



# **Azure Deployment Guide Eli-v6.5.391**

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## **Bridgeworks**

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# 1 Requirements for deployment on Azure

In order to deploy your PORTrockIT you will need the VHD file provided to you by Bridgeworks.

The VHD will be made available to you in ZIP format.

You will need to extract the contents of this ZIP file to an accessible location prior to following the rest of this guide.

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## 2 Guide layout

This guide is divided into a series of ordered steps that should be followed through in order. If at any point you run into trouble with a step please refer to the [Useful Links](#) section at the end of this document.

It is recommended to print this list of steps out and check off each step as you complete them.

- ☐ Step 1. [Storage accounts](#)
- ☐ Step 2. [Uploading a VHD](#)
- ☐ Step 3. [Image creation](#)
- ☐ Step 4. [Virtual machine creation](#)
- ☐ Step 5. [Route tables](#)
- ☐ Step 6. [Network interface](#)
- ☐ Step 7. [Network security](#)

---

## 3 Storage accounts

The following section will deal with the creation and configuration of a storage account. If you already have a configured General Purpose v1 storage account with a container that you wish to use then please proceed to Chapter 4: [Uploading a VHD](#).

A storage account is used to contain any persistent storage.

In this guide, a storage account will be used to store the VHD from which an image will be created.

Microsoft offer multiple types of storage accounts:

### **Storage (general purpose v1)**

This supports: blobs, Azure files, messages, queues, and in-managed disks.

### **Storage (general purpose v2)**

All of general purpose v1, plus all 3 types of blob described below. This solution runs a different pricing model than the v1, and generally results in higher costs for the same resource access as the v1.

### **Blob storage**

**Hot** Frequently accessed data.

**Cool** Infrequently accessed data.

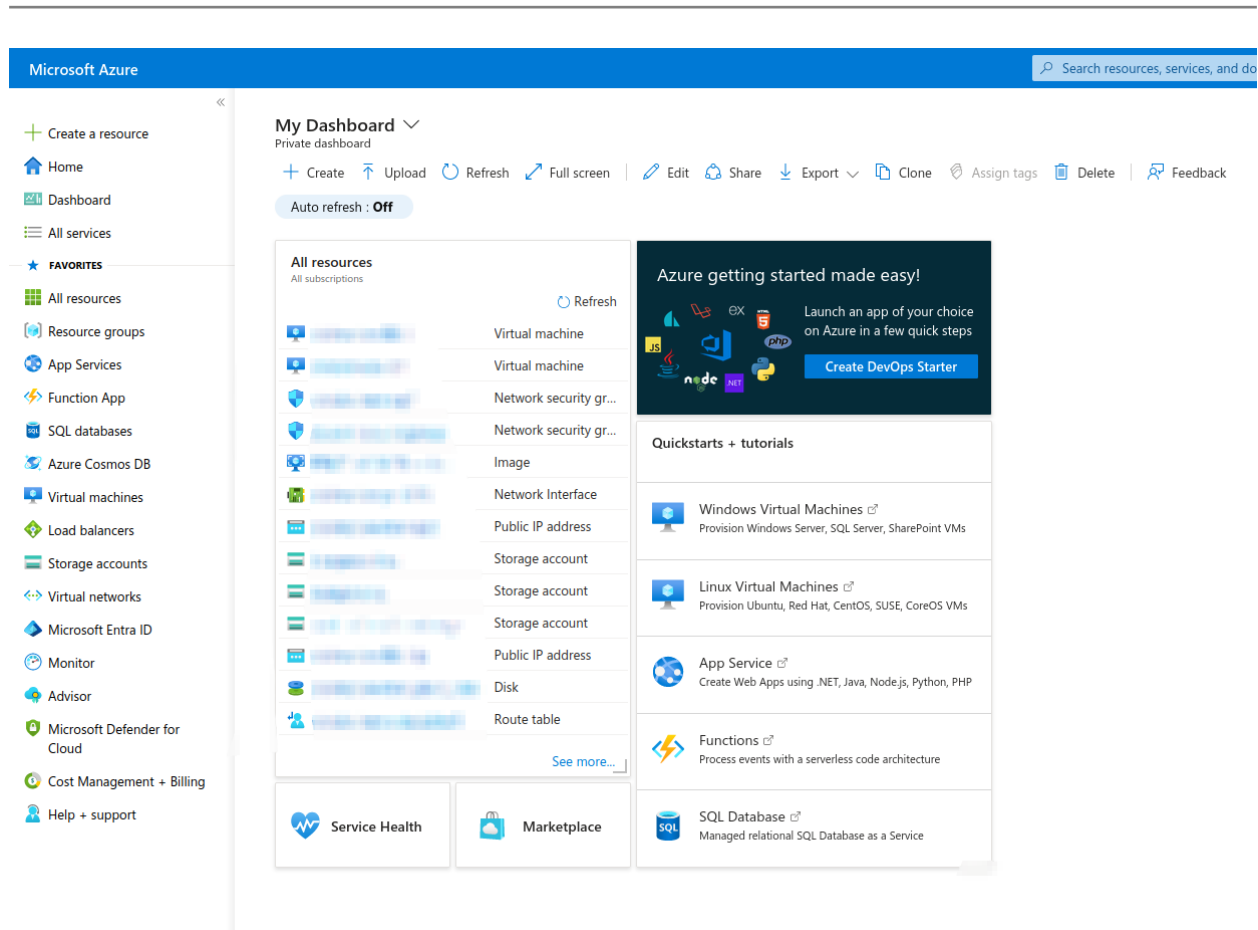
**Archive** Rarely accessed data. Very low storage cost, high access cost. To read archived data it must be “rehydrated” to Hot or Cool storage; this can take up to 15 hours.

Bridgeworks recommends General Purpose v2 storage for the PORTrockIT. General Purpose v1 is now legacy, and the Blob specific storage does not allow storage of “Page Blobs”, which is the default blob type used for virtual machines.

## 3.1 Creating a storage account

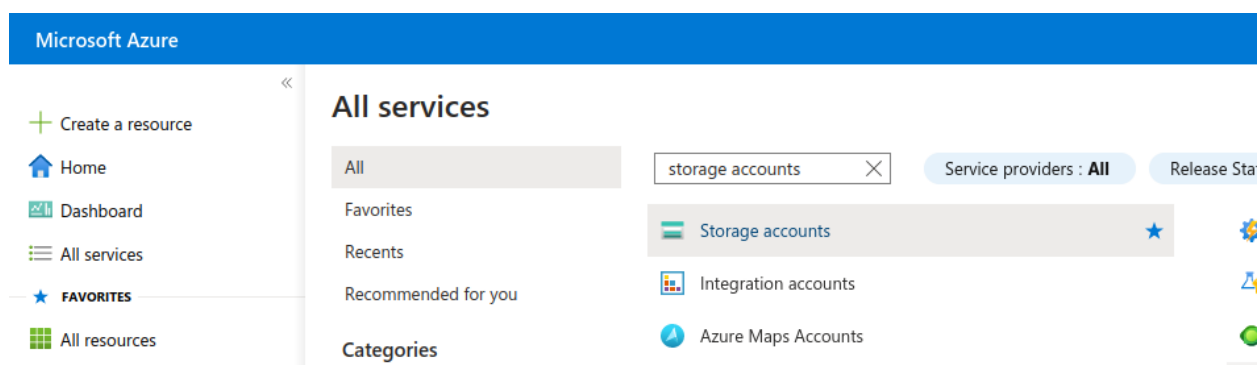
To create a storage account, first log in to your Azure account through the Azure portal.


Once logged in, the dashboard should be presented:



On the left panel, navigate to the *Storage accounts* section. This can be achieved by left clicking on *All Services*.

Find the *Storage accounts* section, or enter *Storage accounts* in the *Filter* bar located at the top of the page.












Note: You can add frequently used sections to the left pane of your Azure page by left clicking on the star to the right of your chosen section.

Left click the *Storage accounts*; this will bring up any accounts that are accessible to this Azure account.

[All services](#) >


## Storage accounts ...


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[+ Create](#)  [Manage view](#)   [Refresh](#)  [Export to CSV](#)  [Open query](#) |  [Assign tags](#)  [Delete](#)

Filter for any field...

Subscription == all

Resource group == all 

Location == all 

 [Add filter](#)

Showing 1 to 4 of 4 records.

<input type="checkbox"/> Name 	Type 
<input type="checkbox"/>  bridgeworks	Storage account
<input type="checkbox"/>  csb10032001b4804110	Storage account
<input type="checkbox"/>  imagesnortheu	Storage account

In this section, left click the *Create* button at the top of the page. This will bring up a *Create storage account* section. In the image below, the values for this storage account have been filled out.

## Create a storage account ...

[Basics](#)   [Advanced](#)   [Networking](#)   [Data protection](#)   [Tags](#)   [Review + create](#)

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

### Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription *	<div>Microsoft Partner Network</div>
Resource group *	<div>(New) example_deployment_group</div> <div><a href="#">Create new</a></div>

### Instance details

If you need to create a legacy storage account type, please click [here](#).

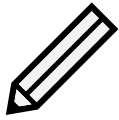
Storage account name ⓘ *	<div>exampledeploymentstorage</div>
Region ⓘ *	<div>(Europe) UK South</div>
Performance ⓘ *	<div><input checked="" type="radio"/> <b>Standard:</b> Recommended for most scenarios (general-purpose v2 account)</div> <div><input type="radio"/> <b>Premium:</b> Recommended for scenarios that require low latency.</div>
Redundancy ⓘ *	<div>Geo-redundant storage (GRS)</div> <div><input checked="" type="checkbox"/> Make read access to data available in the event of regional unavailability.</div>

[Review + create](#)

[< Previous](#)

[Next : Advanced >](#)





#### Note:

- The *Replication* entry was left at the default setting. Reduced redundancy settings can be used if desired.
- The *Resource group* is set to *Create new*, but an existing group can be used if you have one set up.
- Ensure that your correct *Subscription* is being used for the billing of this system.

