

acronis.com

# **Acronis Cloud Manager**

Version 6.0

**Getting Started Guide** 

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# 1 What's new

### 1.1 Product improvements history

### 1.1.1 Version 6.0

- Introduced the new concept of resources management and allocation to tenants: Resource pools, quotas and usage.
- Added ability to put Hyper-V hosts into maintenance mode (enable/disable) with configurable options to define the behavior of the hosted VMs: what to do with the VMs when the host is put into maintenance mode.
- Implemented dedicated guest connection view for Azure virtual machines in the web portal.

#### 1.1.2 Version 5.1

• Added Microsoft Azure support to the web portal.

#### 1.1.3 Version 5.0

• Representing the new web portal - web based graphical user interface.

#### 1.1.4 Version 4.1

- GUI -
  - Re-branding the product to Acronis Cloud Manager

#### 1.1.5 Version 4.0

- Installation
  - Ability to select self-signed or custom certificates as an additional step when installing management service
- Datastore
  - Auto Discovery of datastores
- Jobs
  - Recording of login and log off events
  - Recording of console upgrades
  - ° Delete option is disabled
  - ° Disk copy percentage in the jobs view
  - ° Dock/pin panel
- Monitoring/Alerts
  - ° Dynamic optimization event alerts
  - Exporting alerts to syslog

- Azure Management/Administration
  - ° RBAC Feature to disable Azure & commands for tenants

#### 1.1.6 Version 3.3

- Reporting/Dashboard -
  - New System Status Report PDF output
  - New look for Zombie VMs report
  - Ability to schedule PDF Reports
- REST API Support -
  - VM Management/Monitoring/Reporting/Backup/SDN/Administration
- Management
  - Loading time Improvements
  - Cluster to Cluster VM migration
  - Inspect Virtual Hard Disk
  - Support Anti Affinity Rules In Failover Cluster

#### 1.1.7 Version 3.2

- Monitoring -
  - VM CPU Usage VM Level monitoring shows Guest CPU usage.
  - Host Memory Usage Total Memory Used By VM's and Total Memory used by OS Partition.
  - Host CPU Usage This is the amount of CPU that the Hosts are using for Hyper-V, we will also show the total CPU % the operating system is using the host.
- Reporting Custom Report Timeframe Allows user to change the timeframe to generate, first start to more customizable reports.
- Management
  - MAC Address Pools Enterprise or Multi-Site clients can now use custom MAC address pools.
  - Replication Failure Notices generates alerts and emails on Replication status and failures.
  - Current VMQ Status shows the status of the virtual machine queue (VMQ) properties of VMQcapable network adapters. VMQ is a scaling networking technology for switch that hashes incoming packets based on the destination MAC address.
  - Checkpoints in Grid In the grid view of management pane the checkpoints on a given VM are shown.
  - Turn Off Warning When VM is turned off, a warning about taking this action will now be shown.
  - Custom Column Saving If users make changes to the grids in CM, these custom changes are saved now.
  - Settings Button on RDP Screen Added a Settings button on the RDP screen for quick access to VM settings.
- Backup –

- No VSS Backup Optional ability to bypass VSS for OS Windows 2016 when running backups.
- Backup Failure Notifications New alerts and notifications on backup progress, success and failures. Includes email alert options.
- Installer Links to Evolve Links to evolve are now added to the installer, quick access to help.
- Licensing TCP port 8443 added for easier registrations in closed and NAT environments.
- SDN -
  - VLAN and VXLAN networks management Create and manage Datacenter networks or isolated Tenant networks.
  - Datacenter Firewall (ACL rules) Create and manage access rules for North-South and East-West traffic in Datacenter or Tenant networks.
  - Load balancing in VXLAN and VLAN networks Create and manage load balancers for Datacenter networks or isolated Tenant network.
  - ° Reduce cost of implementing LB features, replace NLB.
  - Backup / Restore Backup and Restore SDN settings.

#### 1.1.8 Version 3.1

- Initial Windows Server 2019 Support
- Multiple migrate operations select multiple virtual machines at once for live migration
- Extended live migration settings set the max number of simultaneous live migrations and storage migrations
- Run optimizer on demand Option to run optimizer on demand, even out the load over the cluster (manual optimization)
- Built in failover cluster load balancing If the host is running Windows 2016, give the option to enable or disable built-in failover clustering load balancing to avoid issues with the dynamic optimizer
- VM replication into Azure
- Syslog integration ability to export log files
- Reporting Introduction of the new plugin for VM lifecycle management reporting of the various resources high/low utilization by virtual machines during last 30 days period and ability to export it in different output formats (PDF, PNG, XLSX)

#### 1.1.9 Version 3.0

- Azure Management 5nine Cloud Manager 3.0 introduces the new plugin designed to control Microsoft Azure subscriptions from its GUI. Basic operations with Azure virtual machines are currently available – create, edit, delete etc. Import VM from Hyper-V to Azure action is also implemented. Please refer to "Azure Management" section below for details.
- Active Directory Enhancements
- Upgrade Agent Management
  - Upgrading remote agents deployed in different networks/domains

- Backup Wizard Enhancements
- Log file Enhancements

#### 1.1.10 Version 2.2

- Messaging Broker service update Multi-protocol open source messaging broker and Erlang components are upgraded the latest 3.7.4 version
- UX/UI Improvements
  - Unite resource-based and event-based monitoring alert settings
     Resource-based and event-based monitoring alerts are united in a single wizard
  - Management Service Upgrade
     All previous settings are shown including passwords.
  - Add Descriptions to All Wizards
     Where necessary detailed descriptions of the objects were added: category, credentials, etc.
  - Hide logical view for users
     Only Cloud Manager administrators can view logical the view tab in the object tree.
- Backup Wizard Enhancements
  - Ability to create backup job for a group of objects.
  - $^{\circ}$  Users are not allowed to edit backup jobs that were created by administrators.
  - Backup wizard texts are reworded and validated.
- Active Directory Enhancements
  - User/group AD browse dialog
     When adding Windows user credentials, a username does not h
    - When adding Windows user credentials, a username does not have to be entered manually. AD browse dialog is used instead.
  - Ability to create a user group mapped to AD
     New type of user group is introduced: domain user group. Domain user group automatically synchronizes its users with the corresponding AD group. You can set permissions for the group and as soon as a user is added to the AD group they start having corresponding permissions in Cloud Manager
- SDN deployment Basic Virtual Network Controller Support: a user can enter major SDN parameters and then special deployment scripts run deploying SDN infrastructure. Improvements include:
  - Create, Read, Update and Delete operations are implemented for the following SDN objects: Logical networks, Virtual networks, Network interfaces, Virtual Switches, Servers, NC Credentials.
  - Read operation is implemented for the following SDN objects: Load balancers, MAC Address Pools.

# 2 Introduction

### 2.1 Summary

Acronis Cloud Manager is a solution designed to help organizations efficiently manage Microsoft Hyper-V and Azure private and hybrid clouds. It provides multi-tenancy and role-based access control providing fine-grained control over virtualization hosts, networking and other resources to create and deploy Hyper-V and Azure virtual machines. The product has the following features:

- Easy-to-use and intuitive design for new or experienced Hyper-V admins.
- Hyper-V management in different Windows Server versions 2019 / 2016 / 2012 R2 from a single console.
- Microsoft Azure subscriptions management from a local console.
- Centralized monitoring for Hyper-V hosts and all virtualized resources.
- Consolidate data of resources utilization by virtual machines for the last month (reporting).
- Software defined network management and deployment.
- Backup and DR capabilities for virtual machines.

### 2.2 System architecture

Acronis Cloud Manager is a modular solution that lets you build a scalable infrastructure for environments of different sizes and configuration. The installation package of Acronis Cloud Manager includes a set of components:

- Management server Windows service that coordinates all operations performed by Acronis Cloud Manager.
- Management database is used by the management server to store data about the Hyper-V infrastructure, jobs, users and so on. The database instance can be located on a SQL Server installed either locally (on the same machine where the management server is running) or remotely.
- Management console provides the application user interface and allows user access to all features.
- Host agent responsible for performing all commands from management server on a Hyper-V host. This component must be installed on every Hyper-V server managed by Acronis Cloud Manager.
- Multi-protocol open source messaging broker (59MgmtSvcRmq) –open source message broker software that implements the advanced message queuing protocol (AMQP). The 59MgmtSvcRmq service is written in the Erlang programming language and is built on the open telecom platform framework for clustering and failover.

You can co-install all components on the same machine, physical or virtual, or you can set them up separately for a more scalable approach. Advanced message queuing protocol (AMQP) is used as a message-oriented middleware for the communication between the management server and the

host agents. HTTPS protocol is used for the communication between the console and the management server.



Figure 1 – Acronis Cloud Manager architecture

### 2.3 Plugins

Cloud Manager consists of the following plugins:

- Hyper-V Management
- Azure Management
- Hyper-V Monitoring
- Hyper-V Reporting
- Hyper-V Backup and DR
- Software defined network (SDN) Management
- Administration
- Usage

# **3 Deployment and configuration**

### 3.1 System requirements

### 3.1.1 Acronis Cloud Manager server

Component	Requirement
Hardware	CPU: modern x64 processor 4 cores minimum
	Memory: 8 GB RAM minimum, 16 GB RAM recommended
	Hard disk space: 300 MB for product installation and sufficient disk space for Microsoft SQL Server and Acronis Cloud Manager database
OS	Only 64-bit versions of the following operating systems are supported:
	<ul> <li>Microsoft Windows Server 2019</li> <li>Microsoft Windows Server 2016</li> <li>Microsoft Windows 10</li> <li>Microsoft Windows 8.1</li> <li>Microsoft Windows Server 2012 R2</li> </ul>
Software	<ul> <li>Microsoft .NET framework 4.6.2 or later</li> <li>Microsoft Visual C++ 2015 redistributable update 3</li> </ul>
Database	Microsoft SQL Server (Full and Express):
	<ul> <li>Microsoft SQL Server 2017</li> <li>Microsoft SQL Server 2016 (SP1)</li> <li>Microsoft SQL Server 2014 (SP2)</li> </ul>
	For production deployment of Acronis Cloud Manager server, it is recommended to use Microsoft SQL Server Standard Edition or higher.
Ports	5671 for messaging broker communication – can be changed during setup
	16080 for communication to management console
Internet	Internet connection is necessary for license activation

### 3.1.2 Acronis Cloud Manager console

Component	Requirement
Hardware	CPU: modern x64 processor 2 cores minimum.
	Memory: 2 GB RAM recommended.
	Hard disk space: 200 MB for product installation
OS	Only 64-bit versions of the following operating systems are supported:

Component	Requirement
	Microsoft Windows Server 2019
	Microsoft Windows Server 2016
	Microsoft Windows 10
	Microsoft Windows 8.1
	Microsoft Windows Server 2012 R2
Software	Microsoft .NET framework 4.6.2 or later
	Microsoft Visual C++ 2015 redistributable update 3
Ports	16080 – communication to management server
	443 – communication to Microsoft Azure

### 3.1.3 Acronis Cloud Manager host agent

Component	Requirement
Hardware	CPU: modern x64 processor 4 cores minimum
	Memory: 8 GB RAM minimum, 16 GB RAM recommended
	Hard disk space: 300 MB for product installation
OS	Only 64-bit versions of the following operating systems are supported:
	Microsoft Windows Server 2019
	Microsoft Windows Server 2016
	Microsoft Windows 10
	Microsoft Windows 8.1
	Microsoft Windows Server 2012 R2
Software	Microsoft .NET framework 4.6.2 or later
	Microsoft Visual C++ 2015 redistributable update 3
Ports	5671 for messaging broker communication – can be changed during setup

### 3.1.4 Acronis Cloud Manager web portal

Component	Requirement
Hardware	Hyper-V virtual machine:
	CPU: modern x64 processor 4 cores minimum
	Memory: 8 GB RAM minimum
	VHD: 2 GB

Component	Requirement
OS	Ubuntu 18.04 <sup>1</sup>
Software	Acronis Cloud Manager web portal components (pre-installed)
Ports	443

## 3.2 Licensing

Acronis Cloud Manager has two separate types of licenses – general one for Hyper-V management, including all its features and the license for Azure management.

Hyper-V management part is licensed per-core. Minimal license set for a Hyper-V host is 16 cores.

Azure management part is licensed per VM. Initially, a free license is installed by default, which includes quota for a maximum number of 5 virtual machines from the cloud. Azure license is installed and works separately on a global level and for each tenant. Default 5 VM licenses are only available to global users.

Acronis offers the following types of licenses for Acronis Cloud Manager:

"Paid subscription license" –a full license that expires at the end of the subscription term. The subscription license term is normally 1-3 years from the date of license issue.

"Trial license" – a full license that can be used for product evaluation. The trial license is valid for 14 days from the moment of product download and contains 100 core limit.

"NFR license" — a full license that can be used for product demonstration, training and education. The person to whom the license is provided agrees that the license is not for resell or commercial use.

Information about licenses is available in the **Home** tab, available in every plugin.

<sup>&</sup>lt;sup>1</sup>OS Ubuntu 18.04 and Acronis Cloud Manager web portal components are pre-installed on the VHD delivered with the setup archive.



### 3.3 Installation

Acronis Cloud Manager installation package represented in two options:

- Separate bootstrap application including Acronis Cloud Manager components and links to documentation and online virtual labs to test pre-configured product.
- Setup package in ISO format including Acronis Cloud Manager components both in bootstrap application and separate Windows Installation Package (.msi) files and prerequisites Microsoft SQL Express and .NET 4.6.2.

To install Acronis Cloud Manager, using bootstrap application, run the Setup.exe application from the downloaded Acronis Cloud Manager archive (or from ISO setup package):



All 3 components can be installed from this bootstrap setup, but it must be run locally on each machine.

To install Acronis Cloud Manager from ISO, using either separate .msi files or similar bootstrap application, mount the Acronis Cloud Manager iso installation file and run the corresponding .msi file from its subfolders (Management, Console and Agent) or setup.exe bootstrap application.

It is generally not necessary to install Host Agent component from bootstrap setup or a separate .msi file. It can be installed automatically from the Acronis Cloud Manager console when adding servers.

#### 3.3.1 Management service setup

 To run management service setup, select the first component in the bootstrap setup list and press the **Install** button or run **managementservice.setup.msi** from the **Management** setup ISO folder. The following window will be shown. Some steps will differ when installing this

#### component from ISO. Press **Next**:



2. The Acronis software end user license agreement will appear.

Read and accept it, then press **Next**:

🕼 Acronis Cloud Manager Management Service Setup - 🗆 🗙				
End-User License Agreement				
Please read the following license agreement carefully				
DATE OF LAST UPDATE: 20 February 2020				
ACRONIS				
SOFTWARE LICENSE AGREEMENT				
SOFTWARE LICENSE AGREEMENT THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT" OR "EULA") GOVERNS THE USE OF THE ACRONIS SOFTWARE ("SOFTWARE"). ACRONIS INTERNATIONAL GMBH ("ACRONIS" OR "LICENSOR") IS WILLING TO LICENSE THE SOFTWARE TO YOU AS AN INDIVIDUAL OR LEGAL ENTITY ("LICENSEE" OR "YOU"), AND IF APPLICABLE TO YOUR SOFTWARE LICENSE, TO PROVIDE YOU WITH SUPPORT AND MAINTENANCE SERVICES ("SERVICES"), PROVIDED, AND ONLY ON V				
Print Back Next Cancel				

#### Note

When installing this component from ISO, the prerequisites check will be done in the background and the setup will install the corresponding missing Microsoft components in *silent* mode.

3. Select the plug-ins you want to use and press **Next**:

# Acronis Cloud Manager Management Service Setup - 🗆 🗙						
Select Features Select the way you want features to be installed.						
Click the icons in the tree below to change the way features will be installed.						
Plugins Hyper-V Management Monitoring		Installs Acronis Cloud Manager Management Service				
Azure Backup SDN Usage		This feature requires 418MB on your hard drive. It has 6 of 6 subfeatures selected. The subfeatures require 387MB on your hard drive.				
					Browse.	
Reset	Disk Usage	В	ack	Next	Cance	el

4. If you are performing an upgrade from a previous version, select the upgrade options:

🕼 Acronis Cloud Manager Management Service Setup	5 <u>-</u> 37		×
Update Settings Mode			Α
Define whether you need to keep previous installation settings or set the If you need to keep the configuration from the previous installation, selec Otherwise, select "Change settings".	new valu t "Use pro	es. evious set	ttings".
• Use previous settings			
○ Change settings			
		·	
Back Next	:	Cano	cel

• **Use previous settings**: all installation existing settings will be kept, except asking you to confirm the service logon for the management service credentials (domain\user).

- **Change settings**: all credential settings can be changed without the need of uninstalling the management service
- 5. Select the destination folder for Acronis Cloud Manager

management service and press **Next**:

Acronis Cloud Manager Management Service Setup -		×
Destination Folder		Λ
Click Next to install to the default folder or click Change to choose another.		A
Install Acronis Cloud Manager Management Service to:		
C:\Program Files\Acronis\Acronis Cloud Manager Management Service\		-
Change		
Back Next	Can	cel

6. Select one of certificate configuration options:

🖟 Acronis Clo	oud Manager Managem	ent Service Setup	5- <u>-</u> 7	
Define Cer	tificate			Α
				~
Select the cert	ificate:			
Self Signed	Certificate			
Path:				Browse
Password:				
		Back	Next	Cancel

- **Self Signed Certificate** Acronis Cloud Manager will automatically install self-signed certificate during management service setup;
- **Existing Certificate** you will have to browse and select pre-configured existing certificate, then enter the password.

7. Provide user credentials for the user that will run management service and press **Next**:

付 Acronis Cloud Mar	nager Management S	ervice Setup	5 <u>-</u> 7		×
Define User					Δ
					A
Install the Acronis Cloud	Manager Management	Service under			
O Local system					
() User					
Login :	DEV\5nine				
Password :	•••••	••			
		Back	Next	Cano	:el

8. Applicable to ISO installer only: choose, which SQL server to use for database placement:

A Acronis Cloud Manager Management Service Setup	×				
SQL Server instance	₿				
Choose SQL Server Instance:					
Install new instance of SQL Server Select this option, if you need setup to install Microsoft SQL Server 2016 Express on the computer where you are installing the management service.	locally,				
Use existing instance of SQL Server Select this option, if you intend to use an existing local or remote Microsoft SQL Server instance.					
Back Next C	ancel				

- Install new instance of SQL Server setup will automatically initiate free Microsoft SQLEXPRESS® server installation onto the local machine. Make sure in advance that there is enough of free space on the local disk and all prerequisites for Microsoft SQLEXPRESS® server installation are met.
- Use existing instance of SQL Server you will be asked to select any of existing MS SQL® or MS SQLEXPRESS® servers available in your environment at the following installation steps.
- 9. Select database server and set authentication method:
- Windows Authentication can be selected if the user has been granted the necessary permissions on the selected SQL Server;
- **SQL Authentication** use a specific SQL Server account (**sa** for example) and enter the relevant password.

Press <b>Next</b> :				
🖟 Acronis Cloud N	Aanager Manageme	ent Service Setup		
Define MS SQL	Database			Δ
				A
Database Server:	(local)		~	
Windows authen	tication			
O SQL authenticati	on			
Name :	sa			
Password :				
		Back	Next	Cancel

10. Specify job messaging queuing (broker) configuration parameters and TLS options, and then press **Next**:

🖟 Acronis Cloud Manag	ger Management Service Setup - 🗆 🗙	(
Communication Set	ttings	
Specify job messaging	g queuing configuration parameters	
Login:	admin	
Password:	••••	
Confirm password:	••••	
Port:	5671	
Address:	5nineMgr.dev.5nine.com	
O № TLS		
TLS1.0, TLS1.1 at	nd TLS1.2	
O TLS1.2 only		
	Back Next Cancel	

TLS option depends on your environment's specific requirements. In most cases, the second (default) option that includes TLS 1.0, 1.1 and 1.2 compatibility is the proper choice.

11. Provide master administrator's credentials to connect to management console without active directory login for example.

The default username is **admin** for the first global administrator that you will need to use to login into the console for the first time. It is strongly recommended that alternate credentials are set for security.

🖟 Acronis Cloud M	Nanager Management Service Setup — 🗌	×
Administrator's	s Credentials	Δ
	/	7
Set custom creden You will need to us	tials for user with administrative privileges for Acronis Cloud Manager. These credentials in management console when connecting to Acron	is
Login	admin	
Password	•••••	
Confirm password	•••••	
	Back Next Cance	el

Click **Next**.

12. Click **Install** to start installation:

😹 Acronis Cloud Manager Management Service Setup	5 <u>-</u> 71		×
Ready to install Acronis Cloud Manager Management	Service		A
Click Install to begin the installation. Click Back to review or change installation settings. Click Cancel to exit the wizard.	any of yo	ur	
Back Install		Can	cel

13. Click **Finish** when installation is complete:



#### 3.3.2 Console setup

1. To run console setup, select the second component in the bootstrap setup list and press the **Install** button or run **console.setup.msi** from the **Console** setup ISO folder. The following

#### window will be shown. Click **Next**:



2. The Acronis software end user license agreement will appear.

Read and accept it, then press **Next**:

Acronis Cloud Manager Console Setup -		
End-User License Agreement		/
Please read the following license agreement carefully		
DATE OF LAST UPDATE: 20 February 2020	_	^
ACRONIS		
SOFTWARE LICENSE AGREEMENT		
THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT" OR "EU GOVERNS THE USE OF THE ACRONIS SOFTWARE ("SOFTWA ACRONIS INTERNATIONAL GMBH ("ACRONIS" OR "LICENSOR" WILLING TO LICENSE THE SOFTWARE TO YOU AS AN INDIVIDUAL LEGAL ENTITY ("LICENSEE" OR "YOU"), AND IF APPLICABLE TO Y SOFTWARE LICENSE, TO PROVIDE YOU WITH SUPPORT MAINTENANCE SERVICES ("SERVICES"), PROVIDED, AND ONLY	JLA") RE"). ") IS L OR OUR AND ON	*
☑ I accept the terms in the License Agreement		
Print Back Next	Cano	el

3. Select the plugins you want to use and press **Next**:

🛃 Acronis Cloud Ma	nager Console Setup			_		×
Select Features Select the way you	u want features to be install	ed.				A
Click the icons in th	e tree below to change the	way feat	ures will	be installed		
	ugins → Console.HyperVPlugii → Console.AzurePlugin	Ins Co	talls Acro nsole	onis Cloud M	lanager	
	<ul> <li>Console.Administratic</li> <li>Console.MonitoringPl</li> <li>Console.ReportingPl.</li> <li>Console.BackupPlugir</li> <li>Console.UsagePlugin</li> </ul>	This feature requires 250MB on your hard drive. It has 8 of 8 subfeatures selected. The subfeatures require 88MB on your			ır	
<	>		u unve.		Browse	<u>-</u>
Reset	Disk Usage	Bad	¢	Next	Can	icel

4. Select the destination folder for Acronis Cloud Manager and set the following program options (select or deselect depending on your preferences):

🖟 Acronis Cloud Manager Console Setup —		×
<b>Destination Folder</b> Click Next to install to the default folder or click Change to choose another.		Α
Install Acronis Cloud Manager Console to:		
C:\Program Files\Acronis\Aronis Cloud Manager Console\		
Change		
Launch application after installation		
Create shortcut in program menu		
Create shortcut on desktop		
Back Next	Can	cel

- Launch application after installation;
- Create shortcut in program menu;
- Create shortcut on desktop.

Press **Next**.

5. Click the **Install** button to install the management console:



6. Click **Finish** when installation is complete:

🛃 Acronis Cloud Manager Cor	nsole Setup	5 <u>-</u> 71		×
Acronis Cloud Manager	Completed the Acronis C Console Setup Wizard	loud M	lanager	
	Click the Finish button to exit the Se	tup Wizaro	d.	
	Back Fini	sh	Cance	el

### 3.3.3 Host agent setup

The host agent is installed automatically on a Hyper-V server when it is added to the objects tree in the management console. If there are any specific conditions or issues, you can also install it manually by selecting the third option in Acronis Cloud Manager bootstrap setup or running **agentservice.setup.msi** from the **Agent** setup ISO folder.

1. The following window will be shown. Press **Next**:



2. The Acronis software end user license agreement will appear.

Read and accept it, then press **Next**:

🖟 Acronis Cloud Manager Agent Setup	-		×
End-User License Agreement			Λ
Please read the following license agreement carefully			A
DATE OF LAST UPDATE: 20 February 2020			^
ACRONIS			
SOFTWARE LICENSE AGREEMENT			
THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT" GOVERNS THE USE OF THE ACRONIS SOFTWARE (" ACRONIS INTERNATIONAL GMBH ("ACRONIS" OR "LI WILLING TO LICENSE THE SOFTWARE TO YOU AS AN IN LEGAL ENTITY ("LICENSEE" OR "YOU"), AND IF APPLICAL SOFTWARE LICENSE, TO PROVIDE YOU WITH SU MAINTENANCE SERVICES ("SERVICES"), PROVIDED, AN	OR " SOFTV CENSC DIVIDU BLE TC PPORT	EULA") VARE"). DR") IS JAL OR JAL OR VOUR AND LY ON	~
I accept the terms in the License Agreement			
Print Back Next		Cano	cel

3. Select the destination folder for Acronis Cloud Manager agent and press **Next**:

🛃 Acronis Cloud Manager Agent Setup		11 <u>-</u> 11		×
Destination Folder				Λ
Click Next to install to the default folder or click	Change to cho	ose another.		A
Install Acronis Cloud Manager Agent to:				
C:\Program Files\Acronis\Acronis Cloud Manager	Agent\			]
Change				
	Back	Next	Can	cel

4. Set the management server and messaging queuing broker connection parameters, specify agent service account, enable TLS option (if applicable):

🖟 Acronis Cloud Man	ager Agent Setup		<u>-</u>		×
Management Ser	vice				Λ
Specify Managemen	t Server path and Agent account				A
RabbitMQ config	uration				
Login :	admin				
Password :	••••				
TCP Port:	5671				
Address:	5nineMgr.dev.5nine.com				
Use TLS					
Agent service a	count configuration				
Login :	DEV\5nine				
Password :	•••••				
	Pack	Next	_	Car	vcel
	Dack	Next		Car	

#### Note

You will have to provide the same messaging broker configuration parameters that were used in management service setup. Specifically, this applies to the address of the messaging broker – it must be entered exactly in the same way as it had been specified during management service setup, including letter case as this parameter is case-sensitive! Otherwise the communication between agent and management service will not work. Then specify credentials to start agent service under and press **OK**.

5. Set CBT options:

🖟 Acronis Cloud Manager Agent Setup			°Y		×
Management Service					Δ
Please specify CBT configuration settings.					A
Default (auto)					
○ Inplace					
ODedicated					
Storage Path :					
	Back	Next		Cano	cel

- **Default (auto)**: CBT data will be stored in the program-defined default location (**C:\Program Files\5nine CBT**);
- Inplace: CBT data will be stored together with virtual machine VHD;
- **Dedicated**: CBT data will be stored in the location, specified by user (**Storage Path**). The location should be available from the Hyper-V server's side.

6. Click **Install** to start installation:

🖟 Acronis Cloud Manager Agent Setup	_		×
Ready to install Acronis Cloud Manager Agent			A
Click Install to begin the installation. Click Back to review or change installation settings. Click Cancel to exit the wizard.	e any of yo	ur	
Back Install		Can	cel

7. Click **Finish** when installation is complete:

🖟 Acronis Cloud Manager Age	ent Setup	_		×
Acronis Cloud Manager	Completed the Acronis C Agent Setup Wizard	loud M	lanager	
II I I I I I I I I I I I I I I I I I I	Click the Finish button to exit the Set	tup Wizaro	d.	
1000				
	Back Finis	sh	Cance	2

### 3.4 Login to console

Launch the management console and enter the relevant credentials

Authentication	$\times$
Management Service Hostname or IP Address:	
localhost:16080	~
User Type:	
○ Current Windows User ○ Domain Windows User ④ Custom U	lser
Login:	
admin	
Password:	
•••••	
Connect Save as	Default

#### Note

On the first console start you need to enter credentials that you entered upon management server setup. At a later point, you will be able to add other users and/or change the default credentials.

### 3.5 First run

1. On the first console start you will be asked to install the license and prompted to add Hyper-V servers:
| First Run - Init         | ial Configuratio         | n              |             |                 |
|--------------------------|--------------------------|----------------|-------------|-----------------|
| Licenses                 |                          |                |             |                 |
| Expiration               | Instances                | Туре           | State       |                 |
| - Please make the follo  | wing steps:              |                |             | Install licence |
| 2. Please install Agents | s on your hosts, you can | do it manually | or by using | Add Servers     |
| Discovery Wizard.        |                          |                |             |                 |

2. Click the Install license link and choose the license.txt file. You may either have a trial license that came with your trial email or a commercial license that would have been purchased. More information about the licensing and how to install the license at a later point can be found in the "Licensing" (p. 14)' section below. Click Add Servers to add Hyper-V hosts or clusters. The adding servers process is described in the next section.

# 3.6 Adding Hyper-V servers

- 1. To start managing your virtual infrastructure, you must configure connections to Microsoft Hyper-V virtual management servers. You can connect the following types of servers:
- Standalone Hyper-V host;
- Hyper-V cluster.
- For the initial launch the object tree will be empty. Adding new servers is implemented via Add servers wizard. To start the wizard press the, Add servers button in the toolbar at the top of the console.
- 3. After the **Add servers** wizard starts you need to specify credentials for discovery:

Configure Datacente	r: Add Servers	×
		Discovery Type
Credentials Credentials Summary	Specify credentials for d Credentials Domain\Username: Password:	liscovering   VNEXT.5nine.com\5nine
		< Back Next > Finish Cancel

You may type in credentials manually or use AD discovery for that purpose, if you are working in a domain environment. To use AD discovery, press the button to the right of the **Domain\userame** filed and then select the AD account and click **OK**:

Pick Active Directory Object		_		$\times$
Search				
Name	Department		O	к
Administrator			Can	cel
🔒 Guest				
🔒 krbtgt				
🔝 5nine Inc. Software				

Then select discovery types and provide discovery data:

New servers can be added in 3 ways:

- **Manual** Manually typing the addresses of servers separated by commas. You may use host name, FQDN or IP address.
- Active Directory to search for available hosts or clusters using AD discovery.
- **IP Range** to search for available hosts or clusters using IP discovery in the given IP range.

Configure Datace	enter: Add Servers	×
	Discovery Type	
Credentials	Choose discovering type	
Discovery Type < Discovery Results	Discovery	7
Summary	List server names separated by ","	
	Active Directory dev.local	
	Start IP address:         10         0         .         2           Finish IP address:         10         .         0         .         10	
	< Back Next > Finish Cancel	

#### Note

AD and IP discovery can take quite significant time depending on your AD and network structure and performance. Once the discovery process completes, you will get the full list of servers that can be managed by Acronis Cloud Manager. Only those servers that match system requirements are selected automatically.

4. Select servers that you need to manage and press **Next**:

Configure Datacenter	Configure Datacenter: Add Servers ×				
	Discovery Results				
Credentials Discovery Type Discovery Results Summary	Select hosts where you want to install Acronis Cloud Manager Agent          Name       Operating System       Type       CPU (Cores)       .NET Version       Agent         Image: Cluster.dev       Unknown (10.0.17763)       Cluster       2 (8)         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: CPU (Cores)       Agent       .NET Version         Image: Cluster Nodes       Image: Cluster Nodes       Image: Cluster Nodes          Image: Cluster Nodes       Image: Cluster Nodes       Image: Cluster Nodes				
	CBT settings Mode: 'Auto' Edit				
	< Back Next > Finish Cancel				

5. Host agents will be installed automatically on the servers that you selected on the previous step.

Configure Datace	nter: Add Servers			×			
		Summary					
Credentials	Completing the wizard						
Discovery Type Discovery Results	You have successfully completed the Add Servers Wizard. You are about to add the following objects:						
Summary <	Host Name	Status					
	NODE1.dev.local	Installing agent					
	ODE2.dev.local	Installing agent					
	To close the Wizard click 'Finis	:h' button.					
		<	Back Next > Finish C	ancel			

### Note

When agents are installed servers will appear in the console objects tree automatically.

# 3.7 Upgrading host agents

If you are upgrading the product from the previous versions, upon completing management service and console upgrade, the product will detect the necessity and offer to upgrade host agents. Blue arrows will appear on host's icons in the object tree, displaying the necessity to upgrade the agents. Also, corresponding commands will appear in the context menu of the host objects and on the main ribbon:



Use the **Upgrade agent** command to proceed with the particular host, selected in the object tree, and the **Upgrade all agents** command to proceed with all managed hosts.

Configure agent upgrade options on the wizard:

Upgrade All Agents		×
	Upgrading Options	
Upgrading Options	Specify options for upgrading the agent	
Summary	Credentials	
	Domain\User name R2.local\5nine	
	Password ••••••	
	Override credentials	
	Rebooting	
	Reboot host if required	
	Lingrade Settings	
		2
		_
	< Back Next > Upgrade Cancel	

- Pick the active directory domain user and enter its password. Enable the **Override credentials** option if you have chosen a different account than was used previously and would like to use it further as host management credentials.
- In the case a reboot is needed on the host during the upgrade and you would like it is done silently during the upgrade process, enable the **Reboot host if required** option.
- Leave the **Use quick upgrade** option enabled as set by default to allow the new fastest agent upgrade method to be used. It consists of self-upgrade of the agents by sending the new .msi file directly to the host agents, which then completes the upgrade process. If this option is disabled, the old method will be used through Active Directory, which repeats the same process, occurring when adding the new Hyper-V hosts to the object tree, and takes the greater time to complete the upgrade.

### Click **Next**.

Review the summary and click **Upgrade** to start the process. Nothing else is required from your side, when the upgrade process is complete, you will see the green marks on the host icons in the object tree, as they usually appear.

Upgrade All Agents						$\times$
		Summa	arv			
Upgrading Options	Summary					
Summary	Name	Old Agent Version	New Agent Version	CBT Mode	CBT Path	
	HV2012R2	3.0.18228.1	3.0.18229.2	Auto	1	
			< Back Next >	Upgrade	Canc	el

# 3.8 Managing users, tenants and roles

Acronis Cloud Manager supports multi-tenant environments when users can have granular permissions and roles to access Hyper-V infrastructure. It is a very convenient instrument for enterprise and service provider organizations. For example, a tenant can represent a department in a company or a corporate client for a service provider.

To use role-based access control (RBAC) capabilities or features you will need to set tenants, users and roles as a part of system configuration process.

- Credentials for system administrator are set in management console setup.
- Tenants, users and roles can be set in the **Administration** plugin under these credentials.

### 3.8.1 Tenants

Tenants are managed on the **Tenants** tab of the **Administration** plugin:

۵ •					Acronis Cloud Manager						-	
Home Users Tenants Roles Ca	tegories											
Create Edit Tenant Remove Refresh												~
t decla latertian												
Administration <	Name	B-tenant										
Enter text to search in tenant 💌 Clear	Description											
🔺 📳 Tenants												
A-tenant	Enabled	1										
B-tenant	Statistics	Tenant total users o	ount: 2									
			Tenant Us	ers				те	enant Resources			
	Name				<b>^</b>	Name	▲ Туре	Description	Parent	Fqdn	IP	
	✓ Administrate	215										
	A BT1											
	✓ Users											
	A BU1								Resource Pools			
Hyper-V Management												
						ResourcePool Name	VCpu	VRam (Gb)	Total Storages (Gb)	Total Networks	Backup	o (Gb)
Azure Management	1					Resource Pool		16	32768 1000	10	1000	
Monitoring			_									
	C Refresh	👫 View Details 🛛 🕄	Stop 🛃 Syslog Options Start from	n: 6/4/2022 🛛 🔻 Plugi	n: Any 💌 Jobs: All jobs	Users: All users	*					
Reporting	Name		Description	User	ContextObject	Started			Finished	Status		
	Tenant Ba	tch Create		admin		6/5/2022 11:38:29 PM		100 %	6/5/2022 11:38:30 PM	Completed		^
C. tester	S Remove le	enant		admin		6/5/2022 8:29:30 AM		100 %	6/5/2022 8:29:30 AM	Completed		
S Backup	Ienant Ba	tch Create		admin		6/5/2022 8:28:51 AM		100 %	6/5/2022 8:28:51 AM	Completed		
	O Urar Batch	h Create		admin		6/5/2022 0:10:07 AM		100 %	6/5/2022 6:16:07 AM	Completed		
SDN Management	Assign Re	source to Pool		admin		6/5/2022 8:14:34 AM		100.%	6/5/2022 8:14:35 AM	Completed		
	Assign Re	source to Pool		admin		6/5/2022 8:13:51 AM		100 %	6/5/2022 8:13:51 AM	Failed to add	Cluster (c)	uster' to R
Administration	Add Data	store	Create Shared datastore - VMs.	admin	VMs	6/5/2022 8:13:32 AM		100 %	6/5/2022 8:13:33 AM	Completed		
•	C Edit Resou	urce Pool		admin	Resource Pool	6/5/2022 8:12:28 AM		100 %	6/5/2022 8:12:30 AM	Completed		
Usage	Evict Reso	urce from Pool		admin		6/5/2022 8:12:12 AM		100 %	6/5/2022 8:12:12 AM	Completed		
25	Add Data:	store	Create Shared datastore - bckp	admin	bckp-rp	6/5/2022 8:10:21 AM		100 %	6/5/2022 8:10:24 AM	Completed		_
	Add MAC	Pool		admin		6/5/2022 7:24:55 AM		100 %	6/5/2022 7:24:55 AM	Completed		
	<ul> <li>Install Age</li> </ul>	ent	Agent installation on 'DEV-NOD	admin	DEV-NODE1	6/5/2022 6:31:12 AM		100 %	6/5/2022 6:33:07 AM	Agent installa	tion comp	leted 🗸
Server status: Online 🛔 admin			Tenant Batch Create	admin 6/5/2022 11:38	29 PM 100 % 6/5/2022 1	1:38:30 PM Completed					O 13 🕻	0 0 1

There is the tenants tree on the left side with the detailed description and parameters for each one on the right side. Tenant name and description is shown on the upper side, the **Tenant users** block contains tenant administrators and users. And there are two alternative blocks on the right: **Tenant resources** and **Resource pools**. First one shows data in the case of using traditional method of resources allocation to tenants, whereas the second one shows data in the case of using the new *resource pools* conception. Please refer to the"Resource pools, quotas and usage" (p. 226) To create a new tenant:

1. Press the **Create tenant** button to open the **Tenant** wizard. Define the tenant name and description. Tenant is enabled by default. If you do not need tenant users to be able to access the system, clear the **Enabled** checkbox.

