# Deploying Actifio Resiliency Director in the Microsoft Azure Cloud



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## Preface

The information in this guide is intended for users who are configuring Actifio Resiliency Director for Microsoft Azure cloud.

Once you have finished configuring Actifio Resiliency Director, consult the Resiliency Director online help. It provides detailed instructions on using Actifio Resiliency Director.

#### The ActifioNOW Customer Portal

From the customer portal you can obtain detailed reports about your appliance, as well as search the portal's knowledge base for answers to specific questions.

To log into the ActifioNOW customer portal:

- 1. Go to: https://now.actifio.com
- 2. When prompted, enter the user name and password you received after registering for Actifio Resiliency Director for Microsoft Azure cloud.

## 1 Introduction

Actific Resiliency Director (RD) is an orchestration product that is used to automate disaster recovery for environments using Actific appliances for backup and replication to a disaster recovery (DR) site or Cloud. RD co-ordinates with the Actific appliances to automate the tasks of recovering VMs, physical servers, and their data in the event of a site-wide outage or disaster at the production site or cloud region. RD allows users to pre-configure the most manual or tedious aspects of the recovery, allowing for one-step recovery of all the in-scope servers and data in a repeatable, reliable, and predictable fashion.

Resiliency Director (RD) Cloud Recovery is a single instance of Resiliency Director that allows enterprises to recover their VMs, physical servers, System State applications, filesystems, and database applications in the cloud environment.

To recover VMs and applications on Microsoft Azure cloud, you must add an instance of Resiliency Director Cloud Recovery in your Azure account as a new virtual machine.

#### Recovery to cloud

- RD runs in a single cloud instance called RD Cloud, that is used for all configuration and recovery tasks.
- RD Cloud communicates with the AGM managing the Actifio appliances in the production environment but does not need to communicate directly with the source-side appliances.
- RD Cloud initiates recoveries on Actifio appliances in the destination cloud. These appliances may be persistent and hold the replicated data that will be used during recovery, or provisioned as-needed, and retrieve data from the cloud-provided object storage.

## 2 Configuring the Actifio Resiliency Director VM

This section assumes that you have a valid Microsoft<sup>®</sup> Azure Cloud account, and are familiar with basic Azure Cloud processes and procedures. It has the following topics:

- CPU and Memory Requirements on page 3
- Uploading the VHD File Using SAS URL on page 4
- Configuring the Resiliency Director Virtual Machine on page 10
- Required Ports on page 19

### **CPU and Memory Requirements**

The following are the CPU and Memory requirements for each Actifio Resiliency Director virtual machine.

- For less than 100 VMs recovery
  - o Core (vCPUs): 2
  - o RAM: 8 GB
  - o Base Partition Size: 49 GB
  - o VM size: D2s\_v3
- For 100 and more VMs recovery
  - o Core (vCPUs): 4
  - o RAM: 16 GB
  - o Base Partition Size: 49 GB
  - o VM size: B4ms

### Uploading the VHD File Using SAS URL

**Note:** Your Actific representative will share the SAS URL, which is required to upload the Resiliency Director image to the Microsoft Azure cloud.

To upload the VHD file using SAS URL:

- 1. Log into your Microsoft Azure portal.
- 2. From Azure Services, click Storage accounts.

≡ Microsoft A:	ure $P$ Search res	ources, service	s, and docs (G+/)		G 🗘 🔅	? 🙂	
Azure ser Create a resource Function Ap	vices Storage accounts → More services	Virtual machines	App Services	SQL databases	Azure Database for PostgreS	Zure Cosmos DB	Kubernetes services
Navigate Subsi Dash	riptions	(*)	Resource groups		All resource	S	

3. From Storage accounts page, click +Add. The Create Storage account page appears.

≡ Microsoft Azure	𝒫 Search resources, service	es, and docs (G+/)	D G	P 👳	? 🙂		
Home >							
Storage account	S x²						×
🕂 Add 🕸 Manage view	✓ ♥ Refresh  ⊈ Export	t to CSV 🕴 🖉 Assign ta	gs 📋 Delete	💙 Feedback			
Filter by name	Subscription == all	Resource group == all 🗙	Location ==	all $ imes$ $+_{\nabla}$ A	Add filter		
Showing 0 to 0 of 0 records.					[	No grouping	$\sim$
Name 1	Type ↑↓	Kind ↑↓	Resource gr	oup ↑↓ Loc	ation $\uparrow_{\downarrow}$	Subscription	↑↓
Cre da Bi	sate a storage account to store L Ita, use a NoSQL data store, defi ob storage account and the hot	No storage accou p to 500T8 of data in the clo ne and use queues for mess or cool access tiers to optim access Learn m Create storag	ints to display nud. Use a general- age processing, and ze your costs based ad. ore ce e account	ourpose storage a l set up file shares I on how frequent	ccount to store in the cloud. U ly your object o	r object ise the data is	

- 4. In the **Basics** tab, configure the following:
  - o Under Project details, select the subscription type from the Subscription drop-down list.
  - o Either select an existing resource group from the **Resource group** drop-down list or click the **Create new** option to create a new resource group.
  - o Under Instance details, enter a name for the storage account in the Storage account name field.
  - o Leave the remaining settings to the default and move to next pages.

