

# Agenda

- Pre-requisites
- Architecture
- Azure Compute
- Deploy Trend Deep Security Manager

# Pre-requisites

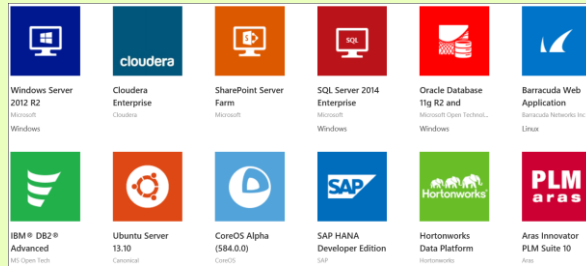
- Internet Access
- Azure subscription access
  - You can register for a free account - <https://azure.microsoft.com/en-us/free/>
- Visual studio Community - <https://go.microsoft.com/fwlink/?LinkId=691978&clcid=0x409>
- PowerShell - <https://www.microsoft.com/web/handlers/webpi.ashx/getinstaller/WindowsAzurePowershellGet.3f.3f.3fnew.appids>
- Azure SDK - <https://go.microsoft.com/fwlink/?LinkId=518003&clcid=0x409>

# Azure Compute: Virtual Machines

# Azure Virtual Machines

## Variety of Images to Select

### Azure Marketplace

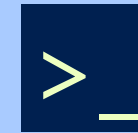


Bring your own on-premises images

## Managing VMs



Azure Management Portal



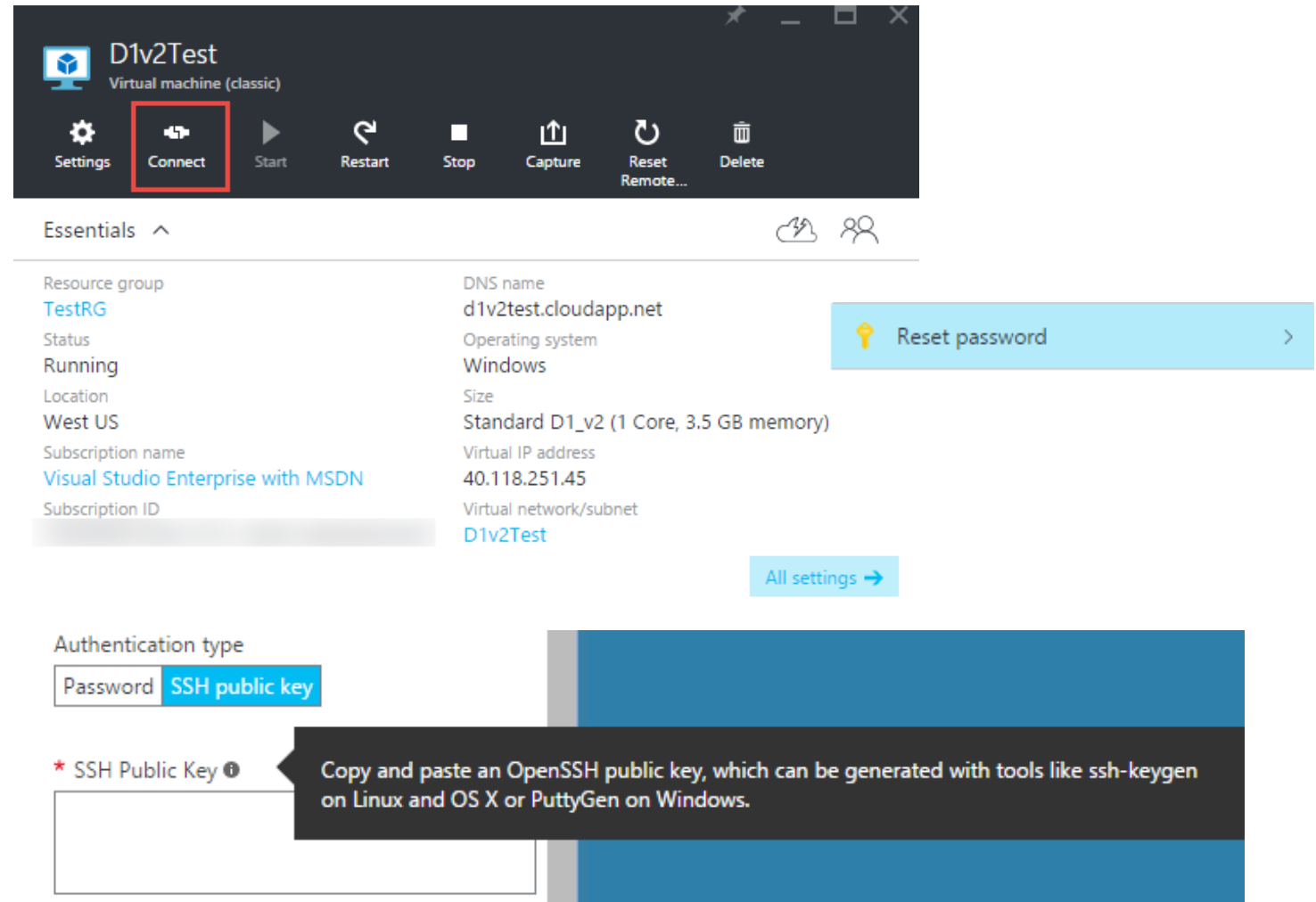
Scripting  
(Windows, Linux, and Mac)



