infoblox.

DEPLOYMENT GUIDE

Deploying BloxOne Hosts in Azure

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Introduction

Infoblox BloxOne® DDI is a subscription-based hybrid cloud solution that provides scalable, reliable, and fault-tolerant DNS, DHCP, and IPAM services across thousands of locations. It is the industry's first cloud-managed DDI (DNS, DHCP, and IPAM) solution optimized for large-scale retail, remote, and branch office deployments. You can deploy BloxOne DDI across thousands of sites and reduce the total cost of ownership by leveraging low-cost hardware, virtual appliances, license pooling, and license portability.

Microsoft Azure, commonly referred to as Azure, is a cloud computing service provided by Microsoft for building, testing, deploying, and managing both applications and services through Microsoft-managed data centers. Deploying BloxOne Hosts into Azure virtual networks allows you to deliver services such as BloxOne DDI and BloxOne Threat Defense to the resources running in your Azure environments.

Prerequisites

The following are prerequisites to deploying and managing a BloxOne Host in Microsoft Azure:

- Valid subscription for Microsoft Azure.
- Security Group with necessary ports opened for inbound and outbound access depending on services used as well as minimum system requirements (<u>here</u>).
- Access to Infoblox Cloud Services Portal (CSP), located at https://csp.infoblox.com.
- For CLI or non-marketplace portal deployment you will also need:
 - Go, version 1.11 or later installed.
 - Azure storage account for the VHD image.

Workflow

- 1. Create a Join Token via the Infoblox CSP.
- 2. Deploy a BloxOne Host via one of the following methods:
 - Deploy a BloxOne Host from the Azure Marketplace (Preferred Method)
 - Deploy a BloxOne Host via the Azure Portal or Azure CLI:
 - Download the VHD file from Infoblox CSP.
 - Upload the VHD file to Azure.

- Deploy the BloxOne Host virtual machine (VM) in Azure.
- 3. (Optional) Start any desired BloxOne services.

Create a Join Token via the Infoblox CSP

Prior to deploying a BloxOne Host in Azure, you will need to create a join token in the Infoblox CSP.

- 1. Navigate to <u>https://csp.infoblox.com</u> and log in.
- 2. In the Infoblox CSP, navigate to Manage \rightarrow Infrastructure.

infoblox. 🤤	Hosts Join Tokens Services Monitoring Locations Templates	
🚳 Dashboard		
🖽 Manage	Create Host Edit Host Actions 👻 🚥	
IPAM/DHCP		
DNS		
Keys	Select All Unselect All	
 Infrastructure 	ashabir-uno	
NTP		
Anycast	BloxOffe Container V3.2.1 SN. VMWare-42 12 65 16 60 42 d0 51-62 21 b7 44 7a d	
Routing		
External Networks	ZTP_TestHost Online	
Endpoints	BloxOne Container v5.2.1 SN: VMware-42 12 85 1e e0 42 d0 51-82 2f b7 44 7a d	

3. Select the Join Tokens tab, and then click Create.

Hosts J	loin Tokens	Services
Create	Edit	Revoke
	TOKEN NAM	E

- 4. In the Create Token window, enter a Name for your join token.
- 5. (Optional) If desired add a Description, or Tags to the Join Token.
- 6. Click Save & Close.

Create Token		
*Name		
B1-Azure		
Description		
Used for joining hosts running in Azure.		
▼ Tags		<i>1</i> 0
Add Remove		
KEY	VALUE	
Cloud	Azure	
Cancel		Save & Close

7. The join token string will appear in a Copy Token? dialog box. Click Copy and save this value where you can find it later.

	Copy Token? Would you like to copy token? You will not be able to view	this token agai	'n
	мс	Dy	
Close			Сору



Deploy a BloxOne Host

There are three methods which can be used to deploy a BloxOne Host in Azure; via the Azure Marketplace, via the Azure Portal, or via the Azure CLI. Deploying the BloxOne Host from Azure Marketplace is the preferred method.. To deploy a BloxOne Host in Azure perform the steps in one of the sections: Deploying a BloxOne Host via the Azure Marketplace or Deploying a BloxOne Host via the Azure CLI or Azure Portal.

Deploying a BloxOne Host via the Azure Marketplace

To deploy a BloxOne Host via the Azure Marketplace perform the following steps:

- 1. Log in to the Azure Portal by navigating to <u>https://portal.azure.com</u> and inputting your credentials.
- 2. Once logged in to the Azure portal, open the **Services menu** located on the top left of the Azure interface.