You can now left click the *Review + Create* button to create the storage account. Alternatively, you can configure the storage account further if required. When it has been set up, left click on the storage account to present its overview section.

The screenshot displays the Azure portal interface for a storage account. On the left, a sidebar shows a list of storage accounts under 'Storage accounts', with 'exampledeploymentstorage' selected. The main area shows the 'Overview' tab for this account. Key details include: Resource group (example\_deployment\_group), Location (uksouth), Primary/Secondary Location (Primary: UK South, Secondary: UK West), Subscription (Microsoft Partner Network), Subscription ID (d2d265b4-243f-4a52-a4cd-de7576aafd54), and Disk state (Primary: Available, Secondary: Available). Below the overview, the 'Blob service' properties are listed: Hierarchical namespace (Disabled), Default access tier (Hot), Blob anonymous access (Disabled), and Blob soft delete (Enabled (7 days)).

## 3.2 Containers

To upload data to a storage account on Azure, a container must be added to the storage account in order to hold the data.

Navigate to the *Storage account* section and left click on your account. In the example, the storage container is labelled *exampledeploymentstorage*.

From the overview for your storage account, left click on the *Blobs* section in the *Blob Service* category.

Then, along the top of the container view, left click on the *+ Container* button.

All services > Storage accounts > exampledeploymentstorage

exampledeploymentstorage | Containers

Storage account

Search

«

+ Container

Change access level

Restore containers

Refresh

Overview

Activity log

Tags

Diagnose and solve problems

Access Control (IAM)

Data migration

Events

Storage browser

Storage Mover

Data storage

Containers

File shares

Search containers by prefix

Name	Last modified
<input type="checkbox"/> \$logs	08/03/2024, 11:02:30

New container

Name \*

example-container

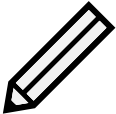
Anonymous access level ⓘ

Private (no anonymous access)

The access level is set to private because anonymous access is disabled on this storage account.

Advanced

Enter the relevant information and left click *OK*.

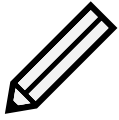


Note: In this example the *Public access level* drop-down is set to *Private*; this is the preferred setting.

## 4 Uploading a VHD

The easiest way to deploy the PORTrockIT as a virtual machine is to upload the provided VHD to a container, create an image from that blob and then create a virtual machine from that image.

You will need to have access to the unzipped VHD file from the provided Bridgeworks ZIP file.




Note: When uploading the VHD, be aware of the region the VHD is being uploaded to. The easiest method is to upload it to the same region it will be deployed in.

Navigate to the container you intend to use. In the ongoing example the container is the *example-container* located in the *exampledeploymentstorage* storage account.

Currently the example container has no contents. Left click the *Upload* icon near the top of the page.

[All services](#) > [Storage accounts](#) > [exampledeploymentstorage | Containers](#) >

 **example-container** ...  
Container

<<

[Upload](#) [Change access level](#) [Refresh](#) | [Delete](#) [Cha](#)

[Overview](#)  
[Diagnose and solve problems](#)  
[Access Control \(IAM\)](#)

**Settings**  
[Shared access tokens](#)  
[Access policy](#)  
[Properties](#)  
[Metadata](#)

**Authentication method:** Access key ([Switch to Microsoft Entra user account](#))  
**Location:** example-container

  
[+ Add filter](#)

Name	Modified
No results	

On the right of the page an options menu will appear.

3

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# Upload blob

Drag and drop files here  
or  
[Browse for files](#)

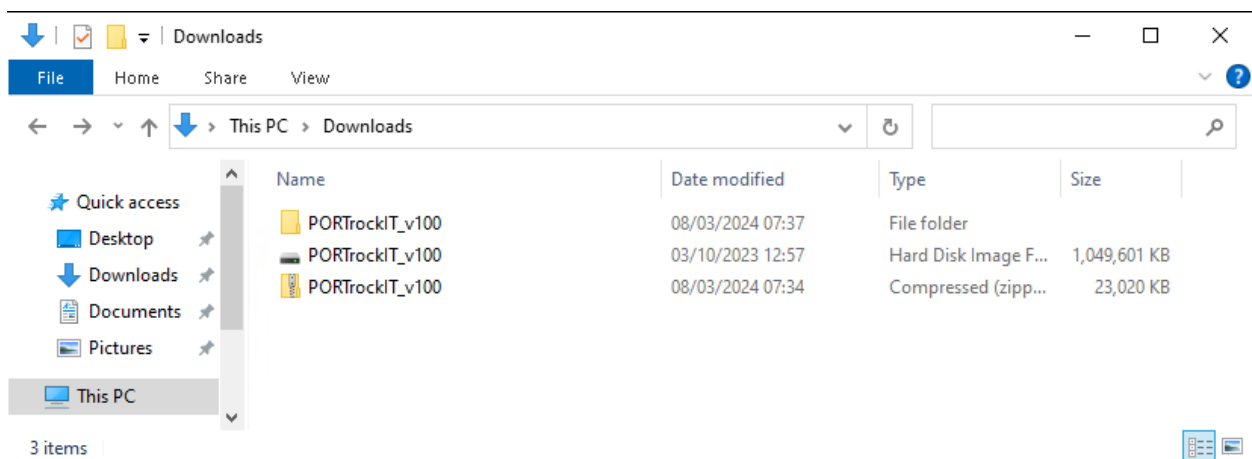
☐ Overwrite if files already exist

Advanced

Upload


Give feedback

From here, left click on the folder icon to bring up your file explorer. Navigate to the folder containing the VHD file you extracted from the provided PORTrockIT ZIP file.



Select the `.vhd` file and left click *Open*, then click the *Upload* button.

Upload

 Give feedback

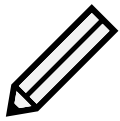
Current uploads

Dismiss: [Completed](#) [All](#)

PORTrockIT\_v100.vhd


 424 MiB / 1 GiB

The upload will begin in your current view.



Note: The screenshot above may show less menu entries than you have; these are found by left clicking on *Advanced*. For this example these settings were not changed from the default.

Leave the upload to complete.

 **Successfully uploaded blob(s)**



Successfully uploaded 1 blob(s).

a minute ago

At this stage you should see the newly added file. If not then you may need to refresh the view by left clicking the *Refresh* button.

[All services](#) >



**example-container**


Container




<<

 Upload  Change access level  Refresh  Delete  Change tier  Acquire lease  Break lease  View snapshots ...


**Overview**

 Diagnose and solve problems

 Access Control (IAM)

**Settings**

 Shared access tokens

 Access policy


 Properties


 Metadata

**Authentication method:** Access key ([Switch to Microsoft Entra user account](#))

**Location:** example-container

☐ Show deleted blobs

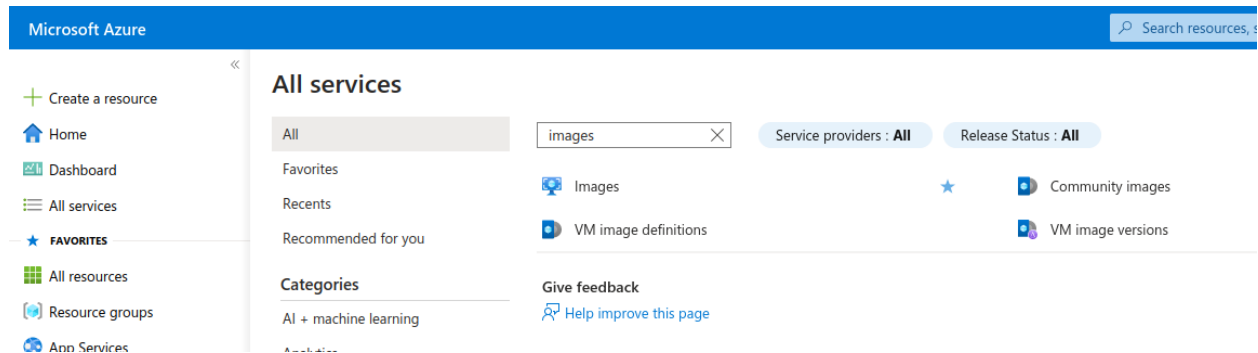
 Add filter

	Name	Modified	Access tier	Archive status	Blob type	Size	Lease state	
<input type="checkbox"/>	 PORTrockIT_v100.vhd	08/03/2024, 15:50:24			Page blob	1 GiB	Available	...

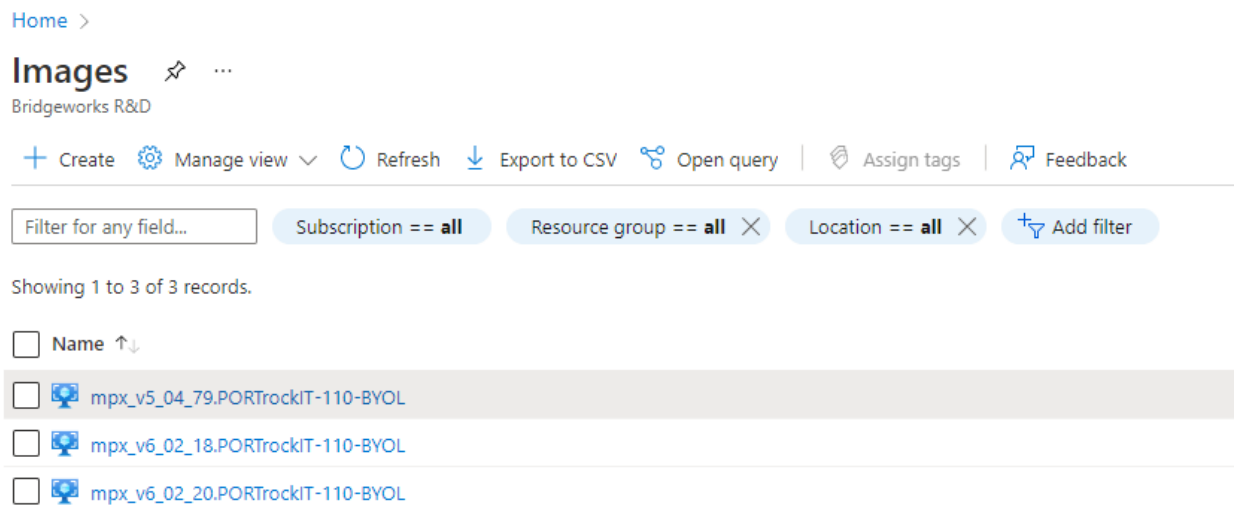
## 5 Image creation

To deploy a PORTrockIT virtual machine you need to generate an *Image* using the provided VHD that should now be located in a container in a storage account that you have access to.