Representational state transfer (REST) API

# Connecting to Azure VMs

- Connect to a Windows VM via RDP
- RDP File is downloaded from Portal
- User Name & Password set when creating VM
- Reset password from Portal
- SSH available for Linux



# Stopping a Virtual Machine

Virtual Machines Support two Stopped States:

## Deallocated

- No longer paying for CPU (still paying for storage)
- Will lose IP address if not marked static (public or private)
- Stop via portal or command line tools

## Stopped

- OS is shutdown, but still paying for compute
- Stop from within OS or command line tools

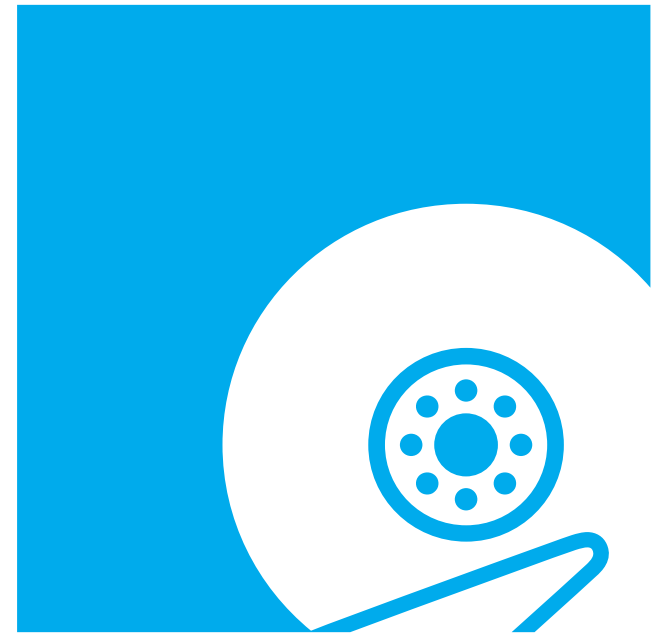
# Bring Your Own VM: Image Types

## Generalized

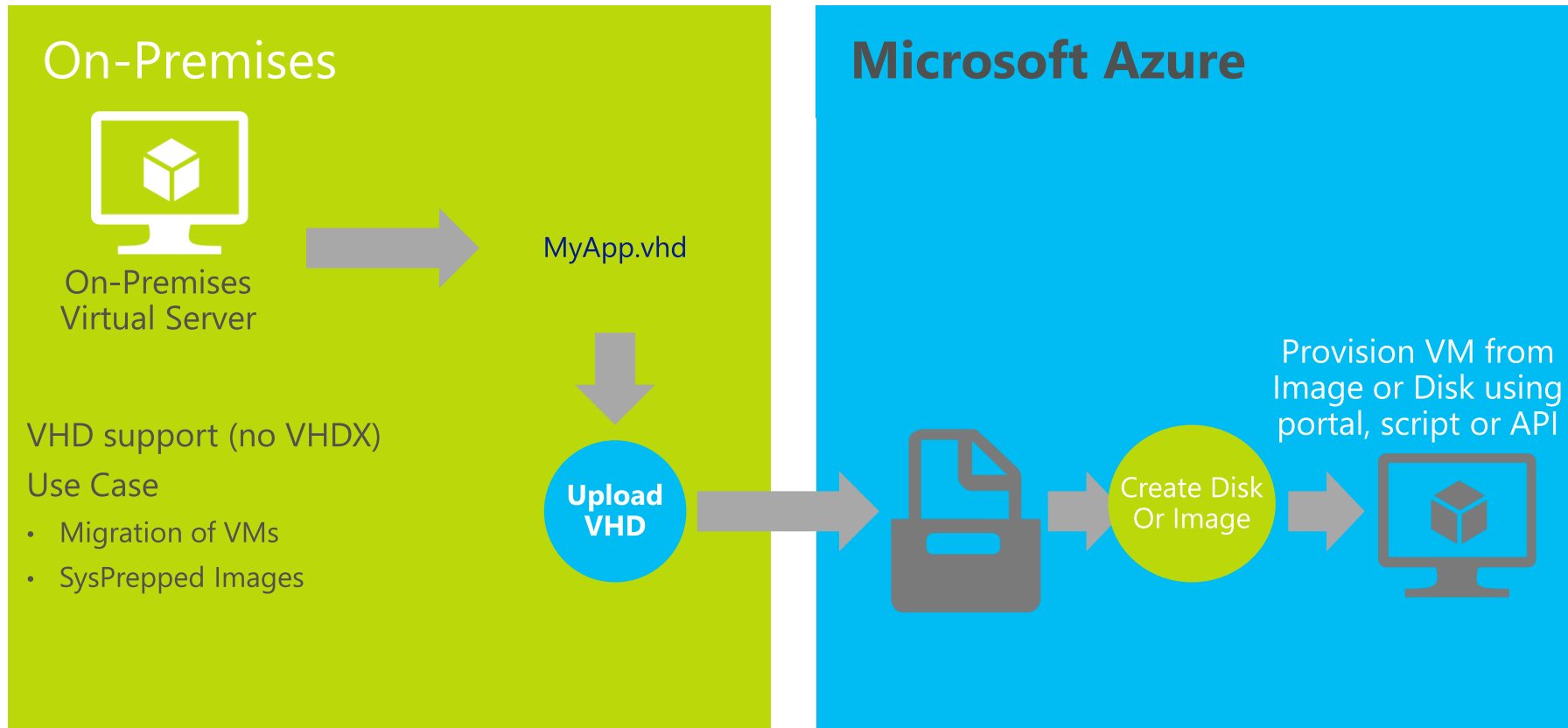
- Generalize OS using Windows Sysprep tool or Linux waagent (Windows Azure Agent)
- Captures OS and data
- Portal or CLI