	${\cal P}$ Search resources, services, and docs (G+/)		Ŗ	¢1	٢	?	٢		
Home > Storage accounts >	>								
Create storage a	ccount								>
Paulas Naturalias D	Not and the Advantation Devices a sector								
Basics Networking L	ata protection Advanced lags Review + create								
Azure Storage is a Microsoft- redundant. Azure Storage incl Tables. The cost of your storag Learn more about Azure stora	managed service providing cloud storage that is highly available, secure. ludes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, A ge account depends on the usage and the options you choose below. age accounts C <sup>4</sup>	durable, s zure Queu	calable Jes, and	, and d Azure					
Project details									
Select the subscription to man your resources.	nage deployed resources and costs. Use resource groups like folders to o	rganize ar	nd mar	age all					
Subscription *				$\sim$					
Resource group *	(New) Engresourcegroup			$\sim$	٦				
	Create new				_				
Instance details									
The default deployment mode the classic deployment mode	el is Resource Manager, which supports the latest Azure features. You ma l instead. Choose classic deployment model	y choose	to depl	oy usin	g				
Storage account name * 🕡	rdnewstorage			~	-				
Location *	(US) East US			~	7				
Performance (i)	Standard      Premium				_				
Account kind ①	StorageV2 (general purpose v2)			$\sim$					
Replication (i)	Read-access geo-redundant storage (RA-GRS)			$\sim$					
Access tier (default) 🕕	🔘 Cool 💿 Hot								
Review + create	< Previous Next : Networking >								

5. In the **Networking**, **Data Protection**, **Advanced**, **Tags** pages, leave the settings to the default and click **Create** in the **Review + Create** page. Your storage account gets created.

6. Now, go to the created storage account and select **Containers**.



- 7. From **Containers** page, click **+Container**.
- 8. In the **New Container** window, enter a name for the container in the **Name** field.
- 9. From **Public access level** drop-down, select Private (no anonymous access) and click **Create**.

😑 Microsoft Azure 🖉 🔎	Search resources, services, and docs (G	+/) 🗵 🕞 (	₽ ©	? ©	
Home > The storage   Cor	ntainers 🖈			New container	×
Storage account	+ Container 🔒 Change acce	ss level 💍 Refresh 🛛 🗐 Delete		Name * vhds	~
Cverview	$\wp$ Search containers by prefix			Public access level ①	
Activity log	Name	Last modified	Public	Private (no anonymous access)	$\sim$
Access control (IAM)	You don't have any containers yet	t. Click '+ Container' to get started.		✓ Advanced	
Tags					
Diagnose and solve problems					
💕 Data transfer					
🗲 Events					
🔛 Storage Explorer (preview)					
Settings					
📍 Access keys					
🌻 Geo-replication					
S CORS				Create Discard	

Once the storage account and container accounts are created, you can now upload the image using the SAS URL.

10. Now, open azure cloud shell from azure portal (click on ">\_" top right below address bar).

11. You will be prompted to chose bash for Linux or Powershell for Windows.



**Note:** You may also need to approve creating and mounting a small amount of storage for the cloud shell to use.



12. Execute the following command from the shell to copy the image to your container.

az storage blob copy start --source-uri "<SAS URL>" --destination-container <container\_name> --destination-blob <vhd name, something to uniquely identify the vhd. Must have .vhd extension> --account-name <storage\_account\_name>

For example,

```
az storage blob copy start --source-uri "https://md-z2wgw4kfw4tl.blob.core.windows.net/
gfz5z1mxlmmr/abcd?sv=2017-04-17&sr=b&si=e3687b22-b884-48cc-a0fc-
c3855e2bcb8e&sig=zUVc04hJofguUErJn2tI7KMSeeXBqzzo%2FwyRT5JQAbs%3D" --destination-
container vhds --destination-blob actifio_rd.vhd --account-name rdnewstorage
```

**Note:** The URL mentioned in above example is a sample URL. Please copy and paste the SAS URL from the chuckwagon mentioned in the cloud manifest file.

13. You will see a JSON indication of status as below if your job is pending.



Copying the image may take a while. You can also track its progress from the created container page. You will see the message "**This blob has a pending copy operation and cannot be deleted or edited**" if the job is in progress. Once the copy is completed, this message gets turned off.