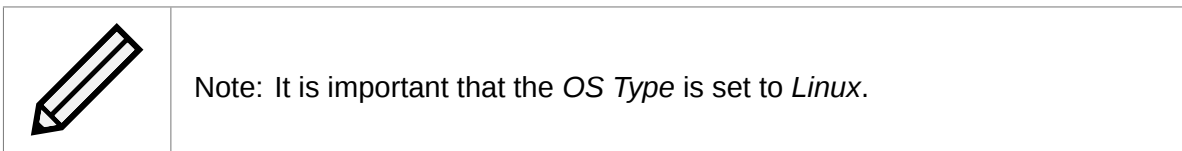
Navigate to the *Images* section. This can be achieved by finding the entry in the *All services* option on the left side of the page.



In the *Images* section, you will be presented with any images available to your account. In this example several have been generated.



From this view, left click the *Create* button. Fill out the information in the new menu that appears. In this example the image is being attached to the *example\_deployment\_group* which was created while setting up a new storage account.



[Home](#) >

## Create an image ...

**Basics**   Tags   Review + create

Create a managed image that can be used to deploy virtual machines and virtual machine scale sets. The image contains a list of managed blobs and metadata necessary for creating virtual machines. [Learn more](#)

### Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ	<div>Microsoft Partner Network</div>
Resource group * ⓘ	<div>example_deployment_group</div> <div><a href="#">Create new</a></div>

### Instance details

Name *	<div>example_deployment_image</div>
Region * ⓘ	<div>(Europe) UK South</div>
Zone resiliency ⓘ	<div><input type="checkbox"/></div>

### OS disk

OS type * ⓘ	<div><input type="radio"/> Windows</div> <div><input checked="" type="radio"/> Linux</div>
VM generation * ⓘ	<div><input checked="" type="radio"/> Gen 1</div> <div><input type="radio"/> Gen 2</div>
Storage blob * ⓘ	<div></div> <div><a href="#">Browse</a></div>
Account type * ⓘ	<div>Standard HDD</div>
Host caching * ⓘ	<div>Read/write</div>

### Encryption

You can encrypt the OS and data disks with a platform-managed or customer-managed key. [Learn more](#)

Encryption type *	<div>(Default) Encryption at-rest with a platform-managed key</div>
-------------------	---

### Data disk

[+ Add data disk](#)

[Review + create](#)

[< Previous](#)

[Next : Tags >](#)

Left click the *Browse* button for the *Storage blob* entry. The page will display the storage account section.

Left click on the storage account you placed the VHD file into.

[All services](#) > [Images](#) > [Create an image](#) > [Storage accounts](#) >

## Storage accounts

+ Storage account Refresh ...

Search storage accounts

☐ Show classic storage accounts

Name

bridgeworks

exampledeploymentstorage

## Containers

exampledeploymentstorage

+ Container Refresh Give feedback

Search containers by prefix

Name

\$logs

example-container

Left click on the container that the VHD was placed into.

[All services](#) > [Images](#) > [Create an image](#) > [Storage accounts](#) > [Containers](#) >

## example-container

Container

Upload Refresh Give feedback

**Authentication method:** Access key ([Switch to Microsoft Entra user account](#))

**Location:** example-container

Search blobs by prefix (case-sensitive)

Show deleted blobs

Add filter

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
PORTrockIT_v100.vhd	08/03/2024, 15:50:24			Page blob	1 GiB	Available

You are now presented with all the data in that container. Left click on the VHD file you uploaded from the provided ZIP file.



[Home](#) >

## Create an image ...

**Basics**   Tags   Review + create

Create a managed image that can be used to deploy virtual machines and virtual machine scale sets. The image contains a list of managed blobs and metadata necessary for creating virtual machines. [Learn more](#)

### Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ	<div>Microsoft Partner Network</div>
Resource group * ⓘ	<div>example_deployment_group</div> <div><a href="#">Create new</a></div>

### Instance details

Name *	<div>example_deployment_image</div>
Region * ⓘ	<div>(Europe) UK South</div>
Zone resiliency ⓘ	<div><input type="checkbox"/></div>

### OS disk

OS type * ⓘ	<div><input type="radio"/> Windows</div> <div><input checked="" type="radio"/> Linux</div>
VM generation * ⓘ	<div><input checked="" type="radio"/> Gen 1</div> <div><input type="radio"/> Gen 2</div>
Storage blob * ⓘ	<div>https://exampledeploymentstorage.blob.core.windows.net/example-contain...✓</div> <div><a href="#">Browse</a></div>
Account type * ⓘ	<div>Standard HDD</div>
Host caching * ⓘ	<div>Read/write</div>

### Encryption

You can encrypt the OS and data disks with a platform-managed or customer-managed key. [Learn more](#)

Encryption type *	<div>(Default) Encryption at-rest with a platform-managed key</div>
-------------------	---

### Data disk

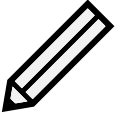
[+ Add data disk](#)

[Review + create](#)

[< Previous](#)








[Next : Tags >](#)

When the settings have been entered, left click the *Create* button at the bottom of the menu.



Note: The PORTrockIT does not require a high performance storage type. Therefore, *Standard HDD* can be selected.

At this stage a notification will appear.

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## Notifications ×

[More events in the activity log →](#) [Dismiss all](#) ▼

---

... **Deployment in progress...** Running ×

Deployment to resource group 'example\_deployment\_group' is in progress.








a few seconds ago

This information can also be found by left clicking on the *Bell* icon at the top of the screen.


... **Deployment in progress...** ×

Deployment to resource group  
'example\_deployment\_group' is in progress.



Wait for the operation to complete.

BRIDGEWORKS R&D

## Notifications

[More events in the activity log →](#) [Dismiss all](#) 

---

 **Deployment succeeded** 

Deployment 'Microsoft.Image-20240308161358' to resource group 'example\_deployment\_group' was successful.

[Go to resource](#) [Pin to dashboard](#)

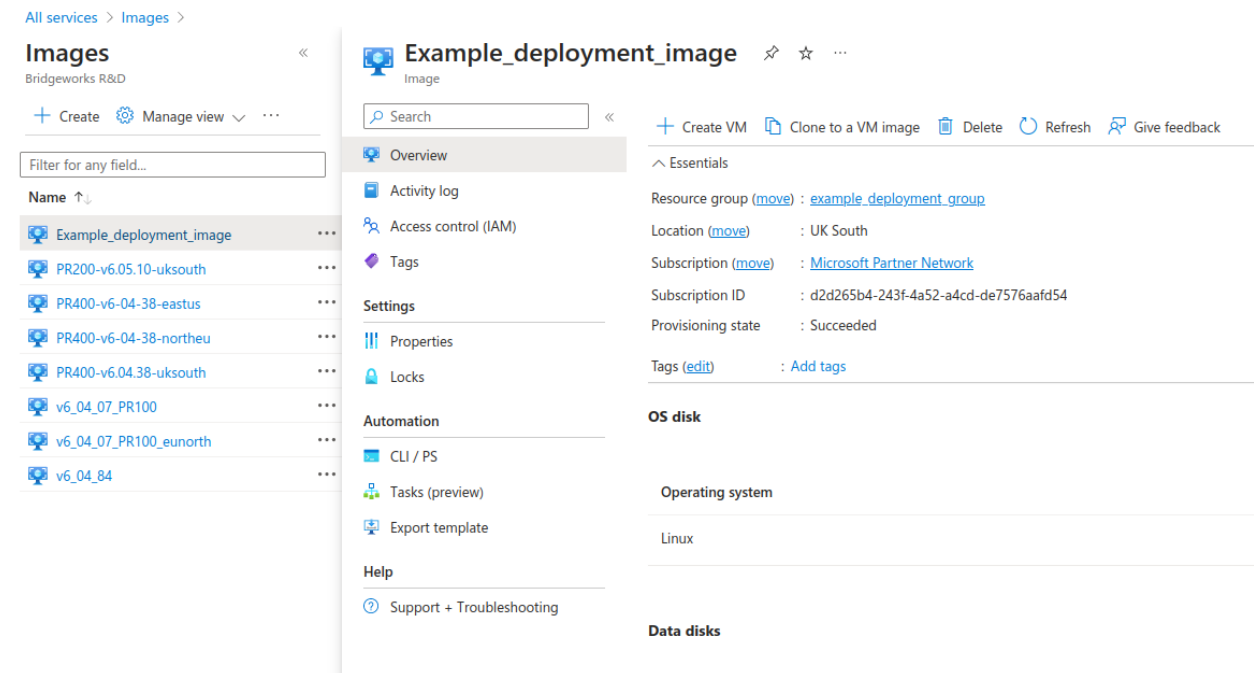
a few seconds ago

Now *Refresh* the page. Your newly added image should appear.

## 6 Virtual machine creation

Now that you've created a PORTrockIT image, you can create a virtual machine from it.

