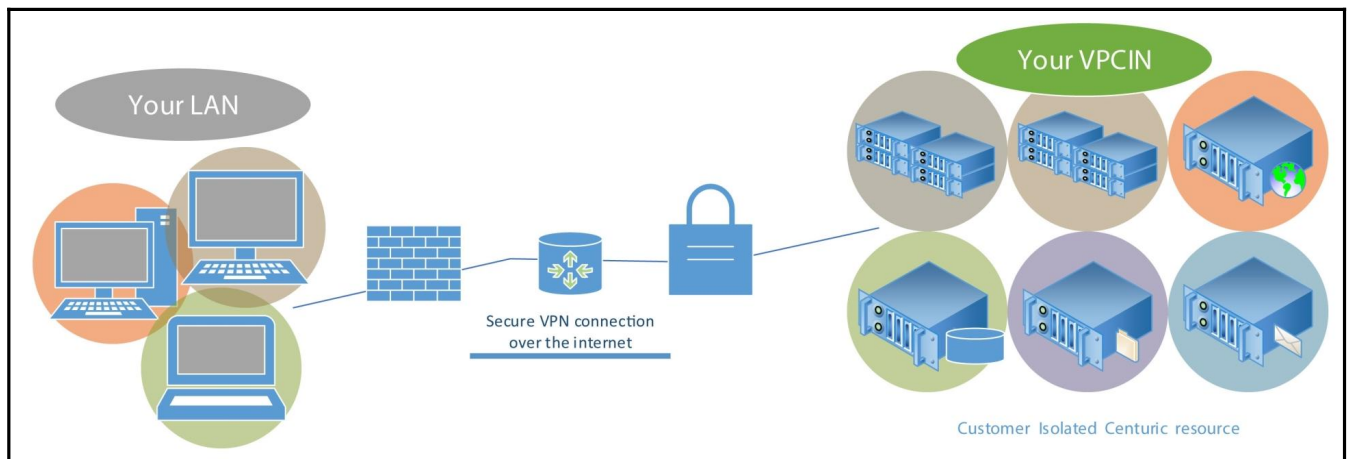
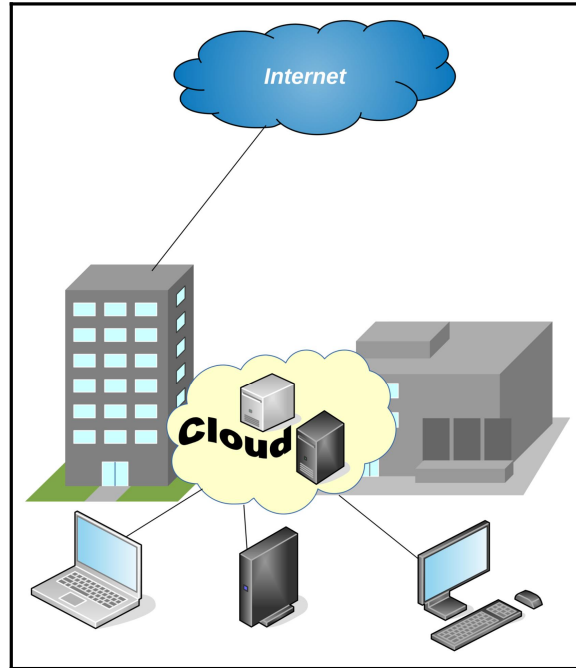
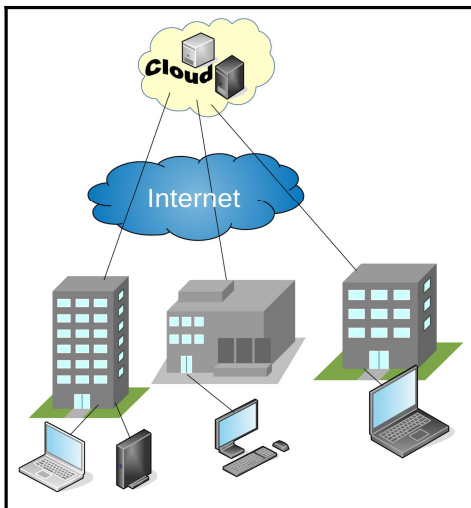


Chapter 01: Key Concepts of Cloud Computing





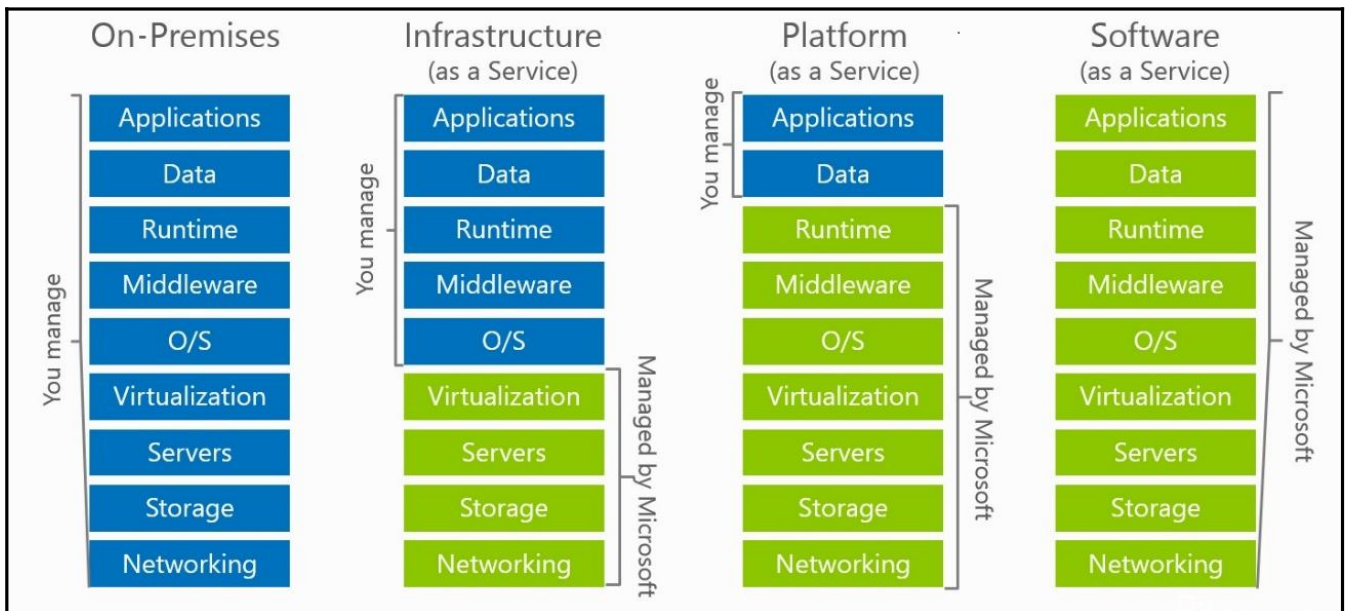
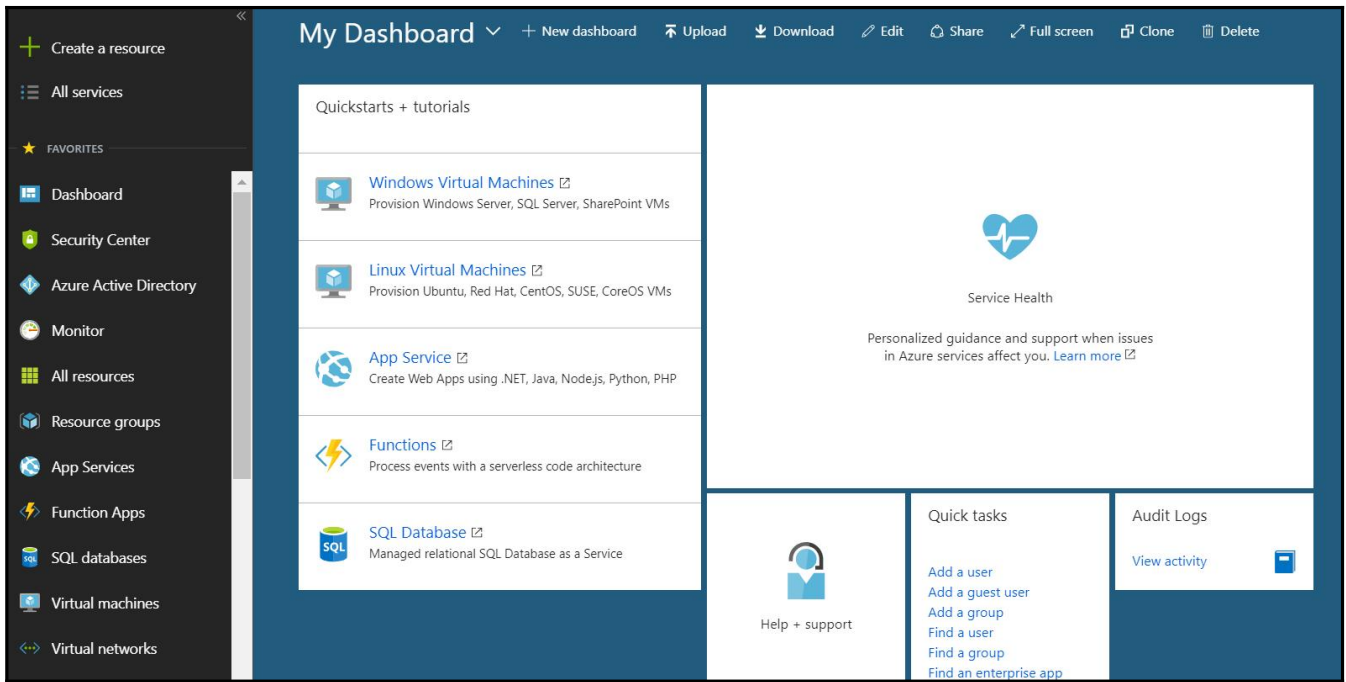
Microsoft Azure ▼ Classic Portal Retirement Notice CREDIT STATUS Subscriptions 🌐 👤

ALL ITEMS

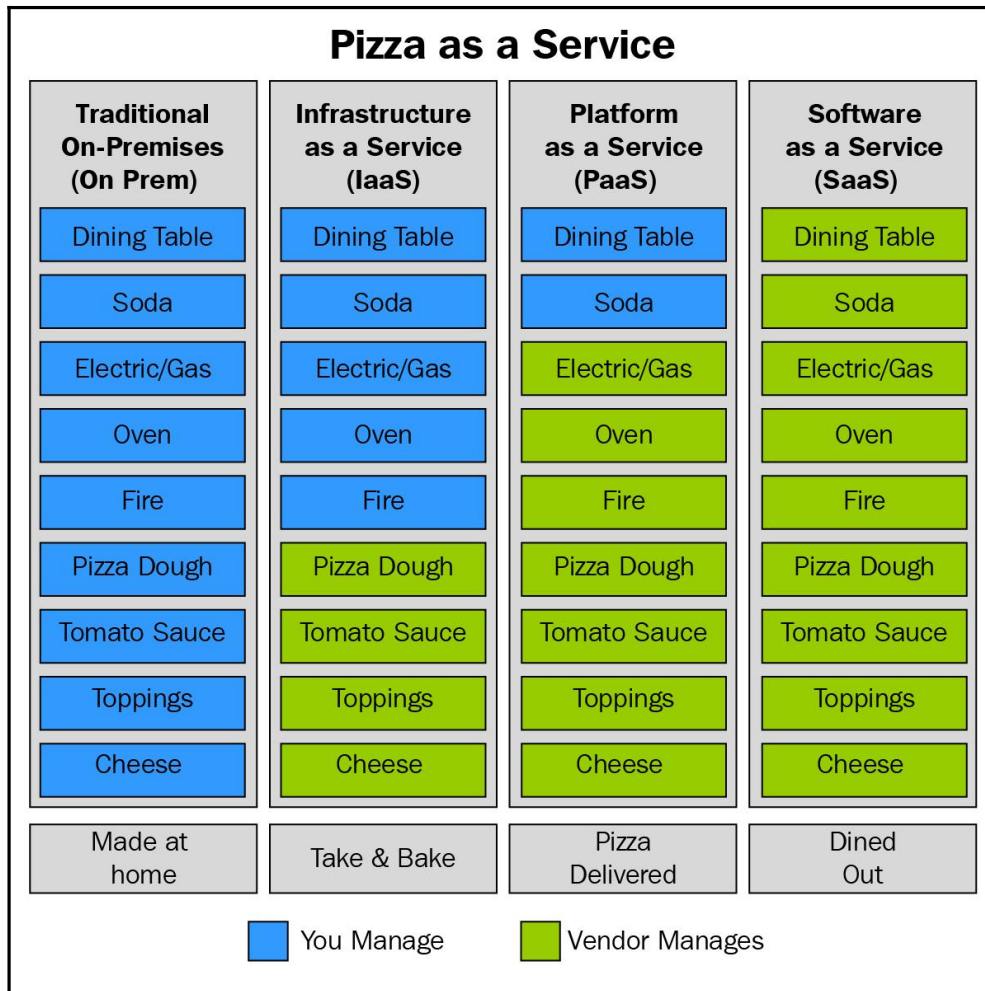
all items

NAME	TYPE	STATUS	SUBSCRIPTION	↑	🔍
------	------	--------	--------------	---	---

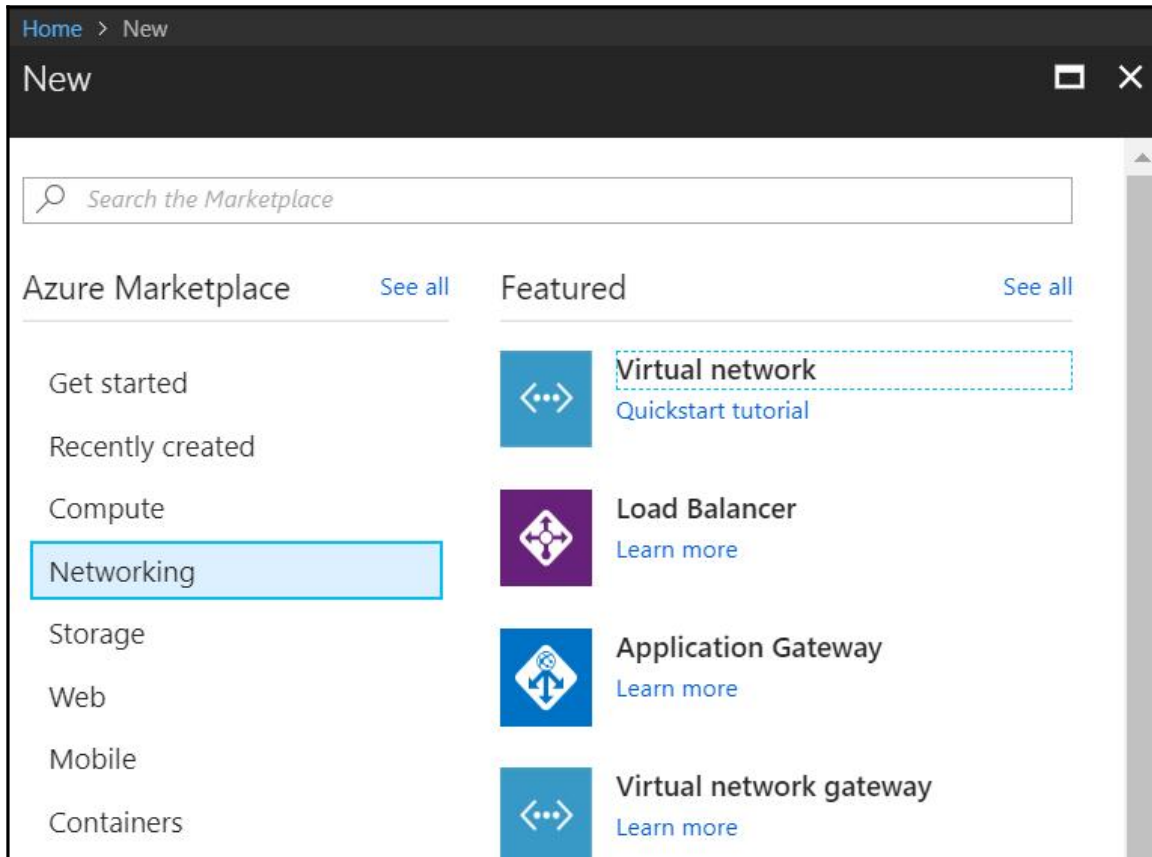
+ NEW ?



Pizza as a Service



Chapter 02: Azure Networking - Foundation of Azure IaaS



Create virtual network

* Name
PacktVnet ✓

* Address space ⓘ
10.1.0.0/16
10.1.0.0 - 10.1.255.255 (65536 addresses)

* Subscription
Microsoft Azure Sponsorship ▾

* Resource group
 Create new Use existing
PacktIaaS ✓

* Location
West Europe ▾

Subnet

* Name
default



* Address range ⓘ
10.1.0.0/24 ✓
10.1.0.0 - 10.1.0.255 (256 addresses)

DDoS protection ⓘ
 Basic Standard

Service endpoints ⓘ

[Automation options](#)

<input type="checkbox"/> Select all
<input type="checkbox"/> Microsoft.AzureCosmosDB
<input type="checkbox"/> Microsoft.EventHub
<input type="checkbox"/> Microsoft.KeyVault
<input type="checkbox"/> Microsoft.ServiceBus
<input type="checkbox"/> Microsoft.Sql
<input type="checkbox"/> Microsoft.Storage
<input type="text" value="Filter services"/>
0 selected ^

 Save  Discard
10.1.0.0/16
10.2.0.0/16
<i>Add additional address range</i>

Home > Resource groups > PacktIaaS > PacktVnet - Subnets > Add subnet

Add subnet

PacktVnet

* Name
DMZ ✓

* Address range (CIDR block) ⓘ
10.1.1.0/24
10.1.1.0 - 10.1.1.255 (251 + 5 Azure reserved addresses)

Network security group
None >

Route table
None >

Service endpoints

Services ⓘ
0 selected ✓

OK

Save Discard

⚠ Virtual machines within this virtual network must be restarted to utilize the updated DNS server settings.

DNS servers ⓘ

Default (Azure-provided)

Custom

...

Add service endpoints ✕

Service
Microsoft.Storage ▼

* Subnets
0 selected ▼

i Adding service endpoints may take up to 15 minutes to complete.

Add peering ☐ ✕
PacktVnet

* Name
InternalConnection ✓

Peer details

Virtual network deployment model i
 Resource manager Classic

I know my resource ID i

* Subscription i
Microsoft Azure Sponsorship ▼

* Virtual network
Network1 (NetworkDemo) ▼

Configuration

Allow virtual network access i

Allow forwarded traffic i

Allow gateway transit i

Use remote gateways i

Basics

* Name
PacktVM1 ✓

VM disk type ⓘ
HDD ▾

* Username
mustafa ✓

* Password
..... ✓

* Confirm password
..... ✓

Subscription
Microsoft Azure Sponsorship ▾

* Resource group ⓘ
 Create new Use existing
PacktIaaS ▾

* Location
West Europe ▾

Save money
Save up to 49% with a license you already own.

* Already have a Windows license? ⓘ

Choose a size

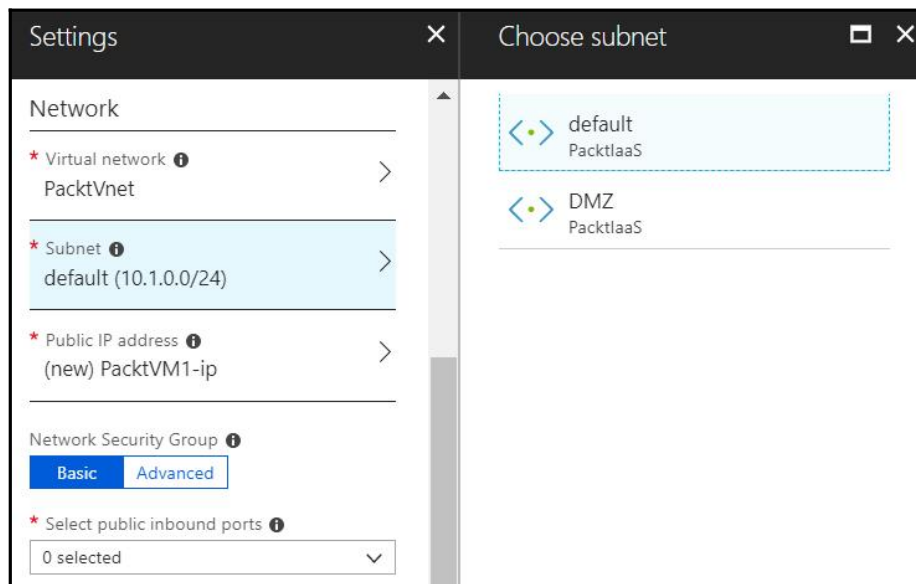
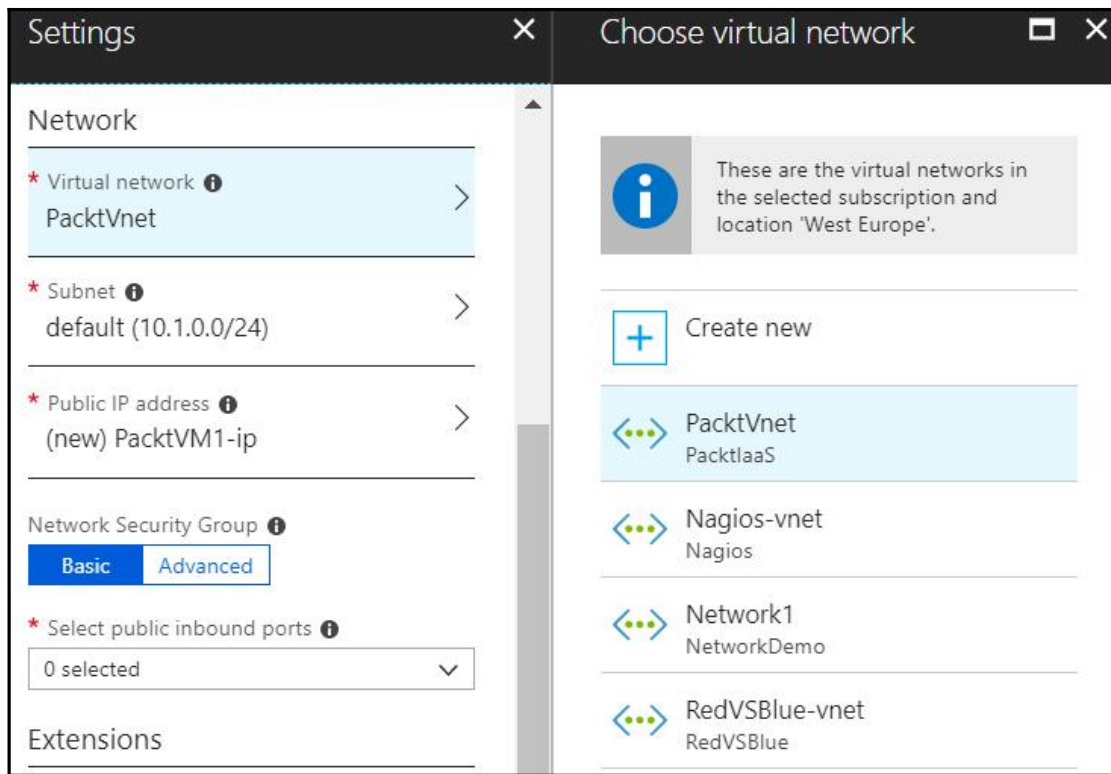
Browse the available sizes and their features

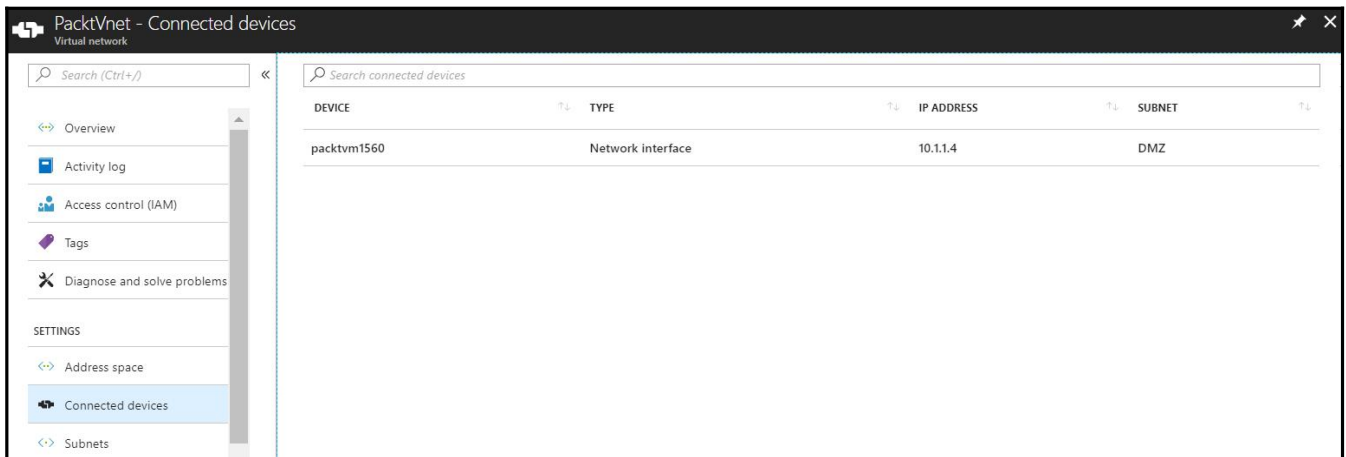
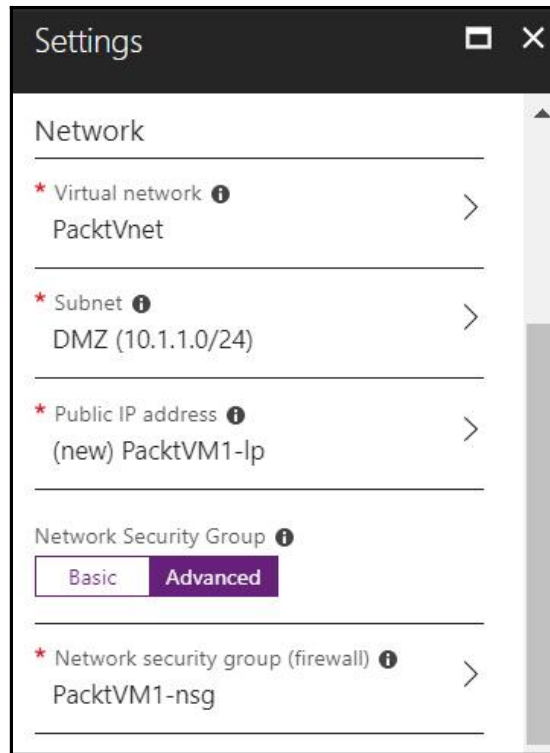
Search Compute type Disk type vCPUs

RECOMM...	SKU	TYPE	COMPUT...	VCPUS	GB RAM	DATA DIS...	MAX IOPS	LOCAL SSD	PREMIU...	ADDITIO...	ZONES	EUR/MO...
Available	B1s	Standard	General purpc	1	1	2	800	4 GB	SSD		1,2,3	€10.73
	B1ms	Standard	General purpc	1	2	2	1600	4 GB	SSD		1,2,3	€20.33
	B2s	Standard	General purpc	2	4	4	3200	8 GB	SSD		1,2,3	€40.66
	B2ms	Standard	General purpc	2	8	4	4800	16 GB	SSD		1,2,3	€76.80
	B4ms	Standard	General purpc	4	16	8	7200	32 GB	SSD		1,2,3	€145.12
	B8ms	Standard	General purpc	8	32	16	10800	64 GB	SSD		1,2,3	€278.95
	D2s_v3	Standard	General purpc	2	8	4	4000	16 GB	SSD		1,2,3	€133.01
	D4s_v3	Standard	General purpc	4	16	8	8000	32 GB	SSD		1,2,3	€266.02
	D8s_v3	Standard	General purpc	8	32	16	16000	64 GB	SSD		1,2,3	€532.05
	D16s_v3	Standard	General purpc	16	64	32	32000	128 GB	SSD		1,2,3	€1,064.10
	D32s_v3	Standard	General purpc	32	128	32	64000	256 GB	SSD		1,2,3	€2,128.19
	D64s_v3	Standard	General purpc	64	256	32	128000	512 GB	SSD		1,2,3	€4,256.38
	E2s_v3	Standard	Memory optin	2	16	4	4000	32 GB	SSD		1,2,3	€158.11

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

Select





packtvm1560 - IP configurations

Network interface

Search (Ctrl+/)

+ Add Save Discard

IP forwarding settings

IP forwarding

Virtual network PacktVnet

IP configurations

* Subnet DMZ (10.1.1.0/24)

Search IP configurations

NAME	IP VERSION	TYPE	PRIVATE IP ADDRESS	PUBLIC IP ADDRESS
ipconfig1	IPv4	Primary	10.1.1.4 (Dynamic)	51.144.47.129 (PacktVM1-ip) ...

