**CITRIX**°

XenApp 7.5 and 7.6 and XenDesktop 7.5 and 7.6

# Deploy XenApp 7.5 and 7.6 and XenDesktop 7.5 and 7.6 with Amazon VPC

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# Introduction

This document describes setting up Citrix XenApp or XenDesktop with the Amazon Web Services (AWS) Virtual Private Cloud (VPC).

## Known issues

Amazon Web Services depreciated the ECU terminology and no longer lists this value for new instance types. However, Studio lists some new instance types for Memory Optimized and General purpose that display **2.5** in the ECU column. The **2.5** actually refers to the clock speed in GHZ for these instance types and not ECU. Refer to the Amazon Web Services website <u>https://aws.amazon.com/</u> for details on each instance type and its technical specification. [#496972]

## Requirements

To deploy a XenApp or XenDesktop 7.5 or 7.6 Site in an Amazon VPC, ensure that you complete the prerequisites and link AWS Marketplace AMIs to your account as follows.

## Prerequisites

Make sure you perform the following before you begin:

- Plan to take one day for the first-time implementation of the deployment.
- Have an AWS environment set up and running, with an active AWS account and preferably an AWS Identity and Access Management user account that can be used for this specific deployment.
- For this proof of concept (POC) deployment, the IAM user must have administrative rights to your AWS environment. For information about the rights you need, see the XenApp and XenDesktop topic <u>Prepare to Install</u>.
- Subscribe with your AWS account to the NetScaler VPX AMI located in AWS Marketplace.

### Link AWS Marketplace AMIs to your account

The CloudFormation template uses AWS Marketplace AMIs. Link the AMIs to your account before beginning the install as follows.

1. From the AWS console, select **Find software on AWS MarketPlace** under the additional information section on the right side of the console.

Additional Information

Getting Started Guide
Documentation
All EC2 Resources
Find software on AWS Marketplace
Forums
Pricing

Feedback

Feedback Report an Issue

2. Search for NetScaler VPX Platinum Edition – 10 Mbps, and select version 10.1-123.9.

<b>CİTR<u>I</u>X</b> ®	NetScaler VPX Platinum Edition - Sold by: Citrix   See product video	10 Mbps	
	Citrix NetScaler is an all-in-one web application delivery controller th application ownership costs, optimizes the user experience, and m advanced L4-7 load balancing and traffic management; proven appli- integrated application firewall for application security; and server offi an undisputed leader of service and application delivery, Citrix NetS	at makes applications run five times akes sure that applications are alway ation acceleration such as HTTP cor pading to significantly reduce costs a caler solutions Read more	better, reduces web s available by using mpression and caching; an nd consolidate servers. As
Customer Rating	Be the first to review this product	Continue	You will have an opportunity to review your order before
Latest Version	10.1-120.13 (Other available versions)		launching or being charged.

3. Select your AWS account and register it.

# Automated deployment using an AWS CloudFormation template

# XenApp or XenDesktop Infrastructure Stack Creation using the CloudFormation template

The following steps show how to use the CloudFormation template to automate building all necessary resources in the Amazon EC2 cloud for a XenApp or XenDesktop Site.

1. On the CloudFormation Stack console tab, use the drop-down box in the upper-right-hand corner to select the region in which you want to build the environment.

👔 CloudFormation Manager 🛞		
← → C 🔮 https://console.aws.amazon.com/	cloudformation/home?region=ap-southeast-2#/stacks?filter=active	☆ =
🎁 Services 🗸 Edit 🗸		Citrix AWS 👻 Sydney 👻 Help 👻
Create Stack Update Stack Delete Stack	Welcome to the new CloudFormation console. Send us your feedback or go back to using the old.	C \$
Filter: Active - By Name:		Showing 0 stacks
	Create a Stack AWS Cloudformation allows you to quickly and easily deploy your infrastructure resources and applications on AWS. You can use one of the templates we provide to get started quickly with applications like WordPress or Drupal, one of the many sample templates or create your own template. You do not currently have any stacks. Click the "Create New Stack" button below to create a new AWS Cloudformation Stack. Create New Stack	
	Create a Template from your Existing Resources If you already have AWS resources running, we also provide a CloudFormer tool that lets you create a template from your existing resources. This allows you to capture and redeploy applications you already have running. To launch the CloudFormer tool click below. Launch CloudFormer	
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- 2. Click Create New Stack.
- 3. Provide the stack name, and point to the CloudFormation JSON template available at <a href="https://s3.amazonaws.com/cf-XenDesktop/XD75NSonAWS\_CF\_v1\_2.json">https://s3.amazonaws.com/cf-XenDesktop/XD75NSonAWS\_CF\_v1\_2.json</a>, and click **Continue**.

🎁 Create A New Stack 🛛 🗴			
← ⇒ C 🔒 https://console.	aws.amazon.com/cloudfor	mation/home?region=ap-southeast-2#/stacks/new	t 2
育 Services 🗸 Edit		Citrix AWS 👻 Sydner	y 🕶 Help 😁
Template Parameters Options Review	Create A New Sta AWS CloudFormation gives stack, fill in the name for yo	Ck you an easier way to create a collection of related AWS resources (a stack) by describing your requirements in a template. ur stack and select a template.	To create a
	Stack		
	Name	XA75POC	
	Template		
	Source	Use sample template Upload template file	
		Choose File No file chosen	
		Provide an S3 URL to template	
		https://s3.amazonaws.com/cf-XenDesktop/XD75onAWS_RDG_CF	
		Cancel	Next Step
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4. Provide parameters for the script to run. The template provides the following information, including brief explanations for each parameter, and displays the following default values.

Default	Default Value	Description
ADInstanceType	m1.medium	Amazon EC2 instance type for the Active Directory Instance.
ADPrivateIP	10.0.1.5	Fixed private IP for the Active Directory server
AZ		Name of Availability Zone that will contain public and private subnets. Select a valid zone for your region.
BastionInstanceType	m1.small	Amazon EC2 instance type for the Bastion instance.
DMZCDIR	10.0.0/24	CIDR Block for the public subnet.
DomainAdminPassword	User Supplied	Password for the domain admin user that is created by the user. Must be at least eight characters and contain letters, numbers, and symbols.
Domain Admin User	Xenadmin	User name for the account that will be added as a domain administrator. This is separate from the default administrator account.
DomainDNSName	xencloud.net	Fully qualified domain name (FQDN) to be used for the DHCP scope; for example, xencloud.com.
DomainLDIFFormat	DC=xencloud,DC=net	LDIF domain (up to 30 characters) for creating users in the Active Directory Domain Tree.
DomainNetBIOSName	XENCLOUD	NetBIOS name of the domain (up to 15 characters) for users of earlier versions of Windows; for example, XENCLOUD.
IAMUserAccessKey	User Supplied	IAM user access key used to create and configure the various instances.
KeyPairName	User Supplied	Public/private key pairs allow you to securely connect to your instance after it launches.
NATInstanceType	m1.small	Amazon EC2 instance type for the NAT instances.
NSCloudFormationURL	https://s3.amazonaws.com /cf- XenApp/NS_VPX_PLT_10M B_Template_v4.4.json	The public URL for the NetScaler VPX CloudFormation v4.4 template.
NSMIP	10.0.1.102	The IP address used. This can be a MIP or a SNIP for the NetScaler NIC connected to the private NIC should be within the CIDR of the private subnet.
NSNSIP	10.0.1.100	Fixed private IP for the NetScaler NIC connected to the private subnet should be

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		within the CIDR of the private subnet.
NSSNIP	10.0.0.175	Fixed public IP for the NetScaler NIC
		connected to the public subnet, should be
		within the CIDR of the public subnet.
NSVIP	10.0.0.176	Fixed VIP for the NetScaler NIC connected to
		the public subnet, should be within the CIDR
		of the public subnet.
PrivateCIDR	10.0.1.0/24	CIDR block for private subnet.
RestoreModePassword	User Supplied	
SecretAccessKey	User Supplied	IAM user secret access key to be used.
ServerNetBIOSName	DC01	NetBIOS name of the AD server (up to 15
		characters).
VDAInstanceType	c1.xlarge	Amazon EC2 instance type for the VDA
		master instance.
VdaName	VDAMaster	NetBIOS name of the machine used as the
		master image for VDAs.
VPCCIDR	10.0.0/16	VPC Subnet.
VPCName	XenDesktop 7.5 and 7.6	Name of the XenDesktop VPC.
	POC VPC	
XD7DDCInstanceType	m3.large	Install server used to build the server farm
		using the App Delivery Setup PowerShell
		scripts. Can be powered down after the farm
	11.0	is built.
XD7ISOLocation	https://s3.amazonaws.com	Network address translation server, which
	<u>/ct-</u>	allows outbound access to the Internet for
	XenDesktop/ISU/XenApp_a	the servers in the private subhet.
	nd_XenDesktop_7_5.lso	
XDAdminPassword	User supplied	NetScaler VPX Instance that is used to provide
		ica proxy functionality for the StoreFront
VDAdminUsor	<b>VDEarmAdmin</b>	501701.
ADAUIIIIIOSEI		

5. Different firmware versions of the NetScaler VPX are supported. Select the version you want by choosing the appropriate JSON template from one of the following firmware versions:

NSCloudFormationURL	Firmware
https://s3.amazonaws.com/cf-XenApp/NS_VPX_Template_v3.json	10.0-71.6008.e
https://s3.amazonaws.com/cf-XenApp/NS_VPX_Template_v4.json	10.1-119.7
https://s3.amazonaws.com/cf-XenApp/NS_VPX_Template_v4.1.json	10.1-120.13

Ti Create A New Stack 🛛 🔪 🛄					
← → C 🔒 https://console	aws.amazon.com/cloudfor.	mation/home?region=ap-southe	east-2#/stacks/new 없    중		
🎁 Services 🗸 Edi	t ~		Citrix AWS ▼ Sydney ▼ Help ▼		
Template Parameters	Specify Paramete	rs			
Options Review	Below are the parameters associated with your CloudFormation template. You may review and proceed with the default parameters or make customizations as needed below.				
	Parameters				
	ADInstanceType	m1.medium	Amazon EC2 Instance type for the Active Directory Instance		
	ADPrivatelp	10.0.1.5	Fixed private IP for the first Active Directory server		
	Name of Availability Zone that will contain public & private subnets - Select a valid Zone for your region				
	BastionInstanceType	m1.small	Amazon EC2 Instance type for the Bastion Instance		
	DMZCIDR	10.0.0/24	CIDR Block for the Public Subnet		
	DomainAdminPasswor d	******	Password for the domain admin user. Must be at least 8 characters containing letters, numbers and symbols		
	DomainAdminUser	XenAdmin User name for the account that will be a	added as Domain Administrator. This is separate from the default "Administrator" account		
	DomainDNSName	xencloud.net	Fully qualified domain name (FQDN) to be used for the DHCP scope e.g. xencloud.com		
	DomainLDIFFormat	DC=xencloud,DC=net	LDIF domain (upto 30 characters) for creating users in the Active Domain Tree		
	DomainNetBIOSName	xencloud	NetBIOS name of the domain (upto 15 characters) for users of earlier versions of Windows e.g. CTXCLOUD		

6. After specifying the required parameters, select I acknowledge that this template may create IAM resources check box, and click Continue.

7. Add any additional tags on the next screen, and click **Continue**.

🧊 Create A New Stack 🛛 🙁 📰						
← → C 🔒 https://console.a	ws.am	azon.com/cloudformation/home?region=ap-southeast-2#/stacks/nev	W			ŝ
🎁 Services 🗸 Edit	¥			Citrix AWS 🕶	Sydney 🕶	Help 🕶
Template Parameters	Opti	ons				
Options Review	Add tag up to 1	gs to your stack to simplify the administration of your infrastructure. A tag co 0 unique keys to each stack along with an optional value for each key. For r	nsists of a key/value pair and will flow more information, go to Tagging a St	v to resources inside yo ack in the CloudFormat	our stack. Yo ion User Gui	u can add de.
	Tags					
		Key (127 characters maximum)	Value (255 characters maximum)			
	1	Project	Mobile Workspace POC			+
	▶ Ad	vanced				
				Cancel	Back Ne	xt Step
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Verify that the values provided match your environment.

**Note:** It is important to ensure that the availability zone, your access credentials and keypair are correct. If not, go back and correct the error; otherwise, the template creation will fail. Once correct, click **Continue** to start the stack build process.

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← → C A https://console.aws.amazon.com/cloudfo	rmation/home?region=ap-southeast-2#/stacks/new	숬 =
Parameters		
ADInstanceType	m1.medium	
ADPrivatelp	10.0.1.5	
AZ	ap-southeast-2a	
BastionInstanceType	m1.small	
DMZCIDR	10.0.0/24	
DomainAdminPasswor		
d		
DomainAdminUser	XenAdmin	
DomainDNSName	xencloud.net	
DomainLDIFFormat	DC=xencloud,DC=net	
DomainNetBIOSName	xencloud	
IAMUserAccessKey	*********************	
KeyPairName	XenCloud	
NATInstanceType	m1.small	
NSCloudFormationURL	https://s3.amazonaws.com/cf-XenApp/NS_VPX_NSIP_Cust_Lic_Template_v4.4.template	
NSMIP	10.0.1.102	
NSNSIP	10.0.1.100	
NSSNIP	10.0.0.175	
NSVIP	10.0.0.176	
PrivateCIDR	10.0.1.0/24	
RestoreModePasswor		
d		
SecretAccessKey	*******	
ServerNetBIOSName	DC01	
VDAInstance Type	c1.xlarge	
VdaName	VDA01	
VPCCIDR	10.0.0/16	
VPCName	XenDesktop 7.5 VPC	
XD7DDCInstanceType	m1.large	
XD7ISOLocation	https://s3.amazonaws.com/cf-XenDesktop/ISO/XenApp_and_XenDesktop_7_5.iso	
XDAdminPassword		
XDAdminUser	XDFarmAdmin	
Create IAM Resources	true	
Ontions		
Options		

8. Click **Create** on the stack creation information screen.

🞁 Create A New Stack 🛛 🛛		_ <b>D</b> X
← → C 🔒 https://console.aws.amazon.com/cloudfo	rmation/home?region=us-west-2#/stacks/new	☆ =
DomainNetBIOSName IAMUserAccessKey KeyPairName NATinstanceType NSCloudFormation/RLL NSMIP NSSNIP NSSNIP NSSNIP PrivateCIDR RestoreModePasswor	xencloud AKQJQSQV6E4JDAO7CMA XenCloud m1.small https://s3.amazonaws.com/cf-XenApp/NS_VPX_PLT_10MB_Template_v4.4.json 10.0.1.102 10.0.1.70 10.0.0.175 10.0.0.176 10.0.0.176	
d SecretAccesses VDAInstanceType VPCCIDR VPCName XD7ISOLocation Create IAM Resources Options	NKBj5XgZvXgeFHka0VEjtMgNxHwxVmes7T5xtuaj c1.xlarge 10.0.0.0/16 XenDesktop 7.5 POC VPC https://s3.amazonaws.com/cF-XenDesktop/ISO/XenApp_and_XenDesktop_7_5 iso true	
Tags Project Advanced	Mobile Workspace POC	
Notification Timeout Rollback on failure	none Yes	
		Cancel Back Create
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The CloudFormation template builds the environment according to the parameters you specified; the template will appear in the CloudFormation Console when completed.

It displays two CloudFormation stacks: one for the EC2 Infrastructure and one for the NetScaler VPX.

Clor	udFormation Manager 🛪			
← ⇒	C Attps://console.aws.amazon.com/cloud	formation/home?region=us-east-	1#/stacks?filter=active	公 =
Cre	eate Stack Update Stack Delete Stack	Welcome to the new CloudFormation cor	nsole. Send us your <u>feedback</u> or <u>go back</u> to using the old.	) C *
Filte	er: Active - By Name:			Showing 2 stacks
	Name	Created	Status	Description
	XA75POC-NSVPXStack-6XMVLA4CDAUM	2014-03-08 01:16:36 UTC+0100	CREATE_COMPLETE	**Version 4.4**. NS Version: 10.1-123.9 Netsca
	XA75POC	2014-03-08 01:15:21 UTC+0100	CREATE_COMPLETE	**Version 1.00**. This template creates a Virtu
Ove	erview Outputs Resources Events Tem	iplate Parameters Tags P	Yolicy	880
Sele	ct a stack above			

9. When you select the Outputs section of the Infrastructure Stack, the IP addresses of the main components appear.

⇒	C https://console.aws.amazon.com/cloud	formation/home?region=us-east	-1#/stacks?filter=active&stackId=ar	n:aws:cloudfe	ormation:us-east-1:519701941432:stack% ゲ
Crea	ate Stack Update Stack Delete Stack	Welcome to the new CloudFormation co	nsole. Send us your feedback or go back to u	sing the old.	C
Filter	r: Active ▼ By Name:				Showing 2 stat
Name Crea		Created	Status		Description
	XA75POC-NSVPXStack-6XMVLA4CDAUM	2014-03-08 01:16:36 UTC+0100	CREATE_COMPLETE		**Version 4.4**. NS Version: 10.1-123.9 Netsca
	XA75POC	2014-03-08 01:15:21 UTC+0100	CREATE_COMPLETE		**Version 1.00**. This template creates a Virtu.
Over	rview Outputs Resources Events Tem	plate Parameters Tags F	Policy		8 2
Over	rview Outputs Resources Events Tem	plate Parameters Tags F Value	Policy	Description	
Over Key Doma	rview Outputs Resources Events Tem	plate Parameters Tags F Value 10.0.1.5	Policy	Description IP address o	f the domain controller.
Over Key Doma	rview Outputs Resources Events Tem ainController topDeliveryController	Plate         Parameters         Tags         F           Value         10.0.1.5         10.0.1.79         10.0.1.79	Policy	Description IP address o IP address o	f the domain controller.
Over Key Doma Desk Basti	rview Outputs Resources Events Tem ainController topDellveryController onElasticIP	Plate         Parameters         Tags         F           Value         10.0.1.5         10.0.1.79	Policy	Description IP address o IP address o External IP a	f the domain controller. f the XenDesktop 7 Desktop Delivery Controller ddress of the Bastion host in AZ1. RDP to this IP
Over Key Doma Desk Bastio	rview Outputs Resources Events Tem ainController dopDeliveryController onElasticIP caler	Plate         Parameters         Tags         F           Value         10.0.1.5         10.0.1.79         10.0.1.79         10.0.1.79         10.0.1.79         10.0.1.100	Policy	Description IP address o IP address o External IP a IP address (I	f the domain controller. f the XenDesktop 7 Desktop Delivery Controller ddress of the Bastion host in AZ1. RDP to this IP VSIP) of the NetScaler. Browse to this IP address

If you select the default values, the template constructs a XenApp or XenDesktop Site infrastructure in the AWS cloud similar to the following example:

### Site infrastructure using the CloudFormation template



# Set up XenApp or XenDesktop on the AWS Infrastructure

Once you have setup AWS using an AWS CloudFormation template, you can configure XenApp or XenDesktop to deliver virtual desktops and applications from AWS.