≡	Microsoft Azure
Az	cure services

3. Click **Create a resource** in the list that is revealed.

≡
+ Create a resource
숚 Home
📶 Dashboard
₩ All services

4. On the Create a resource page, enter **BloxOne** in the search field.

Create a resource		
Get Started	℅ BloxOne	×
Recently created	Popular Azure services See more in All services	

- 5. In the search results, locate the Infoblox BloxOne card.
- 6. Click **Create** and select **Infoblox BloxOne** for most deployments. If you are deploying a Cloud Data Connector (CDC) select the **Infoblox BloxOne HC**.

Infoblox BloxOne	
Infoblox Inc.	
Azure Application	
Infoblox BloxOne Platform delivers flexible SaaS based networking and security solutions	
Price varies	
Create \checkmark	\heartsuit
Infoblox BloxOne	
Infoblox BloxOne HC	

- 7. On the Basics tab of the Create Infoblox BloxOne page, select the **Subscription** via the Subscription dropdown menu.
- 8. Select the **Resource group** via the resource group dropdown menu or click **Create new** to create one.
- 9. Select the **Region** via the Region dropdown menu.
- 10. Input a name for the BloxOne Host in the BloxOne VM name textbox.
- 11. (Optional) If desired, change the VM Size. Note: By default the size is set to the recommended size. For more information on VM sizing for BloxOne Hosts please refer to the Infoblox Documentation portal located at <u>docs.infoblox.com</u>.
- 12. Input the **join token** that was acquired earlier in this guide on pages 3-4 in the Jointoken textbox.
- 13. (Optional) If required, define an HTTP or HTTPS proxy server to handle requests.
- 14. Click Next: VM Settings.

Home > Create a resource > Marketpla	ce >
Create Infoblox BloxOn	e ×
Basics VM Settings Review + cre	ate
Project details	
Select the subscription to manage deploye to organize and manage all your resources	d resources and costs. Use resource groups like folders
Subscription * 🛈	Azure subscription 1
Resource group * ①	(New) BloxOne-rg 🗸
	Create new
Instance details	
Region * 🕕	East US 🗸
Bloxone VM name * ①	Bloxone
VM size * 🛈	1x Standard F8s v2
	8 vcpus, 16 GB memory
	Change size
Jointoken * 🛈	м У
HTTP proxy ①	
Review + create < Previous	Next : VM Settings >

- 15. On the VM Settings page, select the **Virtual Network** via the Virtual network dropdown menu or click Create new to add a new one.
- 16. Select the **Subnet** via the Subnet dropdown menu.
- 17. If communication via public IP is desired, select a **Public IP address** or Create new public IP. If you do not need a public IP, select **None**.
- 18. (Optional) If console access is desired, select the **Yes** radio button for Serial console. If you select yes, you will be prompted to select or create a storage account used for boot diagnostics and virtual console access. If you do not need console access, click **No**.

Basics VM Settings	Review + create
Configure virtual netwo	rks
Virtual network * 🛈	east-vnet 🗸
	Create new
Subnet *	sub-01 (172.19.0.0/24) V
	Manage subnet configuration
Public IP address ①	None V Create new
Security group 🕕	Bootstrap UI (443)
Serial Console * 🛈	○ No
	• Yes
Storage account * 🛈	(configure required settings) V Create New

- 19. If you are creating a new storage account, click **Create new**. If you are not, proceed to step 21.
- 20. Enter a Name, leave other settings as their defaults, and click OK.

Create storage account	\times
Name *	
bloxonestorage001	~
.core.windov	ws.net
Account kind ①	
Storage (general purpose v1)	\sim
Performance ①	
Standard Premium	
Replication (i)	
Locally-redundant storage (LRS)	\sim
ОК	

21. Click Next: Review + create.

Serial Console * ①	NoYes	
Storage account * ①	(new) bloxonestorage001 Create New	~
Review + create < Prev	/ious Next : Review + create >	

- 22. On the **Review and Create** tab, ensure all parameters are correct and wait for the validation to pass. If validation does not pass, make any required changes.
- 23. If no changes are needed, click **Create**.

Create Infoblox I	BloxOne	×
Validation Passed		
Basics VM Settings R	eview + create	
PRODUCT DETAILS		
Infoblox BloxOne by Infoblox Inc.		
Terms of use Privacy policy		
TERMS		
By clicking "Create", I (a) agree Marketplace offering(s) listed method for the fees associated	e to the legal terms a above; (b) authorize I d with the offering(s),	nd privacy statement(s) associated with the Microsoft to bill my current payment , with the same billing frequency as my
Create < Previous	Next	Download a template for automation

24. You can monitor the deployment and click **Go to resource group** once complete to view the newly created Host and associated resources. To continue with the deployment and configuration for your new Host, skip to the Network Security Group section.



