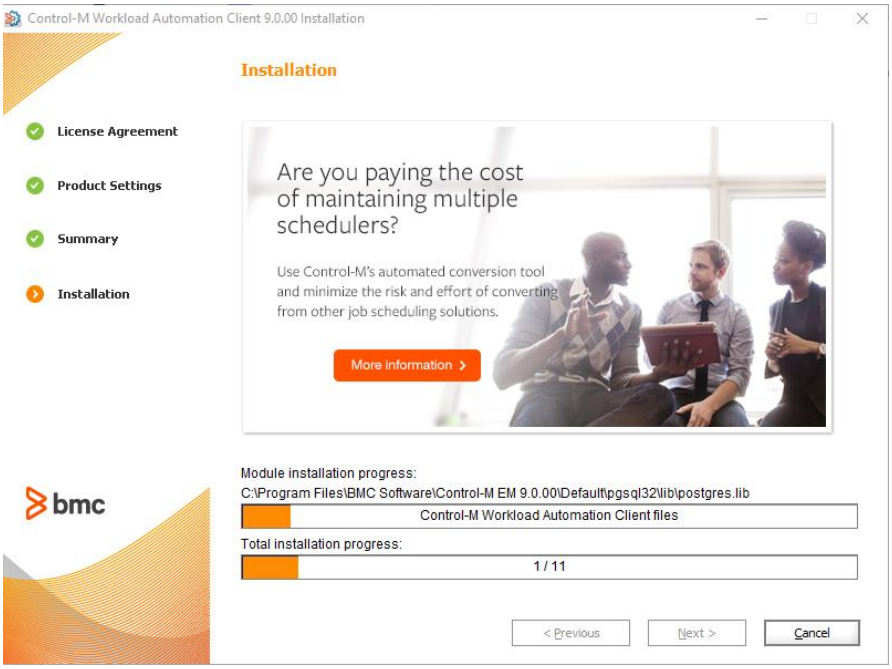


Figure 48: Install Control-M Client

Additional Information

A: In order to connect to Control-M instance created from AWS Marketplace, note the following:

- The ec2-user needs to be used to connect to the Control-M instance
- The created pem key file is also used for ec2-user authentication during connection
- However, the Control-M is installed under the user of control

```
[ec2-user@ip-172-31-33-119 home]$ ls
controlm  ec2-user
```

Figure 49: Check created users

B: Below screenshots demonstrate how to switch to controlm user from ec2-user

Note: By default controlm user will be given the full administrative permission to manage the installed Control-M.

```
[ec2-user@ip-172-31-33-119 home]$ whoami
ec2-user
[ec2-user@ip-172-31-33-119 home]$ sudo sh
sh-4.2# whoami
root
sh-4.2# su - controlm
Last login: Thu Feb 16 23:00:37 EST 2017 on pts/0
Last failed login: Thu Feb 16 23:14:57 EST 2017 on pts/0
There were 2 failed login attempts since the last successful login.
ip-172-31-33-119.us-west-2.compute.internal% whoami
controlm
ip-172-31-33-119.us-west-2.compute.internal%
```

Figure 50: how to logon as controlm

```
Database Server Status
======================
Database Server is active


Gateway Status
==============
Gateway "LocalControlM" on ip-172-31-33-119.us-west-2.compute.internal is alive!
Message returned: "Connected"


GCS Status
==========
GCS on ip-172-31-33-119.us-west-2.compute.internal is alive!
Message returned: "OK"


GUI_Server Status
=================
GUI_Server "ip-172-31-33-119.us-west-2.compute.internal" on ip-172-31-33-119.us-west-2.compute.internal is alive!
Message returned: "OK"

BIM Status
==========
No BIM(s) registered.


Forecast Server Status
======================
No Forecast_Server(s) registered.


Self Service Server Status
==========================
No Self_Service_Server(s) registered.


CONTROL-M Configuration Server Status
=============================
CMS "CMS" on ip-172-31-33-119.us-west-2.compute.internal is alive!
Message returned: "OK"


CONTROL-M/EM Configuration Agent Status
===================================
Config_Agent on ip-172-31-33-119.us-west-2.compute.internal is alive!
Message returned: "OK"


Control-M Naming Service Daemon Status
======================================
Naming Service status: Running on local machine, ec2-54-202-251-170.us-west-2.compute.amazonaws.com:13075
```