Home > Resource groups > PacktIaaS > PacktVnet - Connected devices > packtvm1560 - IP configurations >

ipconfig1
packtvm1560

Save Discard

Public IP address settings

Public IP address

* IP address PacktVM1-ip (51.144.47.129) >

Private IP address settings

Virtual network/subnet PacktVnet/DMZ

Assignment

* IP address

10.1.1.4

packtvm1560 - DNS servers
Network interface

Search (Ctrl+/) Save Discard

Updating the DNS servers for this network interface will restart the virtual machine to which it's attached, and if applicable, any other virtual machines in the same availability set.

DNS servers

Inherit from virtual network

Custom

Add DNS server ...

Applied DNS servers 0

No results

Overview

Activity log

Access control (IAM)

Tags

SETTINGS

IP configurations

DNS servers

Network security group

Properties

packtvm1-nsg
Network security group

Search (Ctrl+/) Move Delete Refresh

Resource group (change)
PacktIaaS

Location
West Europe

Subscription (change)
Microsoft Azure Sponsorship

Subscription ID
cb638267-a366-463c-bfe5-7a49311c27a8

Tags (change)
Click here to add tags

Security rules
1 inbound, 0 outbound
Associated with
0 subnets, 1 network interfaces

Inbound security rules

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
1000	default-allow-rdp	3389	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

Outbound security rules

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Inbound security rules

Outbound security rules

Network interfaces

Subnets

Properties


Locks


Automation script


MONITORING


Add inbound security rule ✕



PacktVM1-nsg

 Basic

* Source 



* Source port ranges 


* Destination 

* Destination port ranges  

* Protocol

* Action

* Priority  

* Name 

Description

PacketVM1-ip - Configuration
Public IP address

Search (Ctrl+/) Save Discard

Overview
Activity log
Access control (IAM)
Tags

SETTINGS
Configuration
Properties
Locks
Automation script

Assignment
 Dynamic Static

IP address ⓘ
51.144.47.129

Idle timeout (minutes) ⓘ
4

DNS name label (optional) ⓘ
westeurope.cloudapp.azure.com

Prefer to use your own domain name? [Try Azure DNS now](#)

Chapter 03: Infrastructure as a Service - the First Layer of Cloud Computing

The image shows a 'Basics' configuration window with the following fields and values:

- Name:** WebSrv1 (with a green checkmark)
- VM disk type:** HDD (with a dropdown arrow)
- Username:** mustafa (with a green checkmark)
- Password:** (with a green checkmark)
- Confirm password:** (with a green checkmark)
- Subscription:** Microsoft Azure Sponsorship (with a dropdown arrow)
- Resource group:** PacktIaaS (with radio buttons for 'Create new' and 'Use existing', and a dropdown arrow)
- Location:** West Europe (with a dropdown arrow)

Choose a size

Browse the available sizes and their features

Search Compute type Disk type vCPUs

RECOMM...	SKU	TYPE	COMPUT...	VCPUS	GB RAM	DATA DIS...	MAX IOPS	LOCAL SS...	PREMIU...	ADDITIO...	ZONES	EUR/MO...
	B1s	Standard	General purpc	1	1	2	800	4 GB	SSD		1,2,3	€10.73
	B1ms	Standard	General purpc	1	2	2	1600	4 GB	SSD		1,2,3	€20.33
	B2s	Standard	General purpc	2	4	4	3200	8 GB	SSD		1,2,3	€40.66
	B2ms	Standard	General purpc	2	8	4	4800	16 GB	SSD		1,2,3	€76.80
	B4ms	Standard	General purpc	4	16	8	7200	32 GB	SSD		1,2,3	€145.12
	B8ms	Standard	General purpc	8	32	16	10800	64 GB	SSD		1,2,3	€278.95
	D2s_v3	Standard	General purpc	2	8	4	4000	16 GB	SSD		1,2,3	€133.01
	D4s_v3	Standard	General purpc	4	16	8	8000	32 GB	SSD		1,2,3	€266.02
	D8s_v3	Standard	General purpc	8	32	16	16000	64 GB	SSD		1,2,3	€532.05

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

Select

High availability

Availability zone ⓘ

None

* Availability set ⓘ
(new) WebSet

Storage

Disk type ⓘ

HDD | SSD

Use managed disks ⓘ

No | Yes

Network

* Virtual network ⓘ
PacktVnet >

* Subnet ⓘ
DMZ (10.1.1.0/24) >

* Public IP address ⓘ
(new) WebSrv1-ip >

Network Security Group ⓘ

Basic Advanced

* Network security group (firewall) ⓘ
None >

Extensions

Extensions ⓘ
No extensions >

Auto-shutdown
Enable auto-shutdown ⓘ
Off **On**





Monitoring
Boot diagnostics ⓘ
Disabled **Enabled**

Guest OS diagnostics ⓘ
Disabled **Enabled**

* Diagnostics storage account ⓘ >
nagiosdiag316

Managed service identity
Register with Azure Active Directory ⓘ
No **Yes**

Backup
Backup ⓘ
Disabled **Enabled**

<input type="checkbox"/>	NAME ↑↓	TYPE ↑↓	LOCATION ↑↓	
<input type="checkbox"/>	 WebSrv1	Virtual machine	West Europe	...
<input type="checkbox"/>	 WebSrv1_OsDisk_1_d731d762891146c6bd4983d5c4a0ba69	Disk	West Europe	...
<input type="checkbox"/>	 webserv1700	Network interface	West Europe	...
<input type="checkbox"/>	 WebSrv1-ip	Public IP address	West Europe	...

[Attach network interface](#)
[Detach network interface](#)

Network Interface: websrv1700
[Effective security rules](#)
[Topology](#)

Virtual network/subnet: [PacktVnet/DMZ](#)
 Public IP: **13.80.42.85**
 Private IP: **10.1.1.4**
 Accelerated networking: **Disabled**

APPLICATION SECURITY GROUPS

[Configure the application security groups](#)

INBOUND PORT RULES

Network security group **DMZ** (attached to subnet: **DMZ**)
 Impacts 1 subnets, 0 network interfaces
 [Add inbound port rule](#)

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION	
100	Port_3389	3389	Any	Any	Any	Allow	...
110	Port_80	80	Any	Any	Any	Allow	...
120	Port_443	443	Any	Any	Any	Allow	...
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow	...
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow	...
65500	DenyAllInBound	Any	Any	Any	Any	Deny	...

OUTBOUND PORT RULES

Network security group **DMZ** (attached to subnet: **DMZ**)
 Impacts 1 subnets, 0 network interfaces
 [Add outbound port rule](#)

[Edit](#)
[Refresh](#)

Managed disks created since June 10, 2017 are encrypted at rest with Storage Service Encryption (SSE). You may also want to enable Azure Disk Encryption.
 [?](#)

OS disk

NAME	SIZE	STORAGE ACCOUNT TYPE	ENCRYPTION	HOST CACHING
WebSrv1_OsDisk_1_d731d762891146c6bd4983d5c4a0ba69	127 GiB	Standard HDD	Not enabled	Read/write

Data disks
 None

[+ Add data disk](#)

NAME	DESCRIPTION
RunPowerShellScript	Executes a PowerShell script
EnableAdminAccount	Enable administrator account
EnableRemotePS	Enable remote PowerShell
IPConfig	List IP configuration
RDPSettings	Verify RDP Listener Settings
ResetAccountPassword	Reset built-in Administrator account password
ResetRDPcert	Restore RDP Authentication mode to defaults
SetRDPPort	Set Remote Desktop port

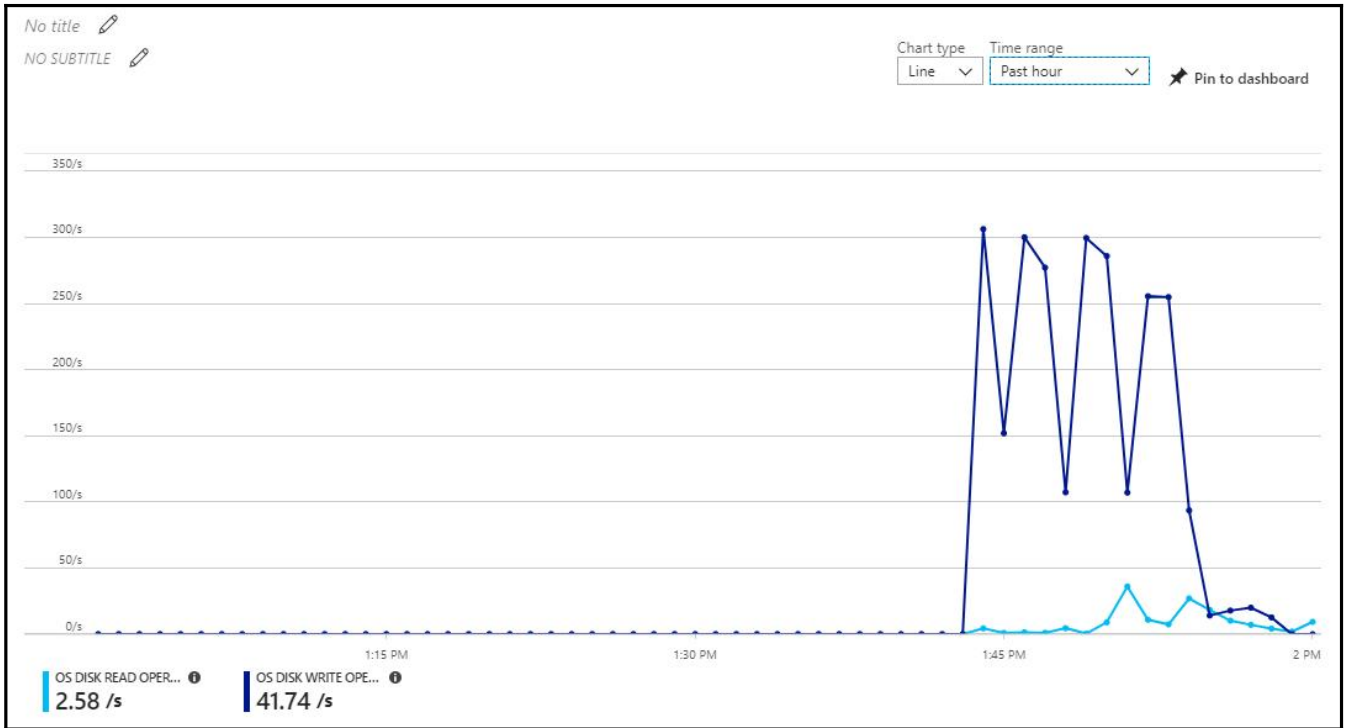
Output

```

Name           : Allow WinRM HTTPS
DisplayName    : WinRM HTTPS
Description    :
DisplayGroup   :
Group         :
Enabled       : True
Profile       : Any
Platform      : {}
Direction     : Inbound
Action        : Allow
EdgeTraversalPolicy : Block
LooseSourceMapping : False
LocalOnlyMapping : False
Owner         :
PrimaryStatus  : OK
Status        : The rule was parsed successfully from the store.
                (65536)
EnforcementStatus : NotApplicable
PolicyStoreSource : PersistentStore
PolicyStoreSourceType : Local

ResourceCreated
  Address = http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous
ReferenceParameters
  ResourceURI = http://schemas.microsoft.com/wbem/wsman/1/config/listener
SelectorSet

```



Add rule [] [X]

Name CPU ✓

Description
Monitor CPU ✓

Source
Alert on
Metrics ▼

Criteria
Subscription
Microsoft Azure Sponsorship ▼

Resource group
PacktIaaS ▼

Resource
WebSrv1 ▼

Metric Percentage CPU ▼

Time	Percentage CPU
6 PM	0
7 PM	0
8 PM	0
9 PM	0
10 PM	0
11 PM	0
12 PM	35

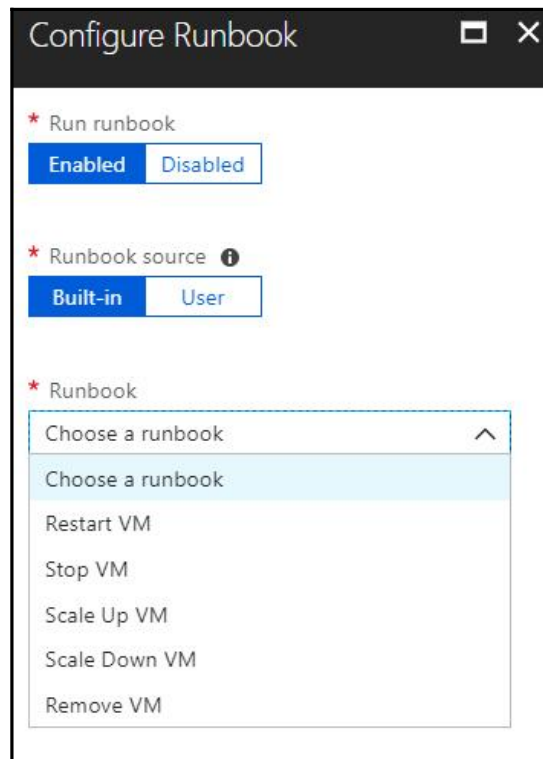
Condition
Greater than ▼

Threshold 90 ✓
%

Period
Over the last 5 minutes ▼

Notify via
Email owners, contributors, and readers

Take action ⓘ Run a runbook from this alert	>
Take action ⓘ Run a logic app from this alert	>



Create load balancer

* Name
WebLB ✓

* Type ⓘ
 Internal Public

* SKU ⓘ
 Basic Standard

* Public IP address ⓘ
 Create new Use existing

WebLB1 ✓

Configure public IP address

Add a public IPv6 address ⓘ

* Subscription
Microsoft Azure Sponsorship ✓

* Resource group
 Create new Use existing

PacktlaaS ✓

* Location
West Europe ✓

Create Automation options

Add backend pool

WebLB

* Name

WebLBPool ✓

IP version

IPv4 IPv6

Associated to ⓘ


Availability set ▾

Availability set ⓘ

WebSet
number of virtual machines: 2 ▾

Target network IP configurations

Only VMs within the current availability set can be chosen. Once a VM is chosen, you can select a network IP configuration related to it.

* Target virtual machine ⓘ 

WebSrv1
size: Standard_D2s_v3, network interfaces: 1 ▾

* Network IP configuration ⓘ

ipconfig1 (10.1.1.4) ▾

OK

Add health probe

WebLB

* Name
 ✓

IP version
 IPv4

Protocol

* Port

* Interval ⓘ
 seconds

* Unhealthy threshold ⓘ
 consecutive failures

NAME	↑↓ PROTOCOL	↑↓ PORT	↑↓ USED BY	↑↓
WebProbe1	TCP	80	-	...
WebProbe2	TCP	443	-	...

Add load balancing rule WebLB

* Name
HTTP ✓

* IP Version
 IPv4 IPv6

* Frontend IP address ⓘ
LoadBalancerFrontEnd

Protocol
 TCP UDP

* Port
80 ✓

* Backend port ⓘ
80 ✓

Backend pool ⓘ
WebLBPool (2 virtual machines)

Health probe ⓘ
WebProbe1 (TCP:80)

Session persistence ⓘ
None

Idle timeout (minutes) ⓘ
 4

Floating IP (direct server return) ⓘ

NAME	PROTOCOL	PORT	USED BY
WebProbe1	TCP	80	HTTP
WebProbe2	TCP	443	HTTPS

Add inbound NAT rule

WebLB

* Name

Frontend IP address

IP Version
 IPv4

Service

Protocol
 TCP UDP

* Port

Associated to
[webset \(availability set\)](#)

Target virtual machine

Network IP configuration

Port mapping
 Default Custom

Create virtual machine scale set

BASICS

* Virtual machine scale set name ✓

* Operating system disk image ⓘ ✓
[Browse all images](#)

* Subscription ✓

* Resource group Create new ✓

* Location ✓

Availability zone ⓘ ✓

* Username ⓘ ✓

* Password ✓

* Confirm password ✓

INSTANCES

* Instance count ⓘ ✓

* Instance size (View full pricing details) ⓘ ✓

Deploy as low priority ⓘ

ⓘ Low priority is not available for the selected instance size

Use managed disks ⓘ

Create

[Automation options](#)

AUTOSCALE

Autoscale ?

* Minimum number of VMs ?

* Maximum number of VMs ?

Scale out

* CPU threshold (%) ?

* Number of VMs to increase by ?

Scale in

* CPU threshold (%) ?

* Number of VMs to decrease by ?

NETWORKING

Microsoft Azure Application Gateway is a dedicated virtual appliance providing application delivery controller (ADC) as a service.
 Azure Load Balancer allows you to scale your applications and create high availability for your services.
[Learn more about load balancer differences](#)

RESOURCES	OPTIMAL FOR	SUPPORTED PROTOCOLS	SSL OFFLOADING	RDP TO INSTANCE
Application Gateway	Web-based traffic	HTTP/HTTPS/WebSocket	Supported	Not supported
Load balancer	Stream-based traffic	Any	Not supported	Supported

Choose Load balancing options Application Gateway Load balancer

* Public IP address name ? ✓

* Domain name label ? ✓

westeurope.cloudapp.azure.com

<input type="checkbox"/>	NAME ↑↓	TYPE ↑↓	LOCATION ↑↓	
<input type="checkbox"/>	ScaleSet	Virtual machine scale set	West Europe	...
<input type="checkbox"/>	ScaleSetIP	Public IP address	West Europe	...
<input type="checkbox"/>	ScaleSetlb	Load balancer	West Europe	...
<input type="checkbox"/>	ScaleSetmsg	Network security group	West Europe	...
<input type="checkbox"/>	ScaleSetVnet	Virtual network	West Europe	...

Default Profile1

Delete warning The very last or default recurrence rule cannot be deleted. Instead, you can disable autoscale to turn off autoscale.

Scale mode Scale based on a metric Scale to a specific instance count

Rules

Scale out			
When	ScaleSet	(Average) Percentage CPU > 75	Increase instance count by 1
Scale in			
When	ScaleSet	(Average) Percentage CPU < 25	Decrease instance count by 1

[+ Add a rule](#)

Instance limits

Minimum	Maximum	Default
<input type="text" value="1"/>	<input type="text" value="10"/>	<input type="text" value="1"/>

Schedule **This scale condition is executed when none of the other scale condition(s) match**

[+ Add a scale condition](#)

Chapter 04: Azure App Service - Hosting Web Applications without a Server

The screenshot shows the 'New App Service Plan' configuration window. The title bar reads 'New App Service Plan' with a maximize and close icon, and a subtitle 'Create a plan for the web app'. The form contains the following fields:

- * App Service plan:** PacktPaaS (with a green checkmark)
- * Subscription:** Microsoft Azure Sponsorship (dropdown arrow)
- * Resource Group:** Includes radio buttons for 'Create new' (selected) and 'Use existing', followed by a dropdown menu showing 'PacktPaaS' (with a green checkmark).
- * Operating System:** Windows (dropdown arrow)
- * Location:** West Europe (dropdown arrow)
- * Pricing tier:** S1 Standard (with a right-pointing chevron)

At the bottom, there is a blue 'Create' button and a link for 'Automation options'.



Dev / Test

For less demanding workloads



Production

For most production workloads



Isolated

Advanced networking and scale

Recommended pricing tiers

S1 1x cores 1.75 GB memory A-Series compute 62.72 EUR/Month (Estimated)	P1v2 1x cores 3.5 GB memory Dv2-Series compute 125.44 EUR/Month (Estimated)	P2v2 2x cores 7 GB memory Dv2-Series compute 250.95 EUR/Month (Estimated)	P3v2 4x cores 14 GB memory Dv2-Series compute 501.90 EUR/Month (Estimated)
--	--	--	---

See additional options

Included features

Every app hosted on this App Service plan will have access to these features:



Custom domains / SSL

Configure and purchase custom domains with SNI and IP SSL bindings



Auto scale

Up to 10 instances. Subject to availability.

Included hardware

Every instance of your App Service plan will include the following hardware configuration:



CPU

Dedicated A-series compute resources used to run applications deployed in the App Service Plan. [Learn more](#)



Memory


Memory per instance available to run applications deployed and running in the App Service plan.

Apply

Home > New > Web App

Web App

Create

* App name
 
 .azurewebsites.net

* Subscription

* Resource Group ⓘ
 Create new Use existing




* OS **Windows** Linux Docker

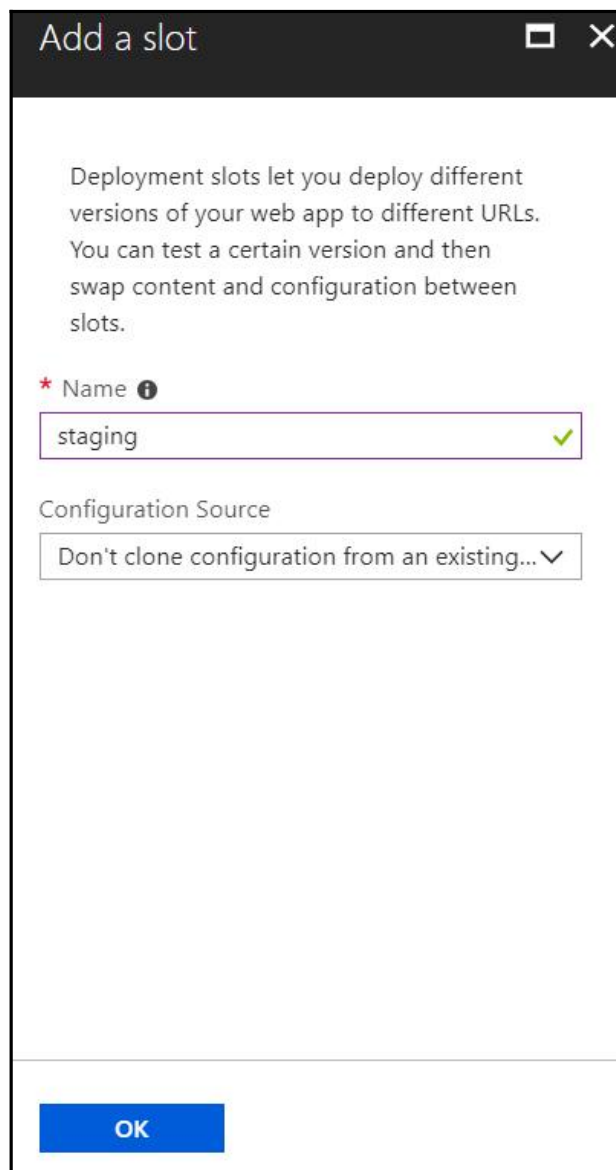
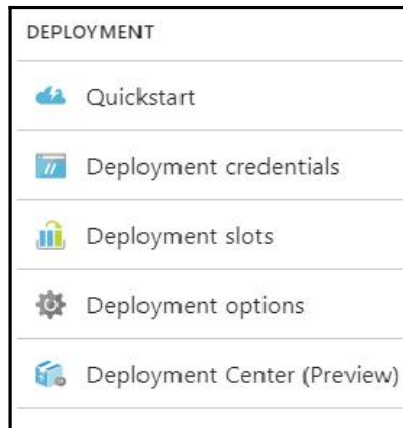
* App Service plan/Location >
 PacktPaaS(West Europe)

Application Insights ⓘ **On** Off

* Application Insights Location ⓘ

Create Automation options

<input type="checkbox"/>	NAME ↑↓	TYPE ↑↓	LOCATION ↑↓	
<input type="checkbox"/>	 packtpaas	Application Insights	West Europe	...
<input type="checkbox"/>	 PacktPaaS	App Service plan	West Europe	...
<input type="checkbox"/>	 packtpaas	App Service	West Europe	...



+ Add Slot ↩ Swap		
NAME	STATUS	APP SERVICE PLAN
packtpaas-staging	Running	PacktPaaS
packtpaas-test	Running	PacktPaaS

Swap

Choose which slots to swap

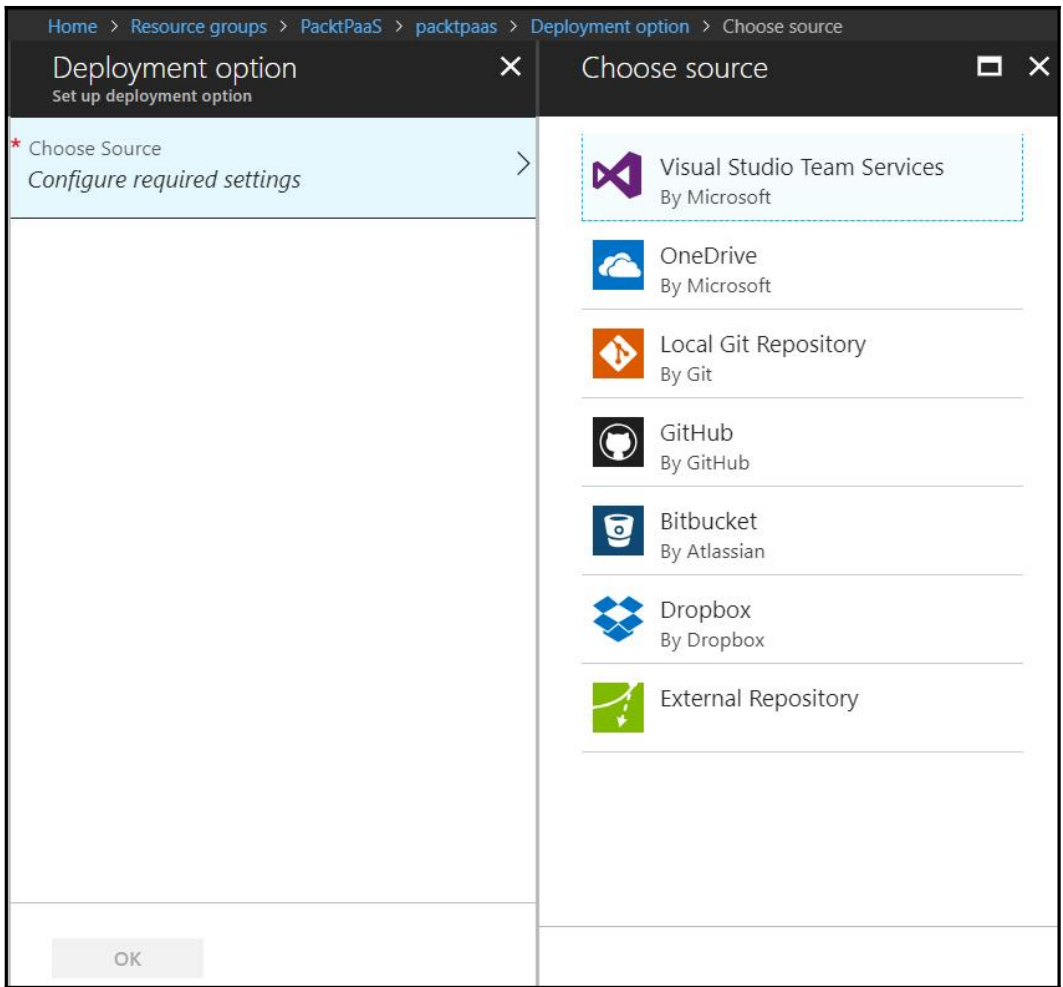
Swap type ⓘ
Swap
















Source
production

Destination
staging

Preview Changes
1 warnings, 1 other messages

OK



SETTINGS	
	Application settings
	Authentication / Authorizati...
	Application Insights
	Managed service identity
	Backups
	Custom domains
	SSL settings
	Networking
	Scale up (App Service plan)
	Scale out (App Service plan)
	WebJobs
	Push
	MySQL In App
	Properties
	Locks

General settings

.NET Framework version ⓘ v4.7

PHP version ⓘ 5.6

i App Service supports installing newer versions of Python. Click here to learn more. [↗](#)

Python version ⓘ Off

Java version ⓘ Off

Java minor version ⓘ

Java web container ⓘ

Platform ⓘ 32-bit 64-bit

Web sockets ⓘ Off On

Always On ⓘ Off On

Managed Pipeline Version Integrated Classic

HTTP Version 1.1 2.0

Authentication / Authorization



To enable Authentication / Authorization please ensure all your custom domains have corresponding SSL bindings .net version is configured to "4.5" and manage pipeline mode is set to "Integrated"

App Service Authentication

Off

On

Action to take when request is not authenticated

Log in with Azure Active Directory

Authentication Providers



Azure Active Directory

Not Configured



Facebook

Not Configured



Google

Not Configured



Twitter

Not Configured



Microsoft

Not Configured



Backup Configuration



Backup Storage

Select the target container to store your app backup.