Deploying a BloxOne Host via the Azure CLI or Azure Portal

This section describes how to deploy a BloxOne VM using the Azure CLI or Azure Portal using a custom image. The Azure Portal provides a user-friendly interface for deploying VMs and is useful for deploying a single or limited number of VMs. Using the Azure CLI, you can easily create scripts to automate deployment of multiple VMs with consistent configuration. While both methods are detailed in this guide, you only need to complete one to deploy your BloxOne Host.

Prior to deploying via the Azure Portal or Azure CLI, you will need to complete the sections: Download VHD, Upload VHD to Azure, and Custom Data.

Note: If you deployed using the Azure Marketplace, skip the following sections and proceed to the Network Security Group section.

Download VHD

Prior to deploying a BloxOne Host in Azure, you will need to download the VHD from the Infoblox CSP. There are two available VHDs. For most deployments, a 60GB package is available. For Cloud Data Connector deployments, a 720GB package is available.

- 1. Navigate to <u>https://csp.infoblox.com</u> and log in.
- 2. In the CSP, navigate to Administration \rightarrow Downloads.



3. Under Hosts, use the dropdown to select **Download Package for Azure (60 GB Disk)**. If you are deploying a **Cloud Data Connector** (CDC) select the Download Package for Azure (750 GB Disk).

On-Prem Hosts	
Select image from Dropdown and click Download package to download the On-Prem Hosts installer package.	
Download Package for Azure (60 GB Disk)	
Download Package for Azure (60 GB Disk)	
Download Package for Azure (750 GB Disk)	

4. Click on Download Package. Save this file for use in later sections.

On-Prem Hosts
Select image from Dropdown and click Download package to download the On-Prem Hosts installer package.
Download Package for Azure (60 GB Disk)
Download Package

Upload VHD to Azure

Once you have downloaded the VHD from Infoblox CSP, you will need to upload it to an Azure Storage Account. We will use the Azure VHD Utilities CLI tool for this,

<u>https://github.com/microsoft/azure-vhd-utils</u>. You will need to have Go version 1.11 or later installed to use the Azure VHD Utilities tool, which can be found at <u>https://golang.org/dl/</u>. In all commands shown, replace the <> and everything in between them with appropriate values.

- 1. Open a Terminal or PowerShell window on your workstation.
- 2. Run the command **go get -u github.com/Microsoft/azure-vhd-utils** to install Azure VHD Utilities.



Note: The previous command may fail to fully install the tool on Mac or Linux. If this command fails, use the following commands to complete installation:

- a. Run the command **mkdir** ~/tmp to create a temporary directory.
- b. Run the command **cp -r ~/upload/src/github.com/Microsoft/azure-vhd-utils ~/tmp** to copy the **azure-vhd-utils** to your temporary directory.
- c. Run the command **cd** ~/tmp/azure-vhd-utils to move into the new directory.
- d. Run the make command to install azure-vhd-utils executable.

1.1. A	<pre>~ % mkdir ~/tmp ~ % cp -r ~/upload/src/github.com/Microsoft/azure-vhd-utils ~/tmp ~ % cd ~/tmp/azure-vhd-utils azure-vhd-utils % make</pre>
go test ./	

- 3. Use the command azure-vhd-utils upload --localvhdpath path_to_BloxOne_image>
 - --stgaccountname <storage_account_name> --stgaccountkey <storage_account_key>
 - --containername <container_name> --blobname <image_name> to upload your image as a VHD.

azure-vhd-utils % ./azure-vhd-utils uploadlocalvhdpath ~/Deskto
p/OPH-Azure-Guide/BloxOne OnPrem Azure v2.5.1-4.1.5.vhdstgaccountname bloxoneguideimagest
gaccountkey
containername bloxoneimageblobname bloxone-oph.vhd
2021/10/06 08:56:03 Using default parallelism [8*NumCPU] : 96
Computing MD5 Checksum.
Completed: 99% RemainingTime: 00h:00m:00s Throughput: 5321 MB/sec
Effective upload size: 2874.00 MB (from 60002.00 MB originally)
Uploading the VHD
Completed: 100% [2874.00 MB] RemainingTime: 00h:00m:00s Throughput: 0 Mb/sec
Upload completed

Note: This upload can take an hour or more depending on your network. Wait for the upload to complete before proceeding.

Custom Data

When deploying a BloxOne Host in Azure, you will use a custom data field to pass some initial configuration information to the VM.

1. Visit the **Infoblox Documentation** site to download a sample custom data template. The download link is available on <u>This Page</u>. Configuration options not shown in this guide are also available on this page.

Warning: Network configuration settings should not be used in custom data when deploying to Azure as they will conflict with network configuration set by Azure.

