Deploy XenApp 7.5 and XenDesktop 7.5 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).

## Requirements

To deploy a XenApp or XenDesktop 7.5 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.

•	NetScaler VPX Platinum Edition - Sold by: Citrix   See product video	10 Mbps
CÍTRIX	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 applii integrated application firewall for application security; and server offi an undisputed leader of service and application delivery, Citrix NetS	akes sure that applications are always available by using cation acceleration such as HTTP compression and caching; an oading to significantly reduce costs and 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 and register to your AWS account.

# 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 ×     CoudFormation Manager ×     CoudFormation Manager ×	tale and a most of the construction of the con	
Services v Edit v	cloudformation/home?region=ap-southeast-2#/stacks?filter=active	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 New Stack It you already have AWS resources running, we also provide a CloudFormer tool that lets	
© 2008 - 2014. Amazon Web Services. Tor, or its official	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	Eaedback
© 2008 - 2014, Amazon Web Services, Inc. or its affi	iates. All rights reserved. Privacy Policy Terms of Use	Feedback

- 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**.

🎁 Services 🗸 Edit			Citrix AWS 👻 Sydney 🍝 Help 👻
Template Parameters Options Review		CK you an easier way to create a collection of related AWS resources (a stack) by des ar stack and select a template.	cribing your requirements in a template. To create a
	Name Template Source	XA75POC .	
		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
© 2008 - 2014, Amazon Web Se	rvices, Inc. or its affiliates. All ri	phts reserved. Privacy Policy Terms of Use	Feedback

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
ADPrivatelP	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 Provided	Password for the domain admin user. Must
		be at least eight characters and contain
		letters, numbers, and symbols.
DomainAdminUser	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 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	The public URL for the NetScaler VPX
	<u>/cf-</u>	CloudFormation v4.4 template
	XenApp/NS_VPX_PLT_10M	
	<u>B_Template_v4.4.json</u>	
NSMIP	10.0.1.102	Fixed private MIP or SNIP for the NetScaler
		NIC connected to the private subnet 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
		within the CIDR of the private subnet
NSSNIP	10.0.175	Fixed public IP for the NetScaler NIC

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		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	Primary XenApp server holding the most preferred data collector role for the farm as well as the SQL server
VPCCIDR	10.0.0/16	Secondary XenApp server holding the preferred data collector role for the farm
VPCName	XenDesktop 7.5 POC VPC	Server hosting the StoreFront role. Runs version 1.2 of StoreFront with the database on the XENAPP server.
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 is built.
XD7ISOLocation	https://s3.amazonaws.com /cf- XenDesktop/ISO/XenApp_a nd_XenDesktop_7_5.iso	Network address translation server, which allows outbound access to the Internet for the servers in the private subnet
XDAdminPassword	User supplied	NetScaler VPX instance that is used to provide ICA proxy functionality for the StoreFront server
XDAdminUser	XDFarmAdmin	

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

🗧 🔿 C 🔒 https://console.	aws.amazon.com/cloudfor	mation/home?region=ap-s	outheast-2#/stacks/new
🎁 Services - Edit	T.		Citrix AWS + Sydney + Help +
Template Parameters	Specify Paramete	rs	
Options Review	Below are the parameters a needed below	ssociated with your CloudForm	nation template. You may review and proceed with the default parameters or make customizations as
	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
	AZ	ap-southeast-2a	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	10.0.0.0/24	CIOR 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 w	III be added as Domain Administrator. This is separate from the default "Administrator" account
	DomainDNSName	xencloud.net	Fully qualified domain name (FODN) to be used for the DHCP scope e.g. xendoud.com
	DomainLDIFFormat	DC=xencloud,DC=net	LDIF domain (upto 30 characters) for creating users in the Active Demain Tree
	DomainNetBIOSName	xencloud	NetBIOS name of the domain (upto 15 characters) for users of earlier versions of Windows e.g. CTXCI, OUD

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**.

🎁 Services 🗸 Edit						Citrix AW	S• Sydn	ey • Help •
'emplate Parameters	Opti	ons						
					consists of a key/value pair and w r more information, go to Tagging			
	Tags							
		Key (127 characters maximum	n)		Value (255 characters maximum)			
	1	Project			Mobile Workspace POC			
	<ul> <li>Ad</li> </ul>	lvanced				Cancel	Back	Next Step
D 2005 - 2014, Amazon Web Ser	vices, In	ic. or its affiliates. All rights res	erved. Privacy Policy	Terms of Use			1	Feedback

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.

Parameters ADInstanceType		
ADInstanceType		
	m1.medium	
ADPrivatelp	10.0.1.5	
AZ	ap-southeast-2a	
BastionInstanceType	mt small	
DMZCIDR	10 0 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 8 8 1	************************************	
ServerNetBIOSName	DC01	
VDAInstanceType	c1 xlarge	
VdaName	VDA01	
VPCCIDR	10.0.0.0/16	
VPCName	XenDesktop 7.5 VPC	
XD7DDCInstanceType	mt large	
XD7ISOLocation	https://s3.amazonaws.com/cf-XenDesktop/ISO/XenApp_and_XenDesktop_7_5.iso	
XDAdminPassword		
XDAdminUser	XDFarmAdmin	
Create IAM Resources	true	

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

📬 Create A New Stack 🔋		_   <b>u</b>   x
← → C 📓 https://console.aws.amazon.com/cloudfo	rmation/home?region=us-west-2#/stacks/new	☆ 🔳
DomainNetBIOSName IAMUserAccessKey KayPainName NATInstanceType NSCloudFormationURL NSMIP NSSNIP NSSNIP NSSNIP PrivateCIDR RestoreModePasswor d SecretAccessKey VDAInstanceType VPCIDR VPCIDR VPCName XD7ISOLcoation Create IAM Resources	xencloud AVAJQSQV6E4JDAO7CMA Xencloud m1.small https://s3.smazonaws.com/cf-XenApp/NS_VPX_PLT_10MB_Template_v4.4.json 10.0.1.100 10.0.1.75 10.0.0.175 10.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.175 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.15 10.0.0.0.0.15 10.0.0.0.15 10.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	
Tags		
Project	Mobile Workspace POC	
Advanced 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.

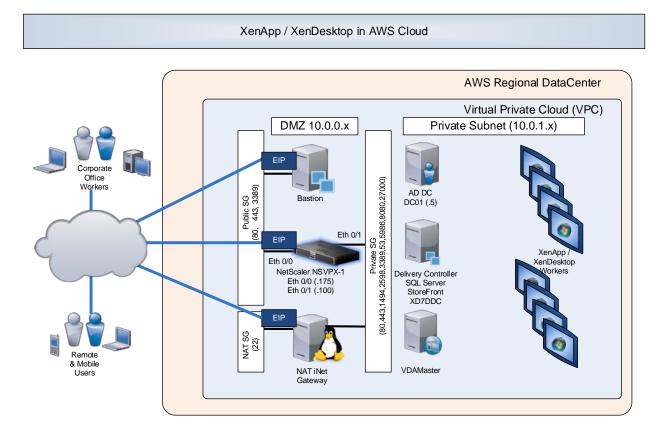
Name       Created       Status       Description         XA75POC-NSVPXStack-6XMVLA4CDAUM       2014-03-08 01:16:36 UTC+0100       CREATE_COMPLETE       **Version 4.4**. NS Version: 10.1-123.9 Netsca         XA75POC       2014-03-08 01:15:21 UTC+0100       CREATE_COMPLETE       **Version 1.00**. This template creates a Virtu	Create Stack Upda	te Stack Delete Stack	Welcome to the new CloudFormation co	nsole. Send us your feedback or go back to using the old.	C
XA75POC-NSVPXStack-6XMVLA4CDAUM       2014-03-08 01:16:36 UTC+0100       CREATE_COMPLETE       "Version 4.4". NS Version: 10.1-123.9 Netsca         XA75POC       XA75POC       2014-03-08 01:16:21 UTC+0100       CREATE_COMPLETE       "Version 1.00". This template creates a Virtue	Filter: Active - By Nar	ne:			Showing 2 stac
XA75POC       2014-03-08 01:15:21 UTC+0100       CREATE_COMPLETE       "Version 1.00". This template creates a Virtue         Overview       Outputs       Resources       Events       Template       Parameters       Tags       Policy	Name		Created	Status	Description
Overview Outputs Resources Events Template Parameters Tags Policy	XA75POC-NSVPX	Stack-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.
	Overview Outputs	Resources Events Te	mplate Parameters Tags F	Policy	8 2
			mplate Parameters Tags F	Policy	8 2
			emplate Parameters Tags F	Policy	
			mplate Parameters Tags F	Policy	
			emplate Parameters Tags F	Policy	
	Overview Outputs elect a stack above		mplate Parameters Tags F	Policy	= =

