

DEPLOYMENT GUIDE

BloxOne® Deployment for Docker and VMware Hosts

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Introduction

Local DNS, DHCP and IPAM services for BloxOne DDI are provided with physical or virtual appliances. Virtual appliances are available for VMware and Docker. This guide will walk through the steps for deploying a BloxOne Host for VMware, then a BloxOne Host for Docker, including the initial provisioning steps for the Infoblox Cloud Services Portal (CSP).

Deployment of BloxOne Hosts is simple, and flexible. This enables an organization to distribute DNS, DHCP and IPAM services to branch offices and remote locations without specialized training or costly infrastructure

This introduction will include supported versions, and requirements for connectivity and services. There is also a section on current best practices.

Prerequisites

- Security Group with necessary ports opened for inbound and outbound access depending on services used as well as minimum system requirements. These requirements can be found in [BloxOne Documentation](#).
- Access to Infoblox Cloud Service Portal (CSP) located at csp.infoblox.com.

Best Practices deploying to VMware and Docker

To ensure a successful deployment of a BloxOne hosts, consider the following best practices:

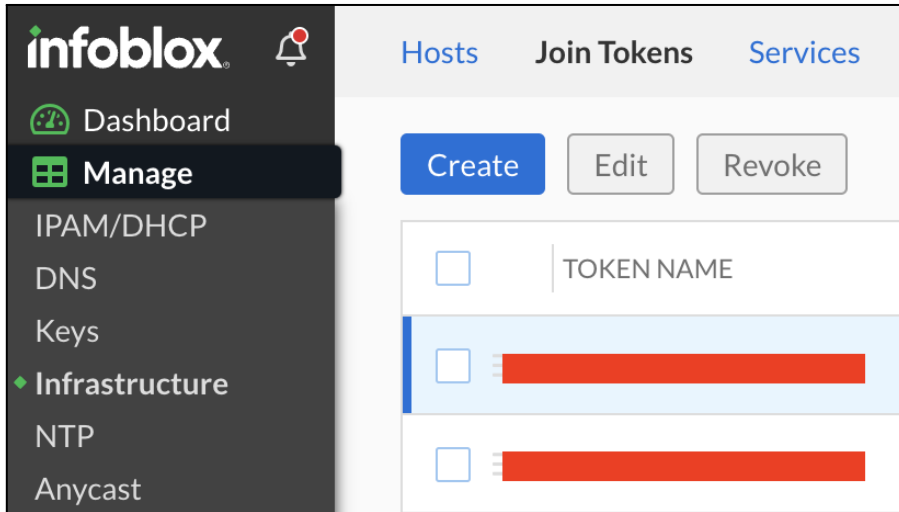
- For any BloxOne host using the BloxOne DDI capabilities, the interface should be reachable through LAN/WAN for queries from external clients needing to be resolved.
- If you need to change the IP address of the BloxOne host after the configuration, For Docker deployments you must restart the system to ensure the change takes effect.
- Ensure that there are no other processes using port 53 on the host system on which your BloxOne BloxOne DDI will be deployed. For example, some Ubuntu systems running local DNS cache (system-resolved) might occupy port 53, and your BloxOne host might not function properly in this case.
- Use the most recent versions of ESXi, Docker, and Operating Systems supported, and do host patch maintenance.

Obtaining a Join Token

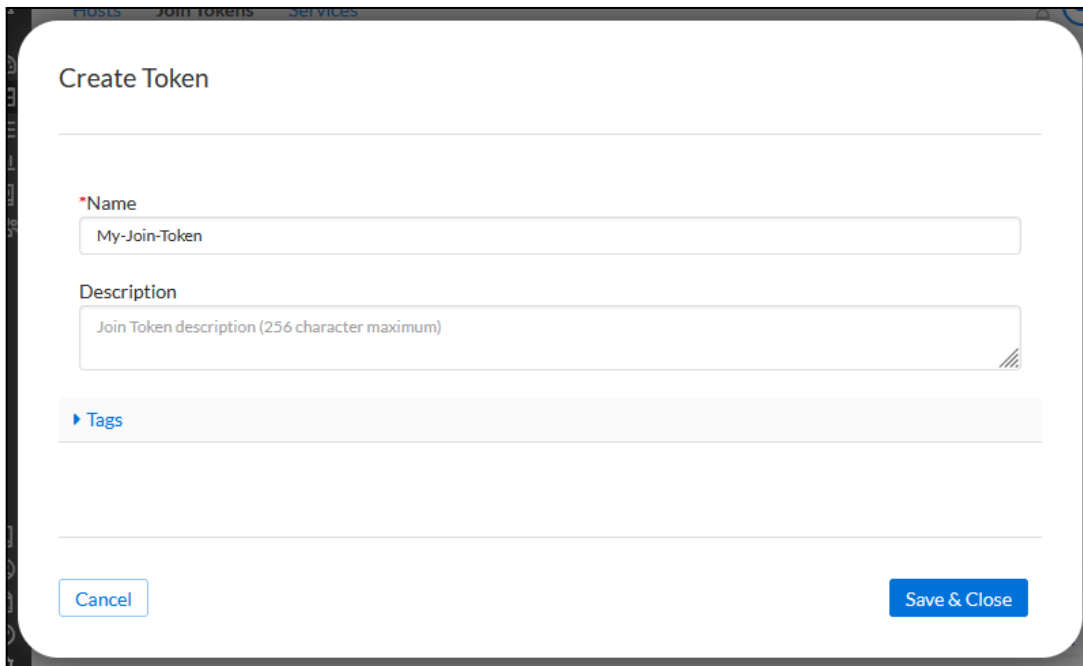
You will need to obtain a join token before deployment on VMware, or Docker.