Navigate to the *Images* section, then left click on the PORTrockIT's image to get to the overview for that image. In this guide the image is called *example\_deployment\_image*.



### 6.1 Basics

Near the top of the page left click the *Create VM* button. This will present you with options for the virtual machine creation. Fill out the options to your liking.

When choosing the size for the virtual machine you will be presented with a large list of available virtual machine sizes. In this example *F8s\_v2* is used.

Find the correct size for your PORTrockIT using the tiering table below, and left click to select it.

PORTrockIT tier	Azure machine size
PORTrockIT 100 Series	Standard_F4s_v2
PORTrockIT 200 Series	Standard_F8s_v2
PORTrockIT 400 Series	Standard_F32s_v2

## Create a virtual machine ...

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Monitoring](#) [Advanced](#) [Tags](#) [Review + create](#)




Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

### Project details


Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *	<div>Microsoft Partner Network</div>
Resource group *	<div>example_deployment_group</div> <div>Create new</div>

### Instance details

Virtual machine name *	<div>example-deployment-vm</div>
Region	<div>(Europe) UK South</div>
Availability options	<div>No infrastructure redundancy required</div>
Security type	<div>Standard</div>
Image *	<div> Example_deployment_image - x64 Gen1</div> <div><a href="#">See all images</a>   <a href="#">Configure VM generation</a></div>
VM architecture	<div><div><input type="radio"/> Arm64</div><div><input checked="" type="radio"/> x64</div></div> <div> Arm64 is not supported with the selected image.</div>
Run with Azure Spot discount	<div><input type="checkbox"/></div>
Size *	<div>Standard_F4s_v2 - 4 vcpus, 8 GiB memory (£119.79/month)</div> <div><a href="#">See all sizes</a></div>
Enable Hibernation (preview)	<div><input type="checkbox"/></div> <div> To enable Hibernation, you must register your subscription. <a href="#">Learn more</a></div>

### Administrator account

Authentication type	<div><div><input checked="" type="radio"/> SSH public key</div><div><input type="radio"/> Password</div></div> <div> Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.</div>
Username *	<div>azureuser</div>
SSH public key source	<div>Generate new key pair</div>
Key pair name *	<div>example-new-key</div>

### Inbound port rules

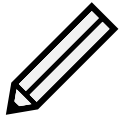
Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports *	<div><div><input checked="" type="radio"/> None</div><div><input type="radio"/> Allow selected ports</div></div>
Select inbound ports	<div>Select one or more ports</div>

[< Previous](#)

[Next : Disks >](#)

[Review + create](#)



Note: In this instance the PORTrockIT is being set up using an SSH key for access as this is the more secure method. You are able to use a password if preferred. The username entered here will be used when logging into your PORTrockIT.

Left click *Next* to proceed.

## 6.2 Disks

Select *Standard HDD* for the Disk Type. You do not need to configure additional data disks to deploy your PORTrockIT.

## Create a virtual machine ...

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

### VM disk encryption

Azure disk storage encryption automatically encrypts your data stored on Azure managed disks (OS and data disks) at rest by default when persisting it to the cloud.

Encryption at host ⓘ

☐

**i** Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

### OS disk

OS disk size ⓘ

Image default (1 GiB) ▾

OS disk type \* ⓘ

Standard HDD (locally-redundant storage) ▾

The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.

Delete with VM ⓘ

☐

Key management ⓘ

Platform-managed key ▾

Enable Ultra Disk compatibility ⓘ

☐

Ultra disk is supported in Availability Zone(s) 1,2,3 for the selected VM size Standard\_F4s\_v2.

### Data disks for example-deployment-vm

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM ⓘ
<a href="#">Create and attach a new disk</a> <a href="#">Attach an existing disk</a>					

▽ Advanced

< Previous

Next : Networking >

Review + create

Left click *Next* to proceed.


---

## 6.3 Networking

### Create a virtual machine ...

Basics   Disks   **Networking**   Management   Monitoring   Advanced   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.



[Learn more](#) 


#### Network interface

When creating a virtual machine, a network interface will be created for you.


Virtual network \*  (new) example-deployment-vm-vnet   
[Create new](#)


Subnet \*  (new) default (10.0.0.0/24) 

Public IP  (new) example-deployment-vm-ip   
[Create new](#)

NIC network security group    
☐ None  
☐ Basic  
☒ Advanced


Configure network security group \* (new) example-deployment-vm-nsg   
[Create new](#)

Delete public IP and NIC when VM is deleted  ☐

Enable accelerated networking  ☐

The selected image does not support accelerated networking.

#### Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#) 

Place this virtual machine behind an existing load balancing solution? ☐

---

< Previous

Next : Management >

Review + create

In this example a new virtual network is being generated. If you have an existing virtual network containing the endpoints you wish to accelerate then use that one instead. To edit settings for this new virtual network, left click on the *Create new* link beneath the *Virtual network* input box.



## Create virtual network



The Microsoft Azure Virtual Network service enables Azure resources to securely communicate with each other in a virtual network which is a logical isolation of the Azure cloud dedicated to your subscription. You can connect virtual networks to other virtual networks, or your on-premises network. [Learn more](#)

Name \*  ✓

### Address space

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

<input type="checkbox"/> Address range *	Addresses	Overlap	
<input type="checkbox"/> 10.0.10.0/24 ✓	10.0.10.0 - 10.0.10.255 (256 addresses)	None	🗑️ ...
<input type="text"/>	(0 Addresses)	None	

### Subnets

The subnet's address range in CIDR notation. It must be contained by the address space of the virtual network.

<input type="checkbox"/> Subnet name	Address range	Addresses	
<input type="checkbox"/> default ✓	10.0.10.0/24 ✓	10.0.10.0 - 10.0.10.255 (256 addresses)	🗑️ ...
<input type="text"/>	<input type="text"/>	(0 Addresses)	

In the *Create virtual network* section on the right, fill in the values as required then left click on the *OK* button to continue.



Note: The subnet entry will automatically change when you add the new settings for the new virtual network. If you have attached an existing virtual network then you may need to adjust the subnet manually.

### 6.3.1 Public IP address

A new public IP address is set to be created by default. To change the IP address settings, left click on the *Create new* link beneath the *IP address* input box.

In this example the *Assignment* setting has been changed. This means that the external IP address of the PORTrockIT won't change like it would with the *Dynamic* setting.

---

Create public IP address

✕

★ Name

example-deployment-vm-ip

SKU ⓘ

☒ Basic

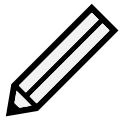
☐ Standard

Assignment

☐ Dynamic

☒ Static

OK



Note: Setting a *Static* IP address in the *Assignment* is advisable, though there is additional billing with Azure to do so. A dynamic IP address is likely to change every time a deallocated virtual machine is started back up. This would then result in needing to reconnect Nodes, and possibly adjusting firewalls to allow the new public IP address to connect.

If you have adjusted the settings in the *Create public IP address* panel then left click on the *OK* button in that section.

### 6.3.2 Network Security Group

The PORTrockIT will require that the *Network Security Group* is set to *Advanced*. This is to allow custom inbound rules for later set up of connections to external Bridgeworks Nodes.

A new network security group will be created by default. If you have an existing group to use, then attach that instead. To edit the settings for the new network security group, left click on the *Create new* link beneath the *Network security group* input box.

In this example setup the connections into the PORTrockIT are going to be restricted to only allow connections from your current IP address.

## Create network security group ...



Name \*

example-deployment-vm-nsg



Inbound rules ⓘ

1000: default-allow-ssh

Any

SSH (TCP/22)



[+ Add an inbound rule](#)

Outbound rules ⓘ

No results.

[+ Add an outbound rule](#)

Left click on *Add an inbound rule* in the *Create network security group* section.

In the right hand menu section enter the information to allow external access from your local machine.



## Add inbound security rule



example-deployment-vm-nsg

Source ⓘ

IP Addresses



Source IP addresses/CIDR ranges \* ⓘ

203.0.113.0/32



Source port ranges \* ⓘ

\*

Destination ⓘ

Any



Service ⓘ

Custom



Destination port ranges \* ⓘ

\*



Protocol



Any



TCP



UDP



ICMP

Action



Allow



Deny

Priority \* ⓘ

100



Name \*

My\_Source\_IP



Description

Add

Cancel

Give feedback

In this example the *Source* drop-down is set to the *IP Addresses* option. The external facing IP address being used to access Azure is entered. The /32 prefix length means only this exact IP address is allowed to connect to this virtual machine.

The *Destination port ranges* entry is also changed. The initial value of 8080 has been removed. Entries have been added for all the entries in the following table. These are the minimum required to access the PORTrockIT and to allow it to connect to an external Node.



Important: These settings only need to be applied to the *Destination port ranges* entry. The *Source port ranges* entry can be left as "\*", which allows the source port to be any number.

Protocol/Port	Description	Recommended Source
TCP 22	SSH, used for accessing the Command Line Interface (CLI).	"My IP"
TCP 80	HTTP, used for accessing the web interface (unencrypted).	"My IP"
TCP 443	HTTPS, used for accessing the web interface (encrypted).	"My IP"
TCP 16665	PORTrockIT main transfer port.	Public facing IP address of the WAN interface of your partner PORTrockIT Node.
UDP 4500	IPsec, used for encrypting PORTrockIT traffic.	Public facing IP address of the WAN interface of your partner PORTrockIT Node.
UDP 500	IPsec used for encrypting PORTrockIT traffic.	Public facing IP address of the WAN interface of your partner PORTrockIT Node.



Note: The "\*" character can be used to specify that all ports will be available. Use with caution.

All other settings are left in their default state.

Left click on *Add* when you have completed your inbound rule.

Once the rules to allow access to the PORTrockIT have been added the default rule to allow access to TCP port 22 from any IP address can be removed.

