WorkSpaces Manager

Updated 12th May 2020

WorkSpaces Manager provides a full Amazon WorkSpaces management portal.

Product highlights:

- WorkSpaces Environment Management with optional application self-service feature for domain group-based application deployment.
- Task driven User & WorkSpaces provisioning.
- Automatic reboot schedule defined on a per WorkSpaces basis.
- Cost reporting and Cost Optimisation.
- Optional WorkSpaces Agent to report on Processer, Memory and Disk statistics

WorkSpaces Manager provides a full Amazon WorkSpaces management portal. Containing both a user self-service portal and administration portal administration of WorkSpaces in a simple to use browser-based portal. This removes the need to provide staff with access to the AWS console and provides easy searching across all WorkSpaces and User information.

The optional WorkSpaces Agent can be deployed by domain GPO to gather hourly metrics on Processer and Memory utilisation and available disk space for root and user drives.

The User portal can be extended to provide application self-service if the environment, provide group-based application deployment service such as Liquidware FlexApp, SCCM or similar products.

WorkSpaces Manager is deployed as an appliance from the AWS MarketPlace as an EC2 instance.

Version	2.0.0
By	Nuvens Consulting Limited
Categories	Application Development Infrastructure as Code
Operating System	Windows, Windows Server 2016
Delivery Method	AWS MarketPlane \ Amazon Machine Image

Installation & configuration guide for AWS MarketPlace subscription

Introduction

This guide has been authored by experts at Nuvens in order to provide information and guidance concerning the installation and configuration of WorkSpaces Manager.

Contents

Software Requirements

WorkSpaces Manager is available as a standalone product and consists of three parts: the Management Portal, the Update Service and the optional Client WorkSpaces agent. The WorkSpaces Management Portal provides one central location where users can manage their own WorkSpace and administrators can provision, manage & monitor the WorkSpaces environment.

The requirements specified below are for deployments up to 500 users. For larger deployments and deploying as an HA cluster please contact support@nuvens.co.uk.

WorkSpaces Portal requirements

Component	Requirements
Platforms Support	Windows Server 2008 R2/2012/2012 R2/2016/2019. Only 64-bit versions where applicable are supported. Both physical and virtual instances are also supported.
Additional Software	• Microsoft® .NET Framework 4.6.2 or higher • Microsoft SQL Server Express or higher All additional software is included with the Workspaces Manager installer
Browsers Supported	Chrome 22.x, Firefox 12.x, and Internet Explorer 9.x or higher versions of these browsers. If you are using Internet Explorer 9, disable enhanced security.
CPU	2 CPUs 1 gigahertz (GHz) or faster
Memory	4 GB RAM
Storage	20Gb of additional storage is provisioned with the Appliance

If the WorkSpaces Manager Portal is being used to provision user accounts in AD a service account will be required with delegated access to the OU's that accounts will be created in.

WorkSpace Client Agent Requirements

The WorkSpaces Client requires the following for installation:

Component	Requirements
Platforms Support	Windows 7/8.1/10, Windows Server 2008 R2/2012/2012 R2/2016/2019
Additional Software	Microsoft® .NET Framework 4.6.2 or higher
Browsers Supported	Chrome 22.x, Firefox 12.x, and Internet Explorer 9.x or higher versions of these browsers. If you are using Internet Explorer 9, disable enhanced security.
CPU	2 CPUs 1 gigahertz (GHz) or faster
Memory	2 GB RAM
Storage	50 MB available hard disk space

Additional Requirements

WorkSpaces Manager requires Active Directory to deploy its client files to the desktop and point the user to its configuration file. Users also must use Active Directory to login to their physical or virtual desktops.

Pre-requisites

The following pre-requisites should be created before launching the appliance from the AWS Marketplace.

Not all pre-requisites are mandatory, please read each one to determine if it's required.

AWS WorkSpaces Cost Optimizer

This is not a mandatory requirement however we recommend that this is applied and run in "Dry Run Mode".

This AWS service auto switches WorkSpaces between Hourly and Monthly Cost modes to ensure the WorkSpaces costs are optimized. Please refer to the link below for more details and deployment instructions.

Please ensure that you are in the correct region before deployment.

https://aws.amazon.com/solutions/amazon-workspaces-cost-optimizer/

After deploying the WorkSpaces cost optimiser please make a note of the S3 Bucket ARN created.

Active Directory Service Account

Not Mandatory

When creating the AD Service Account to support AWS WorkSpaces you will have already provided an account with permissions to create computer objects within AD to the OU specified at the time.

We recommend using the same service account and providing additional permissions to delete computer objects. Through the Management Portal when a WorkSpace is terminated the system will then be able to remove the orphaned computer object.

The AD service account is also used to create user accounts and add/remove users from AD groups if the application management option is used.

Using Active Directory Users and Computers, you can delegate the administration of an Organizational Unit to user or group that may not have the administration permissions otherwise.

To do this, follow these steps:

1. On your domain controller, click Start and point to Administrative Tools.
2. Click on Active Directory Users and Computers.
3. In Active Directory Users & Computers, select the OU to delegate administration.
4. Right click the OU and click on Delegate Control. This will start the delegation control wizard.
5. In select User Account window, click Add.
6. Find the correct User or group and double click.
7. Click OK.
8. In Tasks to Delegate window, choose the permissions to assign and click Next.
9. Review the summary and click Finish.

Delegate policy-related permissions on a domain, OU, or site using GPMC

http://technet.microsoft.com/en-us/library/cc759064%28WS.10%29.aspx

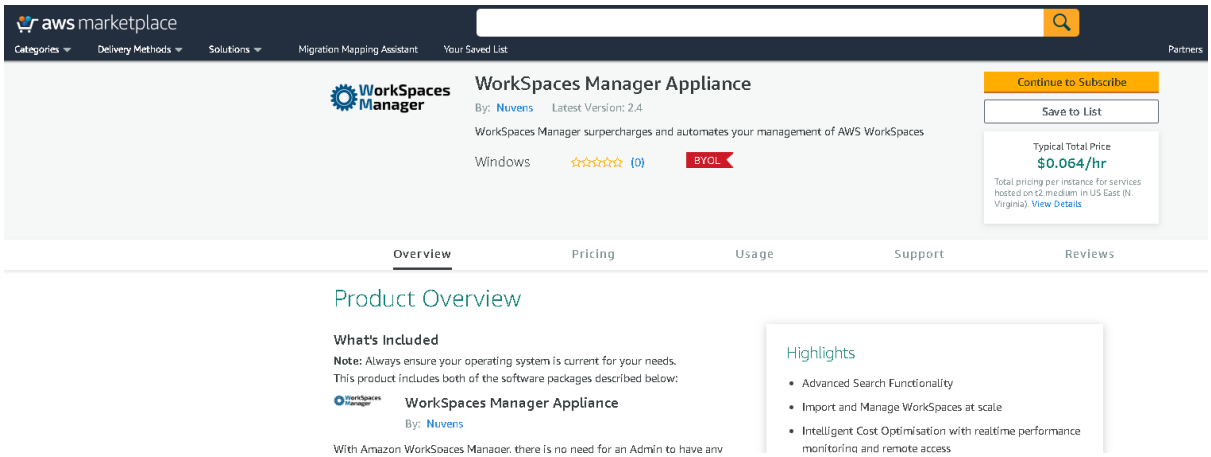
Delegating Administration of Account and Resource OUs

http://technet.microsoft.com/en-us/library/cc784406%28WS.10%29.aspx

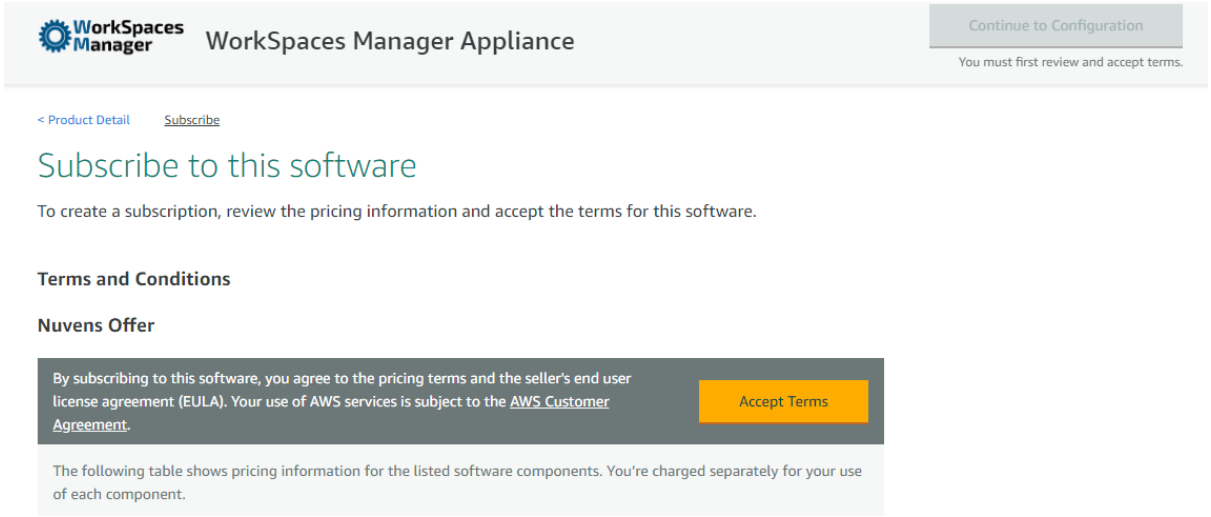
Installing the WorkSpaces Management Portal from AWS MarketPlace

Firstly, ensure that you are logged on to your AWS Console. Then go to the AWS MarketPlace and search for 'Workspaces Manager Appliance'. Alternatively, click this link to take you there.