Important Note: The join token appears only once in the dialog box. When you close the dialog, you will not be able to retrieve the join token. Ensure that you copy it and save it for deployment purposes.

1. Login to the Infoblox Cloud Services Portal (<https://csp.infoblox.com/>).
2. Navigate to the **Manage -> Infrastructure -> Join Tokens**.
3. Click **Create**.

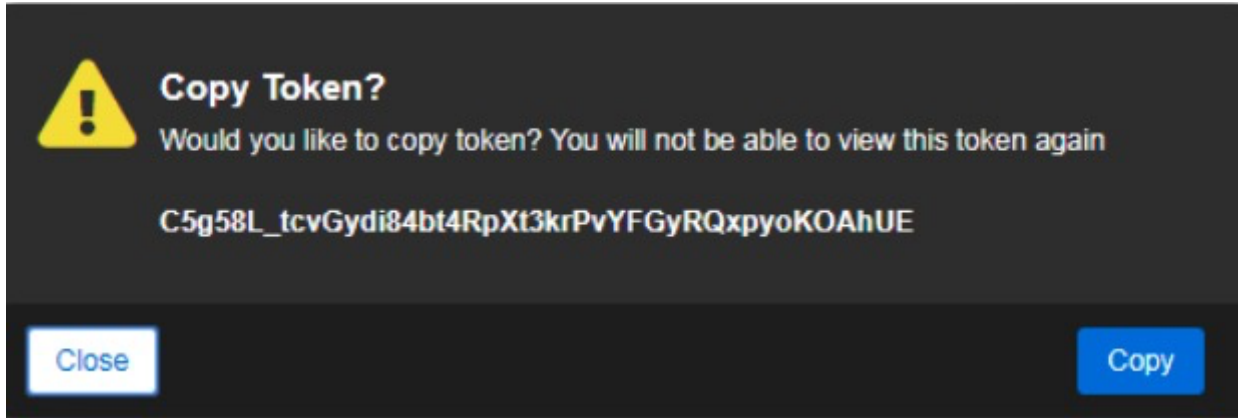


4. Enter a name and click **Save & Close**.

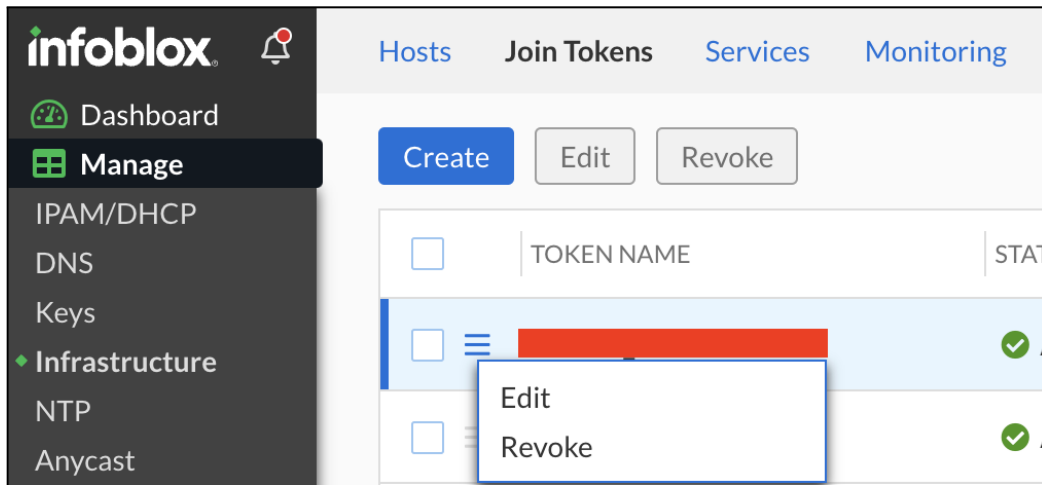


5. Click on the **Copy** button and save this token for future use, this is your **ONLY** chance to copy this token. It can be used for multiple BloxOne deployments until revoked.