Storage Settings
backup



Storage Account: nagiosdiag316.blob.core.windows.net



Backup Schedule

Configure the schedule for your app backup.

Scheduled backup On Off

* Backup Every

1

Days

Hours

* Start backup schedule from

2018-07-28



12:28:58 PM

(UTC+02:00) --- Current Time... ▼

* Retention (Days) ⓘ

30

Keep at least one backup

No

Yes

Save

Discard



Custom Hostnames

Configure and manage custom hostnames assigned to your app [Learn more](#)

IP address: ⓘ

HTTPS Only: ⓘ Off On

Add hostname

HOSTNAMES ASSIGNED TO SITE

SSL BINDING

packtpaas.azurewebsites.net



SSL Configuration

SSL Configuration lets you configure the TLS version used by all bindings in this app and HTTPS only setting

HTTPS Only: Off On

Minimum TLS Version 1.0 1.1 1.2



Bindings

Bindings let you specify which certificate to use when responding to requests to a specific hostname over HTTPS. SSL Binding requires valid private certificate (.pfx) issued for the specific hostname. [Learn more](#)

SSL bindings

Add binding

HOST NAME	PRIVATE CERTIFICATE THUMBPRINT	SSL TYPE
No results		



Certificates

Certificates must be associated with your application before you can use them to create a binding. You can upload a certificate you purchased externally, or import an App Service Certificate.



Import App Service Certificate



Upload Certificate

Client Certificates

Incoming client certificates ⓘ

Off

On

Public Certificates (.cer)

You have no certificates. Upload a certificate now to get started.

Private Certificates (.pfx)

Default Auto created scale condition



Delete warning ⓘ The very last or default recurrence rule cannot be deleted. Instead, you can disable autoscale to turn off autoscale.

Scale mode Scale based on a metric Scale to a specific instance count

Scale out

When PacktPaaS (Average) CpuPercentage > 70 Increase instance count by 1

Rules









Scale in










When PacktPaaS (Average) CpuPercentage > 25 Decrease instance percent by 1

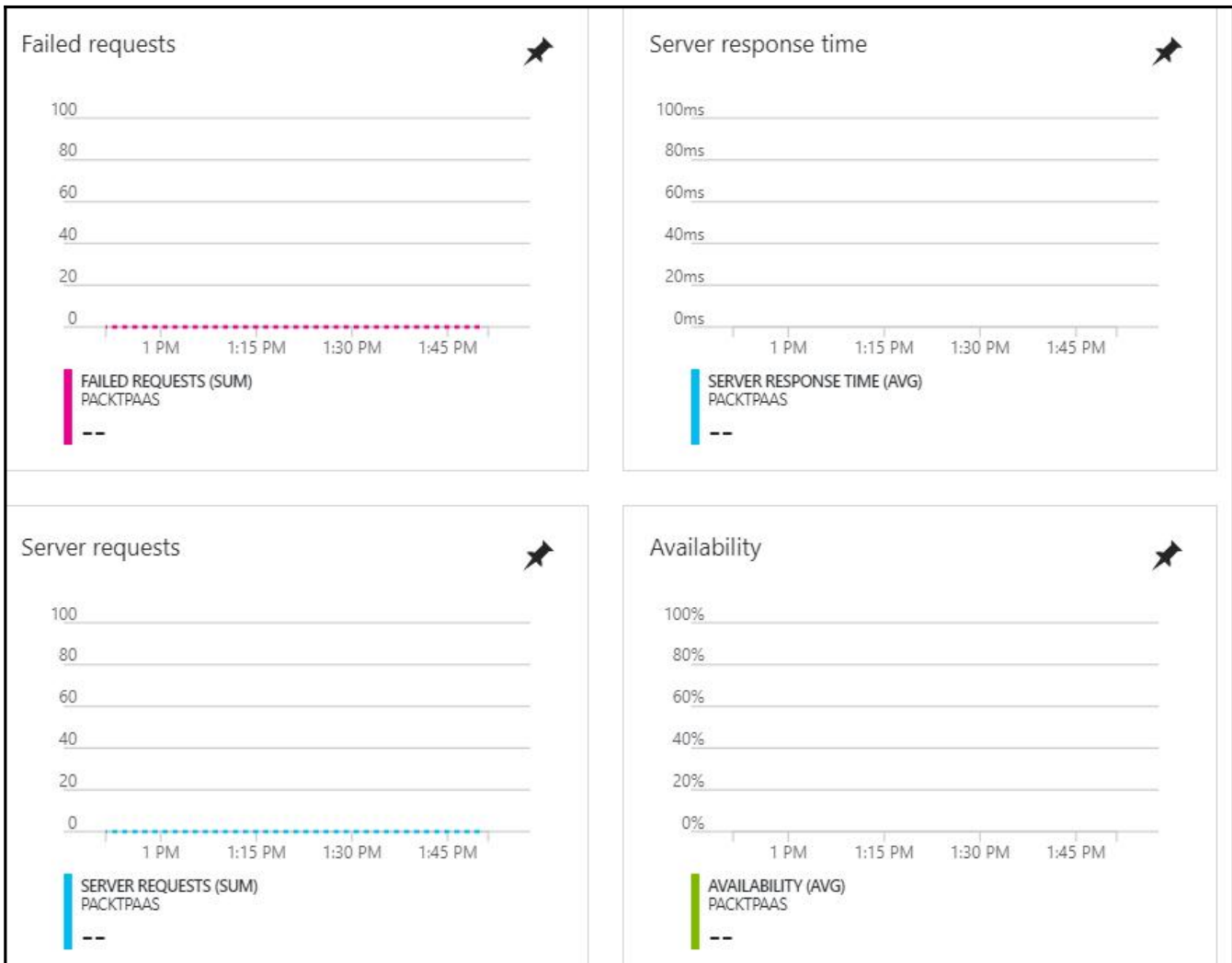
[+ Add a rule](#)














Instance limits Minimum ⓘ 1 Maximum ⓘ 5 ✓ Default ⓘ 1

Schedule **This scale condition is executed when none of the other scale condition(s) match**

DEVELOPMENT TOOLS	
	Clone app
	Console
	Advanced Tools
	App Service Editor (Preview)
	Performance test
	Resource explorer
	Testing in production
	Extensions

MOBILE	
	Easy tables
	Easy APIs
	Data connections
API	
	API definition
	CORS
MONITORING	
	Alerts (Classic)
	Diagnostics logs
	Log stream
	Process explorer



INVESTIGATE	
	Application map
	Smart Detection
	Live Metrics Stream
	Metrics Explorer
	Metrics (preview)
	Search
	Availability
	Failures
	Performance
	Servers
	Browser
	Troubleshooting guides (pr...)
	Workbooks

Create test

* Test name
Availability ✓

Test type
URL ping test ▼

* URL ⓘ
http://packtpaas.azurewebsites.net

Parse dependent requests ⓘ

Enable retries for availability test failures. ⓘ

Test frequency ⓘ
5 minutes ▼

Test locations ⓘ
5 location(s) configured >


Success criteria ⓘ
HTTP response: 200, Test Timeou... >

Alerts (classic) ⓘ
Alert if 3/5 locations fails in 5 mi... >

Create

USAGE

 Users

 Sessions

 Events

 Funnels

 User Flows

 Retention

 Impact

 Cohorts

- CONFIGURE
- Getting started
 - Previews
 - Properties
 - Alerts
 - Alerts (classic)
 - Smart Detection settings
 - Usage and estimated costs
 - Continuous export
 - Performance Testing
 - API Access
 - Work Items
 - Scheduled Analytics (preview)

packtpaas

Time range: Set in query

Schema Filter

Filter by name or type...

ACTIVE









- packtpaas
- APPLICATION INSIGHTS
 - traces
 - timestamp
 - message




```
// What are the 50th, 90th, and 95th percentiles of request duration in the past 24 hours?  
requests  
| where timestamp >= ago(24h)  
| summarize percentiles(duration, 50, 90, 95) by bin(timestamp, 1h)  
| render timechart
```

Completed

packtpaas 00:00:01.625 0 records

TABLE CHART

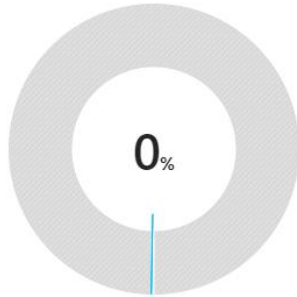
SETTINGS	
	Apps
	File system storage
	Networking
	Scale up (App Service plan)
	Scale out (App Service plan)
	Properties
	Locks
	Automation script

NAME	TYPE	RESOURCE GROUP	STATUS
 packtpaas	Web app	PacktPaaS	Running
 packtpaas-staging	Slot	PacktPaaS	Running
 packtpaas-test	Slot	PacktPaaS	Running



File system storage

Review the file system usage across your App Service plans and apps.



THRESHOLD
50 GiB

> Details

ASP: PACKTPAAS; SKU: STANDARD
50 GiB

USAGE (THIS ASP)
0 KiB



File system quota for App Service hosted apps is determined by the aggregate of App Service plans created in this region and resource group.

File system usage by app

	NAME	TYPE	USAGE
	packtpaas	app	0 KiB
	staging	slot	0 KiB
	test	slot	0 KiB

Create Traffic Manager profile □ ×

* Name
packtpass ✓
.trafficmanager.net










Routing method
Performance ▼

* Subscription
Microsoft Azure Sponsorship ▼

* Resource group
 Create new Use existing
PacktPaaS ▼

* Resource group location ⓘ
West Europe ▼

[Create](#) [Automation options](#)

SETTINGS	
	Configuration
	Real user measurements
	Traffic view
	Endpoints
	Properties
	Locks
	Automation script
MONITORING	
	Metrics (Preview)
	Alerts

Add endpoint
⊞ ✕

Type ⓘ

Azure endpoint
⌵

* Name

Primary
✓

Target resource type

App Service
⌵

* Target resource

packtpaas
➤

Add as disabled

OK

NAME	↑↓	STATUS	↑↓	MONITOR STATUS	↑↓	TYPE	↑↓	LOCATION
Primary		Enabled		Checking endpoint		Azure endpoint		West Europe
Secondary		Enabled		Checking endpoint		Azure endpoint		East US

Routing method ⓘ
Performance

* DNS time to live (TTL) ⓘ
60
seconds

Endpoint monitor settings ⓘ
Protocol
HTTPS

* Port
80

* Path
/ ✓

Fast endpoint failover settings
Probing interval ⓘ
30

* Tolerated number of failures ⓘ
3

* Probe timeout ⓘ
10
seconds

Chapter 05: The Azure Data Platform

Basics

* Name
DBserver ✓

VM disk type ⓘ
SSD ▾

* Username
mustafa ✓

* Password
..... ✓

* Confirm password
..... ✓

Subscription
Microsoft Azure Sponsorship ▾

* Resource group ⓘ
 Create new Use existing
PacktlaaS ▾

* Location
West Europe ▾

Choose a size

Browse the available sizes and their features

Compute type:
 Disk type:
 vCPUs:

RECOMM...	SKU	TYPE	COMPUT...	VCPUS	GB RAM	DATA DIS...	MAX IOPS	LOCAL SS...	PREMIU...	ADDITIO...	ZONES	EUR/MO...
Available	B2s	Standard	General purpc	2	4	4	3200	8 GB	SSD		1,2,3	€40.66
	B2ms	Standard	General purpc	2	8	4	4800	16 GB	SSD		1,2,3	€76.80
	B4ms	Standard	General purpc	4	16	8	7200	32 GB	SSD		1,2,3	€145.12
	B8ms	Standard	General purpc	8	32	16	10800	64 GB	SSD		1,2,3	€278.95
	D2s_v3	Standard	General purpc	2	8	4	3200	16 GB	SSD		1,2,3	€133.01
	D4s_v3	Standard	General purpc	4	16	8	6400	32 GB	SSD		1,2,3	€266.02
	D8s_v3	Standard	General purpc	8	32	16	12800	64 GB	SSD		1,2,3	€532.05
	D16s_v3	Standard	General purpc	16	64	32	25600	128 GB	SSD		1,2,3	€1,064.10
	D32s_v3	Standard	General purpc	32	128	32	51200	256 GB	SSD		1,2,3	€2,128.19

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Recommended sizes are determined by the publisher of the selected image based on hardware and software requirements.

Select

Settings ☐

High availability

Availability zone ⓘ

None ▾

* Availability set ⓘ >

None

Storage

Use managed disks ⓘ

No Yes

Network

* Virtual network ⓘ >

PacktVnet

* Subnet ⓘ >

default (10.1.0.0/24)

* Public IP address ⓘ >

(new) DBserver-ip

Network Security Group ⓘ

Basic Advanced


OK

SQL Server settings

SQL connectivity ⓘ
Private (within Virtual Network) ▾

* Port ⓘ
1433

SQL Authentication ⓘ
Disable Enable

Storage configuration ⓘ 
Not available

Automated patching ⓘ >
Sunday at 2:00

Automated backup ⓘ >
Disabled

Azure Key Vault integration ⓘ >
Disabled

R Services (Advanced analytics) ⓘ
Disable Enable

OK

Storage usage





- AVAILABLE
- OTHER
- SQL DATA
- SQL LOG

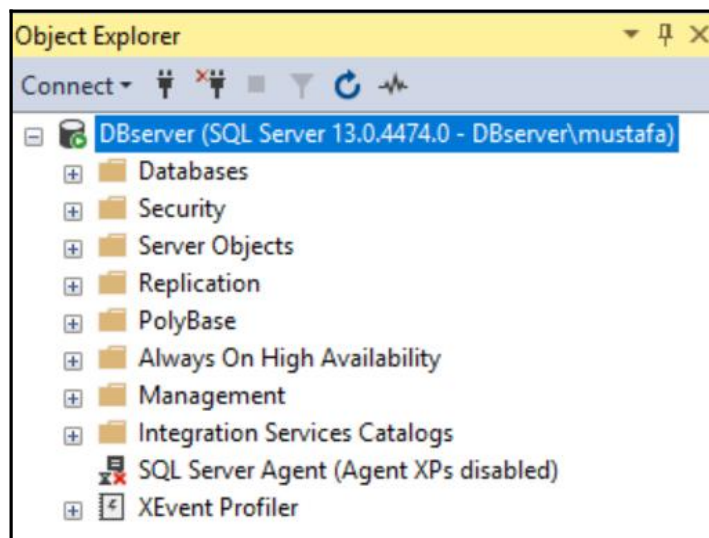
SQL DATA	SQL LOG	OTHER	AVAILABLE
— MiB	— MiB	— MiB	— MiB

SQL connectivity level



SQL connectivity	Private (within Virtual Network)
Port	1433
SQL Authentication	Disabled

Automated patching		 Edit
Automated patching	Enabled	
Maintenance schedule	Sunday	
Maintenance start hour (local time)	02:00	
Maintenance window duration (minutes)	60	
Automated backup		 Edit
Automated backup	Disabled	
Automated Backup is currently disabled due to a change in backup settings via SQL Server Managed Backup. When you enable automated backup, your managed backup settings will be overridden.		
Azure Key Vault integration		 Edit
Status	Disabled	
Additional features		 Edit
R Services (Advanced analytics)	Disabled	



SQL Database

* Database name
Demo ✓

* Subscription
Microsoft Azure Sponsorship ▾

* Resource group ⓘ
 Create new Use existing
PacktPaaSDB ✓

* Select source ⓘ
Sample (AdventureWorksLT) ▾

* Server
packt (West Europe) >

Want to use SQL elastic pool? ⓘ
 Yes Not now

* Pricing tier ⓘ
Standard S0: 10 DTUs, 250 GB >

* Collation ⓘ
SQL_Latin1_General_CP1_CI_AS

Create Automation options

Configure

Feedback

Basic
For less demanding workloads

Starting at 4.21 EUR / month

Standard
For most production workloads

Starting at 12.65 EUR / month

Premium
For IO-intensive workloads.

Starting at 392.13 EUR / month


[vCore-based purchasing options](#)
Click here to customize your performance using vCores

DTUs [What is a DTU?](#)

10 (S0)

Max data size

250 GB



Cost Summary

Cost per DTU (in EUR)	1.27
DTUs selected	x 10
EST. COST PER MONTH	12.65 EUR

Looking for basic, standard, premium?

General Purpose
Scalable compute and storage options

Up to 7,000 IOPS
5-10 ms latency
Starting at 168.52 EUR / month

Business Critical
High transaction rate and high resiliency

Up to 200,000 IOPS
1-2 ms latency
Starting at 447.02 EUR / month

Compute Generation

Gen4

up to 24 vCores
up to 168 GB memory
167.77 / vCore

Gen5

up to 80 vCores
up to 408 GB memory
167.77 / vCore

Save money


Save up to 55% with a license you already own. Already have a SQL Server license?

Yes No

vCores [How do vCores compare with DTUs?](#)

2 vCores

Max data size



Cost Summary

Gen5 - General Purpose (GP_Gen5_2)	
Cost per vCore (in EUR)	167.77
vCores selected	x 2
Cost per GB (in EUR)	0.12
Max storage selected (in GB)	x 41.6
EST. COST PER MONTH	340.35 EUR

NAME	TYPE	LOCATION
 packt	SQL server	West Europe
 Demo (packt/Demo)	SQL database	West Europe

Firewall settings
packt (SQL server)

Save Discard Add client IP

Connections from the IPs specified below provides access to all the databases in packt.

Allow access to Azure services
 ON OFF

Client IP address 178.77.1.85

RULE NAME	START IP	END IP	
<input type="text"/>	<input type="text"/>	<input type="text"/>	...
ClientIPAddress_2018-8-11_...	178.77.1.85	178.77.1.85	...

Connections from the VNET/Subnet specified below provides access to all databases in packt.

Virtual networks [+ Add existing virtual network](#) [+ Create new virtual network](#)

RULE NA...	VIRTUAL ...	SUBNET	ADDRES...	ENDPOI...	RESOURC...	SUBSCRIPT...	ST...
No vnet rules for this server.							

- [-] DBserver (SQL Server 13.0.4474.0 - DBserver\mustafa)
 - + Databases
 - + Security
 - + Server Objects
 - + Replication
 - + PolyBase
 - + Always On High Availability
 - + Management
 - + Integration Services Catalogs
 - + SQL Server Agent (Agent XPs disabled)
 - + XEvent Profiler
- [-] packt.database.windows.net (SQL Server 12.0.2000.8 -)
 - + Databases
 - + Security

[Login](#)
[Edit Data \(Preview\)](#)
[+ New Query](#)
[Open query](#)
[Save query](#)
[Feedback](#)

Demo (mustafa) ↻

Showing limited object explorer here. For full capability please open SSDT.

- ▶ **Tables**
- ▶ Views
- ▶ Stored Procedures

Query 1 ×

▶ Run ■ Cancel query

```
1 select * from SalesLT.Address
```

Results Messages

Search to filter items...

ADDRESSID	ADDRESSLINE1	ADDRESSLINE2
9	8713 Yosemite Ct.	
11	1318 Lasalle Street	

Basic
For less demanding workloads

Starting at 4.21 EUR / month

Standard
For most production workloads

Starting at 12.65 EUR / month

Premium
For IO-intensive workloads.

Starting at 392.13 EUR / month

[vCore-based purchasing options](#)
Click here to customize your performance using vCores >

DTUs [What is a DTU?](#)

10 (S0)

Max data size

250 GB

Database utilization


DTU PERCENTAGE (M... DEMO) **2.29%**

DATABASE SIZE PER... DEMO **0%**




Create secondary


Create geo-replicated secondaries to protect against prolonged datacenter outages. Secondaries have price implications. [Learn more](#)

Region
West US 

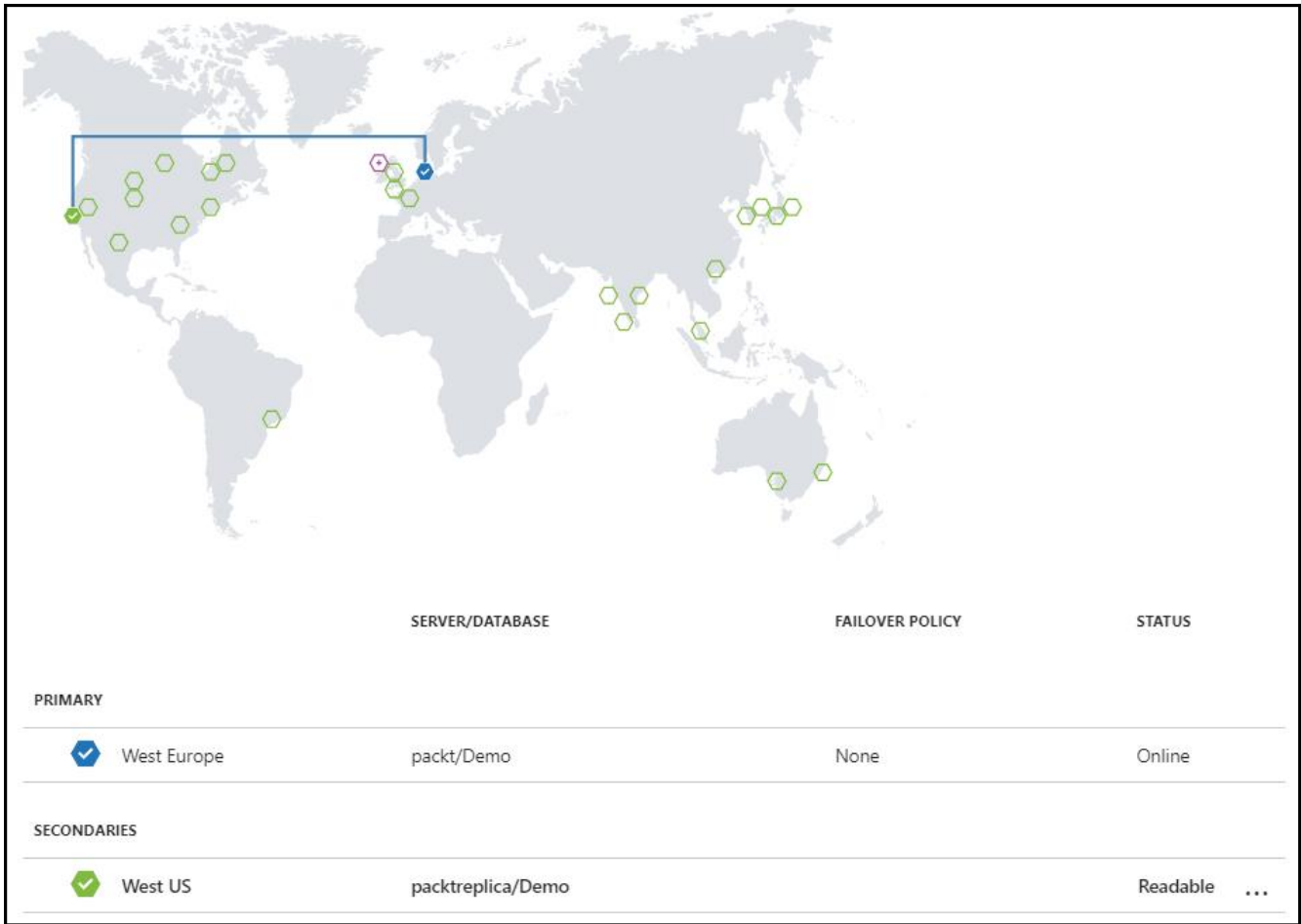
Database name
Demo

* Secondary type 
Readable

* Target server >
packtreplica (West US)


Elastic database pool 
None

* Pricing tier >
Standard S0: 10 DTUs, 250 GB



Failover group

Create a failover group to automatically failover databases in it.

Primary server
packt (westeurope) 

* Secondary server
packtreplica (West US) >

* Failover group name
packtdb ✓
.database.windows.net

Read/Write failover policy
Automatic ▾

Read/Write grace period (hours)
1 hours ▾

Summary

Number of new standalone databases	1
Number of new elastic pools	0

Monthly cost **EUR 0.00**

Create

Data Discovery & Classification (preview)

0
TOTAL

Recommended columns to classify (showing 3 of 15)

COLUMN	SENSITIVITY LABEL
UserName	Confidential
AddressLine1	Confidential - GDPR
AddressLine2	Confidential - GDPR

Vulnerability Assessment

3
TOTAL

- HIGH RISK FAILURES
- MEDIUM RISK FAILURES
- LOW RISK FAILURES

Failed Checks

SECURITY CHECK	RISK
❗ Server-level firewall rules should be tracked and mainta...	High
⚠ 'dbo' user should not be used for normal service opera...	Medium
⚠ Sensitive data columns should be classified	Medium

Threat Detection

0
TOTAL

- HIGH SEVERITY ALERTS
- MEDIUM SEVERITY ALERTS

Security Alerts

DESCRIPTION	DATE
There are no alerts or recommendations to display.	

Audit source ⓘ

Server audit
Database audit

Show only audit records for SQL injections

Showing audit records up to Sat, 11 Aug 2018 10:13:27 UTC.

[Run in Query Editor](#) ⓘ

EVENT TIME (UTC)	PRINCIPAL NAME	EVENT TYPE	ACTION STATUS
8/11/2018 10:08:15 AM	sa	AUDIT SESSION CHANGED	Succeeded

```

SELECT TOP (1000) [CustomerID]
, [NameStyle]
, [Title]
, [FirstName]
, [MiddleName]
, [LastName]
, [Suffix]
, [CompanyName]
, [SalesPerson]
, [EmailAddress]
, [Phone]
, [PasswordHash]
, [PasswordSalt]
, [rowguid]

```

anyName	SalesPerson	EmailAddress	Phone	PasswordHash
Adventure Works	adventure-works\pamela0	orlando0@adventure-works.com	245-555-0173	L/Rlwzpz4w7RWmEgXX+/A7cXae
Adventure Sports	adventure-works\david8	keith0@adventure-works.com	170-555-0127	YPdtRdvqeAhj6wyxEsFdshBDNXkk
Adventure Bike Components	adventure-works\jillian0	donna0@adventure-works.com	279-555-0130	LNoK27abGQo48gGue3EBV/UHYS
Adventure Cycle Systems	adventure-works\jillian0	janet1@adventure-works.com	710-555-0173	ElzTpSNbUW1Ut+L5cWfR7MF6nB
Adventure Metropolitan Sports Supply	adventure-works\shu0	lucy0@adventure-works.com	828-555-0186	KJqV15wsX3PG8TS5GSddp6LFFV
Adventure Pic Exercise Company	adventure-works\linda3	rosmarie0@adventure-works.com	244-555-0112	OKT0scizCdIzymHH0tyJKQiCfCILS
Adventure Specialized Bikes	adventure-works\shu0	dominic0@adventure-works.com	192-555-0173	ZccoP/jZGQm+Xpzc7RKwDhS11Y
Adventure Cycle Emporium	adventure-works\josé1	kathleen0@adventure-works.com	150-555-0127	Qa3aMCxNbVLGrc0b99KsbQqiVgw

Save
Discard
+ Add mask
Feedback

Masking rules

MASK NAME	MASK FUNCTION
You haven't created any masking rules.	