- 1. From the EC2 instances management console, select **Download Desktop File** to connect to the Bastion host using RDP.
- 2. Log in with the domain administrator credentials you provided during the CloudFormation Stack creation.

🧊 Services 🗸 🛛	Edit 🗸							Citrix A	WS - N. Virgi	nia * Help *
EC2 Dashboard Events	Launch Instance Connect Ac	tions ¥								0 ¢ 6
Tags	Filter: All instances * All instance	ce types 👻 🔍 Search		×					1 to 9 of 9 in	nstances > >
Reports	Name	🌳 - Instance ID	- Instance Type -	Availability Zone -	Instance State +	Status Checks		Security Groups -	VPC ID	- Private IP As
Instances	DC01	i-9b7e45ba	m3 medium	us-east-1d	running	2/2 checks p	assed	XA75POC-DomainControllerS	vpc-946c9cf1	10.0.1.5
Spot Requests	VDA Master	i-46754ed7	c1.xlarge	us-east-1d	cunning	Ø 2/2 checks p	assed	XA75POC-DomainMemberSG	vpc-946c9cf1	10.0.1.194
Reserved Instances	NAT NAT	i-c67942e7	m1.small	us-east-1d	running	2/2 checks p	assed	XA75POC-NATSecuntyGroup	vpc-946c9cf1	10.0.0.147
	VPXPnmary	1-a8794289	ms1,large	us-east-1d	a nunning	2/2 checks p	assed	XA75POC-PrivateSecurityGrou	vpc-946c9cf1	10.0.1.100
Mis	xD7DDC	Connect To V	our Instance			,	~	XA75POC-DomainMemberSG	vpc-946c9cf1	10.0.1.54
Bundle Tasks	BASTION	Connect for	our mstance			,	^	XA75POC-BastionSecurityGro	vpc-946c9cf1	10.0.0.138
	XD7Winx64_Mertin_Gold	You can connect to y	our Windows instand	e using a remote dest	top client of your ch	oice, and by		XDonAWS-PrivateSecurityGro	vpc-1ff0fb7d	10.0.1.149
/olumes	VPX_TECH_REVIEW_PUBLISH	downloading and run	ning the RDP shortci	ut file below.				default	vpc-3ef49b57	10.0.1.100
Snapshots	122.1708-e_Sample		Downle	oad Remote Desktop	File			default	vpc-3ef49b57	10.0.0.150
ecurity Groups Dastic IPs Placement Groups Load Balancers Gey Pairs Aetwork Interfaces Autro Scalling		When prompted, con	eect to your instance Elast User n Passy tance connecting to	e using the following de tile IP 54.84.217.230 hame Administrator word Get Passwe your instance, please	ord	documentation .				
Launch Configurations Auto Scaling Groups	Instance: I-3f6d561e (BASTION)	E				Close				880
	Description Status Checks	Aonitoring Tags				- D - H - DHO -				
	Instance ID +.9	50361e				Public UNS				
	Instance type m1	small				Flastic IP				
	Private DNS ip-1	0-0-0-138 xencloud net			A	vailability zone	us-east-1d			
	Private IPs 10	0.0.138				Security groups	XA75POC-Ba DomainMemb	stionSecurityGroup-18TYW639D68+ erSG-184JNFFM9JEYY wew tules	ID, XA75POC-	
	Secondary private IPs				Sc	heduled events	No scheduler	f eventis		
	VPC ID vpc	-946c9cf1				AMI ID	Windows_Se	rver-2012-RTM-English-64Bit-Base-2	014.02.12 (ami-	

 From the Bastion host, RDP to the Delivery Controller (the controller is xd7ddc.xencloud.net when using the default domain name), and log in as the domain administrator using again the DomainAdminUser and DomainAdminPassword provided as parameters during the stack creation event. 4. The XenApp and XenDesktop 7.5 and 7.6 product media is already mounted. Run **AutoSelect.exe** to start the installation.

N.	54 - 54.84.217.230 - Remote Desktop Connection	- 🗖 🗙
Feggle Bin	100154 <u>-</u> 7 ×	Hostname : XD7DDC Instance ID : i-5e675c7f Private IP Address : 10.0.1.54 Availability Zone : us-mast-ld Availability zone : us-mast-ld
For disk       P       Compare         CC       Compare       D       Compare         For Station       P       P       P       Compare         For Station       D       D       D       D       D         For Station       D	Computer  Compu	List
		<ul> <li>▲ 10 10 11:55 AM</li> <li>3/7/2014</li> </ul>

#### Note: The credentials file for the root AWS account, retrieved from

<u>https://console.aws.amazon.com/iam/home?#security\_credential</u> is not in the same format for credentials files downloaded for standard AWS users. Because of this, Studio cannot use the file to populate the API and secret key fields when creating a connection. Ensure that you are using IAM credentials files when administering Studio.

- 5. Install XenApp or XenDesktop as required for your environment.
  - a. Select the **Delivery Controller**.
  - b. Select All Core Components.
  - c. Follow the wizard instructions to complete the Delivery Controller Installation.
- 6. Start Citrix Studio, and follow the wizard to create the site. Note that the CloudFormation template has preinstalled SQL Server 2012 on the Delivery Controller.

7. Select the local host as the database server location, and allow the wizard to create the database.

16			54 - 54.84.217.230 - Remote Desktop Connection	L.			- 🛛 🗙
n			10.0.1.54	_ 8 ×			- 0 X
File Action View Help							
Console Root	CITRIX				Actio	ns	
Citrix StoreFront	sinkja				Citri	x Studio	-
	Welcome		Site Setup			liew	•
	Welcome to Cit To begin, select one of the three of Deliver desktops and app Remote RC access Enable your users to rem Kate your deployment Connect this Delivery Co	Studio ✓ Introduction Datasee Generation Network Storage Apv / Publishing Summary	Site Setup Database The database stores all Site configuration, logging, and mer Database server location:	itoring data.		efensh.	
	363					- 1 <b>8</b> 39 (	12:16 PM 3/7/2014

8. Complete the licensing setup.

			Actions					
citrix								
Welcome			View					
		Site Setup	Refresh					
Walcomo to Cit			Help					
welcome to Cit	Ch. dla	Licensing	2.1					
To begin, select one of the three of	Studio	Low many	2.1					
		License server address: localhost:27000	31.31 A					
Site setup	✓ Introduction	Connected to trusted server View certificate						
	🛩 Database	I want to:						
Deliver desktops and app	Licensing	Use the free 30-day trial     You can add a license later.						
	Connection	Use an existing license						
Remote PC access	Storage	The product list below is generated by the license server.						
	App-V Publishing	There are no suitable licenses on your license server. You can						
Enable your users to rem	Summary	allocate licenses using your License Access Code or you can add						
		licenses from your network.						
Scale your deployment		Lourn more						
Connect this Delivery Co		Allocate and download Bernard for Erange file						
		Landard and Commonder Downe for intervention						
		Back Next Cancel						

9. Provide your AWS access credentials to allow the Delivery Controller to provision instances on AWS.

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10. Select the AWS region, your VPC, and the desired availability zone for this connection.

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11. Select the subnets to host your instances, and then enter a name. In this example, the private subnet, **10.0.1.0/24** is selected to access the VDAs running in this private network, as shown in <u>Site Infrastructure using the CloudFormation template</u>.

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12. Skip the configuration for the App-V Publishing option to complete the Site setup. You can add this feature later.

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When the configuration completes, the wizard displays the Site Setup page.

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#### **Configure the Master VDA machine**

Once you have configured the Delivery Controller, you must configure a master image by configuring a master VDA machine.

From the Bastion host, RDP to the VDA Master (you can find the IP address from the EC2 console), and log in as the **domain administrator**, using again the **DomainAdminUser** and **DomainAdminPassword** provided as parameters during the stack creation event.

C https://cons	sole.aws.amazon.com/ec2/v2/home?region=us-eas	it-1#Instances:								
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IMAGE5	VPXPrimary	i-a8794289	m1.large	us-east-1d	running	2/2 checks	passed	XA75POC-PrivateSecurityGrou	vpc-946c9cf1	10.0.1.100
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2. The XenApp and XenDesktop 7.5 and 7.6 product media is already mounted. Run **AutoSelect.exe** to start the installation.

3. Select **Virtual Delivery Agent for Windows Server OS** for a XenApp Worker installation. See <u>Server VDI</u> for information on setting up a Server VDI Master VDA.