Note: This is your **ONLY** chance to copy this token.



6. This token can be used repeatedly until revoked.



VMware Deployment

VMware deployment via OVA on ESXi or vCenter of BloxOne DDI enables an organization to distribute DNS, DHCP and IPAM services to branch offices and remote locations without specialized training or costly infrastructure.

A quick deployment overview is

- Download the OVA file (template file)
- Deploy the OVA (template file)
- Power on the VM

- Confirm the VM on the correct network and it can reach the internet and it can be reached by the expected clients.

In the CSP, a join token is required to create (provision) your BloxOne host. It's recommended that you rename the BloxOne host from its Zero Touch Provisioning given name (ZTP) via the CSP after deployment, and confirmation of function.

VMware Image File Download

The first step in deploying an BloxOne Host is to download the image file:

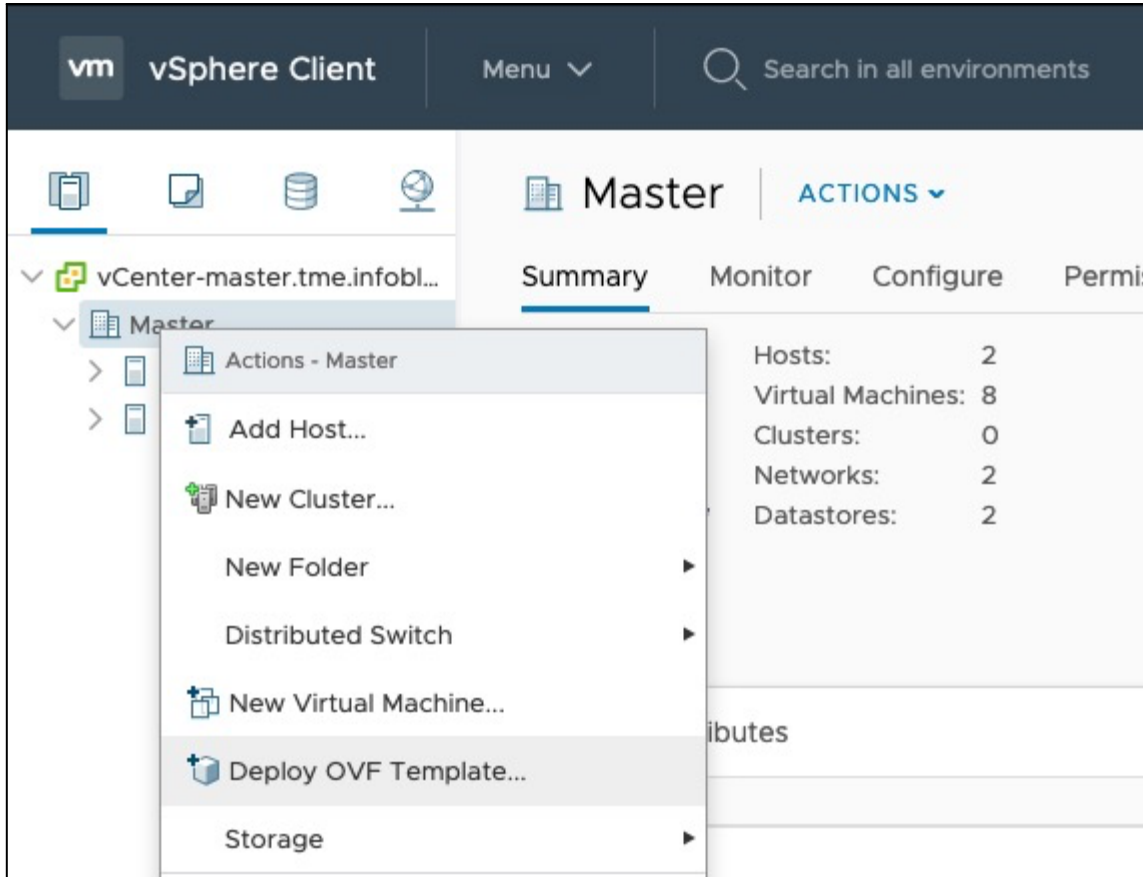
1. Login to the Infoblox Cloud Services Portal (<https://csp.infoblox.com/>).
2. Navigate to Administration -> Downloads.
3. Navigate to the Hosts panel located on the Downloads page.
4. From the drop-down menu, select either Download Package for OVA (60GB disk or 750GB disk)
5. Click on the Download Package button.
6. Follow the prompts to save the compressed tar file.