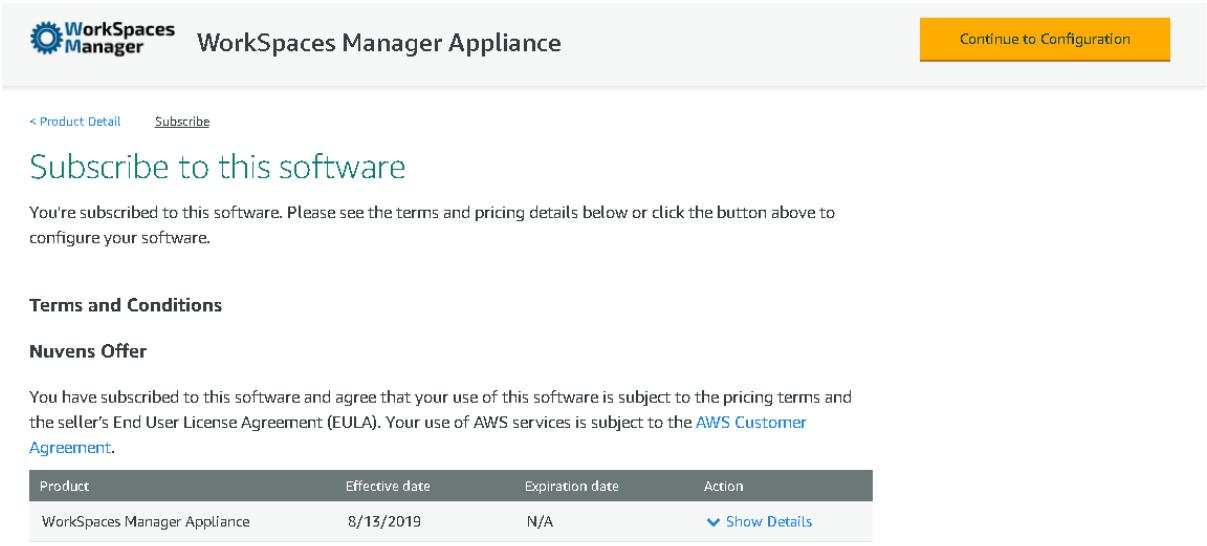
When found, select 'Continue to subscribe'.



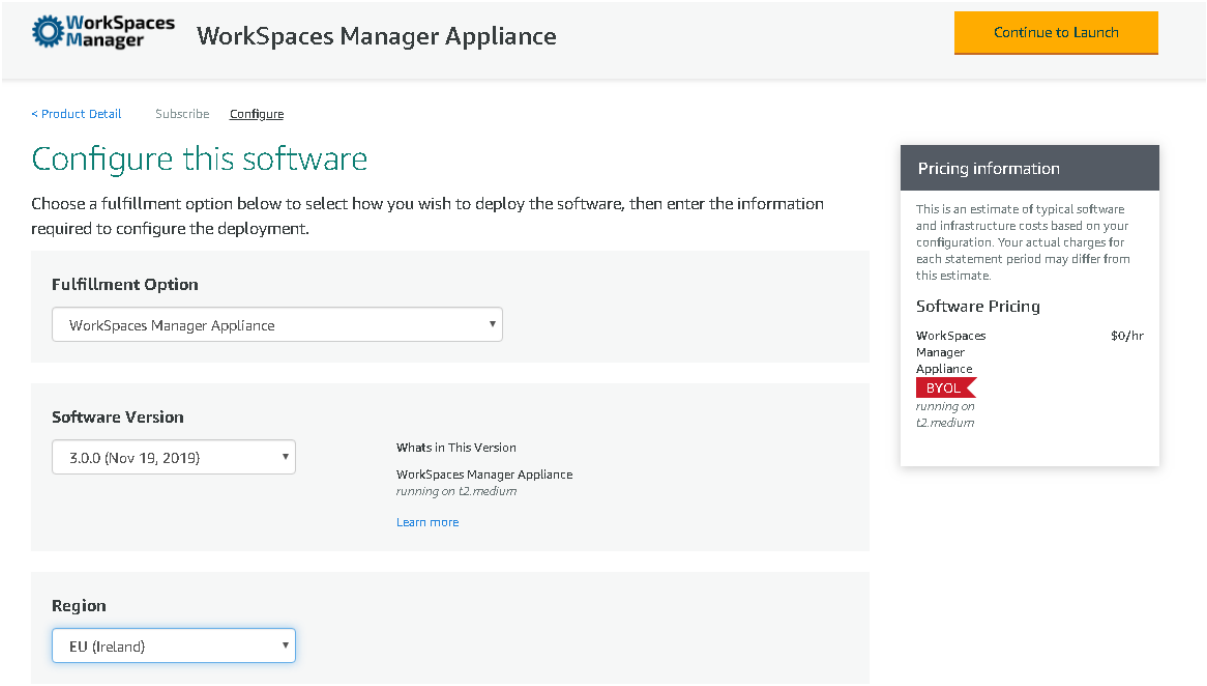
You now need to subscribe to the software. Select 'Accept Terms'.



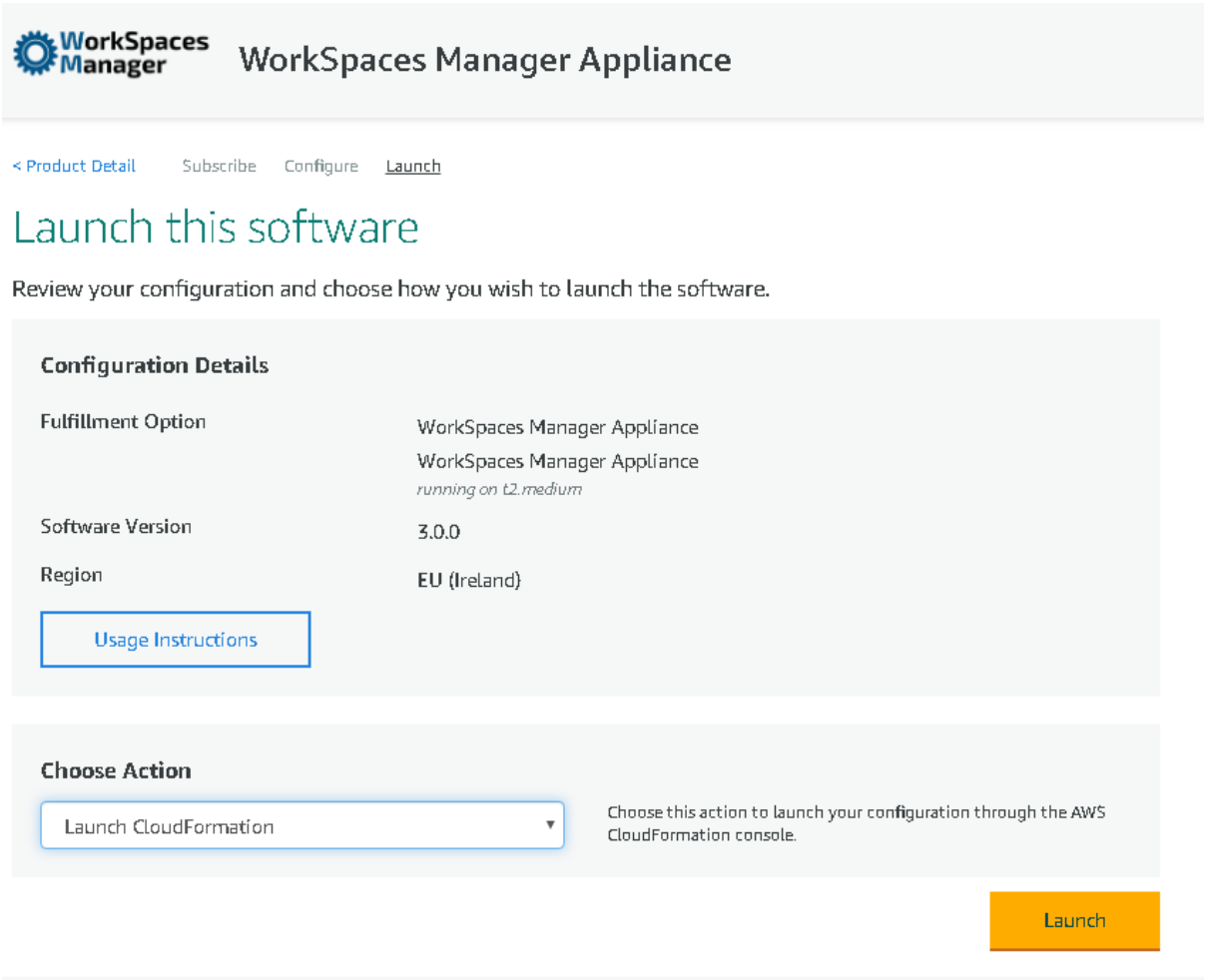
Now select ‘Continue to Configuration’.



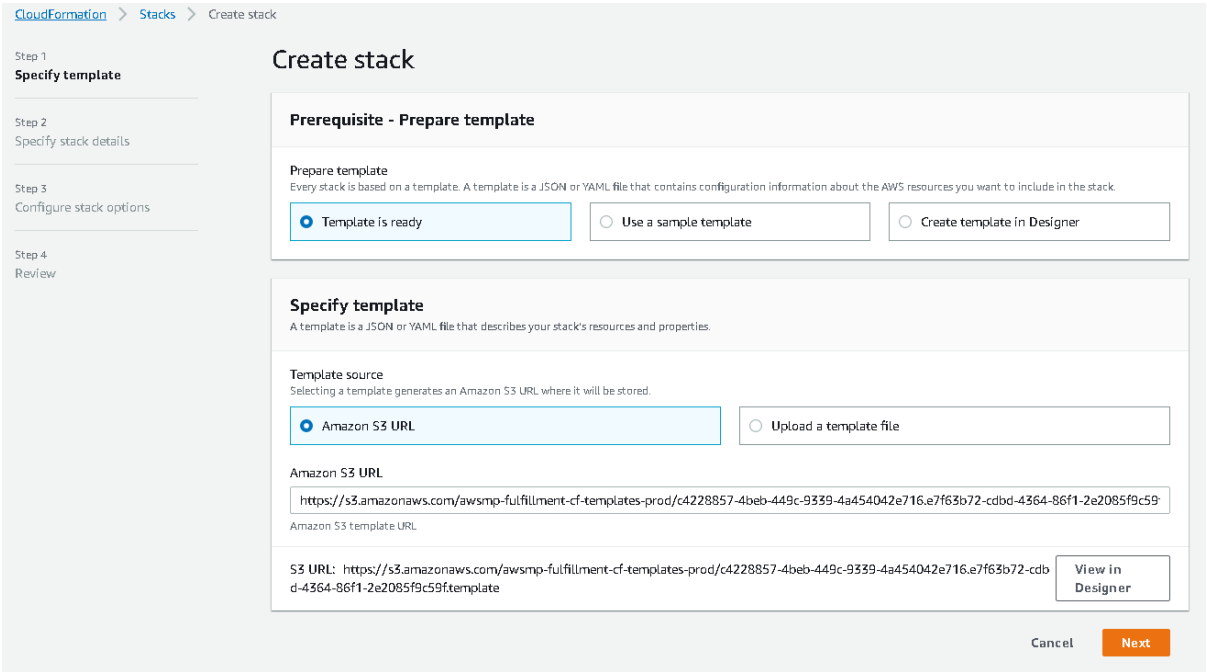
Change your Region to the region that you want your WorkSpaces Manager appliance to reside. Then select ‘Continue to Launch’.