- 14. Next, type disks in the Search box and select **Disks**.
- 15. From the **Disks** page, click **+Add**. The **Create a managed disk** page appears.

= Microsoft Azure 🔎 Se	arch resources, services, and docs (G+/)		) Q	۲	
Home > Disks >					
Create a managed di	sk				
Select the subscription to manage dep your resources.	loyed resources and costs. Use resource groups like folders to organize and man	age all			
Subscription * ①		$\sim$			
Resource group * ①	CloudMobility Create new	~			
Disk details					
Disk name * 🛈	rdimagedisk	~			
Region * ①	(US) East US 2	$\sim$			
Availability zone	None	$\sim$			
Source type ①	Storage blob	$\sim$			
Source subscription		$\sim$			
Source blob * ①	https://rdtestdeploy.blob.core.windows.net/rdtestvhd/rd-sp-10-0-2.vhd Browse	× .			
OS type ①	(Windows Linux None (data disk))				
VM generation ③	Gen 1 Gen 2				
Size * 💿	50 GiB Premium SSD Change size				
Review + create <	Previous Next : Encryption >				

- 16. In the **Basics** tab, configure the following:
  - o Under Project details, select the subscription type from the Subscription drop-down list.
  - o Either select an existing resource group from the **Resource group** drop-down list or click the **Create new** option to create a new resource group.
  - o Under **Disk details**, enter a name for the disk in the **Disk name** field.
  - o Select the region from the **Region** drop-down list.
  - o Select the Source type as Storage blob.

o In the **Source blob**, click **Browse** to select the VHD that you uploaded to your container.

≡ Microsoft Azure				D 6 0 0		3-
Home > Disks > Create a r	nanaged disk > Storage accounts > Containers >			nan inde dates dates		
rdtestvhd Container						
🕂 Upload 💍 Refresh						
Authentication method: Ac Location: rdtestvhd	cess key (Switch to Azure AD User Account)					
Search blobs by prefix (case	-sensitive)			Show delet	ed blobs	
+v Add filter						
Name		Modified	Access tier	Blob type	Size	Lease state
rd-sp-10-0-2.vhd		8/13/2020, 12:48:28 PM		Page blob	50 GiB	Available
Select						

- o Select the OS type as Linux and VM generation as Gen1.
- o Click the **Change size** option and specify the disk size as 50 GB.
- o Leave the remaining settings to the default and move to next pages.
- o In the **Encryption** and **Tags** pages, leave the settings to the default and click **Create** in the **Review + Create** page. Your disk gets created.

### Configuring the Resiliency Director Virtual Machine

- 1. Log into your Microsoft Azure portal.
- 2. From Azure services, select Images.

Microsoft Azure	٩	Search resources, services, and	docs (G+/)							D 🗣	¢.	۲	?	٢
	Azure Cre rest	e services	Virtual machines	(is) Resource groups	Azure AD Risky sign-ins	All	resources	Contract Con	Storage	SQL data	bases	More	→ servic	ces
	Recer	nt resources			*					Level Mire				
	Name				Type					Last Vie	wed			
1	Navig	gate												
	Ŷ	Subscriptions		Resource groups			All resource	5		Dashboard				
7	Tools													
	101	Microsoft Learn 2" Learn Azure with free online training from Microsoft	3	Azure Monitor Monitor your apps infrastructure	and	0	Security Ce Secure your infrastructu	nter r apps and re	\$	Cost Manage Analyze and o cloud spend t	ment optimize or free	your		

3. From **Images** page, select the required RD image from the images list. If you have a lot of images, use the filter to narrow the display to the Actifio image.

	.∞ Search resources, services, and docs (G+/)	×	Ŗ	Ø	۲	?	٢	
Home > Images & Actifio								×
+ Add ( Manage view rd-10-0-2	∨     ○     Refresh     ↓     Export to CSV     ○     Assign tags     ○     Feedback       Subscription == all     ○     Resource group == all     ○     Location == all     ↓     ↓						No grauning	×
Name ↑↓	Source ↑↓ OS type ↑↓ Resource group ↑↓			Loc	ation	†↓	rao grouping	v
🔲 👰 rd-10-0-2-134-actific	rd-10-0-2-1 Linux Engineering-East-1			Eas	t US			
< Previous Page 1	v of 1 Next >							

The selected image page displays the detailed information.

4. Click Create VM.



The Create a Virtual machine page appears.