#### 10. Select Create a Master Image.



11. Supply the FQDN of the Delivery Controller you configured earlier in this process.

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- 12. Review the specified settings for the Master VDA
- 13. Select Install to start the VDA Master installation.

**Note:** You must reboot the machine to complete the addition of the Microsoft Remote Desktop Session host. You can reboot from within the instance; you do not need to use the AWS console to do so. It can take several minutes after reboot before the instance responds to RDP connections again.

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14. After the machine reboots, log in to the Master VDA. The XenApp and XenDesktop product media is no longer mounted (it searches for the media), and the installation does not continue.

#### 15. Click Cancel, and remount the media from its location. For example,

C:\Users\Public\Downloads.



- 16. When the media is mounted, select the **Virtual Delivery Agent for Windows installation**, which automatically continues from where it left off.
- 17. Restart the machine.

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18. After the VDA installation completes, install applications that will be published or available on the users' desktops on the master VDA.

19. After installing additional software, from the EC2 Console, select **Actions > Stop** to shut down the VDA Master Image.

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20. After shutdown, create an AMI from your Master VDA by selecting Actions > Create Image.

21. Assign a name and description, and then click Create Image.

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**Important:** By default, **Delete on Termination** is selected. **Do not change this setting**. The product works on the assumption that root disk volumes are deleted automatically by Amazon. Unchecking this box can cause the deployment to leak volumes in EBS storage.

Depending on the size of the instance volume, image creation can take a long time. You must wait until the image is fully created before you can see it in Studio.

When the AMI creation process completes, set up machines in Studio using Master VDA AMI.

## Set up machines in Studio using the Master VDA AMI

Now that the master AMI is configured, use Studio to provision applications and desktops by creating a machine catalog.

1. Open Studio on the Delivery Controller and select **Option 2**.

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2. Select **Server OS**. If your configuration has Server VDI available on a Desktop OS, you can alternatively choose the **Desktop OS** option.

3. To enable XenApp or XenDesktop to control machine provisioning in AWS, select the settings shown in this example:

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		Machine Template	Deploy machines using:		
		Security	Citrix Machine Creation Services (MCS)		
	Machine Catalogs	Virtual Machines	Resources: AWS US-East-1d		
		Network Cards	Citrix Provisioning Services (PVS)		
	Set up machin	Computer Accounts	Another service or technology		
	_	Summany	I am not using Citrix technology to manage my machines. I have existing machines		
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Note: AWS does not support Citrix Provisioning Services.

4. Select the machine template the AMI created in the EC2 console as described in <u>Configure the</u> <u>Master VDA machine</u>.

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		Machine Template	Citrix NetScaler and CloudBridge Connector 10.1-	Citrix NetScaler and CloudBridge		
	Machine Catalogs	Security		Connector 10.1-121.14		
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	<u> </u>	Computer Accounts		Connector 10.1-122.1708.e		
		Summary	Citrix NetScaler and CloudBridge Connector 10.1-	Connector 10.1-119.7		
	Delivery Groups		XAVDAMaster	XenApp 7.5 Master Image		
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5. Select the required security groups. In this example, you must select the **DomainMemberSG** Security as well as the private security group **PrivateSecurityGroup**.

You can also indicate that dedicated hardware is required to host your instances. **Use Shared Hardware** is the default.

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	Comguration	Machine Management     Machine Template	XA75POC- BastionSecurityGroup-18TYW639D68HD	Enable RDP access from the Internet	guration	
		Security	XA75POC-DomainMemberSG-184JNFFM9JEYY	Domain Members		
	Machine Catalogs	Virtual Machines	XA75POC- PrivateSecurityGroup-1SPN7P07AF3RN	Private Security Group #		
	2 Satur machin	Network Cards	default	default VPC security group		
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		Summary	How would you like your machines to be deployed i	n the cloud? Learn more		
	Delivery Groups		Use shared hardware			
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6. Select the number of machines and instance type to for the machine catalog.



7. Select the networking configuration.

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8. Configure the computer accounts.

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9. Enter a name, and click **Finish**. Note that the process of copying the master image can take a long time to complete. It may take 30 to 40 minutes, or more if there are a lot of machines in the catalog.

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## Set up Delivery Groups

After setting up machines in the machine catalog, configure Delivery Groups to specify which users can access desktops or applications that you want to provide. Delivery Groups are usually based on user characteristics, such as job function or geographical region.

- 1. In Studio, select the Delivery group node and click **Create Delivery Group**.
- 2. Click **Add Machines**, select a machine catalog for this Delivery Group, and then enter the number of machines the group consumes from the machine catalog.
- 3. On the Users page, click **Add users** to add the users or user groups that can access the desktops or applications. You can select user groups by browsing or entering a list of Active Directory users and groups each separated by a semicolon. For Desktop OS Delivery Groups, you can import user data from a file after you create the group.
- 4. On the Delivery Type page, select what the desktops deliver to users:
  - Applications only
  - Desktops only
  - Applications and desktops
- 5. On the StoreFront page, select StoreFront URLs to be pushed to Citrix Receiver so that Receiver can connect to a StoreFront without user intervention. Note that this setting is for Receiver running on VDAs.
- 6. On the Scopes page, define which administrators can access the Delivery Group.
- 7. On the Summary page, check all details and then enter a display name that users and administrators see and a descriptive Delivery Group name that only administrators see.

## Set up NetScaler Gateway Remote Access

After provisioning applications and desktops through Studio, set up access to StoreFront by configuring remote access to NetScaler Gateway. Remote users access and authenticate to the NetScaler Gateway. Upon successful validation, NetScaler Gateway forwards the user request to StoreFront, which generates a list of available application and desktop resources.

#### Set up StoreFront

1. Run the StoreFront administration console on the Delivery Controller and enable remote access.

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2. In the Add NetScaler Gateway Appliance wizard, enter the parameters of your public NetScaler configuration, such as the FQDN and the NetScaler subnet IP address (SNIP). In this example, the SNIP is 10.0.1.102.

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3. Add the Secure Ticket Authority (STA), which is the Delivery Controller.

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4. Click **OK**, and then click **Create** to complete the NetScaler Gateway definition for StoreFront.

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- 5. Click **OK** to complete the remote access enabling process.
- 6. Enable the NetScaler Gateway function.
  - a. Connect a machine on the private subnet to the NSIP (10.0.1.100).
  - b. Log in to the NetScaler GUI.

7. On the NetScaler Gateway, you must use the subnet IP and enable MAC-based forwarding.

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- 8. Create the following network connections:
  - a. SNIP with IP address 10.0.1.102 on the NetScaler server
  - b. VIP with IP address 10.0.0.176 on the NetScaler client

The CloudFormation template or the manual setup procedure has already configured these addresses at the AWS layer for the NetScaler VPX.

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Configure NetScaler Gateway using the Enterprise Store wizard

1. Launch the Enterprise Store wizard.



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2. Ensure that the VIP used for the NetScaler Gateway virtual server is set to **10.0.0.176**. The CloudFormation template configures this VIP to point to an elastic IP address.

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3. Look up the elastic IP address for your VIP using the EC2 console. The CloudFormation output section shows the EIP associated with the VIP (NSGWVIP).

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- 4. Complete the XenApp or XenDesktop configuration:
  - Place a certificate on your NetScaler Gateway, and assign this in DNS. Alternatively, place an entry in your hosts file to the elastic IP address.
  - Create a Delivery Group from your XenApp or XenDesktop machines and publish your applications and desktops.

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Citrix <b>R</b>	leceiver	Please log on User name Password: Log On	



#### Examples

The following example shows a desktop launched using an AWS g2.2xlarge instance (template), which allows for HDX 3D Pro support:





The following example shows applications available in Receiver:

The following example shows launched applications:



## Create template AMIs from other templates

You can create template AMIs by launching an instance from a virtual machine (VM) that you imported from Citrix XenServer, Microsoft Hyper-V, VMware Workstation, or VMware vSphere. You create the template AMI by:

- Exporting your existing Windows images or template from your on-premises virtualization environment using the environment's virtualization tools.
- Importing the image or template to Amazon EC2 using the Amazon EC2 command line or API tools.

See the <u>Importing EC2 Instances</u> in the <u>AWS EC2 User guide</u> for detailed instructions on importing existing VMs.

Once you import your template, and create an instance from it as described in <u>Importing EC2 Instances</u>, you can turn it in to an AMI as with any other instance.

# Appendix

## Manually deploy XenApp and XenDesktop in AWS

An alternative to using an <u>AWS CloudFormation template</u>, you can deploy XenApp and XenDesktop on AWS using manual procedures, as shown in the following example.

Site infrastructure using the manual deployment



## Security and firewall mappings

This section lists network specifics used in this manual set up example.