Figure 51: Check Control-M/EM status

C: Each AWS instance has its internal (private) name and public DNS, Control-M listen on public DNS only

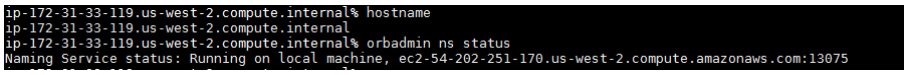


Figure 52: viewing the hostname and listening port of Naming Service

D: Installed Control-M products using “OneInstall” Installation Type”

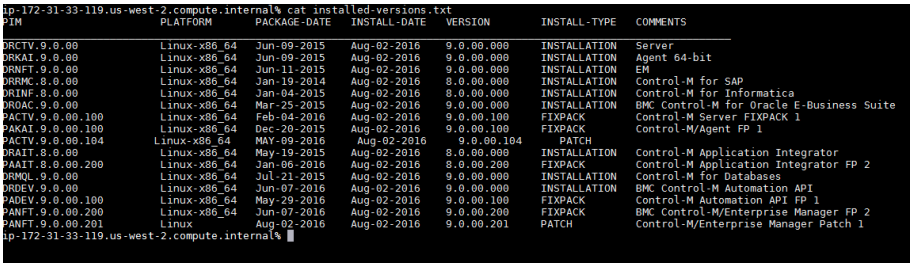


Figure 53: view installed-versions.txt of OneInstall Installation type

Activities after recycling the AMI

Amazon EC2 instance hostnames are derived from the IP address that is dynamically assigned to the instance at startup. Unless the Amazon EC2 instance is allocated with an Elastic IP address (static IP address), the instance will be assigned to a new public IPv4 address after a server restart.

Therefore, after recycling the Amazon EC2 instance, do ensure you update the local DNS Server to use the new hostname and public IP Address of the Amazon EC2.

Additionally, follow the below procedures to publish the Control-M/Enterprise Manager on the new public DNS name.
Note: The example below is based on Windows platform

1) Stop Control-M/Enterprise Manager Configuration Agent

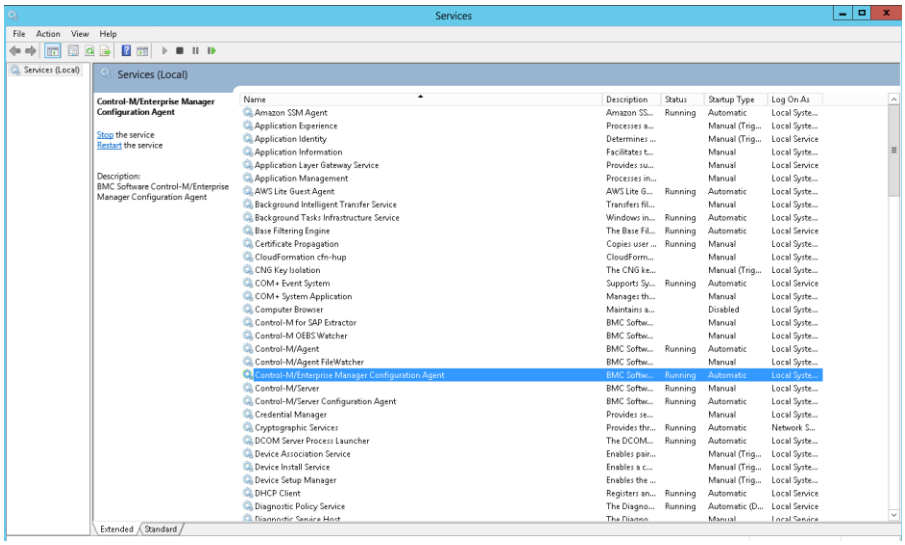


Figure 54: Stop Control-M/Enterprise Manager Configuration Agent

2) Launch the Windows task manager, ensure all below processes are stopped
   - emwa.exe
   - emcms.exe
   - emcmsg.exe
   - emgtw.exe
   - emguisr.exe
   - emmaintag.exe
   - eaming_service.exe