		×
	Information	
Enter tenant ir	Iformation	
Name	A-tenant	
Description		^
		~
Enabled		
	< Back Next > Finish Car	ncel
	Enter tenant in Name Description Enabled	Information         Enter tenant information         Description         Enabled         ✓

2. Define tenant administrators. They can be selected from the existing users list or a new one can be created.

Tenant Wizard	×	(
	Administrators	
Information	Manage tenant administrators	
Administrators Users	Create New 2 Add Existing 2 Remove	
Resource Pools	Name	•
Resources	A T1	
Summary		
	< Back Next > Finish Cancel	

Click the **Create new** button to create the new admin. The standard **Add user** dialog will appear where the new admin can be added:

Add User	×
Туре:	● Custom user ○ Windows/Active Directory user
Name:	BT1 Pm
Password:	•••
Confirm password:	•••
	OK Cancel

Click the **Add existing** button to add the existing "orphan" users from the global users list as a tenant admins (only free global users that are neither global admins nor associated with tenants can be selected):

Ado	d tenant administrators		×
En	ter text to search	▼ Find	Clear
	Name		
*	T1		
	U1		
		ОК	Cancel

#### Click **OK** then click **Next**.

To remove the tenant admin, select it and click the **Remove** button.

### 3. Add tenant users in the same way as admins:

Tenant Wizard	×
	Users
Information	Manage tenant users
Administrators	Create New 📳 Add Existing 🔛 Remove
Resource Pools	Name Add tenant urers
Resources	
Summary	U Find Clear
	Name 🔺
	< Back Next > Finish Cancel

4. [For the resource pools conception] Assign resource pool to the tenant: on the **Resource pools** page click the **Add** button:

Information	Manage tenant resource pools					
Administrators						
Users	Add Edit Remove					
Resource Pools	Drag a column header here to group by that	col				
Resources	ResourcePool Name VCpu VRa	m (C				
Summary						

Set the quota limits - vCPU, vRAM, Storage capacity, networks and backup storage thresholds:

rea	ate quota	
Re	source Pool	Ŧ
vCP vRA	2U	16 × 2768 ×
Dis	ks	
Dr	rag a column header here to	group by that column
	Storage Type	Capacity (Gb)
Þ	hdd	100
Vet	tworks	
Net Dr	<b>tworks</b> rag a column header here to	group by that column
Net	tworks rag a column header here to Network Type	group by that column Virtual Networks Count
Dr	tworks rag a column header here to Network Type Public Private	group by that column Virtual Networks Count
Dr	tworks rag a column header here to Network Type Public Private	group by that column Virtual Networks Count
Dr •	tworks rag a column header here to Network Type Public Private ckup (Gb)	group by that column Virtual Networks Count

Click **OK**.

Tenant Wizard							$\times$
		Resou	irce Poo	ls			
Information N	Manage tenant resource po	ools					
Administrators Users	Add Add Edit	Remove					
Resource Pools <	Drag a column header he	re to group by that	column				
Summary	ResourcePool Name	VCpu	VRam (Gb)	Total Storages (Gb)	Total Networks	Backup (Gb)	
	Resource Pool	16	32768	1000	10	1000	
				< Back	Next > Fin	ish Can	cel

To edit the resource pool quota, selet the resource pool and click the **Edit** button, then set the new limits in the same way as described above.

To remove the resource pool from the tenant, selet the resource pool and click the **Remove** button.

Click **Next**.

[For classic conception] Associate objects with the tenant. An object can be associated with a single tenant only. Tenant administrators have full access to all objects belonging to a tenant. Click the Add button and select the objects to add to the tenant.

Tenant Wizard								$\times$
			Resourc	es				
Administrators	Manage tenant resources	Add ob	jects to tenant			_		<
Users	Add x Remove	Entarty	ut to conrela			- Find	Class	
Resource Pools	Name	Enterte	ext to search			* Find	Clear	
Resources			Name	Object Type	Parent	Fqdn	IP	
Summary			CloudMana	VirtualMachine	DEV-NO	CloudM	192.168.2.9	^
			DEV-NODE1	Host	cluster			
			New VM	VirtualMachine	DEV-NO			
			SQL	VirtualMachine	DEV-NO			
			Lan	VirtualNetwo	DEV-NO			
			Public	VirtualNetwo	ACM2			
			Public	VirtualNetwo	DEV-NO			
			DEV-DC	VirtualMachine	DEV-NO	dev-dc.d	192.168.5.1	
			hdd	Storage	ACM2			
		E alactad c	Lan ount: 4	VirtualNetwo	DEV NO			·
		Selected c	ount: 4					
						OK	Cancel	
				< Bac	:k N	ext >	Finish	Cancel

### To remove objects, select it one-be-one and click the **Remove** button.

Information	Manage tenant resources					
Administrators Users		Add Remove				
Resources		Name	Туре			
Summary		Lan	VirtualNetworkSwitch			
	Ţ	New VM	VirtualMachine			
		Public	VirtualNetworkSwitch			
	<b></b>	SQL	VirtualMachine			

Click **Next**.

6. Check summary information and, if everything is correct, press the **Finish** button to create the tenant.

Tenant Wizard			×
		Summary	
Information	Completing the wizard		
Administrators Users	You have successfully comple	eted the Tenant Wizard. You are about to create the following tenant:	
Resource Pools	Name:	A-tenant	
Summary	Administrators:	1 (T1)	
Summary	Users:	1 (U1)	
	Quotas:	1 (Resource Pool)	
	To create the tenant and clos	se the wizard, click "Finish" button.	
		< Back Next >	Finish Cancel

To edit the tenant, select it in the tree and press the **Edit tenant** button or corresponding context menu command:

<b>●</b> =							
Home	Users	Tenants	Roles	Ca			
	月	×	C				
Create Tenant	Edit Tenant	Remove Tenant	Refresh				
	Tenant Man	agement					
Adminis	Edit Tenant			<			
Enter text to search in tenant 🔻 Clear							
Tenants A-tenant							

Then edit the required data in the same wizard as when creating the tenant.

To remove the tenant, select it in the tree and press the **Remove tenant** button or corresponding context menu command. Then choose if users and groups should be removed along:



### 3.8.2 Users

Users are managed on the **Users** tab of the **Administration** plugin.

8 ·				Acronis Cloud Manager					
Home Users Tenants Roles Cate	egories								
Greate Group     Add User Edit Use     Group Management     Use	er Remove User								~
Administration									-
Administration	Enter text to search		* Find	Clear					
Enter text to search in User na 🔻 Clear	Drag a column header here to gro	oup by that column							
🖌 🏭 All Users	Name		🔺 Ty	pe		Owner			
A 🚔 Global Administrators	🌲 admin		Ci	istom User					
admin	👗 AT1		Cu	istom User					
A Administrators	👗 ATU1		Cu	istom User					
👗 AT1									
🌲 ATU1									
	C Refresh 👫 View Details	Stop Syslog Options	Start from: 6/4/202	2 v Plugin: Any	<ul> <li>Jobs: All jobs</li> </ul>	Users: All users 🔻			
	Name	Description	User	ContextObject	Started 👻	Progress	Finished	Status	
K Hyper-V Management	Tenant Batch Create		admin		6/6/2022 6:50:05 AM	100 %	6/6/2022 6:50:07 AM	Completed	^
Ť	Assign Resource to Pool		admin		6/6/2022 6:21:37 AM	100 %	6/6/2022 6:21:38 AM	Completed	
A ATURA Management	Edit Resource Pool		admin	Resource Pool	6/6/2022 6:21:12 AM	100 %	6/6/2022 6:21:12 AM	Completed	
	Add Datastore	Create Shared datastore	admin	bckp	6/6/2022 6:03:02 AM	100 %	6/6/2022 6:03:04 AM	Completed	
	Create Resource Pool		admin		6/6/2022 5:59:49 AM	100 %	6/6/2022 5:59:49 AM	Completed	
Monitoring	/hyperv/storages	Create datastore - hdd.	admin	hdd	6/6/2022 5:59:38 AM	100 %	6/6/2022 5:59:39 AM	Completed	
	/hyperv/storages	Create datastore - iso.	admin	iso	6/6/2022 5:58:59 AM	100 %	6/6/2022 5:59:00 AM	Completed	
Reporting	/hyperv/storages	Create datastore - template.	admin	template	6/6/2022 5:58:34 AM	100 %	6/6/2022 5:58:35 AM	Completed	
	Logon	Authenticate custom user a	admin		6/6/2022 5:57:52 AM	100 %	6/6/2022 5:57:52 AM	Completed	
0	<ul> <li>Logoff</li> </ul>	Logoff user admin, client IP	admin		6/6/2022 5:57:30 AM	100 %	6/6/2022 5:57:30 AM	Completed	
Backup	Remove Resource Pool		admin	Resource Pool	6/6/2022 5:57:28 AM	100 %	6/6/2022 5:57:29 AM	Completed	
	Remove Tenant		admin		6/6/2022 5:57:24 AM	100 %	6/6/2022 5:57:24 AM	Completed	
SDN Management	Remove Tenant		admin		6/6/2022 5:57:19 AM	100 %	6/6/2022 5:57:20 AM	Completed	
_	Remove Resource Pool		admin	Resource Pool	6/6/2022 5:57:08 AM	100 %	6/6/2022 5:57:08 AM	Failed to delete Resource p	
Administration	Evict Resource from Pool		admin		6/6/2022 5:57:04 AM	100 %	6/6/2022 5:57:04 AM	Completed	
	Remove Tenant		admin		6/6/2022 5:56:53 AM	100 %	6/6/2022 5:56:54 AM	Completed	
0	Remove Datastore		admin	template	6/6/2022 5:56:31 AM	100 %	6/6/2022 5:56:31 AM	Completed	
(5) Usage	<ul> <li>Remove Datastore</li> </ul>		admin	VMs	6/6/2022 5:56:31 AM	100 %	6/6/2022 5:56:31 AM	Completed	
_	Remove Datastore		admin	hdd	6/6/2022 5:56:30 AM	100 %	6/6/2022 5:56:30 AM	Completed	
	Remove Datastore		admin	iso	6/6/2022 5:56:30 AM	100 %	6/6/2022 5:56:30 AM	Completed	
	Remove Datastore		admin	bckp-rp	6/6/2022 5:56:29 AM	100 %	6/6/2022 5:56:29 AM	Completed	~
🥏 Server status: Online   🏯 admin		Tenant Batch Create admin	6/6/2022 6:50:05	AM 100 % 6/6/20	22 6:50:07 AM Completed			💙 48 🖸 0 🚯 2	

There are users tree on the left side with hierarchy: all users - global administrators - tenant administrators - tenant users, and details on the right side.

To create a new user:

1. Press the **Add user** button to start the **Add user** wizard.

Add User Wizard		×	<					
Credentials								
Credentials	Enter user information							
Resources and Roles Summary	Type:	Custom User      Active Directory User						
	Enabled:							
	User Name	U1 Ph						
	Password:							
	Confirm password:	•••••						
		< Back Next > Finish Cancel						

- 2. Define user type and set credentials. User is created enabled by default. If you do not need the user to be able to access the system, clear the **Enabled** checkbox.
- 3. Define user resources and roles. By default, there are 4 roles in the system:
  - **Contributor** specific role that contains access only to the resource pool type of objects.
  - Full access role that contains full access to all objects of any type.
  - **Basic** limited role that contains access to some of operations with virtual machines and readonly access to all other types of objects.
  - **Read-only** role that contains read-only access to all types of objects.

You can define your own roles. Tenant users can have access only to the objects that are associated with the tenant.

Add User Wizard			×
	Resources and	nd Roles	
Credentials	Manage resources and roles for user		
Resources and Roles < Summary	✓ Use Advanced Resource Based Permissions		
Sammary	Resources	Roles	
	Enter text to search	ar Enter text to search   Find Clear	
	Name Description Parent	Is Enabled Name Description	
	Type: Cluster	Contributor	
	Type: Host	Full Access	
	Type: MacPoolObject	Basic	
	Type: ResourcePool	E Read-Only	
	Type: Storage		
	Type: VirtualMachine		
	Type: VirtualNetworkSwitch		
		< Back Next > Finish Cance	4

4. If you are on the **Global administrators** entity in the object tree, then the **Add global administrator** wizard will be opened and the user will be added with global administrator's privileges, you will not be able to alter its permissions during the creation process like it's done for non-administrator users:

Add Global Admi	Add Global Administrator Wizard				
		Credentials			
Credentials	Enter user information	1			
Summary	Type:	Custom User      Active Directory User			
	Enabled:				
	User Name	Global admin	e Pih		
	Password:	•••••			
	Confirm password:	•••••			
		< Back Next > Finish	Cancel		

For active directory users, auto-discovery from the domain active directory is available – click the button to the right of the **User name** field to open the search dialog box:

Pic	Active Directory Object		-	
5ni	ne			Find
	Account	Display Name	Department	OK
:: <b>n</b>	dev.5nine.com\5nine	5nine		Cancel

Start typing the user name into the upper field, then click **Find**. All found accounts will be displayed lower in the results list.

Select the required account and click **OK** – it will be entered into the main dialog box:

3	Enter user information					
	Туре:	○ Custom User				
	Enabled:					
	Domain\User	dev.5nine.com\5nine	8	Å		

5. Check summary information and if everything is correct press the **Finish** button to create the new user.

Add User Wizard		×
		Summary
Credentials	Completing the wizard	
Resources and Roles	You have successfully complete	ted the User Wizard. You are about to create the following user:
,	Name:	U1
	Туре:	Custom User
	Role:	User
	Resource:	Roles:
	cluster	Contributor
	To create the user and close t	he wizard, click "Finish" button.
		< Back Next > Finish Cancel

### 3.8.3 Roles

Roles usually combine granular permissions into the named groups for user convenience.

There is a set of granular permissions for every object type:

- Cluster.
- Host.
- Virtual machine.
- Storage.
- Virtual network switch.
- Virtual network.
- Virtual disk.
- Azure subscription.
- Azure virtual machine.
- Resource pool.

To create a role, go to the **Roles** tab, press the **Create role** button or select the existing role and press the **Edit** button:

<b>8</b> •	Acronis Cloud Manager	– 🗆 X
Home Users Tenants Roles Cat	tegories	
Create Role Role Roles Management		۵
Administration <	Name Contributor	
Enter text to search in role na 💌 Clear	Description	<b>^</b>
A Roles	Cumor Clabal Administrator	
Contributor     Full Access	Owner Group Administrator	
Basic	Resource Type	
2	Operation Enabled Description	
	Resource Type: AzureSubscription	
C Hunger-V Management	Resource Type: AzureVirtualMachine	
Typer v Management	Resource Type: Cluster	
	Resource Type: Host	
Azure Management	Resource Type: ResourcePool	
In the second second	. ► Resource Type: Storage	
Monitoring	·	
	Resource Type: VirtualMachine	
Reporting	Resource Type: VirtualNetwork	
😔 Backup	Resource Type: VirtualNetworkSwitch	
SDN Management		
Administration		
	😋 Refresh 🎄 View Details 💿 Stop 🗿 Syslog Options Start from: 6/6/2022 🔻 Plugin: Any 🔻 Jobs: All jobs 🔻 Users: All users	-
22 00030	Name Description User ContextObject Started v Progress Finished	Status
	Add MAC Pool         admin         6/7/2022 3:45:53         100 %         6/7/2022 3:45:53	Completed
	Add Datastore         Create Shared datastore - BCKP-RP.         admin         6/7/2022 3:42:41         100 %         6/7/2022 3:44:43	Completed 🗸
📀 Server status: Online   🛔 admin	Assign Resource to Pool admin 6/7/2022 4:57:35 AM 6/7/2022 4:57:37 AM Completed	💙 22 🖸 0 🏮 7 🔒

The **Create Role** (**Edit Role**) wizard will be opened. On the **General** page specify name and description for the role:

Edit Role							×
			General				
General <	Specify Role name and	description					
Permissions	Name:	Full Access					
	Description:						
				< Back	Next >	ОК	Cancel

Edit Role				×
		Permis	sions	
General	Assign permissions for the Role			
Permissions				
	Resource Type 🔺			
	Operation	Enabled	Description	
	A Resource Type: AzureSubs	cription		^
	Create	$\checkmark$		
	Replicate	$\checkmark$		
	Update	$\checkmark$		
	Delete	$\checkmark$		_
	Read	$\checkmark$		
	Resource Type: AzureVirtu	alMachine		
	Connect			_
	Restart	Image: A start of the start		_
	Start			_
	Edit			_
	Stop			
	Delete			_
	Deallocate			
	h. Bacaurra Turpa Chustar	Ý		_
	Presource Type: Cluster			
	Resource Type: Host			
	Resource Type: Storage			~
			Rack Nexts OK	Cancal
			< DACK IVEXL> UK	Cancer

On the **Permissions** page, select objects and permissions.

Click **OK** to save changes.

# 3.9 Configuring datastore

Datastore is an internal Acronis Cloud Manager entity necessary to organize and provide storage management for objects of different types: virtual machines, ISO, templates and backup files. Acronis Cloud Manager datastore objects are split into categories and types. Categories reflect storage object types – virtual machine, ISO library, template library and backup storage.

It is not possible to use the storage with the category that does not match object type to avoid confusing or mixing files of different types in the same folder on the storage disk. This makes the datastore ordered and easier to use. Storage types reflect physical location types where files are stored: Cluster shared volume, SMB and local disk. Access to these different locations is provided in different ways, which requires different approaches from the Acronis Cloud Manager side as well.

	Acron	nis Cloud Manager				×
Home Hyper-V Management Datastore	Virtual Switches					
Discover Add Datastore Edit Datastore Data	Refresh					
Manage Datastores						$\diamond$
Hyper-V Management < Enter text to search in role na  Clear	General Type Name		E Cluster Datastore Virtual Machines			<u> </u>
▲      Datastore Objects     A      Virtual Machine Storage     I Local	Shared Content Type Free Space		Shared VMStorage 370 Gb (71.2%)			
■ SMB ▲ ■ CSV 器 Vitual Machines	Settings Id Path		b6fba1ad-6d5c-4ca6-ae08-534402222 C:\ClusterStorage\Volume2	2a61		* ~
Local		Name	▲ Extension Date mo	odified Size		C
Hyper-V Management	SNine-Service     bckp     datastore	5Nine-Service bckp	Folder 6:21 PM Folder 4:09 AM Folder 5:41 PM	1 4/9/2019 1 4/9/2019		_
Azure Management	iso ▶ tmpl Virtual Hard Disks	datastore iso tmpl	Folder         8:32 AM           Folder         8:26 AM           Folder         2:23 PM	1 4/7/2019 1 4/7/2019 1 4/10/2019		
Monitoring	Virtual Machines VM2 VM3 VM3	Virtual Hard Disks Virtual Machines VM2	Folder 1:21 PM Folder 5:08 AM Folder 8:15 AM	1 4/9/2019 1 4/11/2019 1 4/7/2019		_
Reporting	VM3 (from Template based on "VM3")	VM3	Folder 2:10 PM	1 5/3/2019		~
Server status: Online 🛔 admin Use	Batch Create admin 6/3/2019 2:29:52 PM	100 % 6/3/2019 2:	29:55 PM Completed	14	00	1

Datastores can be added manually via the **Add datastore** wizard or automatically by the **Run storage discovery** wizard.

## 3.9.1 Adding datastore

To add a datastore manually, click the **Add datastore** button on the main ribbon.

Define the datastore name and description.

Add Datastore		>	<
	Nan	ne Datastore	
Name Datastore Choose Datastore Type Choose Content Type Select Hosts Set Path	Name and description Name: Description (optional): Shared Resource		
		< Back Next > Finish Cancel	

Enable the **Shared resource** option to allow this storage to be visible/available for all tenants. Otherwise only global users will be able to see it (in accordance with permissions as well).

Acronis Cloud Manager supports 3 types of storage:

- Local filesystem specific for a host. Typically used for simple scenarios where virtual disks are placed directly on local server.
- **Network share (SMB)** can be used by multiple hosts. This type of storage allows to store virtual disks in a CIFS/SMB file server share.

• **Cluster shared volume (CSV) disk** – allows all cluster nodes work with the same storage.

Add Datastore	×
	Choose Datastore Type
	choose batastore rype
Name Datastore	What type of storage do you want to create?
Choose Datastore Type < Choose Content Type Select Hosts Set Path	<ul> <li>Local Filesystem         Local storage is specific for each host. Typically used for simple scenarios where virtual         disks are placed directly on local machine.</li> <li>Network Share (SMB)         Network storage can be used by multiple hosts. This type of storage allows you to store         virtual disks in a CIFS/SMB file server share.</li> <li>Cluster Shared Volume (CSV) Disk         CSV disks allow all failover cluster nodes to share a single volume.</li> </ul>
	F
	< Back Next > Finish Cancel

### Choose content type:

Add Datastore		×
	Choose Content Type	
Name Datastore	Choose Content Type	
Choose Datastore Type		
Choose Content Type	Virtual Machine Storage	
Select Hosts	O ISO Library	
Set Path	O Template Library	
	O Backup Storage	
	O backup storage	
	< Back Next > Finish Cance	I

### Note

Datastore locations will be split by content to avoid disorder. Only matching locations will be available for selection to each content type. Depending on a storage type selected, next steps will differ.

## 3.9.2 Local filesystem

For the local filesystem type select the Hyper-V host where the datastore will be located. Then click **Next**.

Add Datastore		×
	Select Hosts	
	Select Hosts	
Name Datastore	Select Hosts	
Choose Datastore Type		
Choose Content Type		
Select Hosts	DEV-NODE2	
Set Path		
	< Back Next > Finish Cano	:el

Add Datastore						×
Add Datastore						~
		Set	Path —			
Name Datastore	Set Path					
Choose Datastore Type						
Choose Content Type	Path:	C:\Hyper-V				
Select Hosts						Browse
Set Path	1				L	
			< Back	Next >	Finish	Cancel

Type the path to the folder on the local file system of the selected server or click **Browse** to select the path, and then click **Finish**.

## 3.9.3 Network share

For the network share type enable host(s) that will have access to this datastore. Then click **Next**.

Add Datastore		$\times$						
	Salact Hosts							
Select Hosts								
Name Datastore	Select Hosts							
Choose Datastore Type								
Choose Content Type		_						
Select Hosts	DEV-NODE2							
Select Groups								
Set Path								
	< Back Next > Finish Cance	el						

Create Virtual Machine Storage						
		Set	Path			
Name Datastore	Set Path					
Choose Datastore Type Select Hosts Select Groups	Path:	\\DEV-NODE1	vmstore			
Set Path						
			< Back	Next >	Finish	Cancel

Type the path to the folder on the share using UNC format and then click **Finish**.

# 3.9.4 Cluster shared volume

For the CSV type select the cluster.

Add Datastore		×
	Select Hosts	
Name Datastore	Select Hosts	
Choose Datastore Type	Name	
Choose Content Type	cluster	
Select Hosts		
Set Path		
	< Back Next > Finish Cance	el

<b>T</b>	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	41 41.
1VDD TDD D2TD TO TD	a storada or ciick tha i	Krowco nutton to	COLOCT THE REALL	Irad toldar With	the hath
			SCIECT THE LEAD		ule paul.

Add Datastore			×							
	Set Path									
Name Datastore	Set Path									
Choose Datastore Type Choose Content Type Select Hosts Set Path	Path:	C:\ClusterStorage\Volume2\Virtual Machines	Browse							
		< Back Next > Finish	Cancel							

## 3.9.5 Running storage discovery

To evoke storage discovery, click the **Discover datastore** button on the main ribbon. The wizard will immediately start available storages discovery and then shows results on the first page, in accordance with its content:

Run Storage Discovery Wizard X								
				<b>Discovery Res</b>	ults			
Discovery Results	Select	stores	s where you wa	int to add				
Summary	Drag	a colu	umn header hei	re to group by that column				
			Name	Path 🔺	Host	Content	Storage Type	Description
		R	Volume1	C:\ClusterStorage\Volume1	DEV-NODE	Virtual	Cluster Datast	Cluster Dat
			Volume2	C:\ClusterStorage\Volume2	DEV-NODE	Virtual	Cluster Datast	Cluster Dat
	$\checkmark$		iso	C:\iso	DEV-NODE1	ISO Libr	Local Filesyste	Local Filesy
		Ē	DEV-DCNO	C:\vmroot\DEV-DCNODE1	DEV-NODE1	Virtual	Local Filesyste	Local Filesy
		i	DEV-DCNO	C:\vmroot\DEV-DCNODE2	DEV-NODE2	Virtual	Local Filesyste	Local Filesy
	<							>
				[	< Back	Next >	Finish	Cancel

#### Select locations to add to the datastores and click **Next**.

Run Storage Disco	very Wizard			×				
Summary								
Discovery Results Summary	Completing the wizard	mpleted the Storage Discovery Wizard, You are a	hout to add the following obje	orts:				
	Name Volume1	Path C:\ClusterStorage\Volume1 C:\iso	Host DEV-NODE2, DEV-NODE1	Status Storage Storage				
	To close the Wizard click 'f	Finish' button.	Next > Finish	Cancel				

Review summary and click **Finish** to complete adding the selected locations to the datastores. Added locations will be automatically sorted in accordance with its content and storage physical types.

# 3.9.6 Editing and removing datastore

When a datastore is created you can navigate through its content. Also, for your convenience, there is an ability to perform operations on physical folders on the disk directly from Acronis Cloud Manager user interface – create, delete, rename and copy/move actions are available just like in standard file explorer.

	Acronis Cloud Manager		– 🗆 ×	ĸ
Home Hyper-V Management Datastore	Virtual Switches			
Discover Add Datastore Edit Datastore Data	B C Refresh store			
Manage Datastores				$\diamond$
Hyper-V Management	General		*	^
,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	Туре	E Cluster Datastore		
Enter text to search in role na 🔻 Clear	Name	Virtual Machines		
	Description	Chared		
Datastore Objects	Content Type	VMStorage		
	Free Space	370 Gb (71.2%)		
SMB	Settings		*	
⊿ 🗏 CSV	ld	b6fba1ad-6d5c-4ca6-ae08-534402222a61		
🚟 Virtual Machines	Path	C:\ClusterStorage\Volume2		~
ISO Librany	← → ← 👫 🐃 VM3\VM3\Virtual Hard Disks			c
C. Hyper-V Management	Volume2 Name	▲ Extension Date modified Size	2	
·Q	VM3 (from Ten	nplate based on _VM3_)vhdx 2:58 PM 5/3/2019 9.88	3 GB	
Azure Management	bckp	reate		
	datastore 🛛 🖉	elete		
. Monitoring	iso 🚛 R	ename		
Womening	Virtual Hard Disks	aste		
Reporting	Virtual Hard Disks	ору		
E Reporting	Virtual Hard Disks 🔉 🖓 C	ut		
Backup	VM3 (from Template based on 'VM3')			
<b>6 1</b> 0				
🕏 Server status: Online 🛔 admin 🛛 Use	Batch Create admin 6/3/2019 2:29:52 PM 100 % 6/	3/2019 2:29:55 PM Completed	🗢 14 🖸 0 🌗 1	

To edit the datastore select it in the object tree and click the **Edit datastore** button on the main ribbon or the same command using right-click menu:



Then apply any required changes in the same way as when registering the datastore in the **Edit datastore** wizard.

To remove the datastore select it in the object tree and click the **Remove datastore** button on the main ribbon or the same command using right-click menu:



# 4 User interface

The user interface of Acronis Cloud Manager is designed to let you quickly find commands that you need and perform necessary Hyper-V management and other tasks.

8 ·				nis Cloud Manager							
Home Hyper-V Management Datastore	Virtual Switches										
Create Import VM VM P Edit VHD(X)	Servers Disable Host Credentials Settings Disable Host	Image: Second control of the second control of th	Resource to Pool Resource from Pool Resource	sh Gr Reset	G Checkpoin G Gonnect G Settings	t 💭 Turn Off Dause Resume	🖵 Save 👷 Delete Saved State 💭 Delete	<ul> <li>Attach ISO</li> <li>Set Categories</li> </ul>	Export Replic Move Replic Clone Replic	ste stion - ste	
Create Manage Disk	Host	Resource Pool	Gene	ral		Manage			Advanced	5	~
Hyper-V Management <	Search VM Names	-	Clear								
8 0	Name 🔺 State	CPU Usage Assigned Men	nory Memory Demand	Memory Status	Uptime	Status Replicatio	n Health Host	Guest OS	IP addresses	Checkpoir	nts Vmg Status
Entertext to convol	RPVM1 Run	ning 0%	512 MB 512 MB	з ок	3.00:05:34	Not Appli	cable ACM2				
Citer text to searching	RPVM2 Run	ning 0%	512 MB 512 MB	в ОК	2.22:00:30	Not Appli	cable ACM2				
A 🗐 Datacenter 🔨 🔨	RPVM3 Run	ning 0%	512 MB 512 MF	S OK	3.18:41:23	Not Appli	cable ACM2				
PPAN     PPAN     PPAN     PPAN     PPAN     PPAN     PPAN     PONO     PPAN     PONO     PPAN     PONO     PPAN     PONO     PPAN     PONO     PPAN     PPAN											
Hyper-V Management	C Refresh	ails  Stop  Syslog Options St	art from: 4/15/2022 *	Plugin: Any	▼ Jobs: /	All jobs 🔹	Users: All users	•	table of	Chatura	
Azure Management	name	Agent installation on 'ACM2'	user	ContextObject	51	arted		00% 4/1	5/2022 6-57-08 AM	Completed	
*	Install Agent	Agent installation on 'DEV-N.	admin	DEV-NODE2	4/	16/2022 6:54:34 AM		00 % 4/1	6/2022 6:56:27 AM	Completed	
- L Monitoring	Install Agent	Agent installation on 'DEV-N.	admin	DEV-NODE1	4/	16/2022 6:54:34 AM		00 % 4/1	6/2022 6:56:08 AM	Completed	
IIII Wontoning	Logon	Authenticate custom user ad	. admin		4/	16/2022 6:49:31 AM		00 % 4/1	6/2022 6:49:35 AM	Completed	
IR	Logoff	Logoff user admin, client IP: ::	1 admin		4/	16/2022 5:58:26 AM	1	00 % 4/1	6/2022 5:58:26 AM	Completed	
Reporting	Logoff	Logoff user AT1, client IP: ::1	AT1		4/	16/2022 5:58:22 AM		00 % 4/1	6/2022 5:58:22 AM	Completed	
~	Logoff	Logoff user CT1, client IP: ::1	CT1		4/	16/2022 5:58:17 AM		00 % 4/1	6/2022 5:58:18 AM	Completed	
Backup	Logoff	Logoff user BT1, client IP: ::1	BT1		4/	16/2022 5:58:13 AM	1	00 % 4/1	6/2022 5:58:13 AM	Completed	
<ul> <li>SDN Management</li> <li>Administration</li> <li>Usage</li> </ul>											
🔮 Server status: Online   🛔 admin	Install Agent Agent in	stallation on 'DEV-NODE2' using accoun	t'dev.local\5nine' admin D	EV-NODE2 4/16/202	2 6:54:34 AM	100 % 4	/16/2022 6:56:27 AM C	ompleted		<b>O</b> 3	••••

There are the following main parts of user interface:

• Navigation pane.

Navigation pane consists of 2 parts: objects tree and plugin selector. You need to select necessary plugin and then work with the tree to select an object.

Ribbons and tabs

Operation commands are organized into logical groups and collected under tabs on the ribbon. The ribbon is displayed at the top of the main application window. Commands for operations with items are also available in the context menu.

• Data area.

Data area usually shows text or graphical information about object selected in the objects tree.

• Status bar.

Status bar shows management server status and user name under which console is started.

• Jobs pin panel.

Jobs pin panel shows status, progress and other information, related to jobs. Please, see the next chapter for details.
# 5 Job management

All processes, happening in Acronis Cloud Manager, are represented as jobs.

To see the detailed jobs information, click the bottom bar of the screen, where the status of the last job is shown. The jobs dock/pin panel will be shown at the bottom of the main window. Next click will collapse the jobs panel back.

## 5.1 Job list

The list of jobs can be filtered out and you can stop or view details for the selected job.

Job details contain PowerShell script, which implementation is like a job command.

	Name	Description	User	ContextObject	Started	-	Progress	Finished	Status
0	Edit Host Settings		admin	DEV-NODE2	6/3/2019 3:48:36 AM		100 %	6/3/2019 3:48:03 AM	Completed
0	Edit Host Settings		admin	DEV-NODE1	6/3/2019 3:48:36 AM		100 %	6/3/2019 3:48:48 AM	Failed to modify servic
0	Add Datastore	Create Shared datast	admin	0208b73a-b6b0-4b49	6/3/2019 3:43:21 AM		100 %	6/3/2019 3:43:33 AM	Completed
0	Category Group Add	Add Category group	admin		6/3/2019 3:42:22 AM		100 %	6/3/2019 3:42:22 AM	Completed
0	Category Batch Create	Add Category group V	admin		6/3/2019 3:42:12 AM		100 %	6/3/2019 3:42:12 AM	Completed
0	Category Group Add	Add Category group	admin		6/3/2019 3:41:56 AM		100 %	6/3/2019 3:41:56 AM	Completed
0	Category Batch Create	Add Category group C	admin		6/3/2019 3:41:45 AM		100 %	6/3/2019 3:41:45 AM	Completed
0	Category Group Add	Add Category group	admin		6/3/2019 3:41:26 AM		100 %	6/3/2019 3:41:27 AM	Completed
0	Category Batch Create	Add Category group	admin		6/3/2019 3:41:04 AM		100 %	6/3/2019 3:41:05 AM	Completed
0	Logon	Authenticate custom	admin		6/3/2019 3:36:48 AM		100 %	6/3/2019 3:36:50 AM	Completed
	Edit Host Settings	admin DEV-NODE1 6/	3/2019 3:48:36 AM	100 % 6/3/2019	3:48:48 AM Failed to	o mo	dify service settings. The		<b>2</b> 8 <b>0</b> 0 <b>0</b> 1

To do any action with the job, select it in the list and use the corresponding button on the command ribbon. The filter is available to select jobs by date and/or by plugin.

To view the job details, select the required job and click the **View details** button:

Detail	ls of 'Creat	teVM' job					1	[	) ×
Job	Information	ו ו							
Nam	lame: CreateVM				Plugin:	HyperV			
Stat	State: Running			Overall Progress:	34 %				
Star	Started: 6/3/2019 5:04:32 AM			Finished:					
		1		- I - I	120/10001 - 0 51 0 1	77.1 1. 100.0440	1.40.4.1.1447		10
5101		\Hyper-V	VM3 (from Template based on 'VI	M3')\Virtual Har	d Disks\VM3 (from Ten	nplate based on	_VM3_).vhdx'		v. •
Job	Details								
	Name		Started	<ul> <li>Progress</li> </ul>	Finished		Status		
0	Starting vi	rtual mac	6/3/2019 5:13:16 AM	100	% 6/3/2019 5:	13:18 AM	Comple	eted	^
0	Configure	Templat	6/3/2019 5:12:55 AM	100	% 6/3/2019 5:	13:16 AM	Comple	eted	
0	Other ope	rations	6/3/2019 5:12:55 AM	100	% 6/3/2019 5:	12:55 AM	Comple	eted	
0	Create Net	twork Ad	6/3/2019 5:12:51 AM	100	% 6/3/2019 5:	12:55 AM	Comple	eted	
0	Create DV	D Drives	6/3/2019 5:12:49 AM	100	% 6/3/2019 5:	12:50 AM	Comple	eted	
0	Add Hard	Drives	6/3/2019 5:12:48 AM	100	% 6/3/2019 5:	12:49 AM	Comple	eted	
•			CO.0040 E 40 10 111	100				• •	~
- Job Impor Impor Enter Shost So.Id So.Na So.Ve So.Ge So.Pa So.Nu	Script rt-Module "( rt-Module "( -Session -Ac cld = "6211e New-Object = "16b9018 ame = "VM3 crsion = "5.0 eneration = th = "D:\Hyy umaNodesC	C:\Program C:\Program C:\Program ddress https ebb-5c57-41 : FiveNine.H 3-49ba-4b2 (from Temp "2" per-V" ount = "1"	Files\Snine\Snine Manager Datace Files\Snine\Snine Manager Datace Files\Snine\Snine Manager Datace :://localhost:16080 -Username *** ad-96d4-34fe142f21d5" yperV.Common.VirtualMachineSe 7-b236-4b8e11180705" late based on 'VM3')"	enter Console\5 enter Console\5 enter Console\5 -Password *** ttings	nine.PowerShell.Basel nine.PowerShell.Libra nine.HyperV.Common	Library.dll" ry.dll" .dll"			
\$0.Os	sinstallation	= "Later"							ОК

There is the detailed information about the job in the upper block – name, status, related plugin, progress and period. Middle block contains steps that are taken as the job is executed. Lower block contains the PS script that is run to complete the job.

## 5.2 Syslog integration

Jobs and event alerts can be exported to the external syslog server. Syslog server should be installed and properly configured in the environment in advance. RFC 5424 header is supported.

To set up syslog export, click the **Syslog options** button on the main ribbon.

Configure Syslog			$\times$
		General	
General	General		
	Enable Syslog		
	Uri:	udp://127.0.0.1:514	
	Application Name:	59mgmtsvc	
		< Back Next > OK Canc	el

To enable export jobs to the external syslog server, enable the **Enable syslog** checkbox. Then enter the syslog server URI in **udp://<syslog server IP address:port>** format. Default value is **udp://127.0.0.1:514**. Specify the application name – default value is **59mgmtsvc**, leave it as it appears. Click **OK**.

Now you may view and use syslog records as needed. Example, Splunk syslog output:

Attp://localhost:8000/en-US/ap	p/la 🔎 👻 🚺 Mt	ー □ × SN   Outlook, Offi (愛 Service Managemen, □ development.5nine 🕨 Search   Splunk 6 × ① 份 ☆ 戀 🙂					
spiunk> Apps ~ Home		2 Messages V Settings V Activity V Help V Find					
Q New Search	_	Save As 🗸 Close					
source="udp:514" sourcetype="syslog" All time							
✓ 24 events (before 9/27/18 2:15:09.000 PM)	No Event Samplin	g 🗸 🦳 Job 🗸 🔢 🔿 🎂 🛓 📍 Smart Mode 🗸					
Events (24) Patterns Statisti Format Timeline ~ - Zoom Out + Zo	Events (24)       Patterns       Statistics       Visualization         Format Timeline        - Zoom Out       + Zoom to Selection       × Deselect         1       minute per column						
A Dista Cialda All Cialda	i Time	Event					
C Hide Heids III Heids Selected Fields a host 1	> 9/27/18 1:57:37.000 PM	Sep 27 13:57:37 127.0.0.1 1 2018-09-27T13:57:37.534-04:00 SCVMM2016 59mgmtsvc 0 Jo b completed: name="Dynamic Optimization", plugin="Monitoring", user="Management Servic e", status="Completed" host=127.0.0.1 source=udp:514 sourcetype=syslog					
a source 1 a sourcetype 1 Interesting Fields	> 9/27/18 1:57:07.000 PM	<pre>Sep 27 13:57:07 127.0.0.1 1 2018-09-27T13:57:07.780-04:00 SCVMM2016 59mgmtsvc 0 Jo b started: name="Dynamic Optimization", plugin="Monitoring", user="Management Servic e", status="Script started" host = 127.0.0.1 source = udp:514 sourcetype = syslog</pre>					
# date_hour 2 # date_mday 1 # date_minute 7 # date_month 1	> 9/27/18 1:57:07.000 PM	Sep 27 13:57:07 127.0.0.1 1 2018-09-27T13:57:07.290-04:00 SCVMM2016 59mgmtsvc 0 - Jo           b created: name="Dynamic Optimization", plugin="Monitoring", user="Management Service"           host = 127.0.0.1         source = udp:514         sourcetype = syslog					
# date_second 9 a date_wday 1	> 9/27/18 1:47:35.000 PM	Sep 27 13:47:35 127.0.0.1 1 2018-09-27T13:47:35.977-04:00 SCVMM2016 59mgmtsvc 0 Jo b completed: name="Dynamic Optimization", plugin="Monitoring", user="Management Servic e", status="Completed"					

# 6 Hyper-V management

## 6.1 Cluster settings

To access the cluster settings, select the cluster in the objects tree and press the **Cluster settings** button in the toolbar or right-click on the cluster name and select the corresponding context menu command.