### NAT Security Group

	Inbou	Outbound				
Туре	Traffic	Source		Туре	Traffic	Source
All	All	privateSG		All	All	0.0.0.0/0
ТСР	22 (SSH)	0.0.0.0/0				

### Public Network Security Group (publicSG) rules

	Inbou	nd		Outbound	ł
Туре	Traffic	Source	Туре	Traffic	Source
All	All	publicSG	All	All	0.0.0.0/0
	All	publicSG		All	privateSG
ICMP	All	0.0.0.0/0	ICMP	All	0.0.0.0/0
ТСР	22 (SSH)	0.0.0.0/0			
	80 (HTTP)	0.0.0.0/0			
	443 (HTTPS)	0.0.0.0/0			
	1494 (CA)	0.0.0.0/0			
	2598 (Sess)	0.0.0/0			
	3389 (RDP)	0.0.0.0/0			

## Private Network Security Group (privateSG) rules

	Inbou	Ind		Outbound	d
Туре	Traffic	Source	Туре	Traffic	Source
All	All	NATSG	All	All	0.0.0/0
	All	privateSG		All	privateSG
ICMP	All	publicSG	ICMP	All	0.0.0/0
ТСР	53 (DNS)	publicSG	UDP	52 (DNS)	0.0.0.0/0
	80 (HTTP)	publicSG			
	135	publicSG			
	389	publicSG			
	443 (HTTPS)	publicSG			
	1494 (CA)	publicSG			
	2598 (Sess)	publicSG			
	3389 (RDP)	publicSG			
	49152 -				
	65535	publicSG			
UDP	53 (DNS)	publicSG			
	389 (LDAP)	publicSG			

#### Relevant AMIs for XenApp and XenDesktop Site in US-East-1

Function	AMI Name	AMI ID	Network	IP Address
Domain	Microsoft Windows Server 2012 Base	ami-814642e8	private	10.0.1.5
Controller	Microsoft Windows Server 2008 R2 Base			
	configuration	ami-37b1b45e		
Delivery	Microsoft Windows Server 2012 with SQL	ami-e/434/8e	private	10.0.1.15
Controller	Microsoft Windows Server 2008 R2 with	alli-a1090000		
	SOL			
NetScaler	NetScaler VPX Platinum Edition - 10 Mbps	ami-c995aaa0	Public	
Gateway			<b>21</b> 10	
			SNIP	10.0.0.175
			VIP	10 0 0 176
			•	10.0.0.170
			Private	
			NSIP	10.0.1.100
			SNID	10 0 1 102
			51411	10.0.1.102
Bastion	Microsoft Windows Server 2012 Base	ami-814642e8	public	DHCP
	configuration	ami-37b1b45e		
	Microsoft Windows Server 2008 R2 Base			
	configuration	: (640, 20)	1.11	21102
NAI	ami-vpc-nat-1.1.U-beta.x86-64-ebs	ami-1619c29f	public	DHCP
VDAMaster	Microsoft Windows Server 2012 Base	ami-814642e8	private	DHCP
	configuration Microsoft Windows Server	ami-37b1b45e	1	
	2008 R2 Base configuration			

**Note:** The Amazon VPC wizard automatically creates the NAT server. Therefore, you do not need to create the AMI.

## Set up the VPC network

### Create the VPC network infrastructure

Creating a Site involves creating the Virtual Private Cloud (VPC) network infrastructure in your Amazon Web Services account.

1. Log in to your AWS account, and navigate to the VPC tab. Click **Get Started Creating your VPC**.

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2. Select VPC with Public and Private Subnets.



- 3. To create a hybrid setup between your on premise environment:
  - a. Select VPC with Public and Private Subnets and Hardware VPN.
  - b. Alternatively, deploy the CloudBridge on your NetScaler, which creates the VPN for you.

This sample deployment uses the default network settings. Adjust them accordingly.

Create an Amazon Virtual Private Cloud	Cancel 🗙
VPC with Public and Private Subnets	
Please review the information below, then click <b>Create VPC</b> .	
One VPC with an Internet Gateway	
IP CIDR block: 10.0.0/16 (65,531 available IPs) Edit VPC IP CIDR Bl	ock
Two Subnets	
Public Subnet:10.0.0/24 (251 available IPs)Edit Public Subnet IFPrivate Subnet:10.0.1.0/24 (251 available IPs)Edit Private Subnet IF	∘ Range P Range
Additional subnets can be added after the VPC has been created.	
One NAT Instance with an Elastic IP Address	
Instance Type:m1.smallEdit NAT Instance TyKey Pair Name:Edit Key Pair	/pe
Note: Instance rates apply. View rates.	
Hardware Tenancy	
Tenancy: Default Edit Hardware Tenan	су
Create VPC	
Create an Amazon Virtual Private Cloud	Cancel 🗙
VPC with Public and Private Subnets	
Your VPC has been successfully created. You can now launch instances into your VPC.	Close



When the VPC is automatically created, it includes the public and private subnets, the router, NAT gateway, and the Internet gateway.

### Add security groups

The security groups in Amazon VPC provide communication between the Internet and public network, and the public and private network. The security groups contain ACLs and are the basis of the firewalls shown in the <u>network diagram</u>.

You must create the following security groups.

#### Add NAT Security Group

- 1. On the VPC tab, select Security Groups > Create Security Group.
- 2. Add ACL rules for inbound and outbound traffic. Select:
  - a. Create a new rule
  - b. Port number
  - c. Source IP address

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VIRTUAL PRIVATE CLOUDS Your VIPCs	Name	VPC vpc-32332f50 (10.0.0.0/16)	Description default VPC security group	
Subnets Route Tables Internet Gateways				
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<ul> <li>SECURITY</li> <li>Network ACLs</li> <li>Security Groups</li> </ul>		Description: VPC:	NAT Security Group	
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	0 Security Groups selected			
	Select a security group a	bove		
© 2008 - 2014, Amazon Web	Services, Inc. or its affiliates. All rig	hts reserved. Privacy Policy	Terms of Use	Feedback

Note: A source IP address of 0.0.0.0/0 indicates that you want to allow all inbound or outbound traffic.

3. Create ACL rules to match the inbound and outbound traffic table.

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Your VPCs	🗹   🖉 NATSG	vpc-32332f50 (10.0.0.0/16)	NAT Security Group		
DHCP Options Sets Elastic IPs SECURITY Network ACLs Security Groups					
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© 2008 - 2014, Amazon Web S https://console.aws.amazon.com/vpc/h	Services, Inc. or its affiliates. All righ home?region=ap-southeast-2#	ts reserved. Privacy Policy	Terms of Use	Feedback	

#### NAT Security Group rules

Inbound			Outbound			
Туре	Traffic	Source		Туре	Traffic	Source
All	All	privateSG		All	All	0.0.0.0/0
ТСР	22 (SSH)	0.0.0.0/0				

#### NAT instance

The VPC Wizard creates the NAT instance.

Go to the EC2/Instances page, and locate the instance. Right-click the instance, and change the security group to **NATSG**.



### Add public security group

1. On the VPC tab, select **Security Groups > Create Security Group**.

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			Name:	publicSG	
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lustomer Gateways					
Intual Private Gateways					
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- 2. Add ACL rules for inbound and outbound traffic. Select:
  - a. Create a new rule
  - b. Port number
  - c. Source IP address

Note: Entering a Source IP address of 0.0.0.0/0 allows all inbound or outbound traffic.

3. Create ACL rules to match the **Public Network Security Group (publicSG) rules** table.

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Your VPCs	default	vpc-32332f50 (10.0.0/16)	default VPC security group	
Subnets Route Tables	NATSG	vpc-32332f50 (10.0.0/16)	NAT Security Group	
Elastic IPs SECURITY Network ACLs	1 Security Group selected	licsG		
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Virtual Private Gateways	Port range: Custom ICP rule Custom UDP rule Custom ICMP rule	3		
VPN Connections	Custom protocol r Custom protocol r All TOP All ICMP All Traffic SSH DNS HTTP POP3 IMAP LDAP HTTPS SMTPS MAPS	"ule   		
© 2008 - 2014, Amazon Web	Services, Inc. or its POP3S MS SQL		Terms of Use	Feedback

## Public Network Security Group (publicSG) rules

	Inbou	Outbound				
Туре	Traffic	Source		Туре	Traffic	Source
All	All	publicSG		All	All	0.0.0.0/0
	All	publicSG			All	privateSG
ICMP	All	0.0.0/0		ICMP	All	0.0.0.0/0
ТСР	22 (SSH)	0.0.0/0				
	80 (HTTP)	0.0.0/0				
	443 (HTTPS)	0.0.0/0				
	1494 (CA)	0.0.0.0/0				
	2598 (Sess)	0.0.0.0/0				
	3389 (RDP)	0.0.0.0/0				

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## Add Private Security Group

1. On the VPC tab, select **Security Groups > Create Security Group**.

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PC: All VPCs • /PC Dashboard	Create Security Group	Delete		C* 💠 🥥
	Name	VPC	Description	
LOUDS	DepublicSG	vpc-32332f50 (10.0.0/16)	Public Security Group	
our VPCs	🔲 🍐 default	vpc-32332f50 (10.0.0/16)	default VPC security group	
ubnets oute Tables	NATSG	vpc-32332f50 (10.0.0/16)	NAT Security Group	
etwork ACLs ecurity Groups CONNECTIONS Sustomer Gateways virtual Private Gateways /PN Connections	o security Groups selected Select a security group al	Description: VPC:	Private Security Group vpc-32332/50  Cancel Yes, Create	

- 4. Add ACL rules for inbound and outbound traffic. Select:
  - a. Create a new rule
  - b. Port number
  - c. Source IP address

**Note:** Entering a Source IP address of 0.0.0.0/0 allows all inbound or outbound traffic. Create ACL rules to match the table.