2. Extract the downloaded ZIP and open the userdata.yml file in a text editor.



- 3. Replace **YOUR JOIN TOKEN** with the value of the join token you created.
- 4. Save this file for use in deployment.

Deploy host via Azure Portal

This section provides instructions for deploying a BloxOne Host VM using the Azure Portal, with a basic NSG and using an existing subnet. To begin, you will create a custom image from the uploaded VHD which can be used to deploy multiple BloxOne Host in Azure.

Note: Skip this section if you plan to deploy the image via the CLI using instructions on pages 16-18.

Create Image

- 1. Login to the Azure Portal at https://portal.azure.com.
- 2. Use the search bar to search for images.
- 3. Click on Images under Services.

	$^{ m ho}$ images $\qquad \qquad \qquad$
Azure services	Services
	💀 Images
+	Storage accounts
Create a	S images (classic)
resource	🕎 VM images (classic)

4. On the Images page, click on **Create**.

Images ☆ … Infoblox Inc (info + Create ऄ Manage view ∨ Ò Refresh	
Filter for any field Subscription == all	
Showing 0 to 0 of 0 records.	
Name 🔨	

- 5. Select your **Subscription**.
- 6. Select a **Resource group** to store your image.
- 7. Enter a **Name** for your image.
- 8. Select the Region.
- 9. For OS type, select Linux.
- 10. For VM generation, select **Gen 1**.

Create an image		
Subscription * (i)	TME-Sub1	\sim
Resource group * i	BloxOne-Guide	~
	Create new	
Instance details		
Name *	BloxOne-OPH	~
Region * 🕡	(US) West US 2	~
Zone resiliency ①		
OS disk		
OS type * 🕕	O Windows	
	 Linux 	
VM generation * ①	• Gen 1	
	○ Gen 2	
Storage blob *		
	Browse	

11. For Storage blob, enter the URL of your **uploaded vhd** or click Browse to find it.

- a. If you're using Browse, use the storage browser to navigate to the Storage account \rightarrow container \rightarrow VHD you uploaded.
- b. Click on your VHD and click Select.

Home > Images > Create an image	> Storage accounts > Contain	ners >	
bloxoneimage			
↑ Upload Refresh			
Authentication method: Access key (So Location: bloxoneimage	witch to Azure AD User Account)		
Search blobs by prefix (case-sensitive)			
⁺ _♀ Add filter			
Name	Modified	Access tier	Blob type
📄 bloxone-oph.vhd	10/6/2021, 3:12:43	PM	Page blob
Select			

- 12. For Account type, select the **disk type** to be used with your image.
- 13. Remaining settings can be left at their defaults.
- 14. Click **Review + create** to review your settings prior to creating the image.

https://bloxoneguideimage.blob.core.windows.net/bloxoneimage/bloxone \checkmark
Browse
Standard HDD 🗸
Read/write V
a platform-managed or customer-managed key. Learn more
(Default) Encryption at-rest with a platform-managed key \checkmark
ous Next : Tags >

- 15. On the review page, ensure you see **Validation** passed. If not, correct any errors before proceeding.
- 16. Click Create.

Create an image	
Validation passed	
Basics Tags Review +	create
Basics	
Subscription	TME-Sub1
Resource group	BloxOne-Guide
Region	West US 2
Name	BloxOne-OPH
Zone resiliency	false
OS disk	
OS type	Linux
VM generation	V1
Storage blob	https://bloxoneguideimage.blob.core.windows.net/bloxoneimage/bloxone- oph.vhd
Account type	Standard HDD LRS
Host caching	Read/write
SSE encryption type	Platform-managed key
Create	< Previous Next > Download a template for automation

- 17. You can monitor the progress of the image creation.
- 18. Once complete, click on Go to resource to see your new image.

Deploy Virtual Machine

Once you have created the image, you are ready to deploy your BloxOne Host VM.

1. On the resource page for your image, click **Create VM**.

BloxOne-OPH	
	+ Create VM 🗅 Clone to a shared image 📋 Delete 🖒 Refresh
🕺 Overview	
Activity log	Resource group (change) : BloxOne-Guide
Access control (IAM)	Location (change) : West US 2
🗳 Tags	Subscription (change) : TME-Sub1
Settings	Subscription ID :
Properties	Provisioning state : Succeeded
A Locks	Tags (change) :
	OS disk

2. On the Basics tab of the Create a virtual machine blade, select the desired Subscription.

- 3. Select your **Resource group** or create a new one.
- 4. Enter a Virtual machine name.
- 5. Choose an Availability option. Note: For the highest availability SLA from Azure, 99.99%, select Availability zone in regions that support this and deploy VMs in two or more zones.
- 6. Select your Availability zone if using.