## Specialized (Not SysPrepped)

- No generalization has been applied
- Captures OS and data
- Portal or CLI



# Bring Your Own VM/VHD





# Virtual Machine Extensions: Examples

- IaaS Antimalware
- Reset password
- Docker
- Backup
- BGInfo
- RDMA Drivers
- Bash Script
- PowerShell
- PowerShell DSC
- Alert Logic Log Manager
- CloudLink Secure VM
- Symantec
- Trend Micro
- Chef
- Puppet
- SQL IaaS Agent
- Visual Studio
- More...

## New resource

Leverage Azure's powerful capabilities to build, deploy, and manage applications faster.



**Chef Client**  
By Chef Inc.



**Custom Script**  
By Microsoft Corp.



**BgInfo**  
By Microsoft Corp.



**IaaS Antimalware**  
By Microsoft Corp.



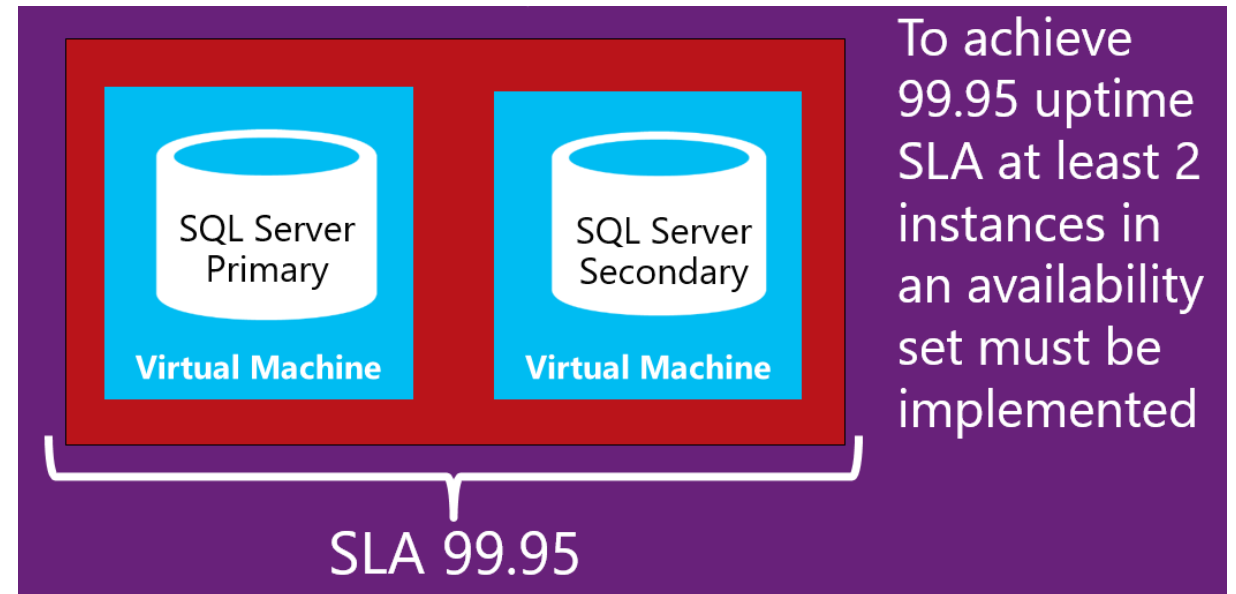
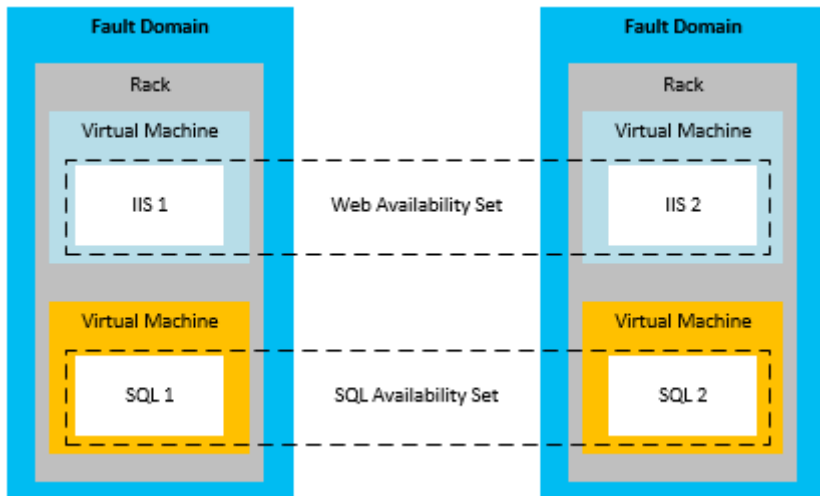
**Symantec Endpoint Protection**  
By Symantec.



