

## Deploying ZENworks on a Citrix Server Best Practices Guide

# Novell<sup>®</sup> ZENworks 10 Configuration Management SP3

10.3

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# About This Guide

The purpose of this *Best Practices Guide* is to describe the items you need to consider when deploying Novell ZENworks 10 Configuration Management on a Citrix server.

## **Audience**

This guide is intended for ZENworks administrators.

## **Feedback**

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to the [Novell Documentation Feedback site \(http://www.novell.com/documentation/feedback.html\)](http://www.novell.com/documentation/feedback.html) and enter your comments there.

## **Additional Documentation**

ZENworks Configuration Management is supported by other documentation (in both PDF and HTML formats) that you can use to learn about and implement the product. For additional documentation, see the [ZENworks 10 Configuration Management SP3 \(10.3\) documentation \(http://www.novell.com/documentation/zcm10/\)](http://www.novell.com/documentation/zcm10/).



# Best Practices for Deploying ZENworks on a Citrix Server

# 1

This section describes the items you need to consider when deploying Novell ZENworks 10 Configuration Management on a Citrix server. This information is intended to supplement the online resources that Novell provides to give you a better understanding of the design-related topics and requirements when deploying a Novell ZENworks 10 Configuration Management solution on a Citrix server.

ZENworks Configuration Management is also supported by other documentation (in both PDF and HTML formats) that you can use to learn about and implement the product. For additional documentation, see the [ZENworks 10 Configuration Management SP3 \(10.3\) documentation \(http://www.novell.com/documentation/zcm10/index.html\)](http://www.novell.com/documentation/zcm10/index.html).

The information in this document is organized as follows:

- ◆ [Section 1.1, “Understanding the Need for Integrating ZENworks and the Citrix Server,” on page 7](#)
- ◆ [Section 1.2, “Gathering Critical Information for Design Activities,” on page 8](#)
- ◆ [Section 1.3, “Performing Lab Tests and Validation,” on page 10](#)
- ◆ [Section 1.4, “Deploying the ZENworks Configuration Management Agent on Citrix Server,” on page 10](#)
- ◆ [Section 1.5, “ZENworks Configuration Management Agent Architecture,” on page 10](#)
- ◆ [Section 1.6, “ZENworks Configuration Management Tuning Parameters,” on page 11](#)

## 1.1 Understanding the Need for Integrating ZENworks and the Citrix Server

When ZENworks and the Citrix Server are properly integrated, these powerful solutions provide a functionally rich and manageable solution that is not possible when they are implemented in isolation. It is important to provide additional functionality without losing the functionality or reliability of either of the components.

By integrating Novell ZENworks Configuration Management and the Citrix Server, you achieve the following benefits:

- ◆ Improved application accessibility and manageability
- ◆ Strengthened security through Patch Management
- ◆ Improved compliance through Asset Management
- ◆ Improved remote access of applications that are on the Citrix server

Allows you to gain simple and one-click access to the applications on the Citrix server. Having all your local and remote software in one place allows you to reduce complexity and increase productivity.

- ◆ Management of the Citrix servers

- ◆ Patching of the Citrix servers and the applications hosted on the Citrix servers
- ◆ Load balancing of the Citrix servers
- ◆ Availability of support for the Citrix Server farm that has servers that are a part of an Active Directory forest or a workgroup

## 1.2 Gathering Critical Information for Design Activities

You need to gather information to help you design your specific implementation for deploying Novell ZENworks 10 Configuration Management on a Citrix Server.

Review the following sections:

- ◆ [Section 1.2.1, “Performing a Technical Assessment,” on page 8](#)
- ◆ [Section 1.2.2, “Factors Influencing Scalability,” on page 9](#)
- ◆ [Section 1.2.3, “Scale Numbers,” on page 9](#)
- ◆ [Section 1.2.4, “Ports Used by the ZENworks Agent,” on page 10](#)

### 1.2.1 Performing a Technical Assessment

You need to perform a technical assessment to review what you already have, identify what you need, and document your requirements.

You also need to have a good understanding of the existing infrastructure. To do this, you should hold a set of workshops or meetings to obtain all the information you need.