Note: The image file will be close to 1GB in size.

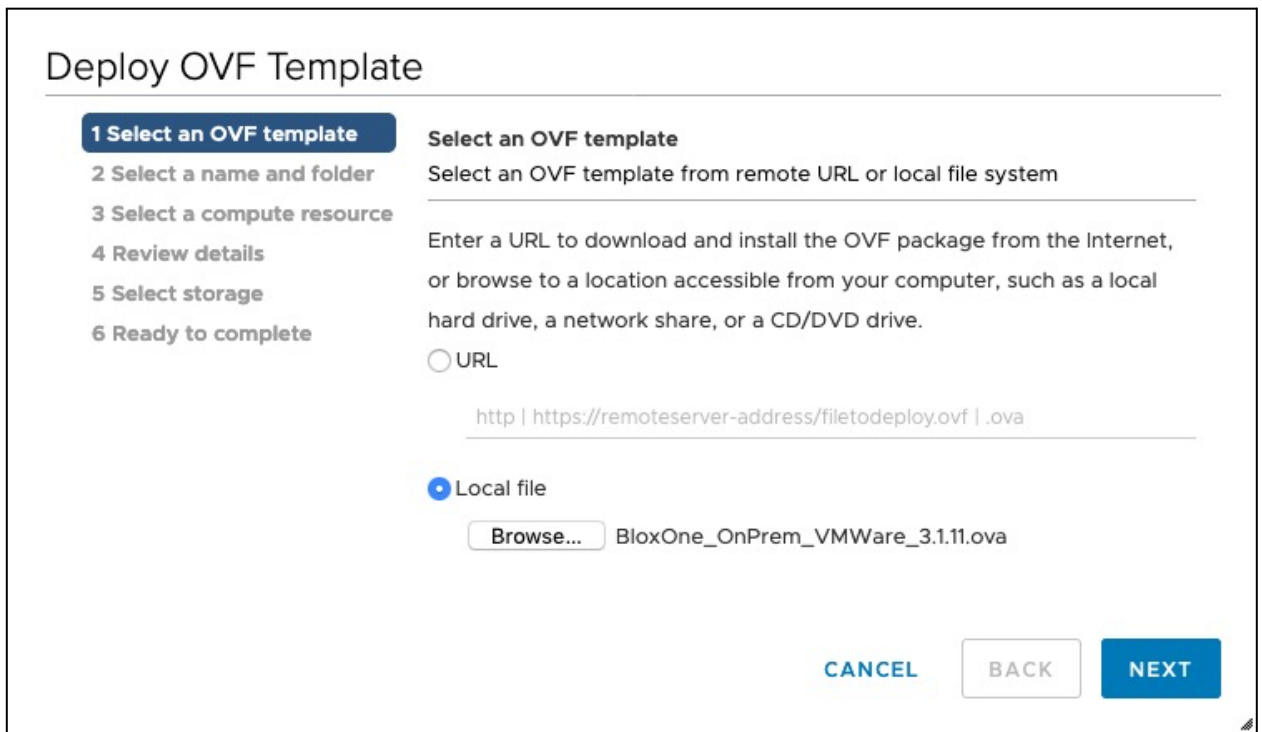
Deploying the BloxOne Host using VMware vCenter

Once the image file has been downloaded, you are ready to proceed with deploying it in your VMware environment. In this guide, this is demonstrated using a recent vCenter. (See Supported Platforms)

1. **Login** to vCenter using an account that has the required privileges to deploy a new VM.
2. **Right-click** on your vCenter server and select **Deploy OVF Template** (it can deploy OVF or OVA's).



3. Click **Browse**, locate and then select the **BloxOne_OnPrem_VMWare** file. Click **Next**.



- Set the name for the BloxOne Host and select the datacenter or folder where the VM should be deployed in. Click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- 2 Select a name and folder**
- 3 Select a compute resource
- 4 Review details
- 5 Select storage
- 6 Ready to complete

Select a name and folder

Specify a unique name and target location

Virtual machine name: BloxOne_Open_Virtual_Appliance_v2.4.17-3.1.11

Select a location for the virtual machine.

- ✓ vCenter-master.tme.infoblox.com
 - > Master

CANCEL **BACK** **NEXT**

- Select the **resource** where the BloxOne host should be deployed. Click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- 3 Select a compute resource**
- 4 Review details
- 5 Select storage
- 6 Ready to complete

Select a compute resource

Select the destination compute resource for this operation

- ✓ Master
 - > esxi-mgmt-8-32.tme.infoblox.com
 - > **esxi-mgmt-8-33.tme.infoblox.com**

Compatibility

✓ Compatibility checks succeeded.