**TrendMicro DSA**  
By TrendMicro DeepSecurity

# Availability Sets

- Availability Sets tell the Fabric Controller in Azure to place the virtual machines in separate fault & upgrade domains
  - Fault Domains (ie racks) – isolate VMs for faults
    - At a minimum half (67% with 3 or more servers) of your applications servers will be up in the event of hardware failure in the Microsoft Azure data center
  - Upgrade Domains – isolate VMs for host upgrades
    - 5 VMs by default, with up to 20. Your VMs are rebooted safely through the hypervisor during an agreed period (not a power off)



# Scale Sets

Deploy and Manage a collection of VMs as a Set

Used for building large-scale services targeting

- Big compute
- Big data
- Containerized workloads

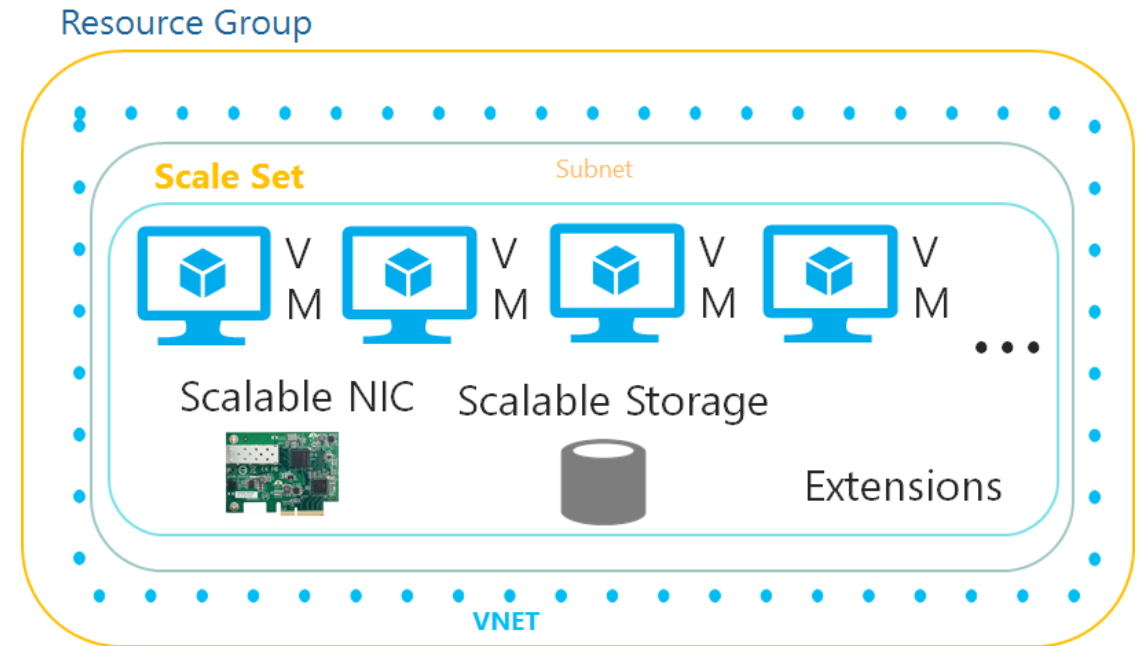
Scale Set VMs are configured identically

Up to 1000 virtual machines within a scale set

Choose how many VMs are required and a Scale Set will automatically build them for you

Scale Set integrates with Virtual Networks, Load Balancers and Network Security Groups

Scale Set implicitly deploys to an Availability Set

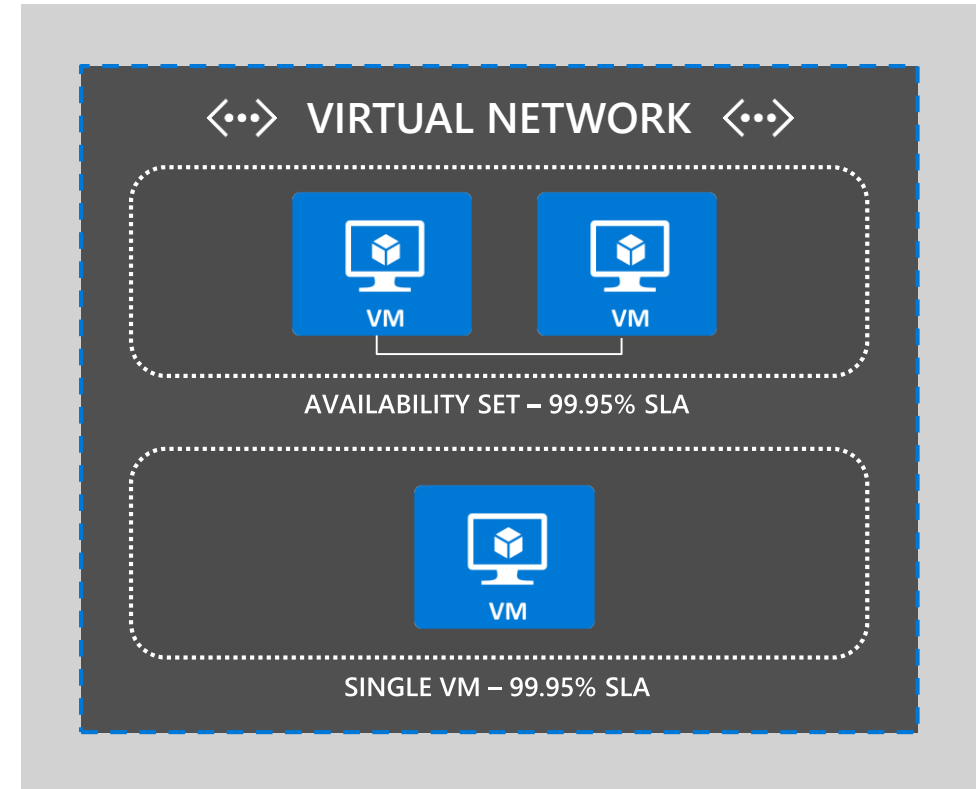


# Single Instance SLA on Virtual Machines

Guaranteed service level availability with a single virtual machine

Azure guarantees availability at 99.9% with only a single instance!