5. In the **Basics** tab, configure the following:

Microsoft Azure	,O. Search resources, services, and docs (G+/)	📃 🛛 🗣 🖓
Home > Images > rd-10-0-2-134-a	ctifio >	
Create a virtual mach	ine	
A Changing Basic options may reset	elections you have made. Review all options prior to creating the virtual machine.	
Basics Disks Networking	Management Advanced Tags Review + create	
Create a virtual machine that runs Line image, Complete the Basics tab then P for full customization. Learn more C	ax or Windows. Select an image from Azure marketplace or use your own customized leview + create to provision a virtual machine with default parameters or review each tab	
Project details		
Select the subscription to manage dep your resources.	loyed resources and costs. Use resource groups like folders to organize and manage all	
Subscription ©	V.	
Resource group * 💿	Engineering-East-1	
	Create new	
Instance details	A resource group is a container that holds related	
Virtual machine name * ①	resources for an Azure solution.	
Region ①	Name *	
Availability options	×	
Image * 💿	OK Cancel	
	An exact an in barrier and his trace modes	
Azure Spot instance ①	VYes 💿 No	
Size * 🛈	Standard_B4ms - 4 vcpus, 16 GiB memory (US\$121.18/month)	
	Select size	
Administrator account		
Authentication type ①	SSH public key      Password	
Review + create	Previous Next : Disks >	

- o Under **Project Details**, either select an existing resource group from the **Resource group** drop-down list or click the **Create new** option to create a new resource group.
- o Under Instance details, enter the name for the virtual machine in the Virtual machine name field.

	AzureRDsetup	$\checkmark$
Region ①	(US) East US	$\sim$
Availability options	No infrastructure redundancy required	$\sim$
Image * 🕕	rd-10-0-2-134-actifio	~
Azure Spot instance ①		
Size * ①	Standard_B4ms - 4 vcpus, 16 Gib memory (US\$121.18/month)	
Size * 🕕	Select size	
Size * ① Administrator account	Standard_B4ms - 4 vcpus, 16 Gib memory (US\$121.18/month) Select size	

o Click the **Select size** option to choose CPU and RAM requirements. The **Select a VM size** page appears.

elect a vivi s	ize							
Search by VM size.	Display cost :	Monthly vCPU:	s : All RAM (GiB) : Al	I <sup>+</sup> <sub>∀</sub> Add filter				
Most used sizes by A	zure users							
Showing 12 of 314 VM s	sizes.   Subscription:		Region: East US	Current size: Standard_B	4ms   Image: rd-10-0	0-2-134-actifio   Learn mo	re about VM sizes	
VM Size ↑↓	Family ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Temp storage (GiB) $\uparrow \downarrow$	Premium disk 斗	Cost/month
DS1_v2 📈	General purpose	1	3.5	4	3200	7	Supported	US\$53.29
D2s_v3 🛹	General purpose	2	8	4	3200	16	Supported	US\$70.08
B2s 🔊	General purpose	2	4	4	1280	8	Supported	US\$30.37
B1s 🛹	General purpose	1	1	2	320	4	Supported	US\$7.59
B2ms 📈	General purpose	2	8	4	1920	16	Supported	US\$60.74
B1ms 🛹	General purpose	1	2	2	640	4	Supported	US\$15.11
B1ls 📈	General purpose	1	0.5	2	160	4	Supported	US\$3.80
DS2_v2 📈	General purpose	2	7	8	6400	14	Supported	US\$106.58
B4ms 📌	General purpose	4	16	8	2880	32	Supported	US\$121.18
D4s_v3 📈	General purpose	4	16	8	6400	32	Supported	US\$140.16
DS3_v2 📈	General purpose	4	14	16	12800	28	Supported	US\$213.89
DRe v2 x2	General numero	۵	27	16	13800	6.4	Sunnartad	1104200 52

- o From Select a VM size page, select the required VM size as below:
  - o To recover less than 100 VMs, select the VM size of D2s\_v3 (2 vCPUs, 8 GB RAM).
  - o To recover 100 and more VMs, select the VM size of **B4ms** (4 vCPUs, 16 GB RAM).

- o Under Administrator account, select the authentication type as SSH public key or Password.
- o If **SSH public key** type is selected, enter the **Username** and **Key pair** name, and select the appropriate key source option from the **SSH public key source** drop-down list.

Authentication type ①	SSH public key O Password	
	Azure now automatically generates an SSH ke store it for future use. It is a fast, simple, and virtual machine.	y pair for you and allows you to secure way to connect to your
Username * 🕕	AzureUser	×
Username * ① SSH public key source	AzureUser Generate new key pair	✓ ✓

o If **Password** is selected, provide a username and password.

**Note:** The password must be a minimum of 12 characters and must have 3 of the following: 1 lower case character, 1 upper case character, 1 number, and 1 special character.

Administrator account		
Authentication type ①	SSH public key 💿 Password	
Username * 🕕	AzureUser	~
Password * 🕕	•••••	~
Confirm password *	•••••	✓

 Under Inbound Rules, select None for Public inbound ports. Note that you can enter the inbound ports at the later steps from the VM's Networking tab. Refer Required Ports section.