SQL users excluded from masking (administrators are always excluded) ⓘ




SQL users excluded from masking (administrators are always excluded) ✓

Recommended fields to mask

SCHEMA	TABLE	COLUMN	
SalesLT	Address	AddressID	ADD MASK
SalesLT	Address	AddressLine1	ADD MASK
SalesLT	Address	AddressLine2	ADD MASK
SalesLT	Customer	FirstName	ADD MASK
SalesLT	Customer	LastName	ADD MASK

[Load more](#)

Add masking rule

 Add  Discard  Delete

Mask name

Select what to mask



Schema

Table

Column

Select how to mask

Masking field format

Exposed Prefix	Padding String	Exposed Suffix
<input type="text" value="0"/> 	<input type="text" value="xxx"/>	<input type="text" value="0"/> 

```

SELECT TOP (1000) [CustomerID]
  , [NameStyle]
  , [Title]
  , [FirstName]
  , [MiddleName]
  , [LastName]
  , [Suffix]
  , [CompanyName]
  , [SalesPerson]
  , [EmailAddress]
  , [Phone]
  , [PasswordHash]
  , [PasswordSalt]
  , [rowguid]

```

CustomerID	NameStyle	Title	FirstName	MiddleName	LastName	Suffix	CompanyName	SalesPerson	EmailAddress	Phone	PasswordHash
1			Orlando				Adventure-Works	adventure-works\pamela0	orlando0@adventure-works.com	xxx	L/Rlwzpz4w7RWmEgXX+/A7cXaePEPcp+KwQhI2fJL7w
2			David				Adventure-Works	adventure-works\david8	keith0@adventure-works.com	xxx	YPdtRdvqeAhj6wyxEsFdshBDNXdkCXn+CRgbvJltknw=
3			Donna				Adventure-Works	adventure-works\jillian0	donna0@adventure-works.com	xxx	LNoK27abGQo48gGue3EBV/UfYSToV0/s87dCRV7uJk=
4			Janet				Adventure-Works	adventure-works\jillian0	janet1@adventure-works.com	xxx	ElzTpSNbUW1Ut+L5cWfR7MF6nBZia8WpmGaQPjLOJ
5			Lucy				Adventure-Works	adventure-works\shu0	lucy0@adventure-works.com	xxx	KJqV15wsX3PG8TS5GSddp6LFFVdd3CoRftZMAP0+R4+
6			Rosmarie				Adventure-Works	adventure-works\linda3	rosmarie0@adventure-works.com	xxx	OKT0scizCdlzymHH0tyJKQiCfCILSooSZ8dQ2Y34VM=
7			Dominic				Adventure-Works	adventure-works\shu0	dominic0@adventure-works.com	xxx	ZccoP/jZGQm+Xpzc7RKwDhS11YFNybwcPVRYSNcn
8			Kathleen				Adventure-Works	adventure-works\josé1	kathleen0@adventure-works.com	xxx	Qa3aMCxNbVLGrc0b99KsbQqjVgwYDfHcsK9GZSUxcT

Encrypts your databases, backups, and logs at rest without any changes to your application. To enable TDE, go to each database.

[Learn more](#)

Data encryption

ON

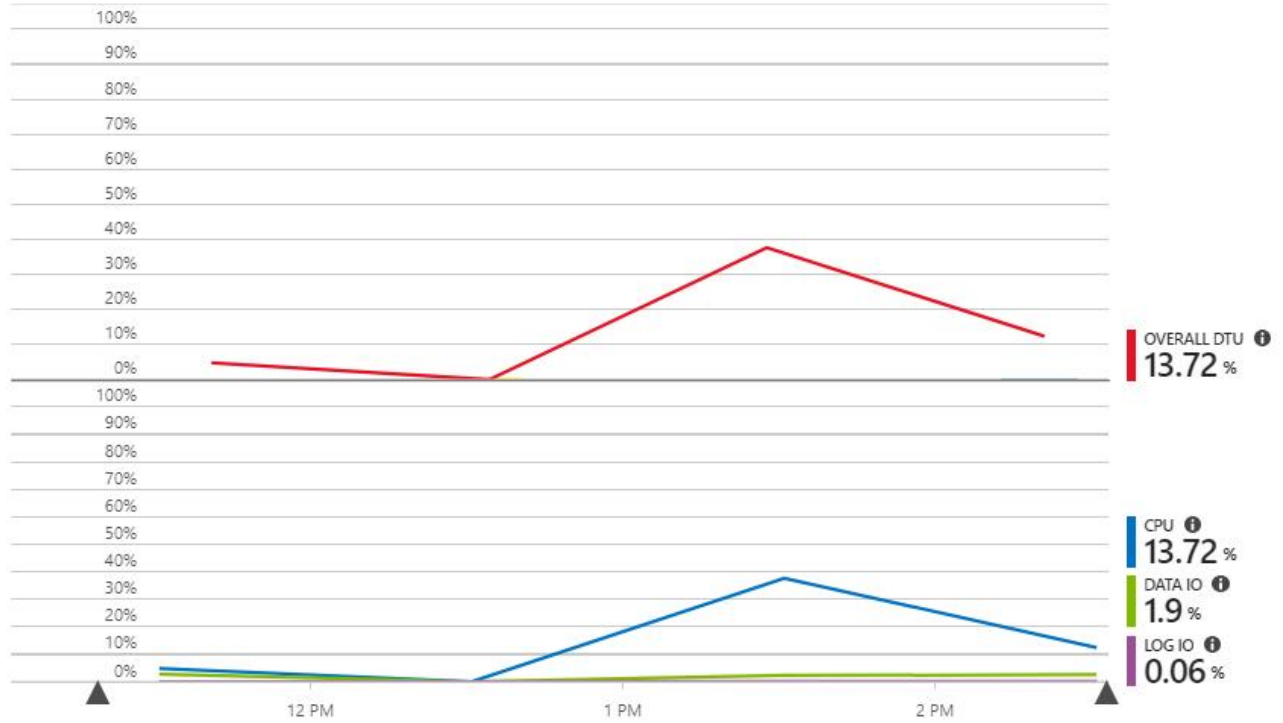
OFF

Encryption status

✔ Encrypted

Database queries

TOP 5 queries by CPU consumption (Aggregation type: sum) 8/11/2018: 12:01 PM - 2:16 PM



Recommendations

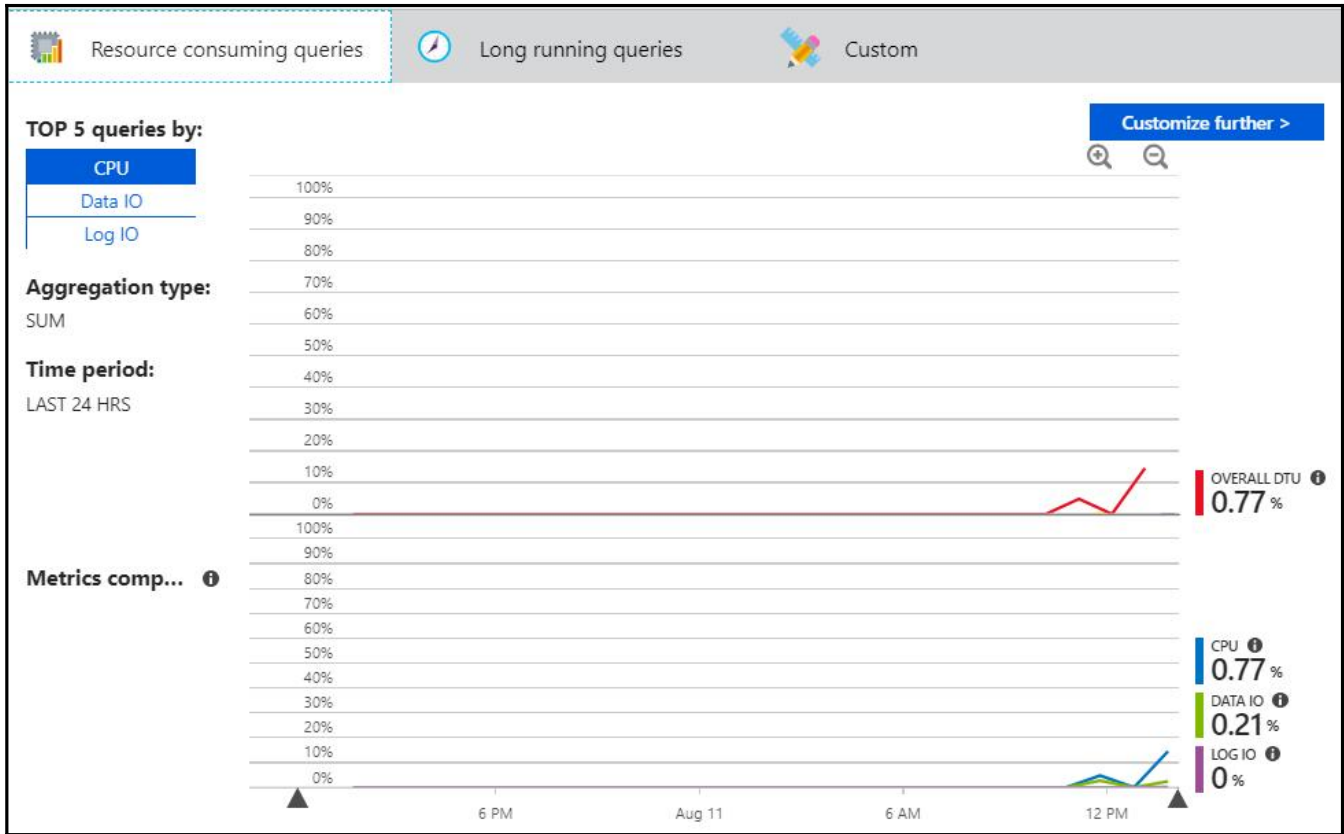
ACTION	RECOMMENDATION DESCRIPTION	IMPACT
--------	----------------------------	--------

We analyzed your database and found that your database was created recently. At this time, we don't have any recommendations.

Tuning history

ACTION	RECOMMENDATION DESCRIPTION	STATUS	TIME
--------	----------------------------	--------	------

There are currently no operations to display. Once you apply a recommendation, its status will be displayed here.
































Inherit from: **Server** | Azure defaults | Don't inherit

i The database is inheriting automatic tuning configuration from the server. You can set the configuration to be inherited by going to: [Server tuning settings](#)

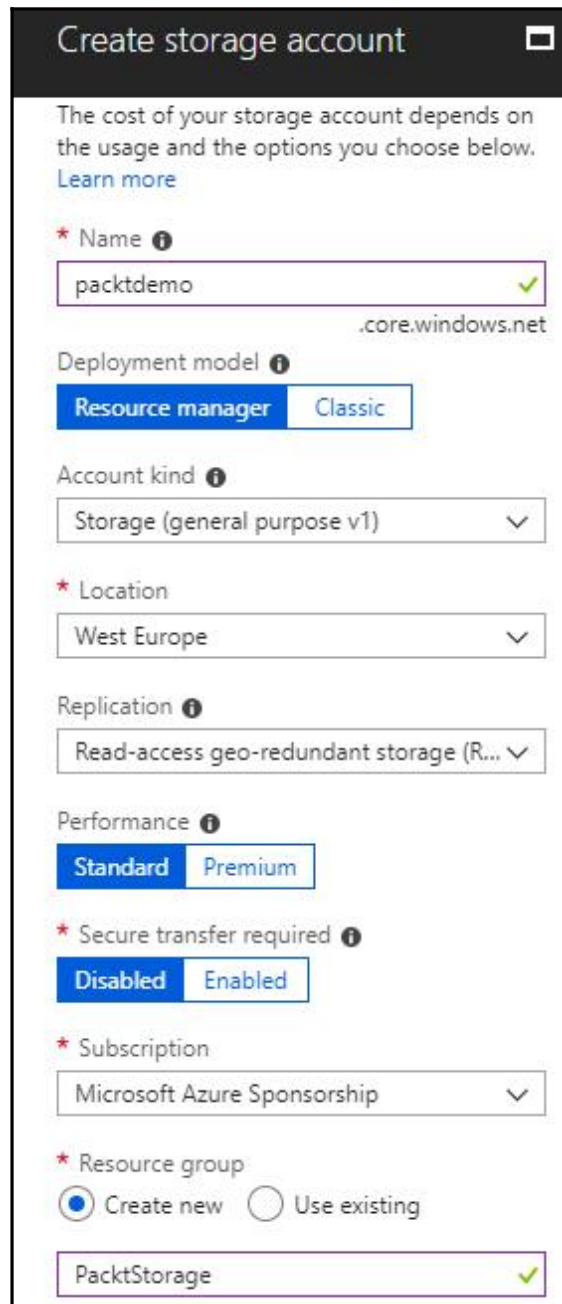
w The database is inheriting settings from the server, but the server is in the unspecified state. Please specify the automatic tuning state on the server.

Configure the automatic tuning options **i**

OPTION	DESIRED STATE	CURRENT STATE
FORCE PLAN	<input type="button" value="ON"/> <input type="button" value="OFF"/> <input checked="" type="button" value="INHERIT"/>	OFF Inherited from server
CREATE INDEX	<input type="button" value="ON"/> <input type="button" value="OFF"/> <input checked="" type="button" value="INHERIT"/>	OFF Inherited from server
DROP INDEX	<input type="button" value="ON"/> <input type="button" value="OFF"/> <input checked="" type="button" value="INHERIT"/>	OFF Inherited from server

DATABASES (15)					
 Azure Cosmos DB	★	 SQL databases	★	 Azure Database for MySQL servers	★
 Azure Database for PostgreSQL servers	★	 SQL servers	★	 SQL data warehouses	★
 Azure Database Migration Services	★	 Redis Caches	★	 SQL Server stretch databases	★
 Data factories	★	 SQL elastic pools	★	 Virtual clusters	★
 Managed databases	★	 Elastic Job agents	PREVIEW ★	 SQL managed instances	★
ANALYTICS (14)					
 SQL data warehouses	★	 Azure Databricks	★	 HDInsight clusters	★
 Data factories	★	 Power BI Embedded	★	 Power BI Workspace Collection	★
 Stream Analytics jobs	★	 Data Lake Analytics	★	 Analysis Services	★
 Event Hubs	★	 Event Hubs Clusters	PREVIEW ★	 Log Analytics	★
 Data Lake Storage Gen1	★	 Customer Insights	★		

Chapter 06: Azure Storage, Backup, and Site Recovery - Moving your Data to Azure



Create storage account

The cost of your storage account depends on the usage and the options you choose below. [Learn more](#)

* Name **i**
packtdemo ✓
core.windows.net

Deployment model **i**
Resource manager Classic

Account kind **i**
Storage (general purpose v1) ▾

* Location
West Europe ▾

Replication **i**
Read-access geo-redundant storage (R... ▾

Performance **i**
Standard Premium

* Secure transfer required **i**
Disabled Enabled

* Subscription
Microsoft Azure Sponsorship ▾

* Resource group
 Create new Use existing
PacktStorage ✓

Account kind ⓘ

Storage (general purpose v1) ^

Storage (general purpose v1)

StorageV2 (general purpose v2)

Blob storage

Replication ⓘ

Read-access geo-redundant storage (R... ^

Locally-redundant storage (LRS)

Geo-redundant storage (GRS)

Read-access geo-redundant storage (RA-GRS)

Virtual networks

Configure virtual networks ⓘ

Disabled Enabled

* Virtual network ⓘ

Filter virtual networks v

[Create a new virtual network](#)

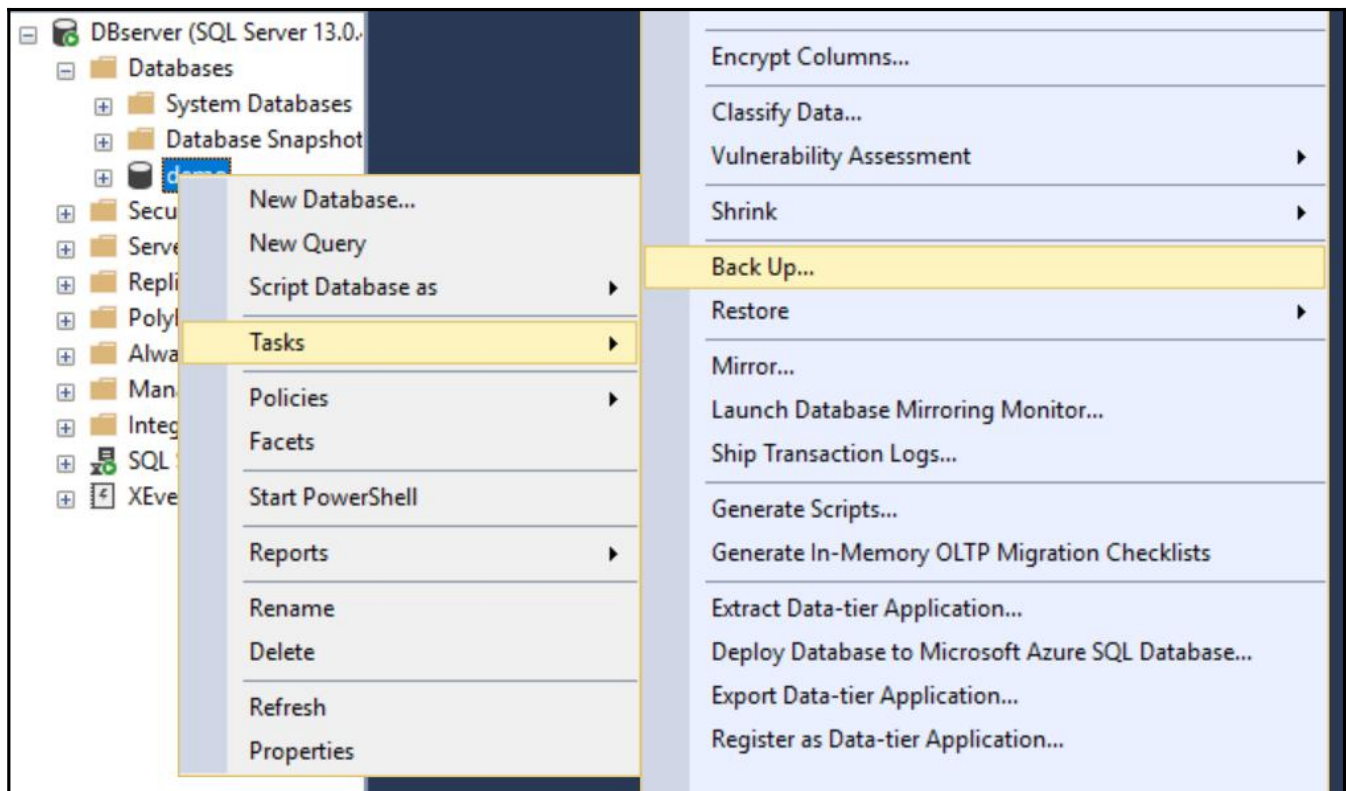
* Subnets ⓘ

0 selected v

Data Lake Storage Gen2 (preview)

Hierarchical namespace ⓘ

Disabled Enabled



Source

Database: demo

Recovery model: FULL

Backup type: Full

Copy-only backup

Backup component:

Database

Files and filegroups: []

Destination

Back up to: URL

[]

Add

Remove

Contents

Select Storage Account: packtdemo

Select Blob Container: backup

Shared Access Policy Expiration: Sunday, August 25, 2019

Shared Access Signature Generated:
 sv=2014-02-14&sr=c&sig=g44AGky0cDdVvYXccOchpYzT6IKDZVxUDCPfBqfFu5%2Fg%3D&se=2019-08-25T00%3A00%3A00Z&sp=rwrl

[Create Credential](#)

OK Cancel

backup Container

Search (Ctrl+/)

Upload Refresh Delete Acquire lease Break lease View snapshots Create snapshot

Location: backup

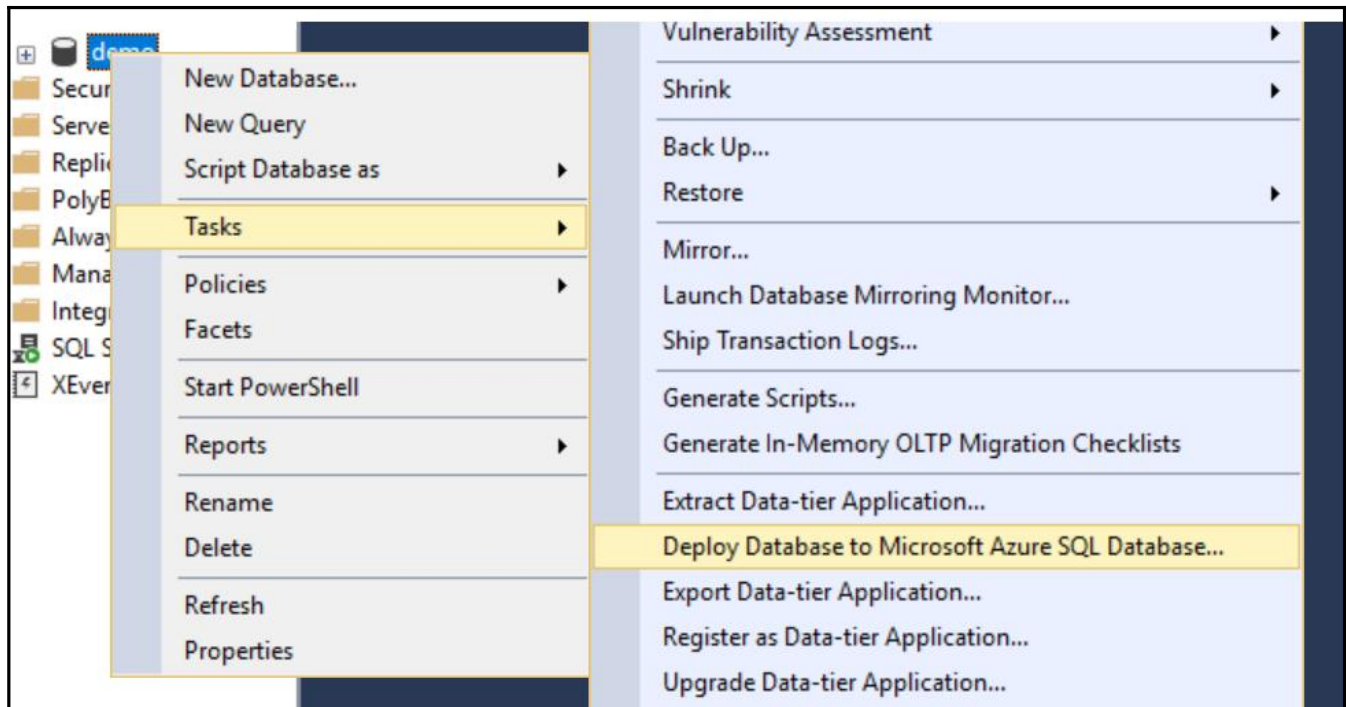
Search blobs by prefix (case-sensitive) Show deleted blobs

NAME	MODIFIED	BLOB TYPE	SIZE	LEASE STATE
demo_backup_2018_08_25_103423.bak	8/25/2018, 12:38:27 PM	Block blob	2.94 MiB	Available ...

Overview Access Control (IAM)

SETTINGS

Access policy Properties Metadata



Specify Target Connection

Specify the name of the instance of SQL Server or the Microsoft Azure SQL Database server that will host the deployed database, name the new database, and then click Connect to login to the target server.

Server connection:

New database name:

Microsoft Azure SQL Database settings

Edition of Microsoft Azure SQL Database:

Maximum database size (GB):

Service Objective:

Other settings

Temporary file name:

Connect to Server

SQL Server

Server type: Database Engine

Server name: packtmigration.database.windows.net

Authentication: SQL Server Authentication

Login: mustafa

Password: *****

Remember password

Connect Cancel Help Options >>

Specify Target Connection

Specify the name of the instance of SQL Server or the Microsoft Azure SQL Database server that will host the deployed database, name the new database, and then click Connect to login to the target server.

Server connection:

New database name:

Microsoft Azure SQL Database settings

Edition of Microsoft Azure SQL Database:

Maximum database size (GB):

Service Objective :

Other settings

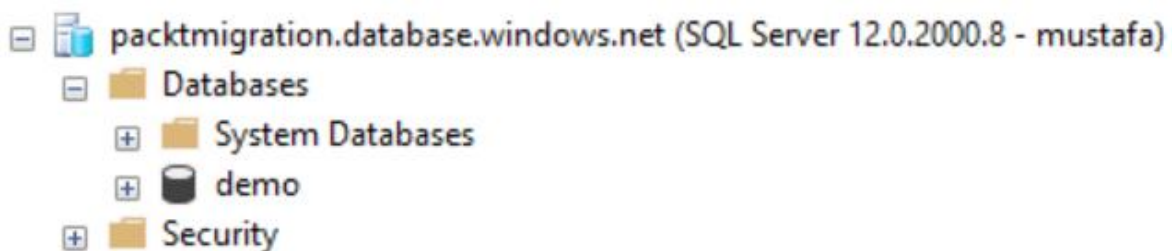
Temporary file name:



Operation Complete

Summary:

Name	Result
Exporting data from database	Success
Exporting data	Success
Processing Export.	Success
Processing Table '[dbo].[Users]'.	Success
Importing database	Success
Creating deployment plan	Success
Initializing deployment	Success
Verifying deployment plan	Success
Analyzing deployment plan	Success
Importing package schema and data into database	Success
Updating database	Success
Importing data	Success
Processing Import.	Success
Disabling indexes.	Success
Processing Table '[dbo].[Users]'.	Success
Enabling indexes.	Success
Refreshing Object Explorer	Success



New ✕

Project type

Assessment

Migration

Project name

Source server type

SQL Server
▼

Target server type

Azure SQL Database
▼

[Create](#)

← demo1

1 Options
2 Select sources
3 Review results

Select report type

- Check database compatibility**
Discover migration blocking issues and deprecated features by analyzing databases you choose in your source server to be migrated to SQL Database.
- Check feature parity**
Discover unsupported or partially-supported features and functions that your applications may rely on. Get guidance around these areas that may need some re-engineering.
- Benefit from new features (coming soon...)**
Discover new SQL Database features that are applicable to the databases in your source once migrated to SQL database platform.

← demo1

1 Options ✓ 2 **Select sources** 3 Review results

+ Add sources -x Remove sources

Name	Compatibilit
▼ dbsrv (SQL Server 2008 R2) (1)	
demo	100

Target Platform

Azure SQL Database

dbsrv / SQL Server 2008 R2

Feature parity (3)

Recommendation	Databases	Windows authentication not supported in Azure SQL Database
▼ Unsupported features (3)		
Windows authentication not supporte...	N/A	<p>Details</p> <p>Impact</p> <p>This server is in Windows authentication mode, and Windows authentication is not supported in SQL Azure.</p> <p>Recommendation</p> <p>Due to Azure SQL Database's cloud architecture, any Windows authentication used in a source database should be handled using SQL Azure.</p> <p>Azure SQL Database supports Azure Active Directory or SQL Azure authentication.</p> <p>If considering using Azure Active Directory, make sure Azure Active Directory is well configured, or else use SQL Azure authentication.</p> <p>More info</p> <p>SQL Database Authentication and Authorization: Granting Access</p>
Azure SQL Database doesn't support...	N/A	
SQL Server Reporting Services is not s...	N/A	
▶ Partially-supported features (0)		

Target Platform

Azure SQL Database

demo / SQL Server 2008 R2 Compat 100 Size 3.00 MB

Compatibility 140 (0)	Compatibility 130 (0)	Compatibility 120 (0)	Compatibility 110 (0)	Compatibility 100 (0)
------------------------------	-----------------------	-----------------------	-----------------------	-----------------------

• -) There are no compatibility issues with your database.