Cluster Settings		×
	General	
General	Please specify general cluster settings	
Network Roles Replica Broker Categories	Name:         2016Dev-Cluster         Shared Resource         Image: Cload balance to a node when it joins         Image: Always load balance	
	< Back Next > OK Cano	el

You can choose whether automatic load balancing of virtual machines is enabled or not in the cluster and its mode – always or just when the new node is joined to the cluster.

The **Shared resource** option determines whether this cluster is available for all tenants or just on the global level.

Select networks and their order for live migration.

Cluster Settings								×
			Netv	work	Roles			
General	Coloct o	-	more networks and	the occu its	order to use for live	migratio	-	
Network Poles	Select	ne or	more networks and o	noosens	order to use for inv	e migrauo		
Realize Broker			Name	State	Role	Metric	Description	]
Replica broker			Cluster Network 2	Up	Cluster only	39984		
Categories			Cluster Network 3	Up	Cluster and Cl	70385		
			Cluster Network 4	Up	None	70384		
			Cluster Network 5	Up	None	70386		
								Move Up
								Move Down
								MOVE DOWN
								,
					< Back	Next >	ОК	Cancel

Configure replication settings for the cluster.

Cluster Settings		$\times$
	Replica Broker	
General		
Network Poles	Configure replication settings for this cluster machine	
Peplica Broker	✓ Enable this cluster as a Replica server	^
Categories		
categories	Specify the authentication types to allow for incoming replication trafic. Ensure that the ports you specify are open in firewall.	
	Use Kerberos (HTTP)	
	Port: 80 +	
	Use certificate-based Authentication (HTTPS)	
	Port: 443 443	
	Certificate: Select Certificate	
	Issued To: -	
	Issued By: -	
	Expiration Date: -	
	Intended Purpose: -	
	Authorization and library	
	Allow replication from any authenticated server	
	Specify the storage and location to store Replica files (only CSV storages are allowed):	~
	< Back Next > OK Cance	el

To add the new replica broker, click the **Add replica broker** context menu command and specify its parameters:



Add Hyper-V Re			×	
Name:	ReplicaBroker			
Use static IP A	ddress			
IP Address:	10.0.0.54			
🗹 If Replica Brok	er already exists remove it and create a new one			
Only one Repl already exists	lica Broker is allowed in the cluster so by default	creation w	ill failed if	fit
		OK	Cano	cel

Specify the category and the group to display the cluster in the logical view:

Cluster Settings					×		
		Categories-					
General	Specify categories for cluster						
Network Roles	specify categories for cluster						
Replica Broker	Set categories and groups for the virtual machine. One virtual machine cannot be included in two groups within the same category.						
Categories	Category		Group				
	DEV Cluster		DEV Cluster		-		
		< Ba	ack Next >	OK Ca	incel		

### 6.1.1 Cluster anti affinity settings

Cluster anti affinity settings are implemented to allow automatic control over HA virtual machines placement during cluster nodes outages in accordance with pre-defined parameters. It works in the following way – HA VMs are selected by user into anti affinity groups. VMs from the same group will be primarily placed onto different active nodes during the outage of one or more other nodes of the cluster (separately from each other) in accordance with technical ability, or, as a last method of lower priority, onto any available node as it happens in usual conditions without anti-affinity configuration.

To configure cluster anti affinity settings, click the corresponding context menu command of the cluster and specify parameters in the wizard below:

Cluster Anti Affinity Se	ettings ×
	Anti Affinity Groups
Anti Affinity Groups	Configure Anti Affinity Groups
	Add Group   Add Group     Add Group     Remove Group     Add VM(s)     Remove VM(s)
	< Back Next > OK Cancel

- Click the **Add group** button to add the new group.
- Select the group and click the **Add VM(s)** button to add HA virtual machines to the group and then click **OK**:

Select Cluster Virtual Machines		$\times$
Infrastructure Logical		
Enter text to host search	~	Clear
🖃 🔳 📑 Datacenter		
🖃 🔳 🛲 cluster		
🖃 🔳 💂 DEV-NODE1		
SnineMgr		
VM3 (from Template based on 'VM3')		
	OK	Cancel

Selected VMs will appear under the group in the tree:

Cluster Anti Affinity Set	ttings	×
	Anti Affinity Groups	
Anti Affinity Groups	Configure Anti Affinity Groups	
	All Anti Affinity Groups   Image: Market Affinity Group 0   Image: WM2   Image: WM3 (from Template based on 'VM3')	Add Group Remove Group Add VM(s) Remove VM(s)
	< Back Next > OK	Cancel

- To remove VM(s) or the whole group, click the corresponding button.
- Click **OK** to save changes and exit the wizard.

### 6.2 Cluster maintenance

In the case maintenance operations with some of cluster nodes required, Cloud Manager allows setting the cluster nodes on maintenance with or without draining cluster roles.

To set the cluster node in maintenance mode:

• Select the cluster node in the object tree and press the **Pause node** button on the main ribbon or corresponding context-menu command:



• Define whether cluster roles should be drained and the target node in the case they should be:

Pause node	×
✓ Drain roles	
Target node	
Default placement logic	-
	OK

- ° Check the **Drain roles** box to enable cluster roles migration.
- Select the target node: **Default placement logic** to use the best possible node, or select the exact node from the drop-down list.

To resume the cluster node:

• Select the cluster node in the object tree and press the **Resume node** button on the main ribbon or corresponding context-menu command:



• Set the policy to bring back drained roles to the cluster node:

Resume node	×
Set the policy to bring drained workloads to	g back the node.
Policy	•
	OK

- NoFailback do not bring drained roles back to the resumed node.
- Immediate bring all drained roles back regardless of conditions.
- **Policy** using the default policy according to the conditions in the cluster.

#### Important

Make sure that there are enough of physical system resources, most importantly RAM on the target node when draining roles. Draining will fail if there are not enough resources to receive additional virtual machines.

## 6.3 Host settings

To access host settings, select the host in the objects tree and press the **Host settings** button in the toolbar.

Host Settings		$\times$
	General	
General Oefault folders Replica Broker Guest Console Remote Category Copy Host Settings Migrations	Specify general settings for this host machine         Numa Spanning         You can configure Hyper-V to allow virtual machines to span non-uniform memory architecture (NUMA) nodes. When the physical computer has NUMA nodes, this setting provides virtual machines with additional computing resources.         Allow virtual machines to span physical NUMA nodes         Enhanced Session Mode Policy         You can configure Hyper-V to allow enhanced session mode connections to virtual machines running on this server.         Allow enhanced session mode         Enhanced session mode allows redirection of local devices and recources from computers running Virtual Machine Connection.         Enhanced session mode requires a supported guest operating system, and may require additional configuration insi the virtual machine. Redirection capabilities may differ according to guest operating system version.         Existing Virtual Machine Connection sessions may need to be restarted if this setting is changed.         Shared Resource	de
	< Back Next > OK Cano	:el

#### Note

You can define NUMA Spanning and enhanced session mode policy. The **Shared resource** option determines whether this host is available for all tenants or just on the global level. These settings can be applied to multiple hosts in the **Copy host settings** section.

In the next section you can specify default storage for machines and disks:

Host Settings		×	<
		Default folders	
General	Specify default fold	ers for host	
Default folders	Vistual Dial		
Replica Broker	- Virtual Hard Disk	<pre>cs Default Storage</pre>	7
Guest Console Remote	Datastore:	Volume2	<u></u>
Category			
Copy Host Settings			
Migrations	Virtual Machines	s Default Storage	]
	Datastore:	Volume2	_
		< Back Next > OK Cancel	

This area allows end user to configure replication settings for standalone hosts or a replica broker for a cluster.

Host Settings		×
	Replica Broker	
General	Configure replication settings for this cluster machine	
Default folders Replica Broker	✓ Enable this cluster as a Replica server	^
Guest Console Remote	- Authentication and ports	
Category	Specify the authentication types to allow for incoming replication trafic. Ensure that the ports you specify are open in firmual	
Copy Host Settings		
Migrations	Use Kerberos (HTTP)	
	Port: 88 v	
	Use certificate-based Authentication (HTTPS)	
	Port: 0 A	
	Certificate: Select Certificate	
	Issued To: -	
	Issued By: -	
	Expiration Date: -	
	Intended Purpose: -	
		Y
	< Back Next > OK Canc	el

In the **Guest console remote** section set your remote desktop gateway (RDG) server parameters.

Host Settings		×
	Guest Console Remote	
General	Configure quest console remote settings for this host machine	
Default folders		
Replication	✓ Use RD Gateway for Guest Console	
Guest Console Remote	External Address:	
Category	5nine-service.dev.local	
Copy Host Settings Migrations	Deploy/Configure RD Gateway Server	
	< Back Next > OK Cano	el

Press the **Deploy/configure RD gateway server** button to configure the RDG connection:

Configure RD Gatewa	ау	$\times$		
Please, specify paramet	Please, specify parameters of the computer you want to configure as an RD Gateway server:			
Computer Name (local r	name or FQDN):			
5nine-service.dev.local				
External Address (publi	t IP or FQDN):			
5nine-service.dev.local				
Credentials				
Domain\Username:	r2.local\5nine			
Password:	•••••			
– Advanced Settings –				
✓ Use default self-si	gned certificate for RD Gateway connection			
✓ Use default option	Use default options for RD CAP and RD RAP policies			
Please ensure, that RD Gateway is accessible via FQDN name or public IP on port 443, or configure NAT to translate 443 traffic to your RD Gateway server				
	OK Cance	el		

In the **Category** section specify the category and the group to display the host in the logical view:

Host Settings				×
		Category		
General	Specify category for this host machi	ne		
Default folders	20 1000 1 1	101 Y 101 Y		
Replica Broker	Please select the category and grou from the administration area.	ip(s) to place your virtual ma	achine. You can create and edit your categories and group	DS .
Guest Console Remote	Category		Group	
Category	Hosts		DEV hosts	-
Copy Host Settings				
Migrations				
			< Back Next > OK Cance	1

#### In the **Copy host settings** section configure if settings should be applied to other Hyper-V servers:

Host Settings		×
	Copy Host Settings	
Canada		
General	Select hosts you want to apply settings from current host machine	
Default folders	Host	
Replica Broker	DEV-NODE2	
Guest Console Remote		
Category		
Copy Host Settings		
Migrations		
	Ignore storage mapping errors (apply location settings using physical paths)	
	< Back Next > OK Canc	el

In the **Migrations** section you can enable and configure live migrations settings:

Host Settings	×
	Migrations
General Default folders Replica Broker Guest Console Remote Category Copy Host Settings <b>Migrations</b>	Specify how many simultaneous migrations are allowed <ul> <li>Enable incoming and outgoing live migrations</li> <li>Live Migrations</li> <li>Specify how many simultaneous live migrations are allowed.</li> <li>Simultaneous live migrations: 2</li> </ul> <li>Storage Migrations</li> <li>Specify how many storage migrations can be performed at the same time on this computer.</li> <li>Simultaneous storage migrations: 2</li> <li>Advanced Features</li>
	< Back Next > OK Cancel

Click the **Advanced features** button to configure authentication protocol and performance options for VM live migrations:

Advanced Features	$\times$
Authentication protocol	
Select how you want to authenticate live migrations.	
Our Credential Security Support Provider(CredSSP)	
O Use Kerberos	
Performance Options	
O TCP/IP	
Compression	
⊖ SMB	
OK Can	icel

## 6.4 Host maintenance

In case maintenance operations with some of standalone Hyper-V hosts are required, Cloud Manager allows setting the host on maintenance (disable) with several options what to do with virtual machines on that host while it is disabled.

To disable the host:

• Select the host in the object tree and press the **Disable host** button on the main ribbon or corresponding context-menu command:

Add Servers	📮 Disable Host	
Set Credentials Host Settings	📮 Enable Host	
Host		

• Select the action that should be done with virtual machines on the host:

Disable Host		×
Save state		
O Live migration		
O None		
	ОК	Cancel

- Save state set all virtual machines on the host in the saved state.
- **Live migration** live-migrate VMs to another server, if such setting is configured on the host. In the other case this option will be disabled.
- **None** do not apply any specific action to VMs on the host.

To resume the disabled host, select it in the object tree and press the **Enable host** button on the main ribbon or corresponding context-menu command:

Add Servers	📮 Disable Host		
Host Settings	📮 Enable Host		
Host			

## 6.5 Configuring virtual switches

Virtual switch management is implemented in the **Virtual switches** tab. You can create, edit and delete virtual switches for all managed Hyper-V hosts.

ð -		Acronis C	oud Manager		– 🗆 X
Home Hyper-V Management Datastore	Virtual Switches				
pr     Edit vSwitch     pr     Edit vSwitch     pr     Delete vSwitch     Refresh					
Manage Virtual Switches					~
Hyper-V Management <	Enter text to search		▼ Find (	Clear	
	Name 🔺 Type	Allow Managemen	Notes	Description	Host
Enter text to search   Clear	Lan External	$\checkmark$		Intel(R) 82576 Gigabit Dual Port Network Connection #2	DEV-NODE2
	Lan External	$\checkmark$		Intel(R) 82576 Gigabit Dual Port Network Connection #2	DEV-NODE1
Datacenter	Public External	$\checkmark$		QLogic BCM5709C Gigabit Ethernet (NDIS VBD Client)	DEV-NODE2
A Cluster	Public External	$\checkmark$		QLogic BCM5709C Gigabit Ethernet (NDIS VBD Client) #2	DEV-NODE1
IIII Public இ MAC Pools					
Hyper-V Management					
Azure Management					
Monitoring					
Reporting					
				1	
🕑 Server status: Online 🛛 🛔 admin	Edit Host Settings admin DEV-I	VODE2 6/3/2019 3:48:36 AM	100 %	6/3/2019 3:48:03 AM Completed	🖉 8 🖸 0 🚯 1 🔡

1. To create the new virtual switch, select the host in the tree and press the **Create vSwitch** button in the toolbar.

Create Vi	rtual Switch		×
		Settings	
Settings	Virtual Switch	Properties	
	General inf Name: Notes: Shared: Connection @ External QLogic I @ Allow	ormation	
	<ul> <li>Internal I</li> <li>Private n</li> <li>VLAN ID —</li> </ul>	etwork etwork	
	The VLAN through	itual LAN identification for management operating system I identifier specifies the virtual LAN that the management operating system wiall use for all network communications this network adapter. This setting does not affect virtual machine networking.	
		< Back Next > Finish C	ancel

- 2. Define name and description and select its type.
- **External netwrok**. In this type of a virtual switch, one of the physical NICs installed on the host is used to connect the VMs to the network.
- **Internal network**. In this type of a virtual switch, neither of the physical NICs of the host is supposed to be used for VMs that will be using this connection.
- **Private network**. In this type of a virtual switch, neither of the physical NICs of the host is supposed to be used for VMs that will be using this connection, nor the VLANs could be set for it.

The **Shared** option determines whether this virtual switch is available for all tenants or just on the global level. VLAN traffic identification can be set for external and internal switches.

3. Press **Finish** to create the virtual switch.

## 6.6 Operations with VMs

#### 6.6.1 Customizing VM list view

The following options are available to configure the view of the **Hyper-V management** tab and displaying virtual machines:

- Search by name;
- Sorting by column;
- Group by column;
- Choose columns to show;
- Auto arrange (best fit);
- Filter.

To customize view press the left mouse button at the column heading:

Name	🔺 State	21	Sort Ascending
test_backup	Off	Z+	Sort Ascending
testSCSI	Running	<b>A</b> ↓	Sort Descending
vmnu2016-g1	Running		Clear All Sorting
vmnu2016-g2	Off		Group By This Column
		-	Show Group By Box
			Hide This Column
			Column Chooser
		<b>□</b>	Best Fit
			Best Fit (all columns)
		7	Filter Editor
		-	Show Auto Filter Pow

### 6.6.2 Creating VM

 To create a VM select the Hyper-V host and press the Create VM button in the toolbar. Select the source – either the new blank VM with default settings or a template. When using the template, you will have to select the datastore/relative path, where the template is located, then select the required template in the corresponding fields.

Create VM			×
		Source	
+ Source	Select the source for the ne	w Virtual Machine	
Identity	Create new virtual mac	hine	
Category     Processor	O Create virtual machine	from VM template	
m Memory	Datastore:	Datastore is not selected	
Disk Configuration	Relative path:		Browse
Network Adapters			
🔅 Additional Options			
Automatic Actions	Template: [Please	select template]	Ψ
🖺 Summary			
		< Back	Next > Finish Cancel
		S DUCK	Current Current

2. Specify VM identity:

Create VM		×
		Identity
+ Source	Specify Virtual	Machine Identity
L Identity	– General Info	prmation
Category	Name:	New VM
Processor	Notes:	
Disk Configuration		
Network Adapters	Version:	Microsoft Windows 10 October 2018 Update/Server 2019
Additional Options		
Automatic Actions	Specify the s	torage and location from existing storages or create new one for the virtual machine files:
🖺 Summary	Datastore:	Virtual Machines
	Relative path	Browse
	- Generation	
	Generation	in 1
	This virtua	al machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V.
	<ul> <li>Generation</li> </ul>	in 2
	This virtua adapter. (	al machine generation provides support for features such as Secure Boot, SCSI boot and PXE boot using a standard network Suest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8.
	Once	a virtual machine has been created, you cannot change its generation
		< Back Next > Finish Cancel

3. Define category and group to display VM in the logical view:

Create VM				×
		Category		
+ Source	Set categories and groups for the Virtua	I Machine		
☐ Identity	Please select the category and group(s	) to place your virtual machine. You c	an create and edit your categories and grou	ups from the
	administration area.			
Processor	Category Virtual Machines	▲ Gr	roup	
Memory	Virtual Machines		LV VIVIS	Ľ
Disk Configuration				
Network Adapters				
Additional Options				
Automatic Actions				
🖺 Summary				
			< Back Next > F	Inish Cancel

4. Define basic virtual CPU parameters:

Processor	
FIOCESSOI	
+ Source Choose processor settings	
Lidentity	
a Category	
You can modify the number of virtual processors based on the number of processors on the physical computer.	
The mory Number of virtual processors:	
Disk Configuration Resource Control	
Network Adapters You can use resource controls to balance resources among virtual machines.	
Additional Options Virtual machine reserve: 0 Percent of total system resources: 0	
Automatic Actions Virtual machine limit: 100 Percent of total system resources: 6	
Summary Relative weight: 100	
Compatibility	
< Back Next > Finish Cancel	

5. [Optional] If necessary, define NUMA parameters.

🛱 General 📲 NUMA	
Configuration	
This virtual machine is configured with the following:	
Processors: 1	
NUMA nodes: 1	
Sockets: 1	
- NUMA Topology	
Select the maximum number of processors and memory allowed on a single virtual non-uniform memory arch	itecture (NUMA) node.
Maximum number of processors:	
Maximum amount of memory (MB):	
Select the maximum number of nodes allowed on a single socket.	
Maximum NUMA nodes allowed on a socket:	
Click "Reset NUMA Topology" to reset the virtual NUMA topology to the topology of the physical hardware.	
	Reset NUMA Topology
NUMA helps multiprocessor virtual machines scale better. With NUMA, the virtual machine's processo nodes, and nodes can be grouped into sockets.	rs and memory are grouped into
Aligning the nodes and sockets of a virtual machine to the hardware topology helps improve the perf workloads.	ormance of NUMA-aware

6. Specify amount of memory and dynamic memory options:

Create VM	×
	Memory
	Picinici y
+ Source	Specify the amount of memory
🖵 Identity	Specify the amount of memory to allocate to this virtual machine. To improve performance, specify more than minimum amount recommended
📕 Category	for this operating system.
Processor	Startup RAM: 1024 🙀 MB
E Memory	Dynamic Memory
Disk Configuration	You can manage the amount of memory assigned to this virtual machine dynamically within the specified range.
Network Adapters	Enable Dynamic Memory
Additional Options	Minimum RAM: 512 A MB
Automatic Actions	Maximum RAM: 2048 🔺 MB
🖺 Summary	Specify the percentage of memory that Hyper-V should try to reserve as a buffer. Hyper-V uses the percentage and the current demand of memory to determine an amount of memory for the buffer.
	Memory buffer
	Memory weight
	Specify the percentage of memory that Hyper-V should try to reserve as a buffer. Hyper-V uses the percentage and the current demand of memory to determine an amount of memory for the buffer.
	includy to determine an amount of memory for the barren
	Low High
	Specify the percentage of memory that Hyper-V should try to reserve as a buffer. Hyper-V uses the percentage and the current
	demand of memory to determine an amount of memory for the buffer.
	Rack Navy Finish Concal
	S DALK IVEXL ? FINISN CANCEL

#### 7. Add virtual disks to a VM.

		Disk Configu	ration
- Source	Connect and manage SCSI adapters	s, Virtual Disk Drives and DVD I	PhysicalDrives
ldentity			
Category	Add 🔻 🛪 Remove		
Processor	SCSI Adapter 0	General Qu	ality of Service
Memory	Mi Hard Drive	You can change how	v this virtual hard disk is attached to the virtual machine. If an operating
Disk Configuration		system is installed or from starting.	n this disk, changing the attachment might prevent the virtual machine
Network Adapters		Controller:	Location:
Additional Options		SCSI Adapter 0	▼ 0 <b>▼</b>
Automatic Actions		Create a new virtual	hard drive
Summary		File name:	New VM
		Datastore:	Datastore is not selected
		Relative path:	Virtual Hard Disks Browse
		Format:	VHDX v
		Tune	Dynamic
		type.	o yname
		Datastore	Datactore is not selected
		Datastore.	
		Relative path:	Browse
		Size (GB):	128 -

#### 8. [Optional] If necessary provide QoS options disks.

General Quality of	Service
– Local Settings –	
Specify Quality of Service ma are measured in 8 KB increm	nagement for this virtual hard disk. Minimum and maximum IOPS ents.
Enable Quality of Service	management
Minimum:	128 IOPS
Maximum:	254 IOPS
() To accept system of values) to zero.	lefaults, set either the minimum or maximum value (but not both

9. Define network configuration for this VM.

Create VM		×
		Network Adapters
Source     Identity     Category     Processor     Memory     Disk Configuration     Network Adapters     Additional Options     Automatic Actions     Summary	Configure Network Adapters connect	tion  General Hardware Acceleration Advanced SDN  Specify the configuration of the network adapter  Virtual network switch: Lan  VLAN ID  Enable virtual LAN identification  The VLAN indetifier specifies the virtual LAN that this virtual machine will use for all network communications through this network adapter.  Virtual LAN ID:  Bandwidth Management  Specify how this network adapter utilizes network bandwidth. Both Minimum bandwidth and Maximum bandwidth: 256 Mbps  Maximum bandwidth: 512 Mbps  To leave the minimum or maximum unrestricted, specify 0 as the value.
		< Back Next > Finish Cancel

10. [Optional] If necessary, enable hardware acceleration options.

General Hardware Acceleration Advanced SDN				
Specify networking tasks that can be offloaded to a physical network adapter.				
Virtual machine queue				
Virtual machine queue (VMQ) requires a physical network adapter that supports the	nis feature.			
✓ Enable virtual machine queue				
IPsec task offloading				
Support from a physical network adapter and the guest operating system is require IPsec tasks.	red to offload			
When sufficient hardware resources are not available, the security associations are not offloaded and are handled in software by the guest operating system.				
✓ Enable IPsec task offloading				
Select the maximum number of offloaded security associations from a range of 1 t	o 4096.			
Maximum number: 512 Offloaded SA				
Single-root I/O virtualization				
Single-root I/O virtualization (SR-IOV) requires specific hardware. It also might req be installed in the guest operating system.	uire drivers to			
When sufficient hardware resources are not available, network connectivity is pro- the virtual switch.	vided through			
Enable SR-IOV				

11. Define advanced network parameters:

🖾 General 🛛 🖾 Hard	dware Acceleration	Advanced	SDN	
MAC address				^
Dynamic				
◯ Static				
O MAC Address Pool	<not selected=""></not>			-
MAC address spoofing	allows virtual machin that is not assigne	es to change the d to them.	source MAC address in	n
Enable MAC address	s spoofing			
- DHCP guard				
DHCP guard drops DHC	P server messages fro	om unauthorized	virtual machines	
pretending to be DHCP	servers.			
Enable DHCP guard				
- Router guard				
Router guard drops rou	iter advertisement an	d redirection mes	sages from unauthori	zed
	tisement guard			
Protected network —				_
Move this virtual machin detected.	ne to another cluster	node if a networ	k disconnection is	
Protected network				~

12. Configure SDN network if applicable.

🖾 General 🛛 🖾 Hai	rdware Acceleration	Advanced	SDN	
Virtual network subnet:	<not connected=""></not>			-

13. Specify OS installation options and automatic actions if necessary.

Create VM	×
	Additional Options
H Source     Identity     G Category     Processor     Memory     Disk Configuration     Network Adapters     Additional Options     Automatic Actions     Summary	Specify installation options, automatic actions and services for the virtual machine         You can install an operating system now if you have access to the setup media or install it later.         Install an operating system later         Install an operating system from a bootable CD/DVD-ROM         Media         Physical CD/DVD drive:         Image:         Specify the storage and location from existing storages or create new one for the virtual machine files:         Datastore:       Iso         Relative path:       en_windows_10_business_editions_version_1803_updated_march_2018_x64_dvd_12063333.iso
	< Back Next > Finish Cancel

Create VM		×
	Automatic Actions	
<ul> <li>→ Source</li> <li>↓ Identity</li> <li>▲ Category</li> <li>₩ Processor</li> <li>₩ Memory</li> <li>∅ Disk Configuration</li> <li>△ Network Adapters</li> <li>♦ Additional Options</li> <li>● Automatic Actions</li> <li>♥ Summary</li> </ul>	Configure Automatic Actions         Automatic start action         What do you want this virtual machine to do when the physical computer starts?         Nothing <ul> <li>Automatically start if it was running when the service stopper</li> <li>Always start this virtual machine automatically</li> <li>Startup delay:</li> <li>Image: Image: Ima</li></ul>	
	< Back Next > Finish Cance	

14. Check summary information and if everything is correct press **Finish** to create the VM:

Create VM		>
		Summary
+ Source	Summary	
🖵 Identity	You have successfully complet	ed the Virtual Machine Wizard. You are about to create the following virtual machine:
📕 Category	Name:	New VM
Processor	Generation:	2
m Memory	Storage:	Hyper-V
m nichtory	Processors:	1 cores
Disk Configuration	Memory:	512 MB
Network Adapters	Category:	SCELAdopters (1)
Additional Options	Hardware:	Virtual Hard Drives (1)
Automatic Actions		Network Adapters (1)
Cumman.		
	✓ Start the virtual machine a To create the virtual machine	fter creation and close the wizard, click 'Finish' button.
		< Back Next > Finish Cancel

### 6.6.3 Editing VM settings

To edit VM settings select the VM and press the **Settings** button in the toolbar:

Identity     Specify Virtual Machine Identity       Category     General Information       Boot Order     Name:				
Identity     Specify Virtual Machine Identity       Image: Category     General Information       Image: VM2     VM2				
General Information Name: VM2				
Memory Notes:	7			
Disk Configuration      Network Adapters      Automatic Actions				
Integration Services       Storage         Specify the storage and location from existing storages or create new one for the virtual machine files:         Datastore:       Virtual Machines         Relative path:       Brow	v Se			
Generation Generation Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot and PXE boot using a standard networ adapter. Guest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8. Once a virtual machine has been created, you cannot change its generation	Generation Generation Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot and PXE boot using a standard network adapter. Guest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8.  Once a virtual machine has been created, you cannot change its generation			

#### Note

You will find all options that were present when creating the VM. Some options, however, are not editable (like VM generation) or require the VM to be turned off to alter them.

### 6.6.4 Standard operations

Acronis Cloud Manager supports standard operations with virtual machines (via toolbar or context menu commands):

- Start.
- Turn off.
- Shut down.
- Save.
- Pause/resume.
- Reset.
- Rename.
- Delete.
- Connect via guest console.

Operations with checkpoints: Create, Delete, Apply, Revert, Rename. To view VM checkpoints, select the VM in the objects tree and switch to the **Checkpoints** tab.

#### Note

Prior to using VM guest console you need to set appropriate credentials for Hyper-V host in the objects tree. Then to view VM guest console select the VM in the objects tree and click the **Connect** button on the main ribbon. The guest console will be opened in the separate window:



### 6.6.5 Adding and removing VM to/from cluster

To remove the clustered VM from the cluster, select the cluster in the Acronis Cloud Manager object tree, and then select the VM that you need to remove from cluster and right click on it. Select the **Remove from cluster** command.

If you want to add a non-clustered VM to the cluster, select the **Add to cluster** command. Make sure you have moved the VM configuration files and VHD(s) to the CSV prior to adding it to the cluster.

### 6.6.6 Importing VM

 To import VM select the host and press the **Import VM** button on the main panel menu. The Import VM wizard will be opened.
2. Select the datastore and define the relative path that contains VM data:

Import VM			×			
		Location				
Location	Specify the folder containing the virtual machine to import					
Virtual Machine Import Type	Datastore:	Virtual Machines	Ŧ			
Summary	Relative path:	Virtual Machines\VM3	Browse			
		< Back Next > Finis	h Cancel			

#### 3. Select the VM data to import:

cation	Select the virtual machine to	import	
rtual Machine			
port Type	Enter text to search		▼ Find Clear
ummary	Name	Date Created	
	VM3	6/3/2019	

#### 4. Select import type.

Import VM		$\times$			
	Import Type				
	тпрогстуре				
Location	Choose the type of import to perform				
Virtual Machine Import Type < Summary	Register the virtual machine in-place (use the existing unique ID)				
	O Restore the virtual machine (use this existing unique ID)				
Ĩ.	<ul> <li>Copy the virtual machine (create a new unique ID)</li> </ul>				
	< Back Next > Finish Cano	cel			

5. If the 2nd or 3rd option were selected at the previous step, provide destination options for a VM.

Import VM		×
	Destination	
Location	Choose folders where you want to store virtual machine files	and its virtual hard disks
Virtual Machine	Virtual machine configuration folder:	
Destination	Datastore: Virtual Machines	•
Summary	Relative path: VM3 (from Template based on 'VM3')	Browse
	Allow other virtual machine files to be placed individually Checkpoint folder: Datastore: Virtual Machines	·
	Relative path: Virtual Machines Smart Paging folder:	Browse
	Datastore: Virtual Machines	<b>•</b>
	Relative path: VM3 (from Template based on 'VM3')	\Smart Pagin (Browse
	Allow virtual hard disks to be placed individually	÷
	< Back Next >	Finish Cancel

6. Check summary information and if everything is correct press **Finish** to start the VM import operation.

Import VM			×
		Summary	
		Summary	
Location	Summary		
Virtual Machine	Virtual Machine:	New VM	
Import Type	Import File	[for_vm]\New VM\Virtual	
Destination	Import Turce	Machines\68618BB2-7BA4-4BD2-BBC4-B5323032CDBF.vmcx Bestore	
Summary <	Configuration folder:	ICSV VM storagel\datastore\New VM	
	Checkpoint folder:	[CSV VM storage]\datastore\checkpoints\New VM	
	Smart Paging folder:	[CSV VM storage]\datastore\smart paging\New VM	
	VHD destination folder:	[CSV VM storage]\datastore\vhd\New VM	
	To import the virtual machine	with specified options and close the wizard, click 'Finish' button.	
		< Back Next > Finish Can	cel

### 6.6.7 Exporting VM

- 1. To export VM select it and press the **Export VM** button in the toolbar. The **Export VM** dialog will be opened.
- 2. Define the datastore and the folder where you want the VM to be exported and press **OK**.

Export VM		$\times$
Please specify where y	ou want to export the virtual machine files:	
Datastore:	Virtual Machines	*
Relative path:	Virtual Machines	Browse
	ОК	Cancel

### 6.6.8 Cloning VM

To clone VM select it and press the **Clone VM** button in the toolbar. The **Clone VM** dialog will be opened.

Clone VM			×	
Number of clones:		1 *		
Name for cloned virtual machine: VM2 Clone				
Virtual machine config	uration folder:			
Datastore:	Virtual Machines		*	
Relative path:	Virtual Machines		Browse	
Allow other virtual	machine files to be pla	ced individually		
Checkpoint folder:				
Datastore:	Virtual Machines		*	
Relative path:	VM2		Browse	
Smart Paging folder:				
Datastore:	CSV VMs		<b>•</b>	
Relative path:			Browse	
Allow virtual hard o	lisks to be placed indiv	vidually		
Virtual hard disks fold	er:			
Datastore:	Virtual Machines		-	
Relative path:	Virtual Hard Disks		Browse	
		ОК	Cancel	

Provide the number of clones, clone name patterns and the datastore parameters and press **OK**.

### 6.6.9 Shared nothing VM migration

This operation allows moving VM with/without its storage or a VM storage only to another Hyper-V host. This operation is available for non-HA VMs in both clustered and non-clustered environments.

To move the non-HA VM select it and press the **Move VM** button in the toolbar. The **Move VM** wizard will be opened.

1. You can move the virtual machine or move just the virtual machine's storage here.

Move VM		$\times$
	Move Type	
Move Type	Choose type of move you want to perform to the virtual machine	
Destination Move Options Vhd options Network Options Summary	<ul> <li>Move the virtual machine Move the virtual machine and, optionally, its storage to another computer running Hyper-V.</li> <li>Move the virtual machine's storage Move only the virtual machine's storage to another location, either on this server or on shared storage.</li> </ul>	
	< Back Next > Finish Canc	el

2. Select the destination host:

Move VM				×		
		Destination				
		Destination				
Move Type Destination	Please select the destination computer					
	Name	Description	State			
Move Options	DEV-NODE2	Description	OK			
Vhd options						
Network Options						
Summary						
		<	Back Next >	Finish Cancel		

3. Specify move options:

Move VM	×
	Move Options
Move Type Destination Move Options Vhd options Network Options Summary	Choose what you want to do with the virtual machine's items         Virtual Machine Files         Datastore:       Virtual Machines         Relative path:       Virtual Machines         Image: Checkpoint folder:       Datastore:         CSV VMs       Image: CSV VMs
	Relative path: VM3 Browse
	Smart Paging folder:   Datastore:   Virtual Machines     Relative path:     Virtual Machines     Browse
	< Back Next > Finish Cancel

4. Select the parameters to move the VHD:

Move VM	×			
	Vhd options			
Move Type	Choose what you want do with the virtual hard drives			
Destination Move Options	Virtual Hard Disks			
Vhd options	O Automatically place all Virtual Hard Disks with the Virtual Machine configuration file			
Summary	Allow all Virtual Hard Disks to be placed individually  Name			
	DEV-DCNODE1.vhdx [Virtual Machines]\Virtual Hard Disks Select			
	Select storage ×			
	Datastore: Virtual Machines			
	Relative path: Virtual Hard Disks Browse			
	OK Cancel			
	Park Nauto Einich Cancel			
	< back Next > Finish Cancel			

5. Select physical network that will be used for the operation:

Move VM					×	
		Natural Outin				
		Network Optic	ons			
Move Type	Please specify network options for the virtual machine					
Destination						
Move Options	Name	Old Network Switch		New Network Switch	_	
Vhd options	Network Adapter	Lan		[Please choose the network switch]	-	
Network Options	Network Adapter	Public		[Please choose the network switch]	*	
Summary						
Junitary						
			< Back	Next > Finish Car	ncel	

6. Check summary information and, if everything is correct, press **Finish** to move a VM/storage.

Move VM		×
		Cummer and
		Summary
Move Type	Please review the summary in	formation
Destination Move Options	You have successfully complete	ted the Move Virtual Machine Wizard. You are about to move the virtual machine:
Vbd options	Virtual machine	DEV-DCNODE1
	Move type	Virtual machine and Storage
Network Options	Item to move	Destination location
Summary	Configuration	[Virtual Machines]\\Virtual Machines
	Checkpoints	[CSV VMs]\\VM3
	Smart paging	[Virtual Machines]\\Virtual Machines
	Virtual hard disks	[Virtual Machines]\\Virtual Hard Disks
	To move the virtual machine	and close the wizard, click 'Finish' button.
		< Back Next > Finish Cancel

### 6.6.10 Live and quick VM migration

These operations apply to clustered VMs. To move the VM between nodes that joined into a cluster, first select the cluster in the Acronis Cloud Manager object tree, and then select the VM that you need to move to another node and click the **Move** button in the toolbar. You may select multiple VMs for this action. To do this, first select the target host in the object tree. Then select the VMs that you need to migrate on the right pane, using **Ctrl+Shift** keys and click the **Move** button on the main command ribbon or the corresponding context menu command by using the right-click.