- o Leave the remaining settings default.
- o Click Next: Disks. The Disks tab appears.

#### 6. In the **Disks** tab, configure the following:

😑 Microsoft Azure 🔎 Se	earch resources, services, and docs (G+/)	Σ	Q	۵ 🗘
Home > Images > rd-10-0-2-134-a Create a virtual mach	actifio > nine			
Basics <b>Disks</b> Networking Azure VMs have one operating system The size of the VM determines the typ	Management Advanced Tags Review + create n disk and a temporary disk for short-term storage. You can attach additional data disks. e of storage you can use and the number of data disks allowed. Learn more			
OS disk type *	Premium SSD			
Encryption type *	(Default) Encryption at-rest with a platform-managed key			
Enable Ultra Disk compatibility 🛈	Yes (a) No Ultra Disk compatibility is not available for this VM size and location.			
Data disks				
You can add and configure additional temporary disk.	data disks for your virtual machine or attach existing disks. This VM also comes with a			
LUN Name	Size (GIB) Disk type Host caching			
Create and attach a new disk Atta	ach an existing disk			
$\checkmark$ Advanced				
· · · · · · · · · · · · · · · · · · ·				
Review + create <	Previous Next : Networking >			
o Select	the disk type <b>Standard HDD</b> or other disk type from the <b>OS disk t</b>	<b>ype</b> dr	op-	down

o Leave the Encryption type to the default.

list.

o Click Next: Networking. The Networking tab appears.

#### 7. In **Networking** tab, configure the following:

= Microsoft Azure	,P Search resources, services, and docs (G+/)	2 🗣
Home > Images > rd-10-0-2-134-acti	ifio >	
Create a virtual maching	ne	
Basics Disks Networking Ma	anagement Advanced Tags Review + create	
Define network connectivity for your virtu ports, inbound and outbound connectivi Learn more	ual machine by configuring network interface card (NIC) settings. You can control ty with security group rules, or place behind an existing load balancing solution.	
Network interface		
When creating a virtual machine, a netwo	ork interface will be created for you.	
Virtual network * ①	AzureEngineering-1	
	Create new	
Subnet * 💿	Eng-East-1 (172.23.32.0/22)	
	manage subres configuration	
Public IP	Create new	
NIC network security group 💿	None     Basic     Advanced	
	1 The selected subnet: "Eng-East-1 (172.2.3.32.0/22)" is already associated to a network security group: "Eng-internalAccess". We recommend managing connectivity to this virtual machine via the existing network security group instead of creating a new one here.	
Accelerated networking	On Off	
	The selected image does not support accelerated networking.	
Load balancing		
You can place this virtual machine in the	backend pool of an existing Azure load balancing solution. Learn more	
Place this virtual machine behind an existing load balancing solution?	🔿 Yes 💿 No	
Review + create < Pre	evious Next : Management >	

- o Under **Network Interface**, either select an existing virtual network from the **Virtual network** drop-down list or click the **Create new** option to create a new virtual network.
- o Select the required **Subnet** from the drop-down list.
- Optional) Select a public IP address from the **Public IP** drop-down list if you want to use an existing public IP address or create a new public IP address by using the **Create new** option.
- o (Optional) Select **None**, **Basic**, or **Advanced** from the NIC network security group selections.

**Note:** If you want to create a new customized network security group, select the **Advanced** option and then click **Create new** from Configure Network Security group.3

- o Leave the remaining settings to the default.
- o Click Next: Management. The Management tab appears.

8. In the **Management** tab, configure the following:

Microsoft Azure	∞ Search resources, services, and docs (G+/)	2 G
Home > Images > rd-10-0-2-134-actifi	io >	
Create a virtual machin	le la	
Basics Disks Networking Mar	nagement Advanced Tags Review + create	
Configure monitoring and management of	ptions for your VM.	
Azure Security Center		
Azure Security Center provides unified security Learn more	urity management and advanced threat protection across hybrid cloud workloads.	
<ul> <li>Your subscription is protected by Azu</li> </ul>	ure Security Center basic plan.	
Monitoring		
Boot diagnostics ①	● On ◯ Off	
OS guest diagnostics ①	On () Off	
Diagnostics storage account * 🛈	actificiting V Create new	
Identity		
System assigned managed identity $\bigcirc$	On () Off	
Azure Active Directory		
Login with AAD credentials (Preview)	○ on ④ off	
This image does not support Login wit	th AAD.	
Auto-shutdown		
Enable auto-shutdown ①	O on () Off	
Review + create < Previ	vious Next : Advanced >	

- Under Monitoring, either select an existing storage account from the Diagnostic storage account drop-down list, or click the Create new option to create a new diagnostics storage account.
- o Leave the remaining settings to the default.
- o Click Next: Advanced. The Advanced tab appears.