CANCEL **BACK** **NEXT**

6. Review the details and click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- 4 Review details**
- 5 Select storage
- 6 Select networks
- 7 Customize template
- 8 Ready to complete

Review details
Verify the template details.

Publisher	infoblox.com (Untrusted certificate)
Download size	896.1 MB
Size on disk	2.4 GB (thin provisioned)
	58.6 GB (thick provisioned)

CANCEL BACK NEXT

7. Set the storage as required (we use Thin Provision, your local policies may differ). Click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- 5 Select storage**
- 6 Select networks
- 7 Customize template
- 8 Ready to complete

Select storage
Select the storage for the configuration and disk files

Encrypt this virtual machine (Requires Key Management Server)

Select virtual disk format:

VM Storage Policy:

Name	Capacity	Provisioned	Free
ds-8-33	18.06 TB	1.92 TB	17.98 TB

Compatibility

✓ Compatibility checks succeeded.

CANCEL BACK NEXT

8. **Select** the network for the BloxOne Host and click **Next**.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 Select storage
- 6 Select networks**
- 7 Customize template
- 8 Ready to complete

Select networks
Select a destination network for each source network.

Source Network	Destination Network
lan	HA

1 Items

IP Allocation Settings

IP allocation: Static - Manual

IP protocol: IPv4

CANCEL BACK NEXT

9. **Update** the properties as required. Those marked with * are currently required for a successful deployment. Additionally, NTP Servers are recommended, with VLAN ID's as required.

Deploy OVF Template

- ✓ 1 Select an OVF template
- ✓ 2 Select a name and folder
- ✓ 3 Select a compute resource
- ✓ 4 Review details
- ✓ 5 Select storage
- ✓ 6 Select networks
- 7 Customize template**
- 8 Ready to complete

Customize template
Customize the deployment properties of this software solution.

3 properties have invalid values

Property	Description
Cloud Credentials (2 settings)	
Join Token	Application Join Token.
HTTPS Proxy	HTTPS Proxy configuration.
IPv4 Network Settings (4 settings)	
IPv4 Address	VM IPv4 address (required). ⓘ
IPv4 Netmask	VM IPv4 Netmask (required). ⓘ
IPv4 Gateway	VM IPv4 gateway (required). ⓘ

CANCEL BACK NEXT

Properties:

- A. Join Token* (Previously copied from the CSP portal)
- B. HTTPS Proxy
- C. IPv4 Address*
- D. Pv4 Netmask*
- E. IPv4 Gateway*
- F. IPv4 VLAN ID
- G. IPv6 Address (not currently in use)
- H. IPv6 CIDR (not currently in use)
- I. IPv6 Gateway (not currently in use)
- J. IPv6 VLAN ID (not currently in use)
- K. Nameservers(s)*
- L. NTP servers(s).
- M. Docker IP address and netmask.

10. Review the configuration data. Click **Finish**.

Deploy OVF Template

✓ 1 Select an OVF template
✓ 2 Select a name and folder
✓ 3 Select a compute resource
✓ 4 Review details
✓ 5 Select storage
✓ 6 Select networks
✓ 7 Customize template
8 Ready to complete

Ready to complete
Click Finish to start creation.

Provisioning type	Deploy from template
Name	BloxOne_Open_Virtual_Appliance_v2.4.17-3.1.11
Template name	BloxOne_Open_Virtual_Appliance_v2.4.17-3.1.11
Download size	896.1 MB
Size on disk	2.4 GB
Folder	Master
Resource	esxi-mgmt-8-33.tme.infoblox.com
Storage mapping	1
All disks	Datastore: ds-8-33; Format: Thin provision
Network mapping	1
lan	HA

CANCEL BACK FINISH

11. Verify that the BloxOne Host has been successfully deployed, and if necessary, complete any required configuration updates and then power it on. It may take 10-15 minutes before the host is visible on CSP.

The screenshot shows the 'Task Console' interface. At the top, there are navigation buttons for 'Previous' and 'Next'. Below this is a table with columns for 'Task Name', 'Target', 'Status', and 'Details'. Two tasks are listed: 'Deploy OVF...' and 'Import OVF...', both showing a progress bar at 37% and a close icon. Below the table, there is a section for the VM 'BloxOne_Open_Virtual_Appliance_v2.4.17-3.1.11'. It includes tabs for 'Summary', 'Monitor', 'Configure', 'Permissions', 'Datastores', 'Networks', and 'Updates'. The 'Summary' tab is active, showing a 'Powered Off' status box. To the right of the box, details are listed: Guest OS: Ubuntu Linux (64-bit), Compatibility: ESXi 5.0 and later (VM version 8), VMware Tools: Not running, not installed, DNS Name, IP Addresses, and Host: esxi-mgmt-8-33.tme.infoblox.com. At the bottom, there are links for 'Launch Web Console' and 'Launch Remote Console' with a terminal icon.