Recovery Services vault

Recovery Services vault

* Name
PacktDemo ✓

* Subscription
Microsoft Azure Sponsorship ▼

* Resource group
 Create new Use existing
PacktRecovery ✓

* Location
West Europe ▼

Where is your workload running?
Azure ▼

What do you want to backup?
Virtual machine ▲

- Virtual machine
- Azure FileShare (Preview)
- SQL Server in Azure VM (Preview)

Backup

Backup
×
Select virtual machines
☐

1 Backup policy
DefaultPolicy ✔

2 Items to backup
Select >

Enable backup

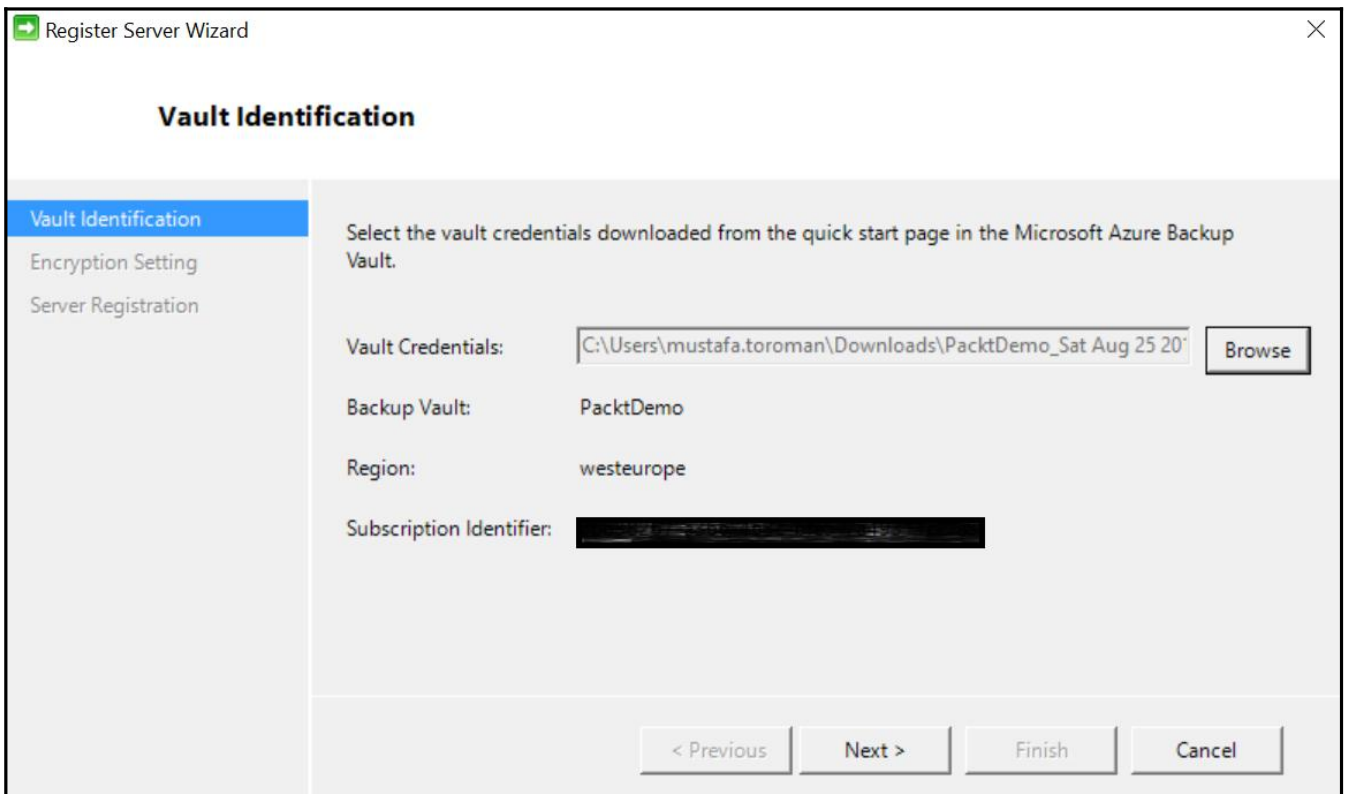
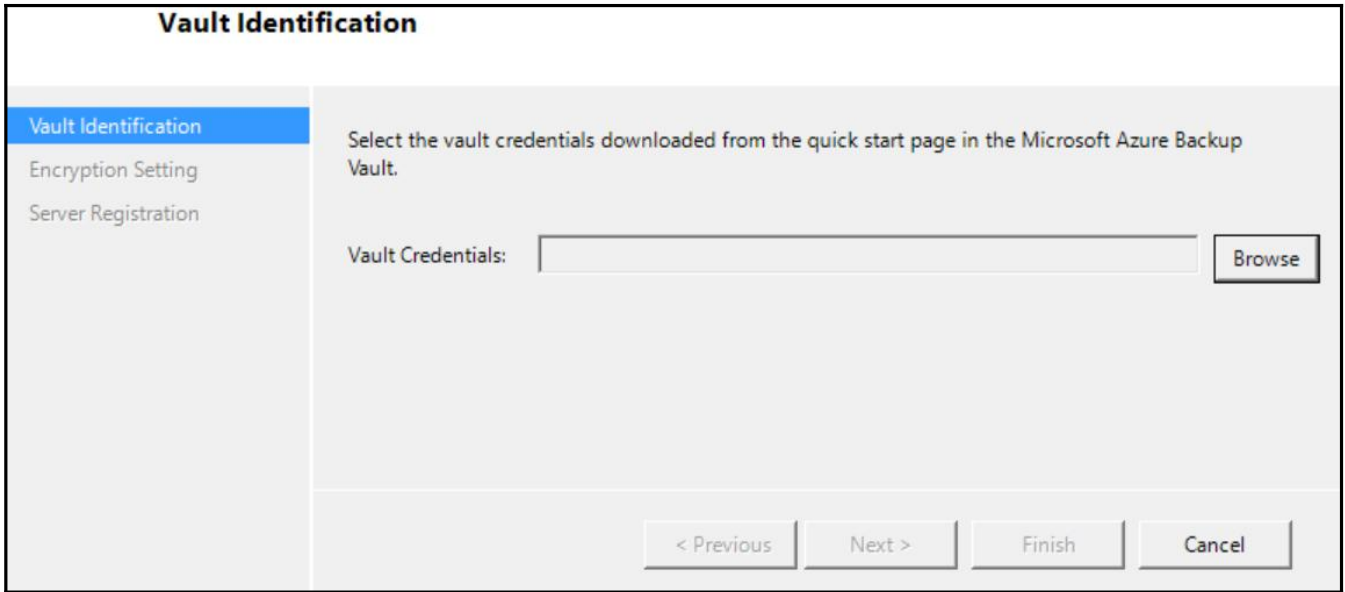
Filter items ...

	VIRTUAL MACHINE NAME	RESOURCE GROUP
<input type="checkbox"/>	Nagios	Nagios
<input checked="" type="checkbox"/>	DBserver	PacktIaaS
<input checked="" type="checkbox"/>	WebSrv1	PacktIaaS
<input checked="" type="checkbox"/>	WebSrv2	PacktIaaS
<input type="checkbox"/>	DBSRV	PacktMigration
<input type="checkbox"/>	RvsB1	RedVSBlue
<input type="checkbox"/>	RvsB2	RedVSBlue
<input type="checkbox"/>	RvsB3	RedVSBlue

Selected virtual machines
3

OK

WORKLOAD NAME	OPERATION	STATUS	TYPE	START TIME	DURATION	
websrv1	Configure backup	✔ Completed	Azure virtual machine	8/25/2018, 1:36:46 PM	00:02:12	...
dbserver	Configure backup	✔ Completed	Azure virtual machine	8/25/2018, 1:36:46 PM	00:02:23	...
websrv2	Configure backup	✔ Completed	Azure virtual machine	8/25/2018, 1:36:45 PM	00:00:41	...



Encryption Setting

Vault Identification

Encryption Setting

Server Registration

Backups are encrypted to protect the confidentiality of your data.

Generate or type a passphrase to encrypt and decrypt backups from this server.

Enter Passphrase (minimum of 16 characters)

***** (36)

Generate Passphrase

Confirm Passphrase

***** (36)

Enter a location to save the passphrase

C:\Users\mustafa.toroman\Desktop

Browse



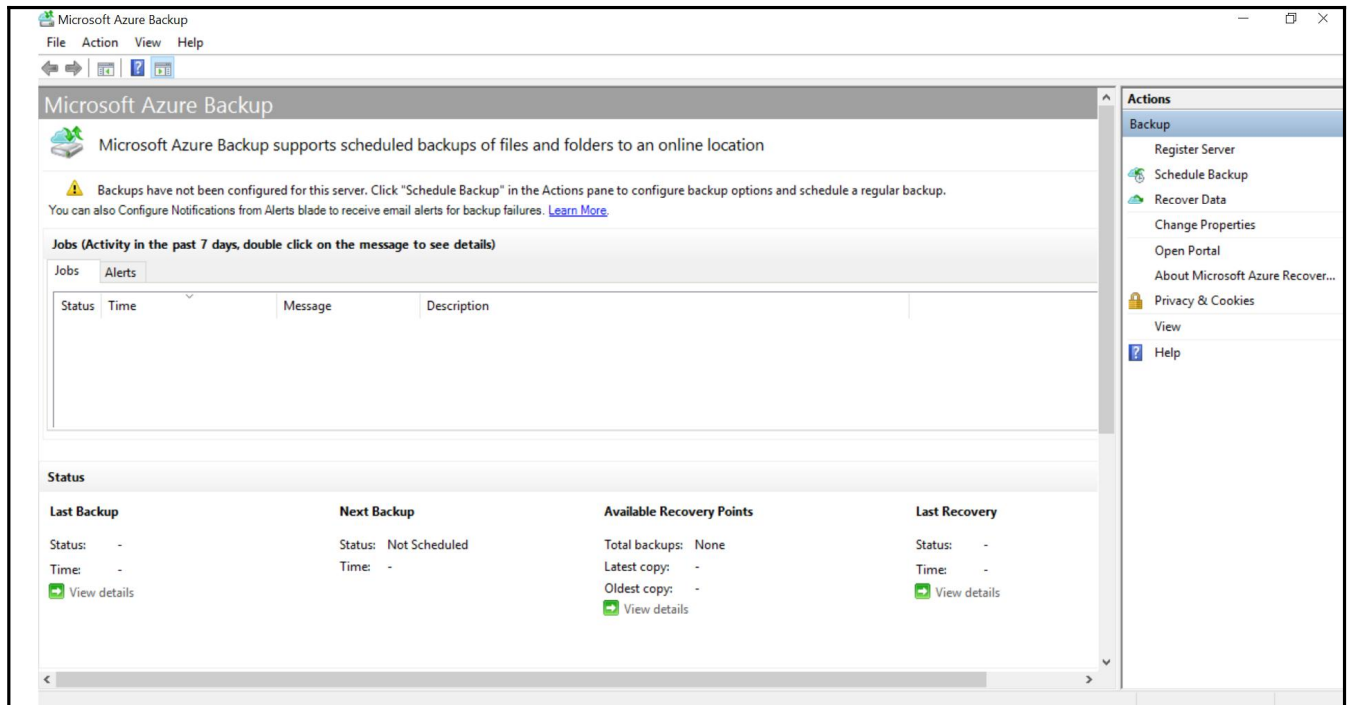
If your passphrase is lost or forgotten, the data cannot be recovered. Microsoft Online Services does not save or manage this passphrase. It is strongly recommended you save your passphrase to an external location like a USB drive or network drive.

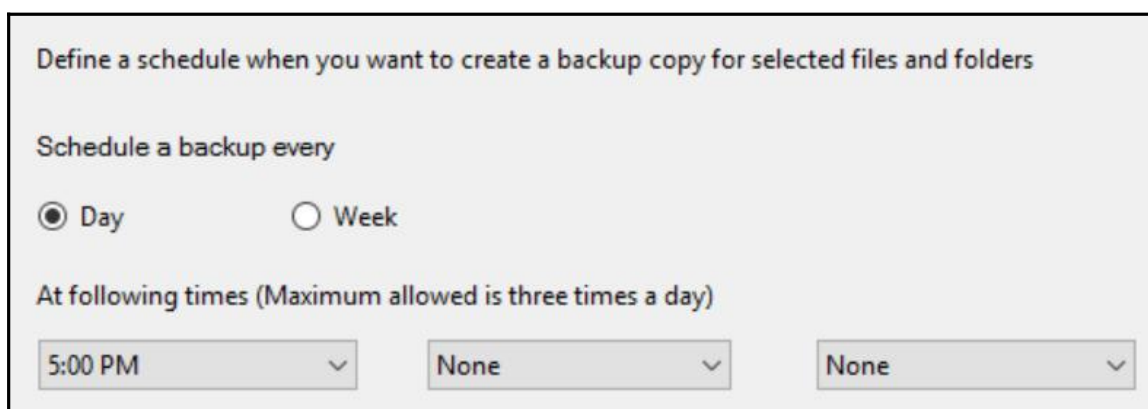
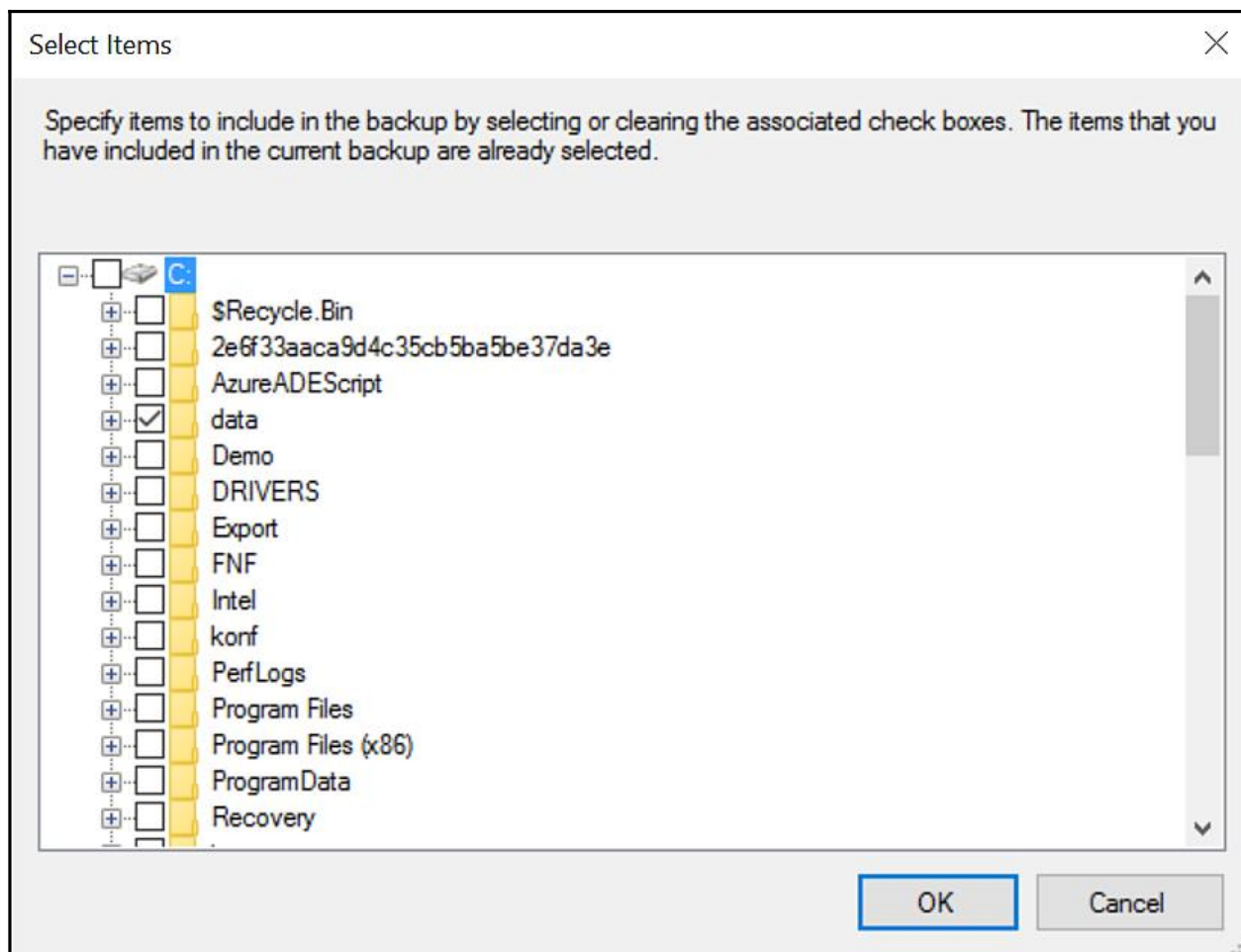
< Previous

Next >

Finish

Cancel





Specify the retention policy for the backup copy of files and folders

Daily Retention Policy

Retain backup copies taken

At 5:00 PM for 180 Days

Weekly Retention Policy

Retain backup copies taken on

Saturday

Modify

At 5:00 PM for 104 Weeks

Monthly Retention Policy

Retain backup copies taken on

Saturday of Last Week

Modify

At 5:00 PM for 60 Months

On day(s) 1

Modify

Yearly Retention Policy

Retain backup copies taken on

Saturday of Last Week of March

Modify

At 5:00 PM for 10 Years

March 1

Modify

Specify the option to be used by Azure Backup to create initial backup copy.

Automatically over the network

Offline Backup

To create an offline backup, please read the instructions for the Import workflow [here](#).

Staging Location

Enter local folder or network share to which the initial backup copy needs to be staged

Browse

Azure Resource Manager Storage Account

Enter an existing Azure Resource Manager Storage Account

Azure Storage Container

Enter an existing destination blob storage container to which the files will be imported

Azure Subscription ID

Enter Azure Subscription ID associated with the Azure Resource Manager Storage Account

Azure Import Job Name

Define a name for the Azure Import Job which would be used as a reference to ship the initial copy of disk

Prepare infrastructure

PacktDemo

These are long running tasks done on-premises.

- 1** Protection goal
Select
- 2** Deployment planning
Select
- 3** Source
Prepare
- 4** Target
Prepare

Protection goal

PacktDemo

- * Where are your machines located?
On-premises
- * Where do you want to replicate your machines to?
To Azure
- * Are your machines virtualized?
Yes, with Hyper-V
- * Are you using System Center VMM to manage your Hyper-V hosts?
No

Prepare infrastructure

PacktDemo

These are long running tasks done on-premises.

- 1 Protection goal
Hyper-V VMs to Azure ✓
- 2 Deployment planning
Select >
- 3 Source
Prepare >
- 4 Target
Prepare >

Deployment planning

PacktDemo

Site Recovery performs optimally when sufficient network bandwidth and storage are provisioned. Allocating insufficient capacity can lead to replication issues.

[Download](#) and run the deployment planner to accurately estimate network bandwidth, storage and other requirements to meet your replication needs. [Learn more](#)

* Have you completed deployment planning?

Prepare infrastructure

PacktDemo

These are long running tasks done on-premises.


- 1** Protection goal
Hyper-V VMs to Azure ✓
- 2** Deployment planning
I have done it ✓
- 3** Source Prepare >
- 4** Target Prepare >

Prepare source

PacktDemo

+ Hyper-V Site + Hyper-V Server

→ **Step 1: Select Hyper-V site**

 (0 sites found) Click on +Hyper-V Site in the command bar above to add a site.

Step 2: Ensure Hyper-V servers are added

Complete previous step(s).

Prepare infrastructure

PacktDemo

These are long running tasks done on-premises.

- 1 Protection goal
Hyper-V VMs to Azure ✓
- 2 Deployment planning
I have done it ✓
- 3 Source Prepare >
- 4 Target Prepare >
- 5 Replication settings Prepare >

Prepare source

PacktDemo

+ Hyper-V Site + Hyper-V Server

✓ **Step 1: Select Hyper-V site**

* Hyper-V Site

mysite

✓ **Step 2: Ensure Hyper-V servers are added**

WIN-PSSHNDT5VEQ

Prepare infrastructure

PacktDemo

These are long running tasks done on-premises.

- 1 Protection goal
Hyper-V VMs to Azure ✓
- 2 Deployment planning
I have done it ✓
- 3 Source
mysite ✓
- 4 Target
Prepare >
- 5 Replication settings
Prepare >

OK

Target

PacktDemo

+ Storage account + Network

✓ **Step 1: Select Azure subscription**

* Subscription ⓘ

Microsoft Azure Sponsorship ▾

* Select the deployment model used after failover ⓘ

Resource Manager ▾

✓ **Step 2: Ensure that at least one compatible Azure storage account exist**

Storage account(s) ⓘ

Found 5 (Standard) compatible Azure storage accounts out of 6 available in the subscription.

✓ **Step 3: Ensure that at least one compatible Azure virtual network exist**

OK

Prepare infrastructure

These are long running tasks done on-premises.

- 1 Protection goal
Hyper-V VMs to Azure ✓
- 2 Deployment planning
I have done it ✓
- 3 Source
mysite ✓
- 4 Target
Azure ✓
- 5 Replication settings
Prepare >

OK

Replication policy

+ Create and Associate Associate Dissociate

→ Step 1: Ensure 'mysite' is associated to at least one replication policy

No replication policies exist. Click '+ Create and Associate' button on top to create a replication policy and associate 'mysite' to it.

OK

Create and associate policy

* Name i
 ✓

Source type i

Target type i

Copy frequency i

* Recovery point retention in hours i

* App-consistent snapshot frequency in hours i

Initial replication start time i

Associated Hyper-V site i

OK

Enable replication

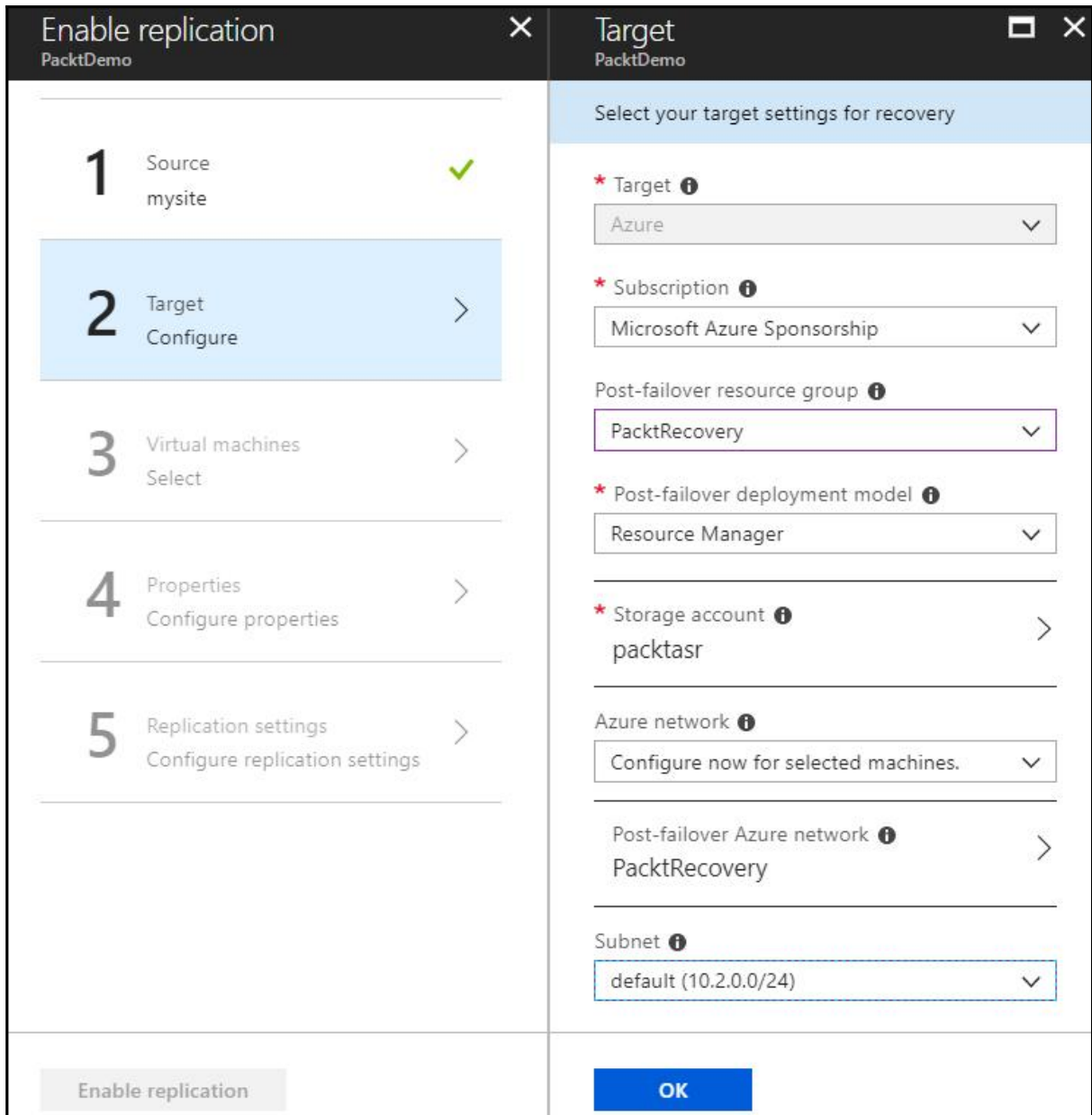
- 1 Source
Configure >
- 2 Virtual machines
Select >
- 3 Replication settings
Configure replication settings >