3) Open the cmd.exe console and navigate to path to:
   <Drive:>\Program Files\BMC Software\Control-M EM 9.0.xx\Default\bin>

4) Run command of ‘updateEmPublicHost.bat’ to update the Control-M/EM with the new IP Address

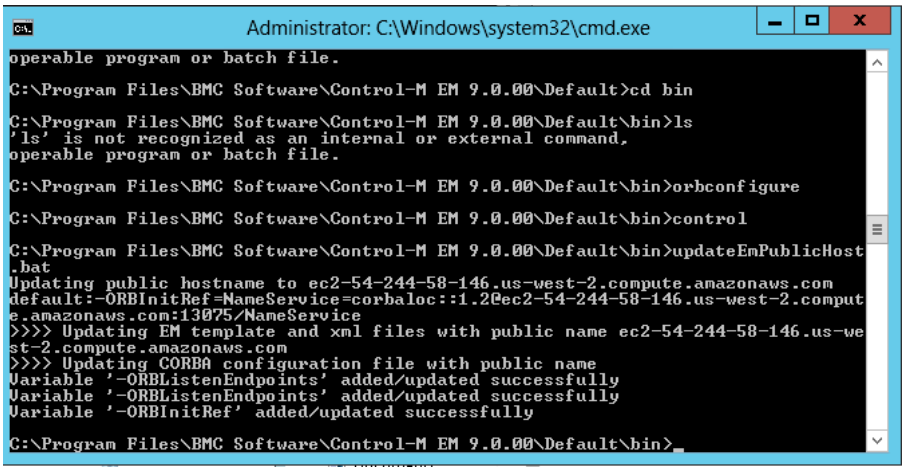


Figure 53: update EM with new PublicIP

5) Start up Control-M/Enterprise Manager Server as per normal procedure

Submit jobs to Control-M/Agents behind AWS Elastic Load Balancing

AWS ELB (Elastic Load Balancing) automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances where Control-M/Agents are installed at. And Control-M V9.0.18 supports AWS ELB, by which the job is submitted to ELB DNS name and then routed to one of the EC2 instances participating in the load balancing group.
AWS Elastic Load Balancing offers three types of load balancers including Application Load Balancer, Network Load Balancer and Classic Load Balancer. As Control-M Server utilizes TCP protocol to communicate with Control-M/Agents, only Network Load Balancer and Classic Load Balancer are supported.

After installing Control-M/Agents at all the EC2 instances participating in the ELB, please follow the below procedures to configure Control-M products to submit jobs to Control-M/Agents behind AWS Elastic Load Balancing.
Note: The example below is based on Linux platform

1) Logon Control-M Configuration Manager, find the parameter of EnableLoadBalancerRouter in Control-M/EM System Parameters and change it to True