Home > Resource groups > BloxO	Home > Resource groups > BloxOne-Guide > BloxOne-OPH >				
Create a virtual machine					
Basics Disks Networking	Management Advanced Tags Review + create				
Create a virtual machine that runs Lin image. Complete the Basics tab then tab for full customization. Learn more	ux or Windows. Select an image from Azure marketplace or use your own Review + create to provision a virtual machine with default parameters or $e\ e^3$	customized review each			
Project details					
Select the subscription to manage de your resources.	ployed resources and costs. Use resource groups like folders to organize a	nd manage all			
Subscription * ①	TME-Sub1	\sim			
Resource group * i)	BloxOne-Guide	\sim			
	Create new				
Instance details					
Virtual machine name * 🕡	bloxone-guide-vm	~			
Region ①	(US) West US 2	\sim			
Availability options ①	Availability zone	\checkmark			
Availability zone * 🕕	1	\sim			

- 7. Ensure the BloxOne Host Image you created is selected.
- 8. For Size, select one of the supported sizes, found in <u>BloxOne Documentation</u>.
- 9. Select Password for Authentication type.
- 10. Enter a **Username**.
- 11. Enter and confirm a **Password**.

Availability zone * (i)	1	,
Image * 🕡	See all images	- -
Azure Spot instance ①		
Size * 🕕	Standard_F4s_v2 - 4 vcpus, 8 GiB memory (\$123.37/month)	·
Administrator account		
Authentication type ①	◯ SSH public key	
	Password	
Username * 🕕	azureuser	^
Password * ①		~
Confirm password *		<u>`</u>

- 12. For public inbound ports, select **None**.
- 13. For License type, select Other.
- 14. Click on Next: Disks.

Confirm password * ①		~
Inbound port rules		
Select which virtual machine network ports network access on the Networking tab.	are accessible from the public internet. You can specify more limited or grant	ılar
Public inbound ports * 🕕	None	
	Allow selected ports	
Select inbound ports	Select one or more ports	\sim
	All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.	
Licensing		
License type *	Other	\sim
Review + create < Previ	ous Next : Disks >	

- 15. On the Disks tab, select the desired OS disk type.
- 16. Click Next: Networking.
- 17. On the **Networking** tab, select an existing Virtual network.
- 18. Select the desired **Subnet**.

- 19. For **Public IP**, select None. Or Create new if desired.
- 20. Click on the **Advanced** tab.

Basics	Disks	Networking	Management Ad	vanced	Tags	Review + create
Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.						
Network	interfac	e				
When cre	ating a vi	rtual machine, a r	etwork interface will be	created for	you.	
Virtual ne	twork *	0	demo-net Create new			~
Subnet *	0		sub-01 (172.16 Manage subnet	.0.0/24) configuratic	n	\checkmark
Public IP	Ū		None Create new			×
NIC netwo	ork securi	ty group 🕕	None Basic			
Public inb	ound por	ts * 🕡	None Allow select	ed ports		
Review	+ create		Previous Next	: Managem	ent >	

- 21. In the Custom data box, copy and paste the contents of the **userdata.yml** file you saved earlier.
- 22. Click **Review + create**.

Basics	Disks	Networking	Management	Advanced	Tags	Review + create	
Add addi	Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.						
Extensio	ons						
Extensior	ns provide	post-deploymen	t configuration and	automation.			
Extensior	ns 🕕		Select an e	xtension to insta	all		
Custom	data						
Pass a sc the VM in	ript, config n a known	guration file, or ot location. Learn n	her data into the v hore about custom	irtual machine v data for VMs 🖄	vhile it is	being provisioned. The data will be saved on	
Custom data #cloud-config // host_setup: jointoken: "4HdTP7UzYu5LCDor_3w5tPqMzvtPbCcbVjVNY5mgdFgs"							
Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. Learn more about custom data for VMs C							
Review + create < Previous Next : Tags >							

- 23. On the review page, ensure you see Validation passed. If not, correct any errors before proceeding.
- 24. Click Create.

Create a virtual machine						
Validation passed						
Basics Disks Network	ing Management Advanced Tags Review + create					
BloxOne-OPH Image	Standard F4s_v2 4 vcpus, 8 GiB memory					
Basics						
Subscription	TME-Sub1					
Resource group	BloxOne-Guide					
Virtual machine name bloxone-guide-vm						
Region West US 2						
Availability options Availability zone						
Availability zone 1						
Image BloxOne-OPH - Gen1						
Size	Standard F4s_v2 (4 vcpus, 8 GiB memory)					
Authentication type	Password					
Username	azureuser					
Public inbound ports	None					
Create	< Previous Next > Download a template for automation					

25. Monitor the progress of the image creation and wait for it to complete.

26. Once complete, click on the **Resource group** name or click **Go** to resource to view the VM and other resources created.