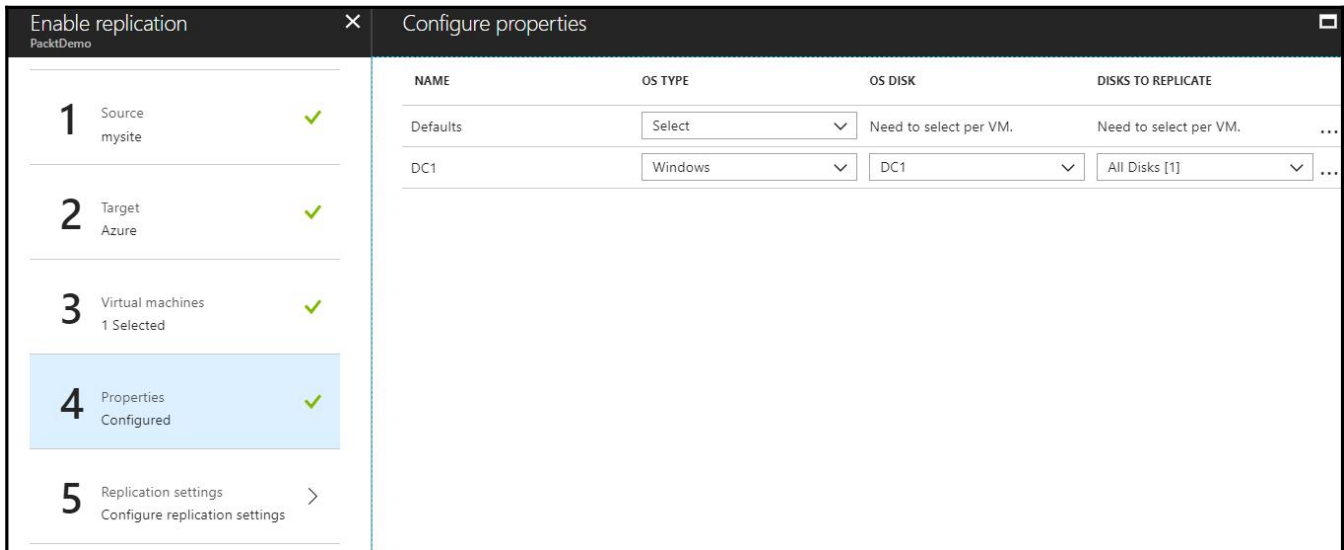
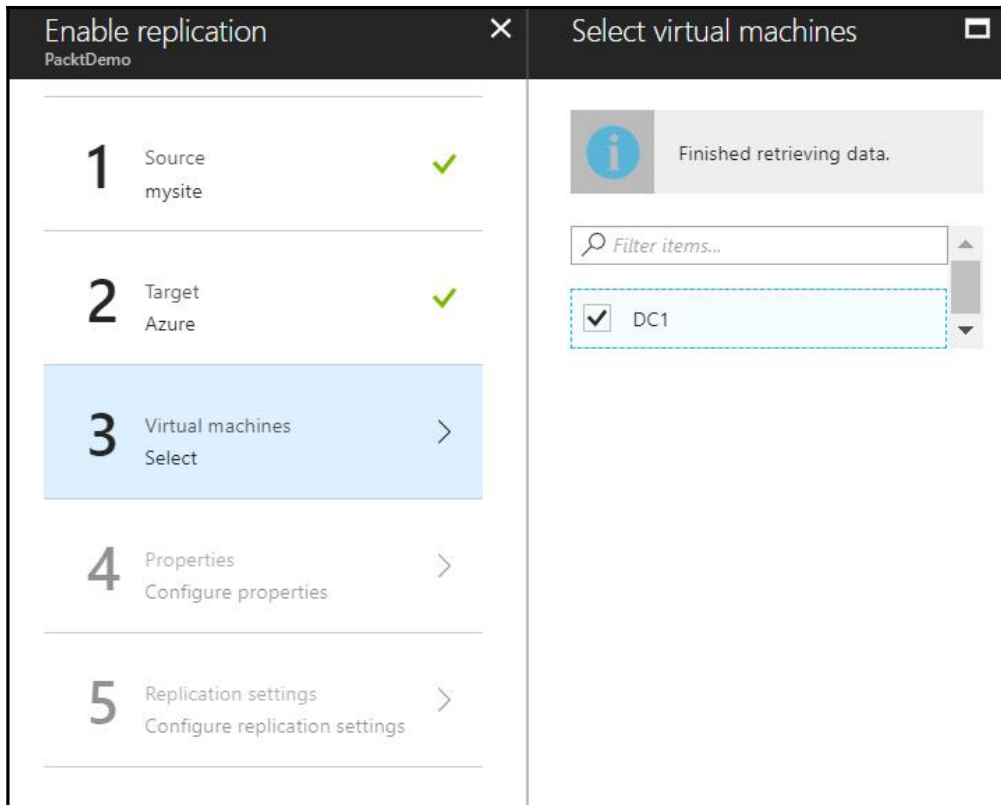
Source

Select your source environment

Source
 ▼

* Source location i
 ▼





Enable replication ✕

PacktDemo

Configure replication settings □

<div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p>1 Source ✓</p> <p>mysite</p> </div> <div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p>2 Target ✓</p> <p>Azure</p> </div> <div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p>3 Virtual machines ✓</p> <p>1 Selected</p> </div> <div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <p>4 Properties ✓</p> <p>Configured</p> </div> <div style="background-color: #e1f5fe; padding: 10px;"> <p>5 Replication settings ></p> <p>Configure replication settings</p> </div>	<p>Replication policy</p> <div style="border: 1px solid #ccc; padding: 2px; margin-bottom: 10px;"> replication ▼ </div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Copy frequency</td> <td>5 Minutes</td> </tr> <tr> <td>Recovery point retention</td> <td>2 Hours</td> </tr> <tr> <td>App consistent snapshot frequency</td> <td>1 Hour</td> </tr> <tr> <td>Initial replication start time</td> <td>Immediately</td> </tr> <tr> <td>Encrypt data stored on Azure</td> <td>Off</td> </tr> <tr> <td>VMM settings</td> <td>Not configured</td> </tr> </table>	Copy frequency	5 Minutes	Recovery point retention	2 Hours	App consistent snapshot frequency	1 Hour	Initial replication start time	Immediately	Encrypt data stored on Azure	Off	VMM settings	Not configured
Copy frequency	5 Minutes												
Recovery point retention	2 Hours												
App consistent snapshot frequency	1 Hour												
Initial replication start time	Immediately												
Encrypt data stored on Azure	Off												
VMM settings	Not configured												
<div style="background-color: #e0e0e0; padding: 5px; text-align: center; width: 100%;">Enable replication</div>	<div style="background-color: #0070c0; color: white; padding: 5px; text-align: center; width: 100%;">OK</div>												

Enable replication
□ ×

PacktDemo

1

Source

mysite

✓

2

Target

Azure

✓

3

Virtual machines

1 Selected

✓

4

Properties

Configured

✓

5

Replication settings

replication

✓

Enable replication

Refresh
Replicate
Columns
Filter

i You can run your machines on managed disks after a failover or migration from on-premises to Azure. Set the option to use managed disks in Replicated item -> Settings -> Compute and Network.

Last refreshed at: 8/25/2018, 7:59:09 PM

i
Finished loading data from service.

NAME	REPLICATION HEALTH	STATUS	ACTIVE LOCATION
DC1	✓ Healthy	Protected	mysite

[Planned Failover](#)
[Failover](#)
[Test Failover](#)
[Cleanup test failover](#)
[Commit](#)
[Resynchronize](#)
[Change recovery point](#)
[Complete Migration](#)
More

Essentials

Health and status

Replication Health ✔ Healthy

Status Protected

RPO 6 secs [As on 8/25/2018, 7:56:44 PM]

Latest available recovery points

Crash-consistent 8/25/2018, 7:58:29 PM

App-consistent 8/25/2018, 7:53:29 PM

Failover readiness

Last successful Test Failover ⚠ Never performed successfully

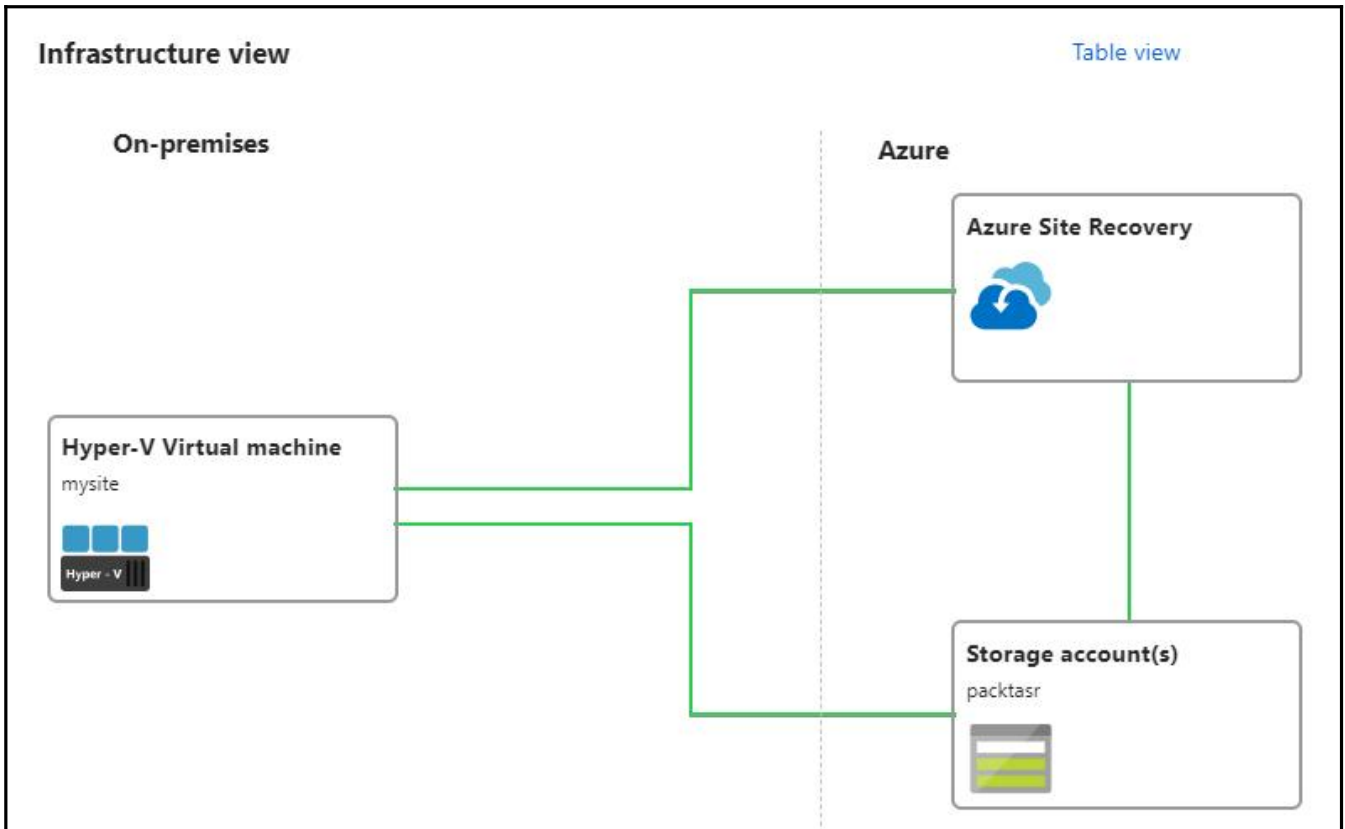
Configuration issues ✔ No issues

Errors(0) [Open in new page](#)

No errors

Events - Last 72 hours(3) [Open in new page](#)

TIME	EVENT NAME	SEVERITY
8/25/2018, 7:58:09 PM	Virtual machine health is i...	i Information
8/25/2018, 7:26:07 PM	Virtual machine health is i...	⚠ Warning
8/25/2018, 6:54:40 PM	Virtual machine health is i...	✖ Critical



Failover
DC1

Failover direction

From ⓘ

mysite

To ⓘ

Microsoft Azure

Recovery Point

Choose a recovery point ⓘ

Latest processed (low RTO) (8/25/2018, 7:... ▾)

Shut down virtual machine and synchronize the latest data. If you do not select this option, or you select this option and the attempt fails, the latest recovery point will be used.

OK

DC1
Virtual machine
⌵ ⌵

⌵ Connect
▶ Start
↺ Restart
■ Stop
➡ Move
🗑 Delete
↻ Refresh

🏠 Overview

📄 Activity log

👤 Access control (IAM)

🏷 Tags

⚙ Diagnose and solve problems

SETTINGS

🌐 Networking

💾 Disks

📏 Size

🛡 Security

🔧 Extensions

📦 Continuous delivery (Preview)

📍 Availability set

📁 Configuration

📘 'DC1' is not using Managed Disks. Migrate to Managed Disks to get more benefits. ➡

<p>Resource group (change) PacktRecovery</p> <p>Status Running</p> <p>Location West Europe</p> <p>Subscription (change) Microsoft Azure Sponsorship</p> <p>Subscription ID cb638267-a366-463c-bfe5-7a49311c27a8</p> <p>Tags (change) Click here to add tags</p>	<p>Computer name -</p> <p>Operating system Windows</p> <p>Size Standard F2s_v2 (2 vcpus, 4 GB memory)</p> <p>Public IP address -</p> <p>Virtual network/subnet PacktRecovery/default</p> <p>DNS name -</p>
---	--

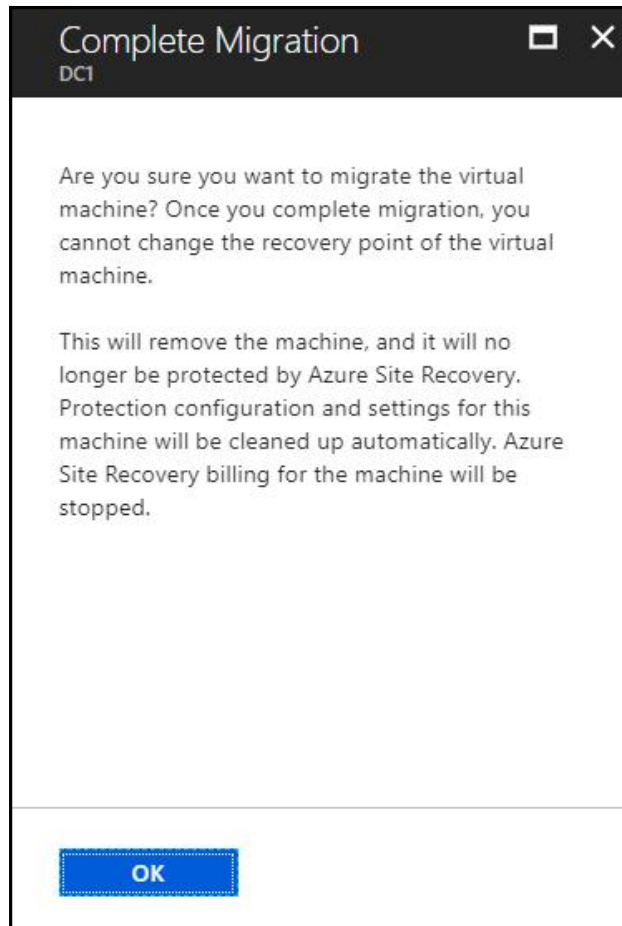
Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average) 📌

100%
80%
60%
40%

Network (total) 📌

100B
80B
60B
40B



Chapter 07: Hybrid Cloud with Azure - Extending Local Workloads to the Cloud

The screenshot shows the 'Create virtual network gateway' form in the Azure portal. The form is titled 'Create virtual network gateway' and has a close button (X) in the top right corner. The form contains the following fields and options:

- Name:** PacktGW (with a green checkmark)
- Gateway type:** VPN (selected), ExpressRoute
- VPN type:** Route-based (selected), Policy-based
- SKU:** VpnGw1 (with a dropdown arrow)
- Enable active-active mode
- Virtual network:** PacktVnet (with a right arrow)
- Gateway subnet address range:** 10.1.2.0/24 (with a green checkmark). Below the input, it says '10.1.2.0 - 10.1.2.255 (256 addresses)'. There is an information icon to the right of the label.
- Public IP address:** Create new (selected), Use existing
- Public IP name:** PacktGWIP (with a green checkmark)
- Configure public IP address:** (expanded section)
 - SKU: Basic
 - Assignment:** Dynamic (selected), Static
- Configure BGP ASN
- Subscription:** Microsoft Azure Sponsorship (with a dropdown arrow)
- Resource group:** PacktIaaS
- Location:** West Europe (with a dropdown arrow)

At the bottom of the form, there is a blue 'Create' button and a link for 'Automation options'.

Create local network gateway

* Name
LocalGateway ✓

* IP address ⓘ
40.91.214.59 ✓

Address space ⓘ
10.3.1.0/24 ...
Add additional address range ...

Configure BGP settings

* Subscription
Microsoft Azure Sponsorship ▾

* Resource group ⓘ
 Create new Use existing
PacktIaaS ▾

* Location
West Europe ▾

Create Automation options

Add connection
PacktGW

* Name
ToLocalNetwork ✓

Connection type ⓘ
Site-to-site (IPsec) ▾

* Virtual network gateway ⓘ
PacktGW 🔒

* Local network gateway ⓘ
LocalGateway >

* Shared key (PSK) ⓘ
Passw0rd0134! ✓

Subscription ⓘ
Microsoft Azure Sponsorship ▾


Resource group ⓘ
PacktIaaS 🔒

Create new

Location ⓘ
West Europe ▾

OK

NAME	STATUS	CONNECTION TYPE	PEER
ToLocalNetwork	Unknown	Site-to-site (IPsec)	LocalGateway

 Download configuration
✕

Download customer VPN device configuration template

* Device vendor

* Device family

* Firmware version

NAME	↑↓	STATUS	↑↓	CONNECTION TYPE	↑↓	PEER
ToLocalNetwork		Connected		Site-to-site (IPsec)		LocalGateway

Add peering
PacktVnet

* Name
AzurePeering ✓

Peer details

Virtual network deployment model ⓘ
 Resource manager Classic

I know my resource ID ⓘ

* Subscription ⓘ
Microsoft Azure Sponsorship ▼

* Virtual network
Network1 (NetworkDemo) ▼

Configuration

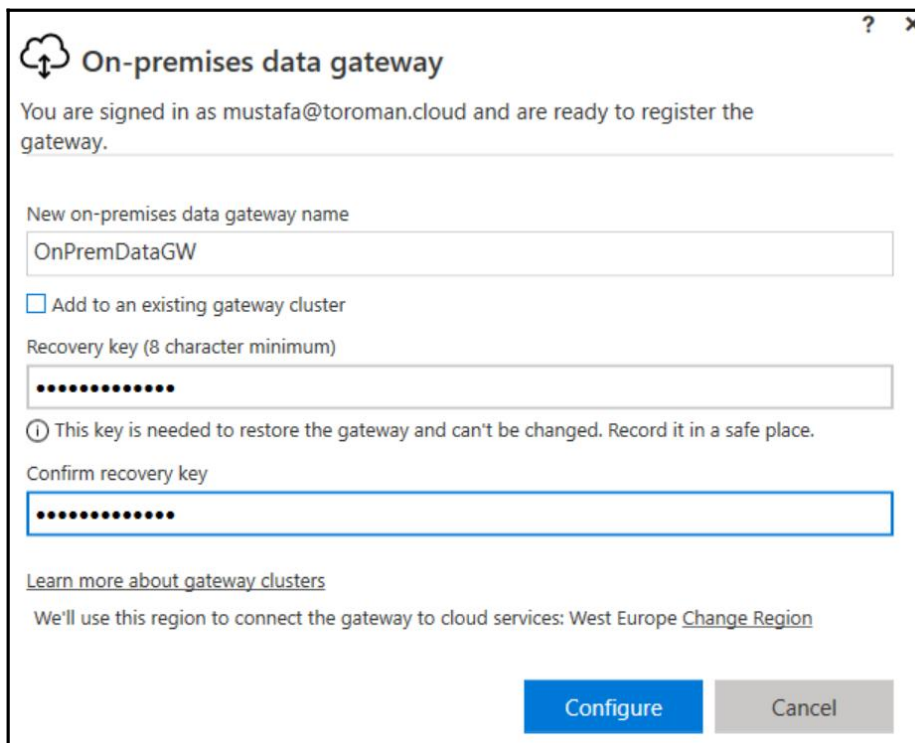
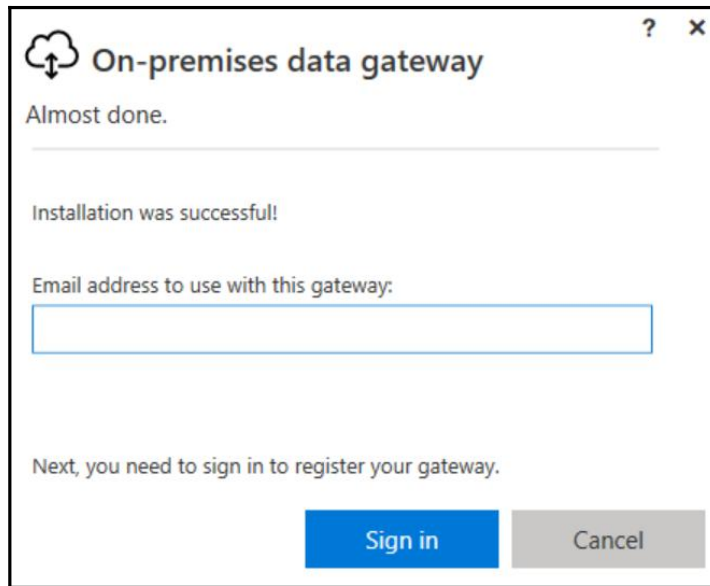
Allow virtual network access ⓘ

Allow forwarded traffic ⓘ

Allow gateway transit ⓘ

Use remote gateways ⓘ

Virtual network 'PacktVnet' has a gateway; peerings created from this virtual network can't



On-premises data gateway

Status

Service Settings

Diagnostics

Network

Connectors

✓ The gateway OnPremDataGW is online and ready to be used.

Gateway version number: 14.16.6792.1 (August 2018)

✓ Help us improve the on-premises data gateway by sending usage information to Microsoft.
[Read the privacy statement online](#)

Logic Apps, Azure Analysis Services [Create a gateway in Azure](#)
West Europe

PowerApps, Microsoft Flow ✓ Ready
Default environment

Power BI ✓ Ready
Default environment

Close

Create connection gateway ☐ ✕
On-premises data gateway

* Resource Name
 ✓



* Subscription
 ▾

* Resource group
 Create new Use existing
 ▾

This location is disabled.

* Location
 ▾

* Installation Name
 ▾

 Select from available installed gateways. For details click here. 

Create Automation options

Microsoft Azure

Search resources, services, and docs

Dashboard

Resource groups ALL SUBSCRIPTIONS

Resource Group	Location
PackIaaS	West Europe
remote	West Europe
DevOps	West Europe
AutomationDemo	West Europe
RedVSBlue	West Europe
PackRecovery	West Europe
PackMigration	West Europe
PackStorage	West Europe

Audit Logs

View activity

DefaultWorkspace-cb... WORKSPACE

Template deployment MICROSOFT

Resource groups ALL SUBSCRIPTIONS

Resource Group	Location
PackIaaS	West Europe
remote	West Europe
DevOps	West Europe
AutomationDemo	West Europe
RedVSBlue	West Europe
PackRecovery	West Europe
PackMigration	West Europe
PackStorage	West Europe

Service Health

RvsB1 Stopped

RvsB2 Stopped

RvsB3 Stopped

RvsB WORKSPACE

Security Center

Nagios Running

Microsoft Azure Stack - Administration

Search resources

Dashboard

Region management

1

REGION	CRITICAL	WARNING
local	0	11

Update

Idle

Alerts

11

Critical 0

Warning 11

Version: 1.1807.0.76

Resource providers

NAME	HEALTH	ALERTS
Capacity	Warning	8
Compute	Healthy	0
Infrastructure backup	Healthy	0
Key Vault	Healthy	0
Network	Healthy	0
Storage	Healthy	0

Quickstart tutorials

- Create a virtual machine
- Offering services
- Populate the Azure Stack marketplace
- Manage infrastructure
- Use the Azure Stack portal

Chapter 08: Azure Active Directory - Identity in the Cloud

Create directory [Close] [Maximize]

* Organization name ⓘ
Azure Security ✓

* Initial domain name ⓘ
azuresecuritycloud ✓
azuresecuritycloud.onmicrosoft.com

Country or region ⓘ
United States ▼

i Directory creation will take about one minute.

Create

Directory + subscription

Global subscription filter

The portal will show data only for these subscriptions.

All subscriptions

Current directory: toroman.cloud

[Learn about directories and subscriptions](#)

Switch directory

Set your default directory

Sign in to your last visited directory

Favorites All Directories A to Z

Azure Security
azuresecuritycloud.onmicrosoft.com
9419d69e-0a97-48f3-9153-87c879b65721

Home > Azure Security - Overview

Azure Security - Overview

Azure Active Directory

Search (Ctrl+/)

Switch directory Delete directory

azuresecuritycloud.onmicrosoft.com

Azure Security

Azure AD Free

Sign-ins

To see sign-in data, your organization needs Azure AD Premium P1 or P2. [Start a free trial](#)

Your role

Global administrator [More info](#)

Find

Users

Azure AD Connect sync

Status	Not enabled
Last sync	Sync has never run

Create

- User
- Guest user
- Group
- Enterprise application
- App registration

Other capabilities

What's new in Azure AD

Stay up to date with the latest release notes and blog posts.

36 entries since May 15, 2018. [View archive](#)

- All services (36) [Changed feature](#)
- Identity Lifecycle Manage...(8) Other - Identity Lifecycle Management
- Monitoring & Reporting (5) July 20, 2018
- Identity Security & Prote... (2) [Improvements to Azure Active Directory email](#)

Overview

Getting started

Manage

- Users
- Groups
- Organizational relationships
- Roles and administrators
- Enterprise applications
- Devices
- App registrations
- Application proxy
- Licenses
- Azure AD Connect
- Custom domain names
- Mobility (MDM and MAM)
- Password reset
- Company branding

Custom domain name


Azure Security


* Custom domain name ⓘ

azuresecurity.cloud ✓


[Add Domain](#)


azuresecurity.cloud
Custom domain name


 Delete

 To use azuresecurity.cloud with your Azure AD, create a new TXT record with your domain name registrar using the info below.

RECORD TYPE TXT MX

ALIAS OR HOST NAME 

DESTINATION OR POINTS TO ADDRESS 


TTL 

[Share these settings via email](#)

Verify domain
Verification will not succeed until you have configured your domain with your registrar as described above.

Verify

Verify domain
Verification will not succeed until you have configured your domain with your registrar as described above.

 Could not find the DNS record for this domain. DNS changes may take up to 72 hours to propagate. Please try again later.

Verify

azuresecurity.cloud
Custom domain name

✓ Make primary 🗑️ Delete

i Verification succeeded!

TYPE	Custom
STATUS	Verified
FEDERATED	No
	To configure azuresecurity.cloud for federated sign-on to your Azure Active Directory, run Azure AD Connect on your local network.
	Download Azure AD Connect
PRIMARY DOMAIN	No
IN USE	No



Use Azure AD Connect to integrate your Azure AD with your Windows Server AD or another directory on your network. 