Requires Premium Storage



# Public IP

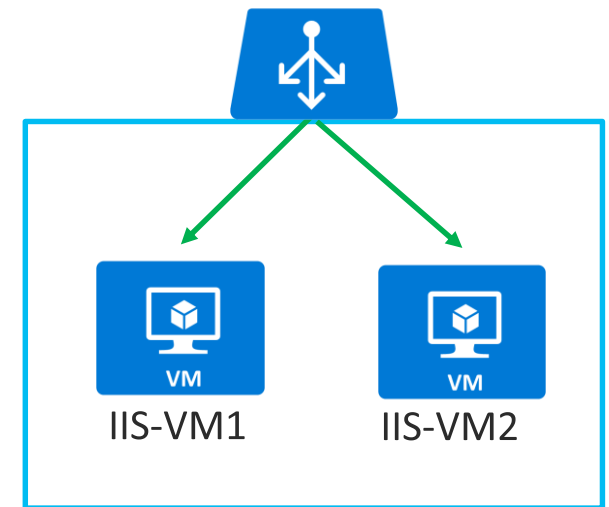
Public IP can be optionally created and associated with a VM or a Load Balancer

Up to 100 VMs per load balancer

Public IP can be:

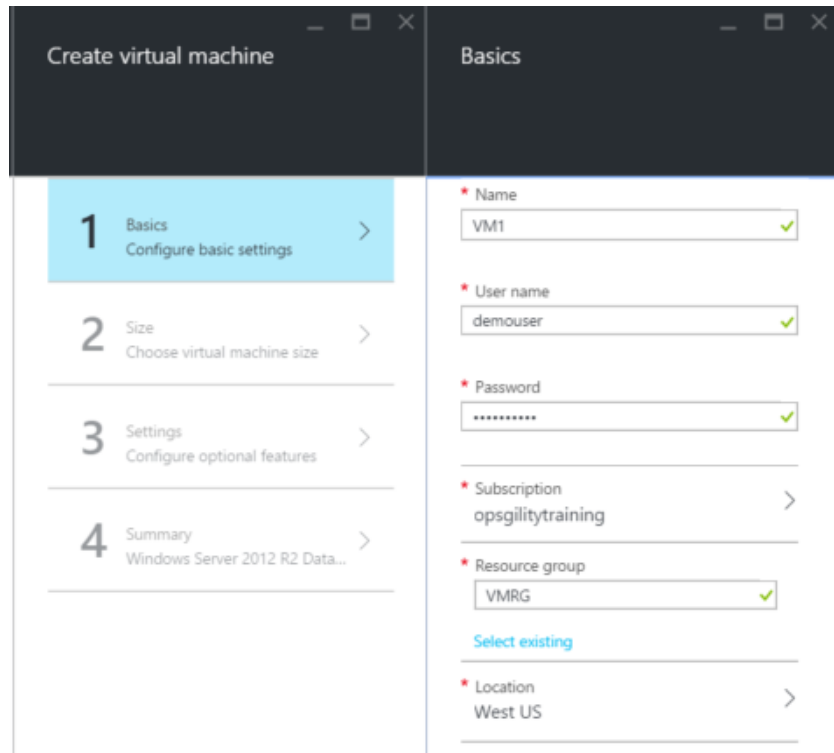
- Dynamic
- Static (reserved)

contososvc.uswest.azure.com  
23.99.9.198



# Creating an Azure Virtual Machine

## Azure Management Portal



The screenshot shows the 'Create virtual machine' wizard in the Azure Management Portal, specifically the 'Basics' tab. The left sidebar contains a navigation pane with four steps: 1. Basics (Configure basic settings), 2. Size (Choose virtual machine size), 3. Settings (Configure optional features), and 4. Summary (Windows Server 2012 R2 Data...). The main area displays the 'Basics' configuration form with the following fields: Name (VM1), User name (demouser), Password (masked with asterisks), Subscription (opsgilitytraining), Resource group (VMRG), and Location (West US). Each field has a green checkmark indicating it is valid. A 'Select existing' link is visible below the Resource group field.