9. In the **Advanced** tab, leave the settings to the default and click **Next: Tags**. The **Tags** tab appears.

Microsoft Azure	,P Search resources, services, and docs (G+/)	E 6
Home > Images > rd-10-0-2-134-actifi	io >	
Create a virtual machin	ne	
Basics Disks Networking Ma	nagement Advanced Tags Review + create	
Add additional configuration, agents, scrip	pts or applications via virtual machine extensions or cloud-init.	
Extensions		
Extensions provide post-deployment conf	liguration and automation.	
Extensions	Select an extension to install	
Custom data		
Pass a script, configuration file, or other da the VM in a known location. Learn more a	ata into the virtual machine while it is being provisioned. The data will be saved on bout custom data for VMs C <sup>2</sup>	
Custom data		
Custom data on the selected image w	ill be processed by cloud-init. Learn more about custom data and cloud init C <sup>2</sup>	
	un de la reserve d'Arena vite en la concerna de la	
Host		
Azure Dedicated Hosts allow you to provis Azure subscription. A dedicated host give	sion and manage a physical server within our data centers that are dedicated to your s you assurance that only VMs from your subscription are on the host, flexibility to	
choose VMs from your subscription that w	vill be provisioned on the host, and the control of platform maintenance at the level	
Hart arous O	No kest envir ferind	
Host group	No nos group round	
Proximity placement group		
Proximity placement groups allow you to	group Azure resources physically closer together in the same region. Learn more	
Review + create < Prev	vlous Next : Tags >	

#### 10. In the **Tags** tab, configure the following:

Home > Images > rd-10-0-2-134-actifio >         Create a virtual machine         Basics Disks Networking Management Advanced Tags Review + create         Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. Learn more about tags of         Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.         Name O       Value O         project       : rd         contact       : bikash         All resources       :         owner       : bikash         All resources       :         iiii : iiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	= Microso	ít Azure			[	D Search resources	, services, and d	ocs (G+/
Basics       Disks       Networking       Management       Advanced       Tags       Review + create         Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. Learn more about tags of       Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.         Name O       Value O       Resource         project       :       :       nd         contact       :       biksah       All resources       :         owner       :       biksah       All resources       :       :         [::::::::::::::::::::::::::::::::::::	Home > Images	> rd-10-0-2-134-actifi	0)					
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Review + create < Previous Next : Review + create >								

- o (Optional) Create a tag for the VM that is easy to remember and identify.
- o Click **Next: Review + create**. The **Review + create** tab appears with all configured VM details.

11. In the **Review+create** tab, review the VM details. If the selections and settings are correct, click **Create**.

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Home > Images > rd-10-0-2-134	I-actifio >	
Create a virtual mad	chine	
Validation passed		
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rd-10-0-2-134-actifio Image	Standard B4ms 4 vcpus, 16 GIB memory	
Basics		
Subscription		
Resource group	Engineering-East-1	
Virtual machine name	azurerd	
Region	East US	
Availability options	No infrastructure redundancy required	
Image	rd-10-0-2-134-actifio	
Size	Standard B4ms (4 vcpus, 16 GiB memory)	
Authentication type	SSH public key	
Username	AzureUser	
Key pair name	azurerd_key	
Azure Spot	No	
Disks		
OS disk type	Premium SSD	
Use managed disks	Yes	
Use ephemeral OS disk	No	
Networking		
Virtual network	AzureEngineering-1	
Subnet	Eng-East-1 (172.23.32.0/22)	
Public IP	(new) azurerd-ip	
NIC network security group	None	
* l + +		
Create	< Previous Next > Download a template for automation	

#### The deployment status page appears.

Home > CreateVm-rd-10-0- Deployment P Search (Cmd+/) <	2-134-actifio-202006	24115144   Over	view 🖉		×
Overview     Inputs     Outputs     Outputs     Template	Your deployment     Deployment mame: Create     Subscription:     Resource group: Engineeri     Deployment details (Down	nt is underway Vm-rd-10-0-2-134-actifio-202 ng-East-1	200624115. Start time: 6/24/ Correlation ID: 3	2020, 12:10:58 PM 8823625-0519-4279-8dc1-6af33921ef42	Security Center Security Center Security Center >
	Resource No results.	Туре	Status	Operation details	Free Microsoft tutorials Start learning today > Work with an expert Azure experts are service provider partners who can help manage your assets on Azure and be your frust line of support. Find an Azure expert >

You will see the deployment confirmation page once deployment is complete.

### **Required Ports**

Following are the required inbound and outbound ports of a RD virtual machine. You can set the ports while creating a VM or from the VM's networking tab.