								Acronis Clo	ud Manager					
Home Hyper-V Mar	nagement Datasto	re		tual Switches										
Create Import VM VM Disk • Create	<ul> <li>Add Servers</li> <li>Set Credentia</li> <li>Host Settings</li> </ul>	ils		<b>C</b> Refresh General	Sta Sh Re	art utdown set	Checkpoint	☐ Turn Off ☐ Pause ☐ Resume	<b>₽ Save</b> ₩ Delete San ₽ Delete	ved State	Attach ISO Set Categor	ries	Export Move Clone	Add To Clus Remove Fro
Hyper-V Management	<								Chara		-			
			Se	arch VM Names	_			•	Clear					
				Name	A 1-	Start		ned Memory	Memory Dem	Memory St	Uptime	Status	Replication He	Host
Enter text to search	▼ Clear		5	5nine-Service2		Shutdo	own	1.7 GB	1.42 GB	OK	0.07:36:25		Not Applicable	NODE1
			5	AzurePack	- <u>5</u> -	Reset		4.63 GB	3.89 GB	OK	5.08:49:42		Not Applicable	NODE1
A Datacenter	^		불	DC01		Check	point	2.05 GB	1.72 GB	OK	39.00:56:53		Not Applicable	NODE1
▲ mil 2016Dev-Cluster		Ŀ	1	SCVMM2016		Conne		7.86 GB	11.95 GB	Warning	5.10:03:51		Not Applicable	NODE1
	ico2	Ŀ	놂	SCVMM-LIB	+=	conne		566 MB	475 MB	OK	7.05:06:27	-	Not Applicable	NODE1
	ice2	Ŀ	L.	TenantVM2/	12	Setting	lz	1024 MB	1024 MB	OK	1.08:04:27		Not Applicable	NODEL
DC01		Ŀ	F	VM20T1		Turn C	Off	1024 MB	1024 MR	01	0.07:17:57		Not Applicable	NODE1
SCVMM20	16	Ŀ	P	VMB		Pause		1.66 GB	1 39 GB	OK	6 21 31 42		Not Applicable	NODE1
SCVMM-LI	В	Ľ	Ö	Windows16		Resum	ie	1.38 GB	1.15 GB	OK	6.21:34:06		Not Applicable	NODE1
🖵 TenantVM	27	E.	Ū.	Windows2012R	2	Save		1024 MB	583 MB	OK	16.05:45:54		Not Applicable	NODE1
Test1		Ľ	÷.	Windows2016R		Duve		1024 MB	573 MB	OK	5.08:22:13		Not Applicable	NODE1
S VM29T1		Ľ	5	YDM23TEST TEM	. ×	Delete	Saved State	1024 MB	1024 MB	OK	7.12:19:51		Not Applicable	NODE1
VM3		Ŀ			×E	Delete								
Windows	01282	Ŀ			0	Attach	ISO							
S Windows	2016RTM	Ŀ			•	Set Cat	tegories							
YDM23TES	TTEMPLATE	L				Export								
	~					Move								
-					-	Class		1						
Hyper-V Manage	ment				2	Cione								
						Add To	o Cluster							

• Select the **Cluster migration** option and the migration type:

Move VM	×
	Hove type
Move Type	Choose type of move you want to perform to the virtual machine
Destination	<ul> <li>Move the virtual machine Move the virtual machine and, optionally, its storage to another computer running Hyper-V.</li> <li>Move only the virtual machine's storage Move only the virtual machine's storage to another location, either on this server or on shared storage.</li> <li>Cluster Migration Move the clutered virtual machine on another node in cluster.</li> <li>Migration Type         <ul> <li>Live Migration</li> <li>Live Migration</li> <li>Live Migration</li> <li>Live Migration</li> <li>Quick Migration</li> <li>Quick Migration</li> <li>Quick Migration is an earlier technology that moves Virtual Machines between cluster nodes but does cause a brief service interruption. Live Migration is preferred for running Virtual Machines however Quick Migration is the only way for non-running Virtual Machines to be transferred.</li> </ul> </li> </ul>
	< Back Next > Finish Cancel

- **Live migration**. With this option, a virtual machine will be migrated without switching to the saved state and losing the access. This operation is applicable to virtual machines that are in active (running) state only.
- Quick migration. With this option, a virtual machine will be migrated to another node as quickly as possible, but it will be switched to the saved state during the operation. That means access to this virtual machine will be temporarily lost until it returns to the running state on the new node. This operation is applicable to virtual machines in any state – active (running), paused, saved or off.
- Select either **Best possible node** so that the system will choose it automatically or select the exact node you would like the VM to be moved to.

Move VM						$\times$
		Destinatio				
		Destinatio	n			
Move Type	Please select the destinat	ion computer				
Destination	Name	Decision		Ctata		
	DEV-NODE2	Description				
	Best possible node					
			< Back	Next >	Finish	Cancel

Press **OK** to start migration.

### 6.6.11 Guest console connection

If management console is on the same network as management server and Hyper-V hosts then you need only set access credentials for every hosts in the objects tree.

Select the host and press the **Set credentials** button in the toolbar.

Set Credentials		×
Specify user account credentials for connec The user name must be specified in the DO Domain\Username	tting to the agent MAIN\USERNAME	format.
dev.5nine.com\5nine		, Pin
Password		
••••		
	ОК	Cancel

#### Note

If everything is configured, select the VM and click the **Connect** context menu command. Guest console for the selected VM will be opened in a separate window.



## 6.7 Hyper-V replication

Hyper-V replica allows virtual machines running at a primary site to be efficiently replicated to secondary location (replica site) across a WAN link. Primary and replica server must be Microsoft Hyper-V 2012 R2 as a minimum.

When replication is underway, changes in the primary virtual machines are transmitted over the network periodically to the replica virtual machines. The exact frequency varies depending on how long a replication cycle takes to finish (depending in turn on the network throughput, among other

things). In the latest versions of Windows Server, you can configure the replication frequency, so that the changes are sent every 30 seconds, every 5 minutes, or every 15 minutes.

You can also access recovery points up to 24 hours old (previously, recovery points up to 15 hours old were available).

If the primary server should fail unexpectedly, perhaps of a major hardware failure or a natural disaster, you can bring up the replica virtual machines to take over the workload — this is *unplanned failover*. In unplanned failover, there is the possibility of data loss, since there was no opportunity to copy over changes that might not have been replicated yet.

### 6.7.1 Prerequisites

To take advantage of the Hyper-V replica, which is included as part of the Hyper-V server role, the following pre-requisites must be met:

- Hardware that supports the Hyper-V role on Windows Server;
- Sufficient storage on both the primary and replica servers to host the files used by virtualized workloads;
- Network connectivity between the locations hosting the primary and replica servers;
- Properly configured firewall rules to permit replication between the primary and replica sites;
- An X.509v3 certificate to support mutual authentication with certificates (if desired or needed)

To start VM replication, select the VM and press the **Replicate** button in the toolbar.

### 6.7.2 Host replication settings

Replication settings is a part of host settings. You need to set replication settings if a Hyper-V host is supposed to be used as a replica server.

Host Settings	X	
	Replica Broker	
General	Configure replication settings for this cluster machine	
Default folders	^	~
Replica Broker	✓ Enable this cluster as a Replica server	
Guest Console Remote	Authentication and ports	
Category	Specify the authentication types to allow for incoming replication trafic. Ensure that the ports you specify are open	
Copy Host Settings		
Migrations	Use Kerberos (HTTP)	
	Port: 88	
	✓ Use certificate-based Authentication (HTTPS)	
	Port: 0	
	Cartificata Salart Cartificata	
	Certificate:	
	Issued To: -	
	Issued By: -	
	Expiration Date: -	
	Intended Purpose: -	
		,
	< Back Next > OK Cancel	

There are the following settings:

- **Enable this computer as a replica server** mark this option to set the current Hyper-V host as a replica server.
- Authentication parameters:
  - **Use Kerberos (HTTP)** this authentication option uses Kerberos authentication protocol via HTTP port 80 (default).
  - Use certificate-based authentication (HTTPS) this authentication method uses preinstalled certificate and works via HTTPS port 443 (default). Press the Select Certificate button to choose pre-installed certificate on the current Hyper-V host:
- Authorization and storage parameters:
  - **Allow replication from any authenticated server**. Any Hyper-V host that is set as a replica server in the environment will be allowed to send replica files. Specify the default location by typing or browsing to the folder to store replica files.
  - **Allow replication from the specified servers**. Only specified Hyper-V hosts will be allowed to send replica files. Click **Add** to add the authorized server to the list:
  - **Default storage for replica files on the current Hyper-V host**. Default location on the current Hyper-V server to store replica files.

## 6.7.3 Starting VM replication

To start VM replication, select the VM and select the **Replicate** command on the main ribbon or from VM's context menu. VM replication wizard will be shown.

Replicate VM				×
		-Replica Server		
Replica Server	Select server you want to	o use to replicate this virtual mach	ine or type another server name	
Connection Replication VHDs	Name	Description	State	
Additional Options	NVPWIN2016		Ok	
Summary				
		< Back	Next > Finish	Cancel

1. Select replica server where you want the VM replicated from the list and press **Next**.

Replicate VM	×							
	Replication VHDs							
Replica Server	Choose virtual hard disks you want to replicate							
Connection	Replicate all virtual bard disks of the virtual machine							
Replication VHDs								
Additional Options	Not replicating certain virtual hard disks, such as operating system virtual hard disk, could result in the Replica virtual machine not starting up properly.							
summary	Storage 🔺 Relative Path							
	C\hyper-v\2003\2003 (1).vhdx							
	< Back Next > Finish Cancel							

- 2. Define additional replication options:
- Replication frequency
- Recovery points
- Schedule resynchronization
- Initial replication options

Replicate VM	×
	Additional Options
Replica Server	Sperify additional options for this virtual machine
Connection	
Replication VHDs	Frequency at witch changes will be sent to the Replica server: 5 minutes 💌
Additional Options	- Additional Recovery Points
Summary	Maintain only the latest recovery point
	O Create additional hourly recovery points
	Coverage provided by additional recovery points (in hours):
	VSS snapshot frequency (in hours):
	Schedule Resynchronization
	O Manual
	○ Automatic
	Automatic during the following hours:     From 6:30 PM (*)     To 6:00 AM (*)
	Schedule Initial Replication
	Start replication immediately
	◯ Start replication on: 5/31/2017 ▼ 5:22 PM ★
	< Back Next > Finish Cancel

3. Press **Finish** to start VM replication. Once VM is replicated its replication health will be shown in the **Replication health** column in the list of VM and in VM details.

En	ter text to search in VM na	imes	▼ Clear	
	Name 🔺	State	Replication Health	Host
Ę	New VM 10	Off	Normal	NU-2016
5	2003	Running	Critical	NU-2016
₽ <b>*</b> •	New VM 11	Off	Warning	NU-2016
무	New VM 8	Off	Normal	NU-2016
R" !!	New VM7	Off	Warning	NU-2016
무	New VMtest1	Off	Normal	NU-2016
$\Box$	New//M	Off	NotApplicable	NU-2016
$\Box$	test_backup	Off	NotApplicable	NU-2016
$\Box$	test-scsi	Off	NotApplicable	NU-2016
$\Box$	testSCSI	Off	NotApplicable	NU-2016
$\Box$	vmnu2016-g1	Off	NotApplicable	NU-2016
$\Box$	vmnu2016-g2	Off	NotApplicable	NU-2016

Please note - Status window with details about replication health is available:

A General Primary Server: Replica Server: Replication Mode: Replication State: Replication Health: A Statistics for 6 Seconds Econ time:	IvanVerkhoturov.cross.local NU-2016.cross.local Primary Replicating Normal 10/17/2017 6:05:49 PM
General  Primary Server: Replica Server: Replication Mode: Replication State: Replication Health:     Statistics for 6 Seconds  Ecom time:	IvanVerkhoturov.cross.local NU-2016.cross.local Primary Replicating Normal 10/17/2017 6:05:49 PM
Primary Server: Replica Server: Replication Mode: Replication State: Replication Health: Statistics for 6 Seconds	IvanVerkhoturov.cross.local NU-2016.cross.local Primary Replicating Normal 10/17/2017 6:05:49 PM
Replica Server: Replication Mode: Replication State: Replication Health: Statistics for 6 Seconds	NU-2016.cross.local Primary Replicating Normal 10/17/2017 6:05:49 PM
Replication Mode: Replication State: Replication Health:	Primary Replicating Normal 10/17/2017 6:05:49 PM
Replication State: Replication Health:	Replicating Normal 10/17/2017 6:05:49 PM
Replication Health:	Normal 10/17/2017 6:05:49 PM
Statistics for 6 Seconds	10/17/2017 6:05:49 PM
From times	10/17/2017 6:05:49 PM
From time:	
To time:	10/17/2017 6:05:56 PM
Average size:	4096 KB
Maximum size:	4096 KB
Average latency:	00:00:01
Maximum latency:	00:00:01
Errors encountered:	0
Successful replication cycles:	1 out of 1 (100%)
▲ Pending replication	
Size of data yet to be replicated:	4 KB
Last synchronized at:	10/17/2017 6:05:50 PM
Refresh Reset statistics	Save as Close

#### Note

Acronis Cloud Manager also allows administrators to perform replication failover testing to ensure that everything will work as expected in the event of a disaster.

Fest F	ailover	$\times$
ou ca ucces	n create a separate virtual machine to verify that a recovery point is able to start sfully, and that the virtual machine is running correctly.	
New	/M - Latest Recovery Point - 17.10.2017 18:10:50	-
(!)	A new virtual machine will be created based on the specified recovery point. It might take up to a few minutes for the new virtual machine to be created.	
	Test Failover Cance	1

# 7 Azure management

Acronis Cloud Manager includes a special plugin to control Microsoft Azure subscriptions from its GUI. It allows performing basic operations with Azure cloud virtual machines and convert Hyper-V VMs into Azure.

## 7.1 General view

The **Azure management** section view looks similar to **Hyper-V management** – there is an object tree on the left pane and VM list on the right pane. Tools and controls are logically grouped and located on the upper ribbon.

		Acro	nis Cloud Manager	r.				- 0	×
Home Azure Management Replication Mar	nagement								
Add subscription	a 🗛 🙇 🞑	Start Deallocate							
Delete subscription Configure Refresh Criticensing V	reate Import Edit VM Delete VM Hyper-V VM VM	👰 Restart 👰 Connect	Configure alerts						
Subscriptions	Virtual Mach	nes	Monitoring						$\diamond$
Azure Management <									
A D Azure Subscriptions	Filter by name	*	Filter by tags			<b>•</b>	Clear		
A Pay-As-You-Go (konstantinmalkovgmai	Name 🔺 Status	Resource Group	Location	Size	OS	Disks	Public IP	Tags	
🛆 boris2	AutoTestVM Running	AutoTest2	West US	Standard_B1ms	Linux	1 (31 GiB)	-		
₫ sqL	boris2 Stopped (	feallocat AzureVMs	East US	Standard_B1Is	Windows	1 (127 GiB)			
AutolestVM	created2008r2 Stopped	new-group	North Europe	Standard_B1s	Windows	1 (30 GiB)	137.116.238.82	[LastChangedBy :	iva
WindowsVM	🚳 mskmeeting Stopped (	deallocat TestRg	Central US	Standard_DS1_v2	Windows	2 (128 GiB)	-	[dsfsdf : sdfdf]	
VM5CL	SQL Stopped (	ieallocat AzureVMs	East US	Standard_B1ms	Windows	1 (127 GiB)			
VM5CL-test	VM5CL Stopped	Yarosh	Central US	Basic_A1	Windows	1		[replicated VM : f	rom ···
Created2008r2	VM5CL-test Running	Yarosh	Central US	Basic_A1	Windows	1		[CreatedBy : Pave	ı ···
Win10	🚱 Win10 Running	new-group	North Europe	Basic_A1	Windows	1		[CreatedBy : Pave	[2]
	WindowsVM Running	TestRg	Central US	Standard_B1ms	Windows	1	23.99.195.128		
Azure Management									
Backup									
SDN Management     Administration									
Server status: Online 🖁 🌡 didemløpdate Azure Subsc	cription 'Pay-As-You-Go' Add or Upda	te Azure Subscription 'Pay-As-Yo	u-Go'admin	6/3/2019 1:24:59 PM	100 %	6/3/2019 1:24:59 PM	Completed	10 0 0	<b>9</b> 1 "

Object tree contains Azure subscriptions instead of hosts as root entries, having VMs under them.

# 7.2 VM view

Selecting a VM from the list on the right pane will enable corresponding controls on the upper ribbon, which are applicable for the current VM state (i.e. **Start** if VM is not currently running, etc.), and the list of the latest alerts for selected VMs in the lower part of the right pane:

		A	cronis Cloud Manager			– 🗆 X
Home Azure Management Replication	Management					
Add subscription	Create Import Edit VM	Start Deallocat Stop Delete WM Restart Connect	configure			
Subscriptions	Vin Tiypet-V Vin	al Machines	Monitoring			۵
Azure Management <	Filter by pame	ar machines	Filter bytage		T Class	
Azure Subscriptions	The by hame		Ther by tags		· Clear	
Pay-As-You-Go (konstantinmalkovgmai	Name 🔺 St	atus Resource Group	Location Size	OS	Disks Public	IP Tags
boris2	AutoTestVM Ru	unning AutoTest2	West US Stand	ard_B1ms Linux	1 (31 GIB) -	•••
SQL	boris2 St	opped (deallocat AzureVMs	East US Stand	ard_B1Is Windows	1 (127 GiB) -	
Autorestvini Markmeeting	created2008r2 St	opped new-group	North Europe Stand	ard_B1s Windows	1 (30 GIB) 137.11	5.238.82 [LastChangedBy : Iva
WindowsVM	mskmeeting St	opped (deallocat TestRg	Central US Stand	ard_DS1_v2 Windows	2 (128 GiB) -	[dsfsdf : sdfdf] ····
VM5CL	SQL St	opped (deallocat AzureVMs	East US Stand	ard_B1ms Windows	1 (127 GiB) -	•••
VM5CL-test	VM5CL St	opped Yarosh	Central US Basic_	A1 Windows	1 -	[replicated VM : from ···
created2008r2	🕼 VM5CL-test Ru	unning Yarosh	Central US Basic_	A1 Windows	1 -	[CreatedBy : Pavel]
Win10	💽 Win10 Ru	unning new-group	North Europe Basic_	A1 Windows	1 -	[CreatedBy : Pavel2] ····
	WindowsVM Ru	unning TestRg	Central US Stand	ard_B1ms Windows	1 23.99.1	95.128
Hyper-V Management	:					
Azure Management	Name	Status	Condition	Resource Group	Resource	Last Fired
1	tesT recomendation NM	Active	Recommendation events	new-group		^
Monitoring	test Policy NM	Active	Policy events	new-group		
-	🔝 test admin NM	Active	Administrative events	new-group		
Reporting	test autoscale	Active	Autoscale events	new-group		
	test security NM	Active	Security events	new-group		
Backup	test service health	Active	ServiceHealth events	new-group		
0	✓ Test-Symon	Active	Percentage CPU > 90	AzureVMs	SQL	8/3/2018 3:14 AM
SDN Management	≪ test	Disabled	Percentage CPU > 3	new-group	created2008r2	4/1/2019 10:48 AM
	≪ test 2	Active	Network In < 9	new-group	created2008r2	3/29/2019 5:33 AM
Administration	≪ qwe	Active	Percentage CPU > 10	TestRg	WindowsVM	3/28/2019 5:28 AM
	Alerts					
Server status: Online 🗸 datambhpdate Azure S	ubscription 'Pay-As-You-Go' Add	or Update Azure Subscription 'Pay-As-	You-Go' admin 6/3/2019 1:	24:59 PM 100 %	6/3/2019 1:24:59 PM Completed	🗢 10 💿 0 🤑 1 📑

Selecting VM in the object tree on the left pane will display graphs for VM performance counters, VM info and alerts on the right pane:

▲ =	Acron	is Cloud Manager	- 1	o x
Home Azure Management Replicatio	n Management			
Add subscription Delete subscription Subscription Configure Licensing Subscriptions	Create Import VM Hyper-V VM Create VM Delete VM Start @ Deallocate VM Start VM Delete VM Delete VM @ Restart @ Connect Virtual Machines	Configure alerts Monitoring		\$
AZUre Management	Show data for last: I hour to hours the hours to a day	0 7 days 0 30 days		
	CPU (average) 100% 80% 60% 40% 20% 0%	Net 15.0 12.0 9.0 6.0 3.0	work (total) 0 kB 00 kB	
Win10	12:30 PM 12:45 PM 1:00 PM	1:15 PM	12:30 PM 12:45 PM 1:00 PM 1:15 PM	
	Percentage CPU		- Network In Network Out	
	Disk bytes (total) 400.00 kB 200.00 kB	Disk 1/5 0.8/5 0.6/5	c operations/sec (average)	$\sim$
Azure Management	100.00 kB -	0.4/5	5	
Monitoring	0 B 12:30 PM 12:45 PM 1:00 PM Disk Read Bytes  Disk Write Bytes	1:15 PM	s 12:30 PM 12:45 PM 1:00 PM 1:15 PM → Disk Read Operations	
C Reporting	AutoTestVM			
G Backup	Resource Group: AutoTest2 Status: Running	Computer Name: AutoTest Operating System: Linux	WM	
SDN Management	Subscription:         Pay-As-You-Go           Subscription ID:         8144f68a-12ac-44b0-85b4-93434bacf29a	Public IP Address: FQDN:	<u>2 9 mi</u>	
Administration	Information Alert Incidents Alerts			
Server status: Online Addate Azure	Subscription 'Pay-As-You-Go' Add or Update Azure Subscription 'Pay-As-You	-Go' admin 6/3/2019 1:24:59 PM	100 % 6/3/2019 1:24:59 PM Completed 🔮 10 🔮	0 🔒 1 🔒

# 7.3 Adding and removing Microsoft Azure subscription

First thing you have to do when starting your work with Azure management is to add your Microsoft Azure subscription to the object tree. To do this, click the **Add subscription** button on the main ribbon, which will open the **Add subscription** wizard:

Add Subscription		$\times$							
	General								
General	Specify tenant								
Select Subscriptions	Tenant:								
Summary	5ninesoftware.onmicrosoft.com								
	View app registrations on Microsoft Azure Portal								
	Application ID:								
	99543f33-eb34-423f-9dd0-587bd15e11c6								
	Application Secret:								
	66IYUT/6KoThgBn56rytW8grcyMEc7pdSWwuM319tnt+								
	< Back Next > Finish Can	cel							

On the first screen, specify your tenant ID, application ID and application secret key. If required, the link **View app registrations on Microsoft Azure portal** will open your browser and lead you to Microsoft Azure portal to review your subscriptions.

#### Note

You will have to login to your Microsoft account first to be able to view the Azure subscriptions.

#### Click **Next**.

On the second screen, select the subscriptions that you want to add to the object tree among available ones in the list and click **Next**:

Add Subscription		$\times$
	Select Subscriptions	
General	Select subscriptions	
Select Subscriptions	Pay-As-You-Go	
Summary		
	< Back Next > Finish Canc	el

Review the summary on the third screen and click **Finish** to add the selected subscription(s) to the object tree:

Add Subscription										
Summary										
General	Summary									
Select Subscriptions Summary	New subscriptions: 1 Pay-As-You-Go Remove subscriptions: 0									
	< Back Next > Finish Cane	cel								

The subscription will be added to the tree.

To remove Microsoft Azure subscription from Acronis Cloud Manager's tree, select the required subscription in the tree and click the **Delete subscription** button on the main menu ribbon:



## 7.4 Role-based access control

Azure subscriptions are added separately on global and tenant levels. Global administrator can delegate permissions on Azure subscriptions (full access, separate Azure VMs and/or operations)

added on global level to global users without administrative privileges and to tenant administrators. Tenant administrator can delegate permissions to tenant users without administrative privileges.

Permissions for Azure subscriptions are delegated in the standard way as it's done for any other type of resources (please, refer to the "Managing users, tenants and roles" (p. 43) section above for detailed information).

Add User Wizard													×
Resources and Roles													
Condentials													
Percources and Poles	Mana	lanage resources and roles for user											
Summary	V U	✓ Use Advanced Resource Based Permissions											
,	-		Resources						Roles				
	En	ter text to search	· · · · · · · · · · · · · · · · · · ·	Find	Clear	-	Enter text to search			*	Find	Clear	
		Name	Description	Parent			Is Enabled Name		Name			tion	
	- A.	Pay-As-You-Go				^	Image: A start of the start	-	Full Access				
	- <b>4</b> T <u>j</u>	Type: AzureVirtualMachine						<u>.</u>	Basic				_
	- A.	mskmeeting		Pay-As-You-Go			Read-Only					_	
		SQL		Pay-As-	You-Go								
	- A-	AutoTestVM		Pay-As-You-Go Pay-As-You-Go									
	A.,	VM5CL-test											
		WindowsVM		Pay-As-	You-Go								
	A.,	VM5CL		Pay-As-	You-Go								
		boris2		Pay-As-	You-Go								
	<u> </u>	Win10		Pay-As-	You-Go	-							
	- A.	created2008r2		Pay-As-	You-Go	~							
							<	Back	Next >		OK	Cancel	

Adding Azure resources to global users:

Select subscriptions and VMs you need to delegate permissions on and click **OK** to add those resources to the user. Operations available for each resource are configured in roles settings (please, refer to the "Managing users, tenants and roles" (p. 43) section above for detailed information). Tenant administrator is able to do the same on tenant level.

Adding Azure resources to tenant:

Tenant Wizard										×
Resources										
Information	Manag	ge tenant resources								
Administrators Users Add Remove Add objects to tenant -										<
Resources		Name AutoTestVM	Enter text to search  Find						Clear	
Summary		mskmeeting			Name	Object Type	Parent	Fqdn	IP	
	A.	Pay-As-You-Go			5nineMgr	VirtualMac	DEV-NODE1	5nineMgr	192.168.5.12	^
	- A-	SQL	<b>_</b>		DEV-DCN	VirtualMac	DEV-NODE1	DEV-DCN	192.168.5.11	
	E	Virtual Machines			Public	VirtualNet	DEV-NODE2			
	-	VM3 (from Template base	=		DEV-NODE1	Host	cluster			
	- A.	VM5CL-test	÷.	$\checkmark$	Windows	AzureVirtu	Pay-As-Yo			
			<b>_</b>		DEV-DCN	VirtualMac	DEV-NODE2	DEV-DCN	192.168.5.11	
			=		DEV-NODE2	Host	cluster			
			- A.	$\checkmark$	VM5CL	AzureVirtu	Pay-As-Yo			
			- A.		boris2	AzureVirtu	Pay-As-Yo			
					Win10	Azure\/irtu	Day As Vo			~
			Select	ed co	ount: 2			ОК	Cancel	
						< B	ack N	ext >	ОК	Cancel

## 7.5 Configuring Azure licensing

Azure management part is licensed per VM. Initially, a free license is installed by default, which includes quota for a maximum number of 5 virtual machines from the cloud. Azure license is installed and works separately on a global level and for each tenant. Default 5 VM licenses are only available to global users and additional Azure VM licenses can be purchased which requires a separate license file.

Without the valid Azure license, Acronis Cloud Manager will still display Azure VMs, but all of them will be inactive and inoperable – no actions against them will be possible. After installing the Azure license, you will need to configure it – select VMs from your added Azure subscriptions that you need to be active and available for management. To configure the license, click the **Configure Licensing** button on the main ribbon:

Configure Licensing ×									×
Configure									
Configure Add Azure virtual machines which you want to be licensed									
		Add	Remove						
		Name 🔺	Status	Resource	Location	Size	OS	Disks	Public IP
	<b>.</b>	aTEST21	Running	AutoTest	East US	Standard B	Windows	1 (31 GiB)	104.211.20.136
	4	NewLinuxV	Stopped	testRG	East US	Standard B	Linux	1 (30 GiB)	-
	<b>S</b>	NewVM	Running	Yarosh	Central US	Standard A0	Windows	1 (127 GiB)	-
	<b>S</b>	RouterVM	Running	ApplianceRG	East US	Standard B	Windows	1 (127 GiB)	40.87.46.74
	4	Ubuntu	Stopped	ApplianceRG	East US	Standard A0	Linux	1 (30 GiB)	-
	4	UbuntuTes	Stopped (d	MyResourc	East US	Standard B	Linux	1 (30 GiB)	-
	You c	an register up t	to 9 virtual mac	hines					
								OK	Cancel

The wizard displays virtual machines that have been already selected from the subscription(s) limited by max number of the license quota. It is written in the lower part of the wizard how many VMs you may currently register. To add new VMs from the subscription click the **Add** button:

Con	Configure Licensing ×										
You	You can choose up to 9 virtual machines										
E	Filter by name										
	iter by fidilie					Clear					
	Name 🔺	Status	Resource	Location	Size	OS	Disks	Public IP			
<b>.</b>	aTEST21	Running	AutoTest	East US	Standard	Windows	1 (31 GiB)	104.211.20			
4	CentosVM	Stopped (	MyResour	East US	Standard	Linux	1	-			
4	created20	Stopped (	new-group	North Eur	Standard	Windows	1 (30 GiB)	-			
4	NewLinux	Stopped	testRG	East US	Standard	Linux	1 (30 GiB)	-			
<b>.</b>	NewVM	Running	Yarosh	Central US	Standard	Windows	1 (127 GiB)	-			
<b>.</b>	RouterVM	Running	Appliance	East US	Standard	Windows	1 (127 GiB)	40.87.46.74			
<b>A</b>	SadTinyC	Running	MyResour	East US	Standard	Linux	2	-			
<b>.</b>	SQL	Running	AzureVMs	East US	Standard	Windows	1 (127 GiB)	-			
<b>A</b>	SymonTEST	Running	testRG	East US	Standard	Windows	1 (127 GiB)	-			
4	Ubuntu	Stopped	Appliance	East US	Standard	Linux	1 (30 GiB)	-			
4	UbuntuT	Stopped (	MyResour	East US	Standard	Linux	1 (30 GiB)	-			
<b>A</b>	VM27TES	Running	testRG	East US	Standard	Linux	3	-			
<b>A</b>	win16-test1	Running	AutoTest	Central US	Standard	Windows	1	-1			
<b>A</b>	Windows	Running	TestRg	Central US	Standard	Windows	1	-			
							OK	Cancel			
						[					

Choose VMs, using your mouse, **Shift+Ctrl** keys as needed, then click **OK** in the dialog window and on the main window of the wizard. Selected VMs will become active and available for management.

# 7.6 Creating/deleting VM

To create a new Azure VM, click the **Create VM** button on the main ribbon. The **Create Azure virtual machine** wizard will open:

Create Azure Virtual	Machine				×				
		Resource gro	oup						
Resource group	Select resource gro	pup							
Images	Select resource group which will hold new virtual machine								
Size	Resource group:	AzureVMs			▼ Create				
Settings	Location:	East US			•				
Summary									
			< Back	Next >	Finish Cancel				

Select resource group and location, create the new resource group if necessary – click the **Create** button to the right from the **Resource group** field.

Create resource group							
Name:	New_resource_group						
Location:	centralus	-					
	Ok Cano	el					

Type in the name and select the location.Then click **Next**.

Create Azure Virtual Machine			
	Images		
Resource group	Select image		
Images <	Popular All		
Basics	Windows Server 2016		
Settings			
Summary			
	< Back Next > Finish Cancel		

Either select one of popular images, or specify publisher, name of group of related images and SKU. Click **Next**.

Create Azure Virtual	I Machine ×	(
	Images	
Resource group Images Basics Size Settings Summary	Select image         Popular       All         The organization that created the image         Publisher:       Snine software inc         Name of a group of related images created by a publisher         Offer:       Snine smart firewall         An instance of an offer, such as a major release of a distribution         SKU:       Snine smart firewall         Before you can use some marketplace image, you must enable the image for programmatic use. In the Azure portal, find the marketplace image that you want to use and then click 'Want to deploy programmatically? Get Started ->'. Enter any required information and then click Save.	
	< Back Next > Finish Cancel	

Enter VM name and credentials – user name and password. Click **Next**.

Create Azure Virtual Machine					
		Basics			
Resource group Images Basics < Size Settings	Set basic settings				
	Name	NewVM			
	User name:	UserName			
	Password:	•••••			
Summary	Confrim password:	•••••			
		< Back Next > Finish Cancel			

Select available VM size. Click **Next**.

Create Azure Virtual	l Machine			×
		Size		
Resource group	Choose virtual machine	size		
Images Basics Size	OS disk size, GiB	vCPU		
Settings	Name	Memory, GiB	Resource disk size, GiB	Max data disks
Summary	A OS disk size, GiB: 10	23		^
	✓ vCPU: 1			
	Standard_B1ms	2	4	2
	Standard_B1s	1	2	2
	Standard_DS1_v2	3.5	7	4
	Standard_F1s	2	4	4
	Standard_A0	0.8	20	1
	Standard_A1	1.8	70	2
	Basic_A0	0.8	20	1
	Basic_A1	1.8	40	2
	Standard_D1_v2	3.5	50	4
	Standard_F1	2	16	4
	Standard_A1_v2	2	10	2
	Hide unsuitable virtu	al machine sizes	50	A
			< Back Next >	Finish Cancel

Set IP addresses. Click **Next**.

Create Azure Virtual	I Machine	$\times$
	Settings	
Resource group	Configure optional features	
lmages Basics	A network interface enables an Azure Virtual Machine to communicate with internet, Azure, and on-premises resources	
Size	Address space: 10.1.0.0/24	
Settings	Opnamic private IP	
Summary	○ Static private IP	
	Without public IP	
	O With public IP	
	DNS name label: LeafDNSLabel	
	[	
	< Back Next > Finish Ca	ncel

Review the summary and click **Finish**.
Create Azure Virtua	al Machine	×
	Summary	
Resource group	Summary	
Images Basics Size Settings Summary	Name: NewVM, Location: eastus, UserName: UserName, Password: **************, ResourceGroup: Microsoft.Azure.Management.ResourceManager.Fluent.ResourceGroupImpl, SizeName: Standard_B1ms, AvailabilitySet: , NetworkInterface: , SelectedVirtualMachine: , SKU: Microsoft.Azure.Management.Compute.Fluent.VirtualMachineSkulmpl, StorageAccount: , StorageKey: , AddressSpace: 10.1.0.0/24, IsDynamicPrivate: True, IsWithoutPublic: True, Privatelp: , LeafDNSLabel: LeafDNSLabel, KnownVirtualMachineImage: WindowsServerTechnicalPreview, IsKnownOS: False	<
	< Back Next > Finish Cance	!

To delete Azure VM, select it, make sure it is in stopped state, and then click the **Delete VM** button on the main ribbon.

## 7.7 Editing VM

To edit Azure VM, you need to deallocate its resources first. Select virtual machine and click the **Deallocate** button on the main ribbon:

								Acronis Cloud M	lanager
Home	Azure Management	Replication	Manager	ment					
🗐 Add sut	subscription Configure Licensing	C Refresh	Create VM	Import Hyper-V VM	Edit VM	Delete VM	Start 🚱 Start	Deallocate Connect	Configure alerts
Subscriptions				Virtu	ual Machir	nes		Monitoring	

When the process is finished (you may control this using Jobs dialog window), click the **Edit VM** button on the main ribbon. The **Edit Azure virtual machine** wizard will be opened:

Edit Azure Virtual Mad	chine		>	<
			Disk	
Disk	Choose	e disk operations		
Size		Name	Size in GB Create disk	٦
Summary		Linux Data	30 Edit disk	
	10-11 1.2-1		Detach	
			< Back Next > Finish Cancel	

The following actions with virtual disk are available on the first screen: create new disk, edit disk and detach disk.

1. To create virtual disk, click the **Create disk** button.

Create	disk >	<
Name:	Data	
Size:	127	
	Ok Cancel	

Enter the name for a new disk and its size, and then click **OK**.

2. To edit the virtual disk, select it and click the **Edit disk** button.

Edit d	isk		$\times$
Name:	Data		
Size:	30		
		Ok Cano	el:

Edit the necessary parameters for the virtual disk (name and/or size), and then click **OK**.

3. To detach virtual disk, select it and click the **Detach** button.

### Click **Next**.

Edit Azure Virt	ual Machine						×
			Size				
Disk	Choose virtual mad	hine size					
Size Settings	Drag a column he	ader here to group	by that column				_
Summary	Name	vCPU	OS disk size, GiB	Memory, GiB	Resource disk s	Max data disks	
	Standard_D13	8	1023	56	400	32	^
	Standard_D14	16	1023	112	800	64	
	Standard_B1ms	1	1023	2	4	2	
	Standard_B1s	1	1023	1	2	2	
	Standard_B2ms	2	1023	8	16	4	
	Standard_B2s	2	1023	4	8	4	
	Standard_B4ms	4	1023	16	32	8	
	Standard_B8ms	8	1023	32	64	16	
	Standard_DS1_v2	1	1023	3.5	7	4	
	Standard_DS2_v2	2	1023	7	14	8	
	Standard_DS3_v2	4	1023	14	28	16	
	Standard_DS4_v2	8	1023	28	56	32	
	Standard_DS5_v2	16	1023	56	112	64	
	Standard_DS11	2	1023	14	28	8	
	Standard_DS11	2	1023	14	28	8	
	Hide unsuitable	e virtual machine siz	es				
				< Back	Next > Fir	nish Cance	1

On the next screen, select the new size for Azure VM if necessary. Click **Next**.

On the next screen, edit Azure VM IP settings, if necessary. Click **Next**.

Edit Azure Virtual Ma	lachine	×
	Settings	
Disk	Configure optional features	
Size Settings	A network interface enables an Azure Virtual Machine to communicate with internet, Azure, and on-premises resources	
Summary	Address space: 10.1.0.0/24 Dynamic private IP Static private IP Without public IP With public IP DNS name label: LeafDNSLabel	]
	< Back Next > Finish	Cancel

Review the summary and click **Finish**.

Edit Azure Virtual Ma	achine	$\times$
	Summary	
Disk	Summary	
Size	Detach disk Data 1 GB	^
Summary <		
	< Back Next > Finish Cano	el

## 7.8 Editing tags

Tags, which are used in Microsoft Azure to categorize and logically order resources, can be edited using Acronis Cloud Manager GUI. To view and edit tags, select either the root branch of the object tree or the exact subscription to view Azure VM list:

Azure Management <	Fi	iter by name			▼ Filter by t	ags			▼ Clear		
Azure Subscriptions											
a 📄 Pay-As-You-Go (konstantinmalkovg		Name 4	Status	Resource Group	Location	Size	OS	Disks	Public IP	Tags	
SQL	4	ATEST29	Stopped (deallo	Yarosh	Central US	Standard A0	Windows	1 (127 GiB)	-		
TEST26YAROSH	A	CentOSvm	Stopped (deallo	TestRg	Central US	Standard DS1 v2	Linux	2	-		
A NewVM		created2008r2	Running	new-group	North Europe	Standard B1s	Windows	1 (30 GiB)	23.100.49.249	[CreatedBy : Pavel	
CentOsym     mskmeeting	4	KolibriOS	Stopped (deallo	SadkovTest	North Europe	Basic A0	Windows	1	-	[CreatedBy : Anton]	
WindowsVM	Ą	Lubunbtu	Stopped (deallo	SadkovTest	North Europe	Basic A0	Linux	2	-		
🛆 ATEST29 🗸 🗸	<b>.</b>	mskmeeting	Running	TestRg	Central US	Standard DS1 v2	Windows	2 (128 GiB)	23.99.134.43	[key : value]	
	<b>\$</b>	NewVM	Running	DeleteMe	Central US	Standard A2	Linux	1 (30 GiB)	-		
C. Hyper-V Management	4	NewVM	Stopped (deallo	SadkovTest	North Europe	Basic A0	Linux	1 (30 GiB)	-		
- <b>Q</b> //	4	NoName-Abcx312	Stopped (deallo	SadkovTest	North Europe	Basic A0	Linux	1 (30 GiB)	-		
4	: 4	SadkovUbuntuC	Stopped (deallo	SadkovTest	North Europe	Basic A0	Linux	1 (30 GiB)	-		
Azure Management	:	SQL	Stopped	AzureVMs	East US	Standard B1ms	Windows	1 (127 GiB)	-	[yarosh : test]	

The **Tags** column shows tags for each object:

Tags	
[CreatedBy : Pavel	
[CreatedBy : Anton]	•••
[key : value]	

Click the button located to the right from each row to open the **Edit tags** dialog:

Edit Tags			×
	Tags		
Tags	Add, update or remove tags for the virtua	al machine	
	Add Remove		
	Кеу	Value	
	CreatedBy	Anton	
		OK Cance	

To add the new tag, click the **Add** button and type in its parameters, and then click **OK**:

Add Tag	y ×
Кеу	CreatedBy
Value	Anton
	OK Cancel

To remove the tag, select it and click the **Remove** button.

At the end, click **OK** in the **Edit tags** dialog to complete the operation.

## 7.9 Importing Hyper-V VM into Azure

#### Note

Only stopped VM can be imported into Microsoft Azure.