Left click on the three dots next to the entry for the rule you wish to remove, then left click on *Remove*.

## Create network security group



Name \*

example-deployment-vm-nsg



Inbound rules ⓘ

1000: default-allow-ssh

Any

SSH (TCP/22)



Delete

1010: My\_Source\_IP

203.0.113.0/32

Custom (Any/Any)

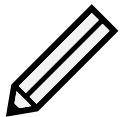


+ Add an inbound rule

Outbound rules ⓘ

No results.

+ Add an outbound rule



Note: The inbound rules will need to be updated if any other IP address will need to access this virtual machine. Inbound rules can be updated in real-time through the Azure platform.

Left click on the *OK* button in the *Create network security group* section once all your inbound rules have been set.

If you do not know the IP address of the partner PORTrockIT Node at this stage, please use [Appendix A: Network security](#) to guide you on how to add the security group rules at a later point.

### 6.3.3 Diagnostics

By default the virtual machine creation will create a new storage account just to store the diagnostics blob for this machine.

In this example the setting has been changed to use the example storage account created earlier. The diagnostics will still create a new container inside that storage account, so it will be distinguishable from the existing data.

---

## Create a virtual machine ...

Basics   Disks   Networking   Management   **Monitoring**   Advanced   Tags   Review + create

Configure monitoring options for your VM.

### Alerts

Enable recommended alert rules ⓘ ☐

### Diagnostics

Boot diagnostics ⓘ ☐ Enable with managed storage account (recommended)  
☒ Enable with custom storage account  
☐ Disable

Enable OS guest diagnostics ⓘ ☐

Diagnostics storage account \* ⓘ  [Create new](#)

### Health

Enable application health monitoring ⓘ ☐

All settings should have been set.

Left click *OK* at the bottom of the *Settings* section to proceed.

## 6.4 Summary

The Azure platform will validate the settings for the virtual machine.

Once this has occurred, left click on *OK* at the bottom to deploy the virtual machine.

## Create a virtual machine ...

✓ Validation passed

Basics   Disks   Networking   Management   Monitoring   Advanced   Tags   Review + create

Example\_deployment\_image  
Image   Standard F4s v2  
4 vcpus, 8 GiB memory

### Basics

Subscription   Microsoft Partner Network  
Resource group   example\_deployment\_group  
Virtual machine name   example-deployment-vm  
Region   UK South  
Availability options   No infrastructure redundancy required  
Security type   Standard  
Image   Example\_deployment\_image - Gen1  
Size   Standard F4s v2 (4 vcpus, 8 GiB memory)  
Authentication type   SSH public key  
Username   azureuser  
Key pair name   example-new-key  
Azure Spot   No

### Disks

OS disk size   Image default  
OS disk type   Standard HDD LRS  
Use managed disks   Yes  
Delete OS disk with VM   Disabled  
Ephemeral OS disk   No

### Networking

Virtual network   (new) example-deployment-vm-vnet  
Subnet   (new) default (10.0.0.0/24)  
Public IP   (new) example-deployment-vm-ip  
NIC network security group   (new) example-deployment-vm-nsg  
Accelerated networking   Off  
Place this virtual machine behind an  
existing load balancing solution?   No  
Delete public IP and NIC when VM is  
deleted   Disabled

### Management

Microsoft Defender for Cloud   None  
System assigned managed identity   Off

< Previous

Next >

Create

[Download a template for automation](#)

A notification will appear.



--- Deployment in progress...



Deployment to resource group  
'example\_deployment\_group' is in progress.



BRIDGEWORKS R&D



## Notifications



[More events in the activity log →](#)

[Dismiss all](#)



**Deployment succeeded**



Deployment '[CreateVm-Example\\_deployment\\_image-20240311103540](#)' to resource group '[example\\_deployment\\_group](#)' was successful.

[Go to resource](#)

[Go to resource group](#)

a few seconds ago



Note: When this operation completes the virtual machine will be deployed in a running state. If you do not intend to set up the system then it is advisable to power off the virtual machine.

## 7 Route tables

If you are deploying your PORTrockIT Node and require to run in the “Logical-In-Path” mode, then please follow this section to allow traffic to be passed to the PORTrockIT for acceleration. If you are configuring the PORTrockIT to be used in “Out-of-Path” mode then please proceed to [Chapter 8: Accessing the GUI](#). For help with deciding on modes of operation please consult the Bridgeworks “PORTrockIT Topology Overview” document.

Navigate to the *Route tables* section. This can be achieved by navigating to *All services* on the left side of the page; either look for the *Route tables* link, or type it into the filter.

### All services

All

Favorites

Recents

Recommended for you

Categories

route

Route tables

DDoS protection plans

Microsoft Entra Privileged Identity Management  
Keywords: **protect**

Service providers : All

Release Status : All

ExpressRoute circuits

DDoS protection plans

Microsoft Entra Privileged  
Keywords: **protect**

In the *Route tables* section you will be presented with all the route tables that are accessible from this Azure account. Left click the *Create* button near the top of the page.

### Route tables

Bridgeworks R&D

[+ Create](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) [Assign tags](#)

[Subscription equals all](#) [Resource group equals all](#) [Location equals all](#) [Add filter](#)

Showing 1 to 4 of 4 records.

No g

<input type="checkbox"/> Name ↑↓	Resource group ↑↓	Location ↑↓
<input type="checkbox"/> <a href="#">usecase-test-route-table</a>	<a href="#">example_deployment_group</a>	UK South


A *Create route table* section will appear. Fill out the sections with your desired names and location. In this example the route table is set to use the existing resource group created earlier in this guide, and will be in *UK South* as all other resources used in this example are in that region.


## Create Route table ...

Basics   Tags   Review + create


### Project details


Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \* ⓘ Microsoft Partner Network 

Resource group \* ⓘ example\_deployment\_group   
[Create new](#)

### Instance details

Region \* ⓘ UK South 

Name \* ⓘ example-deployment-routes 


Propagate gateway routes \* ⓘ ☒ Yes ☐ No

Previous



Next

Review + create

Left click on *Review + Create*, review information and left click on *Create*. At this stage a notification will appear. Wait for the success notification to follow.

--- **Deployment in progress...** 

Deployment to resource group 'example\_deployment\_group' is in progress.

 **Deployment succeeded** 

Deployment 'Microsoft.RouteTable-20240311110324' to resource group 'example\_deployment\_group' was successful.

[Pin to dashbo...](#) [Go to resource gr...](#)

*Refresh* the *Route tables* section to see your newly added route table.

Left click on the route table to see the overview for it.

All services > Route tables >

## Route tables

Bridgeworks R&D

+ Create ⚙️ Manage view ▾ ...

Filter for any field...

Name ↑↓	
usecase-test-route-table	...
example-deployment-routes	...

example-deployment-routes

Route table

Search

→ Move ▾ 🗑️ Delete ↻ Refresh | 🗨️ Give feedback

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- Configuration
- Routes
- Subnets
- Properties
- Locks

Monitoring

- Alerts

Automation

- CLI / PS
- Tasks (preview)
- Export template

Help

- Effective routes
- Support + Troubleshooting

Essentials

Resource group (move) : [example\\_deployment\\_group](#)

Location : UK South

Subscription (move) : [Microsoft Partner Network](#)

Subscription ID : d2d265b4-243f-4a52-a4cd-de7576aafd54

Tags (edit) : [Add tags](#)

Routes

Search routes

Name

No results.

Subnets

Search subnets

Name

No results.

First you must associate a subnet to this route table. Left click the *Subnets* option in the *Settings* category.

All services > Route tables > example-deployment-routes

## Route tables

Bridgeworks R&D

+ Create ⚙️ Manage view ▾ ...

Filter for any field...

Name ↑↓	
usecase-test-route-table	...
example-deployment-routes	...

example-deployment-routes | Subnets

Route table

Search

+ Associate

Filter for any field...

Name ↑↓

No results.

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- Configuration
- Routes
- Subnets**
- Properties
- Locks

Left click the *Associate* button along the top of the *Subnets* section.

## Associate subnet



example-deployment-routes

Virtual network ⓘ

example-deployment-vm-vnet (example\_deployment\_group)



Subnet \* ⓘ

default

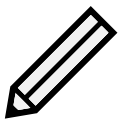


OK

Give feedback

Left click on the *Virtual network* list, and then select the virtual network you are using for your PORTrockIT. Left click on the *Subnet* list and select the subnet your PORTrockIT is using.

Left click on *OK* at the bottom to proceed.



Note: If you created a new virtual network during the virtual machine creation then there should only be the one subnet. Otherwise you will need to navigate to your virtual machine to find the virtual network and subnet that are being used.

Wait for the notification that the route table has been successfully saved.