Туре	Protocol	Port Range	Source
SSH	ТСР	22	Anywhere
SSH	TCP	26	Anywhere
HTTP	ТСР	80	Anywhere
HTTPS	ТСР	443	Anywhere

#### Table 1: Inbound Ports

#### Table 2: Outbound Ports

Туре	Protocol	Port Range	Target
SSH	ТСР	22	Sky Appliance
SSH	ТСР	26	Sky Appliance
HTTPS	TCP	443	Sky Appliance, Azure API Endpoint
Adhd tunnel. TCP	ТСР	5103	Sky Appliance

Inbound and outbound ports are set from the virtual machine's Networking page.

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Bikashrdsp2-134b	uild   Networ	king						×
P Search (Cmd+/)	∯ Attach netw	ork interface d <sup>2</sup> Detach network interface						
Overview	bikashrdsp2-1	34build868						
<ul> <li>Activity log</li> </ul>	IP configuration	0						
Access control (IAM)	ipconfig1 (Prim	anj 🗸						
🗣 Tags	Network Int	erface: bikashrdsp2-134build868	ive security rules	Topology				
Diagnose and solve problems	Virtual network/s	ubnet: AzureEngineering-1/Eng-East-1 NIC	Public IP: 52.188.14.6	NIC Private IP: 172.23.32	48 Accelerated network	king: Disabled		
Settings								
Networking	Inbound port	Outbound port rules Application	security groups	Load balancing				
Ø Connect	Network security 1 sub	arity group Eng-InternalAccess (attached to si nets, 5 network interfaces	abnet: Eng-East-1)				Add inbound	i port rule
E Disks	Priority	Name	Port	Protocol	Source	Destination	Action	
Size	100	Allinternal	Arry	Any	192.168.0.0/16,172.16	Any	O Allow	
Security	65000	AllowVnetinBound	Any	Any	VirtualNetwork	VirtualNetwork	O Allow	
Advisor recommendations	65001	AllowAzureLoadBalancertriBound	Any	Any	AzureLoadBalancer	Any	O Allow	
Extensions	65500	DenyAllinBound	Any	Any	Any	Any	O Deny	
Continuous delivery								
and a second								
<ul> <li>Availability + scaling</li> </ul>								
Configuration								
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**Inbound Ports** 

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Bikashrdsp2-134b	uild   Networ	king						×
Cverview Activity log  Access control (IAM)	bikashrdsp2-1 IP configuration ipconfig1 (Prim	34build868 						
<ul> <li>Tags</li> <li>Diagnose and solve problems</li> </ul>	Network Int Virtual network/s	erface: bikashrdsp2-134build868 ( ubnet: AzureEngineering-1/Eng-East-1	ffective security rules NIC Public IP: <b>52.188.14.6</b>	Topology NIC Private IP: 172.23	32.48 Accelerated netv	vorking: Disabled		
Settings	Inbound port I Retwork sectors 1 sub	ules Outbound port rules Applica unity group Eng-InternalAccess (attached nets, 5 network interfaces	ation security groups to subnet: Eng-East-1}	Load balancing		(	Add outbound	port nule
Bisks	Priority	Name	Port	Protocol	Source	Destination	Action	
📮 Size	100	InternalOutbound	Any	Any	VirtualNetwork	192.168.0.0/16,172.16	O Allow	***
Security	65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	o Aline	
Advisor recommendations	65001	AllowinternetOutBound	Any	Any	Any	Internet	O Aliow	
Extensions	65500	DenyAllOutBound	Arry	Any	Any	Any	O Deny	
Continuous delivery								
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#### **Outbound Ports**

Once you set the ports, you are ready to use RD. See Accessing the Actifio Resiliency Director Cloud Recovery for details.

## **3** Configuring the Resiliency Director Cloud Recovery

When the Actific Resiliency Director virtual machine is ready, you can enter the virtual machine's IP in a browser and log in to the Resiliency Director configuration page.

To configure the Actifio Resiliency Director Cloud Recovery:

- 1. Select the RD VM from the list of available VMs.
- 2. Click **Overview** and the Public and Private IPs will be displayed.