SYNC STATUS



Not Installed

[Download Azure AD Connect](#)

Last Sync

Sync has never run

Password Hash Sync

Disabled

USER SIGN-IN



[Federation](#)

Disabled

0 domains

[Seamless single sign-on](#)

Disabled

0 domains

[Pass-through authentication](#)

Disabled

0 agents

ON-PREMISES APPLICATIONS

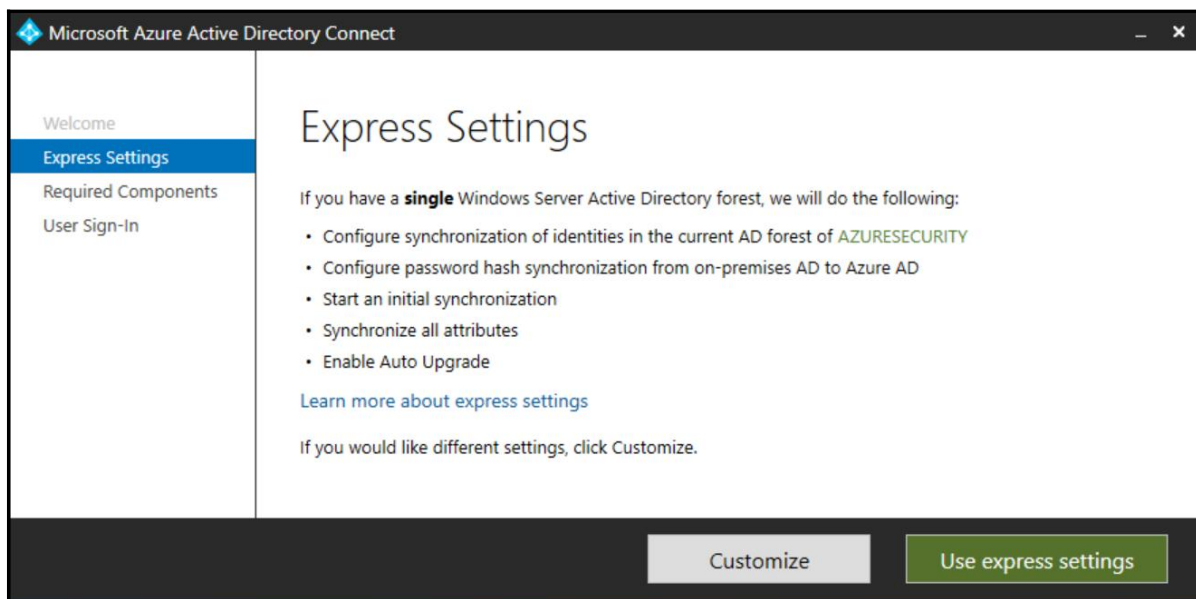
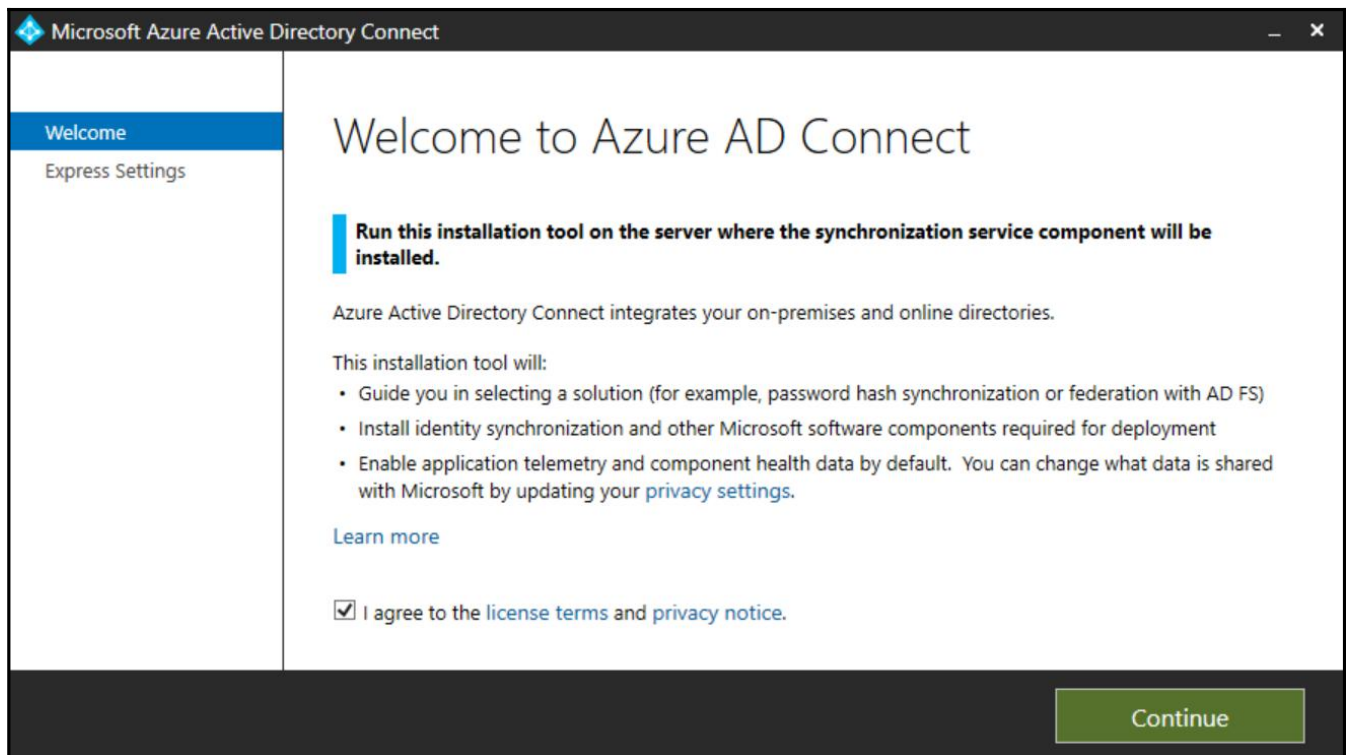


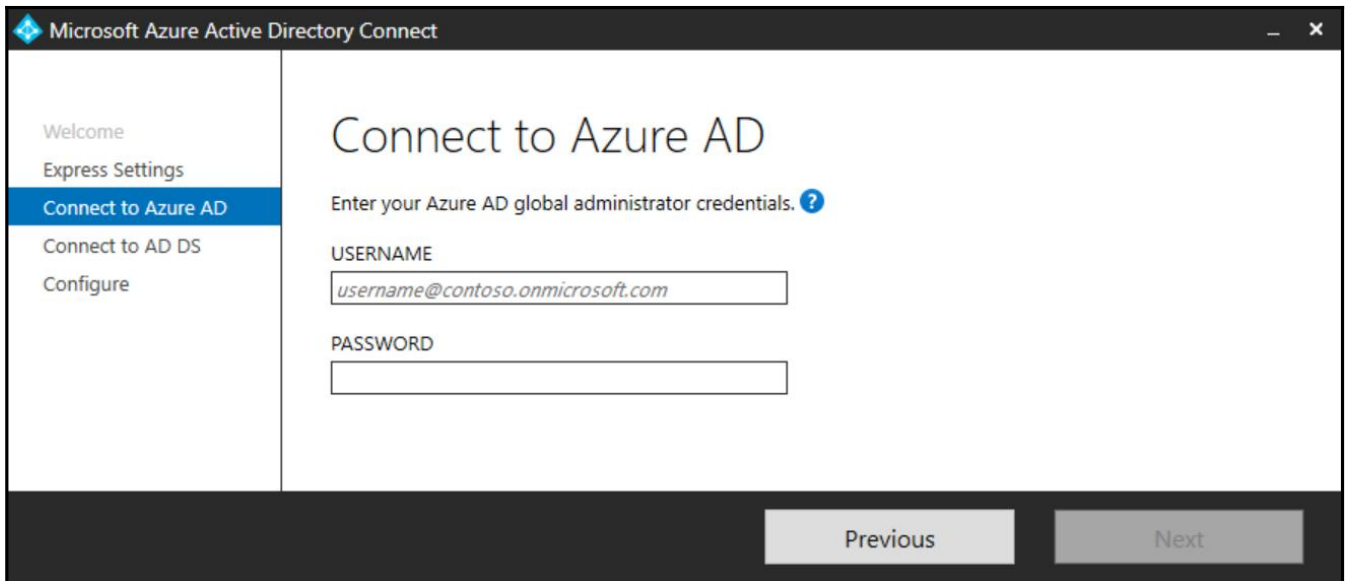
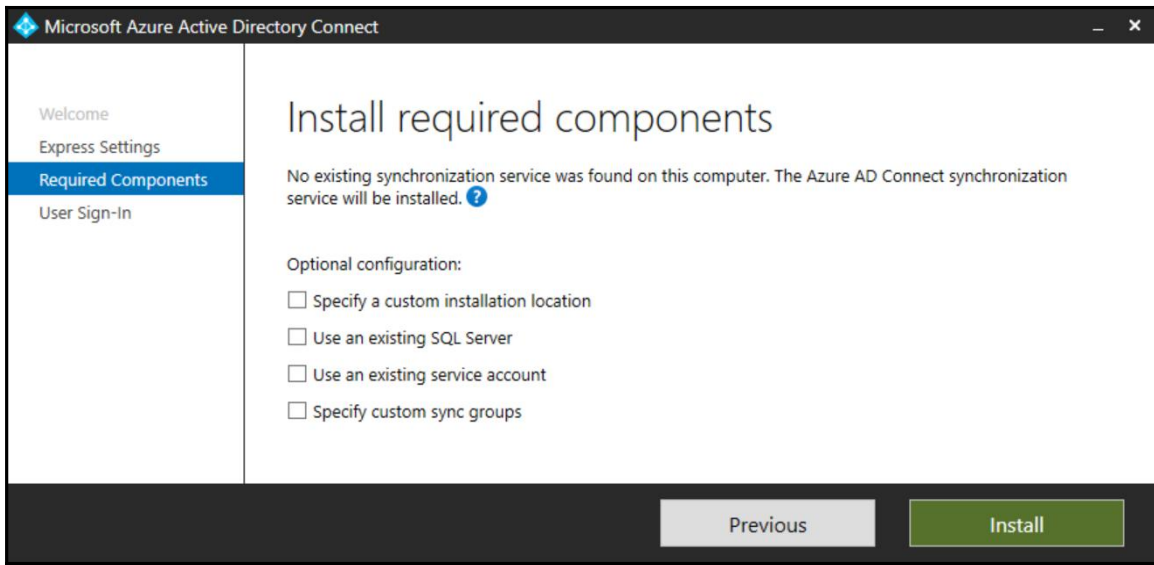
Looking to configure remote access for on-premises applications? [Head to Application Proxy](#)

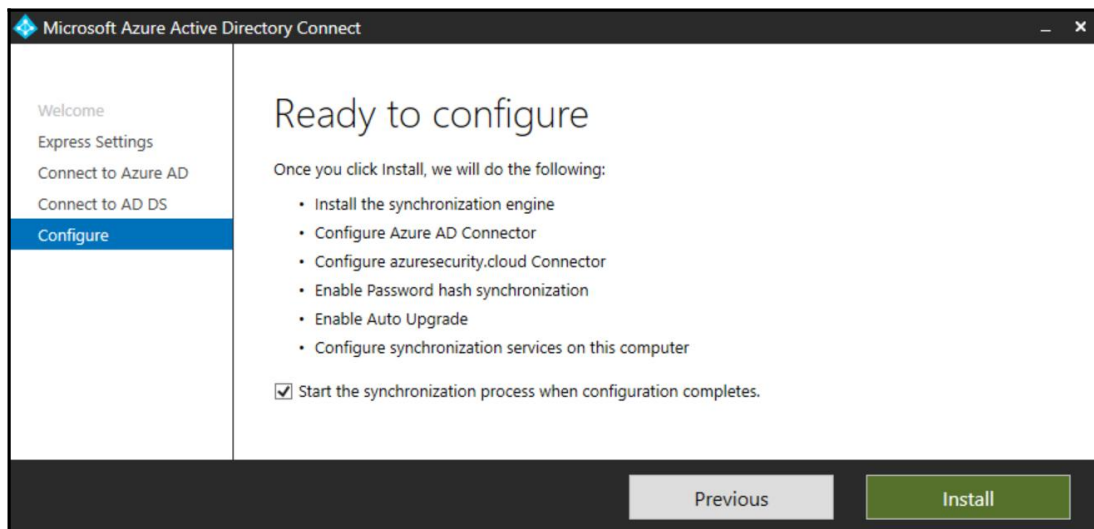
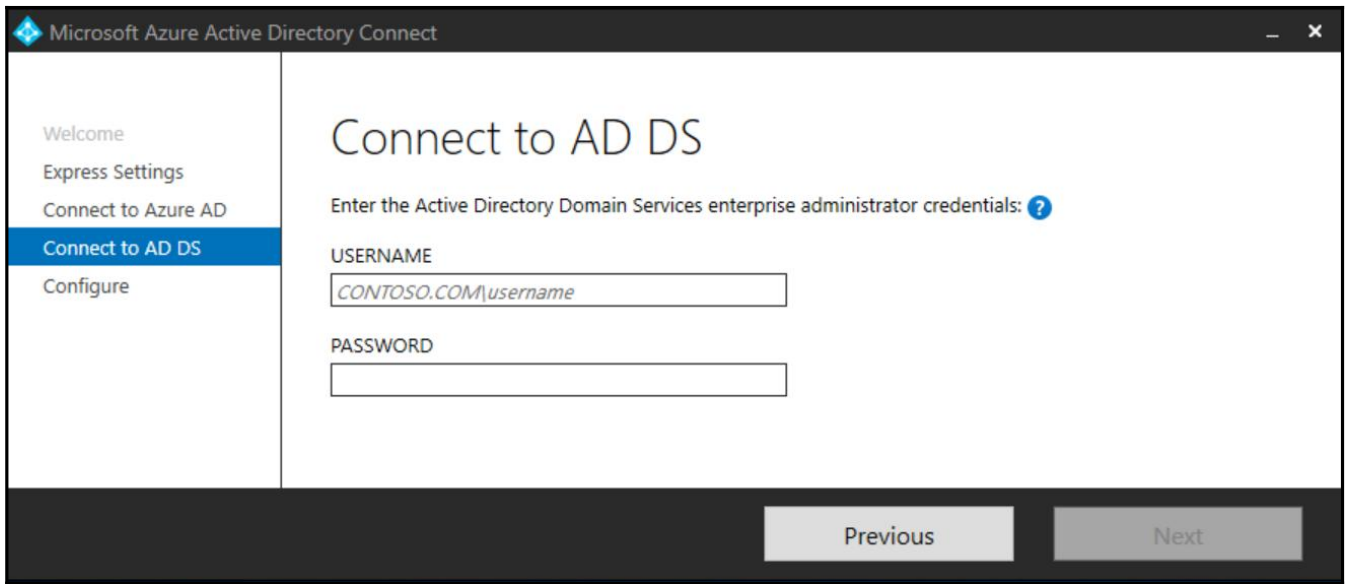
HEALTH AND ANALYTICS

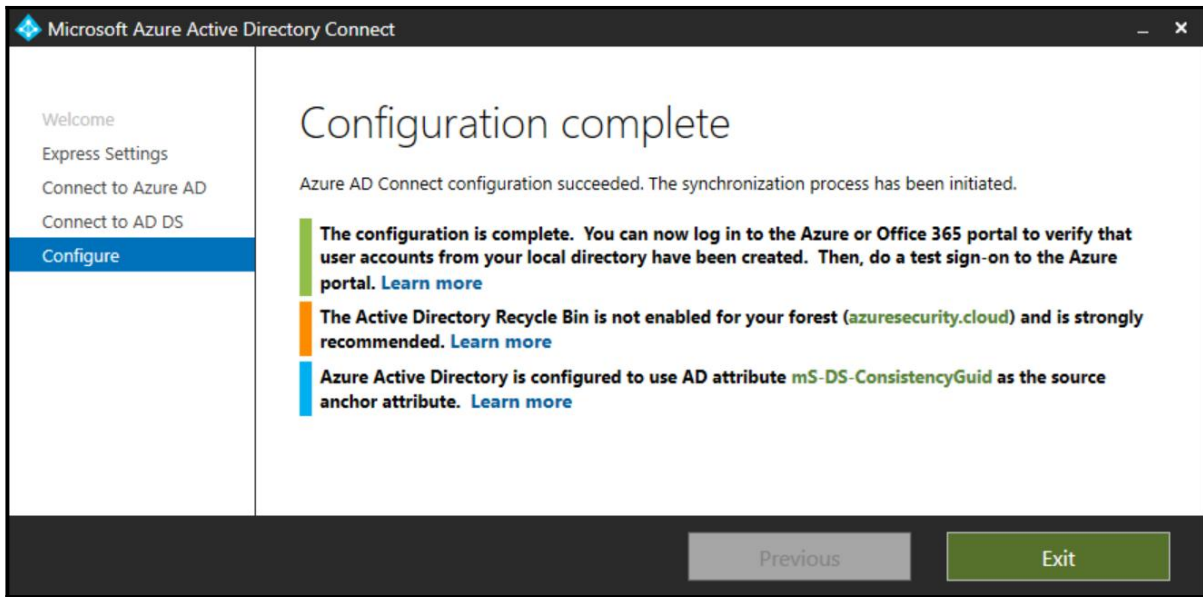


Monitor your on-premises identity infrastructure and synchronization services in the cloud. [Azure AD Connect Health](#)












SYNC STATUS

	Sync Status	Enabled	
	Last Sync	Less than 1 hour ago	
	Password Hash Sync	Enabled	


USER SIGN-IN

	Federation	Disabled	0 domains
	Seamless single sign-on	Disabled	0 domains
	Pass-through authentication	Disabled	0 agents

ON-PREMISES APPLICATIONS

 Looking to configure remote access for on-premises applications? [Head to Application Proxy](#)

HEALTH AND ANALYTICS

 Monitor your on-premises identity infrastructure and synchronization services in the cloud. [Azure AD Connect Health](#)

[+ New user](#)
[+ New guest user](#)
[Reset password](#)
[Delete user](#)
[Multi-Factor Authentication](#)
[Refresh](#)
[Columns](#)

Name
 Show All users

NAME	USER NAME	USER TYPE	SOURCE
aad	aad@azuresecurity.cloud	Member	Azure Active Directory
Adnan Dragnic	adnan.dragnic@azuresecurity.cloud	Member	Windows Server AD
Dino Buljubasic	dino.buljubasic@azuresecurity.cloud	Member	Windows Server AD
Dzemail Selmanovic	dzemail.selmanovic@azuresecurity.cloud	Member	Windows Server AD
Edin Muharemagic	edin.muharemagic@azuresecurity.cloud	Member	Windows Server AD
Mustafa Toroman	mustafa.toroman@azuresecurity.cloud	Member	Windows Server AD
mustafatoroman@yahoo.com Toron	mustafatoroman@yahoo.com	Member	Microsoft Account
On-Premises Directory Synchronizat	Sync_DC1_a2fb1d47c674@azuresecurityclou...	Member	Windows Server AD
Rijad Smajlovic	rijad.smajlovic@azuresecurity.cloud	Member	Windows Server AD
Tarik Karic	tarik.karic@azuresecurity.cloud	Member	Windows Server AD

User □ ✕
Azure Security

* Name ⓘ
AAD ✓

* User name ⓘ
aad@azuresecurity.cloud

Profile ⓘ >
Not configured

Properties ⓘ >
Default

Groups ⓘ >
0 groups selected

Directory role >
User

Create

Mustafa Toroman - Profile

User

Edit Reset password Delete

Manage

- Profile
- Directory role
- Groups
- Applications
- Licenses
- Devices
- Azure resources

Activity

- Sign-ins
- Audit logs

Troubleshooting + Support

- Troubleshoot
- New support request

Mustafa Toroman

mustafa.toroman@azuresecurity.cloud

MT

User Sign-ins
Group memberships

100

50

0

Aug 12
Aug 19
Aug 26
Sep 2
Sep 9

Identity

Name	First name	Last name
Mustafa Toroman	Mustafa	Toroman
User name	User type	
mustafa.toroman@azuresecurity.cloud	Member	
Object ID	Source	
103d3b6b-5ad3-4238-b757-a9faef...	Windows Server AD	

Job info

Job title	Department	Manager
---	---	

Directory roles


Choose admin roles that you want to assign to this user.

[Learn more about directory roles >](#)

ROLE	DESCRIPTION
Application administrator	Can create and manage all aspects of app registrations and enterprise apps.
Application developer	Can create application registrations independent of the 'Users can register applications' sett...
Billing administrator	Can perform common billing related tasks like updating payment information.
Cloud application administrator	Can create and manage all aspects of app registrations and enterprise apps except App Pro...
Cloud device administrator	Full access to manage devices in Azure AD.
Compliance administrator	Can read and manage compliance configuration and reports in Azure AD and Office 365.
Conditional access administrator	Can manage conditional access capabilities.
Customer LockBox access approver	Can approve Microsoft support requests to access customer organizational data.
Dynamics 365 administrator	Can manage all aspects of the Dynamics 365 product.
Exchange administrator	Can manage all aspects of the Exchange product.
Global administrator	Can manage all aspects of Azure AD and Microsoft services that use Azure AD identities.
Guest inviter	Can invite guest users independent of the 'members can invite guests' setting.
Information Protection administrator	Can manage all aspects of the Azure Information Protection product.

Select

[+](#) Add [↻](#) Refresh

NAME	GROUP TYPE	MEMBERSHIP TYPE
 Admins	Security	Assigned ...
 InfaTeam	Security	Synced ...

Create □ ×




* Name ⓘ
demo ✓

Application type ⓘ
Web app / API ▾

* Sign-on URL ⓘ
https://localhost/ ✓

Create

demo 📌 □ ×
Registered app

 Settings  Manifest  Delete

Display name demo	Application ID 72c4eca9-ef71-4291-825f-cffe64d0ddad
Application type Web app / API	Object ID 1bb5622a-b855-4800-b22c-1f21b2e6139e
Home page https://localhost/	Managed application in local directory demo

⌆

Settings

GENERAL

- Properties >
- Reply URLs >
- Owners >

API ACCESS

- Required permissions >
- Keys >

TROUBLESHOOTING + SUPPORT

- Troubleshoot >
- New support request >

Required permissions

+ Add
Grant permissions

API	APPLICATION PERMI...	DELEGATED PERMIS...
Windows Azure Active Directory	0	1

Settings

GENERAL

- Properties >
- Reply URLs >
- Owners >

API ACCESS

- Required permissions >
- Keys >

TROUBLESHOOTING + SUPPORT

- Troubleshoot >
- New support request >

Keys

Save
Discard
Upload Public Key

Passwords

DESCRIPTION	EXPIRES	
newKey ✓	Duration	verystrongpassword\$0000098 ...
<i>Key description</i>	Duration	<i>Value will be displayed on save</i> ...
	In 1 year	
	In 2 years	
	Never expires	

Public Keys

THUMBPRINT	START DATE	EXPIRES
No results.		

Settings × Keys □ ×

GENERAL

- Properties >
- Reply URLs >
- Owners >

API ACCESS

- Required permissions >
- Keys >**

TROUBLESHOOTING + SUPPORT

- Troubleshoot >
- New support request >

Save × Discard ↑ Upload Public Key

⚠ Copy the key value. You won't be able to retrieve after you leave this blade.

Passwords

DESCRIPTION	EXPIRES	VALUE	
newKey	9/11/2019	drWnUPcKBd56pm8msdQUaUbwUoNf4WVoiLuShjoMQ04=	...
<input type="text" value="Key description"/>	<input type="text" value="Duration"/>	<input type="text" value="Value will be displayed on save"/>	...

Public Keys


THUMBPRINT	START DATE	EXPIRES
No results.		

Add permissions ×

Role ⓘ

Assign access to ⓘ

Select ⓘ

 **Demo**

Add permissions ✕

Role ⓘ

- Owner ⓘ
- Contributor ⓘ
- Reader ⓘ
- AcrlImageSigner ⓘ
- AcrQuarantineReader ⓘ
- AcrQuarantineWriter ⓘ
- API Management Service Contributor ⓘ
- API Management Service Operator Role ⓘ
- API Management Service Reader Role ⓘ
- Application Insights Component Contributor ⓘ
- Application Insights Snapshot Debugger ⓘ
- Automation Job Operator ⓘ
- Automation Operator ⓘ
- Automation Runbook Operator ⓘ
- Azure Kubernetes Service Cluster Admin Role ⓘ
- Azure Kubernetes Service Cluster User Role ⓘ
- Azure Stack Registration Owner ⓘ
- Backup Contributor ⓘ
- Backup Operator ⓘ
- Backup Reader ⓘ
- Billing Reader ⓘ
- BizTalk Contributor ⓘ

Chapter 09: Azure Security and Administration

Users - All users
Azure Security - Azure Active Directory

[+ New user](#)
[+ New guest user](#)
[Reset password](#)
[Delete user](#)
[Multi-Factor Authentication](#)
[Refresh](#)
[Columns](#)

Name: Show:

NAME	USER NAME	USER TYPE	SOURCE
aad	aad@azuresecurity.cloud	Member	Azure Active Directory
Adnan Dragnic	adnan.dragnic@azuresecurity.cloud	Member	Windows Server AD
Dino Buljubasic	dino.buljubasic@azuresecurity.cloud	Member	Windows Server AD
<input type="checkbox"/> Dzemail Selmanovic	dzemail.selmanovic@azuresecurity.cloud	Member	Windows Server AD
Edin Muharemagic	edin.muharemagic@azuresecurity.cloud	Member	Windows Server AD
Mustafa Toroman	mustafa.toroman@azuresecurity.cloud	Member	Windows Server AD

multi-factor authentication

users [service settings](#)

Note: only users licensed to use Microsoft Online Services are eligible for Multi-Factor Authentication. Learn more about how to license other users. Before you begin, take a look at the multi-factor auth deployment guide.

View: [bulk update](#)

DISPLAY NAME	USER NAME	MULTI-FACTOR AUTH STATUS
<input type="checkbox"/> aad	aad@azuresecurity.cloud	Disabled
<input type="checkbox"/> Adnan Dragnic	adnan.dragnic@azuresecurity.cloud	Disabled
<input type="checkbox"/> Dino Buljubasic	dino.buljubasic@azuresecurity.cloud	Disabled
<input type="checkbox"/> Dzemail Selmanovic	dzemail.selmanovic@azuresecurity.cloud	Disabled
<input type="checkbox"/> Edin Muharemagic	edin.muharemagic@azuresecurity.cloud	Disabled
<input checked="" type="checkbox"/> Mustafa Toroman	mustafa.toroman@azuresecurity.cloud	Disabled

Mustafa Toroman
mustafa.toroman@azuresecurity.c

quick steps

- [Enable](#)
- [Manage user settings](#)

Home > Resource groups > PacktIaaS > PacktVnet - Subnets > Add subnet

Add subnet

PacktVnet

* Name

AzureFirewallSubnet ✓

* Address range (CIDR block) ⓘ

10.1.3.0/24

10.1.3.0 - 10.1.3.255 (251 + 5 Azure reserved addresses)

Network security group >

None

Route table >

None

Service endpoints

Services ⓘ

0 selected ▾

Subnet delegation

Delegate subnet to a service ⓘ

None ▾

OK


Create a firewall


PROJECT DETAILS

* Subscription 


* Resource group 
[Create new](#)

INSTANCE DETAILS

* Name 

* Location 

Choose a virtual network Create new Use existing

Virtual network 

PUBLIC IP ADDRESS

* Public IP address  Create new Use existing

* Public IP address name 


Public IP address SKU

[Review + create](#)

[Previous](#)

[Next : Tags >](#)

[Download a template for automation](#)



PacktFirewall

Firewall

→ Move 🗑️ Delete 🔒 Lock

- 🏠 Overview
- 📄 Activity log
- 👤 Access control (IAM)
- 🏷️ Tags

Settings

- 📁 Rules
- 📊 Properties
- 🔒 Locks
- 📄 Automation script

Resource group [\(change\)](#)
PacktIaaS

Location
West Europe

Subscription [\(change\)](#)
Microsoft Azure Sponsorship

Subscription ID
cb638267-a366-463c-bfe5-7a49311c27a8

Tags [\(change\)](#)
[Click here to add tags](#)

Virtual network/subnet
[PacktVnet/AzureFirewallSubnet](#)

Private IP address
10.1.3.4

Public IP address
[azureFirewalls-ip](#)

Provisioning state
Succeeded

Create route table

You can add routes to this table after it's created.

* Name
 ✓

* Subscription
 ▼

* Resource group
 ▼
[Create new](#)

* Location
 ▼

BGP route propagation

[Automation options](#)

PactFirewallRouteTable - Subnets

Route table

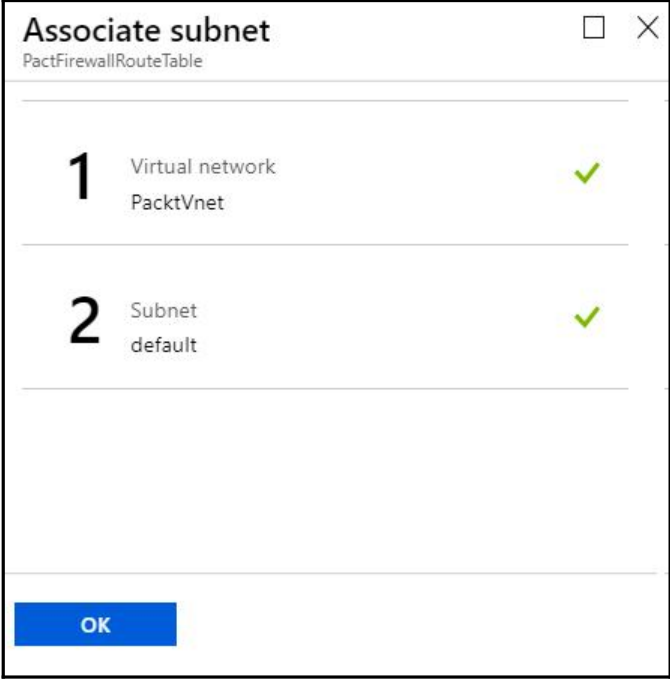
Search (Ctrl+/)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings
- Configuration
- Routes
- Subnets**
- Properties
- Locks
- Automation script

+ Associate

search subnets

NAME	ADDRESS RANGE	VIRTUAL NETWORK	SECURITY GROUP
No results.			