From ‘Choose Action’, select ‘Launch CloudFormation’. Then select ‘Launch’.



On the next section, accept all entries and select ‘Next’.



You now specify your parameters for your stack configuration. Enter :

Stack Name: Your stack name. Call it something that Is relevant for your own identification.

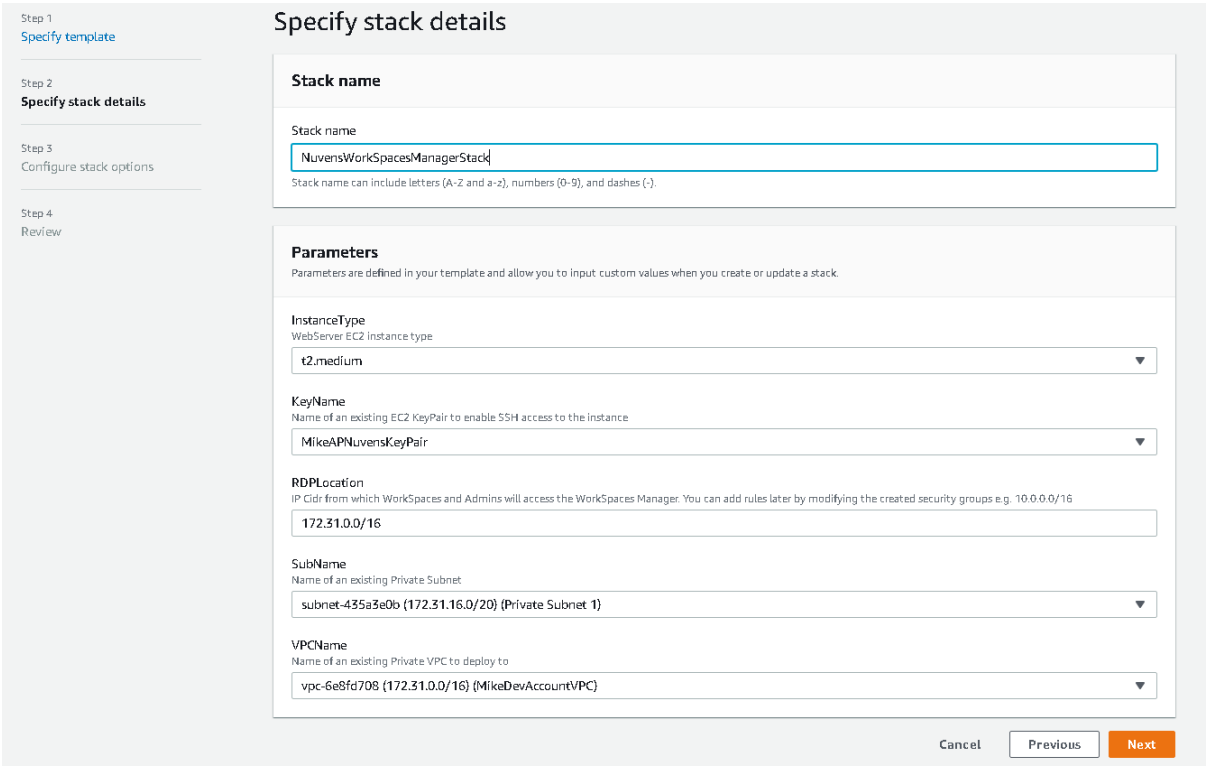
Instance Type: Leave a t2.medium as they should be sufficient to run WorkSpaces Manager. (Drop down list)

Key Name: You may have multiple key names under your IAM account for your own account. Select one – this will be used to provide you with the local administrator credentials to the WorkSpaces Manager EC2 instance further down the line. NOTE : You will need the associated key file to be able to decrypt the passwork later on. (Drop down list)

RDPLocation: Enter a CIDR from which both WorkSpaces and Admins will access WorkSpaces Manager. You can amend this later.

Subname: Select a Private subnet for your WorkSpaces Manager to reside. (Drop down list)

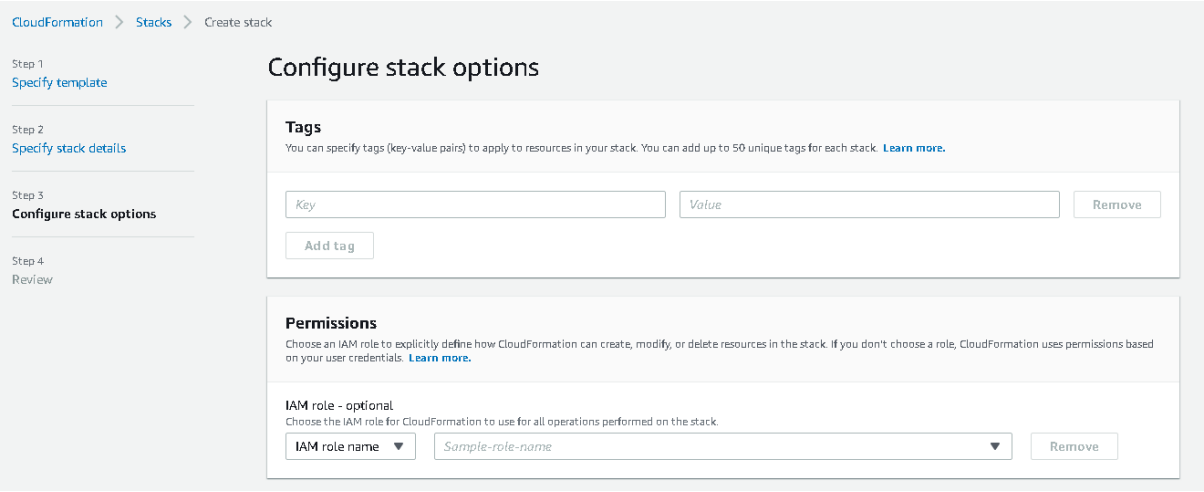
VPCName: Select the VPC that you wish to place the WorkSpaces Manager in. (Drop down list)

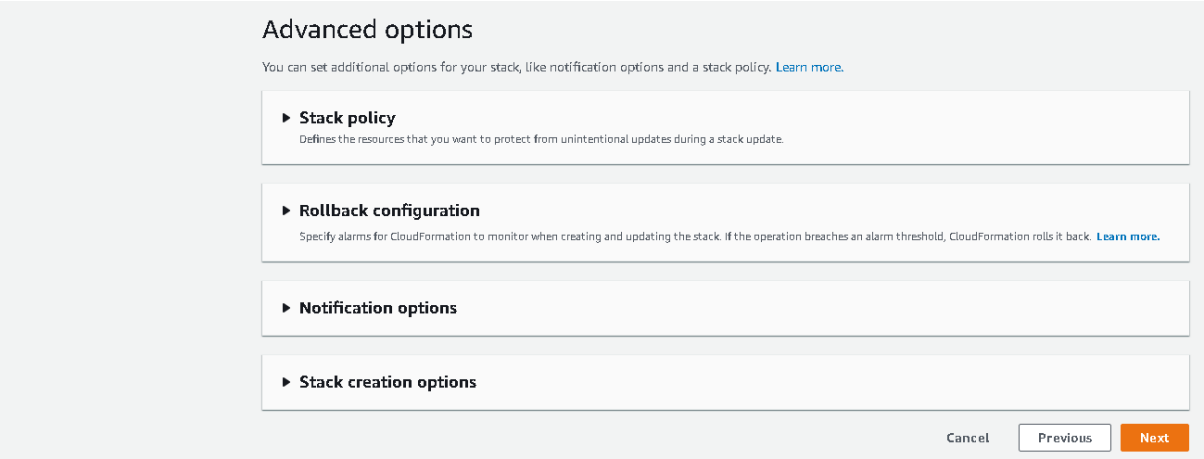


You now configure your stack options.

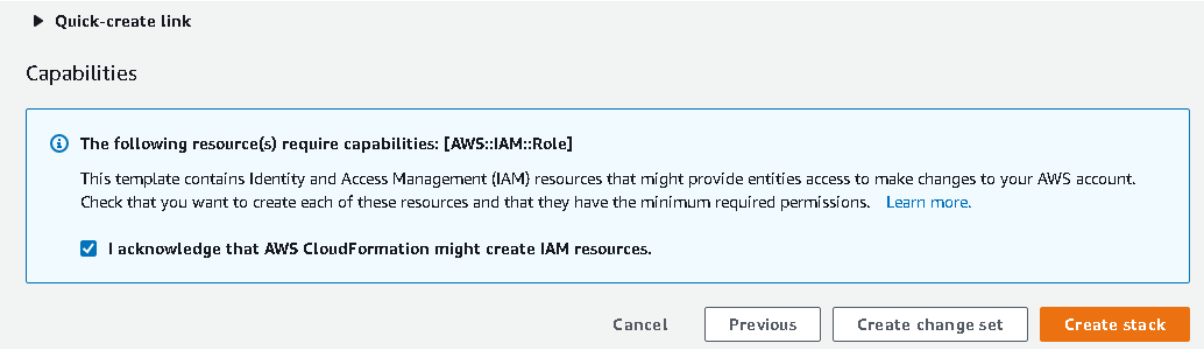
Tags:	You can tag the resources if you wish.
Permissions:	Leave this blank as permissions will be created for you.
Advanced Options:	Keep all options as default. You can enter an SNS Topic ARN to notify you of when the stack is created, but this isn't necessary. You will know when it's finished as the WorkSpaces Manager will appear as an EC2 instance in the console.