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Bikashrdsp2-134bu Virtual machine      Search (Cmd+/) «	iild ダ ダ Connect ▷ Start で Restart □ Stop 窓 Capture 圖 Delete 心 Refresh	×							
Verview	Resource group (change) : Engineering-East-1	Operating system : Linux (centos 6)							
Activity log	Status : Running	Size : Standard B4ms (4 vcpus, 16 GiB memory)							
Access control (IAM)	Location : East US	Public IP address : 52.188.14.62							
Tags	Subscription (change) :	Colocation status : N/A							
P Diagnose and solve problems	Subscription ID :	Virtual network/subnet : AzureEngineering-1/Eng-East-1							
Disglioze and some problems		DNS name : Configure							
Settings	Tags (change) : project : rdcloud Name : bikashrdcloud134 Contact : bikas	h							
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Security	Computer name bikash®Dazura134	Public IP address 52 188 14 62							
Advisor recommendations	Operating system Linux (centos 6)	Public IP address (IPv6) -							
27 Extensions	SKU N/A	Private IP address 172 23 32 48							
	Publisher N/A	Private IP address (IPv6) -							
Continuous delivery	VM generation V1	Virtual network/subnet AzureEngineering-1/Eng-East-1							
Availability + scaling	Agent status Ready	DNS name Configure							
🚔 Configuration	Agent version 2.2.48.1								
🐁 Identity	Host ID None	Size							
Properties	Proximity placement group N/A	Size Standard B4ms							
A Locks		vCPUs 4							
Evport template	S Availability + scaling	RAM 16 GiB							
	Availability zone N/A								
Operations	Extensions	OS disk Bikashrdsp2-							
S Bastion	N/A	134build_disk1_04641ac56afd4d51ba21633881b6029d							
Q Auto-shutdown	2786	Azure disk encryption Enabled							
🔗 Backup		Ephemeral OS disk N/A							
Disaster recovery		Data disks 0							
- state recovery									

#### Actifio Resiliency Director Public IP

3. Open a web browser and enter the URL <a href="https://Actifio Resiliency Director IP Address">https://Actifio Resiliency Director IP Address</a>> to configure the Resiliency Director Configuration page.

Items marked with *are required.	
Appliance IP *	172.27.43.208
Appliance Name *	rdsystem01.test.dom
DNS Server	192.168.192.10,192.168.225.2
Subnet Mask *	255.255.252.0
Gateway*	172.27 40.1
NTP Server	172.29.11.179
Admin Password*	
TimeZone	(US & Canada) Eastern Time 🔻
RD Type	RD CloudRecovery
	Save

- 4. Change the network parameters to the following values:
  - o Enter/verify the static IP address in **Appliance IP**. This should match the private IP of the VM.
  - o Enter the name of RD VM name in Appliance Name.
  - o Enter the DNS Server IP address in **DNS Server**.
  - o Enter the Subnet Mask and Gateway.
  - o Enter the NTP server IP address in **NTP Server**.
  - o Set the administrator password in **Admin Password**. You will use this password to login to the user interface.

Note: You can change the admin password by using the resetuserpasswd command.

- o Select the time zone from TimeZone.
- o Select RD CloudRecovery from RD Type.
- 5. Click **Save**. The server reboots after setting the configuration.

**Note:** To modify the network parameters such as IP address, DNS Server, Gateway, Hostname of the Appliance, use configsystem command.

**Note:** For information on CLI commands, refer the Actifio Resiliency Director CLI guide.

## 4 Accessing the Actifio Resiliency Director Cloud Recovery

This chapter provides the details to log on to the Actifio Resiliency Director Cloud Recovery graphical user interface. You can login to the Actifio Resiliency Director Cloud Recovery graphical user interface using the Resiliency Director administrator credentials.

To access the Actifio Resiliency Director Cloud Recovery home screen:

1. Open a Web browser and use the URL https://<Actifio Resiliency Director IP Address> to access the Actifio Resiliency Director Cloud Recovery Login page.

**Note:** Use the IP address/hostname of the virtual machine where Resiliency Director Cloud Recovery is running.



#### Actifio Resiliency Director Cloud Recovery Login Screen

2. From the Login window, enter the user name as "admin" and the password used during the initial Resiliency Director deployment and installation, then Click **Log In**. The Actifio Resiliency Director Cloud Recovery home screen opens.

### Continue with Resiliency Director Configuration

Once successfully logged in, use the Resiliency Directory Online help for guidance on configuring and using Resiliency Director.

ġ	ctifio	Applicatio	on Grou	ps Recovery Plans	Connect	ions 🗸	Securit	y And Administratio	n.~							US/Eastern	1 admin 🤇	0
Ap	plication Gro	oup														+ ADD	Help About Release Notes	
Sea	ch by Name & Applian	ice .		۹													Download Logs	
0	NAME		•	CREATED ON	0	VM(S)	0	NON-VM(5)	0	VAPP(S)	0	APPLIANCE	0	ORGANIZATIONS	0	MODIFIED	DATE	-
	AGDBOnvault			05/23/2020 0	6:17:32		0		1		0	rdsource					05/23/2020 06:17	:32
	AGOnVault			05/23/2020 0	4:59:35		0		1		0	rdsource					05/23/2020 04:51	:35

#### Accessing Resiliency Director Online Help