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← → C A https://conso	ele.aws.amazon.com/vpc/home	?region=ap-southeast-2#s	=SecurityGroups		ş	
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VPC: All VPCs •	Create Security Group	Delete		₹ ₹	C <sup>4</sup> •	0
	Name	VPC	Description			
CLOUDS	privateSG	vpc-32332f50 (10.0.0.0/16)	Private Security Group			
Your VPCs	publicSG	vpc-32332f50 (10.0.0/16)	Public Security Group			
Route Tables	default	vpc-32332f50 (10.0.0/16)	default VPC security group			
Internet Gateways	NATSG	vpc-32332f50 (10.0.0/16)	NAT Security Group			
Customer Copuolity Setts Elastic IPs SECURITY Network ACLs Security Groups VPN CONNECTIONS Customer Gateways Virtual Private Gateways VPN Connections	1 Security Group selected         Image: Security Group: privipation of the security Group: privipation of the security of the secure of the security of the security of the security of the secure o	vateSG sound Tags le T le I le I				
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	Inbou	Outbound				
Туре	Traffic	Source		Туре	Traffic	Source
All	All	NATSG		All	All	0.0.0.0/0
	All	privateSG			All	privateSG
ICMP	All	publicSG		ICMP	All	0.0.0.0/0
ТСР	53 (DNS)	publicSG		UDP]	52 (DNS)	0.0.0.0/0
	80 (HTTP)	publicSG				
	135	publicSG				
	389	publicSG				
	443 (HTTPS)	publicSG				
	1494 (CA)	publicSG				
	2598 (Sess)	publicSG				
	3389 (RDP)	publicSG				
	49152 -					
	65535	publicSG				
UDP	53 (DNS)	publicSG				
	389 (LDAP)	publicSG				

### Private Network Security Group (privateSG) rules

## DHCP options

## Create a DHCP options set

There is a domain controller running DNS in the private network. The controller enables Citrix servers to authenticate and communicate with each other. To implement this communication:

- Create a new DHCP options set that contains your DNS server IP address.
- Add an open-source DNS server on the Internet in case a server needs to access the Internet.

#### **DHCP Options Set**

1. Navigate to the VPC tab, and select **DHCP Options Set > Create DHCP Options Set**.



2. Select the VPC, right-click on your selection, and choose **Change DHCP Options Set to the new set**.

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🎁 Services 🗸 E								
VPC: All VPCs VPC Dashboard	Create VPC D	elete Cha Private Clouds 🔻	nge DHCP Op	tions Set			K	C 🗘 😧
VIRTUAL PRIVATE	VPC ID	State	CIDR	DHCP Options Set	Main Route Table	Default Network ACL	Tenancy	Default VPC
CLOUDS	Vpc-32332f50	available	10.0.0.0/16	dopt-62303a00	rtb-4e9d822c	acl-aeeff0cc	default	false
Subrets Route Tables Internet Gateways DHCP Options Sets Elastic IPs SECURITY Network ACLs Security Groups VPN CONNECTIONS Customer Gateways Virtual Private Gateways VPN Connections	1 VPC selected VPC: vpc-3 DNS Settings Enable DN Enable DN Enable DN	2332f50 Tags 5 resolution. 5 hostname su	Change Choose a VPC. DHCP	DHCP Options Set set of DHCP options to Options Set: dopt-4a dopt-62 dopt-62 cc	Cancel associate with you 303a28 • 303a00 003a29 Yes, Chang VPC.	e		
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### Set up the XenApp or XenDesktop infrastructure instances

#### Launch and configure a domain controller AMI

Create a domain controller for the Site as follows.

- 1. Select AMIs in the EC2 tab.
- Depending on operating system you use, perform a search in the Amazon AMIs for Windows Server 2012 Base or Windows Server 2008 R2 Base. Ensure that the machine is deployed to your subnet, and make sure it is in the private subnet 10.0.1.0/24.

🞁 EC2 Management Console 🛪 🔲	
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🎁 Services 🗸 Edit 🗸	Citrix AWS • Sydney • Help •
1. Choose AMI 2. Choose Instance Type	3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review
Step 3: Configure Instan	ice Details
Configure the instance to suit your require role to the instance, and more.	ements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management
Number of instances	0 1
Purchasing option	Request Spot Instances
Network	(i) vpc-32332ł50 (10.0.0.0/16)
Subnet	subnet-25f31640(10.0.1.0/24)   ap-southeast-2a     Create new subnet 251 IP Addresses available
Public IP	Automatically assign a public IP address to your instances
IAM role	() None •
Shutdown behavior	(i) Stop •
Enable termination protection	(i) Protect against accidental termination
Monitoring	CloudWatch detailed monitoring     Additional charges apply.
EBS-optimized instance	I Launch as EBS-optimized instance Additional charges apply.
Tenancy	Shared tenancy (multi-tenant hardware)     Additional charges will apply for dedicated tenancy.
	Cancel Previous Review and Launch Next: Add Storage
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3. Assign the IP address for this server.

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage	5. Tag Instance 6. Configure Security Group 7. Review
Step 3: Configure Instance Details	
251 IP Addresses available	
Public IP 👔 🔲 Automatically assign a public IP	address to your instances
IAM role (j) None	•
Shutdown behavior 👔 Stop	
Enable termination protection (i)	nation
Monitoring (i) Enable CloudWatch detailed mo Additional charges apply.	Intering
EBS-optimized instance (i) Launch as EBS-optimized instan Additional charges apply.	ice
Tenancy (i) Shared tenancy (multi-tenant hardwar Additional charges will apply for det	e)  v dicated tenancy.
✓ Network interfaces	
Device Network Interface Subnet Primary IP	Secondary IP addresses
eth0 New network interface  v subnet-25/31640 1  10.0.1.5	Add IP
Add Device	
► Advanced Details	
	Cancel Previous Review and Launch Next: Add Storage
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4. Assign a friendly name to the AMI to make it easily identifiable in the Amazon console.

C C https://console.aws.amazon.com/ec2/v2/home?region=ap-southeast-2#LaunchinstanceWizard: Cutro AWS & Sydney & Help * Cutro AWS & Step 5. Tag Instance Cutro AWS & Sydney & Help * Cutro AWS & Sydney & Help * Cutro AWS & Step 5. Tag Instance Cutro AWS & Step 5. Ta	T EC2 Management Consol		_ 🗆 X
Services Edit     1. Choose Mull 2. Choose Instance Type   3. Configure Instance   4. Add Storage   5. Tag Instance Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Review and Launch Next: Configure Security Group Cancel Previous Ca	C Attps://console.aws.amazon.com/ec2/v2/home?region=ap-southeast-2#L4	aunchInstanceWizard:	☆ 📕
1 Choose Mill 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review   A lag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. Learn more about tagging your Amazon EC2 resources.   Key (127 characters maximum) Value (255 characters maximum)   Name Doot   Create Tag (Up to 10 tags maximum) Cancel Previous Review and Launch Next: Configure Security Group	🎁 Services 🗸 Edit 🗸	Citrix AWS ▼ Sydney ▼	Help 🖌
Step 5: Tag Instance A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. Learn more about tagging your Amazon EC2 resources. Key       (127 characters maximum)       Value       (255 characters maximum)         Name       Dc01       C         Create Tag       (Up to 10 tags maximum)       C	1. Choose AMI     2. Choose Instance Type     3. Configure Instance     4. Add Storage     5. Tag Instance	tce 6. Configure Security Group 7. Review	
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. Learn more about tagging your Amazon EC2 resources.          Key       (127 characters maximum)       Value       (255 characters maximum)         Name       DC01       Image: DC01       Image: DC01         Create Tag       (Up to 10 tags maximum)       Image: DC01       Image: DC01       Image: DC01         Create Tag       (Up to 10 tags maximum)       Image: DC01       Image	Step 5: Tag Instance		
Key       (127 characters maximum)         Name       DC01         Create Tag       (Up to 10 tags maximum)	A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key =	Name and value = Webserver. Learn more about tagging your Amazon EC2 resources.	
Name       DC01         Create Tag       (Up to 10 tags maximum)	Key (127 characters maximum)	Value (255 characters maximum)	
Create Tag (Up to 10 tags maximum)	Name	DC01	8
		Cancel Previous Review and Launch Next: Configure Secu	rity Group

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5. Place the domain controller in the network by launching the AMI into the appropriate network and security group. This example places the domain controller in the private network.

EC2 Manager	ment Console 🛪 🔪									
⇒ C [	https://console.aws.amazo	on.com/ec2/v2/hom	e?region=ap-sou	theast-2#Laund	hInstanceWizard:					\$
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1. Choose AN	II 2. Choose Instance Type	3. Configure Instance	4. Add Storage	5. Tag Instance	6. Configure Security	Group	7. Review			
tep 6:	Configure Security	y Group								
security gro erver and all earn more a	oup is a set of firewall rules that llow Internet traffic to reach you about Amazon EC2 security gr/	it control the traffic for y ur instance, add rules to oups.	your instance. On t hat allow unrestrict	his page, you car ed access to the	add rules to allow sp HTTP and HTTPS po	oecific tra rts. You (	affic to reach your can create a new	instance. Fo	or example, if y up or select fro	ou want to set up a we m an existing one belo
	Assign a security grou	Jp: OCreate a new s	security group							
		Select an exist	ting security group							
Secu	urity Group ID		Name			Descri	ption			Actions
sg-43	3cd2826		default			default	VPC security gro	up		Copy to new
sg-51	1cd2834		NATSG			NAT Se	ecurity Group			Copy to new
sg-e0	0cd2885		privateSG			Private	Security Group			Copy to new
sg-2a	acd284f		publicSG			Public \$	Security Group			Copy to new
nbound ru Type (j	iles for sg-e0cd2885	Protocol ()		•••	° Port Range (j)			Source	1)	
AII ICMP		All		1	I/A			sg-2acd28	84f (publicSG)	
Custom TCF	P Rule	TCP		5	i3			sg-2acd28	84f (publicSG)	
HTTP		TCP		8	0			sg-2acd28	84f (publicSG)	
Custom TCF	P Rule	TCP		1	35			sg-2acd28	84f (publicSG)	
								Cancel	Previous	Review and Laund
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6. Review the settings, and then select Launch.