Then select 'Next'.

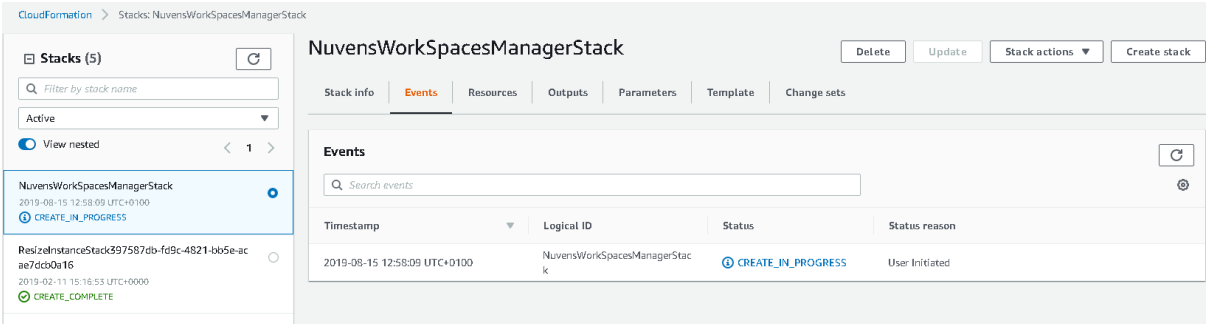




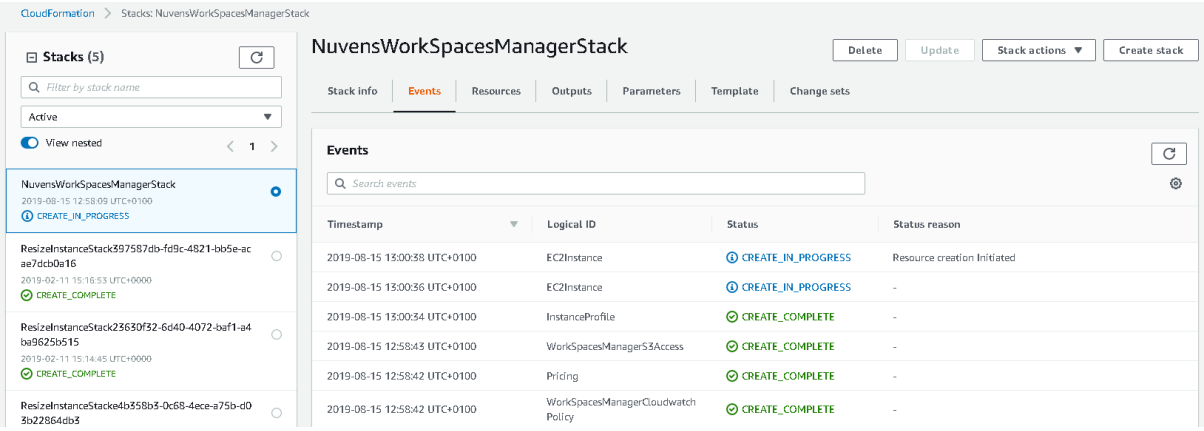
You will now find yourself at the ‘Review’ screen. Scroll down to the bottom, select the acknowledgement and then select ‘Create Stack’.



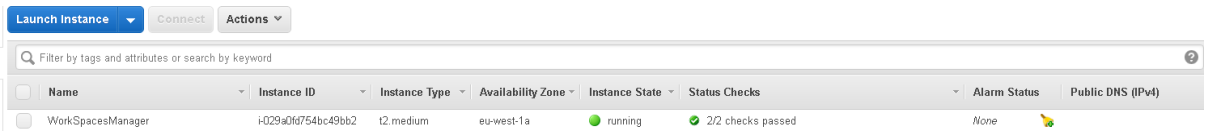
You will now return to the stack status screen where you can see the progress of the WorkSpaces Manager stack.



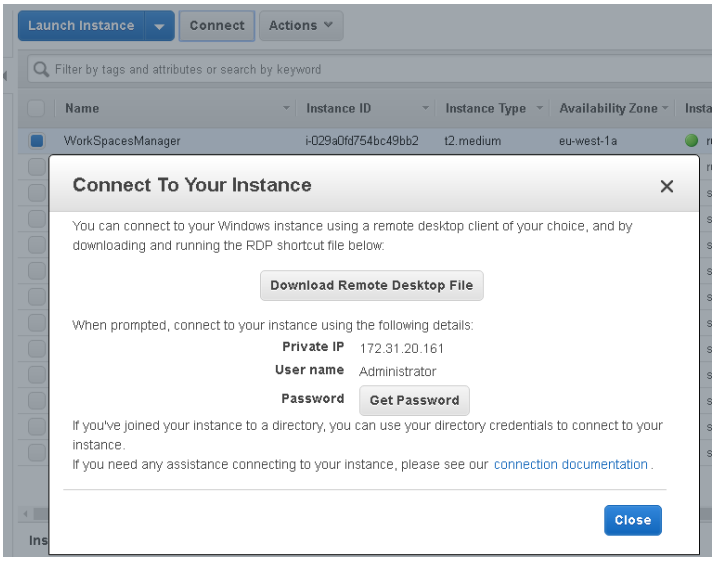
You can view the tasks as they are being performed. When the stack creation is complete, the status will change from ‘CREATE_IN_PROGRESS’ to ‘CREATE_COMPLETE’. The stack creation takes around 3-4 minutes to complete.



If you now view your EC2 instances in the region that you chose to install WorkSpaces Manager, you'll see the WorkSpaces Manager instance. Give this around 5-10 minutes for the Status Checks to finish and for local administrator password the auto generated.



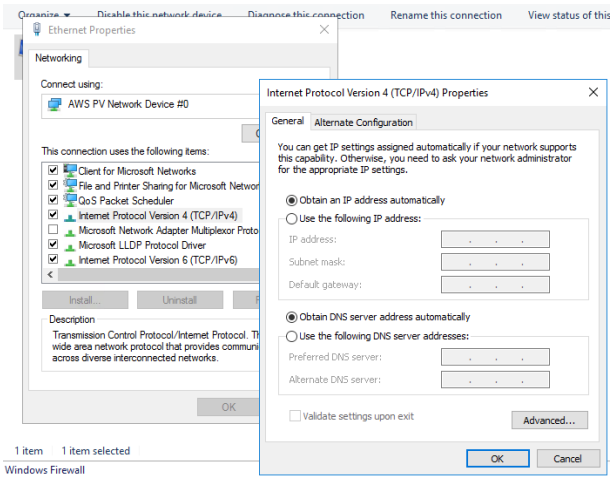
Now RDP to your instance using the Private IP assigned to the instance using the local administrator password and using the KeyName and associated keyfile that you specified in the Stack Details section above. If you cannot RDP to the instance, you need to be connecting from a device in the network CIDR that you specified in RDPLocation in Stack Details section above.



Join your WorkSpaces Manager instance to your Active Directory Domain

Connect to the WorkSpaces Manager instance and join it to your Active Directory domain. Once complete, you can now go to the next section on 'First Time Setup'.

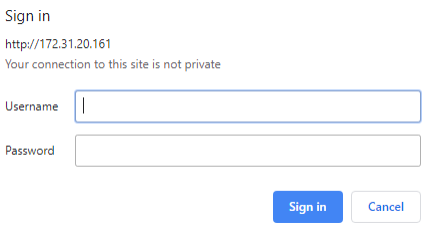
PLEASE NOTE: You need to have your DHCP options set in AWS to be able to find your domain, or enter your DNS servers manually in the TCP/IPv4.



First Time Setup

Log on to the WorkSpaces Manager EC2 instance, go to Internet Explorer and browse to http://localhost.

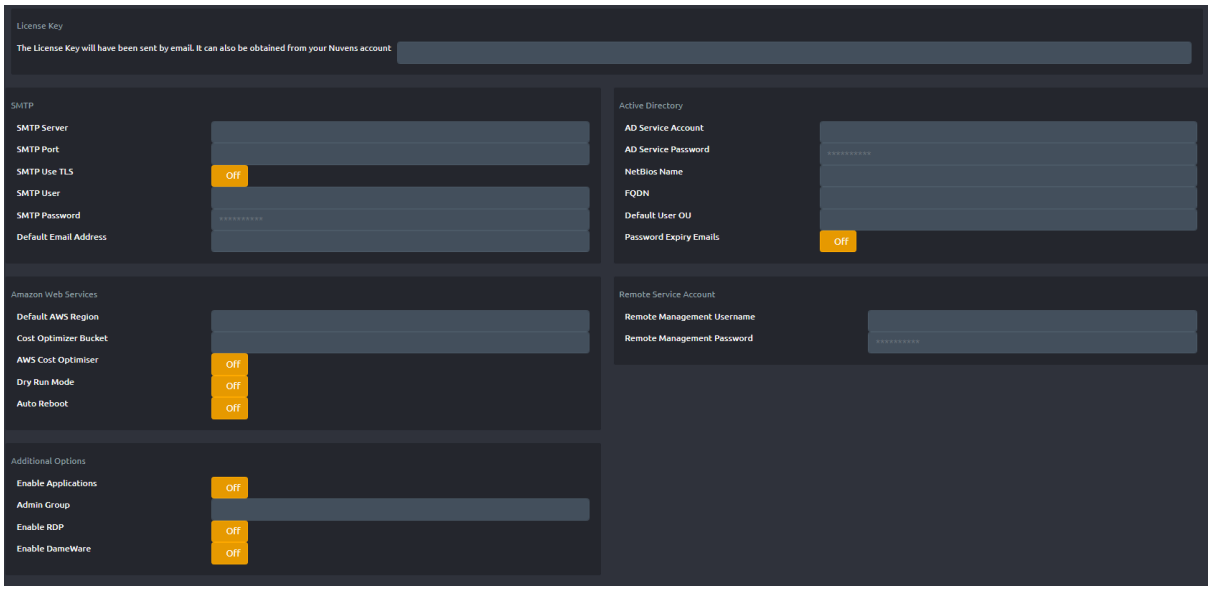
From a browser, connect to the Private IP address of the WorkSpaces Manager portal instance from a device in the 'RDPLocation' CIDR range specified above in 'Specify Stack Details'. If you get this message, you can either enter your DOMAIN\USERNAME and password, or you can go to Internet Explorer > Internet Options and add the website address (e.g. http://*private-ip-of-your-instance*) to Trusted Sites or Local Intranet. You can also provide your portal with a friendly portal name address (e.g. http://workspacesmanager.yourdomain) which means that it will most likely be accepted from most\all browsers in your organisation without amending the Trusted Sites or Local Intranet settings. To give it a friendly name, see the section 'Securing the Portal and adding a friendly portal address'.