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

Cre	ate Stack Update Stack Delete Stack	Welcome to the new CloudFormation co	nsole. Send us your feedback or go back to usi	ing the old.	C +
Filte	r: Active ▼ By Name:				Showing 2 stac
	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
<b>⁄</b>	XA75POC	2014-03-08 01:15:21 UTC+0100	CREATE_COMPLETE		**Version 1.00**. This template creates a Virtu.
Ove	rview Outputs Resources Events Ten	iplate Parameters Tags F	Yolicy		==
Ove Key	·	nplate Parameters Tags F Value		Description	
Key	·				
Key Don		Value		IP address o	1
Key Don Des	iainController	Value 10.0.1.5		IP address o	f the domain controller.
Key Don Des Bas	xainController ktopDeliveryController	Value           10.0.1.5           10.0.1.79		IP address o IP address o External IP a	of the domain controller. If the XenDesktop 7 Desktop Delivery Controller

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.

EC2 Dashboard	Launch Instance Connect Ac	ions Y								00
Tags	Filter: All instances * All instance	e types * Q. Search is		×					< 1 to 9 of 9 in	nstances > >
Reports	Name	♀ - Instance ID -	Instance Type -	Availability Zone -	Instance State +	Status Checks		Socurity Groups	<ul> <li>VPC ID</li> </ul>	- Private IP
Instances	0001	i-9b7e46ba	m3.medum	us-east-1d	<ul> <li>running</li> </ul>	Ø 2/2 checks pa	ssed	XA75POC DomainControllerS	vpc-946c9cf1	10.0.1.5
pot Requests	VDA Master	i#0754ed7	c1.xlarge	us-east-1d	• running	Ø 2/2 checks pa	been	XA75POC-DomanMemberSG-	vpc-545cBcf1	10.0.1.194
Reserved Instances	TAN 1	Fc67942e7	m1 amali	us-east-1d	running	Ø 2/2 checks pr	osied :	XA75POC MATSecurityGroup	vpc-946c9cf1	10.0.0.147
	VPXPrimary	i-a5754265	m1.laras	wa-wast-td	a running	Ø 2/2 checks pr	maned,	XA75POC-PmateSecurityGrou	vpc-846cBcf1	10.0.1 100
Mta	XD70DC	Connect To Ye						XA75POC-DomanMemberSG	spc-346c9cf1	10.0.1.54
undle Tasks	BASTION	Connect to to	bur instance			>		XA75POC-BastrunSecurityOvs	vpc-946c9cf1	10.0.0.138
	XD7Winx64_Mertin_Gold	You can connect to yo			top client of your ch	oice, and by		XDonAWS-PrivateSecurityGro	vpc-199fb7d	10.0.1.145
olumes	VPX_TECH_REVIEW_PUBLISH	downloading and runn	ing the RDP shortcu	it file below.				default	vpc-3el49b57	10.0.1.100
napshots	122 1708-e Sample		Downlo	ad Remote Desktor	File			detault	vpc-3et49b57	10.0.0.15
Jastic IPs Sacement Groups Load Balancers Jey Pairs Jework Interfaces LITO SCALING		If you need any assist	User n. Passw	ord Get Passwo	ord	documentation				
aunch Configurations Auto Scaling Groups	Instance: i i-316d561e (BASTION)					Close				
	Description Status Checks A	ontoring Tags								
	Instance ID36	d561e				Public DNS				
	Instance state runs	ing				Public IP	54 54 217 23			
	Instance type m1					Elastic IP				
		0-0-0-138 xencloud net				aitability zone				
	Private IPs 10.1	0.138			103			estor/SecurityGroup-18TYW639D6 erSO-184JMFFM9JEYY view rute		
	Secondary private IPs				Set	oduled events				
	VPC ID spc-	945c9cH						ner 2012 RTM English 6484 Base		

 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 product media is already mounted. Run **AutoSelect.exe** to start the installation.

N	54 - 54.84217230 - Remote Desktop Connection	- 0 💌
Regult lin	108154 _ d' X	Rostname : XO7DDC Instance ID : 1-5e675674 Private IP Address : 10.0.1.54 Availability Zone : us-east-1d
Feedback Vog M Properties Open Primars Mar professions	Boothom         Parel         Survey           Survey         Survey         Survey           • Hard Dick Drives (2)         Survey         Survey           • Laced Dok (C)         Survey         Survey         Survey           • Devices with Removable Storage (1)         Storage to 223.08         Survey         Survey           • Devices with Removable Storage (1)         Survey         Survey         Survey         Survey	Instance Size : RJ.large NO64 entCongute
		• 16 19 16 11:53 AM

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

https://console.aws.amazon.com/iam/home?#security\_credential 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.

×.		12 X	54 - 54.84.217.230 - Remote Desktop Conne	ction		- 0 ×
File Action View Help		le 🕂 👻	10.0.1.54	_ 8 ×		- 0 ×
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Citrix StoreFront					 Citrix Studio	*
	Welcome		Site Setup		View G Refresh	
	Welcome to Cit	Studio	Database The database stores all Site configuration, logging, an	d monitoring data.	🛃 Help	
	Site setup	✓ Introduction	Database server location:			
	Deliver desktops and app	Database Licensing Connection	۸ Database name: CrossAWS Mobile Workspace If you do not have permission to edit this databais, go	connection		
	Remote PC access Enable your users to rem	Network Storøge App-V Publishing Summary	r you do not nave permaton io kon tria deadale, gi administrator. Cenerate database script	neriere a script to give to your oasaoase		
	Scale your deployment					
	Connect this Delivery Co					
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8. Complete the licensing setup.