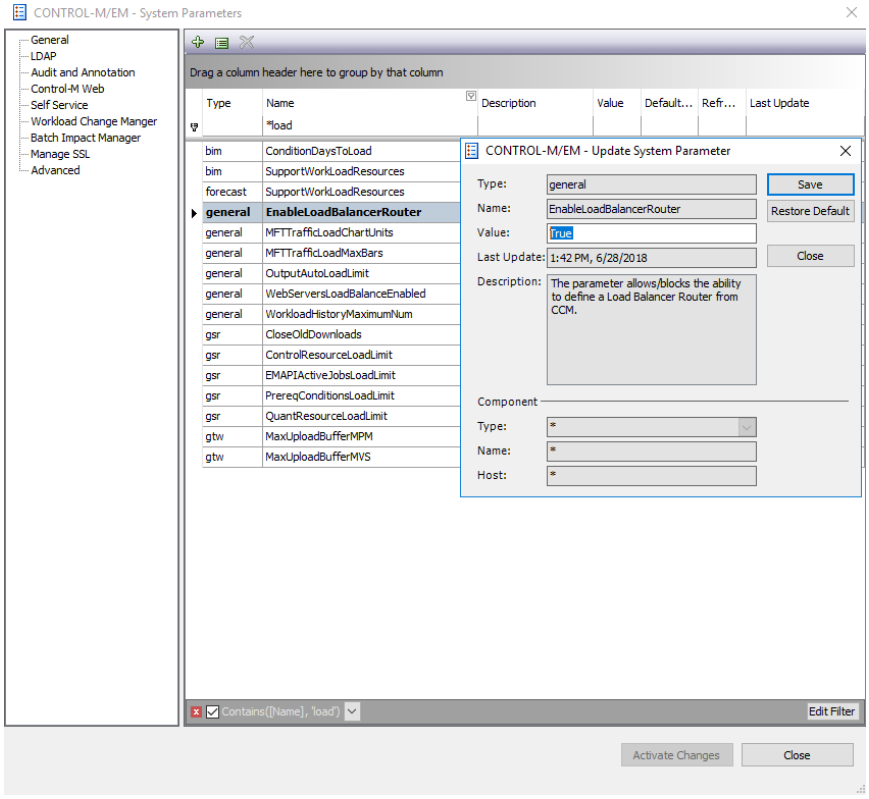


Figure 54: enable EnableLoadBalancerRouter

2) Register Control-M/Agent EC2 instances to ELB

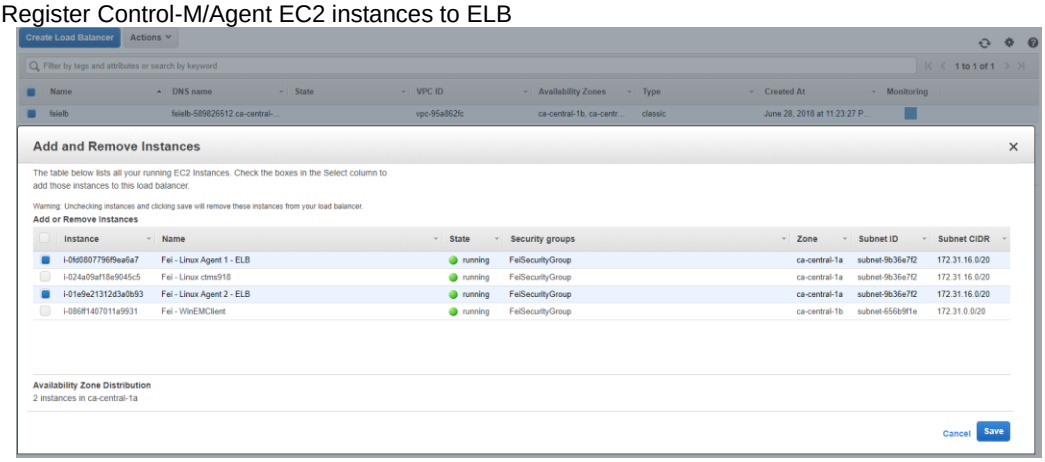


Figure 55: register Control-M/Agents to ELB

3) Create the Security Group for ELB and Control-M/Agent instances

A: enable TCP protocol for port 7005 and 7006 which are communication ports between Control-M/Server and Control-M/Agent.

B: enable the ICMP protocol as Control-M/Server submits ping request to Load Balancer to do the health check and obtain the Agent host id before job submission.

C: this Security Group must be associated to both ELB and Control-M/Agent instances