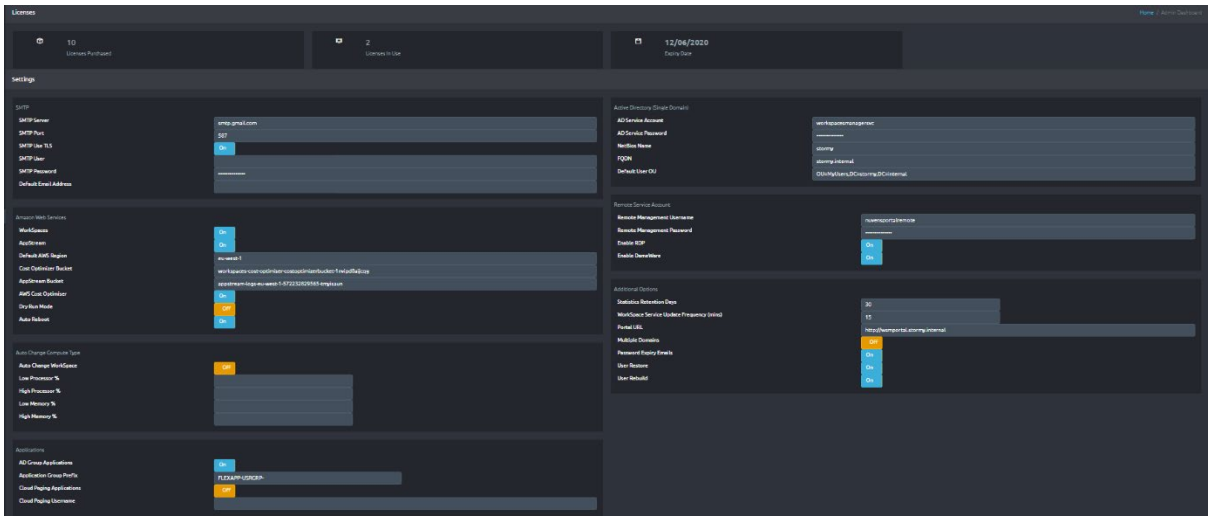
When you can successfully connect to the portal, you will be presented with a setup screen to enter information for

- License key
- AD Service account
- SMTP details
- Default AWS Region
- Other system settings.

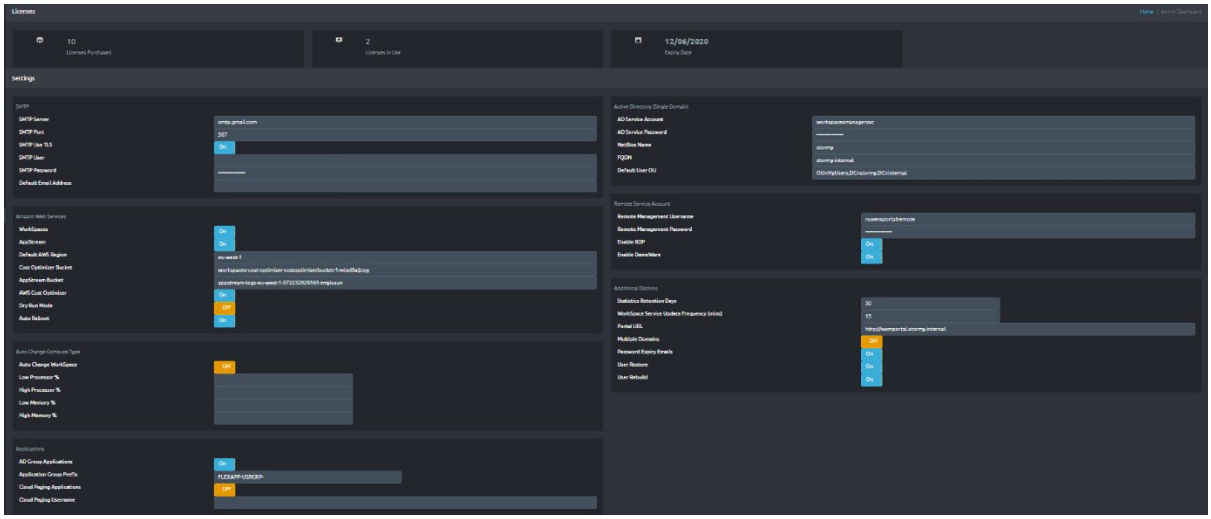
The license key will have been sent via email when you registered on the AWS Marketplace.



This is an example of the Portal filled in.



Now press ‘Save’. **Please wait for up to 30 seconds for the next screen to appear. When it does, it will show the administration section of the portal on the License\Settings page. You can change settings in here where you see them.**



Sections explained:

Required to advance	
License Key	This will be sent to you when you register the Portal on AWS Marketplace.
Active Directory (Single Domain)	***NOTE : If you have users in more than one domain, you can turn on the ‘Multiple Domains’ feature in the ‘Additional Options’ section. You can learn more in ‘Section 9 – Mult-Domain Forest’ of the WorkSpaces Manager User Guide.*** ***AD Service Account and password*:** When creating the AD Service Account to support AWS WorkSpaces you will have already provided an account with permissions to create computer objects within AD to the OU specified at the time. We recommend using the same service account and providing additional permissions to delete computer objects.

	***NetBIOS name*:** NetBIOS name of the domain that your WorkSpaces will be joining. ***FQDN*:** Fully Qualified Domain Name of the domain that your WorkSpaces will be joining. ***Default User OU*:** If you create a user in the 'Add User' section of the Portal, this is where it will place that user. If you use the 'Import Template' then you can specify where you want the user(s) to be located per OU or by copying template users.

These can be filled in later

SMTP
This enables you to send emails to users when their new WorkSpace is ready and\or if their password is to expire in two weeks' time. You could use AWS Simple Email Service to achieve this, or your own SMTP setup.
Amazon Web Services
Workspaces: Turns on the WorkSpaces Management function. ***AppStream:*** ***In development and not available yet***. Turns on the AppStream Management function. ***Default AWS Region*:** This is the AWS Region that your Amazon WorkSpaces are hosted in. For example, Ireland will be eu-west-1. A full list of Regions can be located here. ***Cost Optimizer Bucket*:** This is the bucket name mentioned in the 'AWS WorkSpaces Cost Optimizer' section earlier on the document. ***AppStream Bucket*:** ***In development and not available yet***. This is where you put in your S3 bucket for your AppStream Usage Reports. ***AWS Cost Optimiser*:** This enables the AWS Cost Optimiser. ***Dry Run Mode*:** Running the Cost Optimiser in Dry Run Mode will show you the changes that would have been made ***Auto Reboot*:** This gives the ability to set reboot times on WorkSpaces. Available one you've set up the Portal.

Auto Change Compute Type

You can opt for WorkSpaces Manager to automatically change compute type of a WorkSpace. This is useful if, for example, you had a user running heavy spreadsheets on a Standard WorkSpace and it would benefit them with being upgraded to a Performance WorkSpace.

Set Low and High Processor and Memory values (these are up to you). WorkSpaces Manager will also advise you of recommendations.

Applications

***AD Group Applications*:** Enable this is you use software distribution on to your WorkSpaces from the likes of LiquidWare FlexApp. This allows users to add and remove applications available to them through the Self Service side of the WorkSpaces Manager Portal. You can change this to your own prefix when you've logged into the Portal. For example, your FlexApp groups could be prefixed 'FLEXAPP-USRGRP'.

***Application Group Prefix*:**
As above, this is the prefix of your application distribution groups with whatever product you are using (FlexApp, SCCM, etc).

Cloud Paging Applications:
If you want to use Nument Cloudpaging applications with WorkSpaces, you can enable this feature on here.

***Cloud Paging Username*:**
This is where you enter the account name that you use for Numecent Cloudpaging.

Additional Options

***Statistics Retention Days*:**
If the WorkSpace Agent has been deployed to the WorkSpaces, it will be reporting back to the server key metric statistics periodically as defined in the Group Policy (see section below on 'Installing The WorkSpaces Agent'). In a large estate, this will create millions of rows within the database over a period of time. The number of days that are retained within the database can be specified here. If the number of days are too high on a large estate (e.g. 60) then it will have an impact on queries of statistics and also increased disk space usage. For smaller estates, you can set this to 30 days and monitor from there.

***WorkSpace Service Update Frequency (mins)*:**
This will automatically update the local database with up to date information on this period. 15 minutes is sufficient for most cases, but you wouldn't want to do this on, for example, a 1 minute period on a very large WorkSpaces and user estate. If you need to do a manual update for any reason, you can do this in the Update section of the portal.

***Portal URL*:**
Enter your portal URL here.

***Multiple Domains*:**
If you are using a multi-domain forest, you can add multiple domains that host your user accounts. Therefore, their WorkSpaces can be managed, searched and reported on.