				Actions
CITRIX				Citrix Studio
Welcome		Site Setup		View G Refresh
Welcome to Cit To begin, select one of the three or Site only Deliver desktops and app Remete PC access Enable your users to rem Scale your distiguent Connect this Delivery Co	Studio Instante Instante Instante Connection Nationit Sorge App-V Rublahing Surmay	Licensing Marine ward with the <u>instant of the second sec</u>	rou can add	<ul> <li>Antonio</li> <li>Felp</li> </ul>

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

<b>H</b>			54 - 54.84.217.230	- Remote Desktop Connection	-		- 0 ×
File Action View Help		la 🖌 👻		00.154 <u> </u>			- 0 X
Console Root	citrejx					Actions	
Citrix StoreFront						Citrix Studio	
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	Welcome to Cit Ta begin, when one of the Orece of Storatup Deliver desktops and app Remote PC acros Enable your users to rem Sore your deskonnet Connect this Delivery Co	Studio Studion Studiase Leanig Consction Wil Scaling Age/ Publishing Summay	hardware], select 'No Connection type:	ype, if machine management is not used (for example wher we machine management)  Amazen EC  Amazen		A Refresh	
	30 😫					- 16	12:19 PM 1/7/2014

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

		la H v	10.0.154	_ 8 ×	10		- 0 X
e Action View Help							
Console Root	сітвіх					Actions Citrix Studio	
Crimi StorePront	Wekome				_	View	
	Welcome to Cit To begin, select one of the three of	Studio	Site Setup Virtual Machine Location Court region: useast-1 I want to:	-		📸 Refresh 🚰 Help	
	Deliver desktops and app	✓ Database ✓ Licensing ✓ Connection		Creation Services			
	Remote PC access	VM Location Network	Select an availability zone.		4		
	Enable your users to rem	App-V Publishing Summary	us-east-1a     us-east-1b     us-east-1c     us-east-1d				
	Scale your deployment		O us-east-1e				
	Connect this Delivery Co		Use existing virtual machines				
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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. Private IP addresses?

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2. The XenApp and XenDesktop 7.5 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.

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

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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, and then select **Install** to complete the VDA Master installation.

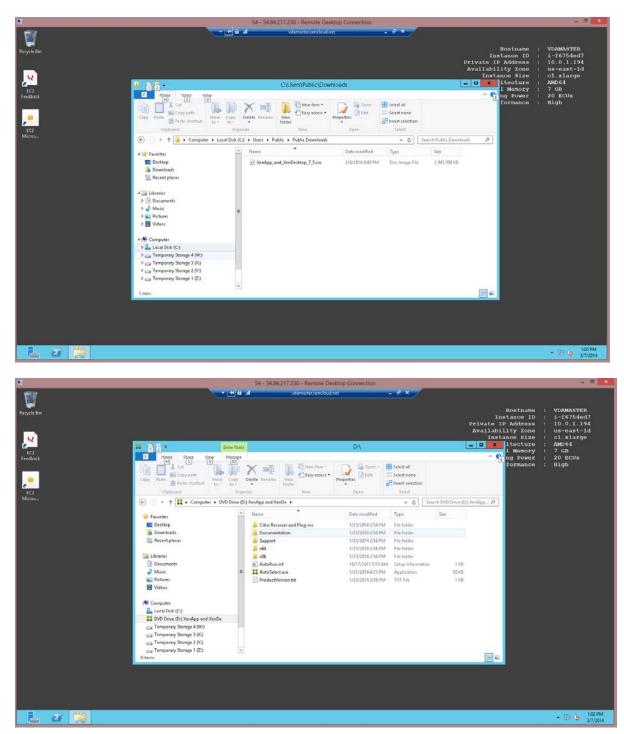
**Note:** You must reboot the machine to complete the addition of the Microsoft Remote Desktop Session host. You can reboot from within the instance; you do not need to use the AWS console to do so. It can take several minutes after reboot before the instance responds to RDP connections again.

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13. 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.

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

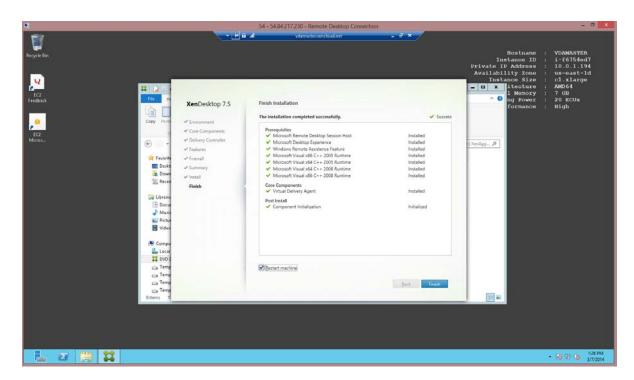
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- 15. When the media is mounted, select the **Virtual Delivery Agent for Windows installation**, which automatically continues from where it left off.
- 16. Restart the machine.

Page 26

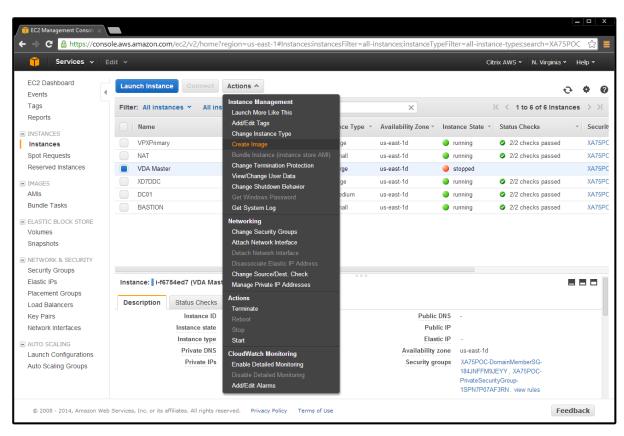
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17. After the VDA installation completes, install applications that will be published or available on the users' desktops on the master VDA.

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

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

20. 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

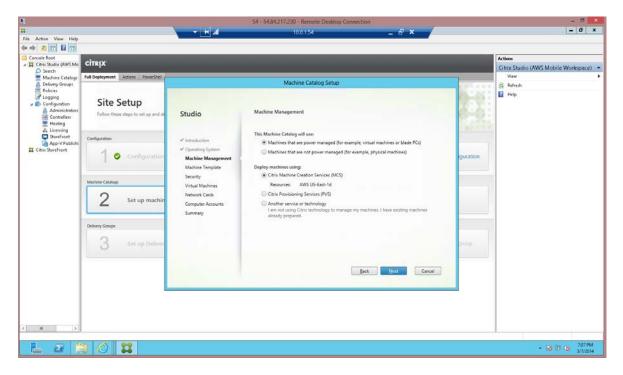
Now that the master AMI is configured, use Studio to provision applications and desktops by creating a machine catalog.

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:



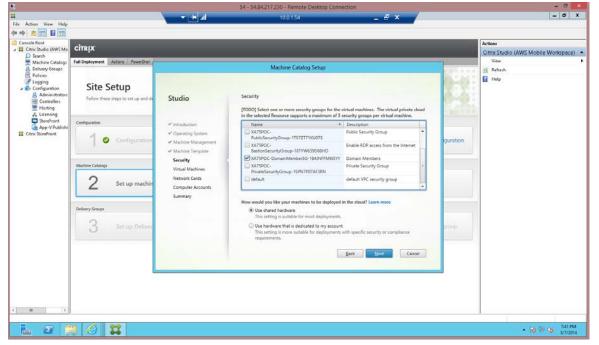
Note: AWS does not support Citrix Provisioning Services.

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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5. Select the required security groups. In this example, you must select the **DomainMemberSG** Security as well as the private security group **PrivateSecurityGroup**. This ensures communication between the Domain controller and the VDAs.

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



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6. Select the number of machines and instance type to for the machine catalog.