CreateVm-BloxOne-C	DPH-20211007111702 Overview ☆ …
> Search (Cmd+/) «	Delete 🛇 Cancel 🔲 Redeploy 🔾 Refresh
👶 Overview	Your deployment is complete
😫 Inputs	
š≣ Outputs	Deployment name: CreateVm-BloxOne-OPH-20211007111702 Subscription: TME-Sub1
📄 Template	Resource group: BloxOne-Guide
	✓ Deployment details (Download)
	∧ Next steps
	Go to resource

Deploy Host via CLI

This section provides instructions for deploying a BloxOne Host VM using the Azure CLI, with a basic NSG and using an existing subnet. As a prerequisite, you will need to install the Azure CLI, available at https://docs.microsoft.com/en-us/cli/azure/install-azure-cli. To use other options for VM deployment, such as creating a new VNet for the VM, refer to https://docs.microsoft.com/en-us/cli/azure/install-azure-cli. To use other options for VM deployment, such as creating a new VNet for the VM, refer to https://docs.microsoft.com/en-us/cli/azure/install-azure-cli. To use other options for VM deployment, such as creating a new VNet for the VM, refer to https://docs.microsoft.com/en-us/cli/azure/install-azure-cli. To use other options for VM deployment, such as creating a new VNet for the VM, refer to https://docs.microsoft.com/en-us/cli/azure/install-azure-cli. To use other options for VM deployment, such as creating a new VNet for the VM, refer to <a href="https://docs.microsoft.com/en-us/cli/azure/usure/listall-azure/listall

Note: If you deployed using the Azure portal, skip this section and continue to the Network Security Group section.

Create Image

The following command is used to create your custom image:

az image create --name <image_name> --location <region> --resource-group <resource_group_name> --hyper-v-generation V1 --os-type Linux --storage-sku <disk_type> --os-disk-caching ReadWrite --source

"https://<storage_account_name>.blob.core.windows.net/<storage_container_name>/<image_na me>"

The following are descriptions and instructions for each argument used:

--name This will be the name of the image created.

--location The Azure region to create your image in.

--resource-group The resource group to create your image in.

--hyper-v-generation V1 Virtual machine generation. This should be V1 for BloxOne Host images.

--**os-type** Linux The operating system type for this image. This will always be Linux for a BloxOne Host image.

--**storage-sku** The type of storage used for VMs created from this image. Allowed values are: Premium_LRS, Premium_ZRS, StandardSSD_LRS, StandardSSD_ZRS, Standard_LRS, or UltraSSD_LRS.

--os-disk-caching Storage caching type for OS disk. Recommended is ReadWrite

--**source** This is the URL of the VHD image you uploaded. Replace <storage_account_name>, <storage_container_name>, and <image_name> with appropriate values for your image.

1. Open a Terminal or PowerShell window and login to Azure using the command az login.

Note: The CLI opens your default browser and loads the sign-in page. If the CLI does not open the browser for you, open a browser window and log in to <u>https://microsoft.com/devicelogin</u> using the authentication token you obtained from Azure. For more information, refer to <u>Microsoft documentation</u>.

The default web browser has been opened at https://login.microsoftonline.com/common/oauth2/autho rize. Please continue the login in the web browser. If no web browser is available or if the web browser fails to open, use device code flow with `az login --use-device-code`.

2. If you have multiple subscriptions, use the **az account set --subscription < subscription_id >** command to select the subscription where you will deploy the BloxOne Host.

3. Using appropriate values for your environment, run the az image create command shown above.

ide --hyper-v-generation V1 --os-type Linux --storage-sku Standard_LRS --os-disk-caching ReadWrite --source "https://b loxoneguideimage.blob.core.windows.net/bloxoneimage/bloxone-oph.vhd" - Running ..

4. Once the image creation is complete, copy the Image ID from the output to use in VM creation.

{- Finished "hyperVGeneration": "V1".	
"id": "/subscriptions/ providers/Microsoft.Compute/images/BloxOne-Image",	/resourceGroups/BloxOne-Guide/
"location": "Westus2", "name": "BloxOne-Image", "provisioningState": "Succeeded", "resourceGroup": "BloxOne-Guide", "sourceVirtualMachine": null, "storageProfile": { "dataDisks": [], "osDisk": {	

Deploy Virtual Machine

Once you have created the image, you are ready to deploy your BloxOne Host VM. The following command is used to deploy your BloxOne Host:

az vm create --name <vm_name> --resource-group <resource_group_name> --location <region>
--admin-password <password> --admin-username <username> --image
"/subscriptions/<subscription_id>/resourceGroups/<resource_group_name>/providers/Microsoft.
Compute/images/<image_name>" --os-disk-name <disk_name> --size Standard_F4s_v2
--custom-data <path_to_custom_data_file> --subnet <subnet_id> --zone <availability_zone>
--public-ip-address <public_ip_name>

The following are descriptions and instructions for each argument used:

--name This will be the name of the VM created.