To import Hyper-V VM into Azure, select it, make sure it is in stopped state, and then click the **Import Hyper-V VM** button on the main ribbon. The **Import Hyper-V VM** wizard will be opened:

Import Hyper-V VM		×
	Choose existing VM	
Choose existing VM	Choose existing VM	
Resource group	Name	
Basics	Yarosh22JUNE	
Size	└── VM27TESTyarosh	
Settings	VM5	
Summary	R2DC	
	Lest-ren-boris	_
	VM2	
	VM4	
	< Back Next > Finish Cance	

On the first screen, select VM that needs to be imported into Microsoft Azure. Click **Next**.

Import Hyper-V VM			$\times$
		Resource group	
Choose existing VM	Select resource gro	up	
Resource group	Select resource gro	oup which will hold new virtual machine	
Size	Resource group:	cloud-shell-storage-westeurope	Create
Settings	Location:	West Europe	
Summary		.westeurope.cloudapp.azure.com	
	Storage Account:	csb8144f68a12acx44b0x85b	
		< Back Next > Finish	Cancel

On the next screen, select resource group, location and storage account. To create the new resource group, click the **Create** button to the right from the **Resource group** field:

Create resource group			
Name:	New_resource_group		
Location:	Central US	*	
	Ok Canc	el	

Enter the name for the new resource group and select the location. Click **OK**. Click **Next** in the main window.

Import Hyper-V VM			$\times$
		Basics	
Choose existing VM	Set basic settings		
Resource group Basics	Name User name:	VM2	
Size	Password:		
Summary	Confrim password:		
		< Back Next > Finish Cance	I

On the next screen, edit the name for virtual machine as it will appear in Microsoft Azure. Only this parameter can be edited. Click **Next**.

Import Hyper-V VM							×
			Sizo				
			Size				
Choose existing VM	Choose virtual m	achine size					
Resource group							
Basics	Drag a column h	header here to group	by that column				_
Size	Name	vCPU	OS disk size, GiB	Memory, GiB	Resource disk s	Max data disks	
Settings	Standard_A2	2	1023	3.5	135	4	^
Summary	Standard_A3	4	1023	7	285	8	
,	Standard_A5	2	1023	14	135	4	
	Standard_A4	8	1023	14	605	16	
	Standard_A6	4	1023	28	285	8	
	Standard_A7	8	1023	56	605	16	
	Basic_A2	2	1023	3.5	60	4	
	Basic_A3	4	1023	7	120	8	
	Basic_A4	8	1023	14	240	16	
	Standard_D1	1	1023	3.5	50	4	
	Standard_D2	2	1023	7	100	8	
	Standard_D3	4	1023	14	200	16	
	Standard_D4	8	1023	28	400	32	
	Standard_D11	2	1023	14	100	8	
	Standard_D12	4	1023	28	200	16	
	Hide unsuitat	ole virtual machine siz	tes				
				< Back	Next > Fir	nish Cancel	

Select size for VM. Click **Next**.

Import Hyper-V VM		×
	Settings	
Choose existing VM	Configure optional features	
Resource group Basics	A network interface enables an Azure Virtual Machine to communicate with internet, Azure, and on-premises resources	
Size	Address space: 10.1.0.0/24	
Settings	Dynamic private IP	
Summary	O Static private IP	
	Without public IP	
	O With public IP	
	DNS name label: LeafDNSLabel	
	Upload speed limit in Kb/s (0 - if none):	
	○ Windows	
	Linux	
	< Back Next > Finish	Cancel

Configure the following settings for VM:

- IP addresses;
- Upload speed limit in Kb/s (0 if none);
- Guest OS type.

Click **Next**.

Import Hyper-V VM		$\times$
	Summary	
Choose existing VM	Summary	
Choose existing VM Resource group Basics Size Settings Summary	Azure import VM settings: Azure virtual machine: VM2 From Hyper-V virtual machine: VM27TESTyarosh Location: westeurope ResourceGroup: cloud-shell-storage-westeurope Size: Standard_F1s UserName: UserName Password: AddressSpace: 10.1.0.0/24 IsDynamicPrivate: True Privatelp: IsWithoutPublic: True LeafDNSLabel: LeafDNSLabel OS: Linux Disks: Hard Drive on SCSI controller number 0 at location 0 (129 Gb) Hard Drive on SCSI controller number 0 at location 1 (6 Gb) Hard Drive on SCSI controller number 0 at location 2 (4 Gb) Max upload speed 1024 Kb/s Estimate upload time: 00:00:12	
	< Back Next > Finish Can	el

Review the summary and click **Finish**.

## 7.10 Configuring Azure monitoring alerts

To configure Azure monitoring alerts, click the **Configure alerts** button on the main ribbon.

	Configure Alerts — 🗌					$\times$		
Home								
C Refresh	Add metric alert (classic)	Add activity log alert Alerts management	Disable Delete					
Name		Status	Condition	Resource Group	Resource	Last Fired		
🗄 log a	alert for ADM N	Disabled	Administrative events	new-group				1
📑 tesT i	recomendation	Active	Recommendation eve	new-group				
📑 test 🛙	Policy NM	Active	Policy events	new-group				
📑 test a	admin NM	Disabled	Administrative events	new-group				
📑 test a	autoscale	Active	Autoscale events	new-group				
📑 test s	security NM	Active	Security events	new-group				
📑 test s	service health	Active	ServiceHealth events	new-group				
≼ test		Disabled	Percentage CPU > 3	new-group	created2008r2	6/27/2018 5:	57 AM	
≼ test 2	2	Disabled	Network In < 7	new-group	created2008r2	6/27/2018 5:	57 AM	
								, i

There are two types of alerts – metric alert (classic) and activity log alert. Metric alerts contain numerical data, such as, CPU percentage, disk write/read operations in bytes and sec, network performance etc. Activity log alerts contain information about various services, security issues and actions.

## 7.10.1 Configuring metric alerts

To add metric alert, click the **Add metric alert (classic)** button on the main ribbon. The **Add metric alert (classic)** wizard will be opened:

Add Metric Alert (cla	assic)	$\times$
	General	
	Concia	
General	General	
Criteria	* Name:	
Notify Via	Metric 1 CPU	8
	Description:	
	< Back Next > Finish Cano	el

On the **General** screen type the name and description (if necessary) and click **Next**.



On the next screen, specify the criteria for the alert – resource group, resource, metric, condition, threshold and period. Click **Next**.

Add Metric Alert (cla	assic) ×
	Notify Via
	,
General	Notify Via
Criteria	Email owners, contributors, and readers
Notify Via	Additional administrator email(s):
	email1@azuremonitoring.com
	Webhook:
	https://azuremonitoring.com/monitor/bce35g67-9908-6t3y-j885-a1abebe9d38a&wa=ws 😒
	< Back Next > Finish Cancel

On the last screen determine, whether and who should be notified – email owners, contributors and readers associated with Microsoft Azure subscription and/or additional email addresses, and/or specific http/https endpoint, where the alerts should be sent. Click **Finish**.

To edit the metric alert, select it in the **Configure alerts** window and click the **Edit** button on the main ribbon. Then repeat the same actions as when adding the alert – edit alert settings as required. To remove the metric alert, select it in the **Configure alerts** window and click the **Delete** button on the main ribbon.

### 7.10.2 Configuring activity log alert

To add activity log alert, click the **Add activity log alert** button on the main ribbon. The **Add activity log alert** wizard will be opened:

Add Activity Log Al	ert ×				
	General				
	General				
General	General				
Criteria	* Activity log alert name:				
Alert Via	Activity log alerts are Azure Resource Manager resources. Your alert's name must be unique within the Resource Group it is associated with.				
	Security log 🛞				
	Description:				
	A description to describe the purpose of the alert.				
	* Subscription:				
	The Subscription in which the alert will be saved.				
	Pay-As-You-Go (konstantinmalkovgmail.onmicrosoft.com)				
	* Resource group:				
	The Resource Group the alert will be associated with.				
	AzureVMs 🔻				
	< Back Next > Finish Cancel				

On the **General** screen, specify the following parameters – activity log alert name, description (if necessary), Microsoft Azure subscription and resource group. Click **Next**.

Add Activity Log Ale	rt		×		
		Criteria			
General	Criteria				
Criteria Alert Via	* Event category: Events in the Activity Logs are assigned to categories. Choose which category of events the alert will evaluate as part of its criteria.				
	Security		-	-	
	The properties of Sec	urity events this alert will monitor.			
	* Resource type:	Action groups (Microsoft.Insights/ActionGroups)	3 -	r	
	* Resource group:	AzureVMs	3 -	-	
	* Resource:	All	-	r	
	* Operation name:	Action group write (ActionGroups)	3 -	-	
	* Level:	All	-	-	
	* Status:	All	-	r	
	Event initiated by:	Azure Admin	e	3	
		< Back Next > Finish Cance	9		

On the next screen, specify criteria for the activity log alert. Events in the activity logs are assigned to categories. First, select the required category, then select properties. The **All** value that is set by default will include all values in each property. Also, you may type the name or another ID of the person who created the alert, if required. Click **Next**.

Add Activity Log Ale	rt	>	<
		Alert Via	
General	Alert Via		
Criteria	Action group:		
Alert Via	New Existing		
	* Action group name:	Azure Security Alerts	8
	* Action short name:	AzureSec	8
	Actions:		
	Action Name	Action Type	
	Notify	Email/SMS/Push/Voice	^
		•	
			~
		< Back Next > Finish Cancel	

On the last screen, specify notification actions associated with the alert. You can configure the new group or select the existing one.

To configure the new notification action group, stay on the **New** tab and enter full and short name for the new group. Then specify action name and type.

Click on **Details** link. The following dialog will be opened:

Email/SMS/Push/Voice	$\times$
* Action name:	
Notify	
Email	
azureadmin@server.com	
SW2	
Carrier charges may apply.	
Country code: * Phone number:	
1 0000000	
Azure app push notifications	
Learn about the connecting to your Azure resources using the Azure app.	
azure@server.com	
This is the email you use to log into your Azure account.	
✓ Voice	
Country code: * Phone number:	
1 0000000	
OK Can	cel

Fill up the parameters for notification methods as required – email, SMS, push and/or voice. Click **OK**. You may add several actions into the new group.

To select the existing action group, move to the **Existing** tab:

Action group:	
New Existing	
* Action group:	
alerts for NM	•

Select the required action group from the drop-down box.

Click **Finish** on the wizard when you complete the operation to add the new activity log alert.

To edit the activity log alert, select it in the **Configure alerts** window and click the **Edit** button on the main ribbon. Then repeat the same actions as when adding the alert – edit alert settings as required. To remove the activity log alert, select it in the **Configure alerts** window and click the **Delete** button on the main ribbon.

# 7.11 Hyper-V VM replication into Azure

The **Azure management** plugin provides ability to replicate Hyper-V VMs into Azure, which acts as a replica server instead of the other Hyper-V server since that happens in the Hyper-V replication environment. This Acronis Cloud Manager feature is managed on the **Replication management** tab:



To start Hyper-V VM replication into Azure, first select the subscription to which VM will be replicated. To be able to start replication into Azure using Acronis Cloud Manager, the recovery vault with all necessary parameters must be configured on Azure portal for the selected subscription.

Click the **Replicate Hyper-V VM** button on the main ribbon.

Configure replication parameters:

Replicate Hyper-V VI	М	×	
		Source	
Source <	Select your source er	nvironment	
Target			
Virtual Machines	Recovery vault:	YaroshVMVault 💌	
Properties	Hyper-V site:	YaroshHyper/Site 🔻	
Replication Settings			
		< Back Next > Finish Cancel	

Select the recovery vault and Hyper-V site. These parameters must be configured on Azure portal in advance. Click **Next**.

Replicate Hyper-V VI	М	×						
		Target						
Source	Select your target setti	ings for recovery						
Target <	Storage account:	varochstorage	1					
Virtual Machines	Storage account.	Vironstriage	1					
Properties	✓ Configure Azure network settings now							
Replication Settings	Virtual network:	vnet0c1193779a82 💌	]					
	Subnet:	subnet1 💌	]					
		< Back Next > Finish Cancel						

Configure the target settings for recovery – storage account, virtual network and subnet. Click **Next**.

Replicate Hyper-V V	М					×	
		Virtual	Machino	e			
		Vircuari	-lacinic.	<b>,</b>			
Source	Select virtual	machines you want t	o replicate				
Target		Name				Generation	
Virtual Machines		VM3				2	
Properties		VMstaticMEM				2	
Replication Settings		VM4CL				2	
		VM4				2	
		VM5CL				2	
		DiffVM				2	
		R2DC				2	
	VM5					2	
		R2MGMT-Server	GMT-Server				
		VM2				2	
			< Back	Next >	Finish	Cancel	

Select virtual machines for replication. Click  $\ensuremath{\textbf{Next}}.$ 

Replicate Hyper-V VI	М					×			
		-Pro	perties —						
Source	Configure properties for selected virtual machines								
Target	Default OS type:	Windo	w/s			*			
Virtual Machines									
Properties <	Name		OS Type		OS Disk				
Replication Settings	VM5CL		Windows		Microsoft.Az	ure.Manageme			
			< Back	Next >	Finish	Cancel			

Select the operating system of the VM (Windows/Linux). Click  $\ensuremath{\textbf{Next}}.$ 

Replicate Hyper-V V	M ×
	Replication Settings
Source	Configure replication settings
Target	
Virtual Machines	Frequency at which changes will be sent to the Replica server: 5 minutes *
Properties	Coverage provided by additional recovery points (in hours):
Replication Settings	App-consistent snapshot frequency (in hours):
	Initial replication start time:
	• Start replication immediately
	◯ Start replication on: 11:00 AM
	< Back Next > Finish Cancel

Configure the general replication settings:

- Frequency to send changes to the Replica server (Azure).
- Coverage period in hours, which additional recovery points provide.
- Application-consistent snapshot frequency in hours.
- Replication start time: immediately upon completing the replication configuration wizard or deferred start (at which moment in the future).

Click **Finish** to save replication configuration settings and start replication in accordance with the configured schedule.

Other replication operations available: failover, test failover, planned failover, commit failover, complete migration, resynchronize, change recovery point, reverse replication. Disabling replication into Azure will erase the replicated VM from Azure and, if configured, stop the replication on the VM:

Disable Replication	×
Disable replication and remove (Recommended)	
This will remove the replicated item from Azure Site Recovery a machine will stop. Replication configuration on source will be Recovery billing for the machine will stop.	nd the replication for the cleaned up automatically. Site
○ Remove	
This will remove the replicated item from Azure Site Recovery. F source will not be cleaned up. Use this option only if the sour accessible.	Replication configuration on ce environment is deleted or not
	OK Cancel

# 8 Hyper-V monitoring

Acronis Cloud Manager provides basic capabilities for cluster, host and VM monitoring. The **Datacenter** view provides consolidated data for the entire environment.

## 8.1 Datacenter monitoring

Datacenter monitoring contains consolidated data for all managed objects – clusters, hosts and virtual machines. It also displays datastore information and the list of latest alarms.

<b>⊘</b> =				Acronis Cle	oud Manager			- 0	×
Dynamic Optimization - General									\$
Monitoring <	Object Summary	1		Hosts	Health	Virtual	Machines Health		
<ul> <li>B</li> <li>Search</li> <li>Name</li> <li>→ I 2015Der-Cluster</li> </ul>	Hosts Clusters Datastores	2 Windows Se 1 Windows Se 10 VM Storage Backup Stor ISO Librarier Template Lit 19	rver 2016 Standard: : rver 2016 Standard: s: 4 ages: 2 :: 2 raries: 2			Healthy 1( Warning Critical Error	(66%) 5 (26%)	Healthy Warning Critical En	ror
	Datastores	15							
	Name	Purpore	Time	Location	Dath	Canacity			
	E Virtual Machin	A VM Storage	iype CSV	NODEL	Ch(ChurterStorage))/okume2).datactore	00 C 04	54.6 GR free of 520.0 GR		
	E cmb backup	Backup Storage	Network Share	C	Chtect1	88.0%	12.3 GB free of 111.4 GB		
	E tart stor	VM Storage	CSV	NODEL	Ch(LusterStorage))/olume2)STOP	87.3.9/	66.2 GB free of 520.0 GB		
	E test_stor	ISO Library	Local	NODE2	CAISO	01.3 %	0.2 GB free of 1110 GB		
C. Hyper-V Management	E coh	130 Elorary	Natural Chase	node2	Upped 2 Mart 1	01.7%	9.2 GB free of 111.0 GB		
- typer v management	E smb	VM Storage	Network share	NODE2	(houez (test)	91.770	9.2 GB free of 111.0 GB		
	E test	VA Sterage	CEV	NODE2	Cityaroshz	91.776	9.2 GB free of F11.0 GB		
Azure Management	E Bashure	Reclare Chernes	CSV	NODEL	C: (Cluster Storage (Volume2(S)	07.576	60.2 GB free of 520.0 GB		
		ISO Library	CSV	NODEI	C:\ClusterStorage\Volume2\bACKOPS	09.3 %	54.6 GB free of 520.0 GB		
Monitoring	E Tomolata	Tamplata Library	COV	NODEL	C: (Cluster Storage Volume2 (So	07.3 70	54.6 GB free of 520.0 GB		
1111	Es remplace	Template Dorary	0.54	NODET	C.(Cluster Storage (#Oldinez \TEMP Ditte	03.3 70	34.0 GB HEE 01 320.0 GB		~
Departing	Latest Alarms	ource Filters 📰 🗄 🕻	Type Filters 🔕						
Reporting	Type Tim	ie	▼ Source		Info	Repea	t Count		
	Warning 11/	29/2018 5:46:27 PM	NODE1		Metric 'CPU Guest Runtime (%)' is out of normal	values range	25		^
Backup	Warning 11/	29/2018 5:46:17 PM	NODE1		Metric 'CPU Total (%)' is out of normal values ran	ge	76		_
•	Warning 11/	29/2018 5:46:17 PM	NODE2 \ Snin	e-Service2	Metric 'CPU Total (%)' is out of normal values ran	ge	272		
	S Error 11/	29/2018 4:59:35 PM	NODE1		Microsoft-Windows-Hyper-V-VMMS:16300: C	annot load a virtual	132 Resolve		
Co SDN Management	Warning 11/	29/2018 12:26:17 PM	NODE2 \ dc3		Metric 'Disk Latency' is out of normal values rang	e	12		
	Warning 11/	29/2018 12:21:38 PM	NODE1 \ Win	dows2016RTM	Metric 'Disk Latency' is out of normal values rang	e	2		
Administration	8 Error 11/	29/2018 12:21:35 PM	NODE1 \ Win	dows2012R2	Metric 'Disk Latency' is out of normal values range	e	1		
-0	Warning 11/	29/2018 12:21:33 PM	P NODE1 \ WIN	DOWS16TEST2	Metric 'Disk Latency' is out of normal values rang	e	2		
	S Error 11/	29/2018 12:21:31 PM	VODE1 \ WIN	DOWS16TEST	Metric 'Disk Latency' is out of normal values rang	e	1		
	Warning 11/	29/2018 12:21:29 PM	NODE1 \ VM3		Metric 'Disk Latency' is out of normal values rang	e	5		~
Server status: Online 🔺 admin		Sta	rage Discovery Storage	Discovery adm	in 6/3/2019 4:12:40 PM	6/3/2019 4:12:44 PM Com	oleted	20 0 0	0 1
		510	inge entering storage	contractly duri	10070	Com			•

## 8.2 Cluster monitoring

Cluster monitoring has the following tabs containing information about cluster performance indicators:

- Summary.
- Disk.

ome Summary Disk				loud Manager					
Dynamic General									
nitoring	< Cluster Sum	mary	Node	s Health	Vir	tual Machines Health			
earch ne □ Datacenter □ Datacenter □ □ atacenter □ □ Datacenter □ □ NODE1 → □ NODE1 → □ NODE2	Name Nodes Virtual M: Current H Networks Subnets Storage Sj	2016Dev 2 achines 19 fost Server NODE1 ; Cluster N 5 IPv4 an paces Direct Disabled	-Cluster.dev.local etwork 3, Cluster Netwo d 1 IPv6		Healthy Warning Critical Error	13 (68%) 1 (5%)	5 (26%)	Healt Warni Critica	hy ing al Error
	Cluster Disk	5							
							Constitu		
	Name		Status	Assigned to	Owner Node	Disk Number	CADACITY		
	Name	er Disk 1	Status	Assigned to Cluster Shared Volume	Owner Node NODE2	Disk Number 3	Capacity	86.9 %	
 Hyper-V Management	Name Cluste Cluste Cluste	er Disk 1 er Disk 3 er Disk 2	Status Online Online Online	Assigned to Cluster Shared Volume Cluster Shared Volume	Owner Node NODE2 NODE1 NODE1	Disk Number 3 2 1		86.9 % 0.7 % 88.2 %	
Hyper-V Management Azure Management	Name	er Disk 1 er Disk 3 er Disk 2	Status Online Online	Assigned to Cluster Shared Volume Cluster Shared Volume	Owner Node NODE2 NODE1 NODE1	Disk Number 3 2 1		86.9 % 0.7 % 88.2 %	>
 Hyper-V Management Azure Management	Name  Name  Cluste  Cluste Clus	er Disk 1 er Disk 3 er Disk 2 15 Source Filters 🗃 🖻 🕻	Status Online Online Online	Assigned to Cluster Shared Volume Cluster Shared Volume	Owner Node NODE2 NODE1 NODE1	Disk Number 3 2 1		86.9 % 0.7 % 88.2 %	>
Hyper-V Management Azure Management Monitoring	Name  Name  Cluste  Cluste Clu	er Disk 1 er Disk 3 er Disk 2 source Filters 📑 🕒 🕻	Type Filters	Assigned to Cluster Shared Volume Cluster Shared Volume	Owner Node NODE2 NODE1 NODE1	Disk Number 3 2 1		86.9 % 0.7 % 88.2 %	>
Hyper-V Management Azure Management Monitoring	Name  Name  Cluste  Cluste C	er Disk 1 er Disk 3 er Disk 2 15 Source Filters 📑 🖸 🕻	Status Online Online Online Type Filtes Source	Assigned to Cluster Shared Volume Cluster Shared Volume	Owner Node NODE2 NODE1 NODE1 NODE1 volues range	Disk Number 3 2 1 epeat Count 25		86.9 % 0.7 % 88.2 %	>
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Hyper-V Management Azure Management Monitoring Reporting	Name > Q Cluste > Q Cluste > Q Cluste > Q Cluste > Q Cluste > Q Warning @ Warning @ Warning @ Error	er Disk 1 er Disk 3 er Disk 3 Time 11/23/2016 54627 PM 11/23/2016 54627 PM 11/23/2016 54627 PM	Status Online Orline Orline Vipre Filters Vipre Filters NOE1 NODE1 NODE	Assigned To Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Info Metric (CPU Guest Runtime (%)' is out of normal values ran Metric (CPU Total (%)' is out of normal values ran Metric (CPU Total (%)' is out of normal values ran Metric (CPU Total (%)' is out of normal values ran	Owner Node NODE2 NODE1 NODE1 NODE1 ge ge ge anot load a virtual	Disk Number 3 2 1 epeat Count 25 76 272 132 Resc	olve	86.9 % 0.7 % 88.2 %	>
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Hyper-V Management Azure Management Monitoring Reporting Backup SDN Management	Name	er Disk 1 er Disk 3 er Disk 3 Time 11/29/2016 54627 PM 11/29/2016 54627 PM 11/29/2016 54627 PM 11/29/2016 54627 PM 11/29/2016 126213 PM 11/29/2016 122135 PM	Status     Online     Online     Online     Online     Online     Online     Nine     NODE1	Assigned To Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Metric CPU Guest Buntime (%) is out of normal values ran Metric CPU Total (%) is out of normal values rang Metric CPU Total (%) is out of normal values rang Metric Diak Latency is out of normal values rang Metric Diak Latency is out of normal values rang	Owner Node NODE2 NODE1 NDDE1 values range ge ge annet load a virtual e e e	Disk Number 3 2 1 epeat Count 25 76 272 272 12 2 1 1 1	olve	86.9 % 0.7 % 88.2 %	>
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<ul> <li>Hyper-V Management</li> <li>Azure Management</li> <li>Monitoring</li> <li>Reporting</li> <li>Backup</li> <li>SDN Management</li> <li>Administration</li> </ul>	Name  V Q Cluste  Q Cluste  Q Cluste  C Uste  Q Q Varning  Q Warning  Q Warni	er Dick 1 er Dick 3 er Dick 2 source Filters  er Dick 2 source  er Dic	Source     NODE1     NODE1     NODE1     NODE1     NODE1     NODE1     NODE2, Snine-Service2     NODE1     NODE1     NODE1, Windows201282     NODE1, Windows201282     NODE1, Windows201282     NODE1, Windows101282     NODE1, Windows101885     NODE1, Windows101885     NODE1, Windows101885     NODE1, Windows101885     NODE1, WINDOWS16855     NODE1, WINDOWS16855     NODE1, WINDOWS16855     NODE1, WINDOWS16855	Assigned to Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Cluster Shared Volume Metric CPU Gatest Runtime (%) is out of normal values ran Metric CPU Tota (%) is out of normal values rang Metric Diak Latency is out of normal values rang	Owner Node NODE2 NODE1 NODE1 NODE1 e ge annot load a virtual e e e e e e e e e e e e e e e	Disk Number 3 2 1 epeat Count 25 76 27 72 122 122 122 122 12 12 12 12 1	ohe	86.9% 0.7% 88.2%	>
Hyper-V Management Azure Management Monitoring Reporting Backup SDN Management Administration	Name	er Disk 1 er Disk 3 er Disk 3 Time 11/29/2015 546/27 PM 11/29/2015 546/27 PM 11/29/2015 546/27 PM 11/29/2015 546/27 PM 11/29/2015 124/2138 PM 11/29/2015 122/138 PM 11/29/2015 122/138 PM 11/29/2015 122/138 PM 11/29/2015 122/138 PM 11/29/2015 122/138 PM 11/29/2015 122/138 PM	Status           Onine           Orine           Orine           Orine           Orine           Source           NODE1	Assigned To     Cluster Shared Volume     Metric (CPU Guest Runtime (%)' is out of normal values ran     Metric (CPU Total (%)' is out of normal values ran     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang     Metric 'Disk Latency' is out of normal values rang	Owner Node NODE2 NODE1 NODE1 e ge annot load a virtual e e e e e e e e e e e e e	Disk Number 3 2 1 epeat Count 25 76 272 12 2 1 2 1 2 1 3 15 15 1 2 2 1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2	cipacity	85.9 % 0.7 % 88.2 %	>

### Note

Summary contains consolidated data for the cluster, overall nodes health diagram, overall VMs health diagram, cluster disks info and the list of latest alarms.





## 8.3 Host monitoring

Host monitoring has the following tabs containing information about host performance indicators:

- Summary.
- CPU.
- Memory.
- Network.
- Disk.

The **Summary** tab contains consolidated host information, VM states and health diagrams, host disks information, CPU total usage (%), memory consumption (Mb), disk read/write speed (MB/sec) and network in/out traffic (MB/sec) and the list of latest alarms.

			oud Manager		
Home Summary CPU Memory I	Network Disk				
Dynamic Optimization - General					۵
Monitoring <	Host Summary	Virtua	I Machines Health	Virtual Machines State	
B         Search           Name         ✓           ▲ B Datacenter         ✓           ▲ B 20150ex-Cluster         →           > B NODE1         →           → B NODE2         ✓	Name NODE1.dev.loc Virtual Machines 14 # of Processors 2 # of Processor Cores 8 Networks dev.local. dev.loc Subnets 5 IPv4 and 8 IP	al cal, dev.local, Unide v6	4 (29%) Healthy Warning Critical Error	14 (100%)	Running
	Host Disks				
	Name	Capacity			
	+ 0 INTEL SSDSC28B120G4 ATA Device (IDE)		89.0 % 12.3 GB free of 111.8 GB		^
↔ Hyper-V Management					~
- It Manitorian	Latest Alarms Source Filters 📃 🖵 Type	Filters 🔕			
IIII Montoring	Type Time	Source	Info	Repeat Count	
	() Warning 11/29/2018 5:46:27 PM	NODE1	Metric 'CPU Guest Runtime (%)' is out of normal values range	25	^
Reporting	Warning 11/29/2018 5:46:17 PM	NODE1	Metric 'CPU Total (%)' is out of normal values range	76	
	S Error 11/29/2018 4:59:35 PM	NODE1	Microsoft-Windows-Hyper-V-VMMS:16300: Cannot load a virtual	132 Resolve	
Backup	Warning 11/29/2018 12:21:38 PM	VODE1 \ Windows2016RTM	Metric 'Disk Latency' is out of normal values range	2	
	Error 11/29/2018 12:21:35 PM	L NODEL WINDOWS15TEST2	Metric 'Disk Latency' is out of normal values range	1	
SDN Management	• warning 11/29/2018 12:21:33 PM	LI NODEL (WINDOWSTBIESIZ	Metric 'Disk Latency' is out of normal values range	2	~
Se bort monogenetic	CPU Usage	Memory Usage	Disk Usage	Network Traffic	
Administration	implant	m	Mrshaw	Mu mana	shacks.
Server status: Online 🚔 admin	Storage	Discovery Storage Discovery add	nin 6/3/2019 4:12:40 PM 100 % 6/3/2019 4:12:44	2M Completed	20 0 0 0 1
a state of the sta	storage	and a storage biscovery aut	0/3/2013 4/12/44		

### Note

CPU, Memory, Network and Disk tabs show more indicators and historical data for the host.

E.g., the **Memory** tab displays the detailed information about the host memory consumption:

o ∓ Nome Summany (201 Memory )	Naturati Dick	Acronis C	oud Manager		- 🗆 X
Home Summary CPO Memory P	Network Disk				
Befresh					
in the second seco					
Gene					~
EA	Memory Usage				
Search				• • • • • • • • • • • • • • • • • • •	
Name					
Datacenter     2016Dex-Cluster	30000MiB				
NODE1					
NODE2					
	20000MiB				
	10000MiB				
Hyper-V Management					
4					
Azure Management	0160				
Monitoring	4:54 PM	5:01 PM 5:08 PM	5:15 PM 5:22 PM	5:29 PM 5:36 PM 5:43 PM	5:50 PM
				Chart views Memory Usage	od Past hour
Reporting	Chart Legend				
Backup	Кеу	Name			
0		Memory Consumed			^
SDN Management					
•					
🧭 Server status: Online   🛔 admin		Storage Discovery Storage Discovery ad	min 6/3/2019 4:12:40 PM 100 %	6/3/2019 4:12:44 PM Completed	😋 20 🖸 0 😲 1 📑

## 8.4 VM monitoring

VM monitoring has the following tabs containing information about VM performance indicators:

- Summary.
- CPU.
- Memory.
- Network.
- Disk.

The **Summary** tab contains VM CPU total usage (%), memory consumption (Mb), disk read/write speed (MB/sec) and network in/out traffic (MB/sec).



### Note

CPU, Memory, Network and Disk tabs show more indicators and historical data for the VM.



## 8.5 Optimizer

Optimizer is an active part of Acronis Cloud Manager monitoring feature. It provides dynamic optimization for Hyper-V servers' VM load based on the configured parameters and each server's performance. Selected VMs will be dynamically migrated to a less loaded Hyper-V host (cluster node) in accordance with the configured thresholds.

1. To configure optimizer, click the **Dynamic optimization** – **Configure optimizer** menu item on the main ribbon of the **Monitoring** plugin screen:



2. In the **Optimization groups** dialog window, you can add, edit and remove optimization groups.

prinization oroups				
ptimizer module provides dynamic optir der to balance server's performance in a ad between cluster nodes and shared sto	nization functionality for Hy ccordance with the configur rage groups to balance load	per-V hosts automatically migrati ed thresholds. Two types of group between the hosts with shared st	ng VMs between hosts within a gr is are supported: cluster groups to orage.	oup in balanc
ame		<ul> <li>Group Type</li> </ul>	Thresholds	
DEV Cluter Group		Cluster	CPU: 80%, Mem: 80%	
Shared Storage Group		Shared Storage	CPU: 80%, Mem: 80%	

- 3. To add the new group, click **Add** to open the **Create optimization group** wizard.
- 4. Set the optimization group parameters: specify group name and choose the group type:

Create Optimization	Group ×				
	General				
General	General				
Resource Thresholds	Specify the name of the optimization group.				
	Name: DEV Cluter Group				
	What type of optimization group do you want to create?				
	Cluster group				
	This type of optimization group is only suitable for nodes of a single cluster. It allows for Live and Quick Migration of the clustered virtual machines.				
	Cluster: 2016Dev-Cluster 🗸				
	Shared datastore group				
	This type of optimization group aggregates the hosts with virtual machines residing on a single shared datastore.				
	< Back Next > Finish Cancel				

If the **Cluster group** type is selected, then choose the available cluster from the drop-down box.

If the **Shared datastore group** type is selected, then you will need to choose the datastore on the next screen:

Create Optimization	Group	$\times$
	Shared Datastore	
General Shared Datastore Resource Thresholds	Shared Datastore         Specify the shared datastore designated to store virtual machines.         Shared datastore:       VM Storage         Select hosts to include to the optimization group (mininum 2).         NODE1         NODE2	
	< Back Next > Finish Ca	ancel

5. Set the resource thresholds for Hyper-V server's CPU and memory consumption:

	Resource Thresholds	
General	Resource Thresholds	
Resource Inresholds	Specify the thresholds of performance counters for the optimization group. When a value is exceeded and also a less loaded host is found, the migration is initiated. CPU Total Run Time: 80% * Memory Used: 80% *	

- 6. Click **Finish** when complete.
- 7. To choose automatic or manual optimizer mode, select the corresponding option in the **Dynamic optimization** menu on the main ribbon.
- 8. To run the optimizer once, click the **Run once** item in the **Dynamic optimization** menu on the main ribbon.
# 9 Reporting

The Acronis Cloud Manager **Reporting** plugin is designed to provide consolidated data about virtual machines. It consists of three tabs – **VM life cycle management**, **System status** and **Zombie VM**.

## 9.1 VM life cycle management

The **VM life cycle management** tab contains consolidated information about various resources utilization by virtual machines during the last week, last month or a period, specified by user.

			Acronis Cloud Manager					- 0	×
Home VM Life Cycle Management Syste	m Status Zombie VM								
Refresh Export Export to PDF to Image to XLSX	Past week								~
Reporting <			VM Lif	e Cycle Manageme	ent				c†כ
8	High CPU Usage		<u>تْ</u> دَار	Low CPU Usage					ch 53
Entertext to search T Clear Name CPU				Name		-	CPU		
CloudManager 14.6599			6	DEV-DC			0.352%		
a 🗐 Datacenter	ACM2	1.002%		cmportal			0.731%		
A B Resource Pool	cmportal	0.731%		ACM2			1.002%		
ACM2	DEV-DC	0.352%		CloudManager			14.659%		
↓ RV/M2 ↓ RV/M3 ▲ III duster → DV-NODE1 ↓ DV-NODE2 ↓ CM2 ↓ CM2 ↓ CM2									
🖵 cmportal	Top VM's by IOPS	rîn KA	Dynamic Memory VM's Usa		rîa Ka	Static Memory VM's	lleage		eta KR
DEV-DC	Name	1005	Name	Acciment	Demand	Name A	cianad	Demand	
L New VM	Name	0.27	DEVIDO	Assigned	2 CR	Name A	CR	1215 MP	
	DEV.DC	0.051	Cloud Manager	7.00	5 GB		2.00	614 MP	
*	ACM2	0.001	Cloudmanager	7.65	5 65	ACMZ	2.65	014 MD	
Hyper-V Management	cmportal	0.0008							
	SQL	0							
Azure Management	New VM	0							
III Monitoring									
Reporting	VM Sprawl Report by Month	Ċ 23	VHD/VHDX Files not attache	ed to VMs	ch 53	CSV Volume Usage B	y Month		ch 53
		2024	Name Storag	e Path	PrettySize			2024	
Backup		2021 2022	VHD2.vhdx VHD	\\DEV-NODE1\Reso	ourc 4 MB			2021	2022
<b>U</b>	6		VHD2_FB86339A VHD	\\DEV-NODE1\Reso	ourc 4 MB	150	-		
			Virtual disk.vhdx VHD	\\DEV-NODE1\Reso	ourc 4 MB	100			
Co SDN Management	5					120			
Administration						90 30 0 0			
	January March May J	uly September				January M	1arch May	July September	
Server status: Online 👗 admin	sub StartVM	BT1 RPVM2 4/14/2022 7:24	:12 AM 100 %	4/14/2022 7:24:13 AM Compl	eted			💙 27 D 0 🕴	U3 .:

The VM life cycle management tab represents the following data:

- High CPU usage;
- Low CPU usage;
- Top VMs by IOPS;
- Dynamic memory usage;
- Static memory usage;
- VM sprawl report;
- VHD/VHDX files not attached to VMs;
- CSV volume usage.

Each section can be maximized to the full window size:



The whole report or just any single separate section (as needed) can be exported into different output formats – PDF file, PNG image, XLSX document or printed and print-previewed:

• By usage of the corresponding main ribbon buttons (for the whole report);



• By usage of the upper-right buttons for both whole report and a single section.



## 9.2 System status

The **System status** tab contains system status report in the table view. There are different parameters of Hyper-V hosts and virtual machines configuration – CPU, memory, physical/virtual disks, checkpoints and replication data.

۰ ا				A	cronis Cloud Mana	ger			—		×
Home	VM Life Cycle Management	System Statu	Zombie VM								
C Refresh Gen 15	Export to PDF Ex 15										~
Reporting	9	<							1		^
Enter te	xt to search 🔻 Clear										
▲ 🗐 Dat	acenter cluster DEV-NODE1 DEV-NODE2 HV2019 J. VMH1		4	Acronis Cloud Total Running Tota 9	Manager	I Saved Total Pau 0	used Clustered	Total Critical Total W	/arning 0		
Ф, н	 yper-V Management		н	OSTNAME DEV-NO	DE1 Stopped 7	OS NAME Mi Saved Pau 0	crosoft Windows Sei Ised Clustered	rver 2019 Dataœnter I Critical W 7 0	/arning 0		
<b>A</b>	zure Management	1	н	ost Configuration	I						
ult M	lonitoring		C 3	ipu Usage Free	Memory S GB 0	tate Nu K	mber Of Cores OS \ 8 10.0	Version Agent Version .17763 4.0.20105.1	n		
R	eporting		SI	witches							
• Ва	ackup	<									>
🔓 st	DN Management	CI	Refresh 🎼 View	Details O Stop	Syslog Options	Start from: 4/15/	2020 - Plugir Started -	n: Any 🔻 Job Progress Finishe	s: All jobs	▼ Status	
- A	dministration	0	AddToCluster Vir. Logon	Authenticate cus	admin admin	5nineMgr	4/27/2020 2:30:2 4/16/2020 11:59:	100 % 4/27/20 100 % 4/16/20	020 2:30:4 020 11:59:	Completed Completed	
Server	status: Online 🛛 🛔 adminAddToCl	uster Virtual M	Logoff achine admin	Logoff user admi 5nineMgr 4/27/202	admin 0 2:30:28 PM	100 % 4/2	4/15/2020 12:41:	100 % 4/15/20	020 12:41:	Completed	<b>D</b> 0 .:

To generate system status report, after opening the System Status tab, click the Refresh button on the main ribbon and then select sections to show in the report:

Select Report Items	×
Please select the items you want to include in the report:	
Select All	
Host Configuration	
Switches	
Disks on Host	
CPU	
Memory	
✓ Network	
Current State	
Checkpoints	
✓ DvdDrives	
✓ HardDrives	
✓ Integration Services	
✓ Replication	
OK Canc	el

To export the report to pdf file, click "Export to PDF" button on the main ribbon.