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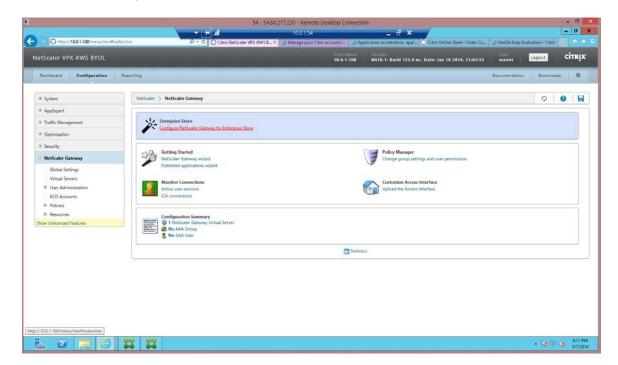
- 8. Create the following network connections:
  - a. **SNIP** with IP address **10.0.1.102** on the NetScaler server
  - b. VIP with IP address 10.0.0.176 on the NetScaler client

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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Primary Authentication - Li 10.0.1.5_LDAP_pol Enterprise Store Settings XenMobile  XenAp Deployment Type* So StoreFront FQDH* xd Von HTTPS	DAP				East
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XenMobile     XenAş Deployment Type <sup>4</sup> Storefrant PQDM <sup>4</sup> ud Use HTTPS					
Deployment Type" Sb StoreFront FQDN" xd Use HTTPS					
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StoreFront FQDN* ad	oreFront				
	17ddc.xencloud.net				
Receiver for Web Path* /C					
-	itrix/StoreWeb				
Single Sign-on Domain* xet	ncloud				
STA URL* htt	tp://xd7ddc.xencloud.net ×				
Done Cancel					

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).

Ť	Services 🕶 Edit 😁				Citrix AWS 👻 N. Virginia 👻 Help 👻
Crea	ate Stack Update Stack Delete Stack	Welcome to the new CloudFormation co	onsole. Send us your feedback or go back to using	; the old.	C 4
Filter	r: Active - By Name:				Showing 2 stack
	Name	Created	Status	Desc	ription
	XA75POC-NSVPXStack-6XMVLA4CDAUM	2014-03-08 01:16:36 UTC+0100	CREATE_COMPLETE	**Ver	sion 4.4**. NS Version: 10.1-123.9 Netsca.
1	XA75POC	2014-03-08 01:15:21 UTC+0100	CREATE_COMPLETE	**Vers	sion 1.00**. This template creates a Virtu
Ove	rview Outputs Resources Events T	emplate Parameters Tags F	Policy		88
		emplate Parameters Tags F Value		escription	88
Key		Value 10.0.1.5	De	escription address of the do	
Key Dom		Value	De IP	address of the do	
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Key Dom Desł Bast	ainController dopDeliveryController	Value 10.0.1.5 10.0.1.79	ри  Р  Р  Р  Р  Р  Р  Р 	address of the do	main controller. InDesktop 7 Desktop Delivery Controller

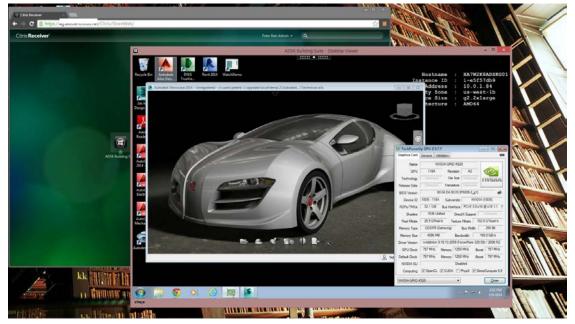
- 4. Complete the XenApp or XenDesktop configuration:
  - Place a certificate on your NetScaler Gateway, and assign this in DNS. Alternatively, place an entry in your hosts file to the elastic IP address.
  - Create a Delivery Group from your XenApp or XenDesktop machines and publish your applications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

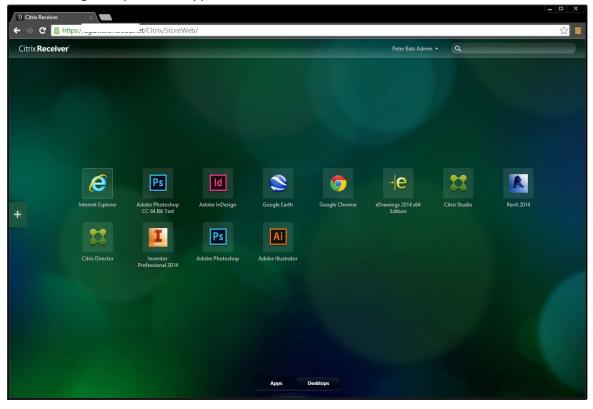
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Citrix <b>Receiv</b>	Ver Please log on User name: Password: Log On	



### 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.

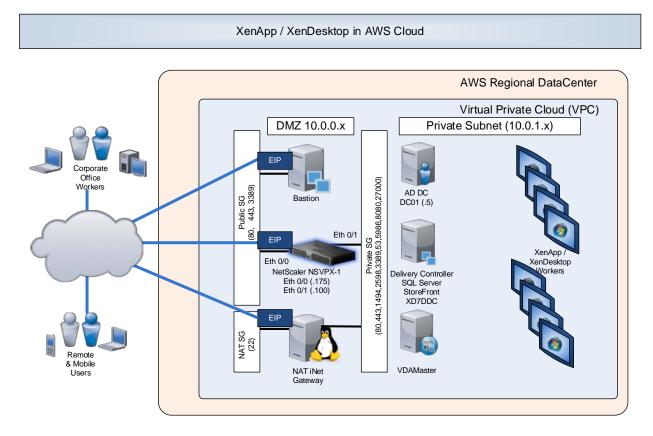
Once you import your template, and create an instance from it as described in <u>Importing EC2 Instances</u>, you can turn it in to an AMI as with any other instance.

# 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				

## Public Network Security Group (publicSG) rules

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

## Private Network Security Group (privateSG) rules

	Inbou	ınd		Outboun	ld
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
	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	ami-37b1b45e		
		ami-3701045e		
Delivery	Microsoft Windows Server 2012 with SQL	ami-e743478e	private	10.0.1.15
Controller		ami-a1b9bcc8		
	Microsoft Windows Server 2008 R2 with			
	SQL			
NetScaler	NetScaler VPX Platinum Edition - 10 Mbps	ami-c995aaa0	Public	
Gateway			CNUD	10.0.0.175
			SNIP	10.0.0.175
			VIP	10.0.0.176
			Private	
			NSIP	10.0.1.100
			SNIP	10.0.1.102
			JINF	10.0.1.102
Bastion	Microsoft Windows Server 2012 Base	ami-814642e8	public	DHCP
	Microsoft Windows Server 2008 R2 Base	ami-37b1b45e		
NAT	ami-vpc-nat-1.1.0-beta.x86-64-ebs	ami-f619c29f	public	DHCP
VDAMaster	Microsoft Windows Server 2012 Base	ami-814642e8	private	DHCP
	Microsoft Windows Server 2008 R2 Base	ami-37b1b45e		

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

## Set up the VPC network

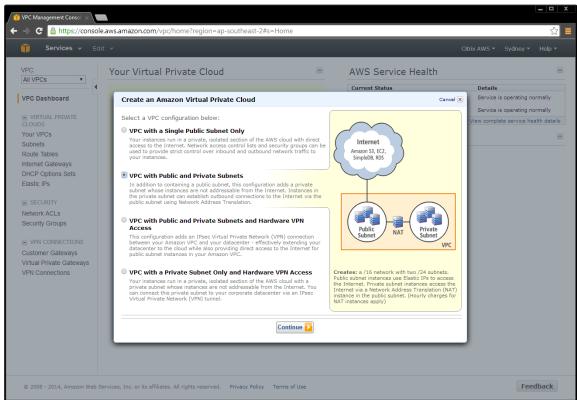
### Create the VPC network infrastructure