--resource-group The resource group to deploy your BloxOne Host into.

- --location The Azure region to deploy your BloxOne Host in.
- --admin-password The password you will use to access the VM CLI.
- --admin-username The username you will use to access the VM CLI.

--**image** This is the ID of the image you created. Replace <subscription_id>, <resource_group_name>, and <image_name> with appropriate values for your image.

--os-disk-name This will be the name of the VM disk created.

--size This is the size of the VM to create. Refer to <u>BloxOne Documentation</u> for supported sizes.

--custom-data This is used to pass configuration information to the VM. Use the path to your userdata.yml file.

--subnet This is the subnet your VM is created in. Use the subnet ID, which can be found with the command az network vnet subnet list --resource-group <rg_name> --vnet-name <vnet_name>.

--zone The availability zone to provision the VM in. Accepted values are 1, 2, or 3. This is optional and not supported in all Azure regions.

--public-ip-address Enter a value of "" (enter """ if running from a PowerShell window) if you do not want to create a public IP. Otherwise, specify a name for the public IP address.

1. Using appropriate values for your environment, run the command shown above.

orn-AzUE-Guide % az vm create --name bloxone-guide-vm --resource-group bloxone-guide --t /resourceGroups/BloxOne-Guide/providers/Microsoft.Compute/images/BloxOne-Image" --os-disk-name bloxoneguide-vm --size Standard_F4s_v2 --custom-data ./userdata.xml --subnet "/subscriptions/life" --so-disk-name bloxone-/resourceGroups/BloxOne-Guide/providers/Microsoft.Network/virtualNetworks/guide-vnet/subnets/sub-01" --zone 1 --pu blic-ip-address "" ____Running ..

2. Once the deployment is complete, you can see the new VM and associated resources in the Azure Portal.

Image: BloxOne-Guide ☆ Resource group ∞	
	+ Create ≡≡ Edit columns 📋 Delete resource group 💍 Refresh
() Overview	
Activity log	Subscription (change) : TME-Sub1
Access control (IAM)	Subscription ID :
🗳 Tags	Tags (change) : Click here to add tags
🛧 Resource visualizer	
🗲 Events	Resources Recommendations
Settings	Filter for any field Type == all × Location == all ×
Deployments	Showing 1 to 6 of 6 records. Show hidden types 🛈
Security	Name 1
Policies	
🔁 Properties	
🔒 Locks	
Cost Management	v bioxone-guide-vm/vsg

Network Security Group

You will likely need to adjust the network security group rules for your new VM based on the services it will provide. For a list of connectivity and service requirements, refer to <u>BloxOne Documentation</u>.

1. To add or edit your NSG rules, from the resource group page, click on the NSG.

BloxOne-rg ARESource group	☆☆		
🔎 Search	~	🕂 Create ಟ Manage view 🗸 📋 Delete resource group	🖒 Refresh 🚽 Expo
() Overview		✓ Essentials	
Activity log			
Access control (IAM)		Resources Recommendations	
🗳 Tags		Filter for any field Type equals all X Location	equals all \times + Add
🕂 Resource visualizer			ſ
🗲 Events		Showing 1 to 5 of 5 records. Show hidden types ()	
Settings		🗌 Name \uparrow_{\downarrow}	Type ↑↓
1 Deployments		Bloxone	Virtual machine
Security		Bloxone-lan1	Network Interface
Policies		Bloxone-securityGroup	Network security group

2. Select **Inbound** security rules or **Outbound** security rules from the navigation menu to add or edit these rules.

bloxone-guide-vm-nsg Inbound security rules Network security group					
Search (Cmd+/) «	🕂 Add 👒 Hide default rules	🕐 Refresh 📋 Delete 🔗 Give feed	dback		
💎 Overview					
Activity log	> Filter by name	Port == all Pr	rotocol == ali		
Access control (IAM)	Priority 1	Name ↑↓	Port ↑↓		
🗳 Tags	65000	AllowVnetInBound	Any		
Diagnose and solve problems	65001	AllowAzureLoadBalancerInBound	Any		
	65500	DenyAllInBound	Any		
Settings					
📩 Inbound security rules					
📩 Outbound security rules					
Metwork interfaces					

BloxOne as Primary DNS for Azure VNet

A common use case for BloxOne DDI in Azure is serving as the primary DNS server for workloads running in your Azure VNet(s). This allows you to manage and monitor DNS configuration for your on-premises and hybrid cloud environments from a single interface, the Infoblox CSP. This section covers minimal steps to enable the DNS service on your BloxOne Host and set the primary DNS

server for an Azure VNet. For more complex configuration, refer to <u>Infoblox Documentation</u> and additional guides available at <u>https://www.infoblox.com/resources/</u>.