## Command Line

### PowerShell

```
New-AzureRmVM -ResourceGroupName $rg -VM $vm ...
```

### X-Plat CLI

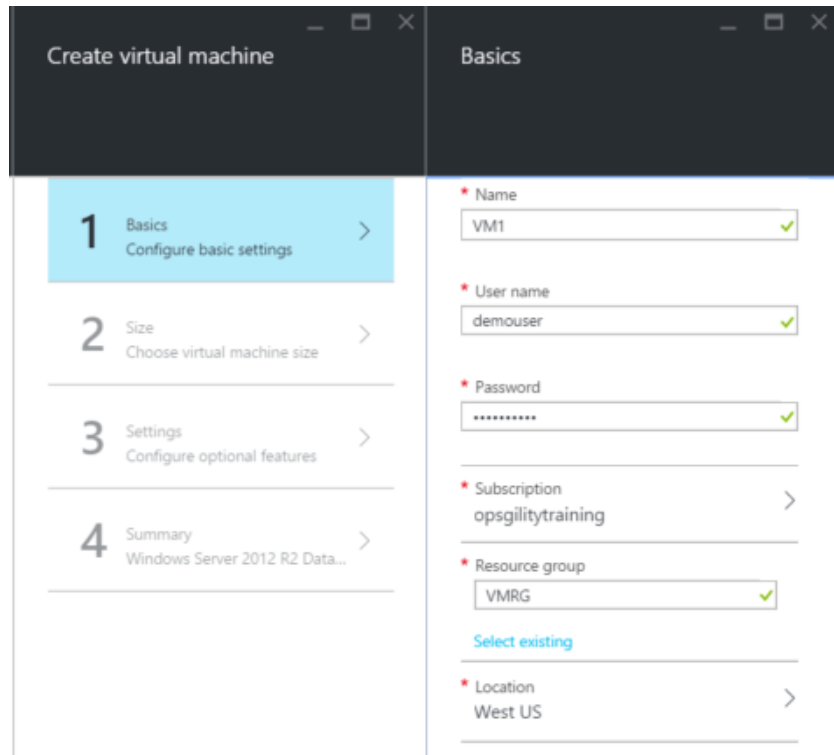
```
azure-cli@0.8.0:/# azure vm quick-create  
info: Executing command vm quick-create
```

## REST API

```
"OSDisk": {  
  "EncryptionSettings": null,  
  "OperatingSystemType": "Windows",  
  "Caching": "Readwrite",  
  "CreateOption": "FromImage",  
  ...  
}
```