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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Services      Edit      VPC:     AII VPCs     VPC Dashboard      VPC Dashboard      VIRTUAL PRIVATE CLOUDS      Your VPCs Subnets Route Tables Internet Gateways DHCP Options Sets Elastic IPs      SECURITY Network ACLs Security Groups      VPN CONNECTIONS Customer Gateways V/PN Connections	Your Virtual Private Cloud ■ Amazon VPC enables you to create a virtual network topology - including subnets and route tables - for your EC2 resources. Click the button below to create a Virtual Private Cloud. © Cet started creating a VPC  Context Your Virtual Private Cloud will be created in the Asia Pacific (Sydney) region	AWS Service Health ✓ Amazon VPC (Asia Pacific - Sydney) ✓ Amazon EC2 (APAC - Sydney) Related Links > VPC Documentation > All VPC Resources > Forums > Contact Us	Details Service is ope	rating normally rating normally
© 2008 - 2014, Amazon Web Se	ervices, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use			Feedback

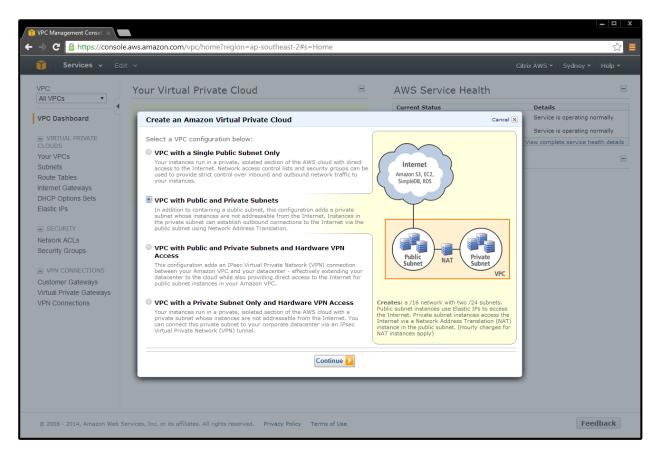
2. Select VPC with Public and Private Subnets.



- 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 Block	
Two Subnets		
Public Subnet: 10.0.0/24 (251 available IPs) Private Subnet: 10.0.1.0/24 (251 available IPs)	Edit Public Subnet IP Range Edit Private Subnet IP Range	
Additional subnets can be added after the VPC has been created.		
One NAT Instance with an Elastic IP Address		
Instance Type: m1.small Key Pair Name:	Edit NAT Instance Type Edit Key Pair	
Note: Instance rates apply. View rates.		
Hardware Tenancy		
Tenancy: Default	Edit Hardware Tenancy	
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**.



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VPC: All VPCs	Create Security Group	Delete		(* <b>6</b>
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VIRTUAL PRIVATE CLOUDS Your VPCs Output	Name	VPC vpc-32332f50 (10.0.0.0/16)	Description default VPC security group	
Subnets Route Tables				
Internet Gateways DHCP Options Sets Elastic IPs			NATSG	
<ul> <li>SECURITY</li> <li>Network ACLs</li> <li>Security Groups</li> </ul>			VAT Security Group	
VPN CONNECTIONS     Customer Gateways     Virtual Private Gateways     VPN Connections			Cancel Yes, Create	
	0 Security Groups selected			
	Select a security group at	nove		
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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

VPC Management Consci C Anttps://conso	le.aws.amazon.com/vpc/l	nome?region=ap-southeast	-2#s=SecurityGroups	☆ -
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VPC	Create Security Group	(pattice)		C 🗢 😡
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I VIRTUAL PRIMATE	Name	VPC	Description	
CLOUDS Your VPCs	🔲 🌘 default	vpc-32332f50 (10.0.0.0	(16) default VPC security group	
Internet Gateways DHCP Options Sets Elastic IPs SECURITY Network ACLS Security Groups Provide Gateways Virtual Private Gateways Virtual Private Gateways		Descript	Group Cancel R me: NATSG INAT Security Group PC: vpc-3233250 • Cancel Yes, Create	
	0 Security Groups select	ed		
	Select a security gro			
© 2004 - 2014 downers Web	Services for as its efflicted	All rights reserved. Privacy Pe	an Tamadan	Feedback

**Note:** A source IP address of 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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VPC.	Lorenza	ate Security Grou	up Dele	te			C	¢	0
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Elastic IPs SECURITY Network ACLs									
Elastic IPs SECURITY Network ACLs Security Groups VPN CONNECTIONS		curity Group selec Security Group					-	-	
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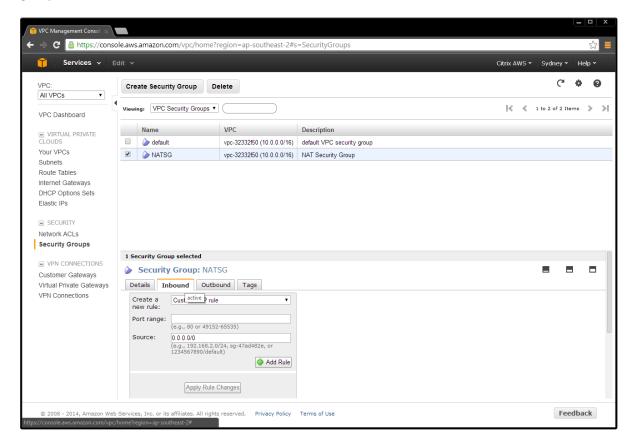
#### NAT Security Group rules

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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/PC Dashboard	Viewing:	· VPC Security Groups ▼			Ҝ 💰 1 to 2 of 2 Items 🔉
VIRTUAL PRIVATE	N	Name	VPC	Description	
		≽ default	vpc-32332f50 (10.0.0.0/16)	default VPC security group	
our VPCs Subnets		➢ NATSG	vpc-32332f50 (10.0.0.0/16)	NAT Security Group	
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lastic in s			Name:	publicSG	
SECURITY			Description:	Public Security Group	
letwork ACLs			VPC:	vpc-32332f50 V	
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VPN CONNECTIONS					
Customer Gateways				Cancel Yes, Create	
/irtual Private Gateways					
PN Connections					
		urity Groups selected			
	Sele	ect a security group abov	ve		8 8

- 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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VIRTUAL PRIVATE	Name	VPC	Description	
CLOUDS	🗹    publicSG	vpc-32332f50 (10.0.0/16)	Public Security Group	
Your VPCs Subnets	default	vpc-32332f50 (10.0.0/16)	default VPC security group	
Route Tables	NATSG	vpc-32332f50 (10.0.0/16)	NAT Security Group	
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## Public Network Security Group (publicSG) rules

	Inbou	nd		Outbour	nd
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)	0.0.0.0/0			
	80 (HTTP)	0.0.0.0/0			
	443 (HTTPS)	0.0.0.0/0			
	1494 (CA)	0.0.0.0/0			
	2598 (Sess)	0.0.0.0/0			
	3389 (RDP)	0.0.0/0			

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## Add Private Security Group

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

🧊 Services 🗸 🛛				
VPC: All VPCs •	Create Security Group	Delete		C* 🌩 🕑
VIRTUAL PRIVATE CLOUDS Your VPCs Subnets Route Tables Internet Gateways DHCP Options Sets Elastic IPs SECURITY Network ACLs Security Groups VPN CONNECTIONS Customer Gateways Virtual Private Gateways VPN Connections	Name publicSG default NATSG O Security Groups selected Select a security group	d Description:	default VPC security group NAT Security Group Cencel  privateSG Private Security Group	