Task Name	Target	Status	Details
Deploy OVF...	BloxOne_Open_Virtual_Appliance_v2.4...	37%	✕
Import OVF...	esxi-mgmt-8-33.tme.infoblox.com	37%	✕

BloxOne_Open_Virtual_Appliance_v2.4.17-3.1.11

Summary | Monitor | Configure | Permissions | Datastores | Networks | Updates

Powered Off

Guest OS: Ubuntu Linux (64-bit)
Compatibility: ESXi 5.0 and later (VM version 8)
VMware Tools: Not running, not installed
[More info](#)

DNS Name:
IP Addresses:
Host: esxi-mgmt-8-33.tme.infoblox.com

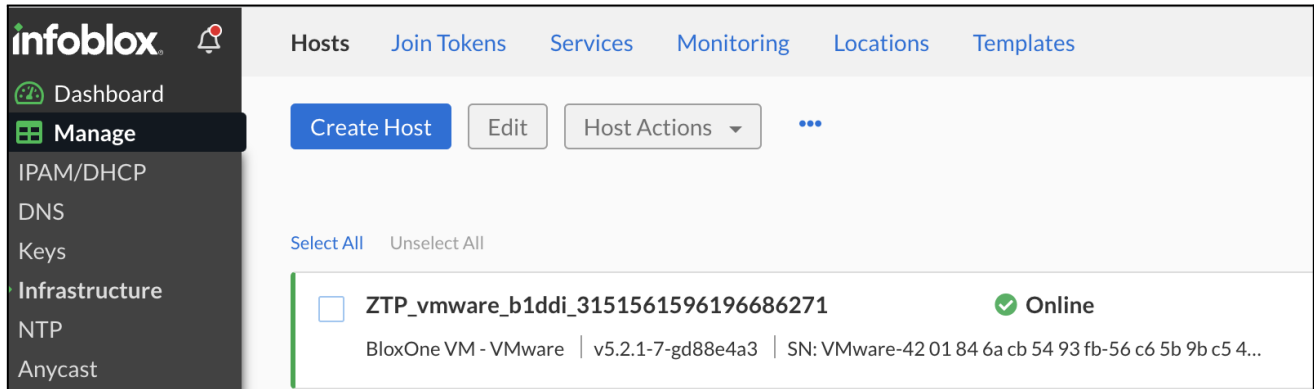
[Launch Web Console](#)
[Launch Remote Console](#) ⓘ

- The following screenshot shows the BloxOne host after power on.

```
Infoblox On-Prem VM.  
  
Network configuration:  
  ens160: 100.79.252.97  
  
Agent status:      active and running  
Docker status:    alive and running  
Network status:   active  
NTP sync status:  NTP synchronized: yes
```

Configuring the BloxOne Host

Now that the BloxOne Host is deployed, you can now configure various applications and services via the CSP. Note the Host name will begin with ZTP for Zero Touch Provisioning. It will contain the join token's name. You can also filter on the given IP address.



Docker Deployment

Docker BloxOne DDI deployment enables an organization to distribute DNS, DHCP and IPAM services to branch offices and remote locations without specialized training or costly infrastructure. To deploy a docker image, a Join Token is required to create (provision) your docker host for BloxOne.

Obtaining a Join Token is discussed earlier in this document.