# Creating an Azure Virtual Machine

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"OSDisk": {  
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}
```

# Deploying Trend Solutions

Microsoft Azure New > Marketplace > Everything [Report a bug](#)

Marketplace Everything

Everything

Compute

Networking

Storage

Web + Mobile

Databases

Intelligence + analytics

Internet of Things

Enterprise Integration

Security + Identity

Developer tools

Monitoring + Management







Add-ons

Containers


Blockchain


Filter


Results

NAME	PUBLISHER	CATEGORY
 Worry Free Business Security 9.0 SP1 Advanced	Trend Micro	Compute
 Worry Free Business Security 9.0 SP1 Standard	Trend Micro	Compute
 Deep Security Manager	Trend Micro	Compute
 Deep Security Manager (BYOL)	Trend Micro	Compute
 Interscan Messaging Security	Trend Micro	Compute
 Deep Security SaaS	Trend Micro	Security + Identity

Related to your search

 GreatHorn  
GreatHorn

 DgSecure for HDInsight  
Dataguise

 Quest Unified Communications Command  
Suite (UCCS)  
Quest



# Trend Licensing

Choose BYOL if you don't have a credit card associated with your subscription

[Report a bug](#)

benho@microsoft.com  
MICROSOFT

Deep Security Manager  
Trend Micro

^ CATEGORY ^

Compute

Compute

Compute

Compute

Compute

Security + Identity

Quest

Unified Communications Command Suite (UCCS)

Built to work seamlessly with Azure, Deep Security provides a complete suite of security capabilities for your virtual machines:

- Prevent network attacks with Intrusion detection and prevention (IDS/IPS).
- Accelerate PCI-DSS and other compliance requirements with multiple security controls.
- Automate security with powerful, fully scriptable security controls.

Pricing information: Depending on the number of workloads you want to protect, you choose a matching Virtual Machine size (min. of 25 VMs):

- 25 agents - choose VM size D2\_V2
- 50 agents - choose VM size D3\_V2
- 100 agents - choose VM size D4\_V2
- 200 agents - choose VM size D5\_V2

Learn more at [trendmicro.com/azure](http://trendmicro.com/azure) or email us at [azure@trendmicro.com](mailto:azure@trendmicro.com) for help sizing your Deep Security deployment.

**Free 30-Day Trial**

Try Deep Security free for 30 days. There will be no hourly software charges for 30 days, but Azure infrastructure charges still apply. Free Trials will automatically convert to a paid subscription upon expiration.

Release notes: last updated August 5, 2016

Version: 9.6.22191

Available on Azure Marketplace Since: 04/29/2016

UPGRADE AVAILABLE: For latest upgrade information and instructions on upgrading your Deep Security Manager see the Helpful Links below.

Select a deployment model ⓘ

Resource Manager

Create

# Choose the right licence!

20170227... x		Operation details	
		OPERATION ID	B94549D7E0F50881
		TRACKING ID	de9c12a9-6266-4ca3-88b6-5a95bea03762
		STATUS	BadRequest
		PROVISIONING STATE	Failed
		TIMESTAMP	27/02/2017 10:10:31
		DURATION	14 seconds
		TYPE	Microsoft.Compute/virtualMachines
		RESOURCE ID	/subscriptions/d5a40ca2-4f53-416b-a510-659eb51b57fc/resou...
		STATUSMESSAGE	<pre>{   "error": {     "code": "ResourcePurchaseValidationFailed",     "message": "User failed validation to purchase resources. Error message: '{\"ErrorDescription\": \"[\\\"CustomerDeniedElibility We could not find a credit card on file for your azure subscription. Please make sure your azure subscription has a credit card.\\\"]' \", \"CultureInvariantErrorCode\": \"BadRequest\", \"ActivityId\": \"8 f099cf3-efd9-41c2-b0a2-05206ca38b49\"}"   } }</pre>
		RESOURCE	benhtestdsmvm1

# Deep Security Manager - Setup

Microsoft Azure

« Create Deep Security Manager > Basics

Report a bug

Search resources

Create Deep Security Mana... Basics

1 Basics  
Configure basic settings

2 Deep Security Manager VM  
VM configuration and pricing

3 Deep Security Database  
Database Settings

4 Deep Security Credentials  
Configure credentials

5 Network Settings  
Review network settings

6 Summary  
Deep Security Manager

7 Buy

\* Deep Security Manager VM name ⓘ

benhtestdsmvm1 ✓

\* Your Username ⓘ

AzureAdmin ✓

\* Authentication type

Password SSH public key

\* Your password ⓘ

•••••••••• ✓

Subscription

Microsoft Azure Internal Consumption (d5a- ✓

\* Resource group ⓘ

Create new

benhtestdsm-rg ✓

Location

UK South ✓

OK

Microsoft Azure

« Deep Security Manager VM

Report a bug

Search resources

Create Deep Security Mana... Deep Security Manager VM

1 Basics  
Done ✓

2 Deep Security Manager VM  
VM configuration and pricing

3 Deep Security Database  
Database Settings

4 Deep Security Credentials  
Configure credentials

5 Network Settings  
Review network settings

6 Summary  
Deep Security Manager

7 Buy

\* VM Size ⓘ

1x Standard D2 v2 >

\* Public IP address ⓘ

(new) benhtestdsmvm1 >

\* Deep Security Manager URL ⓘ

benhtestdsmvm1 ✓

uksouth.cloudapp.azure.com

\* Deep Security Manager console port ⓘ

443

\* Heartbeat Port ⓘ

4120

OK

# Deep Security Manager - Setup

Create Deep Security Mana...

Deep Security Database

1

Basics

Done

✓

2

Deep Security Manager VM

Done

✓

3

Deep Security Database

Database Settings

>

4

Deep Security Credentials

Configure credentials

>

5

Network Settings

Review network settings

>

6

Summary

Deep Security Manager

>

7

Buy

>

Azure SQL Database ⓘ

Create New Use Existing

The Database Hostname string is a mandatory input if 'Use Existing' is selected. Leave blank for the 'Create New' option.

Database Hostname ⓘ

benhtestdmsqldb

\* Database Name ⓘ

dsm

\* Database Admin Name

AzureAdmin

✓

\* Database Admin Password

••••••

✓

\* Confirm password

••••••

✓

OK

Microsoft Azure « Deep Security Credentials

Report a bug

Search

Create Deep Security Mana...

Deep Security Credentials

1

Basics

Done

✓

2

Deep Security Manager VM

Done

✓

3

Deep Security Database

Done

✓

4

Deep Security Credentials

Configure credentials

>

5

Network Settings

Review network settings

>

6

Summary

Deep Security Manager

>

7

Buy

>

\* Deep Security Admin Name ⓘ

dsmadmin

✓

\* Deep Security Admin Password

••••••••

✓

\* Confirm password

••••••••

✓

OK

# Deep Security Manager - Setup

Microsoft Azure « Network Settings > Create virtual network Report a bug Search resources

Create Deep Security Mana... Network Settings Create virtual network

1 Basics Done ✓

2 Deep Security Manager VM Done ✓

3 Deep Security Database Done ✓

4 Deep Security Credentials Done ✓

5 Network Settings Review network settings >

6 Summary Deep Security Manager >

7 Buy >

\* Virtual network (new) dsmvnet01 >

\* Subnets Review subnet configuration >

OK

Create virtual network

\* Name dsmvnet01

\* Address space 10.2.0.0/16  
10.2.0.0 - 10.2.255.255 (65536 addresses)

OK

Deep Security Manager > Summary Report a bug Search resources

Create Deep Security Mana... Summary

1 Basics Done ✓

2 Deep Security Manager VM Done ✓

3 Deep Security Database Done ✓

4 Deep Security Credentials Done ✓

5 Network Settings Done ✓

6 Summary Deep Security Manager >

7 Buy >

Validation passed

Basics

Subscription Microsoft Azure Internal Consumption

Resource group benhtestdsm-rg

Location UK South

Deep Security Manager VM na... benhtestdsmvm1

Your Username AzureAdmin

Your password \*\*\*\*\*

Deep Security Manager VM

VM Size Standard D2 v2

Public IP address benhtestdsmvm1

Deep Security Manager URL benhtestdsmvm1

Deep Security Manager consol... 443

Heartbeat Port 4120

Deep Security Database

Azure SQL Database Create New

Database Hostname benhtestdsmsqldb

Database Name dsm

Database Admin Name AzureAdmin

Database Admin Password \*\*\*\*\*

Deep Security Credentials

Deep Security Admin Name dsmadmin

Deep Security Admin Password \*\*\*\*\*

Network Settings

Virtual network dsmvnet01

VM Subnet vmsubnet

VM Subnet address prefix 10.2.0.0/24

OK

Download template and parameters

# Automation – ARM Templates

Microsoft Azure « Summary > Template Report a bug Search resources

Template

Download Add to library Deploy

Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Define resources and configurable input parameters and deploy with script or code.

Template Parameters CLI CLI 2.0 (Preview) PowerShell .NET Ruby

Parameters (24)  
Variables (28)  
Resources (8)  
[variables('storageAccountName')]...  
buildSQLServer (Microsoft.Resour...  
[parameters('publicIPAddressNam...  
[parameters('virtualNetworkName'...  
[variables('nicName')] (Microsoft.N...  
[variables('securityGroupName')] (...  
[parameters('vmName')] (Microsof...  
[concat(parameters('vmName'), '/i...