- 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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VPC Dashboard	Name	VPC	Description		
VIRTUAL PRIVATE CLOUDS	privateSG	vpc-32332f50 (10.0.0.0/16)	Private Security Group		
Your VPCs	publicSG	vpc-32332f50 (10.0.0.0/16)	Public Security Group		
Subnets Route Tables	🔲 🍐 default	vpc-32332f50 (10.0.0.0/16)	default VPC security group		
Internet Gateways	NATSG	vpc-32332f50 (10.0.0/16)	NAT Security Group		
DHCP Options Sets Elastic IPs SECURITY Network ACLs Security Groups VPN CONNECTIONS Customer Gateways Virtual Private Gateways VPN Connections	1 Security Group selected Security Group: priv Details Inbound Outb Create a new rule: Custom TCP rul Port range: Custom UDP rul Custom UDP rul Custom ICMPro Custom protocol All TCP All TCP All TCMP All Traffic SSH SMTP DNS HTTP POP3 MAP LDAP HTTPS SMTPS	e Tags e V e			
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Inbound					Outbound			
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		
	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

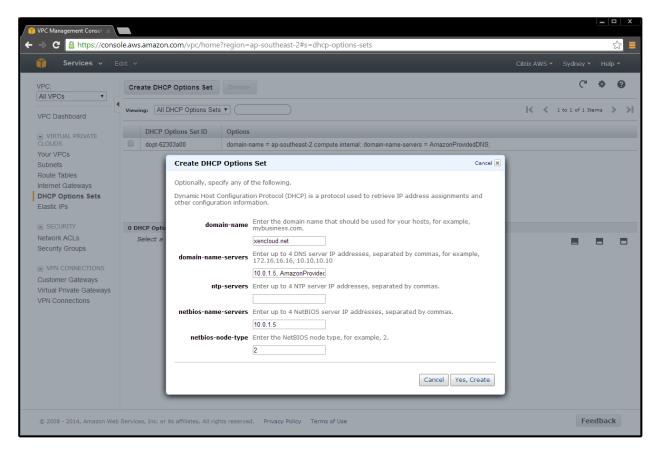
## Create a DHCP options set

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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CLOUDS Your VPCs	Vpc-32332f50	available	10.0.0.0/16	dopt-62303a00	rtb-4e9d822c	acl-aeeff0cc	default	false
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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 R Base. Ensure that the machine is deployed to your subnet, and make sure it is in the private subnet 10.0.1.0/24.

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1. Choose AMI 2. Choose Instance Type	De 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review	
Step 3: Configure Instar	ince Details	
Configure the instance to suit your requi role to the instance, and more.	uirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the lower pricing, assign an access manag	jement
Number of instances	s (j) 1	
Purchasing option	n 🕕 🔲 Request Spot Instances	
Network	k (j) vpc-32332/50 (10.0.0.0/16)	
Subnet	t () subnet-25/31640(10.0.1.0/24)   ap-southeast-2a   Create new subnet 251 IP Addresses available	
Public IP	P (i) Automatically assign a public IP address to your instances	
IAM role	e 🚯 None 🔻	
Shutdown behavior	r (j) Stop •	
Enable termination protection	n 🕕 Protect against accidental termination	
Monitoring	g (i) Enable CloudWatch detailed monitoring Additional charges apply.	
EBS-optimized instance	e (j) Launch as EBS-optimized instance Additional charges apply.	
Tenancy	Y (i)     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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← ⇒ C 🔒 https://console.aws.amazo	on.com/ec2/v2/home?region=ap-south	neast-2#LaunchInstanceWizard:		☆ =
🎁 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 Instance	e Details			
	251 IP Addresses available			
Public IP (j	i Automatically assign a public IP a	address to your instances		
IAM role (j	1) None	Ŧ		
Shutdown behavior 🧃	1) Stop	T		
Enable termination protection (i	i) Protect against accidental termin	nation		
Monitoring (j	Enable CloudWatch detailed mon Additional charges apply.	nitoring		
EBS-optimized instance (j	<ol> <li>Launch as EBS-optimized instand Additional charges apply.</li> </ol>	ice		
Tenancy (j	Shared tenancy (multi-tenant hardware     Additional charges will apply for ded			
▼ Network interfaces				
Device Network Interface Sul	ubnet Primary IP	Secondary IP addresses		
eth0 New network interface 🔻 sub	ubnet-25f31640 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                         C Introduction Interpretation     Interpretation     C Interpretation     Interpretation        Interpretation        Interpretation     C Interpretation     C Interpretation     C Interpretation Interpretation     C Interpretation Interpretation Interpretation     C Interpretation Interpretation  Interpretation	
1. Choose AMI       2. Choose Instance Type       3. Configure Instance       4. Add Storage       5. Tag Instance       6. Configure Security Group       7. Review         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         Key       (127 characters maximum)         Value       (255 characters maximum)         Name       DC01	☆] 〓
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 Amazo         Key       (127 characters maximum)         Name       DC01	ix AWS ▼ Sydney ▼ Help ▼
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 Key (127 characters maximum) Value (255 characters maximum) Name DC01	
Key     (127 characters maximum)       Name     DC01	
Name DC01	on EC2 resources.
Create Tag (Up to 10 tags maximum)	8
Cancel Previous Review and Launch	Next: Configure Security 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.

	C Attps://console.aws.ar	mazon.com/ec2/v2/home?region=ap-s	outheast-2#LaunchInstanceWizard:		\$
Î	Services 🗸 Edit 🗸			Citrix AWS	▼ Sydney <del>×</del> Help ▼
1. Cho	oose AMI 2. Choose Instance Typ	e 3. Configure Instance 4. Add Storage	5. Tag Instance 6. Configure Security Group	7. Review	
ter	o 6: Configure Secu	irity Group			
secu rver	rity group is a set of firewall rules	s that control the traffic for your instance. C n your instance, add rules that allow unrest	On this page, you can add rules to allow specific traff ricted access to the HTTP and HTTPS ports. You ca		
	Assign a security	group: Oreate a new security group			
		Select an existing security gro	quo		
	Security Group ID	Name	Descript	tion	Actions
	sg-43cd2826	default	default V	PC security group	Copy to new
	sg-51cd2834	NATSG	NAT Sec	urity Group	Copy to new
4	sg-e0cd2885	privateSG	Private S	ecurity Group	Copy to new
	sg-2acd284f	publicSG	Public Se	curity Group	Copy to new
	und rules for sg-e0cd2885				885
Туре	(1)	Protocol (j)	Port Range (j)	Source (j)	
	MP	All	N/A	sg-2acd284f (publicS0	G)
-	om TCP Rule	TCP	53	sg-2acd284f (publicS0	3)
		TCP	80	sg-2acd284f (publicS0	3)
	om TCP Rule	TCP	135	sg-2acd284f (publicS0	3)
Custo	JIII TOP Rule				

6. Review the settings, and then select Launch.

Services 🗸	- 10					
Services +	Edit 🗸					Citrix AWS 👻 Sydney 👻 Help 👻
Choose AMI 2. Choose	Instance Type	3. Configure	Instance 4. Add Storage	5. Tag Instance 6. Configure Sect	urity Group 7. Review	
ep 7: Review I	nstance	Launch				
ase review your instance	launch details	s. You can go l	back to edit changes for e	each section. Click <b>Launch</b> to assign a	a key pair to your instance and	complete the launch process.
AMI Details						Edit AM
Microsoft	Nindows Ser	ver 2012 Bas	e - ami-2b23bd11			
			ith 64-bit architecture. [Eng	lish]		
	pe: ebs Virtuali	zation type: hvm				
Instance Type						Edit instance type
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 group
					Description	
Security Group ID			Name			
sg-e0cd2885			privateSG		roup	
All selected security	groups inbo	und rules				
Security Group ID		Туре		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		TOD	00	
						Cancel Previous Laun

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7. Choose an existing AWS keypair, or create a new one.