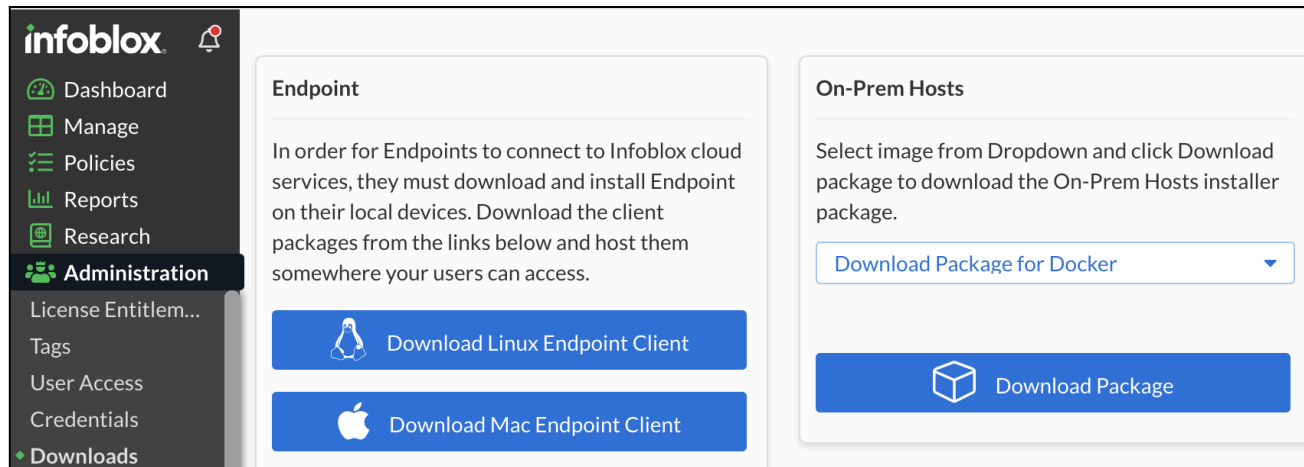
It is assumed you have docker deployed on your host platform and that System Requirements (earlier in this guide) are appropriate, It is also assumed you have access to a command line, and have downloaded the compressed tar file for Docker from the Cloud Services Portal at Administration -> Downloads -> On-Prem Hosts.

Docker Tar File Download

The first step in deploying a BloxOne Host is to download the compressed tar file:

1. Login to the Infoblox Cloud Services Portal (<https://csp.infoblox.com/>).
2. Navigate to Administration -> Downloads.
3. Navigate to the Hosts panel located on the Downloads page.
4. From the drop-down menu, select Download Package for Docker.
5. Click on the Download Package button.
6. Follow the prompts to save the compressed tar file.

Note: The compressed tar file will be around 110MB in size.



Our example will be deployed on an Ubuntu 20.04 server, with the standard docker.io package running version 20.10.12 installed.

You may need to have root/administrator permissions (sudo) to run the following commands, and/or be a member of the docker group. This is dependent on your platform, and the method of docker installation.

```
% docker load -i BloxOne_OnPrem_Docker_<VERSION>.tar.gz
```

In our case we ran this command “docker load -i BloxOne_OnPrem_Docker_3.1.11.tar.gz”

```
infoblox@host-1:~$ sudo docker load -i BloxOne_OnPrem_Docker_4.3.10.tar.gz
89ae5c4ee501: Loading layer 5.809MB/5.809MB
c96fb288a1c9: Loading layer 2.048kB/2.048kB
17dad58b1f26: Loading layer 67.76MB/67.76MB
33431a26c89b: Loading layer 2.048kB/2.048kB
0b93a2c85081: Loading layer 55.54MB/55.54MB
05d265b81310: Loading layer 6.609MB/6.609MB
9717cdeee547: Loading layer 3.072kB/3.072kB
6fc7b4ae4f8c: Loading layer 3.584kB/3.584kB
91be96773167: Loading layer 3.072kB/3.072kB
1d0a07a597e3: Loading layer 3.072kB/3.072kB
Loaded image: infobloxcto/onprem.agent:v4.3.10
```

And to verify the successful load, run the command “docker images”. You will then be able to use this image to “boot strap” the rest of the deployment.

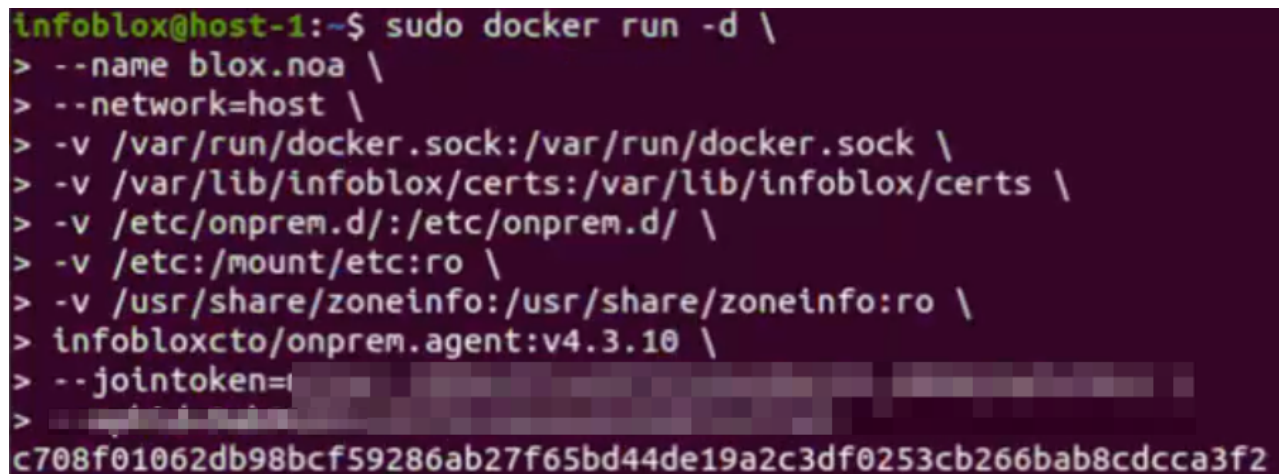
```
% docker images
```

```
infoblox@host-1:~$ sudo docker images
REPOSITORY          TAG          IMAGE ID          CREATED          SIZE
infobloxcto/onprem.agent  v4.3.10    77de863a3671    16 months ago   130MB
```