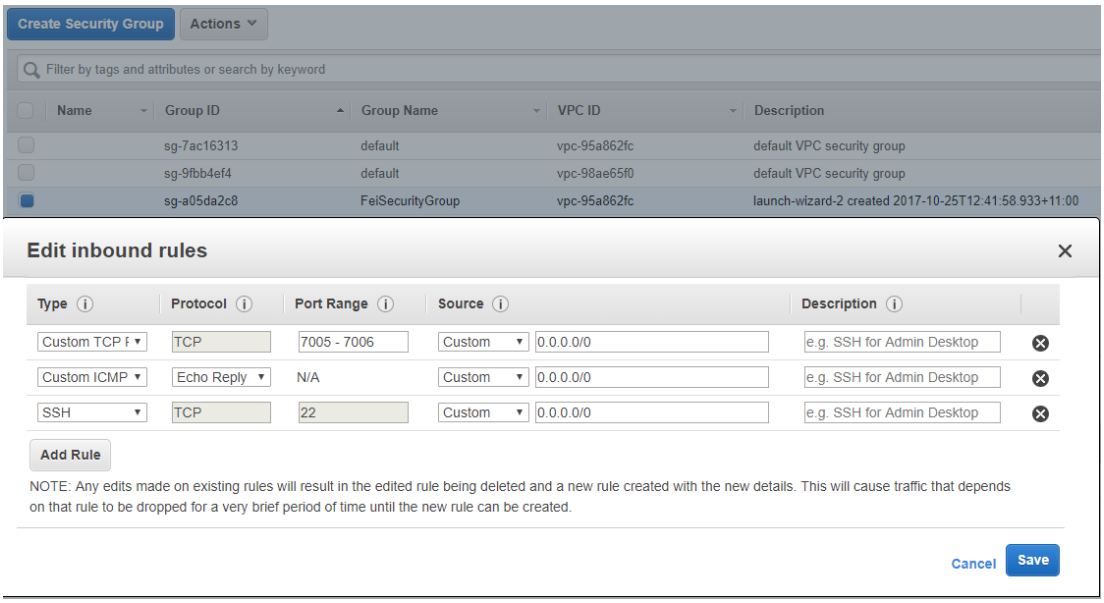


Figure 56: create Security Group

4) Create ELB Listeners and add TCP port 7006

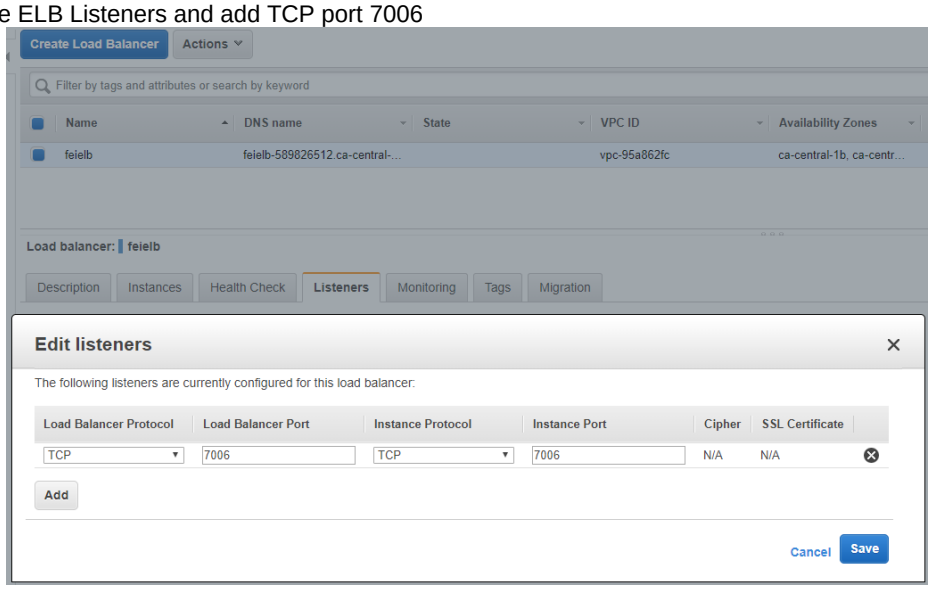


Figure 57: edit ELB listeners

5) Configure ELB Health Check with TCP port 7006

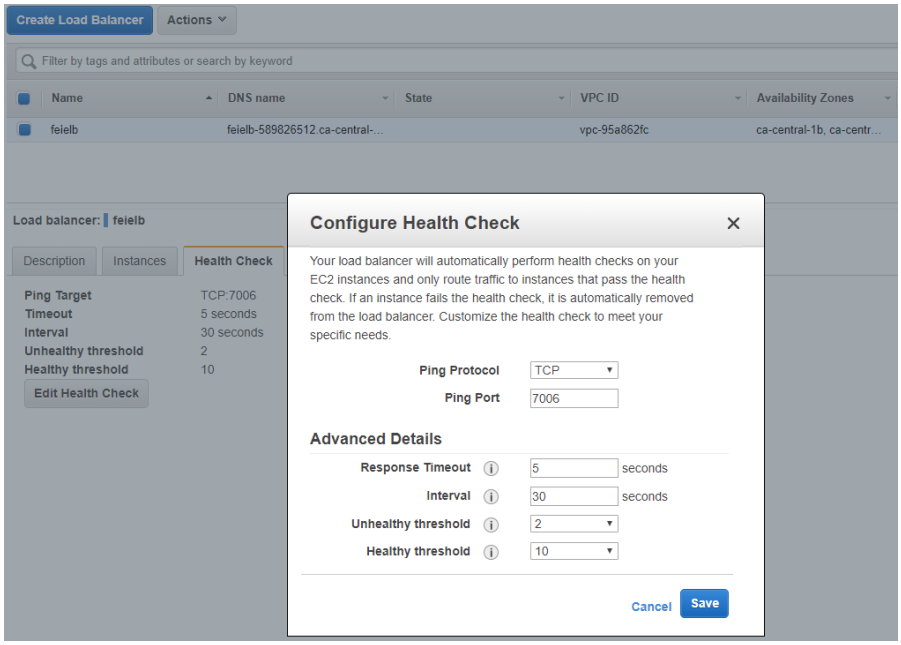


Figure 58: configure Health Check

6) confirm the Control-M/Agent's Logical Agent Name

A: logon Control-M/Agent and run ag_diag_comm

B: check 'Agent Host Name' and 'Logical Agent Name' to ensure they are same, please refer to below as sample

Agent Host Name : ip-172-31-18-245.ca-central-1.compute.internal

Logical Agent Name : ip-172-31-18-245.ca-central-1.compute.internal

As once a job is submitted to ELB, the ELB will route the job to a Control-M/Agent and pass the Logical Agent name back to Control-M/Server. This Logical Agent name will be registered at 'Host' in the active job as shown below. This Logical Agent name must be resolvable from Control-M/Server, because Control-M/Server use this Logical Agent name for all the subsequent requests for example viewing job output, rerunning the job, etc.