C 🔒 https://console.aws.amazo	n.com/ecz/vz/nomerregi	on=ap-southeast-2#LaunchInstan	cewizard:	ร์
Services 🗸 Edit 🗸				Citrix AWS 👻 Sydney 👻 Help
Choose AMI 2. Choose Instance Type	3. Configure Instance 4. Ad	ld Storage 5. Tag Instance 6. Con	figure Security Group 7. Review	
ep 7: Review Instance L	aunch			
		ges for each section. Click Launch to	assign a key pair to your instance and c	complete the launch process.
AMI Details				Edit Al
Microsoft Windows Serve	r 2012 Base - ami-2h23hd	11		Edity
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 ×	
Instance Type	A key pair consists of a	public key that AWS stores, and a pr	rivate key file that you store. Together,	Edit instance typ
	they allow you to connect	t to your instance securely. For Wind	ows AMIs, the private key file is required	
Instance Type ECUs	securely SSH into your in		ux AMIs, the private key file allows you to	Network Performance
m3.medium 3	Choose an existing	key pair	¥	Moderate
	Select a key pair			
Security Groups	XA_6.5_CloudWork	s	T	Edit security group
Security Group ID		at I have access to the selected privat file, I won't be able to log into my insta	ie key file (XA_6.5_CloudWorks.pem), ance.	
sg-e0cd2885				_
All selected security groups inboun			Cancel Launch Instances	
Security Group ID	Туре (і)	Protocol (j)	Port Range (i)	Source (j)
sg-e0cd2885	All ICMP	All	N/A	sg-2acd284f (publicSG)
sg-e0cd2885	Custom TCP Rule	TCP	53	sg-2acd284f (publicSG)
	UTTO	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>.

👖 VPC Management Consol 💉 🕅 AWS Marke	etplace: NetSca 🗙 🧧 EC2 Management Co	onsol 🗙 🙀 EC2 Management C	onsol ×	_ <b>□</b> X
← → C 🔒 https://aws.amazon.com	/marketplace/ordering?ie=UTF8&s	tatus=SUCCESS&appActio	n=SUBSCRIBE_RESULTS&appActionToken=j2Flj2Blad4Sn	n6Rplj2B45f9TCKj2 😭 🗮
•	and AWS hourly usage fees apply whe	-	se fees will appear on your monthly bill.	
Usage Instruc	tions s://s3.amazonaws.com/awsmp-usageinstr		Related Links         AWS Management Console ☑         Your Software         Continue shopping on AWS Marketplace	
	n will receive an email shortly to confirm y	our subscription		
<ul> <li>Once you've re</li> </ul>	ceived the email, you can click the "Launc w the instructions to launch an instance of	h with EC2 Console" buttons		
	nd and launch these AMIs by searching fo y AMIs" tab of the EC2 Console 례 Laund			
	his information at a later time by visiting th by-step instructions 🖪 for launching Mark			
Select a Vers	ion			
10.1-123.9, relea	sed 01/30/2014 V			
Region	ID			
US East (Virginia	) ami-c995aaa0	Launch with EC2 Console		
US West (Oregon		Launch with EC2 Console		
US West (Northe		Launch with EC2 Console		
EU West (Ireland		Launch with EC2 Console		
Asia Pacific (Sing		Launch with EC2 Console		
Asia Pacific (Syd		Launch with EC2 Console		
Asia Pacific (Tok South America (S		Launch with EC2 Console		
South America (S	au rauloj ami-/1501062	Launch with EC2 Console		

3. Deploy the instance into the private subnet.

🎽 VPC Management Consol 🗙 🖕 AWS Mari	ketplace. NelSci 🛪 🔰 🔀 C2 Management Consoli 🙁 👔 EC2 Management Consoli 🗴		x
⇐ ⇒ C	azon.com/ec2/v2/home?region=ap-southeast-2#LaunchInstanceWizard:ami=ami-7940de43	ŝ	≡
🎁 Services 🗸 Edit 🗸	Citrix AWS ∽ Sydney	y 👻 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 requir role to the instance, and more.	rements. 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	(i)		
Network	(i) vpc-32332f50 (10.0.0.0/16)		
Subnet			
Public IP	249 IP Addresses available  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	<ol> <li>Enable CloudWatch detailed monitoring Additional charges apply.</li> </ol>		
EBS-optimized instance	<ul> <li>Launch as EBS-optimized instance Additional charges apply.</li> </ul>		
Tenancy	Shared tenancy (multi-tenant hardware)     Additional charges will apply for dedicated tenancy.		
	Cancel Previous Review and Launch Next	t: Add Storag	je
© 2008 - 2014, Amazon Web Services, In	nc. or its affiliates. All rights reserved. Privacy Policy Terms of Use	Feedback	

#### 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

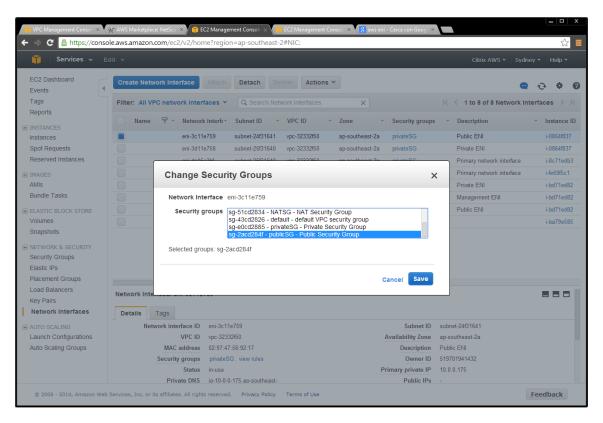
	or configuration of the state of the	FC2 Management Cor	nsoli 🙁 🦲 EC2 Mana	gement Consol 🛪			(=	
-> C 🔒 https://console.aws.an	nazon.com/ec2/\	/2/home?region=ap-s	southeast-2#Laund	hInstanceWizard:ami=a	mi-7940de43			☆
🎁 Services 🗸 Edit 🗸						Citrix AWS 🕶	Sydney 🕶 Hel	lp •
Choose AMI 2. Choose Instance Typ	oe 3. Configure In	nstance 4. Add Storage	e 5. Tag instance	6. Configure Security Grou	p 7. Review			
tep 3: Configure Insta	nce Details	3						
Shutdown behavior	r (i) Stop			•				
Enable termination protection	n (j) 🗏 Prot	tect against accidental to	ermination	C2				
Monitoring	g 🕕 🗆 Ena	able CloudWatch detaile anal charges apply.						
EBS-optimized instance		inch as EBS-optimized in inal charges apply.	nstance					
Tenancy	y (i) Sharer	d tenancy (multi-tenant har	rdware)	•				
		Primary IP	Secondary I	addresses				
evice Network Interface	Subnet	Frimary IF	second in					
	Subnet subnet-25/31640 1		10 0 1 102	Add IP				
h0 [New network interface •]	subnet-25/31640 1 a public IP addr ress feature for this	10.0.1.100  ress to your instance s instance is disabled be	10 0.1.102	Add IP		be assigned to		
<ul> <li>New network interface •</li> <li>We can no longer assign The auto-assign public IP addr instances with one network ink</li> </ul>	subnet-25/31640 1 a public IP addr ress feature for this	10 0.1.100  ress to your instance is disabled bu le the auto-assign public	10 0.1.102	Add IP		be assigned to		
th0 New network interface • We can no longer assign The auto-assign public IP addr instances with one network inter th1 New network interface • dd Device	subnet-25/31640 1 a public IP addr ress feature for this erface. To re-enab	10 0.1.100  ress to your instance s instance is disabled bu le the auto-assign public	10 0.1 102	Add IP multiple network interface please specify only the e				
th0 New network interface • ) We can no longer assign The auto-assign public IP addr instances with one network inte	subnet-25/31640 1 a public IP addr ress feature for this erface. To re-enab	10 0.1.100  ress to your instance s instance is disabled bu le the auto-assign public	10 0.1 102	Add IP multiple network interface please specify only the e				
th0 New network interface • We can no longer assign The auto-assign public IP addr instances with one network inte th1 New network interface • wdd Devece	subnet-25/31640 1 a public IP addr ress feature for this erface. To re-enab	10 0.1.100  ress to your instance s instance is disabled bu le the auto-assign public	10 0.1 102	Add IP multiple network interfact please specify only the o			Next: Add Sto	orag

