Citrix Virtual Apps and Desktops Service

Your testing and validation guide

Introduction

You need your users to have the best possible experience with your Citrix cloud services – from the very start.

You also need to know if your new Citrix Virtual Apps and Desktops service is functioning correctly so you can troubleshoot issues early and ensure you maximize value.

That's why performing thorough testing and validation is essential. Over the next few pages we'll explain the various tests and checks you need to perform – from fundamental user experience tests to comprehensive validation of your environment's functionality.

End-user experience testing

Once you configure the Citrix Virtual Apps and Desktops service, it is vital you test the user experience and check whether all of your configurations are working as expected.

You can find the most important tests to perform in the table below.

Test	Description
Customer-managed StoreFront and Citrix Gateway	
Access and Authentication	• Test StoreFront/Citrix Gateway access through a web browser • Test StoreFront/Citrix Gateway through Citrix Workspace App • Ensure StoreFront authentication is successful • Ensure Citrix Gateway authentication is successful
Application Launch	• Verify applications and desktops are enumerated • Verify successful application launch from the internal network • Verify successful application launch from an external network
Policies and Profiles	• Verify Profiles are being created/pulled from UPM share and folders are being redirected • Verify Workspace Environment Manager (WEM) agent is being initialized (if applicable) • Ensure Citrix HDX Policies, GPOs, and WEM settings are being applied
Workspace Experience and Citrix Gateway Service	
Access and Authentication	• Test Workspace Experience access through a web browser • Test Workspace Experience access through Citrix Receiver • Ensure Workspace authentication is successful
Application Launch	• Verify applications and desktops are enumerated • Verify successful application launch
Policies and Profiles	• Verify Profiles are being created and folders are being redirected • Verify Workspace Environment Manager (WEM) agent is being initialized (if applicable) • Ensure Citrix HDX Policies, GPOs, and WEM settings are being applied

Full system testing

Full system tests help ensure your environment´s functionality. It's important to identify which components you need to test based on your design decisions.

High Availability Testing makes sure your environment is resilient against single component failures by forcibly powering off single components inside an HA setup to check service continuity.

Basic User Workflow, Image, and Application Testing helps ensure the various settings you configured via Citrix HDX Policies or Delivery Groups options are being applied to user sessions. Additionally, they allow you to ensure no errors are registered on the VDA event log.

Security and Lockdown Testing validates your environment is securely locked down to prevent unauthorized access to administrative areas on your VDAs.

Step	Description
High Availability Testing	
Internal Citrix ADC HA	1. Only required if utilizing your own Citrix ADC appliances 2. Shut down one of the Citrix ADC appliances and confirm VIPs are still available
StoreFront HA	1. Only required if utilizing your own Citrix StoreFront servers 2. Disable IIS on one of the StoreFront servers and confirm the StoreFront site is available. Rotate which StoreFront server is left available. 3. Power off one of the StoreFront servers and confirm the StoreFront site is available. Rotate which StoreFront server is left on. 4. Repeat the above steps for all StoreFront servers from a single data center and confirm the StoreFront site is available from the other data center
Cloud Connector HA	1. Power off one of the Cloud Connectors and validate that applications enumerate and launch. Rotate which Cloud Connector is left on. 2. Repeat the above for all Cloud Connectors from a single data center, and confirm applications enumerate and launch
Citrix License Server HA	1. Only required if utilizing Citrix Provisioning or Workspace Environment Management on-premises 2. Power off active Citrix License Server and confirm grace period check in
Remote Desktop Services License Server HA	1. Only required if utilizing Citrix Virtual Apps 2. Power off one of the Remote Desktop Services License Servers and confirm published applications launch
Citrix Provisioning HA	1. Only required if utilizing Citrix Provisioning 2. Power off one of the Citrix Provisioning servers and confirm the Provisioning farm is available and vDisk streaming is working Rotate which Provisioning server is left on 3. Repeat the above steps for all Citrix Provisioning servers from a single datacenter

Full system testing

Step	Description
Workspace Environment Management HA	1. Only required if utilizing your own WEM environment 2. Power off one of the WEM Broker servers and confirm the WEM console is available and WEM agents are working. Rotate which WEM broker server is left on. 3. Repeat the above steps for all WEM Broker servers from a single data center

Basic User Workflow, Image, and Application Testing

Server OS VDA Idle Timer	Validate idle timer functionality
Server OS VDA Disconnect Session Timer	Validate disconnect timer functionality
Citrix Policy and Printing Validation (Citrix Apps)	1. Validate GPO(s) that contains Citrix Policy settings are applying via RSOP 2. Log in as a user and confirm printer mappings occur
Citrix Services	Log into the image and validate Citrix services are running
Event Log Review	Review warnings or errors within the Windows Event Log

Security and Lockdown Testing

Server OS VDA Idle Timer	Validate idle timer functionality
Non-default Citrix ADC Passwords	Do not utilize default appliance and service passwords
Role Based Access Control	Implement role-based access control based on least-privileged principle
Secure StoreFront Traffic	Confirm base URL is HTTPS and redirect to HTTPS is in place
Secure XML Traffic (Cloud Connectors)	Confirm XML traffic us communicating over HTTPS (443)
Command Prompt Access	Prohibit access to the command prompt on a shared server image. Note: future implementation of applications may require the reversal of this step. If so, any rationale should be documented
Registry Access	Prohibit access to the registry on a shared server image. Note: future implementation of applications may require the reversal of this step. If so, any rationale should be documented
Run Access	Prohibit access to the run utility on a shared server image. Note: future implementation of applications may require the reversal of this step. If so, any rationale should be documented
OS Drive Access	Prohibit access to the C:\ on a shared server image. Note: future implementation of applications may require the reversal of this step. If so, any rationale should be documented

Component level testing

Component level testing helps you ensure the functionality of the different components in your solution.