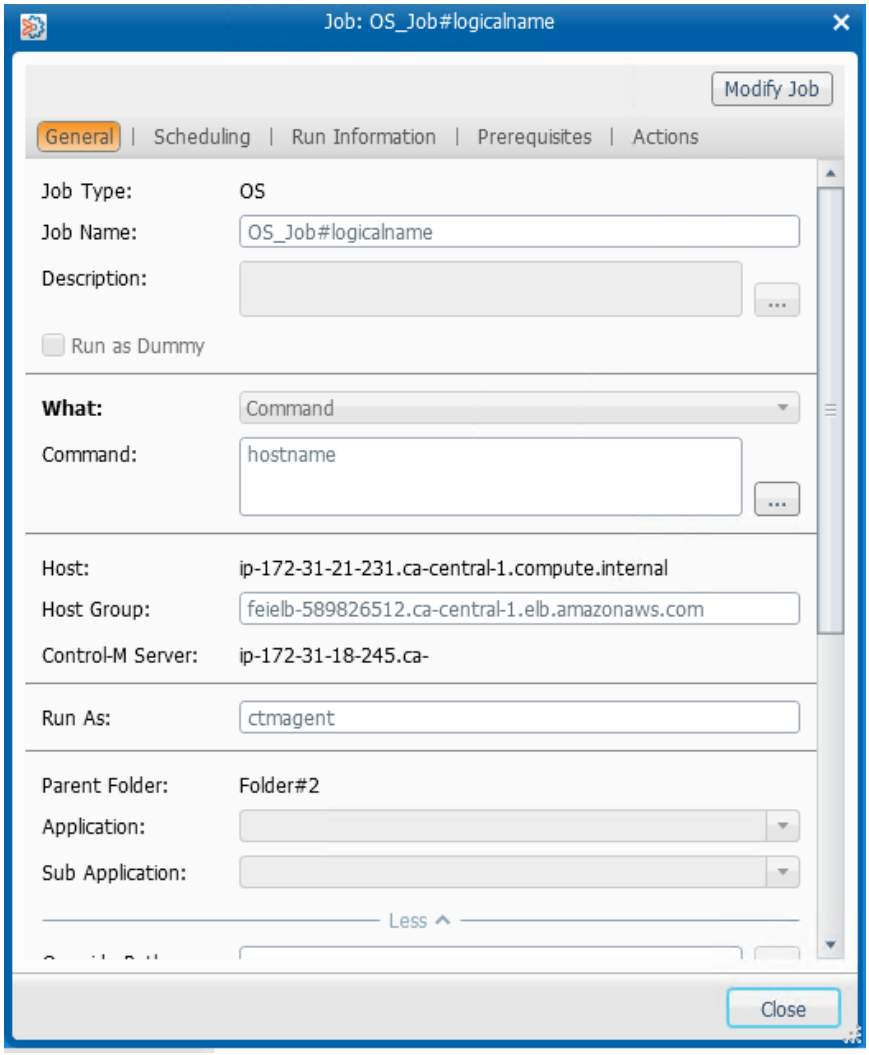


Figure 59: confirm Logical Agent Name

7) define all of the load balancer participating Control-M/Agents through the Control-M Configuration Manager

8) define the Network Load Balancer Router through the Control-M Configuration Manager

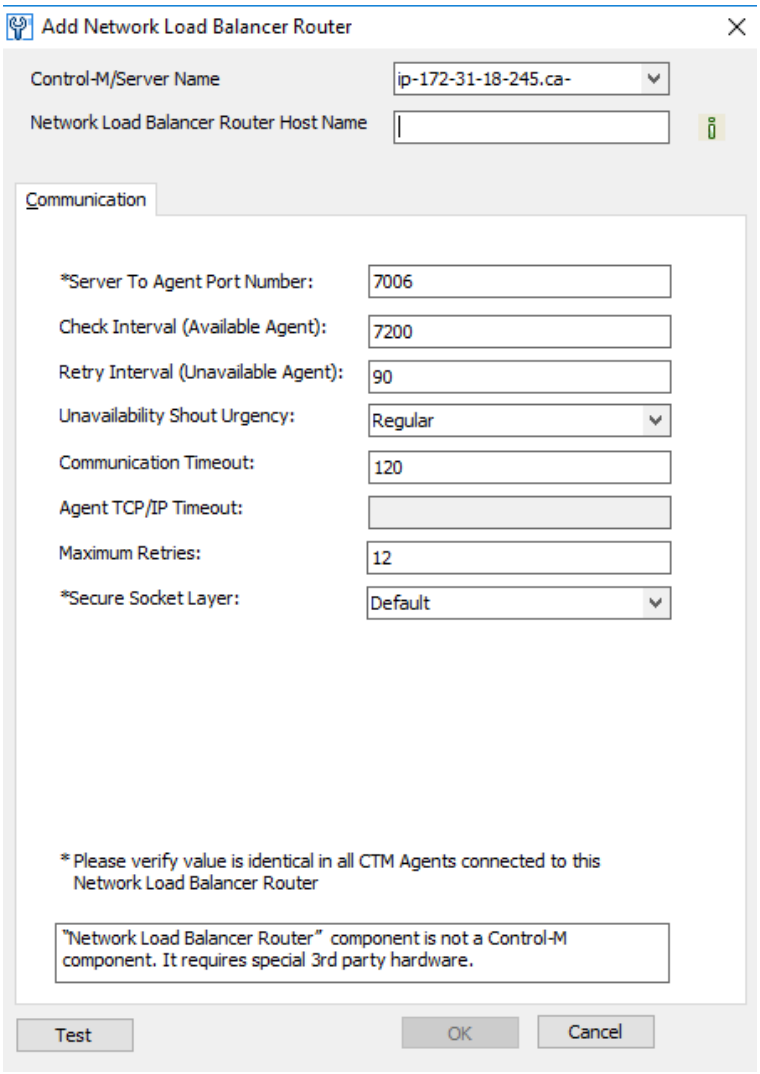


Figure 60: add Network Load Balancer

Related Products:

1. Control-M/Server for UNIX and Microsoft Windows
2. Control-M/Enterprise Manager
3. Control-M/Agent for UNIX and Microsoft Windows