## 9.3 Zombie VM

The **Zombie VM** tab displays all VMs by rank to identify VMs with very low CPU usage, network performance and virtual disk growth.

<b>●</b> =									Acro	nis Cloud Manag	jer						
Home	VM Life Cyc	le Man	agemer	nt Sy	stem Sta	atus	Zombie VM										
C Refresh Gen Ts	Export Exp to PDF to In Exp	oort mage	Export to XLSX	Perio	d Past	week P	eriod										\$
Reporting	9				(						Dashbo	oar	d T				rîa
E											Dusinov	ourt	u		r к з		÷ 5.3
Enter te	xt to search		•	Clear	R	ombie ank	e VM Detection	State		Current Host	Cpu Usag	ge %	Disk Growth	Network Usa	х кы ge	VMs totals	
					8	1	SCVMM	Runn	ning	DEV-NODE1	2.24		0 B	0.163 MB/s			
⊿ 🗐 Dat	acenter				7	1	DEV-DCNODE1	Runn	ning	DEV-NODE1	2.53		0 B	0.002 MB/s		1.	45
4 mm	DEV-NODE1				7		5nine Web Portal	Runr	ning	DEV-NODE1	6.28		0 B	0.001 MB/s		Mom	CP.
	DEV-NODE2				6	1	HV2019	Runr	ning	DEV-NODE1	1.56		0 B	0.005 MB/s		Werne	JIY GB
	5nineMg	ar .			1		VM2	Runr	ning	DEV-NODE1	0.22		0 B	0 MB/s			
	DEV-DCN	VODE2			1		SCVMM-LIB	Runr	ning	DEV-NODE1	0.015		0 B	0.001 MB/s			
и (П С	HV2019 VMH1	 jement	:		C	PU					ٹ ٹ VM2	Со	Pres Ct1-A2+Dives to sign in	<u>c1</u>	1 2 2 2	2 Data Sto	5 rage GB
AZ	zure Managen Ionitoring	nent			1	1. 0. ₿ 0. 0.	2 9 6 3				Aut		5:34			( Total che	) eckpoints
Re	eporting					4	0 /21/2020 12:00 AM	4/24/2020	12:00	AM 4/27/2	020 12:00 AM		Tuesday, April 14 ◆	4			
0	at the second					🕽 Ref	resh 🕼 View D	etails 🔘 Stop	5	Syslog Options	Start from: 4	/15/20	1020 - Plug	gin: Any	▼ Jo	bs: All jobs	Ŧ
<b>1</b>	аскир					N	ame	Description	Us	ser	ContextObject	t Sta	tarted 👻	Progress	Finishe	ed .	Status
						A	ddToCluster Vir		ad	dmin	5nineMgr	4/2	/27/2020 2:30:28	100 %	4/27/20	020 2:30:43 PM	Completed
CO SE	ON Manageme	ent				D Le	ogon	Authenticate cus	ad	Imin		4/1	/16/2020 11:59:0	100 %	4/16/20	020 11:59:06 AM	Completed
						2 L(	ogoff	Logoff user adm	i ad	dmin		4/1	/15/2020 12:41:0	100 %	4/15/20	020 12:41:01 PM	Completed
<b>A</b>	dministration																
Server	status: Online	🌲 ad	IminAdo	dToCluste	r Virtua	l Maci	nine admin S	inineMgr 4/27/2	020 2:	:30:28 PM	100 %	4/27/	7/2020 2:30:43 PM	Completed		O 1	••••

Any section can be exported into different output formats – PDF file, PNG image or XLSX document. Use the corresponding buttons on the main ribbon or the subsequent upper-right commands on each block. They also can be printed and print-previewed:

<b>1</b> 2											
➡ Open 🖹 Save	<ul> <li>Print</li> <li>Quick Print</li> <li>Options</li> </ul>	Header/Footer S	Margins • Corientation • Corientation • Corientation •	Find Thur	mbnails Editing First Page	<ul> <li>Previous Page</li> <li>Next Page</li> <li>Last Page</li> </ul>	Many Pages	Q Zoom Out Q Zoom → Q Zoom In	• 🕾 •	Close	
Document	Print	Pag	ge Setup	E2	Navigation		Zoom	Pag	e Exp	Close	
	Zo Rank 27 23 20 16 13 2.7 3 1	mbie VM D Name SNine-Service Snine-Service2 AzurePack DC01 dc3 DEV-DC02 SCVMM-2016 SCVMM-LIB VV113DEC.new	Petection State Running I Running I Running I Running I Running I Running I Running I	Da Options Show Title: Title: Include: Position: Reset	Shboard Dashboard Filters Parameters Below	rd × ri M M M M M M M M M M M M M M M M M M M	k Usage IB/s IB/s IB/s IB/s IB/s IB/s IB/s IB/s	6.06 Memory GB			
<	-		· · · · · [								>
Page 1 of 1								100	% -	-1	+

# 10 Hyper-V backup and restore

The Acronis Cloud Manager **Backup** plugin performs the entire VM backup on-demand immediately, with specified delay or by schedule. All backup jobs are started from job templates initially created by user from backup wizard. Job templates are kept for further usage and the new jobs can be launched from them manually at any time. Recurrent and deferred backup jobs are launched automatically in accordance with the scheduled configured in their job templates. There is an option to perform the offsite backup copy to Microsoft Azure cloud and restore from it.

0 •	Acronis Clou	id Manager		– 🗆 X
Home Backup Archives				
create Edit Delete Backup Full backup Delayed Refresh Restore				
Operations				\$
Backup < Backups				
Label	<ul> <li>Description</li> <li>Schedule type</li> </ul>	e Next start	Use retention User	Number of VMs
D 20test	Manual		No admin	0 ^
21test	Manual		No admin	0
Search	Manual		No admin	0
Name Deckup	Manual		No admin	0
A Datacenter	Manual		No admin	0
4 2016Dev-Cluster	Marual		No admin	0
NODE1	Magual		No admin	0
A S NODE2	Manual		No admin	0
Snine-Service2	Manual		No admin	0
G dc3	Manual		No admin	1
DEV-DC02	Manual		No admin	0
SCVMM-LIB	Manual		No admin	0
VM26NOV 🖪 NOVSS_fix	Manual		No admin	0
🖬 regular_backup	Manual		No admin	0
TDVM_backup	Manual		Yes admin	0
. WIN16TEST	Manual		No admin	1
K Hyper-V Management	Manual		No admin	0
•				
A Atura Managament				
Azure Management				
0.01100.000				
Monitoring				
Reporting				
Co. Packup				
G backup				
SDN Management				
Administration				
				v
📀 Server status: Online 🛛 🛔 admin	Storage Discovery Storage Discovery admin	6/3/2019 4:12:40 PM 100 %	6/3/2019 4:12:44 PM Complet	ed 🔮 20 💽 0 🔮 1 🔐

The **Backup** plugin consists of two tabs: **Backup** and **Archives**. On the **Backup** tab there are list of backup job templates and commands to work with them – create, delete, edit, start (full, incremental, delayed).

On the **Archives** tab there are list of backup jobs that are started, in progress and completed (both successful and failed ones) and commands to work with them – restore, delete, view job info.

• •		Acronis	Cloud Manager						×
Home Backup Archives									
Restore Delete Refresh Operations IS IS									\$
Backup < Archives									
Label	Stora	ge Path	Start at 🔺	Finished	Host	Number of VMs	User	VM List	
Job 9/5/2018 8:0	9:00 AM Backu	p	05 Sep 2018 08:44:28	05 Sep 2018 08:45	NODE1	1	admin	YDM23TEST	^
Sackup	Backu	p	17 Sep 2018 10:48:51	17 Sep 2018 10:49	NODE2	1	admin	17test	- 8
Search 🗸 🕑 backup	Backu	p	17 Sep 2018 10:51:36	17 Sep 2018 10:51	NODE2	1	admin	17test	
backup17	Backu	p	17 Sep 2018 10:59:38	17 Sep 2018 11:01	NODE1	1	admin	VMseptember17	
Name Ø yarosh17	Backu	p	17 Sep 2018 11:15:37	17 Sep 2018 11:15	NODE1	1	admin	Yarosh17	
🔺 🚊 Categories 🔷 🥥 azure_vm	Backu	p	26 Sep 2018 08:38:08	26 Sep 2018 08:39	NODE1	1	admin	TenantVM	
WorkingVM azure_vm	Backu	p	26 Sep 2018 10:50:05	26 Sep 2018 10:50	NODE1	1	admin	TenantVM	
iii high_priority 0 BCK50	Backu	p	05 Oct 2018 09:12:35	05 Oct 2018 09:13	NODE1	0/1	admin	VM5octbDATASTORE	
III low_priority	Backu	D	05 Oct 2018 09:14:21	05 Oct 2018 09:14	NODE1	1	admin	VMSoctbDATASTORE	
Snine-Service2	Pada	~	05 0 + 2010 00-14-55	05 0 + 2019 00-15	NODEL	4	admin	VALEAGEDATACTORE	~
4 🚊 DEV Cluster									
DEV Cluster									_
4 🚟 2016Dev-Cluster Name:	Backup		Plugi	in:	Backup				
🖌 🗐 NODE1									
SNine-Service State:	Completed		Prog	ress:	100%				
Stated	00/17/2018 10:51/26		Einir	bade	00/17/201	10.51.55			
Stateu.	05/17/2010 10:31:30		r mis	neu.	03/11/201	5 10.51.50			
Hyper-V Management Status:	Completed								~
lob Details									
Azure Management									
Name	Started		<ul> <li>Progress</li> </ul>	Fini	shed	St	atus		
Monitoring     Completing	VSS backup 17 Sep 201	8 10:51:56	100 %						^
VSS client di	spose 17 Sep 201	8 10:51:56	100 %						
<ul> <li>Mark Hyper-</li> </ul>	V writer as succesfully backed up 17 Sep 201	8 10:51:56	100 %						
Reporting Sackup file	'C:\ClusterStorage\Volume2\ 17 Sep 201	8 10:51:55	100 %						
Backup file	'C:\ClusterStorage\Volume2\ 17 Sep 201	8 10:51:54	100 %						
S Backup file	'C:\ClusterStorage\Volume2\ 17 Sep 201	8 10:51:53	100 %						
Backup Backup file	'C:\ClusterStorage\Volume2\ 17 Sep 201	8 10:51:52	100 %						
Backup file	C:\ClusterStorage\Volume2\ 17 Sep 201	8 10:51:51	100.%						
SDN Management	C\ClusterStorage\Volume2\	8 10:51:49	100.%						
Backup file	'66841cd4 6ded 4f4b 8f17 f 17 Sep 201	8 10:51:48	100 %						~
Administration Job Script									
									$\sim$
📀 Server status: Online 🛛 🛔 admin	Storage Discovery S	torage Discovery ad	min 6/3/2019 4:12:40 PM	100 % 6/3/20	19 4:12:44 PM Comp	leted		🛛 20 🖸 0	<b>0</b> 1

There are different backup job types:

- *Full* always performs the entire VM backup.
- *Incremental* performs only first entire VM backup, then saves only changed virtual disks parts in subsequent backups. Normally, the scheduled jobs are used for incremental backup that allows additional saving of a storage disk space and ensure safety of data.

To keep track of changing data blocks, Acronis Cloud Manager backup uses changed block tracking technology (CBT) for Hyper-V virtual disks (A)VHD(X).

The CBT is implemented as a file system filter driver to be installed on every Hyper-V host within Acronis Cloud Manager agent setup. The CBT driver keeps track of changed data blocks of virtual disks. Information on data blocks that have changed is registered in special files. When an incremental job is run, Acronis Cloud Manager uses these files to understand what blocks of data have changed since the last run of this incremental job, and copies only changed data blocks from the disk image.

## 10.1 Creating backup job

 To create a VM backup job, start backup wizard by pressing the **Create** button. Specify the name of the backup job and provide the job description. For Windows 2016 OS or later you can bypass the usage of Volume shadow copy service (VSS) for the backup by checking the **Do not use VSS** box. Click **Next**.

Backup wizard			$\times$
		Name and description	
		Nume and description	
Name and description	Specify the backup	name and description	
Compression and encryption			
Virtual machines and groups	Backup name:	Job 11/29/2018 7:48:21 PM	
Select storage	Description:	Created by admin at 11/29/2018 7:48:21 PM	~
Backup copy to Azure			
Backup schedule			
Backup type			
Retention			~
Summary	Do not use VS	S	
	This option work: consistency in thi	s only for VMs running on Hyper-V hosts with Server 2016 and later versions. Application data s case is guaranteed by Server 2016 mechanism of production snapshots.	
		< Back Next > Finish Canc	el

2. Define compression and encryption options.

Backup wizard	×
	Communication and ensumition
	Compression and encryption
Name and description	Select compression and encryption options
Compression and encryption <	
Virtual machines and groups	✓ Use encryption
Select storage	Encryption settings
Backup copy to Azure	Encryption level: AES 128 bit
Backup schedule	
Backup type	Encryption key:
Retention	Vise compression
Summary	Compression settings
	Compression level: Normal
	Block size (Mb): 2
	Once a backup has been created, you cannot change this settings
	< Back Next > Finish Cancel

3. Select virtual machines or groups to be placed into backup job.

Backup wizard		$\times$
	Virtual machines and groups	
	virtual machines and groups	
Name and description	Select virtual machines or groups	
Compression and encryption		
Virtual machines and groups <		
Select storage	Infrastructure Logical	
Backup copy to Azure	Enter text to host search	
Backup schedule		
Backup type	🖃 🗹 🗐 Datacenter	
Retention	I I I I I I I I I I I I I I I I I I I	
Summary	v □ Fake2	
	Fake3	
	V C TESTVM23N	
	₩ Ţ, VM2	
	VM5CL	
	< Back Next > Finish Cance	el

4. Select the storage and folder for each VM Hyper-V host where backup files will be placed.

Backup wizard			×					
	Colo	et eterne o						
Select Stol age								
Name and description	Please select storage for each object							
Compression and encryption								
Virtual machines and groups	For hosts and clusters please select any appropriate backup datastore.							
Select storage								
Backup copy to Azure	Host/Cluster/Group	Selected datastore	·····					
Backup schedule	HV2012R2	[for_backup]\	Select					
Backup type								
Retention								
Summary								
		< Back Next > Finish	Cancel					

5. Specify parameters to create an offsite backup copy to Microsoft Azure cloud, if necessary (skip this screen if an offsite backup copy to Microsoft Azure is not needed):

Backup wizard		×
	Backup copy to Azure	
	backup copy to Azure	
Name and description	Configure backup copy to Microsoft Azure	
Compression and encryption		
Virtual machines and groups	Make a backup copy to Microsoft Azure	
Select storage	✓         Name	
Backup copy to Azure	VM3	
Backup schedule		
Backup type		
Retention		
Summary		
		>
	Provide protocol account name and key to access Azure blob storage account where backup	
	archives are to be stored.	
	Do not use your general Azure portal credentials.	
	Endpoint protocol: https	
	Account name: myresourcegroundisks822	
	Account key:	(***
	< Back Next > Fin	ish Cancel

- Enable the checkbox for Make a backup copy to Microsoft Azure option.
- Select VMs to make backup copy to Microsoft Azure from the list of selected VMs into the backup job.
- Select endpoint protocol (http or https) and specify the storage account name and access key to access Microsoft Azure cloud.

#### Note

Storage account name and access key are different from your general Azure portal credentials, which will not be accepted! The proper parameters can be retrieved at the following address on the portal: **Home -> Storage accounts -> <your\_storage\_account\_name> -> Access keys**. You may generate the new key(s) for the existing storage account in there and/or create the new storage account(s).

#### 6. Configure backup job schedule:

Backup wizard			×
		Backup schedule	
Name and description	Specify the backup sche	duling options	
Compression and encryption	Manual		
Virtual machines and groups			
Select storage	OHourly		
Backup copy to Azure	First start:	Ψ	
Backup schedule	Even	12 hours	
Backup type	LVCIY	12 110013	
Retention	Daily		
Summary	Start at	23:00:00	
	Day period	Every 1 days	
	Selected days	Sun Mon Tue Wed Thu Fri Sat	
	O Monthly		
	Day of month:	1 *	
	Start at:	23:00:00	
		< Back Next > Finish Cano	el.

7. Select the backup job type.

For incremental backup job you can determine the frequency of performing full backup job between incremental backup jobs.

#### Note

Cloud Manager does not allow to leave at "0", some value must be configured for full backups. The number of incremental backups to perform before doing a full backup should balance between ease of restoration jobs due to the number of backup archives files and the speed of performing backups. This will vary widely between environments based on the frequency of backups and the rate of changes between them.

Backup wizard		$\times$					
	Packup type						
Backup type							
Name and description Compression and encryption	Specify backup type						
Virtual machines and groups	Full						
Select storage	Create full backup. This option is recommended for manual backup if you want to restore virtual machines very quickly						
Backup copy to Azure	in the future.						
Backup schedule Backup type	Create incremental Create incremental backup. This option is recommended for periodical backup if you want to save storage disk space. In incremental mode, will sometimes create full backups in order to be able to remove old archives Create full archives every 5 backup Once a backup has been created, you cannot change its type						
	< Back Next > Finish Ca	ncel					

8. Review and set the retention parameters if necessary. It is disabled by default.

Backup wizard			×			
Retention						
Name and description	Specify when old archives will be removed					
Compression and encryption Virtual machines and groups Select storage Backup copy to Azure Backup schedule Backup type <b>Retention</b>	<ul> <li>Use retention</li> <li>Number of days to keep backups</li> <li>Number of restore points to keep</li> <li>Use retention for Azure</li> <li>Number of days to keep backups</li> <li>Number of restore points to keep</li> </ul>	7 7 7 7				
		< Back Next > Finish	Cancel			

9. Check the summary information and if everything is correct. Check the **Run immediately** box if you need to launch the backup job right upon completing the backup wizard. Press the **Finish** button to create a backup job.

Backup wizard			×
		C	
		Summary	
Name and description	Review job settings		
Compression and encryption			
Virtual machines and groups	Backup type	Job 11/29/2018 7:48:21 PM	^
Select storage	Description	Created by admin at 11/29/2018 7:48:21 PM	
Select stolage	Encryption level	AES 128 bit	
Backup copy to Azure	Encryption key	123	
Backup schedule	Compression level	Normal	
Backup type	Block size (Mb)	2	
Retention	Selected virtual machines	Fake3 Fake1	
Summary		VM5 R2DC R2MGMT-Server TESTVM23N VM3 VM3 VM2 VM5CL VM4 VM4 VM4CL Fake2	
	Selected storage:		
	HV2012R2	for_backup	
	Use Azure	Yes	
	Selected virtual machines	VM3 VM2	
	Endpoint protocol	https	
	Account name	mytenant.onmicrosoft.com	
	Schedule type	Daily	~
	Run immediately		
		< Back Next > Finish	Cancel

## 10.2 Restore

To restore a VM from backup, perform the following actions:

1. Select appropriate completed backup job on the **Backup** or **Archives** tab and start the **Restore** wizard by pressing the **Restore** button.

If you have chosen the job on the **Backup** tab, first the following dialog window will be opened:

۵	Restore								-		×
	Label	Storage	Path	Start at	Finished	Host 🔺	Number of VMs	User	VM List	ŧ	
9	Job 7/9/20	BCKP-CSV		09 Jul 2020 12:4	09 Jul 202	DEV-NODE1	1/2	admin	testVM	12, test1	
0	Job 7/9/20	BCKP-CSV		09 Jul 2020 12:4	09 Jul 202	DEV-NODE2	0/1	admin	1		

Select the required archive and click **Restore**.

If you are on the **Archives** tab, select the required archive form the list of archives and then click the **Restore** button on the main ribbon:

	Acronis Cloud Manager					
Home Backup Archives						
Restore Delete Refresh Operations 15 15						\$
Backup < Archives						
Label	Storage	Path Start at 🔺	Finished Host	Number of VMs	User VM List	
Job 9/5/2018 8:09:00 AM	Backup	05 Sep 2018 08:44:28	05 Sep 2018 08:45 NODE1	1	admin YDM23TEST	^
S backup	Backup	17 Sep 2018 10:48:51	17 Sep 2018 10:49 NODE2	1	admin 17test	
Search 🗸 🖉 backup	Backup	17 Sep 2018 10:51:36	17 Sep 2018 10:51 NODE2	1	admin 17test	
Ø backup17	Backup	17 Sep 2018 10:59:38	17 Sep 2018 11:01 NODE1	1	admin VMseptember	/17
Name yarosh17	Backup	17 Sep 2018 11:15:37	17 Sep 2018 11:15 NODE1	1	admin Yarosh17	
▲ Categories A gaure_vm	Backup	26 Sep 2018 08:38:08	26 Sep 2018 08:39 NODE1	1	admin TenantVM	
A workingVM azure_vm	Backup	26 Sep 2018 10:50:05	26 Sep 2018 10:50 NODE1	1	admin TenantVM	
III high_priority BCK50	Backup	05 Oct 2018 09:12:35	05 Oct 2018 09:13 NODE1	0/1	admin VM5octbDAT	ASTORE
A III low_priority SCK50	Backup	05 Oct 2018 09:14:21	05 Oct 2018 09:14 NODE1	1	admin VM5octbDAT	ASTORE
Snine-Service2	Package	05 0+ 2010 00-14-55	05 0 # 2019 00-16 NODE1	1	admin MMEacthDAT	ACTORE V
DEV Cluster Job Information						
A iii DEV Cluster Name:	Backup	Plugi	in: Backu	p		
Shine-Service State:	Completed	Prog	ress: 100%			
Started:	09/17/2018 10:51:36	Finis	ihed: 09/17/	/2018 10:51:56		
K Hyper-V Management Status:	Completed					~
Azure Management						
Name	Started	T Progress	Finished	Stat	hus	
Completion VSS backup	17 Sep 2018 10:51:56	100 %	Thistica	5.00		^
Monitoring	17 Sep 2018 10:51:56	100 %				
Mark Hyper-V writer as succ	estuliv backed up 17 Sep 2018 10:51:56	100 %				
Reporting Reporting	age\Volume2\	100 %				_
Backup file 'C:\ClusterStor	age\Volume2\ 17 Sep 2018 10:51:54	100 %				
Backup file 'C')ClusterStor     Backup file 'C')ClusterStor	age\Volume2\ 17 Sep 2018 10:51:53	100 %				
Backup Backup	age\/olume2\ 17 Sep 2018 10:51:52	100 %				
Backup file 'C'\ClusterStor	age\/olume2\ 17 Sep 2018 10:51:51	100 %				
SDN Management SDN Management	age\Volume2\ 17 Sep 2018 10:51:49	100 %				
Rackup file '66841cd4.6de	d AFAb 8F17 f 17 Sep 2018 10-51-48	100 %				~
Administration Job Script						
						~
🥏 Server status: Online  🛔 admin	Storage Discovery Storage Discove	ery admin 6/3/2019 4:12:40 PM	6/3/2019 4:12:44 PM C	ompleted	🥥 20	<b>0</b> 0 🚺 1 .::

- 2. Select the restore mode:
  - **Restore entire virtual machine** to restore the full copy of the VM.
  - **Browse and download virtual machine files** to select and download the separate files from within the archived VM.

Specify the decryption key if encryption was used in the backup creation. If the decryption key was not specified, the field **Decryption key** will not appear. Click **Next**.

Restore		$\times$
	Restore mode	
Restore mode	Restore mode	
Restore from Microsoft Azure		
Select Destination Hosts	Restore mode	
Select VMs to restore	Restore entire Virtual Machine	
	Browse and download Virtual Machine files	
	Decryption key:	
	F	
	< Back Next > Finish Cance	1

3. [Optional] The next page will appear only if in the corresponding backup job the **Make a backup copy to Microsoft Azure** option was enabled and on the first page of the **Restore** wizard the **Restore entire Virtual Machine** option was selected.

Restore		×
	Restore from Microsoft Azure	
Dartere me de		
Restore mode	Restore from Microsoft Azure	
Restore from Microsoft Azure <		
Select Destination Hosts	Restore from Microsoft Azure	
Select VMs to restore	✓ Override Azure settings	
	Provide protocol, account name and key to access Azure blob storage account where backup archives are to be stored. Do not use your general Azure portal credentials.	
	Endpoint protocol: https	
	Account name: myresourcegroupdisks822	
	< Back Next > Finish Canc	el

This step is optional and can be skipped. If you do not need to restore the VM from the Microsoft Azure off-site copy, just click **Next**. Otherwise, enable the **Restore from Microsoft Azure** option and specify the storage account settings to override the default ones if necessary, and then click **Next**.

4. Select a host or a cluster where you need to restore a VM. This step applies for the restore of the entire VM.

Restore			×
	s	Select Destination Hosts	
Restore mode	Calact Dactinat	tion Moste	
Restore from Microsoft Azure	Select Destinat		
Select Destination Hosts		Name	
Select VMs to restore	۲	HV2012R2	
		< Back Next > Finish Cancel	

5. Select VMs you need to restore and the alternative path if necessary and click **Finish** to start the VM restore operation:

Restore				×
	Se	lect VMs to resto	ore	
Restore mode	Select VMs to restore			
Restore from Microsoft Azure	Name	Storage	Path	
Select Destination Hosts Select VMs to restore	VM3	Stotuge	Original	
	<			>
	Original path			
	<ul> <li>Default path</li> <li>Another path</li> </ul>			
	Datastore:	Datastore is not selected		<b>v</b>
	Relative path:			Browse
		< Ba	ick Next > Finish	Cancel

6. If you have selected to browse and download separate files from the archive, you will need to choose and download the required files:

Restore						$\times$
		Dow	nload			
Restore mode	Download					
Select Virtual Machine	Select folders and files and p	ress downloa	d button.			
Download <	← ⇒ ± <u>p</u>					
Download selected	folder(s) and file(s).		Name	Date Mo	di File size	
	β]	^				^
		~				~
			< Back	Next > Fin	ish Car	ncel

7. When the files downloading is complete, press **Finish** or **Cancel** to exit the wizard.

# **11 SDN management**

Software defined networking (SDN) provides a method to centrally configure and manage physical and virtual network devices such as routers, switches, and gateways in your datacenter.

For Hyper-V hosts and virtual machines (VMs) that run SDN infrastructure servers, such as network controller and software load balancing nodes, you must install Windows Server 2016 Datacenter edition or later. For Hyper-V hosts that contain only tenant workload VMs that are connected to SDN-controlled networks, you can run Windows Server 2016 Standard edition.

New in Windows Server 2016, the network controller provides a centralized, programmable point of automation to manage, configure, monitor, and troubleshoot both virtual and physical network infrastructure in your datacenter. Using network controller, you can automate the configuration of network infrastructure instead of performing manual configuration of network devices and services.

Network controller is a highly available and scalable server role and provides one application programming interface (API) - the *Southbound API* - that allows network controller to communicate with the network, and a second API - the *Northbound API* - that allows you to communicate with network controller.

Network controller provides Windows PowerShell and the representational state transfer (REST) API. Microsoft provides management APIs, Acronis Cloud Manager provides graphical user interface (GUI) to these APIs so that system administrator can easily work with SDN objects.

This GUI provides basic management features for the main SDN objects:

- Network controllers;
- Logical networks;
- Virtual machine networks;
- Logical switches;
- Network interfaces;
- Virtual switches;
- IP address pools.

Acronis Cloud Manager provides a graphical user interface for operations with all these objects via PS or REST interfaces of network controller.

.€ =			Acronis Cloud Manager			- D X
Home SDN Management						
中 Create Logical Network 見 Create Crede     中 Create Virtual Network 理 Create Serve     谭 Create Network interface Create MAC Pool     Manage	ntial Create Public IP Address r Create Load Balancer	Add SDN endpoint  Remove SDN endpoint  Create Network Controller  Settings	eate Software Load Balancer			۵
SDN Management <						
Enter text to search	Network Controller Wizard	Build	Options	× (		
C Datacenter	Parameters Parame	eters				
	Certificate Dom Build Options Man Virtual Machines Man Summary Man	nain: Nagement Domain Account Name: Nagement Domain Account Password:	rdg.Snine.com R2.local\Snine	S S S		
	Man	agement Security Group:	Administrators	🔕 🤷		
	Clier	nt Security Group:	Users	8 ph		
	REST	l'Endpoint:	192.168.1.4/24	8		
	Dia	iagnostic Logging Parameters	\\node1\logs			
	Dia	gnostic Log Share Username:	DEV\5nine			
	Dia	gnostic Log Share Password:	*******			
🤹 Hyper-V Management						
Azure Management						
Monitoring			< Back Next >	Finish Cancel		
Reporting						
🚱 Backup						
SDN Management						
Administration						
in and						
😎 Server status: Online   🛔 admin		Storage Discovery Stora	ge Discovery admin 6/3/2019 4:12:4	0 PM 100 % 6/3/201	9 4:12:44 PM Completed	💙 20 🖸 0 🕒 1 🔡

## 11.1 Network controller deployment

To start the network controller deployment, click the **Create network controller** button on the main ribbon:

Fill in parameters:

- **REST endpoint** IP address or FQDN of northbound network controller interface (REST API). If FQDN is specified *A* record must be created in DNS. If an IP address is used, it must be chosen from the vacant part of the pool. This IP address will be set for the NC cluster. It is not needed to create the cluster manually and set the IP in advance.
- **Domain** active directory domain.
- Management domain account name domain account used for network controller deployment. Will be added to local administrators group. Must be member of Management Security Group specified below.
- Management domain account password password for domain account.
- Local administrator password password assigned to local administrator account.
- **Management security group** active directory security group. Members of this group will have full access to the network controller.
- **Client security group** active directory security group. Members of this group will have readonly access to the network controller.
- **Diagnostic log share** file share for storing logs of network controller and managed server. If not specified logs will be stored locally on each NC node or managed server with retention 14 days.

- **Diagnostic log share username** user name of the account, which have write access to logs file share.
- **Diagnostic log share password** password of log share access account.

#### Click **Next**.

Network Controlle	r Wizard	×
	Certificate	
Parameters	Certificate	
Certificate Networks	Certificate selection option	
Virtual Machines	Create new self signed certificate	
Summary	O Use existing certificate or generate new CA certificate	
	Server Certificate Password:	8
	< Back Next > Finish	Cancel

Set certificate. Network controller can be deployed with self-signed or CA certificate. Acronis Cloud Manager can work with both types of certificate. If you want to use CA certificate – you need to prepare certificate template with two **Enhance key usage** attributes – *server authentication* (1.3.6.1.5.5.7.3.1) and *client authentication* (1.3.6.1.5.5.7.3.2). Click **Next**.

Network Controller \	Nizard			×
	Net	works		
Parameters Certificate Networks Virtual Machines Summary	Networks         Management Network Name:       Managem         Add       Remove         Name       VLAN ▲ Address Prefix         元       Manage       0         10.0.0.0/24	ent DNS Gate 10.0.0.6 10.0.	way Pool Start 0.1 10.0.010	Pool End P VIP 10.0.254
	Transit Network Name:     Transit       Add     Remove       Name     VLAN ▲       Address Prefix       元     Transit_1       0     172.16.0/24	DNS Gate 172.16.0.6 172.1	way Pool Start 16.0.1 172.16.0.1	Pool End P VIP 0 172.16.0.254
	HNV PA Network Name: Add Remove Name VLAN Address Prefix RHNV PA_1 0 192.168.1.0/24	C DNS 4 192.168.1.6	Gateway Pc 192.168.1.1 19	22.168.1.10 192.168.1.254
		< Bac	k Next >	Finish Cancel

Set networks:

- Management network management network is used for communication between network controller, network controller service VMs (SLB, GW) and managed devices. Must be specified for use in feature deployment of NC services (SLB, GW).
- Transit network transit network is used for communication between service VMs (SLB, GW) and BGP router(s).
- HNV PA network HNV PA network is used for creation of virtualized (VXLAN) VM networks. Every Hyper-V host will acquire two addresses from this network pool. These addresses will be used to create tunnels between Hyper-V hosts.

Click **Next**.

Network Controller Wizard ×				
		Virtual Mad	chines	
Parameters	Virtual Machines			
Certificate Networks	Select Virtual Machine	storage for new created VM	Иs	
Virtual Machines	Relative path:	C3V VWS		Browse
Select template with Windows Server 2016 Guest Operating System				
	Datastore:	CSV tmpl		▼
	Relative path:			Browse
	Template: Templa	ate based on 'TenantVM'		-
	NC Virtual Machine 1:	Settings	Reset	
	NC Virtual Machine 2:	Settings	Reset	
	NC Virtual Machine 3:	Settings	Reset	
	1		< Back Next >	Finish Cancel

Select virtual machines that will be used for network controller. The following parameters must be specified for VMs that will be used for network controller deployment – datastore on which NC VMs will be placed and template from which network controller nodes will be deployed. Template must be syspreped VM with Windows Server 2016 or higher. Click **Finish**.

## 11.2 SDN management

SDN management includes the following operations:

### 11.2.1 Access control list

Defines set of ACL for network interfaces – direction of flow (ingress/egress), range of source/destination ports and address prefix. After the network controller deployment Acronis Cloud Manager creates default rule which allows all inbound traffic.

To add access control list, click the corresponding button on the main ribbon:

<b>●</b> =		
Home	SDN Management	
C	🚓 Create Logical Network	Le Create Credential
Defeat	井 Create Virtual Network	Add Access Control List
Refresh	🕎 Create Network Interface	Add Server
		Manage
SDN Management		Add Access Control List

### Specify name:

Access Control List V	Access Control List Wizard			
		Name		
Name <	Name			
Rules			100	
Summary	Name:	ACL1		
		< Back Next > Finish Canc	el	

Specify rules:

Access Control List Wizard ×									
			Name						
Name	Rules								
Rules Summary	Add	Remove							
	Name Prot	tocol Source	Destinat	Acti Sou	u Dest	Prio	Descripti	Туре	Logging
	ACL1_Rule 1 All	*	*	Allow *	*	65000	Default R	Inbo	Enabled
				< Bac	ck N	ext >	Finisł	1	Cancel

Rule includes:

- Source/Destination port range.
- Action: (Allow/Deny).
- Source/Destination address prefix in CIDR (use /32 to specify one address).
- Priority from 100 to 65000 (rules with low priority have high precedence).
- Description.
- Type: Inbound/Outbound.
- Logging: Enabled/Disabled.

Click Finish.

### 11.2.2 Logical network

Logical networks present abstraction of physical topology (i.e. provider addresses). After the network controller deployment, Acronis Cloud Manager creates PA network (used by host to build VXLAN tunnels), management network, and transit network (used for communication between SLB MUXes and BGP).

To add logical network click the corresponding button on the main ribbon:



#### Specify name:

Logical Network Wizard			
		Name	
Name	Name		
Subnets			_
Summary	Name:	External Customer NC 8	
	Network Virtu	ualization Enabled	
		< Back Next > Finish Cancel	]

Specify subnets:

Logical Network Wizard ×					
Subnets					
Name	Subnets				
Submets Summary	Subnets can be added to a logical network to associate VLANs and address prefixes Enter IP subnets using CIDR notation, for example 192.168.1.0/24 Add Remove Name VLAN Address Prefix DNS Gateway Pool Start Pool End P VIP External 0 10.1.0.0/24 10.1.0.6 10.1.0.1 10.1.0.10 10.1.0.254				
Sack Next > Finish Cancel					

Subnet consist of VLAN ID, subnet address prefix, DNS server address, gateway address, IP range (must start from x.x.x.4, because first three addresses used internally by the network controller).

### 11.2.3 Virtual network

Virtual network is a network that virtualized using VXLAN. Virtual network must be created upon PA logical network.

To add virtual network, click the corresponding button on the main ribbon:

<b>●</b> =	
Home	SDN Management
C Refresh	Create Logical Network Create Virtual Network Create Network Interface
SDN Mai	Create Virtual Network

Specify name:

Virtual Network Wiza	ard		×
		Name	
Name	Name		
Subnets	Name:	System Network	
Summary	Nume.	Jystem network	
	Logical Network:	Virtualization VXLAN PA Network	- 8
		< Back Next > Finish	Cancel

#### Specify subnets:

Virtual Network W	Virtual Network Wizard			
	Subnets			
Name	Subnets			
Subnets Summary Subnets can be added to a virtual network to associate address prefixes Enter IP subnets using CIDR notation, for example 192.168.1.0/24 Add Remove				
	Name	Subnet		
	🚍 System Network_1	192.168.1.0/24		
		< Back Next > Finish Cancel		

Subnet consists of subnet address prefix. x.x.x.1 assigned as subnet default gateway automatically. Network interfaces can use addresses from x.x.x.4.

### 11.2.4 Load balancer

LB defines L4 load balancing for VMs: load balancer VIP, backend VMs.

Load balancer MUX - load balancer multiplexor is internally used by network controller. Network controller publishes load balancer VIPs to MUX, MUX publishes /32 route to BGP. Handles inbound traffic for load balancing.

To add MUXes, click the **Create software load balancer** button on the main ribbon:

Acronis Cloud Manager	
Add SDN endpoint  Remove SDN endpoint  Create Network Controller	<ul> <li>♣ Create Software Load Balancer</li> <li>♣ Backup Wizard</li> </ul>
Set	tings 🛛
	Create Software Load Balancer

#### Specify parameters:

Software Load Balancer Wizard				
	Para	meters		
Parameters	Parameters			
Virtual Machines	REST Endpoint:	https://nc.mngmt.azureline.ru		
Summary			_	
	Domain:	mngmt.azureline.ru		
	Management Domain Account Name:		) pin	
	Management Domain Account Password:			
	Local Administrator Password:			
		< Back Next > Finish	C	ancel

- **Domain** domain to join SLB MUXes.
- **Management domain account name** account used for add VM to domain, and configure MUXes in NC. Must be member of network controller management group.

• Local administrator password – password for local administrator account. Local administrator account used for install and configure necessary windows roles for SLB.

Specify parameters for VMs:

Software Load Balar	ncer Wizard X
	Virtual Machines
Parameters Virtual Machines	Virtual Machines
Summary	Datastore: VM-nodedup
	Relative path: Browse
	Select template with Windows Server 2016 Guest Operating System         Datastore:       VMTemplates         Relative path:       Browse
	Template: Template based on 'w2019dc'
	SLB MUX Virtual Machine 1: Settings Reset Host: HG-NODE1 VM name: nc1mux1
	SLB MUX Virtual Machine 2: Settings Reset Host: HG-NODE1 VM name: nc1mux2
	SLB MUX Virtual Machine 3: Settings Reset Host: HG-NODE1 VM name: nc1mux3
	< Back Next > Finish Cancel

Datastore for VM placement. Datastore contains VM templates. Master automatically fills VM parameters upon clicking the **Settings** button. You can change VM name or CPU/memory configuration per VM If needed.