Keep in mind that these tests might not be applicable to your environment depending on which components your deployment includes.

Test	Description
Cloud Connector Testing	
Citrix Services	Log into each server and validate Citrix services are running
Event Log Review	Review warnings or errors within the Windows Event Log
Local Host Cache Mode	Ensure LHC functionality is working by forcing an outage on your Cloud Connectors
StoreFront Testing	
Citrix Services	Log into each server and validate Citrix services are running
Event Log Review	Review warnings or errors within the Windows Event Log
Internal Receiver for Web Resource Enumeration and Launch	1. From a browser, navigate to each SF's FQDN, login, and confirm applications or desktops enumerate and launch 2. From a browser, navigate to the SF VIP, login, and confirm applications or desktops enumerate and launch
External Receiver for Web Resource Enumeration and Launch	From a browser, navigate to the NetScaler Gateway VIP, login, and confirm applications or desktops enumerate and launch
Site Aggregation	1. Stop the Citrix Remote Broker Provider Service on all of the Cloud Connectors in one data center 2. Click on an application and make sure it launches 3. Repeat the above steps for the Cloud Connectors in the other data center
Native Receiver Resource Enumeration and Launch	Verify that resources can be launched from Receiver

Component level testing

Test	Description
Workspace Experience Testing	
Receiver for Web Resource Enumeration and Launch	From a browser, navigate to the Workspace Experience URL, login, and confirm applications or desktops enumerate and launch
Site Aggregation	Login to Citrix Workspace Experience and ensure aggregated resources are enumerated and launched
Native Receiver Resource Enumeration and Launch	Verify that resources can be launched from Receiver
OTP Enroll	Enroll a new device to the OTP service and ensure login is successful
Citrix Gateway Testing	
Authentication	Ensure the configured authentication methods are presented by Citrix Gateway
Receiver for Web Resource Enumeration and Launch	From a browser, navigate to the Citrix Gateway URL, login, and confirm applications or desktops enumerate and launch
Native Receiver Resource Enumeration and Launch	Verify that resources can be launched from Receiver
WEM Testing	
Citrix Services	Log into each server and validate Citrix services are running
Event Log Review	Review warnings or errors within the Windows Event Log

Component level testing

Test	Description
Provisioning Services Testing	
Citrix Services	Log into each server and validate Citrix services are running
Event Log Review	Review warnings or errors within the Windows Event Log
PVS Retries/WC Location Testing	1. Spot check vDisk retries on devices or via the PVS console. No more than 5-10 retries should be observed during device boot up. 2. Validate write cache location and confirm adequate space
PVS Bootstrap File Verification	Verify that all PVS servers' bootstrap files have all PVS servers listed in them
Validate vDisk Replication	Verify .VHDX, .VHD, .AVHD, and .PVP files are replicated to all PVS servers (D:\) and across data centers
Citrix Cloud Connectivity	Ensure the PVS servers can successfully connect to Citrix Cloud via the Remote PowerShell SDK
Machine Creation Services Testing	
Machine Creation and Deletion	1. Ensure machines can be created and deleted through Machine Creation Services 2. Ensure Virtual Machines are created / deleted from the hypervisor or public cloud subscription 3. Ensure machine accounts are created / deleted in Active Directory
Machine Updates	Ensure machine catalogs can be updated via MCS
Power Management	Ensure machines can be turned on, powered off, and restarted from Citrix Studio
Policies Testing	
Citrix Services Policies	Launch an application or desktop and ensure Citrix Studio policies are applied by monitoring the session through Citrix Director
Microsoft Policies	Launch a desktop and ensure Microsoft policies are applied by running "gpresult -r" from an admin command prompt

Component level testing

Test	Description
Active Directory Testing	
AD Devices Testing	Validate devices are in the Active Directory domain and that users are able to log into the servers with domain credentials
Profile Use	Using a test user account (non-admin) without a profile, log onto application and verify that the mandatory/UPM user profile is being used
Shared Infrastructure Testing	
Citrix Licensing	Validate license server connectivity and available licenses from Citrix Virtual Apps, PVS, and WEM environments
Remote Desktop Services Licensing	Validate that RDS licenses are configured on the RDS license server and no VMs have RDS licensing error messages
Antivirus Exclusions	Verify all AV exclusions have been put in place

Congratulations –
you are ready for rollout!

If you completed the tests and checks in this guide you are ready to roll out your Citrix Virtual Apps and Desktops service to your users.

Visit the Citrix Cloud Success Center for click-by-click guidance and expert tips.

Any questions about testing and validation? We're here to help. Contact Cloud Success.

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