To start, you must have root/administrator permissions due to the “--network host” argument. Replace <JOIN_TOKEN> and <VERSION> with appropriate values. The screen capture reveals what was used to

deploy for this guide. This starts the first container which will then load and start the rest of the BloxOne Platform.

```
sudo docker run -d \  
  
--name blox.noa \  
  
--network=host \  
  
-v /var/run/docker.sock:/var/run/docker.sock \  
  
-v /var/lib/infoblox/certs:/var/lib/infoblox/certs \  
  
-v /etc/onprem.d:/etc/onprem.d/ \  
  
-v /etc:/mount/etc:ro \  
  
-v /usr/share/zoneinfo:/usr/share/zoneinfo:ro \  
  
infobloxcto/onprem.agent:<version> \  
  
--jointoken=<Join_token>
```



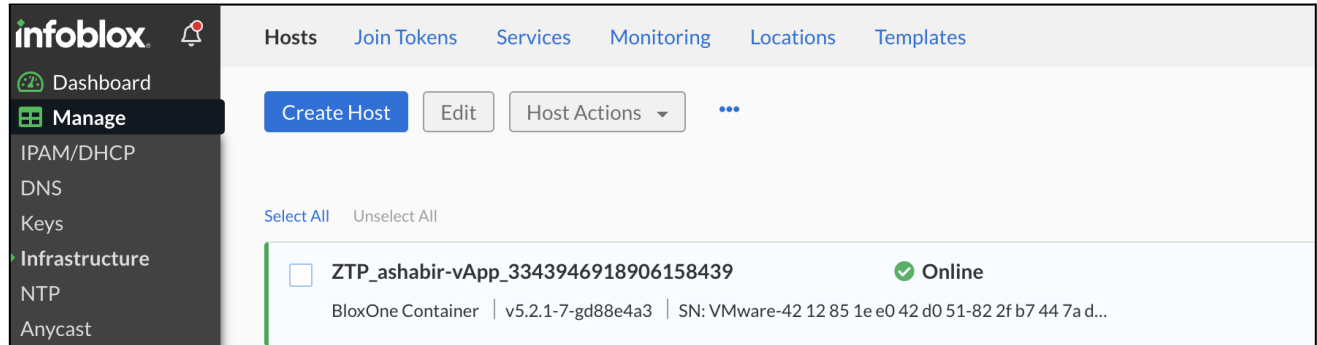
```
infoblox@host-1:~$ sudo docker run -d \  
> --name blox.noa \  
> --network=host \  
> -v /var/run/docker.sock:/var/run/docker.sock \  
> -v /var/lib/infoblox/certs:/var/lib/infoblox/certs \  
> -v /etc/onprem.d:/etc/onprem.d/ \  
> -v /etc:/mount/etc:ro \  
> -v /usr/share/zoneinfo:/usr/share/zoneinfo:ro \  
> infobloxcto/onprem.agent:v4.3.10 \  
> --jointoken=  
> c708f01062db98bcf59286ab27f65bd44de19a2c3df0253cb266bab8cdcca3f2
```

The response is a long hex string, as seen here it starts with c708f. This will be different for each deployment and is the UUID long identifier of the container

To see the progress of the deployment, you can use “docker ps”. The most important container is blox.noa, and you should see that it ends up being healthy. Deployment speed will vary depending upon bandwidth and latency of your internet connection. Typical deployment time is of the order of 10-15 minutes.

Configuring the BloxOne Host

Now that the Host is deployed, you can now configure various applications and services via the CSP. Note the Host name will begin with ZTP for Zero Touch Provisioning, and will contain the join token's name. You can also filter on the given IP address which will be the IP address of the host you deployed upon.



Documentation

For more information, please refer to [BloxOne DDI Documentation](#) which is our online documentation. Specifically look at “What’s New” for the latest changes to this SaaS platform.



Infoblox unites networking and security to deliver unmatched performance and protection. Trusted by Fortune 100 companies and emerging innovators, we provide real-time visibility and control over who and what connects to your network, so your organization runs faster and stops threats earlier.

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