```
1 {  
2   "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",  
3   "contentVersion": "1.0.0.0",  
4   "parameters": {  
5     "location": {  
6       "type": "string",  
7       "defaultValue": ""  
8     },  
9     "vmName": {  
10      "type": "string",  
11      "defaultValue": ""  
12    },  
13    "vmAdminName": {  
14      "type": "string",  
15      "defaultValue": ""  
16    },  
17    "vmAuthType": {  
18      "type": "string",  
19      "defaultValue": "password",  
20      "allowedValues": [  
21        "password",  
22        "sshPublicKey"  
23      ]  
24    },  
25    "vmAdminPassword": {  
26      "type": "securestring",  
27      "defaultValue": ""  
28    },  
29  }
```

# Custom Script Extensions

```
435 {
436     "type": "Microsoft.Compute/virtualMachines/extensions",
437     "name": "[concat(parameters('vmName'), '/installDSM')]",
438     "apiVersion": "2015-05-01-preview",
439     "location": "[variables('location')]",
440     "dependsOn": [
441         "[concat('Microsoft.Compute/virtualMachines/', parameters('vmName'))]"
442     ],
443     "properties": {
444         "publisher": "Microsoft.OSTCExtensions",
445         "type": "CustomScriptForLinux",
446         "typeHandlerVersion": "1.2",
447         "settings": {
448             "commandToExecute": "cp ../../config/0.settings /opt/trend/packages/dsm/default/"
449         },
450         "protectedSettings": {
451             "subscriptionId": "[subscription().subscriptionId]",
452             "vmName": "[parameters('vmName')]",
453             "databaseName": "[parameters('dbName')]",
454             "adminUserName": "[parameters('dsmAdminName')]",
455             "adminPassword": "[parameters('dsmAdminPassword')]",
456             "databaseUserName": "[parameters('dbAdminName')]",
457             "databaseUserPassword": "[parameters('dbAdminPassword')]",
458             "licenseMode": "[variables('licenseMode')]",
459             "databaseServer": "[reference('buildSQLServer').outputs.sqlServerFQDN.value]",
460             "location": "[variables('location')]",
461             "managerPort": "[parameters('managerPort')]",
462             "heartbeatPort": "[parameters('heartbeatPort')]",
463             "vmFQDN": "[reference(resourceId('Microsoft.Network/publicIPAddresses', parameters('publicIPName')), 'Microsoft.Network/publicIPAddresses').outputs.fqdn]",
464             "databaseOption": "[parameters('databaseOption')]",
465             "vmSize": "[variables('offerChosed').vmSize]"
466         }
467     }
```

# Deployment In Process

Microsoft Azure « [Report a bug](#)

Deployment history

benhtestdsm-rg

buildSQLServer  
27/02/2017 10:44:37

trendmicro.deep-security-manager-st-...  
27/02/2017 10:44:35

trendmicro.deep-security-manager-st-byoldeep-secu-2017022...

Deployment

Delete Cancel Refresh Redeploy View template

Deploying

PUBLICIPADDRESSNAME

benhtestdsmvm1

PUBLICIPDOMAINNAMELABEL

benhtestdsmvm1

VIRTUALNETWORKNAME

dsmvnet01

NETWORKEXISTS

new

NETWORKADDRESS

10.2.0.0/16

SUBNETVMNAME

vmsubnet

SUBNETVMNADDRESS

10.2.0.0/24

BASEURL

https://gallery.azure.com/artifact/20151001/trendmicro.

Operation details

	RESOURCE	TYPE	STATUS	TIMESTAMP
✓	benhtestdsmvm1-nic	Microsoft.Network/...	Created	2017-02-27T10:44:4...
✓	benhtestdsmvm1	Microsoft.Network/...	OK	2017-02-27T10:44:4...
✓	benhtestdsmvm1	Microsoft.Network/...	OK	2017-02-27T10:44:4...
⚙	benhtptfy6vq6226...	Microsoft.Storage/s...	Accepted	2017-02-27T10:45:3...
✓	dsmvnet01	Microsoft.Network/...	OK	2017-02-27T10:44:3...
⚙	buildSQLServer	Microsoft.Resource...	Created	2017-02-27T10:45:4...



# Deployed Trend DSM Server Resources

Microsoft Azure Resource groups > trenddsm-rg [Report a bug](#)

**trenddsm-rg**  
Resource group

- Overview
- Activity log
- Access control (IAM)
- Tags

SETTINGS

- Quickstart
- Resource costs
- Deployments
- Policies
- Properties
- Locks
- Automation script

MONITORING

- Metrics
- Alert rules
- Diagnostics logs
- Application insights
- Log analytics (OMS)
- Log search

**Essentials**

Subscription name (change)  
[Microsoft Azure Internal Consumption](#)

Subscription ID  
d5a40ca2-4f53-416b-a510-659eb51b57fc

Deployments  
1 Deploying, 1 Succeeded

Location  
UK South

9 items

NAME	TYPE	LOCATION
dsmvnet01	Virtual network	UK South
trenddpequplndcuwoo	Storage account	UK South
trenddsmpip1	Public IP address	UK South
trenddsmvm1	Virtual machine	UK South
trenddsmvm1-nic	Network interface	UK South
trenddsmvm1-nic-nsg	Network security group	UK South
trenddsmvm1pequplndcuwoo-sql	SQL server	UK South
bendsm	SQL database	UK South