BloxOne Configuration

- 1. Navigate to <u>https://csp.infoblox.com</u> and log in.
- 2. In the CSP, navigate to Manage \rightarrow Infrastructure.
- 3. Find the new BloxOne Host you deployed in Azure.

Note: When provisioning a new BloxOne Host, it will be assigned a temporary name beginning with ZTP_<join_token_name>. You can also identify your Azure host by the Host Type: BloxOne VM - Azure.

4. To open the settings for your BloxOne Host, click the checkbox associated with your BloxOne Host and select **Edit**.

infoblox. 🧷	Hosts Join Tokens Services Monitoring Locations Templates	
🙆 Dashboard		
🖽 Manage	Create Host Edit Host Actions -	
IPAM/DHCP		
DNS		
Keys		
Infrastructure	Host Type: BloxOne VM - Azure X Select a value VX	
NTP	Select All Unselect All	
Anycast		_
Routing	ZTP_B1Azure_6126764112499141288 Online	
External Networks	BloxOne VM - Azure v5.2.1 SN: 0000-0006-1099-1624-1199-9725-28	
Endnoints		

- 5. Rename your BloxOne Host for easy identification.
- 6. (Optional) Configure other settings for the Host. Refer to <u>BloxOne Documentation</u> for configuration options.
- 7. To confirm the changes made to the BloxOne host, click **Finish**.
- 8. Then, click Save and Close.

Edit ZTP B1Azure 612676411	*Name
	My-Azure-B1-Host
	Description
> General Info	
O IP Interface Settings	li.
O DNS Local Resolver Settings	Corial Number
O Time Settings	
O Proxy Settings	
O Docker Bridge Settings	IP Space
O Kubernetes Bridge Settings	
f≣ Summary	Finish Next

- 9. Click the **Services** tab located within the **Infrastructure** page.
- 10. Click Create Service, then locate and click DNS located in the list that is revealed.



- 11. Input a Name for the DNS Service.
- 12. Click the **Select Host** button.
- 13. Locate and Click the BloxOne Host that was created earlier in this guide. Then, click **Select** to confirm the selection.
- 14. Click Finish.

Create DNS Service	*Name	My-DNS-Service
) General Info	Description	
 Interface Binding Summary 	Service State	Started
	*Host	Select Host My-Azure-B1-Host 🛞
		Select Host
		azure O My-Azure-B1-Host
		25 50 100 Page: 1
		Cancel My-Azure-B1-Host Select
Cancel Help		Finish Next

15. Click Save & Close to confirm the creation of the DNS Service.

Azure Configuration

To set your BloxOne Host as the primary DNS server for an Azure VNet, complete the following steps:

1. In the Azure Portal, click on Virtual networks.

2. Select the VNet you want to configure from the list.

Home >							
Virtual networks 🖉 … Infoblox Inc (infoblox.onmicrosoft.com)							
🕂 Create 🔅 Manage view \vee 🕐 Refresh 🞍 Export to CSV 😽 Open que							
Filter for any fieldSubscription == allResource group == all \times							
Showing 1 to 7 of 7 records.							
■ Name ↑↓							
az-network							
🗹 🐡 demo-net							

- 3. On the page for your VNet, select **DNS servers** from the menu.
- 4. Select the radio button next to Custom.
- 5. Enter the **IP Address** of your BloxOne Host.
- 6. Click Save.

Home > Virtual networks > demo-net						
demo-net DNS ser	vers …	×				
✓ Search (Cmd+/) «						
Overview Activity log	A Virtual machines within this virtual network must be restarted to utilize the updated DNS server settings.					
Access control (IAM) Tags Diagnose and solve problems	DNS servers ① O Default (Azure-provided) C Custom					
Settings	IP Address					
Address space	172.16.0.4	✓ 🗊				
& Connected devices	Add DNS server					
<-> Subnets						
DDoS protection						
🛖 Firewall						
Security						
DNS servers						
Peerings	Save					

Note: Existing VMs attached to this VNet will use your BloxOne Host for DNS after they are restarted. Any new VMs deployed in this VNet will use your BloxOne Host for DNS immediately.

Additional Resources

- Deployment Guide: Configuring BloxOne DDI Post Deployment
- Infoblox BloxOne DDI Documentation
- Azure CLI Documentation

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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