Saved route table for subnet



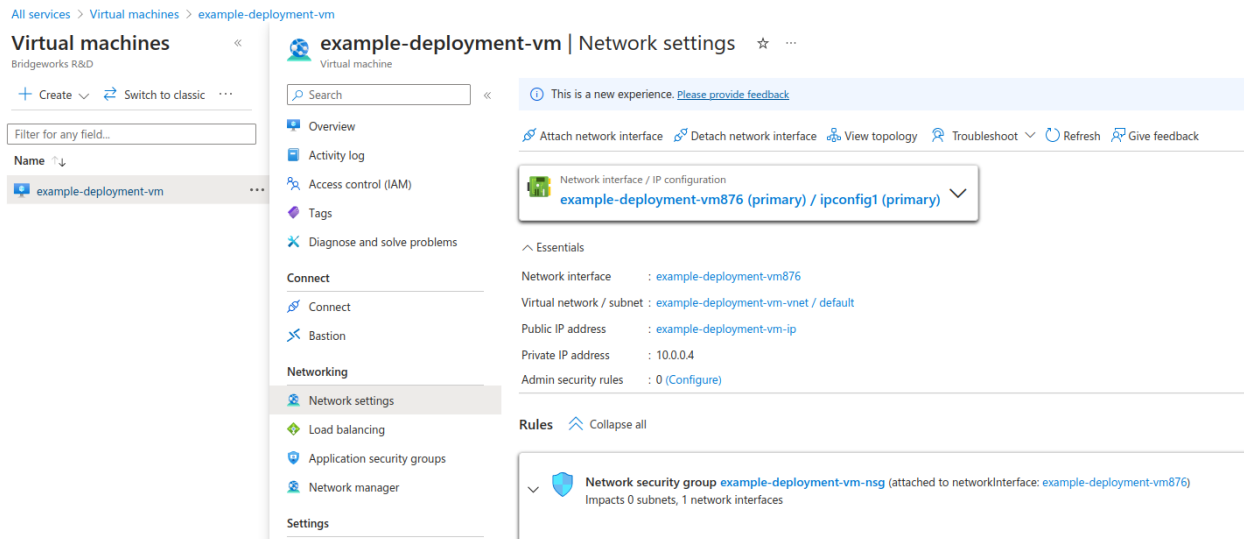
Successfully saved route table for subnet 'default'.

The next step is to add a routing rule for this subnet that will take all traffic destined for the other Node and pass it to the PORTrockIT virtual machine.

To complete this step you need to know the private IP address of the PORTrockIT.

Navigate to the PORTrockIT virtual machine through the *Virtual machines* section, which is accessible from the *All services* section.

Left click on the PORTrockIT, and then left click the *Networking* section in the *Settings* category. From this view you can see the *Private IP* entry located near the middle of the page.



In this example the private IP of your PORTrockIT virtual machine is *10.0.0.4*; this is the value you need for the route.

In the *Route tables* section, left click the route table you have been setting up, then left click *Routes* in the *Settings* category.

Click *Add* near the top of the *Routes* section. This will clear the screen and present just the *Add route* options.

## Add route



example-deployment-routes

A user defined route (UDR) is a static route that overrides Azure's default system routes, or adds a route to a subnet's route table. [Learn more](#)

Route name \*

route\_to\_other\_bridgeworks\_node



Destination type \* ⓘ

IP Addresses



Destination IP addresses/CIDR ranges \* ⓘ

10.0.1.0/24



Next hop type \* ⓘ

Virtual appliance



Next hop address \* ⓘ

10.0.0.4



Ensure you have IP forwarding enabled on your virtual appliance. You can enable this by navigating to the respective network interface's IP address settings.

Add

Give feedback

Enter the information needed to pass network traffic destined for the remote side through the PORTrockIT virtual machine.

In this example:

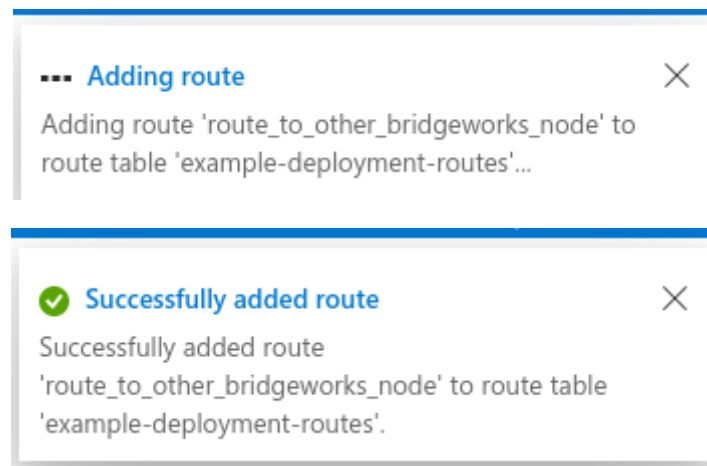
**Destination type** You want to use the IP Addresses in Azure. The *IP Addresses* selection results in the *Destination IP addresses/CIDR ranges* field appearing.

**Destination IP addresses** The LAN side of the remote Node. This is the address range for the endpoints you want to be able to connect to through the PORTrockIT connection.

**Next hop type** You want to use the virtual machine in Azure. The *Virtual Appliance* selection results in the *Next hop address* field appearing.

**Next hop address** The private IP of the PORTrockIT. This is the equivalent of the LAN port on a Node. All network traffic destined for the *Address prefix* IP range will get routed through this IP.

Once all options have been correctly set, left click **OK** to add the route. Wait for the success notification to appear.



The overview section for your newly set up route table should now show the route to the network address range of the other Node, and the subnet that this routing applies to. In this example the subnet range covers the private IP of the PORTrockIT virtual machine.

All services > Route tables >

**Route tables**  
Bridgeworks R&D

+ Create Manage view ...

Filter for any field...

Name

- usecase-test-route-table
- example-deployment-routes

**example-deployment-routes**  
Route table

Search Move Delete Refresh Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Configuration

- Routes
- Subnets
- Properties
- Locks

Monitoring

Alerts

Automation

**Essentials**

Resource group (move) : example-deployment-group

Location : UK South

Subscription (move) : Microsoft Partner Network

Subscription ID : d2d265b4-243f-4a52-a4cd-de7576aafdf54

Tags (edit) : Add tags

Associations : 1 subnet associations

JSON View

Routes

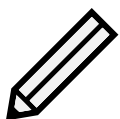
Search routes

Name	Address prefix	Next hop type	Next hop IP address
route_to_other_bridgeworks_node	10.0.1.0/24	Virtual appliance	10.0.0.4

Subnets

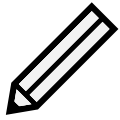
Search subnets

Name	Address range	Virtual network	Security group
default	10.0.0.0/24	example-deployment-vm-vnet	-



**Note:** The route here will take any network traffic trying to get to any IP on the 10.0.1.0/24 range, and pass it to 10.0.0.4, which is your PORTrockIT. The PORTrockIT will in turn connect to another Node which has a LAN side network running the 10.0.1.0/24 IP range.





Note: The routing rules must cover all the private IP ranges that the PORTrockIT will connect to. In this example if another Node is connected that has an endpoint behind it running an IP of 192.0.2.10, then a new route would need to be added that takes 192.0.2.10/32 (or 192.0.2.0/24 etc.) and passes that through a *Virtual appliance* with a *Next hop address* of 10.0.0.4.

## 7.1 Network interface

Before this route will work, the network interface on the PORTrockIT Node needs to allow IP forwarding.

When the PORTrockIT virtual machine was deployed, the Azure platform created a network interface for your network connection. See Chapter 6: [Virtual machine creation](#).

Once you have added a route table and populated it with the route for your Node connection, a dialog box pointed out that you should enable IP forwarding. See Chapter 7: [Route tables](#).

To enable IP forwarding you need to modify settings on the network interface that your PORTrockIT is using.

Navigate to *All resources*.

**All resources** ✨ ...

Bridgeworks R&D

+ Create ⚙️ Manage view ▾ ↻ Refresh ⬇️ Export to CSV 🔗 Open query | 🏷️ Assign tags 🗑️ Delete

Filter for any field... Subscription equals **all** Resource group equals **all** ✕ Type equals **all** ✕ Location equals **all** ✕ + Add filter

🌐 1 Recommendations 🛡️ 0 Unsecure resources No grouping ▾ List view ▾

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> bridgeworks	Storage account	NewMPN-ImagesUKSouth	UK South	Microsoft Partner Network •

Filter the output to your resource group.

## All resources

Bridgeworks R&D

[+ Create](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) [Assign tags](#) [Delete](#)

Filter for any field...

Subscription equals all

Resource group equals example\_deployment\_group

[+ Add filter](#)

[0 Recommendations](#)

[0 Unsecure resources](#)

- ☐ Name ↑↓
- ☐ example-deployment-routes
- ☐ example-deployment-vm
- ☐ example-deployment-vm-ip
- ☐ example-deployment-vm-nsg
- ☐ example-deployment-vm-vnet
- ☐ example-deployment-vm876
- ☐ example-deployment-vm\_disk1\_d895957f65154...
- ☐ Example\_deployment\_image
- ☐ exampledeploymentstorage
- ☐ usecase-test-route-table

### Resource group

Operator

Equals

Value

example

☒ All

☒ example\_deployment\_group (10)

Apply

Cancel

Left click on *Network interface*. In this example it is the only network interface in the resource group and is named *example-deployment-vm876*.

## All resources

Bridgeworks R&D

[+ Create](#) [Manage view](#) [Refresh](#) [Export to CSV](#) [Open query](#) [Assign tags](#) [Delete](#)

Filter for any field...

Subscription equals all

Resource group equals example\_deployment\_group

[+ Add filter](#)

[0 Recommendations](#)

[0 Unsecure resources](#)

No grouping

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓
<input type="checkbox"/> example-deployment-routes	Route table	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm	Virtual machine	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm-ip	Public IP address	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm-nsg	Network security group	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm-vnet	Virtual network	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm876	Network Interface	example_deployment_gr...	UK South
<input type="checkbox"/> example-deployment-vm_disk1_d895957f65154...	Disk	EXAMPLE_DEPLOYMENT_...	UK South
<input type="checkbox"/> Example_deployment_image	Image	example_deployment_gr...	UK South
<input type="checkbox"/> exampledeploymentstorage	Storage account	example_deployment_gr...	UK South
<input type="checkbox"/> usecase-test-route-table	Route table	example_deployment_gr...	UK South

Additionally, you can also filter the results to show only the network interfaces:

- Select the drop-down labelled *All Types*.
- Deselect the *Select all* box.
- Select the *filter items* bar at the top of the list.
- Type *Network interfaces*.
- Left click the box labelled *Network interfaces*.
- Click out of the drop-down to apply the setting.