### 11.2.5 Network interface

List of VM network interfaces managed by the network controller.

To add managed VM interface, open VM properties, and navigate to the **Network adapters** page. Choose the appropriate network adapter and open the **SDN** tab:

Edit VM			×
		Network Adapters	
Identity     Category     Soot Order     Processor     Memory     Disk Configuration     Network Adapters     Automatic Actions     Integration Services	Configure Network Adapters connection	n General Ardvare Acceleration IP Settings Advanced SDN SDN REST Endpoint: https://nc.mngmt.azureline.ru Network: LAB-NET Network subnet: LAB-NET Network subnet: LAB-NET-7f72bff41a3146eca54292d82a0c80e9 192.168.0.0/24 Disconnect MAC Address: Dynamic Static Dynamic Static 192.168.0.6 DNS Servers: 192.168.0.4	
		< Back Next > OK Cancel	

Choose the SDN REST endpoint of the appropriate network controller, network and network subnet. Configure MAC and IP addresses, and DNS servers as applicable. Click **OK** to save the configuration.

## 11.2.6 SDN backup

Acronis Cloud Manager provides ability to perform the network controller OVSDB backups.

To create manual backup, click the **Backup wizard** button on the main ribbon:

Acronis Cloud Manager		
<ul> <li>Add SDN endpoint</li> <li>Edit SDN Endpoint settings</li> <li>Remove SDN endpoint</li> </ul>	躍 Create Network Controller 計・Create Software Load Balancer 分 Backup Wizard	
Settings Backup Wizard		

Specify the backup datastore parameters and click **Finish**:

Backup Wizard		×
		Settings
Settings	Settings	
Summary	Datastore:	NC Backup
	Relative path:	Browse
	Credential Account:	mngmt\SSC-VMM01-RI01
		< Back Next > Finish Cancel

### 11.2.7 SDN restore

Acronis Cloud Manager provides ability to perform the network controller OVSDB restores.

To restore OVSDB, select backup and click the **Restore wizard** button on the main ribbon:

Acronis Cloud	Manager			
<ul> <li>Add SDN endpoint</li> <li>Remove SDN endpoint</li> </ul>		‡I+ Create Software Load Balancer 分 Backup Wizard		
躍 Create Network Controller		Restore Wiza     O	rd	
Settings 🕞				
Aessage	Backup P	Restore Wizard	Failed resources	

Review parameters, correct if required (they are filled in by default) and click **Finish**:

Restore Wizard			$\times$
		Settings	
Settings Summary	Settings Restore Path:	\\mngmt-dc01\\NCLogging\2017-12-18T09_55_43	
	Credential Account:	mngmt\SSC-VMM01-RI01	-
		< Back Next > Finish Cano	:el

# 12 Logical view grouping

This feature allows administrators to combine multiple related resources into a single, logical tree through categorization and grouping. This new, customizable view has been added to the existing infrastructure view within the Hyper-V management console. A workload administrator, for example, can create a view of all relevant application VMs. Resource views can also be created to align with existing regional or functional administrative models.

Logical view grouping allows administrators to more effectively manage, monitor and optimize operations by providing fast, easy access to relevant resources. It decreases the time and effort needed to sort through and find a resource or group of resources while maintaining strict role-based access controls.


First thing you need to do is create categories and groups using the Administration plugin – Categories tab:

۵ -		Acro	nis Cloud Manager					– 🗆 X
Home Users Tenants Roles Ca	ategories							
📮 📕 💆 C	+••• ו•							
Create Edit Category Remove Refresh Category Category	Add Group Edit Group Remove Group							
Category Management	Group Management	5						~
Administration < Enter text to search in User ne  Clear	Category is a sort of logical di Group is a collection of virtual There are three types of object	ision of the virtual infrastructure. Every category incl infrastructure objects that share the same characteri s you can categorize in Manager Datacenter: clusters	udes one or more groups stics, or match the same cr hosts, and virtual machir	iteria. Group is like a tag tes.	that is assigned to an	object.		
All categories	Name CLUSTERS							
CLUSTERS	December							
DEV-CLUSTER	Description							
	Cluster							
A A MANAGEMENT VMs	Host							
CLOUD MANAGER	VirtualMachine							
Kanagement Hyper-V Management								
Azure Management								
Monitoring								
Reporting								
🚱 Backup								
SDN Management								
Administration								
G Usage	C Refresh 👫 View Details	Stop 🖓 Syslog Options Start from: 6/6/2	1022 <b>v</b> Plugin:	Any 🔻 Jobs	All jobs 🔹	Users: All users	<b>T</b>	
2	Name	Description	User	ContextObject	Started	<ul> <li>Progress</li> </ul>	Finished	Status
	Create Resource Pool		admin		6/7/2022 4:56:53 AM	100 %	6/7/2022 4:56:54 AM	Completed
	Logon	Authenticate custom user admin, client IP: 192.1	admin		6/7/2022 4:49:13 AM	100 %	6/7/2022 4:49:13 AM	Completed
📀 Server status: Online   🛔 admin	Us	er Batch Create admin 6/7/2022 7:19:04 AM	100 % 6/7,	/2022 7:19:04 AM Compl	eted		-	🛛 24 🖸 0 🚯 7

2. Click the **Create category** button on the left of the top bar and configure the new category parameters using the **Create category** wizard:

Create Category \	Wizard X
	Category
Category	Enter category information
Summary	Name CLUSTERS   Description     Cluster   Host   VirtualMachine
	< Back Next > Finish Cancel

#### Note

The main point is to enable certain object types that will be allowed to be associated with this category. There are three object types – cluster, host and virtual machine. It is up to you whether allow all of them or just some or one in any category. Category availability will be then appearing accordingly.

3. Click **Next**, review summary and click **Finish** to complete the wizard.

Create Category Wiz	zard	$\times$
	Summary	
Category	Completing the wizard	
Summary	You have successfully completed the Category Wizard. You are about to create the following category:	
	Name: CLUSTERS	
	Description:	
	Supported Objects Types:	
	Cluster	
	To create the category and close the wizard, click "Finish" button.	
	- Park Navta Finish Care	al
	< Back Next > Finish Canc	ei

You will find your new category in the list then, where you will be able to alter it at any time.

4. Next step is adding groups into categories. Select the category and click the **Add group** button.

Create Ca	ategory Group		$\times$
		Group	
Group	Enter group infor	rmation	
Summary	Name	New Jersey DC	
	Description	New Jersey Datacenter	
		< Back Next > Finish Car	ncel

5. Specify the name for the group as will be displayed in your customized logical view. Click **Next**, review summary and click **Finish** to complete the wizard.

#### Note

Now that you completed the above steps, you can assign objects to the group in accordance with its settings/availability (in the given example it is for cluster). This is done in the object's settings – **Categories** section, which appears in the same way in cluster, host and virtual machine settings:

Cluster Settings					×
		Categories			
		categories			
General	Specify categories for cluste	er			
Network Roles Replica Broker	Please select the category categories and groups fro	and group(s) to place you m the administration area.	r virtual machine. You	can create and edit your	
Categories <	Category	A	Group		
	CLUSTERS		DEV-CLUSTER		
		< Ba	Ack Next >	OK Car	ncel

Your object will appear in configured group in the logical view – open the **Hyper-V management** plugin and go to the right tab, where logical view is displayed:



# **13 Notifications**

Notifications are sent to configured email addresses and inform admin about various alerts – resource alerts, event alerts, backup & replication alerts and dynamic optimization alerts. There are also scheduled reports mailing settings for several types of data. Resource alerts work for physical/virtual performance parameters – CPU, memory, network and disk utilization; event alerts work for Microsoft Windows® clustering, HA, Hyper-V and security native events. Backup & replication alerts work for backup & replication successful/unsuccessful procedures. Dynamic optimization alerts are sent when VM migrations successfully completed. Scheduled reports are sent to configured emails – system status report, VM life cycle report and zombie VM report.

# 13.1 Email settings

To configure notifications email settings, open the **Home** tab and then select **Notifications** – **Notifications email settings**:

E		Acro	nis Cloud Manager		_	×
<ul> <li>Info</li> <li>Notifications</li> <li>Exit Application</li> </ul>	Ϋ́ <> 8→ 0> Ϋ́	Notifications Email settings Setup email address, SMTP server and secure parameters Aierts Provide alerts threshold settings Event notifications Backup, Optimization and Replication notifications setting: Chedude Reports Configure reports mailing	Enable e-mail notifications SMIP Server Settings Address: Port: Authentication required: Username: Password: SSL: Email address notification email monitoring@myserver.com Recipient email addresses, sep jsmith@mon.com; dduane@m	smtp.myserver.com		~
				Save	]	

Configure the email server with the TCP port and authentication credentials, and specify the recipients' emails. Notifications will be sent to the specified email addresses.

### 13.1.1 Resource alerts

To set thresholds for warning and critical alerting on performance counters open the **Home** tab and select **Notifications – Alerts**.

Specify threshold values for notification alerts (leave empty field if disabled)         Measurement       Warning If       Critical If       Critical If A         CPU Guest Runtime (%)       60       8         CPU Hypervisor Root Virt       60       8         CPU Hypervisor Total Run       60       8         CPU Total (%)       60       8         Disk Time       60       8         Disk Latency       5       1         Disk Read (MiB/s)       100       20         Disk Read (MiB/s)       100       20         Available Memory (MB)       2048       1024         Network Receive (MiB/s)       100       20         Network Send (MiE/s)       100       20	Host Alerts	VM Alerts	Cluster Alerts			
MeasurementWarning IfCritical IfCritical If ACPU Guest Runtime (%)608CPU Hypervisor Root Virt608CPU Hypervisor Total Run608CPU Total (%)608Disk Time608Disk Latency51Disk Queue Length220Disk Read (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Specify thresho	old values for	notification ale	rts (leave empty	y field if disab	led)
CPU Guest Runtime (%)608CPU Hypervisor Root Virt608CPU Hypervisor Total Run608Disk Time608Disk Time608Disk Latency51Disk Queue Length2Disk Read (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Measurement		Warning If	Warning If	Critical If	Critical If A
CPU Hypervisor Root Virt         60         8           CPU Total (%)         60         8           Disk Time         60         8           Disk Time         60         8           Disk Latency         5         1           Disk Queue Length         2         0           Disk Read (MiB/s)         100         20           Available Memory (MB)         2048         1024           Network Receive (MiB/s)         100         20           Network Send (MiB/s)         100         20	CPU Guest Run	ntime (%)		60		80
CPU Hypervisor Total Run         60         8           CPU Total (%)         60         8           Disk Time         60         8           Disk Latency         5         1           Disk Queue Length         2         0           Disk Read (MiB/s)         100         20           Disk Write (MiB/s)         100         20           Available Memory (MB)         2048         1024           Network Receive (MiB/s)         100         20           Network Send (MiB/s)         100         20	CPU Hyperviso	r Root Virt		60		80
CPU Total (%)         60         8           Disk Time         60         8           Disk Latency         5         1           Disk Queue Length         2         0           Disk Read (MiB/s)         100         20           Disk Write (MiB/s)         100         20           Available Memory (MB)         2048         1024           Network Receive (MiB/s)         100         20           Network Send (MiB/s)         100         20	CPU Hyperviso	r Total Run		60		80
Disk Time608Disk Latency51Disk Queue Length2Disk Read (MiB/s)10020Disk Write (MiB/s)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	CPU Total (%)			60		80
Disk Latency51Disk Queue Length2Disk Read (MiB/s)10020Disk Write (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Disk Time			60		80
Disk Queue Length2Disk Read (MiB/s)10020Disk Write (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Disk Latency			5		10
Disk Read (MiB/s)10020Disk Write (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Disk Queue Le	ngth		2		4
Disk Write (MiB/s)10020Available Memory (MB)20481024Network Receive (MiB/s)10020Network Send (MiB/s)10020	Disk Read (Mil	B/s)		100		200
Available Memory (MB)     2048     1024       Network Receive (MiB/s)     100     20       Network Send (MiB/s)     100     20	Disk Write (Mil	B/s)		100		200
Network Receive (MiB/s)       100       20         Network Send (MiB/s)       100       20	Available Mem	ory (MB)	2048		1024	
Network Send (MiB/s) 100 20	Network Recei	ive (MiB/s)		100		200
	Network Send	(MiB/s)		100		200
L						

#### Note

There are separate sections for host, VM and cluster counters.

Values that are set to **0** mean they are disabled. Warning and error thresholds values can be set to trigger alerts when a value either falls below or above the setting.

### 13.1.2 Event alerts

Event alerts are configured to transfer native Microsoft events into the Acronis Cloud Manager **Monitoring** plugin. To configure event alerts, select **Notifications** – **Event alerts**. Select checkboxes for the desired events to enable alerting for that event:

	Severity	EventId	Description	
Micr	osoft-Windo	ws-Failove	rClustering	1
$\checkmark$	Error	1000	Cluster service fatal error	
$\checkmark$	Error	1006	Cluster service interruption	
$\checkmark$	Warning	1011	Host node was evicted from cluster	
$\checkmark$	Error	1046	Invalid subnet mask detected	
$\checkmark$	Error	1047	Invalid IP address detected	
$\checkmark$	Error	1049	Failed to bring cluster resource online	
$\checkmark$	Error	1057	Cluster database could not be loaded	
$\checkmark$	Error	1069	Cluster resource failure	
$\checkmark$	Error	1073	Inconsistency within the failover cluster	
$\checkmark$	Warning	1080	Cluster service failed to write data to a file	
$\checkmark$	Error	1090	Cluster service cannot be started	
$\checkmark$	Error	1093	Host cluster membership	
$\checkmark$	Error	1105	Cluster service failed to start	
$\checkmark$	Warning	1126	Unreachable cluster network interface	
$\checkmark$	Warning	1127	Cluster network failure	
$\checkmark$	Warning	1130	Cluster network is down	
$\checkmark$	Error	1135	Host node was removed from cluster	
$\checkmark$	Error	1177	Cluster service shut down	
$\checkmark$	Error	1193	Failed to create cluster resource name in domain	
$\checkmark$	Error	1207	Cluster resource cannot be brought online	
$\checkmark$	Error	1360	Invalid IP address for cluster resource	
$\checkmark$	Error	1546	Host failed to form a cluster	
$\checkmark$	Warning	1548	Cluster hosts update version mismatch	
$\checkmark$	Error	1554	Cluster host node network connectivity error	
$\checkmark$	Error	1556	Unexpected cluster service problem	
$\checkmark$	Error	1557	Cluster witness resource update failure	
$\checkmark$	Error	1558	Cluster witness resource failure	
$\checkmark$	Error	1561	Missing latest cluster configuration data	
$\checkmark$	Error	1570	Cluster communication session failed	1

## 13.1.3 Backup, replication and dynamic optimization alerts

To configure backup, replication and dynamic optimization alerts, select **Notifications – Event notifications**. Select checkboxes for the desired events to enable notifications for that event:

$\bigotimes$	Acronis Cloud M	anager — $\Box$ $ imes$
<ul> <li>Info</li> <li>Notifications</li> <li>Exit Application</li> </ul>	<ul> <li>Notifications Email settings Setup email address, SMTP server and secure parameters</li> <li>Aleris Provide alerts threshold settings</li> <li>Event aleris Provide event alerts settings</li> <li>Event notifications Backup, Optimization and Replication notifications setting:</li> <li>Scheduled Reports Configure reports mailing</li> </ul>	Backup Notifications         Success backup complete notifications         Failed backup complete notifications         Notify when replication successfully completed         Notify when replication failed         Notify when replication health state changed to 'Critical'         Notify when replication health state changed to 'Warning'         Notify when replication health state changed to 'Normal'         Dynamic Optimization Notifications
		Notify when migration succesfully completed

# 13.1.4 Scheduled reports

To configure scheduled reports mailing, select **Notifications** – **Scheduled reports**.

$ \in $		Acronis Cloud	d Mana	ager				_ □
		Notifications Email settings		Report	Last start	Next start	Scheduler Type	Scheduler
<b>U</b> nuo	×.	Setup email address, SMTP server and secure parameters	•	System Status Report		5/29/20	Daily	Setup Scheduler s
Notifications	A	Alerts Provide alerts threshold settings		Zombie VM Report		5/29/20	Daily	Setup Scheduler s
🗴 Exit Application	<b>B</b>	Event alerts Provide event alerts settings		VM Life Cycle Report		5/29/20	Daily	Setup Scheduler :
	Ģ	Event notifications Backup, Optimization and Replication notifications setting:						
	¥	Scheduled Reports Configure reports mailing						
								Save

Under the **Scheduler** column, click the **Setup scheduler settings** button on the corresponding row to open the scheduler configuration dialog:

			Acronis Cloud	l Man	ager				–
i Info	Notificat	ions Email settings			Report	Last start	Next start	Scheduler Type	Scheduler
	Setup en	Configure Scheduler				)	<	Manual	Setup Scheduler s
Notifications	Alerts Provide a							Manual	Setup Scheduler s
Evit Application	Event ale	🔿 Manual						Manual	Setup Scheduler s
	Provide e	O Hourly							
	Event no Backup,	First start:	· ·						
	Schedule	Even	12 hours						
	Configu	Every	12 nours						
		Daily							
		Start at	11:00:PM						
		Day period	Every 1 days						
		Selected days	🗹 Sun 🗹 Mon 🗹 T	ue	🗸 Wed 📝 Thu	🗸 Fri 🗹 Sat			
		O Monthly							
		Day of month:	1 -						
		Start at:	07:00:PM						
					ОК	Cancel			
									Save

When all settings are done, click **Save** at the bottom of the window on the right side.

#### Note

These reports can be viewed in the **Reporting** plugin of Cloud Manager (refer to the "Reporting" (p. 181) section above).

# 14 Resource pools, quotas and usage

Resource pools, quotas and usage features are designed to implement self-service Cloud Manager web portal. These features secure tenants isolation from physical layer when providing resources to them, managing resources allocation and keeping record of resources utilization.

# 14.1 Resource pools

Resource pool is a logical entity designed to isolate customers (tenant users) from physical layer: clusters, hosts, storages, network switches. To create VM user should select the resource pool, set CPU count, memory size, number of network adapters, number and size of disks without using any host specific information. At final VM will be created on the most appropriate host or cluster node. Resource pool contains a number of resource pool items: clusters (all nodes) and hosts:



Physical host or cluster can belong only to one resource pool. Resource pool is an exclusive owner of resource pool items. So, hosts/clusters added to resource pool became not available as standalone resource for setting permissions. That way we have the principally new conception of resource utilization and control using resource pools. Hyper-V objects can be managed either using traditional method of straight control or using the new resource pool conception.

### 14.1.1 Creating, editing and deleting resource pool

To start creating the new resource pool either:

• In the **Hyper-V Management** plugin of Acronis Cloud Manager console press the **Create resource pool** button on the main ribbon:

<b>P</b>	Create VM
<b>4</b>	Create Resource Pool
/	Edit Resource Pool
×	Delete Resource Pool
C:	Add Resource to Pool

• Right-click the existing resource pool (if it's been already created earlier) in the object tree and press the **Create resource pool** context menu item:

Create Resource Pool
Celete Resource Pool
Celete Resource Pool
Celete Resource Pool

#### The **Create resource pool** wizard will be opened.

Create Resource Pool					×			
	General							
General	Enter resource	pool informa	tion					
Storage Types								
Network Types	Name	Resource Po	ool					
Summary	Description							^
	<ul> <li>Template St</li> </ul>	orage —						
	Datastor	e:	tmpl-rp					-
	ISO Storage							
	Datastor	e:	iso-rp					-
	- Backup Stor	rage						
	Datastor	e:	bakp-rp					<b>•</b>
					< Back	Next >	Finish	Cancel

On the first page type the resource pool name, description (optional), and select storages for templates, ISO and backup files. Standard wizard to add the new datastore is available from drop down menu, if necessary.

#### Important

All resource pool storages must be registered as SMB type.

#### Click **Next**.

On the next page add the mandatory storage types:

Create Resource Poo	l	$\times$
	Storage Types	
General	Configure mandatory storage types	
Storage Types <	Add Remove Edit	
Summary	Datastore	
	▲ Type: VHD store	
	hdd	
	< Back Next > Finish Cance	1

### • Click the **Add** button. The **Add VHD storage type** dialog will be opened.

Add VHD Sto	rage Type			×
Name:				
VHD Store				
Description:				
Datastores:				
Enter text to	search		▼ Find	Clear
	Name		Туре	
$\checkmark$	hdd		Network Datastore	
	vm storage		Network Datastore	
	VMs		Network Datastore	
		Add New D	Datastore	K Cancel
			L	

- Enter the name and, optionally, the decription for the storage type.
- Check the box(es) on the left side to select the required datastores from the list. Use the search filter for convenience on the large list.
- To add the new datastore, click the **Add new datastore** button to open the standard **Create virtual machine storage** wizard and then register the new storage there (please refer to the "Adding datastore" (p. 60) section above).
- Click **OK** to add the storage type.

Click **Next**.

On the next page configure the mandatory network types:

Create Resource Pool	I		×
	N	etwork Types	
_			
General	Configure mandatory network types		
Storage Types	Add		
Network Types	Add Remove		
Summary	Name	Description	VLAN range (e.g. 1-5,12,20-29)
	Public		1-99
	Private		100-200
		< Back	Next > Finish Cancel

- Click **Add** button to add the new network type.
- Type the network type name, description (optionally) and VLAN range (e.g. 1-5, 12, 20-29).
- To remove the network type, select it and click the **Remove** button.

Click **Next**.

Create Resource P	Pool		×
		Summary	
General	Completing the wizard		
Storage Types Network Types	You have successfully co	mpleted the Resource Pool Wizard. You are about to create the following resource pool:	
Summary	Name	Resource Pool	
,	Template storage	tmpl-rp	
	ISO storage	iso-rp	
	Backup storage	bakp-rp	
	VHD storage	hdd (VHD store)	
	Network types	Public (1-99), Private (100-200)	
		< Back Next > Finish Can	cel

Review the summary and click **Finish**.

To edit the resource pool select it in the object tree and then either:

• Press the **Edit resource pool** button on the main ribbon:



• Right-click the resource pool and press the **Edit resource pool** context menu item:



- Create Resource Pool
- Edit Resource Pool
- Delete Resource Pool
- La Add Resource to Pool

Lait i coour ce poor parametero ao regan ca jast inte mileri you er cate re	Edit resource pool	parameters as re-	quired just like when	you create it:
---	--------------------	-------------------	-----------------------	----------------

Edit Resource Pool									×
General									
General	Enter resource	pool informa	tion						
Storage Types	Name	Resource Po	pol 1						
inclusion ()pcs	Description								~
	- Template St	orage							
	remplace of	orage							
	Datastor	e:	tmpl-rp						*
	- ISO Storage								
	Datastor	e:	iso-rp						•
	– Backup Sto	rage							
	Datastor	e:	bakp-rp						<b>T</b>
						< Back	Next >	ОК	Cancel

To delete resource pool select it in the object tree and then either:

• In the **Hyper-V Management** plugin of Acronis Cloud Manager console press the **Delete resource pool** button on the main ribbon:



• Right-click the existing resource pool (if it's been already created earlier) in the object tree and press the **Delete resource pool** context menu item:



#### Note

Resource pool that contains resources cannot be deleted.

# 14.1.2 Adding and evicting resource to/from pool

To add resource to pool either:

• In the **Hyper-V Management** plugin of Acronis Cloud Manager console select the target resource pool and press the **Add resource to pool** button on the main ribbon:

Hyper-V Management	Datastore Virtual Networ				
Create Resource Pool	📑 Add Resource to Pool				
📕 Edit Resource Pool	📑 Evict Resource from Pool				
x Delete Resource Pool	📮 Edit Resource				
Resource Pool					

• Right-click the target resource pool in the object tree and press the **Add resource to pool** context menu item:



#### The Add resource to pool wizard will be opened.

Add Resource to Poo	ol		×
		Resource	
Resource	Select host or cluster you want to add to	the resource pool	
Storage	Name	Description	Туре
Network	ACM2		
Summary	cluster		
		< Back	Next > Finish Cancel

On the first page select the resource from the list of available objects, enter description (optional), and click **Next**.

On the **Storage** page select the datastore form the drop-down list or add the new datastore, using standard wizard that can be called with the **Add new datastore** button at the bottom of the drop-down menu. Click **Next**.

Add Resource to	o Pool				>
		Stora	ge		
Resource	Select VM storage				
Storage Network	VM Storage				
Summary	Datastore:	Datastore is not selected			•
		Name	*	Туре	
		📓 hdd		Network datastore	^
		hdd		Cluster datastore	
		📓 hdd		Cluster datastore	
		Hot		Cluster datastore	~
			Add new d	atastore	
			< Back	Next > Finish	Cancel

On the **Network** page type the names and, optionally, descriptions for mandatory virtual networks and select the external virtual switches from the drop-down menu to map them to these virtual networks. Click **Next**.

Add Resource to	Pool			×
		Netwo	rk	
Resource	Map network types t	to external virtual network switche	5	
Storage	Name	Description	Virtual network switch	
Network	Private	Description	Vswitch1	<b>.</b>
Summary	Public		Vswitch2	-
			< Back Next > Finish	Cancel
				Carreet

Review the summary and click **Finish**.

Add Resource to Po	ol	×	
		Summary	
Resource	Completing the wizard		
Storage Network	You are about to add the follo	owing resource to the resource pool:	
Summary	Resource	[Host] ACM2	
	VM storage	hdd	
	Network mappings	[Public] Vswitch2	
		[Private] Vswitch1	
		< Back Next > Finish Cancel	

To evict the resource from pool, select it in the object tree and then either:

• Press the Evict resource from pool button on the main ribbon.



• Right-click the target resource and press the Evict resource from pool context menu item.



#### Note

Resource that is assigned to a tenant cannot be evicted from the pool.

## 14.1.3 Editing resource

To edit the resource, select it in the object tree and then either:

• Press the **Edit resource** button on the main ribbon:



• Right-click the target resource and press the **Edit resource** context menu item:



The **Edit resource** wizard will be opened.

Edit Resource					×
		Storage			
Storage <	Select VM storage				
Network	- VM Storage				
	Datastore:	hdd			•
		Name	*	Туре	
		🛱 hdd		Network datastore	
			Add new da	tastore	
			< Back	Next > OK	Cancel

On the **Storage** page select the datastore form the drop-down list or add the new datastore, using standard wizard that can be called with the **Add new datastore** button at the bottom of the drop-down menu. Click **Next**.

Edit Resource					×
			Networ	k	
Storage	Map network types	to external vi	tual network switches		
Network	Name		Description	Virtual network switch	
	Private			Vswitch1	-
	Public			Vswitch2	-
				< Back Next > OK Cance	1

On the **Network** page select the external virtual switches from the drop-down menu to re-map them to the virtual networks. Click **OK**.

### 14.1.4 Allocating resource pool to a tenant

Resource pool allocation to tenants is done in the standard way just like traditional resources allocation when the tenant is created or edited using the **Tenant** wizard in the **Administration** plugin.

Tenant Wizard							$\times$
		Resou	irce Poo	ls			
Information	Manage tenant resource p	pols					
Administrators Users	Add 🚚 Edit	Remove					
Resource Pools	Drag a column header he	re to group by that	column				
Summary	ResourcePool Name	VCpu	VRam (Gb)	Total Storages (Gb)	Total Networks	Backup (Gb)	
	Resource Pool	16	32768	1000	10	1000	
				[			
				< Back	Next > Fi	nish Can	cel

Please refer to the "Tenants" (p. 43) section above for details.

### 14.1.5 Operations in the resource pool

Operations in the resource pool include creating, editing and removing virtual disks, virtual networks and virtual machines. These operations are performed in the **Hyper-V management** plugin and can be done by both global users (admins) and tenant users (admins), who have rights to access the resource pool.

To create VHD(x) in the resource pool:

- 1. In the **Datastore** tab select the resource pool (or exact datastore) in the object tree and click the **Create virtual disk** button on the main ribbon.
- 2. Configure parameters for the VHD(x):

Create Virtual Disk	×	<
Disk Name:	Virtual Disk	
Storage Type:	VHD Store	r
Set the size of the virtual disk (GB):	100	
– Virtual disk type: –––––		
<ul> <li>Dynamically Expanding         This type of disk provides better of servers running applications that created is small initially and chan         Fixed Size         This type of disk provides better prapplications with high levels of d initially uses the size of the virtua or added.     </li> </ul>	use of physical storage space and is recommended for are not disk intensive. The virtual hard disk file that is ges as data is added. Derformance and is recommended for servers running isk activity. The virtual hard disk file that is created I hard disk and does ot change when the data is deleted	1
	OK	

3. Type the VHD(x) name, select the storage type, set the VHD(x) size and type. Click **OK**.

To edit VHD(x) in the resource pool, select it and click the **Edit virtual disk** button. Then alter the VHD(x) parameters in the **Edit virtual disk** dialog:

Edit Virtual Disk	×
Disk Name:	Virtual Disk.vhdx
Storage Type:	VHD store 🔻
Set the size of the virtual disk (GB)	100
- Operation	
Compact	
O Change Size	
	OK Cancel

- Choose the operation: **Compact** or **Change size**.
- If the **Change size** operation is selected, set the new size of the VHD above.
- Click OK.

To delete VHD(x) select it and click the **Delete virtual disk** button. Confirm the operation.

To create the virtual network in the resource pool:

 In the Virtual network tab select the resource pool in the object tree and click the Create vNetwork button on the main ribbon:



2. Configure parameters for the new virtual network in the **Create virtual network** wizard:

Create Virtual Netwo	ork	×
	Settings	
	Settings	
Settings <	Virtual Network Properties	
	- General information	
	Name: Vnet2	
	Virtual Network Type	
	Public	
	< Back Next > Finish Cancel	

- Type the vnet name.
- Select the vnet type from the drop down menu.
- 3. Click Finish.

To edit the virtual network, select it and click the **Edit vNetwork** button. Then alter the vnet parameters just like you done when creating virtual network.

To delete the virtual network, select it and click the **Delete vNetwork** button. Confirm the operation.

To create the new resource pool VM:

- In the Hyper-V management tab select the resource pool in the objet tree and click the Create
   VM button on the main ribbon or the corresponding context menu command.
- 2. On the first page of the **Create VM** wizard select the source for the new virtual machine:

Create VM	×	
	Source	
Source	Select source for new Virtual Machine	
General		
ISO Options	Create virtual Machine and deploy it from scratch	
Storage	Create Virtual Machine from template	
Network		
Summary		
	< Back Next > Finish Cancel	]

• **Create virtual machine and deploy it from scratch** - to create the new VM with your own parameters.

• **Create virtual machine from template** - to create the new VM using stored VM template. Click **Next**. 3. On the **General** page specify common VM information: name, notes (optionally), set vCPU cores count and vRAM size in MB. Clik **Next**.

Create VM			$\times$
		General	
Source	Specify general V	/irtual Machine information	
General			
ISO Options	Name:	Resource Pool Virtual Machine	
Storage	Notes:		
Network			
Summary			
	vCPU count:	1 📩 cores	
	vRAM size:	1024 A MB	
		< Back Next > Finish Cano	cel

4. [If creating VM from scratch] On the **ISO options** page select the ISO from the drop-down list. It should be placed into the configured resource pool ISO storage in advance. Click **Next**.

Create VM						$\times$
		ISO	Options			
Source	Configure I	SO options				
General						
ISO Options	ISO:	iso1.iso				-
Storage		Name		Path		
Network		iso1.iso		[ISO Storage]\iso1.iso		
Summary						
			<	Back Next >	Finish	Cancel

5. [If creating VM from template] On the **Template options** page select the template from the drop-down list. It should be placed into the configured resource pool template storage in advance. Click **Next**.

Create VM			$\times$
		Template Options	
		· · · · · · · · · · · · · · · · · · ·	
Source	Configure Ten	mplate options	
General			_
Template Options	l emplate:	[Select template]	*
Summary			
		< Back Next > Finish Cance	el 🛛

6. [If creating VM from scratch] On the **Storage** page add VM disks. You may both create new disk (s) or select and attach existing one(s):

Create VM			2	×
		Storage		
Source	Add new or attach	existing Virtual Disks		
General				
ISO Options	Add New	Attach Existing Remove		
Storage	Name	Туре	▲ Is OS Disk	
Network				
Summary		Attach Existing Virtual Disks	×	
		Enter text to search	Find Clear	
		Name	🔺 Туре	
		Virtual Disk.vhdx	VHD Store	
			OK Cancel	
			< Back Next > Finish Cancel	

If you add several disks, set one of them as OS disk in the **Is OS disk** column. Click **Next**.

7. On the **Network** page set VM network connections - add virtual network adapters. You may both create new network(s) or select and attach existing one(s):

Create VM		Notrovia		×
		Network		
Source	Add new or attack	existing Virtual Networks		
General				
ISO Options	Add New	Attach Existing Remove		
Storage	Name	Туре		
Network	{			
Summary		Attach Existing Virtual Networks		
		Enter text to search	▼ Find Clear	
		Name 🔺	Туре	
		Vnet2	Public	
		Vnet3	Private	
			OK Cancel	
			< Back Next > Finish	Cancel

Click **Next**.

#### 8. Review the summary:

Create VM			$\times$								
		Summary									
		our in the second se									
Source	Completing the wizard										
General	Very have a second fully completed the Victory Machine Minard Very are about to complete fallencing Victory Machine										
ISO Options	You nave successfully completed the Virtual Machine Wizard. You are about to create following Virtual Machine:										
Storage	Name Resource Pool Virtual Machine										
Network	VCPU	1 Cores									
Summary		IU24 MB									
-	Virtual Disks	Virtual Disk.vhdx (OS Disk)									
	Virtual Networks	Vnet3									
	Start the virtual machine at	fter creation									
	To create the virtual machine a	and close the wizard, click 'Einish' button									
		and close the wizard, clerk riflish button.									
		< Back Next > Finish Can	cel								

If you would like VM to be started after the creation, enable the corresponding check box in the lower part of the page. Click **Finish**.

To edit VM settings, select it in the objet tree and click the **Settings** button on the main ribbon or the corresponding context menu command. Then edit VM parameters as required in the similar wizard as described above.

To delete VM, select it in the object tree and click the **Delete** button on the main ribbon or the corresponding context menu command. Then confirm the operation and, if you would like to delete all VM configuration files and disks, enable the corresponding option:

Remove Virtual Machine								
Do you want to remove virtual machine 'Resource Pool Virtual Machine'?								
Remove all related virtual hard drives and empty virtual machine's folders								
Yes No								

# 14.2 Quotas

Quotas are tenant specific settings determining how many resources can be allocated for the tenant per assigned resource pool. Also quotas are used in capacity planning of resource pools.

## 14.2.1 Setting quotas

Administrator can set quotas on the **Resource pools** page of the **Tenant** wizard when adding the resource pool to the tenant:

Tenant Wizard		×										
	Resource Pools											
Information	Manage tenant resource pools											
Administrators Users	Add Add Edit Remove											
Resource Pools	Drag a column header here to group by that column											
Summary	ResourcePool Name VCpu VRam (Gb) Total Storages (Gb) Total Networks Backup (G	b)										
	▶ Resource Pool 16 32768 1000 10 1000											
	< Back Next > Finish	Cancel										

Each selected resource pool are configured with its own quota settings:

- vCPU (Gb).
- vRAM (Mb).
- Total disk capacity per each storage type (Gb).
- Number of virtual networks per each network type.
- Total backup storage capacity (Gb).

Quota settings are validated for consistence with current allocated resources: decreasing lower than already allocated resources and exceeding capacity of resource pool are denied. The warning with details appears if these constraints are violated.

rea	ate quota	×
Re	source Pool	•
vCP vRA	PU 16 AM (Mb) 32768	4 <b>7</b> 4 <b>7</b>
Dis	ks	
Dr	rag a column header here to grou	p by that column
	Storage Type	Capacity (Gb)
×	hdd	1000
Net	tworks	
Net	tworks rag a column header here to group	p by that column
Net	tworks rag a column header here to group Network Type Public	p by that column Virtual Networks Count
Net	tworks rag a column header here to group Network Type Public Private	p by that column Virtual Networks Count 5 5
Net Dr •	tworks rag a column header here to group Network Type Public Private ckup (Gb)	p by that column Virtual Networks Count 5 5 5

# 14.2.2 Displaying quotas

To view quotas, assigned to the tenant, go to the **Administration** plugin and open the **Tenants** tab, then select the required tenant:

8 -				Aci	onis Cloud Manager						- 0	×
Home Users Tenants Roles Cat	egories											
Create Edit Tenant Remove Refresh Tenant Tenant Management												\$
Administration <	Name	Bitenant										
-	name	Dicentaric										
Enter text to search in tenant 💌 Clear	Description											
🔺 📳 Tenants												
A-tenant	Enabled	×										
E B-tenant	Statistics	Tenant total users count: 2										
			Tenant Users					т	mant Resources			
	Name					a Nama	+ Tune	Description	Parent	Fada	IP	
	4 Administrat					- Maine	- 000	beschphon	Turcin	1 qui		
	≞ BT1											
	4 Urarr											
	A BUI											
	AN DOT					1			Resource Pools			
*						Drag a column header he	ere to group by that co					
Hyper-V Management						ResourcePool Name	VCpu	VRam (Gb)	Total Storages (Gb)	Total Networks	Backup (Gb)	
						Resource Pool		16	32768 1000	10	1000	
Azure Management	1											
Monitoring												
	C Refresh +	🗱 View Details 🔘 Stop 🛃 Syslog Op	tions Start from: 6/4	/2022 Y Plugin: An	y v Jobs: All Job	s v Users: All users	*					
Reporting	Name	Description	User		ContextObject	Started			Finished	Status		
	Ienant Ba	itch Create	adm	in		6/5/2022 11:38:29 PM		100 %	6/5/2022 11:38:30 PM	Completed		^
C. Bachura	C Remove I	enant	adm	in 1-		6/5/2022 8:29:30 AM		100 %	6/5/2022 8:29:30 AM	Completed		
Backup	e lienant Ba	itch Create	adm	in 1-		6/5/2022 8:28:51 AM		100 %	6/5/2022 8:28:51 AM	Completed		
	Oser batt	h Create	adm	in		6/5/2022 6:16:07 AM		100 %	6/5/2022 6:16:07 AM	Completed		
SDN Management	Oser batt	n Create	adm	n  -		0/5/2022 0:15:45 AM		100 %	6/5/2022 0:15/44 AM	Completed		
	Assign Re	source to Pool	adm	n  -		0/5/2022 0:14:54 AM		100 %	6/3/2022 0:14:55 AM	Completed		
Administration	Assign Re	source to Publi	adm	n  -	184	6/5/2022 0:15:51 AM		100 %	6/3/2022 0:15:51 AM	Failed to ac	a cluster duster ti	0 K
-0	C Edit Pero	urre Pool	adm	in	Perource Pool	6/5/2022 0:13:32 AM		100 %	6/5/2022 P:12:20 AM	Completed		
	Cult Reso	arte Foor	udmi	-	Resource room	6/5/2022 0.12.20 AM		100 %	6/5/2022 0.12.30 AM	Completed		
(2) osage	Add Data	rtore Create Shared di	dum	in .	beko m	6/5/2022 9:10:21 AM		100 %	6/5/2022 8:12:12 AM	Completed		- 1
	Add MAC	Pool	adm	in .	nechals	6/5/2022 7:24:55 AM		100 %	6/5/2022 7:24-55 AM	Completed		
	Add MAC	ant Agent installation	adm	in .	DEV NODE1	6/5/2022 6-31-12 AM		100 %	6/5/2022 6-33-07 AM	Agent insta	lation completed	
						-, -, 0.31.12 Am				Agent into		~

Quotas are displayed on the **Resource pools** pane on the right hand side:

Resource Pools Drag a column header here to group by that column										
ResourcePool N VCpu VRam (Gb) Total Storages ( Total Networks Backup (Gb)										
Þ	Resource Pool	16	32768	1000	10	1000				

# 14.3 Usage

Usage is the feature that collects, displays and exports data on all resources allocated to tenants. These data are used for billing and can be imported into external billing systems.