### 5. Deploy the instance into the private security group.

*	Services 🗸 Edit 🗸			st-2#LaunchInstanceWizard:		Citrix AWS 🗸	Sydney + Help +
	Services + Edit +					CIGIX AWS +	Sydney • Help •
I. Cho	ose AMI 2. Choose Instance Type	3. Configure Instance	4. Add Storage 5. T	ag Instance 6. Configure Secu	ity Group 7. Review		
tep	6: Configure Secur	rity Group					
rver		your instance, add rules			specific traffic to reach your insta ports. You can create a new secur		
	Assign a security g	roup: O Create a nev	w security group				
		Select an ex	isting security group				
	Security Group ID		Name		Description		Actions
	sg-a2cc29c7		AWSMP-NetScaler-VPX-	-Customer-Licensed-2014	Security Group for Managemen	Copy to new	
8	sg-accc29c9		AWSMP-NetScaler-VPX-	-Customer-Licensed-2014	Security Group for Private ENI	Copy to new	
	sg-adcc29c8		AWSMP-NetScaler-VPX-	-Customer-Licensed-2014	Security Group for Public ENI	Copy to new	
	sg-43cd2826		default		default VPC security group	Copy to new	
	sg-51cd2834		NATSG		NAT Security Group	Copy to new	
	sg-e0cd2885		privateSG		Private Security Group	Copy to new	
	sg-2acd284f		publicSG		Public Security Group		Copy to new
nbou	nd rules for sg-e0cd2885			2.9.8			880
Туре	0	Protocol (		Port Range (i)	So	urce (i)	
	MP	All		N/A	sg-	2acd284f (publicSG)	
Custo	m TCP Rule	TCP		53	sg-:	2acd284f (public8G)	
нттр тср			80	sg-			
Custom TCP Rule		TCP		135	sg	2acd284f (publicSG)	
					Ca	ncel Previous	Review and Laund

- 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



• 🕘 C 🙆 https://cons	ole.aws.amazon.com/ec2,	v2/home?reg	ion=ap-southeast	-2#NIC:				4
EC2 Dashboard Events	Create Network Inter		and Managerson and	Actions	•		ć	• • • •
Tags Reports	Filter: All VPC netwo				×		K K 1 to 8 of 8 Network	Interfaces > >
	Name 9 -	Network Interf	- Subnet ID	VPC ID	- Zone -	Security groups	<ul> <li>Description</li> </ul>	<ul> <li>Instance II</li> </ul>
Instances		eni-3c11e759	subnet-24/31641	vpc-32332/50	ap-southeast-2a	privateSG	Public ENI	1-0864/837
Spot Requests		eni-3d11e758	subnet-25/31640	vpc-32332150	ap-southeast-2a	privateSG	Private ENI	1-0864/837
Reserved Instances		and dist for the	- Acres 2003204	100 1000060	on an abased To	and a Real	Primary network interface	i-8c71edb3
TMAGES	Cha	nge Secu	rity Groups			>	Primary network interface	(Je6965c1
AMIs	0						Private ENI	i-bd71ed82
Bundle Tasks	Netv	ork Interface	eni-3c11e759				Management ENI	i-bd71ed82
ELASTIC BLOCK STORE	Se	curity groups	sg-51cd2834 - NA			- 81	Public ENI	i-bd71ed82
Volumes			sg-43cd2826 - de sg-e0cd2885 - pri			n		i-ba79e585
Snapshots				licSG - Public Sec				
NETWORK & SECURITY	Sele	ted groups: so	-2acd284f					
Security Groups								
Elastic IPs Placement Groups						annat Save		
Load Balancers	-				c	ancel Save		
Key Pairs	Network Inte							888
Network Interfaces	Details Tags							
	Network inter	ace ID eni-3	:11e759			Subnet ID	subnet-24/31641	
aunch Configurations		/PC ID vpc-3	2332150		1	Availability Zone	ap-southeast-2a	
Auto Scaling Groups	MAC a	ddross 02.97	47.66.92.17			Description	Public ENI	
	Security	roups privat	eSG view rules			Owner ID	519701941432	
		Status in-usi			P	imary private IP	10.0.0.175	
	Priva	e DNS Io-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).

← → C 🔒 https://cons	sole.aws.amazon.com/e	c2/v2/home?re	igion=ap-sou	utheast-	2#NIC:						☆ =
🎁 Services 🗸											
EC2 Dashboard Events	Create Network In	terface	Detac	h) [0	Actions	. •					0 ¢ 0
Tags	Filter: All VPC net	work interfaces	Q Se		work interfaces	×			14 4 1 10 1	8 of 8 Network Int	erfaces 0 01
Reports	Name 💡	Network inte	de Subnet	1D -	VPC ID	• Zono	se ilĝ	Security groups	- Descript	tion	- Instance ID
E INSTANCES Instances		eni-3c11e759	subnet-2	4/31641	vpc-32332f50	ap-southeast-2	a	publicSG	Public E	N	1-0864#837
Spot Requests		eni-3d11e758	subnet-2	5f31640	vpc-32332f50	ap-southeast-2	3	privateSG	Private E	ENI	1-0864/837
Reserved Instances	1	ani datea 26	cubace 2	6131610	une 1233250	an couthoast 2	0	Denning .	Primanu	etwork interface	i-8c71edb3
	Associate	e Elastic IP	Address						×	etwork interface	i-fe6965c.1
AMIs									~	4	i-bd71ed82
Bundle Tasks	Select the add	ress you wish to	associate with	eni-3c1	1e759					ent ENI	i-bd71ed82
E ELASTIC BLOCK STORE	0		Address	54 20	06 79 118					1	i-bd71ed82
Volumes	0	Allow reat	sociation					0			i-ba79e685
Snapshots				100			-				
RETWORK & SECURITY	Assoc	ate to private I	P address	-	0.176 the primary private IP a		•	1			
Security Groups				- denotes	the primary private in t	louress					
Elastic IPs								(Transmission			
Placement Groups Load Balancers	10					C	ance	Associate	Address		
Key Pairs	Nerman									1	880
Network Interfaces	Details Tags										
E AUTO SCALING	The second second	terface ID eni-	3c11e759					Subnet ID	subnet-24f3164	1	
Launch Configurations			32332(50				Av	ailability Zone	ap-southeast-2		
Auto Scaling Groups	MA	Caddress 02.5	7:47:56.92:17					Description	Public ENI		
	Secu	ity groups put	licSG wew rul	es				Owner ID	519701941432		
		Status in-u					Prin	nary private IP	10.0.0.175		
	Pi	ivate DNS io-1	0-0-0-175 ab-so	utheast-				Public IPs			