**All resources** ☆ ...

Bridgeworks R&D

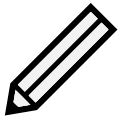
+ Create Manage view ▾ Refresh Export to CSV Open query Assign tags Delete

Filter for any field... Subscription equals **all** Resource group equals **example\_deployment\_group** X Type equals **Network Interface** X

Location equals **all** X Add filter Less

0 Recommendations 0 Unsecure resources No grouping List view

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> example-deployment-vm876	Network Interface	example_deployment_group	UK South	Microsoft Partner Network



Note: If your group has multiple interfaces then you need to establish which one is connected to your PORTrockIT virtual machine. Left click each network interface and check the overview section; there will be an entry titled *Attached* to from which you can find the network interface attached to your PORTrockIT virtual machine.

**All resources** < > **example-deployment-vm876** ☆ ...

Bridgeworks R&D Network interface

Search < → Move Delete Refresh Edit accelerated networking

Overview

- Activity log
- Access control (IAM)
- Tags

Settings

- IP configurations
- DNS servers
- Network security group

Properties

- Locks

Monitoring

- Insights
- Alerts

Essentials

Resource group (move)	Private IPv4 address
example_deployment_group	10.0.0.4
Location (move)	Public IPv4 address
UK South	172.166.209.148 (example-deployment-vm-ip)
Subscription (move)	Private IPv6 address
Microsoft Partner Network	-
Subscription ID	Public IPv6 address
d2d265b4-243f-4a52-a4cd-de7576aafd54	-
Accelerated networking	Attached to
Disabled	example-deployment-vm (Virtual machine)
Virtual network/subnet	example-deployment-vm-nsg (Network security group)
example-deployment-vm-vnet/default	Type
	Regular

Tags (edit) Add tags

In the overview section, left click on the *IP configurations* section in the *Settings* category.

### All resources

Bridgeworks R&D

+ Create Manage view

Filter for any field...

Name

- example-deployment-routes
- example-deployment-vm
- example-deployment-vm-ip
- example-deployment-vm-nsg
- example-deployment-vm-vnet
- example-deployment-vm876**
- example-deployment-vm\_disk1\_d89595...
- Example\_deployment\_image
- exampledeploymentstorage
- usecase-test-route-table

### example-deployment-vm876 | IP configurations

Network interface

Search Refresh

Overview

Activity log

Access control (IAM)

Tags

Settings

IP configurations

DNS servers

Network security group

Properties

Locks

Monitoring

Insights

Alerts

Metrics

Diagnostic settings

IP Settings

Enable IP forwarding ☐

Virtual network [example-deployment-vm-vnet](#)

Gateway load balancer

Subnet

250 free IP addresses

Private and public IP addresses can be assigned to a virtual machine's network interface controller. You can add as many private and public IPv4 addresses as necessary to a network interface, within the limits listed in the [Azure limits article](#). [Learn more](#)

+ Add Make primary Delete

Name	IP Version	Type	Private IP Address	Public IP Address
<input type="checkbox"/> ipconfig1	IPv4	Primary	10.0.0.4 (Dynamic)	172.166.209.148 (example-dep)

From this view, left click on the toggle for *Enable IP forwarding*.

### IP Settings

Enable IP forwarding ☒

Virtual network [example-deployment-vm-vnet](#)

Gateway load balancer

Subnet

Private and public IP addresses can be assigned to a virtual machine's network interface controller. You can add as many private and public IPv4 addresses as necessary to a network interface, within the limits listed in the [Azure limits article](#). [Learn more](#)

+ Add Make primary Delete

Name	IP Version	Type	Private IP Address	Public IP Address
<input type="checkbox"/> ipconfig1	IPv4	Primary	10.0.0.4 (Dynamic)	172.166.209.148 (example-dep)

Apply Discard changes

Left click on *Apply* when you are ready to proceed.

Wait for the success notification.

---

**--- Updating network interface**



Updating network interface 'example-deployment-vm876'.

**✓ Updated network interface**



Successfully updated network interface 'example-deployment-vm876'.

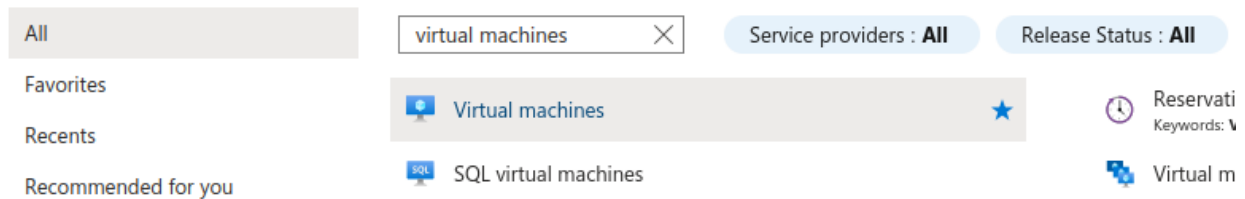
## 8 Accessing the GUI

With a PORTrockIT virtual machine running there is now a web GUI available.

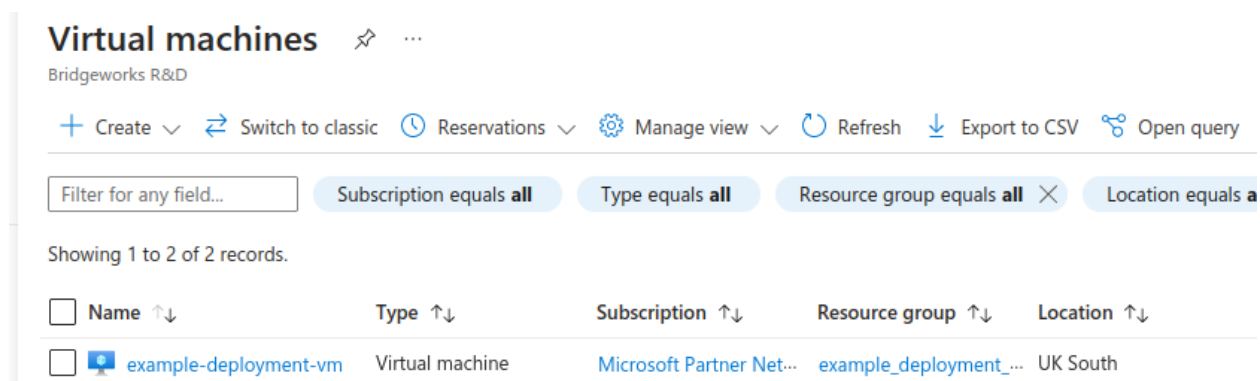
To access the GUI you need to know the public IP address for your virtual machine.

Navigate to the virtual machines section. This can be achieved by navigating to *All services* on the left side of the page. In this view either look for *Virtual machines*, or type it into the filter.

### All services



All deployed virtual machines in the account will be displayed in the *Virtual machines* section.



To reduce the list to your intended machine you can use filters. At the top of this list there are drop-down bars to filter the list. In this example the *All resource groups* drop-down will be changed:

- Left click on *All resource groups* to show the drop-down.
- Left click the ticked *Select all* box to deselect everything.
- Left click on the desired resource group, in this example it is the *example\_deployment\_group*.
- Left click out from the drop-down to cause the filter to load.

Virtual machines

Bridgeworks R&D

+ Create

↔ Switch to classic

🕒 Reservations

⚙️ Manage view

🔄 Refresh

📄 Export to CSV

🔗 Open query

🏷️ Assign tags

▶ Start

Filter for any field...

Subscription equals all

Type equals all

Resource group equals example\_deployment\_group

Location equals all

Showing 1 to 1 of 1 records.

<input type="checkbox"/> Name	Type	Subscription
<input type="checkbox"/> example-deployment-vm	Virtual machine	Microsoft Partner Ne

Resource group

Operator

Equals

Value

example

☒ All
 ☒ example\_deployment\_group (1)

Apply

Cancel

The result will be a filtered list of virtual machines attached to that group.

Virtual machines

Bridgeworks R&D

+ Create

↔ Switch to classic

🕒 Reservations

⚙️ Manage view

🔄 Refresh

📄 Export to CSV

🔗 Open query

🏷️ Assign tags

▶ Start

Filter for any field...

Subscription equals all

Type equals all


Resource group equals example\_deployment\_group

Location equals all

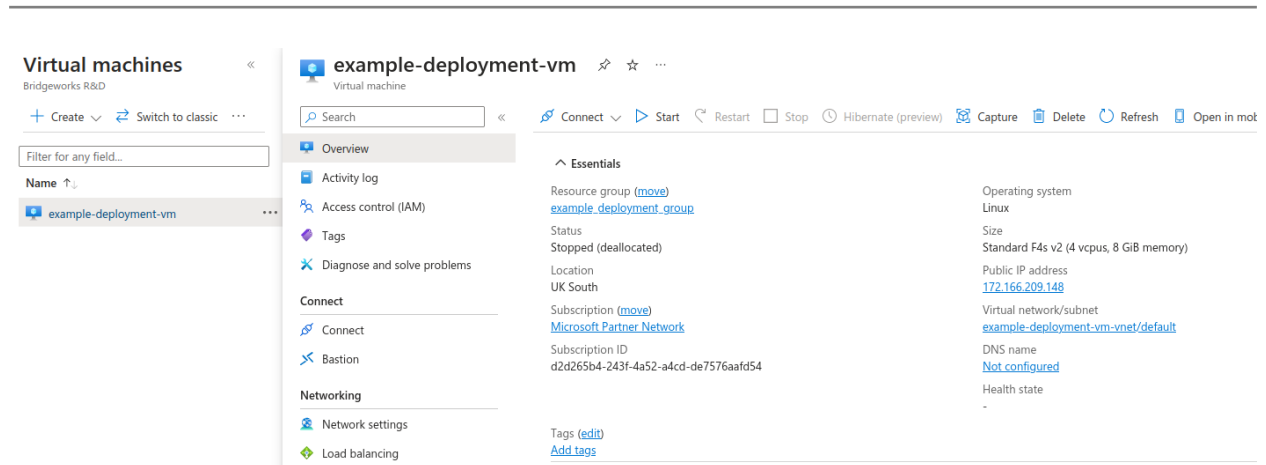
Showing 1 to 1 of 1 records.