### 14.3.1 Collecting usage statistics

Statistics is collected on allocated resources:

- VMs vCPU (periods when VM is running) and vRAM (periods when VM is running and paused).
- Virtual disks per disk type total size.
- Virtual networks per network type.
- Backup storage capacity used.

Taking into account that settings of each entity can be changed during a period, the start and end date/time of usage are stored for each specific configuration item in the detailed usage data description.

# 14.3.2 Displaying usage statistics

Usage statistics is displayed in the **Usage** plugin:

O *					Acronis Clo	ud Manager						-	□ ×
Home Usage													
Refresh Export Export to XLSX	٣												
Gen rs Export rs Per	iod	5											$\diamond$
Usage <	vCPU Summary			ф.53	vRAM Summar	,		Ċ	Backup Stora	ge Summary			± 53
	Tenant	Resource Pool	vCPU, unit-days		Tenant	Resource Pool		rRAM, Gb-days	Tenant	Resource P	001	Archives, Tb-days	
Enter text to search in tenant 👻 Clear	A-tenant	Resource Pool	اد 16.36		A-tenant	Resource Pool	rce Pool 12572:		45 A-tenant	A-tenant Resource Pool			100.68025
4 FD AII	B-tenant	Resource Pool		7.31219 B-tenant		ant Resource Pool		3743.84	23 B-tenant	Resource P	100		100.00021
A El Resource Pool	C-tenant	Resource Pool		8.02573	C-tenant	Resource Pool		4109.17	09				
A-tenant	vNetwork Summar	v				rta 53	vStorage	Summary					r†1 53
B-tenant     C-tenant	Tenant	Resource Pool	Network Ty	pe	vNet, unit-o	lays	Tenant	Resource Pool		Storage Type	vSt	orage, Tb-days	L
	B-tenant	Resource Pool	Public			8.1563	6 A-tenant	Resource Pool		VHDstore			308.44582
	C-tenant	Resource Pool	Public			8.0259	6 B-tenant	Resource Pool		VHDstore			163.16807
							C-tenant	Resource Pool		VHDstore			160.52505
	Usage Data												rîn 53
	Tenant	Owner Reso	ource Pool	Type	SubType	Name			Started		Finished	Value	
	A-tenant	Reso	ource Pool	vCpu		Resour	e Pool Virtual	Machine	4/13/2022 6:40 A	AM			1.00000 ^
	A-tenant	Reso	Resource Pool			RPVM1				AM 4/14/2022 5:13 AP			1.00000
A	A-tenant	Reso	Resource Pool N			RPVM1			4/14/2022 5:19 /	4/14/2022 5:19 AM			1.00000
No Hyper-V Management	A-tenant	Reso	ource Pool	vRam		Resource	ce Pool Virtual	l Machine	4/13/2022 6:40 /	AM			1024.00000
	A-tenant	Reso	Resource Pool		RPVI		3PVM1		4/13/2022 7:14 #	AM	4/14/2022 5:13 AM		512.00000
Azure Management :	A-tenant	Reso	Resource Pool		R		RPVM1		4/14/2022 5:19 /	4/14/2022 5:19 AM			512.00000
	A-tenant	AT1 Reso	Resource Pool		VHDstore	e VHD1.vhdx		4		4/13/2022 7:13 AM			20.00000
- Monitoring	A-tenant	AT1 Resource Pool		vDisk	VHDstore	store VHD1.vhdx				4/14/2022 3:16 AM			20.00000
intentoring	B tenant	Reso	ource Pool	vcpu		REVIN2			4/15/2022 7:55 /	AM .	4/15/2022 11:00 AM		1.00000
	B-tenant	Reso	ource Pool	vepu		RPVM2 RPVM2			4/13/2022 7:35 4	AM SM	4/13/2022 11:08 AM		512 00000
Reporting	B-tenant	Reso	ource Pool	vRam		RPVM2			4/14/2022 7:24 #	AM			512.00000
	B-tenant	BT1 Reso	ource Pool	vDisk	VHDstore	VHD2.v	hdx		4/13/2022 7:32 #	AM			20.00000 🗸
😔 Backup													
	C Refresh 🌾 V	riew Details 🔘 Stop 🔒	Syslog Options Sta	rt from: 4/15/20	22 💌 Plug	in: Any 👻	Jobs: All j	obs 🔻 Users: All	users 🔻	Platitical		Charters	
SDN Management	Name	Descriptio	in .	oser	0	intextObject	started	y → Pr	ogress	Finished		Status	
	Logon Authenticate custom user ad adr		admin				4/21/2022 10:39:42 AM		4/21/202	2 10:59:42 AM	Completed		
Administration	Logon	Authentic	ate custom user ad	admin			4/21/20	022 10:00:04 AM	100 %	4/21/202	2 10:00:04 AM	Completed	
-0	Cogon Auth		ate custom user ad	aumiin				4/21/2022 7:04:29 AM		4/21/202	2 7:04:29 AM	Completed	
	Logon	Authentic	ate custom user ad	admin		and at the second se	4/19/20	022 0:17:06 AM	100%	4/19/202	2 0:17:06 AM	Completed	
CΣ Usage	Turn Off Virtu	iai Machine		admin	cn	iportal	4/19/2022 2:53:17 AM		100 %	4/19/202	2 2:53:19 AM	Completed	
	Disable Host			admin	DI	V-NODE1	4/18/20	022 5:25:25 AM	100 %	4/18/202	2 5:25:26 AM	Completed	
	Install Agent	Agent inst	tallation on 'ACM2'	admin	A	:M2	4/16/20	022 6:54:34 AM	100 %	4/16/202	2 6:57:08 AM	Completed	
	Install Agent	Agent ins	tallation on 'DEV-N	admin	DI	V-NODE2	4/16/20	022 6:54:34 AM	100 %	4/16/202	2 6:56:27 AM	Completed	~
📀 Server status: Online  🋔 admin	L	ogon Authenticate custom	user admin, client IP:	192.168.2.92 ad	min 4/21/2022	10:39:42 AM	100 %	4/21/2022 10:39:42 AM Co	mpleted			<b>9</b> 9	000.

- User can see usage statistics across only own resources.
- Tenant admin can see overall tenant statistics and on per-user basis.
- Global admin can see statistics global, per-tenant, and per-user basis.
- User can set any date/time range to generate report using the **Refresh** button. The default is permonth view.
- Summary data is available in form: vCPU units, vRAM units, Size units per disk type, virtual network units.
- 1 Unit is equal to 1 day using of 1 unit of measurement. E.g., if 1 vCPU VM was running for a half of a day, it will be counted as 0.5 vCPU units.
- Physical resources (clusters, hosts) are measured by resource itself. 1 Unit is one day of this host/cluster being online. Physical host characteristics are displayed just for reference/additional details.

## 14.3.3 Exporting usage statistics

Usage statistics can be exported into PDF or XLSX file formats. The corresponding buttons are located on the main ribbon:


Click the required button and select the location where the corresponding file should be saved.

# 15 Web management console

Web management console is a web-based interface of Acronis Cloud Manager, which provides users with an access to all application's features through the web browser.

Acronis Cloud Manager	Hyper-V	Œ	Infrastructure		[	+ Add server	+ Add Resource Po	ool 🗘 🕲
HYPER-V MANAGMENT	Virtual machines		Search Q					
	Data storages		Name 个	Status	CPU usage	Assigned memory	Demand memory	Host
-√∽ MONITORING	Search	Q	ACM2	Running	3%	12.01 GB	737 MB	DEV-NODE2
	Resource Pool		DEV-DC	<ul> <li>Running</li> <li>Running</li> </ul>	2%	6.43 GB 4.16 GB	4.76 GB 3.45 GB	DEV-NODE2
	ciuster		portal	C Running	0%	2 GB	2 GB	DEV-NODE2
			SQL	Off	0%	0	0	DEV-NODE1

There are the following main parts of web console interface:

• Main navigation pane.

Main navigation pane appears on the left side of the browser and contains the list of available plugins. You need to select the necessary plugin to open its content in the main browser's window to the right from the main navigation pain.

• Middle navigation pane.

Middle navigation pane appears to the right from the main navigation pain and contains submenu with the selection of the objects and/or sections, applicable for the currently selected plugin.

• Data area.

Data area appears in the main part of the browser's window and shows text and/or graphical information about objects. It also contains applicable buttons and controls to perform operations with the objects and initiate various procedures. Context menu commands are also available for the objects where applicable.

## 15.1 Web management console installation

Web management console arrives along with the main setup archive of the product as a preconfigured .vhd file. It already contains all necessary software and required OS (Ubuntu Linux 18.04). All you need to do is prepare in advance generation 1 Hyper-V virtual machine, in accordance with system requirements and attach that vhd to this machine. Then review and configure a few settings inside the created virtual machine and on the management server side as described below.

To install web management portal:

- Create generation 1 Hyper-V virtual machine in your environment that Acronis Cloud Manager is supposed to work in. This virtual machine must be connected to the external virtual switch and has the access to the management network, where the main application components will be working. Requirements to the machine you can find in the "Deployment and configuration" (p. 12) - "Acronis Cloud Manager web portal" (p. 13) section above.
- 2. Attach vhd disk that arrived with the installation package to the created VM.
- 3. Make sure you have at least one custom user with global admin rights created in Cloud Manager (**Administration** plugin). Please refer to the "Users" (p. 52)
- 4. Make sure you have SQL server user (sa) with sysadmin rights and remote connections enabled on your SQL server. Contact your DBA in case the assistance is required.
- 5. To use SSL/TLS connection to the management service you need to have a valid certificate for management server installed – self signed certificate will not work. Installing pfx for management server is available only within the management service installation wizard and should be done at that step. Please refer to the "Management service setup" (p. 16) section above.
- 6. Upload your own certificate for the web portal appliance via the Cloud Manager desktop console:



Go to the **Home** tab and press the **Upload certificate** command. Then locate and select your certificate pfx file in the Windows explorer and click **Open**.

7. Start portal VM, open the guest console and, after the initial loading of the OS is finished, login into the system:

login: acronis

password: CloudManager5

8. Execute the following commands (substitute the fake data, shown in the snippet below - IP addresses, domain, URL etc, with yours):

```
aronis@cmportal:~$ sudo ./initsettings.sh
Current Ip is:
0.0.0.0
...Enter IP address with mask. Example: 192.168.1.1/16 :
192.168.1.3/24
Enter gateway:
192.168.1.1
Enter domain:
mydomain.com
Enter your DNS servers:
192.168.1.1,192.168.1.2
Enter URI:
https://192.168.1.4:16080/
Enter Acronis Cloud Manager User Name:
admin
Enter Aronis Cloud Manager User Password: admin
Enter ssl certificate password: <enter password>
Enter MS SQL Server address:
192.168.1.5
Enter MS SQL Server port:
1433
Enter MS SQL admin (sa):
sa
Enter MS SQL admin password: <enter password>
**now reboot the system**
sudo reboot
```

#### Note

If you use SQLEXPRESS version of MS SQL Server database, then you need to enable remote access and setup remote connection in the SQL Server Configuration Manager (enable browsing, TCP/IP connection and set up the port), which is disabled by default in this version. It is done on MS SQL server's side in accordance with Microsoft procedure. Contact your database admin if the assistance is required.

## 15.2 Login to the web management console

To login to the Acronis Cloud Manager web management console:

- Open the web portal appliance address in a browser, e.g. https://192.168.1.5/.
- Enter the Cloud Manager custom user login and password, then click **Sign in**:

Acronis Cloud Manager	
Sign in	
Login admin	
Password	~
Sign in	

If the credentials are correct and login is successful you will see the main screen in your browser:

Acronis Cloud Manager	Hyper-V 💽	Infrastructure		(	+ Add server	+ Add Resource Po	ool 🗘 🕲
HYPER-V MANAGMENT	Virtual machines	Search Q					
	Data storages	Name 🕇	Status	CPU usage	Assigned memory	Demand memory	Host
₩ MONITORING	Search Q	ACM2	<ul> <li>Running</li> <li>Running</li> </ul>	3%	12.01 GB 6.43 GB	737 MB 4.76 GB	DEV-NODE2 DEV-NODE2
	🛔 Resource Pool 👜 cluster	DEV-DC	Running	0%	4.16 GB	3.45 GB	DEV-NODE2
		portal	Running	0%	2 GB	2 GB	DEV-NODE2
		SQL	Off	0%	0	0	DEV-NODE1
v 6.0.34							

## 15.3 Web management console operations

In current release there are the following features implemented in Acronis Cloud Manager web management console:

- Hyper-V management: all operations with VMs, virtual switches and datastores.
- Guest console VM connection: access VM directly from the web portal via guest console.
- Hyper-V monitoring: various performance indicators and alerts for Hyper-V objects.
- Azure management: operations with Microsoft Azure subscriptions.
- Administration: operations with users, tenants, roles and permissions.
- Reporting: creating various reports for Hyper-V environment/resources.
- New self-service tenant portal, based on the new features resource pools, quotas and usage.

Next release will include other features:

• Hyper-V backup & replication.

### 15.3.1 Hyper-V management

Hyper-V management plugin has the same features as desktop console including operations with VMs, virtual switches, resource pools and datastores. The submenu appears on the middle pane to open the necessary section: Virtual Machines, Virtual Switches and Data Storages.

Acronis Cloud Manager	Hyper-V 💽	Infrastructure			+ Add server	+ Add Resource	e Pool 🗘 🕲
HYPER-V MANAGMENT	Virtual machines		🖒 Shut down 😗 Reset 🕲	Save 🗙 R	temove from cluster		1 items selected 🗙
AZURE MANAGEMENT	Data storages	Name 1	Status	CPU usage	Onnect	nd memor	y Host
-√⊷ monitoring	Search Q	CloudManager	<ul><li>Running</li><li>Running</li></ul>	0%	<ul> <li>Pause</li> <li>Shut down</li> </ul>	в	DEV-NODE2 DEV-NODE2
	🛔 Resource Pool 🚭 cluster	DEV-DC	Running	0%	() Reset	в	DEV-NODE2
USAGE		portal	Running	0%	× Remove from cluster		DEV-NODE2
		SQL	Off	096	Turn off     MA cottings	_	DEV-NODE1
					S Move VM		
					Clone VM		
					I→ Export VM		
					🖬 Template		
					<ul> <li>Attach ISO</li> </ul>		
					Set categories		
					🗗 Replicate VM		
v 6.0.34				_			

Guest connection view is implemented via Guacamole remote desktop gateway (see https://guacamole.apache.org/).



## 15.3.2 Hyper-V monitoring

Hyper-V monitoring plugin has the same features as desktop console including various performance graphs and alerts for Hyper-V hosts and VMs.

Acronis Cloud Manager	Summary 💽	Datacenter > cluster					🗘 Refresh	Oynamic Optimization	\$ ₽
HYPER-V MANAGMENT	Search Q	SUMMARY DISK							
AZURE MANAGEMENT	Datacenter     DEV-NODE1	Cluster summary		Hosts health			Virtual machines health		
	P DEV-NODE2	Name	cluster.dev.local				$\sim$		
-√∽ MONITORING		Virtual machines	6	2 Total	Healthy: 2     Warning: 0	- 0	6 Total	Healthy: 6 Warning: 0	
		NetworksCluster Network	k 1, Cluster Network 4, Cluster		• Critical erro	r: 0		Chucal error: 0	
USAGE		Storage spaces direct (S2	D) not applicable	Hosts: 2			Virtual machines: 6		
		Cluster disks							
		Name 🕆	Status As	ssigned to	Owner node	Disk number	Capacity		
		<ul> <li>Cold Storage</li> <li>Flash Storage</li> </ul>	Online Cl Online Cl	luster Shared Volume luster Shared Volume	DEV-NODE2 DEV-NODE1	1 2	463.9 GB free of 520.0 GB 336.3 GB free of 420.0 GB		
		Latest alarms							S Filters
		Туре 🕆	Time	Source	Info		Repeat count	Operations	
		Error	4/4/2022, 12:22:04 PM	DEV-NODE2	Microsoft-Wind	ows-Hyper-V-Worker:120	30: 'cm 3	Resolve	
		Error	4/4/2022, 12:22:04 PM	DEV-NODE2	Microsoft-Wind	ows-Hyper-V-Worker:120	10: 'cm 3	Resolve	
		Error	4/4/2022, 12:19:59 PM	DEV-NODE1	Microsoft-Winde	ows-Hyper-V-Worker:120	30: 'cm 2	Resolve	
		S Error	4/4/2022, 12:19:59 PM	DEV-NODE1	Microsoft-Wind	ows-Hyper-V-Worker:120	10: 'cm 2	Resolve	
v 6.0.13									

## 15.3.3 Hyper-V reporting

Hyper-V reporting plugin has the same features as desktop console and is designed to provide consolidated data about virtual machines. It consists of three tabs – **VM life cycle**, **System status** and **Zombie VM**.

Acronis Cloud Manager	Reporting 💽	Infrastructure				(† Refresh	1 Export	4 <u>9</u> @
HYPER-V MANAGMENT	Search Q	VM LIFE CYCLE SYSTEM STATU	JS ZOMBIE VM					
-√∽ MONITORING	💼 Resource Pool 🚭 cluster	High CPU Usage	٥	Low CPU Usage	٥	Top VMs by IOPS		٥
		Name	CPU	Name	CPU	Name		IOPS
II REPORTING		CloudManager	7.85 %	DEV-DC	0.23 %	CloudManager		0.174
		portal	0.77 %	ACM2	0.69 %	portal		0.055
		ACM2	0.69 %	portal	0.77 %	DEV-DC		0.031
		DEV-DC	0.23 %	CloudManager	7.85 %	ACM2		0.010
<b>CV</b>						SQL		0.000
		Dynamic memory VMs Usage		0	Static memory VMs Usage			٥
		Name	Assigned	Demand	Name	Assigned	Demand	
		DEV-DC	4 GB	3 GB	ACM2	12 GB	614 MB	
		CloudManager	7 GB	4 GB	portal	2 GB	0 B	
v 6.0.34		VM sprawl report month		¢	CSV volume usage by mor	th		٥

## 15.3.4 Azure management

Azure management plugin represents features to control Microsoft Azure subscriptions from Acronis Cloud Manager web console as it's done in the desktop application. It allows adding and removing subscriptions, control Azure VMs and, also, VM replication.

Acronis Cloud Manager	Azure 💽	All virtual machines > P	ay-As-You-Go			+	Add subscription	🗘 Confi	gure 💪 🕘
HYPER-V MANAGMENT	VM Management	Search	Q Tags	~					•••
AZURE MANAGEMENT	Representation	Name 🕇	Status	Resource Group	Location	Size	OS	Disks	Public IP
	Search Q	EndpointVM1	Stopped (deallocat	ApplianceRG	East US	Standard_DS1_v2			
	All virtual machines	EndpointVM2	Stopped (deallocat	ApplianceRG	East US	Standard_DS1_v2		1 (127 GiB)	
√~ MONITORING	aaaa	NetworkTest	Stopped	DRProtoScn1RG	Central US	Standard_B2s	Linux	1 (30 GiB)	23.99.133.103
	EndpointVM1 EndpointVM2	🗌 🛔 qwerty	Running	ApplianceRG	East US	Standard_DS11_v2		1 (127 GiB)	
<b>C</b> ¥	qwerty	🗌 🔒 RouterVM	Stopped (deallocat	ApplianceRG	East US	Standard_B2ms		1 (127 GiB)	13.92.89.90
	RouterVM	🗌 🔒 ubuntu19	Running	ApplianceRG	East US	Basic_A2	Linux	1 (30 GiB)	52.170.191.77
	NetworkTestVM3	Alarms							
		Name Ty	pe	Status	Cond	lition Resou	irce Group		Resource
		🔺 cpu10 Mi	icrosoft.Insights/metricA	<b>.</b>					
		🔺 fghgfh 🛛 Mi	icrosoft.Insights/metricA	<b>.</b>					
		🔺 ffff Mi	icrosoft.Insights/metricA	<b>.</b>					
		🔺 erererererer Mi	icrosoft.Insights/metricA	<b>.</b>					
		🔺 act Mi	icrosoft.Insights/metricA	<b>.</b>					
		🔺 111 Mi	icrosoft.Insights/metricA	A					

### Adding subscription

To add Microsoft Azure subscriptions click the **Add subscription** button on the main panel of the web portal. Then enter the credentials, click **Check** and, if everything is correct, click **Next**:

Add subscrtiption		×
General	Specify tenant	
Select Subscriptions	Tenant: * mytenant.onmicrosoft.com	
Summary	View app registrations on Microsoft Azure Portal	
	Application ID: * 20000000-2000-2000-2000-20000200000000	
	Application Secret: *	
	Check	
	Cancel	Next

#### Select the subscriptions and click **Next**:

Add subscrtiption		×
General	Select Subscriptions	
Select Subscriptions	✓ Name ↑	
Summary	Pay-As-You-Go	
		_

#### Review the summary and click **Done**:

Add subscrtiption		×
General	Completing the wizard	
Select Subscriptions	Tenant:	5ninesoftware.onmicrosoft.c
Summary	Subscriptions to add:	1
		Pay-As-You-Go
		Cancel Next Done

### **Configuring licensing**

Before you are able to do any actions with Azure VMs, you have to configure licensing. The amount of VMs that will be operable in the portal can be configured within the limit of your purchased license. To configure licensing, select the subscription and click the **Configure licensing** button on the main panel of the web portal. Then select the VMs and click **Done**:

Con	figure licensin	g			×
	Name	Status	Resource Group	Location	Size
	qwerty	Running	ApplianceRG	eastus	Standard_D
	RouterVM	Stopped (deallocated)	) ApplianceRG	eastus	Standard_B
	ubuntu19	Running	ApplianceRG	eastus	Basic_A2
	NetworkTestVM3	Stopped	DRProtoScn1RG	centralus	Standard_B
_					
				Cancel	Done

### VM management

To do any action with Azure VM, open the **VM management** view on the left side of the **Azure management** plugin. Select the subscription and operable VM in the list from those you have configured in the license previously. Then select the required command on the subpanel:

Þ	Start 🕕 Stop	🕑 Restart 🛛 🔘 De	eallocate 🛛 🗹 Edit	× Delete	🕑 Edit Tags			
	Name 1	Status	Resource Group	Location	Size	OS	Disks	Public IP
	<b>å</b> aaaa	Stopped (deallocat	ApplianceRG	East US	Basic_A0	Windows		
	LndpointVM1	Stopped (deallocat	ApplianceRG	East US	Standard_DS1_v2	Windows		
	LndpointVM2	Stopped (deallocat	ApplianceRG	East US	Standard_DS1_v2	Windows		
2	A NetworkTest	Stopped	DRProtoScn1RG	Central US	Standard_B2s	Linux	1 (30 GiB)	23.99.133.103
	awerty	Running	ApplianceRG	East US	Standard_DS11_v2	Windows		
	RouterVM	Stopped (deallocat	ApplianceRG	East US	Standard_B2ms			13.92.89.90
	👗 ubuntu19	Running	ApplianceRG	East US	Basic_A2	Linux	1 (30 GiB)	52.170.191.77

### **Replication management**

To manage VM replications open the **Replication management** view on the left side of the **Azure management** plugin. Select the subscription and the replicated VM in the list. Then select the required command on the subpanel:

Acronis Cloud Manager	Azure 💽	All Replicated Items		() Refresh	+ Replicate Hyper-V VM	4 <u>9</u> @
HYPER-V MANAGMENT	VM Management	▶ Planned Failover → Failover	● Test Failover	Disable Replication		
	Replication management	Name 个	Health	Status	Active Location	
	Search Q	🗹 🔒 Empty	Critical	Protected	Primary	
	Pay-As-You-Go (5ninesof	Empty	Critical	Protection couldn't be disabled	Primary	
		Empty2	Normal	Protection couldn't be disabled	Primary	
		Empty4	Critical	Protected	Primary	
		Empty_Static	Critical	Initial replication is in progress	Primary	
		Test VM	Critical	Protected	Primary	
		Windows	Critical	Protection couldn't be enabled	Primary	

To replicate the new Hyper-V VM into Azure, select the subscription and click the **Replicate Hyper-V** VM button on the main panel. Select the source environment on the first screen of the **Replicate** Hyper-V VM wizard and click **Next**:

Replicate Hyper-V VM				
Source	Select your source environment			
Target	Recovery Vault * smith		~	
Virtual Machines	Hyper-V site * smith		~	
Properties				
Replication Settings				
		Cancel	Next	

### Select the target and click **Next**:

Replicate Hyper-V VM				
Source	Select your target settings for recovery			
Target	Storage account * cloudmigrationsa			
Virtual Machines	Configure Azure network settings now			
Properties	Virtual network * CloudMigration-vnet			
<ul> <li>Replication Settings</li> </ul>	Subnet * default			
	Cancel Next			

### Select the VMs and click **Next**:

Replicate Hyper-V \	/M	×
• Source	Select virtual machines you wa	nt to replicate
Target	Name	Generation
Virtual Machines	portal	1
Droportion	behost2019	2
• Flopelites	behost2016	2
Replication Settings	CS_VM1	2
		Cancel Next

### Configure the VM properties and click **Next**:

Replicate Hyper-V \	/M		×
Source	Configure propertie	s for selected virtual mach	hines
Target	Default OS type * Windows		~
Virtual Machines	Name	OS Type	OS Disk VHD Na
Properties	portal	Windows	cmportal
Replication Settings			
			Cancel Next

Configure replication settings and click **Done**:

Replicate Hyper-V VM					
• Source	Configure replication settings				
Target	Frequency at which changes will be sent to the Replica server: 5 minutes	~			
Virtual Machines	Coverage provided by additional recovery points (in hours 0-24) 2				
Properties	App-consistent snapshot frequency (in hours 0-24): 1				
Replication Settings	Initial replication start time Start replication immediately Start replication at:				
	Time 12:00	O			
	Cancel Next D	one			

## 15.3.5 Administration

Administration plugin has the same features as desktop console including all operations with tenants, users and roles within the role-based access model and jobs management.

Acronis Cloud Manager	Administration 🖪	Roles > Full Access	Cr Refresh 🛕 🕘
	👪 Users 🔝 Tenants	C Edit role X Remove role	
AZURE MANAGEMENT	🛔 Roles		
	Categories	General Name Full Access	
	Search Q	Description	
	Full Access	Owner	
		Resources type	
		Name	
		✓ Resource type: Storage	
		Edit	
		Read	
		Add	

Acronis Cloud Manager	Jobs								4 ©
HYPER-V MANAGMENT	Search	Q 3/17/2021	P	lugins: Any	Job Types: All jobs	~			
AZURE MANAGEMENT	Name	Description	User name	Status	Context object	Started $\downarrow$	Finished	Progress	
	Import VM from HyperV	Import VM from HyperV to	admin	Completed	HV01N1	31/3/2021	31/3/2021	100 %	
Ŧ	Create NewVm	Create NewVm	admin	Failed		31/3/2021	31/3/2021	100 %	
	Complete Migration	Complete Migration	admin	Completed		31/3/2021	31/3/2021	100 %	
	Logon	Authenticate custom user	admin	Completed		31/3/2021	31/3/2021	100 %	
	Planned Failover	Planned Failover	admin	Completed		31/3/2021	31/3/2021	100 %	
	Cleanup Test Failover	Cleanup Test Failover	admin	Completed		31/3/2021	31/3/2021	100 %	
	Create SmithCreateVM	Create SmithCreateVM	admin	Failed		31/3/2021	31/3/2021	100 %	
	Test Failover	Test Failover	admin	Completed		31/3/2021	31/3/2021	100 %	
	Replicate Hyper-V VM	Replicate Hyper-V virtual r	admin	Completed		31/3/2021	31/3/2021	100 %	
	Install Agent	Agent installation on 'host	admin	Completed	HOST4	31/3/2021	31/3/2021	100 %	
	Install Agent	Agent installation on 'host	admin	Completed	HOST3	31/3/2021	31/3/2021	100 %	
	Install Agent	Agent installation on 'host	admin	Completed	HOST2	31/3/2021	31/3/2021	100 %	

### 15.3.6 Usage

The **Usage** plugin in the web console has the same features as in desktop version to collect, display and export data on all resources allocated to tenants. Usage statistics is displayed on the **Usage** page of the portal:

Acronis Cloud Manager	Usage	ß										C Refresh	1 Export	<b>}</b>
HYPER-V MANAGMENT			Period: This	month 🗸										
	Search	Q	vCPU Summ	nary	c	>	vRAM Sum	mary		٥	Backu	p Storage Summary		٥
	← Datacenter A-tenant		Tenant	ResourcePool	vCPU, unit-days		Tenant	ResourcePool	vRAM, uni	t-days	Tenar	nt ResourcePool	Archives, Tb-day	s
- Mo monitoring	B-tenant C-tenant		A-tenant C-tenant	Resource Pool Resource Pool Resource Pool	0.148198449074074 0.359158773138888 0.0224752083287037		C-tenant A-tenant B-tenant	Resource Pool Resource Pool Resource Pool	281.91950 75.877605	5664296294 0221511064 592592589	B-teni	ant Resource Pool	4.101003240640	103
REPORTING														
USAGE														
			vNetwork S	ummary				٥	vStorage Su	immary				¢
			Tenant	ResourcePool	Network Type		vNet, unit-	days	Tenant	Resource	cePool	Storage Type	vStorage, Tb-day	s
<u>ک</u>			C-tenant	Resource Pool	Public		0.0227087	731435185	C-tenant	Resourc	ce Pool	VHDstore	0.459984722129	63
									B-tenant	Resourc	ce Pool	VHDstore	3.103003240648	14
			Usage Data											٥
			Tenant	Owner	ResourcePool	Na	me		Туре	Started		Finished	Value	
			B-tenant		Resource Pool	RP	VM2		vCpu	4/13/2022, 12:35	5:30 AM	4/13/2022, 4:08:54 AM	1	
			B-tenant		Resource Pool	ne	t2		vNet	4/13/2022. 12:35	5:16 AM		1	_
			A-tenant A-tenant		Resource Pool	ке VH	D1.vhdx	tuai Machine	vopu vDisk	4/12/2022, 11:40	3:50 AM		20	
			C-tenant		Resource Pool	RP	VM3		vRam	4/13/2022, 3:43:	22 AM		512	
			C-tenant		Resource Pool	VH	D3.vhdx		vDisk	4/13/2022, 3:42:	37 AM		20	

You can set the required period to collect data, reload the information using the **Refresh** button and export data into PDF or XLSX file formats using the **Export** button, located in the right-upper corner of the web page.

# **16 REST API**

On the Acronis Management server, open a web browser to https://localhost:16080/Swagger

### ) 📵 https://localhost:16080/swagger/

#### This will open the Acronis swagger API interface

🗲 🛞 🕕 https://localhost-16080/swagger/index.html#/Host/Host/ 🖉 🗸 🤤 Certificate error 🖒 🕼 Swagger Ul 🛛 🗙			- 四 × 命☆戀 🧐
⊖ swagger	Select a spec	v1 V	)
Acrons Cloud Manager (************************************			
Schumes HTTPS 🔽 -		Authorize	
ActiveDirectory		>	
AgentVersion		>	
Category		>	
Cluster		>	
Discovery		>	
EventAlarms		>	
GlobalSettings		>	

#### Navigate to authentication to generate an API key for testing

#### Select the /core/authentication/negotiate

#### Authentication

GET /Core/Authentication/Negotiate

### Execute the API call: select Try it out

Authentication	~
GET /Core/Authentication/Negotiate	<b>A</b>
Parameters	Try it out
No parameters	

Next, select **Execute** 

Authentication		
GET /Core/Authenticat:	on/Negotiate	
Parameters		C:
No parameters		
	Execute	Clear
Responses		Response content type application/json
Cond.		

Copy generated access token without the quotes:

Curl								
curl -X GET "https://localhost:16080/Core/Authentication/Negotiate" -H "accept: application/json" -H "Authorization: Bearer eyabbciolJUZ:INHISIARSCCIChEPAC39.eyJoeHBAC18v2NoZMhcy36Hkrzb2P4La9y5y32g9yBALL2ALL2LEMBGARE5L2NSYALtcy50HYLIJoicne9iIixic3ViIjoiNhEZ2j112G7xYMFINGZH01iYzF1ZDdHND12NG2HkF1iCJqdGk 1011yB01Xm7ZSC0YHEXLTM2Dkt/ThNNiADZ30HkrzbXEZNIJALCDpXZDiOjEINDg5NTBH&2U5Lm512LIGHT0CDk1NTA2NSv1ZXhvTjoxNTDxND2HM1LCDpc3HiOiJodEkwczovLyoGHTvdDALLCJhdMDiOIJOdEkwczovLyoGHTvdDALLCJhdMDiOIJOdEkwczovLyoGHTvdDALLCJhdMDiOIJODEkwczovLyoGHTvdDALLCJhdMDiOIJOdEkwczovLyoGHTvdDALLCJhdMDiOIJODEkwczovLyoGHTvdDALLCJhdMDiOIJODEkwczovLyoGHTvdDALLCJhdMDiOIJODEkwc								
Request URI	L							
https://localhost:16080/Core/Authentication/Negotiate								
Server response								
Code	Details							
200	Response body							
	<pre>{ "Sid": "SBL", "S</pre>							
	Response headers							
	transfer-encoding: chunked content-type: apjication/json: charget=utf=8 www=multentLickt: MeyDiate oRswGaDACgEAoxIEEAEAAAA11zdAD7018AAAAA=							
Responses								
Code	Description							

### Browse back to top of the swagger API Screen and select Authorize

5nine Cloud Manager	
Snine Cloud Manager REST API Support - Website	<b>\</b>
Schemes	Authorize

Enter the access token into the Value field,

### Note

You will need to add the word *bearer* before the access token, using the above access token.

The example entry would look like this:

### Bearer

eyJhbGciOiJIUzI1NiIsInR5cCl6lkpXVCJ9.eyJodHRwOi8vc2NoZW1hcy54bWxzb2FwLm9yZy93cy8y MDA1LzA1L2lkZW50aXR5L2NsYWltcy9uYW1lljoicm9iliwic3ViljoiNmE2ZjI1ZGYxYWFiNGZhMDli YzFiZDdhMDI2NGZIMzIiLCJqdGkiOilyMDI3MTZhZS0wYWExLTQ4ODktYThhNi04ZDJmNzhkN2R hNjAiLCJpYXQiOjE1NDg5NTEwMzUsIm5iZil6MTU0ODk1MTAzNSwiZXhwljoxNTUxNTQzMDM1L CJpc3MiOiJodHRwczovLyo6MTYwODAiLCJhdWQiOiJodHRwczovLyo6MTYwODAifQ.HPlklCiWKU WL38fRZzDI7rlc\_Qp1\_e8R\_V3HmfHB7sw

Available authorizations	×
Bearer (apiKey)	
Name: Authorization In: header	
value: Bearer eyJhbGciOiJIUzI1N ×	
Authorize Close	

Select **Authorize**, at this point, you should be authenticated to the API, You can now run and test other fuctions of the API. For more details about the API including examples please review https://www.acronis.com/en-us/support/.

# **17 Support information**

To ease the communication process with Acronis technical support in the case of any questions regarding product function or if an investigation is required, automatic support information collection of logs is available in the Acronis Cloud Manager console. To get the support information archive, go to the **Home** tab – **Info** – **Export log files for support**. You will be offered to save the archive either directly on your desktop (by default) or any other place of your choice:



Please attach the collected archive to your request or send it to <u>5ninesupport@acronis.com</u> or the Acronis representative that you are in contact with.

Join our Acronis support community at https://www.acronis.com/en-us/support/5nine/cloudmanager/ where you can:

- View the latest knowledge base articles, guides, release notes and more!
- Download the latest product releases and updates!
- Suggest new product ideas as well as commenting and voting on existing ideas!
- Chat directly to our support team with our new live chat system!
- Submit support requests and keep track of existing requests!

# **18 Uninstalling Acronis Cloud Manager**

1. To uninstall Acronis Cloud Manager, you can use the same bootstrap application:



2. Select the component you need to uninstall and click on it to run uninstallation process.

Or you can open the **Start** menu, go to **Control Panel > Add or Remove Programs**, choose Acronis Cloud Manager components you want to uninstall and click **Uninstall**.

Programs and Features						- 0	×
← → < ↑ 🖸 > Control Panel > Programs > Programs and Features v 🖏							, p
<ul> <li>Programs and reatures</li> <li>         →          →               Control Face Home      </li> <li>         View installed updates         </li> <li>             Turn Windows features on or off             Install a program from the             network         </li> </ul>	Panel  → Programs  → Programs and Features Uninstall or change a program To uninstall a program, select it from the list and then Organize  ✓ Uninstall Repair Name Uninstall this program. ( Acronis Cloud Manager Console ( Acronis Cloud Manager Console ( Acronis Cloud Manager Management Service ( Acronis Cloud Manager Management Service ( Acronis Cloud Manager Console ( Acronis Cloud Manager Console ( Acronis Cloud Manager Management Service ( Acronis Cloud Manager Management Manager Manager Manager Manager ( Acronis Cloud Manager Manager Manager ( Acronis Cloud Ma	click Uninstall, Change, or Repair Publisher Acronis Microsoft Corporation Microsoft Corporation	Installed On 6/7/2022 6/7/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 5/15/2022 3/3/2022 3/3/2022 3/3/2022 3/3/2022 5/15/2022	Size 368 MB 729 MB 530 MB 11.0 MB 11.1 MB 9.71 MB 9.71 MB 9.73 GB 17.1 MB 23.2 MB 20.4 MB 19.1 MB 1.75 MB	Version 6.0.22139.106 6.0.22139.106 1.35.0 15.0.200.5 102.0.5005.63 2.3.28307 17.7.2.1 18.5.0.0 11.4.7462.6 15.0.4013.40 15.0.2000.5 15.0.18404.0 15.0.2000.5 15.0.18404.0 12.0.40664.0 14.14.26429.4 14.14.26429.4 15.0.20717 15.0.2000.5	Search Programs and Features	
	YubiKey Smart Card Minidriver x64      Acronis Product version: 6.0.22139.106     Size: 368 MB	Yubico AB	3/8/2022	1.31 MB	4.1.1.210		

Repeat this procedure on every machine where the Acronis Cloud Manager components are installed.

### Note

Acronis Cloud Manager database and its data is retained until you manually remove the database.

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