Add route

PactFirewallRouteTable

* Route name
 ✓

* Address prefix ⓘ
 ✓

Next hop type ⓘ
 ▼

* Next hop address ⓘ
 ✓

ⓘ 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.

OK

PactFirewall - Rules

Firewall

Search (Ctrl+/) << Refresh

NAT rule collection Network rule collection Application rule collection

+ Add NAT rule collection

PRIORITY	NAME	ACTION	RULES
No results			

- Overview
- Activity log
- Access control (IAM)
- Tags
- Settings
 - Rules
 - Properties
 - Locks
 - Automation script

Add application rule collection

* Name: AllowVSTS ✓

* Priority: 100 ✓

* Action: Allow ✓

Rules

NAME	SOURCE ADDRESSES	PROTOCOL:PORT	TARGET FQDNS	FQDN TAGS
AllowVSTS ✓	10.1.0.0/24 ✓	http,https ✓	*.visualstudio.com ✓	0 selected ✓
	*, 192.168.10.1, 192.168.10.0/24,...	http, http:8080, https	www.microsoft.com, *.microsoft,...	0 selected ✓

FQDN tags may require additional configuration. [Learn more.](#)

Create key vault

* Name: PacktKV ✓

* Subscription: Microsoft Azure Sponsorship ✓

* Resource Group: (New) PacktKeyVault ✓
[Create new](#)

* Location: West Europe ✓


Pricing tier: Standard >

Access policies: 1 principal selected >

Virtual Network Access: All networks can access. >

Create Automation options

Home > PacktKV



PacktKV

Key vault

Delete → Move

Search (Ctrl+/)

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

Settings

- Keys
- Secrets
- Certificates
- Access policies
- Firewalls and virtual networks
- Properties
- Locks
- Automation script

Resource group [\(change\)](#)
PacktKeyVault

Location
West Europe

Subscription [\(change\)](#)
Microsoft Azure Sponsorship

Subscription ID
cb638267-a366-463c-bfe5-7a49311c27a8

DNS Name
<https://packtkv.vault.azure.net/>


Skus (Pricing tier)
Standard

Monitoring

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

[Click for additional metrics.](#)

Total requests



Create a key □ ×

Options
Generate ▼

* Name ⓘ
MyKey ✓

Key Type ⓘ
RSA EC

RSA Key Size
2048 3072 4096

Set activation date? ⓘ

Set expiration date? ⓘ

Enabled? Yes No

Create

Create a secret □ ×

Upload options

Manual ▼

* Name ⓘ ✓

MySecret

* Value ✓

.....

Content type (optional)

Set activation date? ⓘ

Set expiration date? ⓘ

Enabled? Yes No

Create

packtdemo - Encryption
Storage account

Search (Ctrl+/)

Save Discard

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

Settings

Access keys
CORS
Configuration
Encryption
Shared access signature
Firewalls and virtual networks
Advanced Threat Protection...
Properties
Locks
Automation script

Storage service encryption protects your data at rest. Azure Storage encrypts your data as it's written in our datacenters, and automatically decrypts it for you as you access it.

By default, data is encrypted using Microsoft Managed Keys for Azure Blobs, Tables, Files and Queues. You may choose to bring your own key for encryption for Azure Blobs and Files. Encryption for Tables and Queues will always use Microsoft Managed Keys.

Please note that after enabling Storage Service Encryption, only new data will be encrypted, and any existing files in this storage account will retroactively get encrypted by a background encryption process.

[Learn more](#)

Your storage account is currently encrypted with Microsoft managed key by default. You can choose to use your own key.

Use your own key

Encryption key

Enter key URI
 Select from Key Vault

* Key Vault
PacktKV

* Encryption key
MyKey

i The storage account named 'packtdemo' will be granted access to the selected key vault. Both soft delete and purge protection will be enabled on the key vault and cannot be disabled. [Learn more](#)

Demo - Transparent data encryption
SQL database

Search (Ctrl+/)

Save Discard Feedback

ADD AZURE SEARCH
Properties
Locks
Automation script

Security

Advanced Threat Protection
Auditing
Dynamic Data Masking
Transparent data encryption

🛡️ Encrypts your databases, backups, and logs at rest without any changes to your application. To enable TDE, go to each database.
[Learn more](#)

Data encryption

ON OFF

Encryption status

✔️ Encrypted

DBserver - Disks
Virtual machine

Search (Ctrl+/) Edit Refresh

Updating

Managed disks created since June 10, 2017 are encrypted at rest with Storage Service Encryption (SSE). You may also want to enable Azure Disk Encryption.

OS disk

NAME	SIZE	STORAGE ACCOUNT TYPE	ENCRYPTION	HOST CACHING
DBserver_OsDisk_1_d3e73877e5b84cb38f17b29acf20e024	127 GiB	Premium SSD	Not enabled	Read/write

DBserver - Disks
Virtual machine

Search (Ctrl+/) Edit Refresh

Managed disks created since June 10, 2017 are encrypted at rest with Storage Service Encryption (SSE). You may also want to enable Azure Disk Encryption.

OS disk

NAME	SIZE	STORAGE ACCOUNT TYPE	ENCRYPTION	HOST CACHING
DBserver_OsDisk_1_d3e73877e5b84cb38f17b29acf20e024	127 GiB	Premium SSD	Enabled	Read/write

Security Center - Overview
Showing 6 subscriptions

Search (Ctrl+/) Subscriptions

Policy & compliance

Subscription coverage

6 TOTAL
1 Covered (standard)
5 Covered (free)
0 Not covered
41 Covered resources

Policy compliance

Overall compliance 25%
Least compliant subscriptions BizSpark 25%
Show policy compliance of your environment >

Resource security hygiene

Secure score 553 of 945
23 Active recommendations

Resource health monitoring

- 18 Compute & apps
- 16 Data & storage
- 6 Networking
- 1 Identity & access

Security Center - Recommendations

Showing 6 subscriptions

Search (Ctrl+F)

Filter

- GENERAL
- Overview
- Getting started
- Events
- Search
- POLICY & COMPLIANCE
- Coverage
- Security policy
- RESOURCE SECURITY HYGIENE
- Recommendations
- Compute & apps
- Networking
- Data & storage
- Identity & access (Preview)
- Security solutions
- THREAT PROTECTION

Secure score

Secure score

553 of 945

23 Active recommendations

Resource health monitoring

18 Compute & apps

16 Data & storage

6 Networking

1 Identity & access

Review and

Learn more >

DESCRIPTION	SECURE SCORE IMPACT	RESOURCE	SEVERI...
Enable MFA for accounts with owner permissions on your subscription (Preview)	-50	1 subscription	High
Remove external accounts with owner permissions from your subscription (Preview)	-30	1 subscription	High
Install endpoint protection solution on virtual machines	+18	8 virtual machines	High
Add a web application firewall	+15	2 web applications	High
Apply disk encryption on your virtual machines	+11	7 virtual machines	High
Enable auditing on SQL database	+10	2 SQL databases	High

Compute

+ Add Computers

Overview

Vms and Computers

Cloud services

App services (Preview)

RECOMMENDATION	SECURE SCORE IMPACT	TOTAL	
Install endpoint protection solution on virtual machines	+18	8 of 10 virtual machines	<div style="width: 80%; height: 10px; background-color: red;"></div>
Add a web application firewall	+15	5 of 5 web applications	<div style="width: 100%; height: 10px; background-color: red;"></div>
Apply disk encryption on your virtual machines	+11	7 of 10 virtual machines	<div style="width: 70%; height: 10px; background-color: red;"></div>
Install a vulnerability assessment solution on your virtual machines	+30	5 of 10 virtual machines	<div style="width: 50%; height: 10px; background-color: orange;"></div>
Resolve monitoring agent health issues on your machines	+20	5 of 10 virtual machines	<div style="width: 50%; height: 10px; background-color: orange;"></div>
Function App should only be accessible over HTTPS (Preview)	+20	1 of 1 function apps	<div style="width: 100%; height: 10px; background-color: orange;"></div>
Web Application should only be accessible over HTTPS (Preview)	+16	4 of 5 web applications	<div style="width: 80%; height: 10px; background-color: orange;"></div>
Configure IP restrictions for Web Application (Preview)	+10	5 of 5 web applications	<div style="width: 100%; height: 10px; background-color: orange;"></div>
Configure IP restrictions for Function App (Preview)	+10	1 of 1 function apps	<div style="width: 100%; height: 10px; background-color: orange;"></div>
Install system updates on your machines	+40	2 of 10 virtual machines	<div style="width: 20%; height: 10px; background-color: blue;"></div>
Remediate vulnerabilities in security configuration on your machines	+35	2 of 10 virtual machines	<div style="width: 20%; height: 10px; background-color: blue;"></div>

Endpoint Protection not installed on Azure VMs

Filter [Install on 8 VMs](#)

VIRTUAL MACHINE	STATE	SEVERITY
<input checked="" type="checkbox"/> DBSRV	Open	High
<input checked="" type="checkbox"/> DBserver	Open	High
<input checked="" type="checkbox"/> DC1	Open	High
<input checked="" type="checkbox"/> RvsB1	Open	High
<input checked="" type="checkbox"/> RvsB2	Open	High
<input checked="" type="checkbox"/> RvsB3	Open	High
<input checked="" type="checkbox"/> WebSrv1	Open	High
<input checked="" type="checkbox"/> WebSrv2	Open	High

Security Center - Security alerts

Showing 6 subscriptions

Filter

Some subscriptions have limited protection. Upgrade to Standard to enhance their security →

DESCRIPTION	COUNT	DETECTED BY	ENVIRON...	DATE	STATE	CONFIDENCE	SEVERITY
Suspicious authentication activity	1	Microsoft	Azure	09/18/18	Active	—	Medium
Suspicious authentication activity	1	Microsoft	Azure	09/17/18	Active	—	Medium
Suspicious authentication activity	2	Microsoft	Azure	09/14/18	Active	—	Medium

Suspicious authentication activity

DMS

[Learn more](#)

RESOURCE TYPE	Virtual Machine
ALERT START TIME (UTC)	2018/09/18 07:00:25
NON-EXISTENT USERS	41
SUCCESSFUL LOGINS	0
SUCCESSFUL USER LOGONS	[]
ACCOUNT LOGON IDS	[]
FAILED USER LOGONS	DEFAULTACCOUNT
RDP SESSION INITIATED	No
END TIME UTC	09/18/2018 07:59:11

✓ Geo and Threat Intelligence Information

✓ Remediation steps

Was this useful? Yes No

[Investigate](#) [View playbooks](#)

Investigation Dashboard (Preview)

Refresh Analytics

Suspicious authentication activity

Related TO INCIDENT
Medium PRIORITY
ASC DETECTED BY

Investigation path

Investigation

Suspicious authentication a...

nt authority\anonymous logon

9/17/2018 10:50 AM — 9/29/2018 10:50 AM (12 days)

General Information

DESCRIPTION	Several login attempts were detected from IP Address: 46.72.54.238, none of them succeeded. This resembles a failed brute force attack. Event logs analysis shows that over the detected time period there were 42 failed attempts. Some of the failed login attempts aimed at 1 existing user(s).
ALERT ID	2518650467749999999_534fa750-6624-45e5-9bb3-d8b9df986b91
TIME GENERATED	9/18/2018 10:51:45.000 AM
START TIME	9/18/2018 9:00:25.000 AM
END TIME	9/18/2018 9:00:25.000 AM
ALERT START TIME (UTC)	2018/09/18 07:00:25
SOURCE	IP Address: 46.72.54.238
NON-EXISTENT USERS	41
EXISTING USERS	1
FAILED ATTEMPTS	42

Security Center - Just in time VM access

Showing 6 subscriptions

Search (Ctrl+ /)

Search

POLICY & COMPLIANCE

- Coverage
- Security policy

RESOURCE SECURITY HYGIENE

- Recommendations
- Compute & apps
- Networking
- Data & storage
- Identity & access (Preview)
- Security solutions

THREAT PROTECTION

- Security alerts
- Custom alert rules (Preview)
- Security alerts map (Preview)

AUTOMATION & ORCHESTRATION

- Playbooks (Preview)

ADVANCED CLOUD DEFENSE

- Adaptive application contr...
- Just in time VM access**
- File Integrity Monitoring

Some subscriptions have limited protection. Upgrade to Standard to enhance their security →

> What is just in time VM access?

> How does it work?

Virtual machines

Configured Recommended **No recommendation**

VMs for which we recommend you to apply the just in time VM access control.

4 VMs Enable JIT on 0 VMs

Search to filter items...

VIRTUAL MACHINE	STATE	SEVERITY
<input type="checkbox"/> DBserver	Open	High
Nagios	Open	High
WebSrv1	Open	High
WebSrv2	Open	High

JIT VM access configuration

WebSrv1

+ Add Save Discard

Configure the ports for which the just in time VM access will be applicable

PORT	PROT...	ALLOWED SOUR...	IP RANGE	TIME RANGE (H...
22 (Recommended)	Any	Per request	N/A	3 hours ...
3389 (Recommended)	Any	Per request	N/A	3 hours ...
5985 (Recommended)	Any	Per request	N/A	3 hours ...
5986 (Recommended)	Any	Per request	N/A	3 hours ...

Request access

WebSrv1

Please select the ports that you would like to open per virtual machine.



PORT	TOGGLE	ALLOWED SOURCE IP	IP RANGE	TIME RANGE (HOURS)
▼ WebSrv1				
22	On Off	My IP IP Range	No range	3
3389	On Off	My IP IP Range	No range	1
5985	On Off	My IP IP Range	No range	3
5986	On Off	My IP IP Range	No range	3

Open ports

Chapter 10: Best Practices



default-allow-rdp ✕
RedVSBBlue

 Save  Discard ⋮ More

* Source ⓘ

* Source IP addresses/CIDR ranges ⓘ
 ✓

* Source port ranges ⓘ

* Destination ⓘ

* Destination port ranges ⓘ

* Protocol
 Any TCP UDP

* Action
 Allow Deny

* Priority ⓘ

* Name

Description

Please select the ports that you would like to open per virtual machine.

PORT	TOGGLE	ALLOWED SOURCE IP	IP RANGE	TIME RANGE (HOURS)
▼ RvsB1				
22	<input type="checkbox"/> On <input checked="" type="checkbox"/> Off	<input type="text" value="My IP"/> <input type="text" value="IP Range"/>	<input type="text" value="No range"/>	<input type="range" value="1"/> 1
3389	<input checked="" type="checkbox"/> On <input type="checkbox"/> Off	<input type="text" value="My IP"/> <input type="text" value="IP Range"/>	<input type="text" value="No range"/>	<input type="range" value="1"/> 1
5985	<input type="checkbox"/> On <input checked="" type="checkbox"/> Off	<input type="text" value="My IP"/> <input type="text" value="IP Range"/>	<input type="text" value="No range"/>	<input type="range" value="1"/> 1
5986	<input type="checkbox"/> On <input checked="" type="checkbox"/> Off	<input type="text" value="My IP"/> <input type="text" value="IP Range"/>	<input type="text" value="No range"/>	<input type="range" value="1"/> 1



```
C:\>az login
Note, we have launched a browser for you to login. For old experience with device code, use "az login --use-device-code"
```

```

C:\>az --help

Group
  az


Subgroups:
  account      : Manage Azure subscription information.
  acr          : Manage Azure Container Registries for private registries within Azure.
  acs          : Manage Azure Container Services.
  ad           : Manage Azure Active Directory Graph entities needed for Role Based Access Control.
  advisor      : Manage Azure Advisor.
  aks          : Manage Azure Kubernetes Services.
  ams          : Manage Azure Media Services resources.
  appservice   : Manage App Service plans.
  backup       : Manage Azure Backups.
  batch        : Manage Azure Batch.
  batchai      : Manage Batch AI resources.
  billing      : Manage Azure Billing.
  bot          : Manage Microsoft Bot Services.
  cdn          : Manage Azure Content Delivery Networks (CDNs).
  cloud        : Manage registered Azure clouds.
  cognitiveservices : Manage Azure Cognitive Services accounts.
  consumption  : Manage consumption of Azure resources.
  container    : Manage Azure Container Instances.
  cosmosdb     : Manage Azure Cosmos DB database accounts.
  deployment   : Manage Azure Resource Manager deployments at subscription scope.
  disk         : Manage Azure Managed Disks.
  dla          : (PREVIEW) Manage Data Lake Analytics accounts, jobs, and catalogs.
  dls          : (PREVIEW) Manage Data Lake Store accounts and filesystems.
  dms          : Manage Azure Data Migration Service (DMS) instances.
  eventgrid    : Manage Azure Event Grid topics and subscriptions.
  eventhubs    : Manage Azure Event Hubs namespaces, eventhubs, consumergroups and geo recovery configurations - Alias.
  extension    : Manage and update CLI extensions.
  feature      : Manage resource provider features.
  functionapp  : Manage function apps.
  group        : Manage resource groups and template deployments.
  identity     : Managed Service Identities.
  image        : Manage custom virtual machine images.
  iot          : Manage Internet of Things (IoT) assets.
  iotcentral   : Manage IoT Central assets.
  keyvault     : Manage KeyVault keys, secrets, and certificates.
  lab          : Manage Azure DevTest Labs.
  lock         : Manage Azure locks.
  managedapp   : Manage template solutions provided and maintained by Independent Software Vendors (ISVs).
  maps         : Manage Azure Maps.
  monitor      : Manage the Azure Monitor Service.
  mysql        : Manage Azure Database for MySQL servers.
  network      : Manage Azure Network resources.
  policy       : Manage resource policies.
  postgres     : Manage Azure Database for PostgreSQL servers.
  provider     : Manage resource providers.
  redis        : Manage dedicated Redis caches for your Azure applications.
  relay        : Manage Azure Relay Service namespaces, WCF relays, hybrid connections, and rules.
  reservations : Manage Azure Reservations.
  resource     : Manage Azure resources.
  role         : Manage user roles for access control with Azure Active Directory and service principals.
  search       : Manage Azure Search services, admin keys and query keys.
  servicebus   : Manage Azure Service Bus namespaces, queues, topics, subscriptions, rules and geo-disaster recovery configuration alias.
  sf           : Manage and administer Azure Service Fabric clusters.
  snapshot     : Manage point-in-time copies of managed disks, native blobs, or other snapshots.
  sql          : Manage Azure SQL Databases and Data Warehouses.
  storage      : Manage Azure Cloud Storage resources.
  tag          : Manage resource tags.
  vm           : Manage Linux or Windows virtual machines.
  vmss        : Manage groupings of virtual machines in an Azure Virtual Machine Scale Set (VMSS).
  webapp       : Manage web apps.

```

Custom deployment

Deploy from a custom template

TEMPLATE

 Customized template
 2 resources

[Edit template](#)
[Edit parameters](#)
[Learn more](#)

BASICS

* Subscription

* Resource group [Create new](#)

* Location

SETTINGS

* Web App Name

Skus

Location

TERMS AND CONDITIONS


[Purchase](#)

<input type="checkbox"/>	 packt-demo-arm-webapp-01	App Service	West Europe
<input type="checkbox"/>	 packt-demo-arm-webapp-01-AppServicePlan	App Service plan	West Europe

```

GitRemoteName      :
GitRemoteUri       : https://packt-demo-ps-webapp-01.scm.azurewebsites.net
GitRemoteUsername  : $packt-demo-ps-webapp-01
GitRemotePassword  : System.Security.SecureString
State              : Running
HostNames          : {packt-demo-ps-webapp-01.azurewebsites.net}
RepositorySiteName : packt-demo-ps-webapp-01
UsageState         : Normal
Enabled            : True
EnabledHostNames   : {packt-demo-ps-webapp-01.azurewebsites.net, packt-demo-ps-webapp-01.scm.azurewebsites.net}
AvailabilityState  : Normal
HostNamesStates    : {packt-demo-ps-webapp-01.azurewebsites.net, packt-demo-ps-webapp-01.scm.azurewebsites.net}
ServerFarmId      : /subscriptions/cb638267-a366-463c-bfe5-7a49311c27a8/resourcegroups/packt-demo-ps/providers/Microsoft.Web/serverfarms/packt-demo-ps-webapp-01
Reserved          : False
LastModifiedUtc   : 10/9/2018 7:50:31 AM
SiteConfig         : Microsoft.Azure.Management.Websites.Models.SiteConfig
TrafficManagerHostNames :
ScmSiteAlsoStopped : False
TargetSwapSlot    :
HostingEnvironmentProfile :
ClientAffinityEnabled : True
ClientCertEnabled   : False
HostNamesDisabled   : False
OutboundIpAddresses : 40.114.210.78,40.114.239.62,40.114.231.39,13.80.106.127,40.114.212.109
PossibleOutboundIpAddresses : 40.114.210.78,40.114.239.62,40.114.231.39,13.80.106.127,40.114.212.109,40.114.236.249,40.114.238.127,13.80.108.215
ContainerSize      : 0
DailyMemoryTimeQuota : 0
SuspendedTill     :
NumberOfWorkers    :
CloningInfo        :
SnapshotInfo       :
ResourceGroup      : packt-demo-ps
IsDefaultContainer :
DefaultHostName    : packt-demo-ps-webapp-01.azurewebsites.net
SlotSwapStatus     : False
HttpsOnly          :
Identity           :
Id                 : /subscriptions/cb638267-a366-463c-bfe5-7a49311c27a8/resourcegroups/packt-demo-ps/providers/Microsoft.Web/sites/packt-demo-ps-webapp-01
Name               : packt-demo-ps-webapp-01
Kind               :
Location           : West Europe
Type               : Microsoft.Web/sites
Tags               :

```

<input type="checkbox"/>	 packt-demo-ps-webapp-01	App Service plan	West Europe
<input type="checkbox"/>	 packt-demo-ps-webapp-01	App Service	West Europe

```



PS C:\Windows\system32> $ResourceGroupName = "packt-demo-ps"
Remove-AzureRmResourceGroup -Name $ResourceGroupName -Force
True






```






```

"hostNames": [
  "packt-demo-cli-webapp-01.azurewebsites.net"
],
"hostNamesDisabled": false,
"hostingEnvironmentProfile": null,
"httpsOnly": false,
"id": "/subscriptions/331583a8-386b-4a0e-be78-67c97ddc8810/resourcegroups/packt-demo-cli/providers/Microsoft.Web/sites/packt-demo-cli-webapp-01",
"identity": null,
"isDefaultContainer": null,
"kind": "app",
"lastModifiedUtc": "2018-10-09T08:21:45.473333",
"location": "West Europe",
"numberOfWorkers": null,
"name": "packt-demo-cli-webapp-01",
"outboundIpAddresses": "104.214.237.135,51.144.123.73,23.97.221.250,51.144.120.21,51.144.126.188",
"possibleOutboundIpAddresses": "104.214.237.135,51.144.123.73,23.97.221.250,51.144.120.21,51.144.126.188,104.214.234.130,51.144.121.68,104.46.33.147",
"repositorySiteName": "packt-demo-cli-webapp-01",
"reserved": false,
"resourceGroup": "packt-demo-cli",
"scmSiteAlsoStopped": false,
"serverFarmId": "/subscriptions/331583a8-386b-4a0e-be78-67c97ddc8810/resourcegroups/packt-demo-cli/providers/Microsoft.Web/serverfarms/packt-demo-cli-webapp-01",
"siteConfig": null,
"slotSwapStatus": null,
"snapshotInfo": null,
"state": "Running",
"suspendedTill": null,
"tags": null,
"targetSwapSlot": null,
"trafficManagerHostNames": null,
"type": "Microsoft.Web/sites",
"usageState": "Normal"
}

```

<input type="checkbox"/>	 packt-demo-cli-webapp-01	App Service plan	West Europe
<input type="checkbox"/>	 packt-demo-cli-webapp-01	App Service	West Europe

<input type="checkbox"/>	 packt-demo-ps-webapp	App Service plan	West Europe
<input type="checkbox"/>	 packt-demo-ps-webapp-01	App Service	West Europe
<input type="checkbox"/>	 packt-demo-ps-webapp-02	App Service	West Europe
<input type="checkbox"/>	 packt-demo-ps-webapp-03	App Service	West Europe
<input type="checkbox"/>	 packt-demo-ps-webapp-04	App Service	West Europe

<input type="checkbox"/>	 packtdemoVM-01	Virtual machine	West Europe
<input type="checkbox"/>	 packtdemoVM-01	Network interface	West Europe
<input type="checkbox"/>	 packtdemoVM-01_OsDisk_1_aaae7ea40cd441f5a9bdd7ad6e5a318c	Disk	West Europe
<input type="checkbox"/>	 packtdemoVM-02	Virtual machine	West Europe
<input type="checkbox"/>	 packtdemoVM-02	Network interface	West Europe
<input type="checkbox"/>	 packtdemoVM-02_OsDisk_1_4427daa582784470868a9d46d21f602e	Disk	West Europe
<input type="checkbox"/>	 packtdemoVM-IP-1	Public IP address	West Europe
<input type="checkbox"/>	 packtdemoVM-IP-2	Public IP address	West Europe
<input type="checkbox"/>	 packtdemoVM-nsg	Network security group	West Europe
<input type="checkbox"/>	 packtdemoVM-Vnet	Virtual network	West Europe

Add Automation Account □ ×

* Name ❗
 ✓

* Subscription
 ▼

* Resource group
 ▼

Create new

* Location
 ▼

* Create Azure Run As account ❗

packt-demo-aa-01 - State configuration (DSC)
Automation Account

Search (Ctrl+/) <<

+ Add Refresh Reset filters Enable Log Search

Nodes Configurations Compiled configurations Gallery

Configuration status

Failed	0	Pending	0
Not compliant	0	In progress	0
Unresponsive	0	Compliant	0

Nodes 0

Search Node names...

Status 6 selected

Node configuration All

NODE	STATUS	NODE CONFIGURATION
No data		


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

Configuration Management
Inventory
Change tracking
State configuration (DSC)
Update management
Update management

Process Automation

Import
Configuration

Add a new configuration or update an existing one. Select a file smaller than 1 MB to import.

* Configuration file ⓘ
"webserverDSC.ps1" 

* Name
webserverDSC

Description

webserverDSC
Configuration

Compile
 Export
 Delete

Essentials ^

Resource group	Account
packt-demo	packt-demo-aa-01
Location	Subscription name
westeurope	Microsoft Azure Sponsorship
Subscription ID	Status
cb638267-a366-463c-bfe5-7a49311c27a8	Published
Last published	Configuration source
10/9/2018, 3:07 PM	View configuration source

packtdemoVM-01
Virtual machine

Connect
 Refresh
 Learn more

i Not connected

POWER STATE

VM running

OS

Windows

STATUS

Not connected

Registration

* Registration key

Primary key
Secondary key

Node configuration name ⓘ

Refresh Frequency ⓘ

Configuration Mode Frequency ⓘ

Configuration Mode ⓘ

Allow Module Override ⓘ

Reboot Node if Needed ⓘ

Action after Reboot ⓘ

[+ Add](#)
[Refresh](#)
[Reset filters](#)
[Enable Log Search](#)

[Nodes](#)
[Configurations](#)
[Compiled configurations](#)
[Gallery](#)

Configuration status

Failed	0	Pending	0
Not compliant	0	In progress	0
Unresponsive	0	Compliant	2

Nodes
 Status
 Node configuration

NODE	STATUS	NODE CONFIGURATION	LAST SEEN
packtdemoVM-01	Compliant	webserverDSC.WebServer	10/9/2018, 3:29 PM
packtdemoVM-02	Compliant	webserverDSC.WebServer	10/9/2018, 3:30 PM

Not secure | 104.45.6.205

Windows Server

Internet Information Services

Welcome
 Bienvenue
 Tervetuloa

ようこそ
 Benvenuto
 歡迎

Bem-vindo
 Bienvenido
 Hoş geldiniz
 ברוכים הבאים
 Welkom

Vitejte
 Καλώς ορίσαστε
 Välkommen
 환영합니다
 Добро пожаловать
 Üdvözljük

Microsoft
 Willkommen
 Velkommen
 مرحبا
 欢迎
 Witamy