EC2 Management Console 🗙									
C 🔒 https://cor	isole.aws.ama	zon.com/ec2,	/v2/home?region=ap-s	outheast-2#LaunchInstanceWizard	:	<u>ن</u>			
🎁 Services 🗸	Edit 🗸					Citrix AWS 👻 Sydney 👻 Help 👻			
1. Choose AMI 2. Choos	e Instance Type	3. Configure	Instance 4. Add Storage	5. Tag Instance 6. Configure Secu	rity Group 7. Review				
Step 7: Review	Instance	Launch							
lease review your instanc	e launch details	s. You can go t	back to edit changes for e	ach section. Click <b>Launch</b> to assign a	key pair to your instance and c	omplete the launch process.			
<ul> <li>AMI Details</li> </ul>						Edit AMI			
Microsoft Windows Server 2012 Base - ami-2b23bd11           Free ter eligible         Microsoft Windows 2012 Standard edition with 64-bit architecture. [English]           Root Device Type: ebs         Virualization type: hvm									
Instance Type	ECUs	VCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance			
m3.medium	3	1	3.75	1 x 4	-	Moderate			
Security Groups						Edit security groups			
Security Group ID			Name		Description				
sg-e0cd2885			privateSG		Private Security Gro	pup			
All selected security	groups inbo	und rules							
Security Group ID		Type (j)		Protocol (j)	Port Range (j)	Source (j)			
sg-e0cd2885		All ICMP		All	N/A	sg-2acd284f (publicSG)			
sg-e0cd2885		Custom TC	P Rule	TCP	53	sg-2acd284f (publicSG)			
		UTTO		700	00	Cancel Previous Laun			
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7. Choose an existing AWS keypair, or create a new one.

G inttps://console.aws.amazo	n.com/ecz/v2/nome?regi	on=ap-southeast-2#LaunchInstan	cevvizard:	2
Services 🗸 Edit 🗸				Citrix AWS 👻 Sydney 👻 Help
Choose AMI 2. Choose Instance Type	3. Configure Instance 4. Ad	dd Storage 5. Tag Instance 6. Con	figure Security Group 7. Review	
ep 7: Review Instance L	aunch			
se review your instance launch details.	You can go back to edit chan	nges for each section. Click Launch to	assign a key pair to your instance and c	complete the launch process.
				Edit Al
Microsoft Windows Serve	r 2012 Base - ami-2b23bd	11		
Free tier Microsoft Windows 2012 Stand				
eligible Root Device Type: ebs Virtualizati	Select an existi	ng key pair or create a i	new key pair ×	<
	A key pair consists of a	public key that AWS stores, and a pr	rivate key file that you store. Together.	Edit instance for
	they allow you to connect	Lait motarios ()		
Instance Type ECUs	securely SSH into your in	Network Performance		
m3.medium 3	Choose an existing key pair			Moderate
	Select a key pair			
Security Groups	XA_6.5_CloudWork	S	Ŧ	Edit security group
	I acknowledge th	at I have access to the selected privat	e key file (XA 6.5. CloudWorks nem)	
Security Group ID	and that without this	file, I won't be able to log into my insta	ance.	
sg-e0cd2885				-
All selected security groups inboun			Cancel Launch Instances	
Security Group ID	Туре (і)	Protocol (j)	Port Range (i)	Source (i)
sg-e0cd2885	All ICMP	All	N/A	sg-2acd284f (publicSG)
sg-e0cd2885	Custom TCP Rule	TCP	53	sg-2acd284f (publicSG)
	11770	TOD	00	
				Cancel Previous Lau

#### Launch remaining XenApp or XenDesktop AMIs

Launch the remaining XenApp or XenDesktop AMIs using the parameters in the following table. Ensure that you launch them into the correct network (private or public as applicable), and assign an IP address and the elastic IP addresses.

Function	AMI Name	AMI ID	Network	IP Address
Domain Controller	Microsoft Windows Server 2012 Base	ami-814642e8	private	10.0.1.5
	Microsoft Windows Server 2008 R2 Base	ami-37b1b45e	private	10.0.1.5
Delivery Controller	Microsoft Windows Server 2012 with SQL	ami-e743478e	private	DHCP
	Microsoft Windows Server 2008 R2 with SQL	ami-a1b9bcc8	private	DHCP
VDA Master	Microsoft Windows Server 2012 Base	ami-814642e8	private	DHCP
	Microsoft Windows Server 2008 R2 Base	ami-37b1b45e	private	DHCP
Bastion	Microsoft Windows Server 2012 Base	ami-814642e8	public	DHCP
	Microsoft Windows Server 2008 R2 Base	ami-37b1b45e	public	DHCP
NetScaler VPX	NetScaler VPX Platinum Edition - 10 Mbps	ami-c995aaa0	public/private	10.0.1.100

Note: The Amazon VPC wizard automatically creates the NAT server, so you should not need this AMI.

#### Launch the NetScaler AMI

- 1. Ensure that you subscribe to NetScaler VPX in the AWS Marketplace.
- 2. In **Community AMIs** of the EC2 Console launch wizard, launch the AMI searching for the **AMI IDs**.

For detailed instructions, see <u>https://s3.amazonaws.com/awsmp-usageinstructions/CitrixUI.html</u>.

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https://aws.amazon.com/marketplace/orderi	ng?ie=UTF8&status=SUCCESS&appActic	n=SUBSCRIBE_RESULTS&appActionToken=j2Flj2Blad4S	m6Rplj2B45f9T0						
Software and AWS hourly usage	Software and AWS hourly usage fees apply when the instance is running. These fees will appear on your monthly bill.								
Thank you! Your subscription	will be completed in a few mome	ents.	_						
Usage Instructions		Related Links							
Please go to https://s3.amazonaws.com/a usage instructions.	awsmp-usageinstructions/CitrixUI.html Ӣ for full	<ul> <li>AWS Management Console </li> <li>Your Software</li> </ul>							
Next Steps		Continue shopping on AWS Marketplace							
<ul> <li>aws@citrix.com will receive an email sh</li> </ul>	nortly to confirm your subscription.								
<ul> <li>Once you've received the email, you can below and follow the instructions to laur</li> </ul>	n click the "Launch with EC2 Console" buttons ich an instance of this software.								
<ul> <li>You can also find and launch these AM the "Community AMIs" tab of the EC2 ( EC2 APIs 12</li> </ul>	Is by searching for the AMI IDs (shown below) in Console 🕼 Launch Wizard, or launch with the								
<ul> <li>You can view this information at a later help, see step-by-step instructions Console.</li> </ul>	time by visiting the Your Software page. For for launching Marketplace AMIs from the AWS								
Select a Version									
10.1-123.9, released 01/30/2014	]								
Region	ID								
US East (Virginia)	ami-c995aaa0 Launch with EC2 Console								
US West (Oregon)	ami-3eeb8b0e Launch with EC2 Console								
US West (Northern California)	ami-c07b4685 Launch with EC2 Console								
EU West (Ireland)	ami-7628df01 Launch with EC2 Console								
Asia Pacific (Singapore)	ami-d840168a Launch with EC2 Console								
Asia Pacific (Sydney)	ami-7940de43 Launch with EC2 Console								
Asia Pacific (Tokyo)	ami-b9ec84b8 Launch with EC2 Console								
South America (Sao Paulo)	ami-7f50f062 Launch with EC2 Console								

3. Deploy the instance into the private subnet.

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🤄 🔿 C 🔒 https://console.aws.am	azon.com/ec2/v2/home?region=ap-southeast-2#LaunchInstanceWizard:ami=ami-7940de43 😒
🎁 Services 🗸 Edit 🗸	Citrix AWS ∽ Sydney ∽ Help ∽
1. Choose AMI 2. Choose Instance Type	3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review
Step 3: Configure Instar	ice Details
Configure the instance to suit your requir role to the instance, and more.	ements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access management
Number of instances	(i) 1
Purchasing option	Request Spot Instances
Network	(i) vpc-32332f50 (10.0.0.0/16) Create new VPC
Subnet	subnet-25f31640(10.0.1.0/24)   ap-southeast-2a     Create new subnet 249 IP Addresses available
Public IP	Automatically assign a public IP address to your instances
IAM role	(i) None
Shutdown behavior	(i) Stop •
Enable termination protection	Protect against accidental termination
Monitoring	Additional charges apply.
EBS-optimized instance	Launch as EBS-optimized instance     Additional charges apply.
Tenancy	Shared tenancy (multi-tenant hardware)     Additional charges will apply for dedicated tenancy.
	Cancel Previous Review and Launch Next: Add Storage
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#### 4. Ensure that this instance has two interfaces:

- Public subnet
- Private subnet:
  - i. eth0 is connected to the private subnet
  - ii. Primary IP address (NSIP) is 10.0.1.100
  - iii. Secondary IP address (SNIP) is 10.0.1.102

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🤄 🔿 🏽 🔓 https://console.aws.amazon.com/ec2/v2/home?region=ap-southeast-2#LaunchInstanceWizard:ami=ami-7940de43	☆ 〓
Services         Edit         Citrix AWS         Syd	lney × Help ×
1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review	
Step 3: Configure Instance Details	
Shutdown behavior 🕕 Stop 🔻	
Enable termination protection () Protect against accidental termination	
Monitoring () Enable CloudWatch detailed monitoring Additional charges apply.	
EBS-optimized instance () Launch as EBS-optimized instance Additional charges appy.	
Tenancy (i) Shared tenancy (multi-tenant hardware)	
✓ Network interfaces           Device         Network Interface         Subnet         Primary IP         Secondary IP addresses	
eth0 New network interface v subnet-25/31640 1 v 10.0.1.100 10.0.1.102 m Add IP	
We can no longer assign a public IP address to your instance         The auto-assign public IP address feature for this instance is disabled because you specified multiple network interfaces. Public IPs can only be assigned to instances with one network interface. To re-enable the auto-assign public IP address feature, please specify only the eth0 network interface.         eth1       New network interface • Subnet-24/316411 • 10.0.175       10.0.176       Add IP       C         Add Device       • Advanced Details	
Cancel Previous Review and Launch N	ext: Add Storage
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## 5. Deploy the instance into the private security group.

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	G	tps://console.aws.amaz	on.com/ec2/v2/hon	ne?region=ap-sou	utheast-2#LaunchInstanceWi	zard:ami	i=ami-7940de43		<u>ت</u> ک
Ũ	Servio	es 🗸 Edit 🗸						Citrix AWS 👻	Sydney 👻 Help 👻
1. Ch	oose AMI	2. Choose Instance Type	3. Configure Instance	4. Add Storage	5. Tag Instance 6. Configure	Security G	Group 7. Review		
Ster	0.6 <sup>.</sup> Co	nfigure Securit	v Group						
A secu server below.	rity group i and allow I Learn mor	s a set of firewall rules than nternet traffic to reach you e about Amazon EC2 secu	it control the traffic for ur instance, add rules urity groups.	r your instance. On that allow unrestric	this page, you can add rules to ted access to the HTTP and HT	allow spe TPS port	ecific traffic to reach your instance is. You can create a new security	e. For example, if yo group or select from	ou want to set up a web m an existing one
		Assign a security grou	Jp: OCreate a new	security group					
			Select an exist	sting security grou	p				
	Security	Group ID		Name		D	Description		Actions
	sg-a2cc2	9c7		AWSMP-NetScaler	-VPXCustomer-Licensed-2014	1 S	ecurity Group for Management E	NI	Copy to new
	sg-accc2	9c9		AWSMP-NetScaler	-VPXCustomer-Licensed-2014	1 S	ecurity Group for Private ENI		Copy to new
	sg-adcc2	9c8		AWSMP-NetScaler	-VPXCustomer-Licensed-2014	1 S	ecurity Group for Public ENI		Copy to new
	sg-43cd2	826		default		d	efault VPC security group		Copy to new
	sg-51cd2	834		NATSG		N	AT Security Group		Copy to new
1	sg-e0cd2	885		privateSG		P	rivate Security Group		Copy to new
	sg-2acd2	84f		publicSG		P	ublic Security Group		Copy to new
Inbo	und rules	for sg-e0cd2885			000				880
Туре	i		Protocol (j		Port Range	()	Sourc	e (j)	
All IC	MP		All		N/A		sg-2ad	d284f (publicSG)	
Cust	om TCP Ru	le	TCP		53		sg-2ad	d284f (publicSG)	
HTTP	<b>b</b>		TCP		80		sg-2ad	d284f (publicSG)	
Cust	om TCP Ru	le	TCP		135		sg-2ad	d284f (publicSG)	
							Canc	Previous	Review and Launch
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- 6. Configure the NetScaler ENIs (AWS elastic network interfaces) to be part of their respective security groups.
  - Public-subnet-facing ENI needs to be part of the public security group
  - Private-subnet-facing ENI needs to be part of the private security group

## Public ENI – Public Security Group



🎁 VPC Management Consol 🗴 🕴	AWS Marketplac	e: NetSca 🛛 🗡 🎁 EC2	Management Console 🙁 🗸	👕 EC2 Management	Consol: × <mark>8</mark> aws eni	- Cerca con Googi 🗙				
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EC2 Dashboard Events	Create Netw	ork Interface	ttach Detach D	Actions	•			🗬 Ə 🏶 🛛		
Tags	Filter: All VP	°C network interfa	Ces 👻 🔍 Search Ne		×		K K 1 to 8 of 8 Net	work Interfaces > 🖂		
Repons	Name	😪 - Network i	nterfar Subnet ID	VPC ID	- Zone -	Security groups	* Description	* Instance ID		
Instances		eni-3c11e7	59 subnet-24f31641	vpc-32332f50	ap-southeast-2a	privateSG	Public ENI	i-0864f837		
Spot Requests		eni-3d11e7	58 subnet-25f31640	vpc-32332f50	ap-southeast-2a	privateSG	Private ENI	i-0864f837		
Reserved Instances		oni da16a2	hf01000000000000000000000000000000	une 20220460	an coutboast 2a	O2estavice	Primary network inte	erface i-8c71edb3		
IMAGES		Change S	curity Groups			>	Primary network inte	erface i-fe69f5c1		
AMIs		g					Private ENI	i-bd71ed82		
Bundle Tasks		Network Inter	face eni-3c11e759				Management ENI	i-bd71ed82		
ELASTIC BLOCK STORE		Security gr	ups sg-51cd2834 - N	ATSG - NAT Secur	ty Group		Public ENI	i-bd71ed82		
Volumes			sg-43cd2826 - de sg-e0cd2885 - pr	efault - default VPC	security group Security Group			i-ba79e585		
Snapshots			sg-2acd284f - pu	blicSG - Public Sec	urity Group					
NETWORK & SECURITY		Selected group	s: sg-2acd284f							
Security Groups										
Elastic IPS Placement Groups						Save				
Load Balancers					C C	ancel Save				
Key Pairs	Network Inte		•							
Network Interfaces	Details	Tags								
AUTO SCALING	Netv	vork interface ID	eni-3c11e759			Subnet ID	subnet-24f31641			
Launch Configurations	VPC ID vpc-32332f50 Availability Zone						ap-southeast-2a			
Auto Scaling Groups	MAC address 02:97:47:56:92:17 Description P					Public ENI				
	Security groups privateSG, view rules Owner ID 5						519701941432			
	Status in-use Primary private IP 1						10.0.0.175			
		Private DNS	p-10-0-0-175.ap-southeast			Public IPs				

7. Assign an elastic IP address to the NetScaler public ENI – associated to the VIP (10.0.0.176).

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C2 Dashboard vents	Create Network Interface	Attach	Delete Actions	*			🗨 😔 🌾		
ags	Filter: All VPC network interfaces × Q. Search Network Interfaces × K < 1 to 8 of 8 Network								
NSTANCES	Name 🖓 - Network	interfer Subnet I	D - VPC ID	- Zone -	Security groups	• Description	✓ Instar		
Istances	eni-3c11e	759 subnet-24	lf31641 vpc-32332f50	ap-southeast-2a	publicSG	Public ENI	i-0864		
pot Requests	eni-3d11e	758 subnet-25	if31640 vpc-32332f50	ap-southeast-2a	privateSG	Private ENI	i-0864		
eserved Instances	oni da15r	3bf cubpot 26	F31640 vpc 32332f60	an coutboact 2a	privato SG	Primany network	k interface i-8c71		
	Associate Elastic	IP Address				× etwor	k interface i-fe69		
lis		Address				<b>^</b>	i-bd71		
ndle Tasks	Select the address you wis	h to associate with	eni-3c11e759			ent E	NI i-bd71		
ASTIC BLOCK STORE		Address	54 206 79 118	•		1	i-bd71		
lumes			04.200.10.110				i-ba79		
apshots	Allow	reassociation			U				
TWORK & SECURITY	Associate to prive	ate IP address	10.0.0.176	•	(1)				
curity Groups			* denotes the primary private IP a	ddress					
astic IPs					_				
acement Groups				Cano	el Associate	Address			
ad Balancers	Network Internation Chin Borrier								
etwork Interfaces									
etwork interfaces	Details								
TO SCALING	Network interface ID	eni-3c11e759			Subnet ID	subnet-24f31641			
to Scaling Groups	VPC ID	02-07-47-56-02-17		P	Description	ap-soutneast-za			
to ocaning oroups	Security groups	publicSG, view rule	s		Owner ID	519701941432			
	Status	in-use		Pr	imary private IP	10.0.0.175			
	Private DNS	in-10-0-0-175 an-sou	itheast-		Public IPe				