<input type="checkbox"/> Name	Type	Subscription	Resource group	Location	Status
<input type="checkbox"/> example-deployment-vm	Virtual machine	Microsoft Partner Net...	example_deployment_...	UK South	Stopped (deallocated)

Left click on the virtual machine you wish to access. The overview for that virtual machine will be shown. On the right there should be a *Public IP address*. Note or copy that address.



Note: Azure has a quick copy. Left click on the copy symbol that appears when hovering the mouse over the entry.



Open a new tab in your browser and enter the IP address taken from the virtual machine overview to access your PORTrockIT.

You will now be presented with the password prompt page.

Follow the on-screen prompts to set the password and log in.

For further guidance on setting up data acceleration and routing, see the *Policy Routed* guide.



---

## 9 Troubleshooting

### 9.1 Deployment Problems

If a virtual machine has problems deploying, there may be communication issues between the Microsoft Azure Linux Agent (WAAgent) and the Azure Fabric Controller (Microsoft Azure Service), causing the PORTrockIT to have a provisioning failure. If this occurs, the virtual machine's state will be unable to progress from *Creating* in the Azure portal. You will also be unable to log into the GUI with the credentials set up during deployment.

The PORTrockIT needs to be rebooted in order for provisioning to be retried. You can do this by either stopping and restarting the Virtual Machine on the Azure portal or by logging into the GUI and rebooting the node.

To access the GUI, follow the on screen prompt to set a temporary password and log in with the username *admin*. You will then have access to the GUI and can reboot the PORTrockIT from the left hand menu.

Once provisioning succeeds, you will be able to access the PORTrockIT using the credentials set up during creation of the virtual machine. If username and password authentication was used when creating the virtual machine, log in with that username and password. If SSH authentication was used, you will need to set a new password using the on screen prompts and log in using the username chosen during creation.

---

## 10 Useful Links

Further documentation and support is available through our website: <https://support.4bridgeworks.com/>

If your question is not answered in our documentation, please submit a ticket: <https://support.4bridgeworks.com/contact/>

# Appendix A: Network security

During virtual machine creation a network security group was created. In this example this group was modified to only allow access from the IP address you are currently connecting to Azure from. See Section 6.3.2: [Network Security Group](#) for the initial network security group setup.

In order to start using a Node connection you need to add another inbound rule to allow the other Node's public IP address.

Navigate to the *Network security group* used by your PORTrockIT virtual machine that has been set up.

This can be achieved by left clicking *All services* on the left of the page and then finding *All resources*.

**All resources** ✨ ...

Bridgeworks R&D

+ Create ⚙️ Manage view ▾ ↻ Refresh ⬇️ Export to CSV 🔗 Open query | 🏷️ Assign tags 🗑️ Delete

Filter for any field... Subscription equals all Resource group equals all ✕ Type equals all ✕ Location equals all ✕ + Add filter

1 Recommendations 0 Unsecure resources No grouping ▾ List view ▾

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> bridgeworks	Storage account	NewMPN-ImagesUKSouth	UK South	Microsoft Partner Network

Then filter the *All resource groups* to use the your group.

**All resources** ✨ ...

Bridgeworks R&D

+ Create ⚙️ Manage view ▾ ↻ Refresh ⬇️ Export to CSV 🔗 Open query | 🏷️ Assign tags 🗑️ Delete

Filter for any field... Subscription equals all Resource group equals example\_deployment\_group ✕ + Add filter

0 Recommendations 0 Unsecure resources

<input type="checkbox"/> Name ↑↓	Type ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> example-deployment-routes				
<input type="checkbox"/> example-deployment-vm				
<input type="checkbox"/> example-deployment-vm-ip				
<input type="checkbox"/> example-deployment-vm-nsg				
<input type="checkbox"/> example-deployment-vm-vnet				
<input type="checkbox"/> example-deployment-vm876				
<input type="checkbox"/> example-deployment-vm_disk1_d895957f65154...				
<input type="checkbox"/> Example_deployment_image				
<input type="checkbox"/> exampledeploymentsstorage				
<input type="checkbox"/> usecase-test-route-table				

**Resource group** ⓘ

Operator

Equals ▾

Value

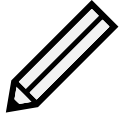
example

☒ All

☒ example\_deployment\_group (10)

Apply Cancel

Once in your resource group look for the *Network security group*. In this example it is named *example-deployment-vm-nsg*. Left click on the *Network security group*.



Note: The filters along the top also allow filtering to *Network security groups* from the *All types* drop-down.











## All resources

Bridgeworks R&D

[+](#) Create [⚙️](#) Manage view [v](#) [...](#)

Filter for any field...

Name [↑↓](#)

 example-deployment-routes	<a href="#">...</a>
 example-deployment-vm	<a href="#">...</a>
 example-deployment-vm-ip	<a href="#">...</a>
 example-deployment-vm-nsg	<a href="#">...</a>
 example-deployment-vm-vnet	<a href="#">...</a>
 example-deployment-vm876	<a href="#">...</a>
 example-deployment-vm_disk1_d89595...	<a href="#">...</a>
 Example_deployment_image	<a href="#">...</a>
 exampledeploymentstorage	<a href="#">...</a>
 usecase-test-route-table	<a href="#">...</a>

The only custom rule is *My\_Source\_IP*. This allows your connection to the PORTrockIT.

example-deployment-vm-nsg

Network security group

Search

Move

Delete

Refresh

Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Inbound security rules

Outbound security rules

Network interfaces

Subnets

Properties

Locks

Monitoring

Alerts

Diagnostic settings

Logs

NSG flow logs

Automation

Essentials

Resource group (move)

example\_deployment\_group

Location

UK South

Subscription (move)

Microsoft Partner Network

Subscription ID

d2d265b4-243f-4a52-a4cd-de7576aafd54

Tags (edit)

Add tags

Custom security rules : 1 inbound, 0 outbound

Associated with : 0 subnets, 1 network interfaces

JSON View

Filter by name

Port == all

Protocol == all

Source == all

Destination == all

Action == all

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
Inbound Security Rules						
100	My_Source_IP	Any	Any	1.2.3.4/32	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalanc...	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny
Outbound Security Rules						
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

Left click on the *Inbound security rules* in the *Settings* category.

example-deployment-vm-nsg | Inbound security rules

Network security group

Search

Add

Hide default rules

Refresh

Delete

Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Inbound security rules

Outbound security rules

Network interfaces

Subnets

Properties

Locks

Monitoring

Alerts

Diagnostic settings

Logs

NSG flow logs

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol to allow or deny the traffic. A security rule can't have the same priority and direction as an existing rule. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

Filter by name

Port == all

Protocol == all

Source == all

Destination == all

Action == all

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	My_Source_IP	Any	Any	1.2.3.4/32	Any	Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalanc...	Any	Any	AzureLoadBalancer	Any	Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	Deny

Left click on *Add*.



## Add inbound security rule



example-deployment-vm-nsg

Source ⓘ

IP Addresses



Source IP addresses/CIDR ranges \* ⓘ

203.0.113.100/32



Source port ranges \* ⓘ

\*

Destination ⓘ

Any



Service ⓘ

Custom



Destination port ranges \* ⓘ

\*



Protocol

☒ Any

☐ TCP

☐ UDP

☐ ICMP

Action

☒ Allow

☐ Deny

Priority \* ⓘ

110

Name \*

example\_external\_bridgeworks\_node



Description

This is the other Bridgeworks Node. All traffic to/from the 10.0.1.0/24 route will actually come through here.

Add

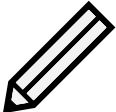
Cancel

Give feedback

Fill out the settings to allow the other Node to connect to this PORTrockIT virtual machine.

In this example, another Bridgeworks PORTrockIT is set up with a public IP address of `203.0.113.100`. The external Node is the only IP address in that range that should be allowed to connect to the Azure one being set up, so a 32 prefix length is used.

The *Destination port ranges* entry is set according to the table found in Section 6.3.2: [Network Security Group](#). This adds the minimum functionality to access the PORTrockIT and connect it to the external Node.



Note: Other services will need their relevant ports added to the list.

This connection will be the target when your PORTrockIT virtual machine routes network traffic destined for the `10.0.1.0/24` IP address range seen previously in this guide.

Left click *Add* when you are ready to proceed.

Wait for the success notification to occur.

...

Creating security rule

'example\_external\_bridgeworks\_node'.

✓

Created security rule

Successfully created security rule  
'example\_external\_bridgeworks\_node'.

example-deployment-vm-nsg | Inbound security rules

Network security group

Search

+ Add Hide default rules Refresh Delete Give feedback

Overview  
Activity log  
Access control (IAM)  
Tags  
Diagnose and solve problems

Settings  
Inbound security rules  
Outbound security rules  
Network interfaces  
Subnets  
Properties

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol to allow or deny the traffic. A security rule can't have the same priority and direction as an existing rule. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

Filter by name

Port == all Protocol == all Source == all Destination == all Action == all

Priority	Name	Port	Protocol	Source
<input type="checkbox"/> 100	My_Source_IP	Any	Any	1.2.3.4/32
<input type="checkbox"/> 110	example_external_brid...	Any	Any	203.0.113.100/32
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork
<input type="checkbox"/> 65001	AllowAzureLoadBalan...	Any	Any	AzureLoadBalancer
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any

You now have two custom rules; *My\_Source\_IP* allows you to access the PORTrockIT GUI and

---

connect to it via SSH from your current connection, and *example\_external\_bridgeworks\_node* allows incoming network traffic from an external Node.