***Password Expiry Emails*:**
If this is chosen, users will receive a notification email two weeks prior to their password expiring. This can be turned on\off whenever and is not required to complete the Portal configuration at this stage.

***User Restore*:**
Enables the Self-Service function for a user to restore their WorkSpace to a last known healthy state. Automatic snapshots for use when restoring a WorkSpace are scheduled every 12 hours. If the WorkSpace is healthy, snapshots of both the root volume and user volume are created around the same time. If the WorkSpace is unhealthy, these snapshots are not created.
If needed, a user can restore a WorkSpace to its last known healthy state. This recreates both the root volume and user volume, based on the most recent snapshots of these volumes that were created when the WorkSpace was healthy.

User Rebuild:
Enables the Self-Service function for a user to rebuild their WorkSpace.

- The system is refreshed with the most recent image of the bundle that the WorkSpace was created from. Any applications that were installed, or system settings that were changed after the WorkSpace was created, are lost.
- The user volume (for Microsoft Windows, the D drive; for Linux, /home) is recreated from the most recent snapshot. The current contents of the user volume are overwritten.
  Automatic snapshots for use when rebuilding a WorkSpace are scheduled every 12 hours. If the WorkSpace is healthy, a snapshot of the user volume is created. If the WorkSpace is unhealthy, the snapshot is not created.
- The primary elastic network interface is recreated. The WorkSpace receives a new private IP address.

Remote Services Account

This is an account that you configure to remote control user devices using Dameware, etc. This is the generic account that you connect with (which will be standard throughout your organisation). You can remote control a user's WorkSpaces by selecting 'Dameware' (if you've selected the 'Enable Dameware' option in 'Additional Options' and it downloads a connection file for you to run.

Enable RDP:
Enables the option for downloading an RDP file to connect to the user's WorkSpace from within the Portal.

Enable DameWare:
Enables the option for downloading an RDP file to connect to the user's WorkSpace from within the Portal.

A 60 day unlimited WorkSpace trial is available after which a monthly billing subscription will be started. The System only counts active WorkSpaces used within the last 30 days and can be cancelled at any time.

For any assistance with the License key or setting up the WorkSpaces Manager Appliance please contact support@nuvens.co.uk

Installing the WorkSpaces Agent

The WorkSpaces Manager agent collects Processor, Memory and disk utilisation on an hourly basis.

The Agent installer can be found in “D:\WorkSpaceAgent” on the appliance.

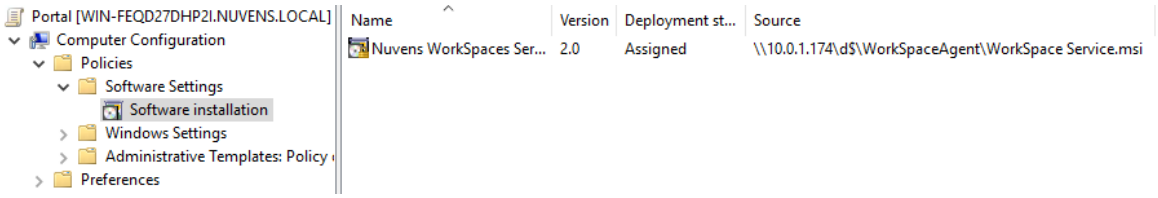
The Agent requires a registry key value to be present to locate the database on the appliance.

> *[HKEY_USERS\.DEFAULT\Software\Nuvens]*
>
> *"Portal"="**http://DNS or IP address of your portal**" (REG_SZ)*
>
> *(If you are using SSL, use **https** in place of http)*
>
> *“Frequency” = “5” (REG_DWORD (32-bit))*
>
> *(The value data is a numeric value of minutes (e.g. ‘5’ where the Agent reports back to the database every 5 minutes with metrics. You can change this frequency to an increased value if you have a large estate as a lot of information will be stored in the database).*

The best way to deploy the registry settings and the application is via a Group Policy or by using a distribution tool of your choice (such as Microsoft SCCM).

In Group Policy Manager Create a new Group policy on the OU containing the AWS WorkSpaces. Under Computer Configuration expand Policies:

- Expand Software Settings under Computer Configuration
- Right-click Software Installation, select the New context menu and then click on Package
- In the Open dialog type the full UNC path of the shared package you want to assign
- Click on the Open button
- Click on Assigned and then click OK (the package will be added to the right pane of the "Group Policy" window)



The required Registry values can be added on the same Group Policy

Under Computer Configuration expand Preferences: -

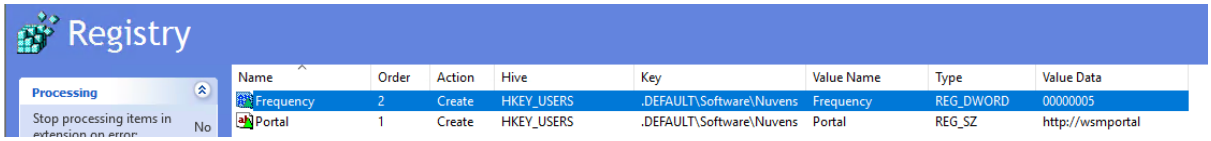
- Expand Windows Settings under Preferences
- Right-click Registry and create new registry item

(a) Create the “Portal” registry value with the key [HKEY_USERS\.DEFAULT\Software\Nuvens]

  - The value name is “Portal” of type REG_SZ.
  - The value data is http (or https) and the IP address (or DNS address) of your WorkSpaces Manager appliance. (e.g. http://wsmportal).

(b) Create the “Frequency” registry value with the key [HKEY_USERS\.DEFAULT\Software\Nuvens]

- The value name is “Frequency” of type REG_DWORD (32-bit)
- The value data is a numeric value of minutes (i.e. 5 where the agent reports back to the database every 5 minutes with metrics. You can change this frequency to an increased value if you have a large estate as a lot of information will be stored in the database).



If you

The WorkSpaces Manager agent collects Processor, Memory and disk utilisation on an hourly basis.

The Agent installer can be found in “D:\WorkSpaceAgent” on the appliance.

The Agent requires a registry key value to be present to locate the database on the appliance.

[HKEY_USERS\.DEFAULT\Software\Nuvens]

*"Portal"="**http://DNS or IP address of your portal**" (REG_SZ)*

*(If you are using SSL, use **https** in place of http)*

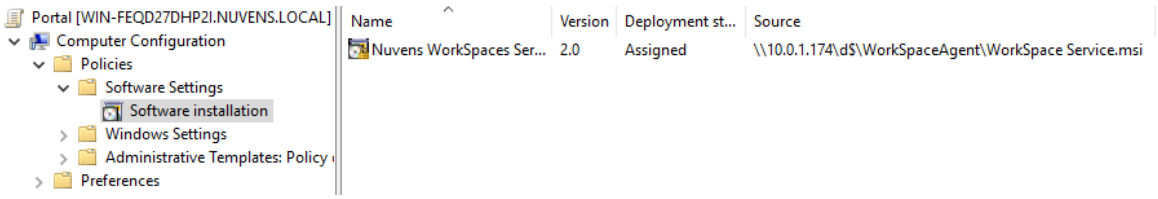
“Frequency” = “5” (REG_DWORD (32-bit))

(The value data is a numeric value of minutes (e.g. ‘5’ where the Agent reports back to the database every 5 minutes with metrics. You can change this frequency to an increased value if you have a large estate as a lot of information will be stored in the database).

The best way to deploy the registry settings and the application is via a Group Policy or by using a distribution tool of your choice (such as Microsoft SCCM).

In Group Policy Manager Create a new Group policy on the OU containing the AWS WorkSpaces. Under Computer Configuration expand Policies:

- Expand Software Settings under Computer Configuration
- Right-click Software Installation, select the New context menu and then click on Package
- In the Open dialog type the full UNC path of the shared package you want to assign
- Click on the Open button
- Click on Assigned and then click OK (the package will be added to the right pane of the "Group Policy" window)



The required Registry values can be added on the same Group Policy

Under Computer Configuration expand Preferences: -

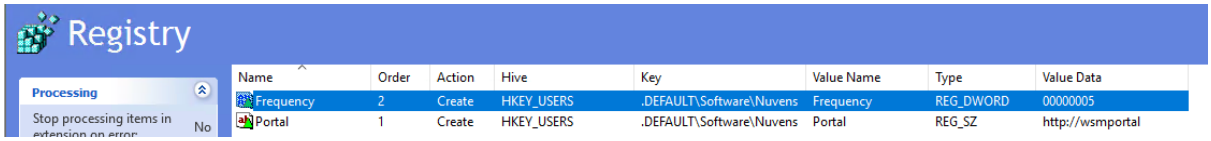
- Expand Windows Settings under Preferences
- Right-click Registry and create new registry item

(a) Create the “Portal” registry value with the key [HKEY_USERS\.DEFAULT\Software\Nuvens]

  - The value name is “Portal” of type REG_SZ.
  - The value data is http (or https) and the IP address (or DNS address) of your WorkSpaces Manager appliance. (e.g. http://wsmportal).

(b) Create the “Frequency” registry value with the key [HKEY_USERS\.DEFAULT\Software\Nuvens]

- The value name is “Frequency” of type REG_DWORD (32-bit)
- The value data is a numeric value of minutes (i.e. 5 where the agent reports back to the database every 5 minutes with metrics. You can change this frequency to an increased value if you have a large estate as a lot of information will be stored in the database).



High Availability

The WorkSpaces Manager appliance is a single EC2 instance containing IIS & SQL Express. Providing you schedule a backup schedule for the EBS volumes associated with the appliance, recovery can be completed in under an hour.

Database

To achieve database HA we recommend on deploying AWS RDS Microsoft SQL Server into at least 2 Availability Zones.

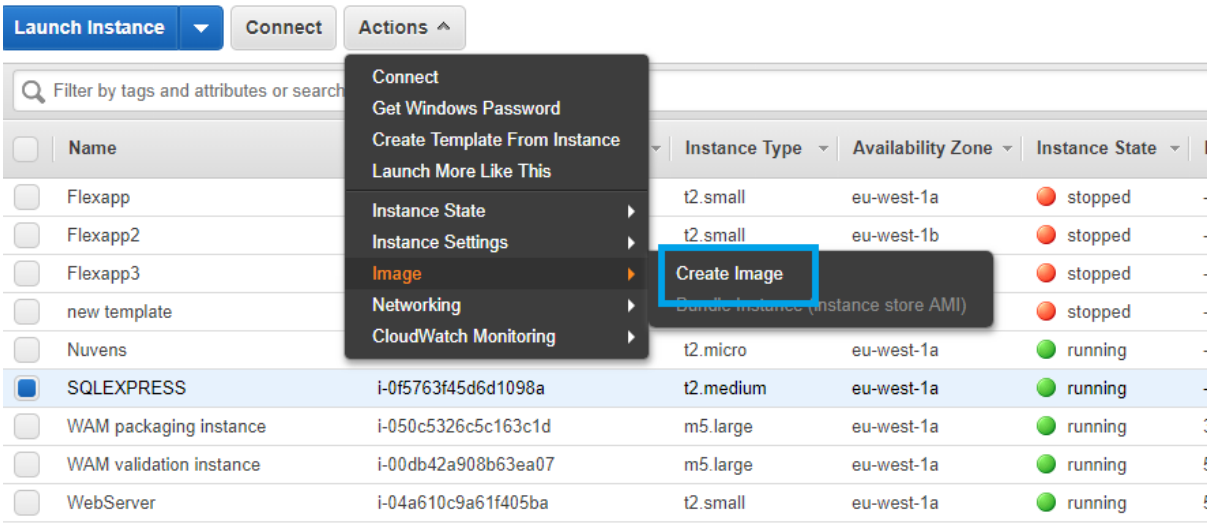
After deploying RDS you will need to do the following actions: -

- Change the registry key 'Portal' to point to the RDS database cluster endpoint.
- Edit the Web.Config in D:\Portal on the appliance from "127.0.0.1" to the RDS Cluster endpoint.
- Stop the 'PortalService' service on the appliance. Edit the service config file in "C:\Program Files (x86)\Nuvens Consulting Ltd\Nuvens AWS WorkSpaces Management Portal Service\ PortalService.exe.config" and change the database connection string from "127.0.0.1" to the RDS Cluster endpoint. Then restart the appliance.

User/Admin Portal

There are several ways that HA can be provided for the Portal including Auto Scaling Groups. The simplest method is to make an Amazon Machine Image of your appliance.

1. Log into your Amazon Web Services EC2 site using your administrative credentials.
2. Right-click on the instance to make an AMI and select Create Image.

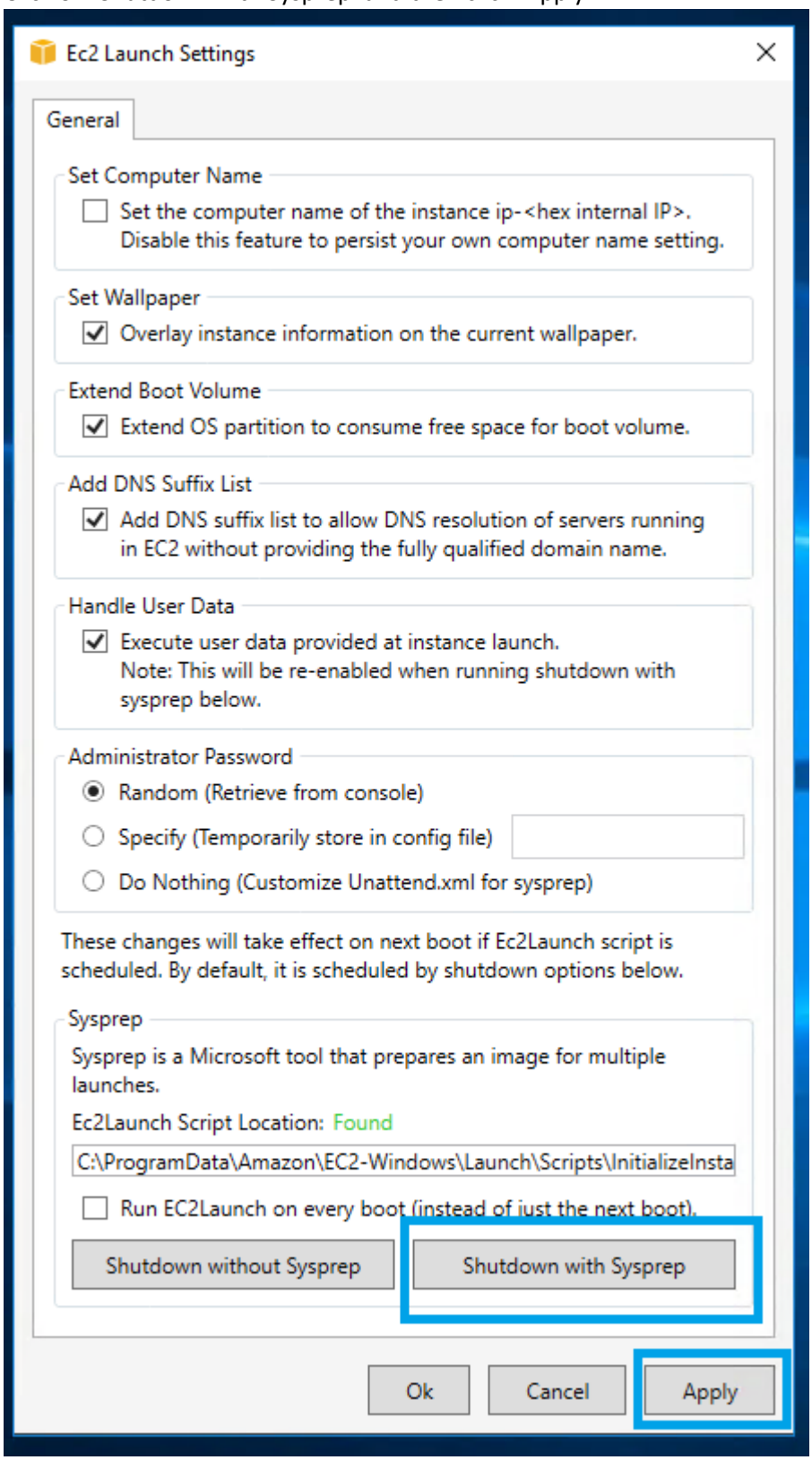


3. Name the Image and click Create Image

This will make a cloned image of your WorkSpaces Manager Instance. This can be kept as a backup.

To be able to deploy the image as another instance we need to first go through a process called SysPrep and create our deployable image.

1. Stop the original instance that the image was created from.
2. Launch the AMI just created as a new instance.
3. Once the instance is running connect via RDP.
4. Click the ‘Windows’ icon on the instance and start ‘Ec2LaunchSettings’.
5. Click on ‘Shutdown with Sysprep’ and then click ‘Apply’.

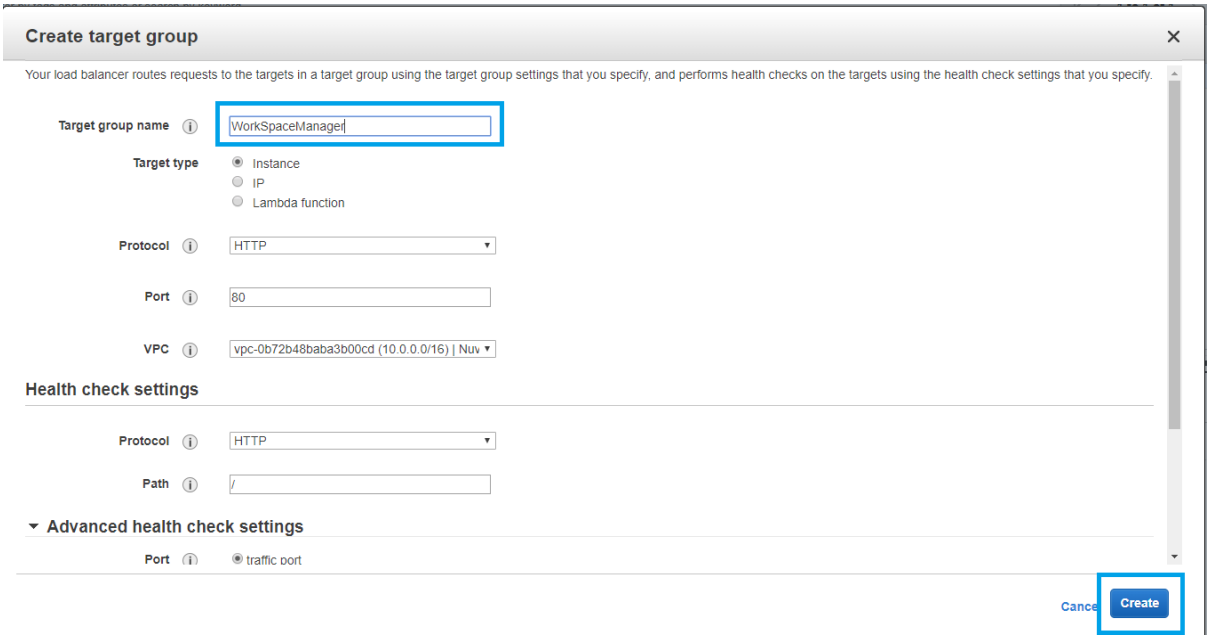


6. This will start a process of removing Windows user and system settings. Once it's complete the instance will be left in a stopped state.
7. The original appliance can now be started again.
8. The Sysprepped stopped image can now be imaged again to create our master appliance image. Once the AMI has been created you can terminate the source instance,

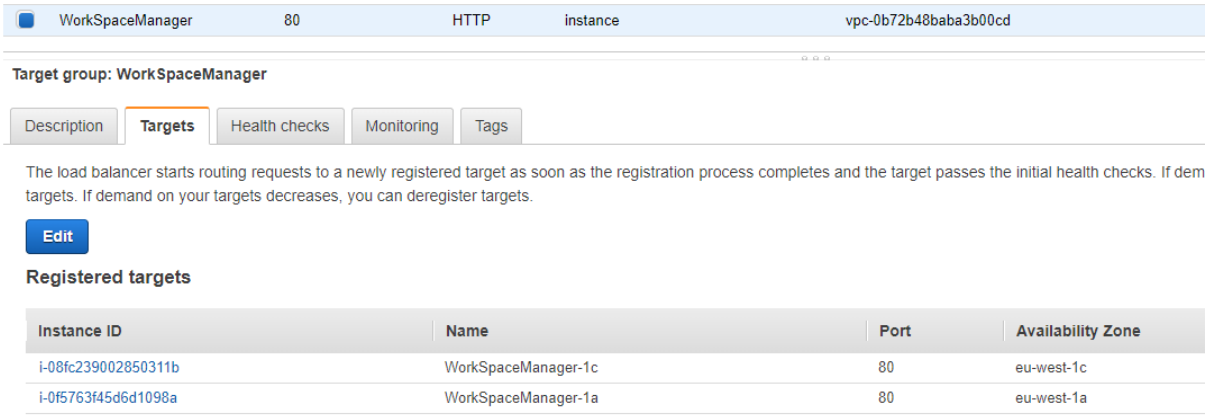
Now that we have created a master image this can be launched into an alternative Availability Zone in the Region. The same instructions as 'Installing the WorkSpaces Management Portal on AWS' can be used to launch the image however this time rather than installing from the Marketplace you will launch the instance from the AMI just created. If you are launching with domain joined configured and ensuring that you assign the 'WorkSpacesManager' Role, the instance will be available after about 30 minutes.

This has provided 2 instances in different AZ's configured to connect to HA RDS Microsoft SQL Server. However, we now need to create a single point of entry into the Portal.

1. From the AWS Console select 'EC2' Service then 'Target Groups'.
2. Click Create target group and provide a target group name before clicking 'Create'.



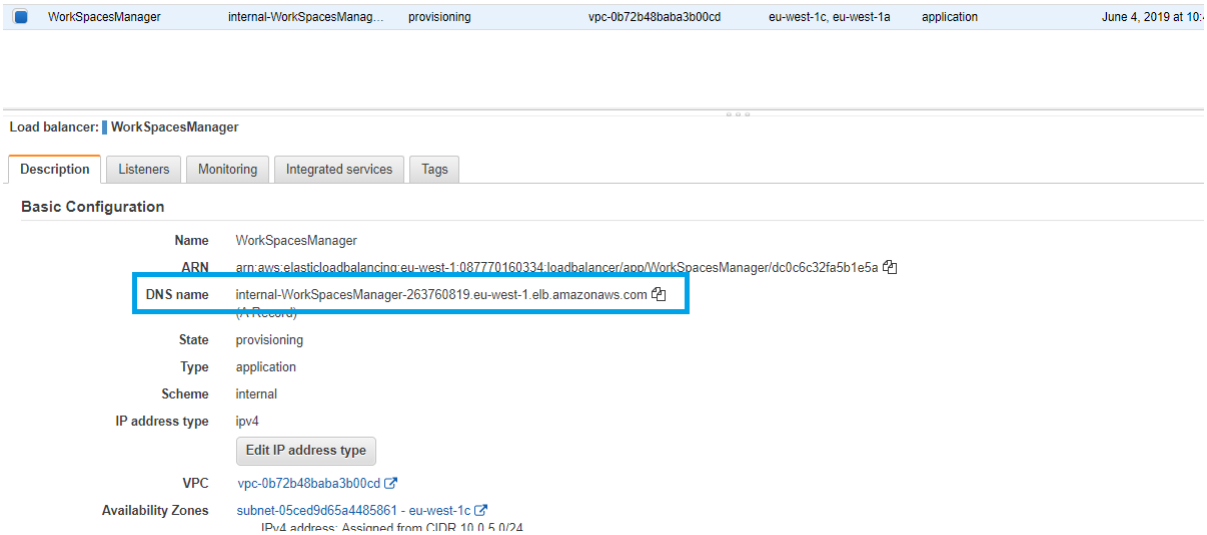
3. Register both WorkSpace Manager appliances with the target group



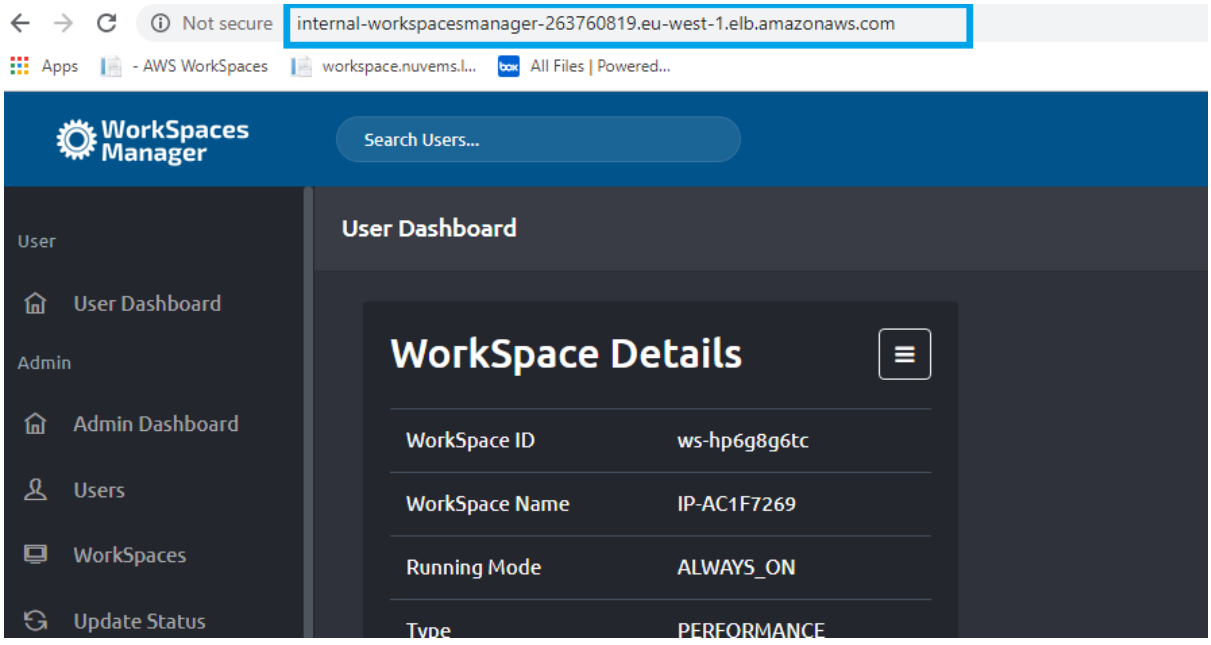
4. Next create an Application Load Balancer ensuring you select the Availability Zones that you used when creating the target group and the Scheme is set as 'Internal'.

5. On Step3: Configure Security Groups, create a new security allowing inbound HTTP from the private subnets.
6. On Step4: Configure Routing, select the target group we created above then click next and complete creation of the load balancer.

Once the load balancer has been created you can view the details of the load balancer including its DNS name.



The DNS name can the be used to access the portal which will be load balanced across both instances



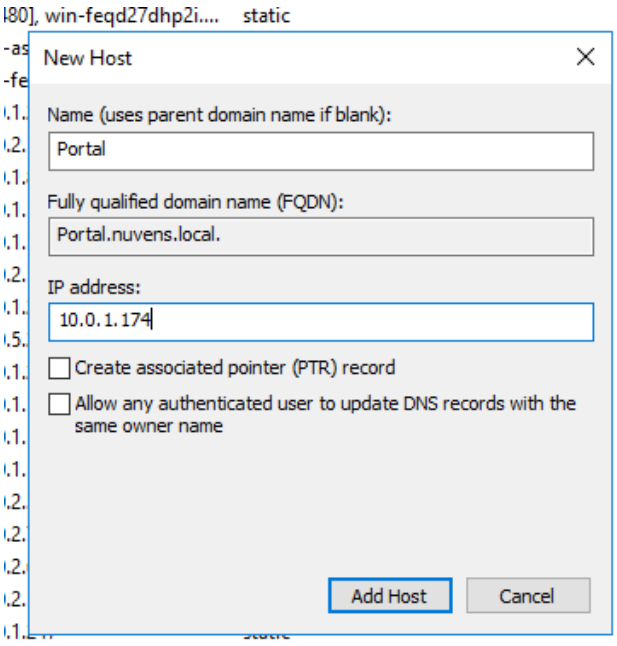
The portal is now in full HA mode load balanced across 2 AZ's with an HA database supporting it. However, the address is not very friendly. See 'Securing the Portal and adding a friendly portal address' below.

Securing the Portal and adding a friendly portal address

Portal address

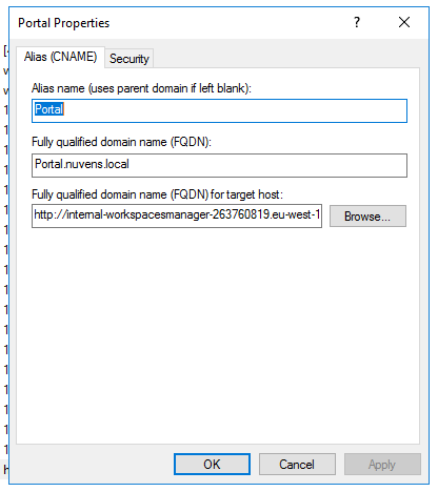
Rather than accessing the Portal via the IP address of the instance you can add a record to your DNS server.

From DNS manager add an A record to your domain referencing the IP address of the instance



This will now allow you to reference the portal in this scenario has http://portal.nuvens.local.

If you have configured load balancing then you will need to add a CNAME record and reference the DNS record of the load balancer which in this example would be:



SSL Certificate

Now that we have a friendly hostname we can associate an SSL certificate to encrypt traffic between the client browser and the host.

1. Select the Load Balancer previously created and click on listeners.
2. Add a listener for HTTPS port 443.
3. Create a Default action to forward to the target group.
4. Select the appropriate certificate from ACM.
5. Click ‘Save’.