The two main results from a technical assessment are documentation on your findings, along with a set of tasks that you need to perform. Information that you should gather includes the following:

- ◆ Which version of Citrix Server should you use?

For more information on the supported versions of Citrix Server, see the [ZENworks 10 Configuration Management Installation Guide \(http://www.novell.com/documentation/zcm10/index.html\)](http://www.novell.com/documentation/zcm10/index.html).

- ◆ What is the maximum number of user sessions per server that can be active on Citrix Server?

If the maximum number of user sessions per server is more than the recommended number, try adding more servers to the Citrix farm. We plan to provide such recommendations for the ZENworks 11 Configuration Management product after the product is released.

- ◆ Is user-based management used?

If it is used, a policy or bundle must be assigned to the users only if the policy or bundle is not applicable to all the users logging in to the server. However, if the policy or bundle is applicable to all the users logging in to the server, assign it to the device instead of assigning it to all the users.

For example, if there are 150 bundles that are assigned to the users and 50 bundles are common to all the users logging in to a device, assign these 50 bundles to the device instead of the user.

- ◆ Are servers available in the Citrix farm? If they are, how many servers are available and are these servers load balanced?

Make sure that no single server is overloaded. For information on load balancing mechanisms, see the [Citrix Web site \(http://www.citrix.com\)](http://www.citrix.com).

- ◆ Is the Novell Client installed on the Citrix server?

If the Novell Client is not installed on a Citrix server, the Citrix server session might crash during login. To avoid this issue, see “[Tasks to be Performed After Deploying the Agent on Citrix Servers](#)” on page 10.

- ◆ Do you plan to use the DLU policy? If you do, are the profiles volatile?

If there is more than one Citrix server in a farm, you must use the volatile DLU and Roaming Profile policies to enable the users and their profiles to exist on all the servers in the farm. If you do not use the volatile DLU and Roaming Profile policies, a profile synchronization issue might exist among the servers.

- ◆ Do you have a mechanism to handle idle and disconnected sessions? If you do, how often is it used?

The idle and disconnected sessions should be periodically logged out to enable the ZENWorks events such as memory release and policy unenforcement to happen. Otherwise, the server might have high memory consumption.

- ◆ Are the Citrix servers used only to distribute applications or they are also used as terminal servers?

You must deploy ZENworks 10 Configuration Management on Citrix Server only if you want the Citrix server to be used as a terminal server in addition to distributing applications. However, if you only intend to distribute applications, create thin client bundles and assign them to devices or users

## 1.2.2 Factors Influencing Scalability

The main physical factor that govern the scalability of the Citrix servers is the RAM. The majority of operations are performed by three services: zenworksWindowsService, ZenNotifyIcon, and zenUserDaemon. The RAM consumption depends on the number of sessions and the number of effective assignments that each session has.

For the minimum hardware recommendations, refer to the [Citrix Web site \(http://www.citrix.com\)](http://www.citrix.com). If you can provide hardware that exceeds these recommendations, your system will perform better. Additional processing power and faster drives can make the systems more responsive.

The other factors that you need to consider include:

- ◆ Device refresh frequency
- ◆ Bundle schedules
- ◆ System requirements

## 1.2.3 Scale Numbers

The information will be available for ZENworks 11 Configuration Management product after the product is released.

## 1.2.4 Ports Used by the ZENworks Agent

For information on the ports used by the ZENworks Agent, see the [ZENworks 10 Configuration Management Installation Guide](http://www.novell.com/documentation/zcm10/index.html) (<http://www.novell.com/documentation/zcm10/index.html>)

## 1.3 Performing Lab Tests and Validation

Before deploying ZENworks 10 Configuration Management on Citrix Server in a production environment, we recommend that you test ZENworks 10 Configuration Management on the Citrix servers with the exact load that needs to be in the production environment.

## 1.4 Deploying the ZENworks Configuration Management Agent on Citrix Server

For deploying the ZENworks Configuration Management Agent on Citrix Server, see the Deploying the ZENworks Adaptive Agent section in the [ZENworks 10 Configuration Management Discovery, Deployment, and Retirement Reference](http://www.novell.com/documentation/zcm10/index.html) (<http://www.novell.com/documentation/zcm10/index.html>).

### Tasks to be Performed After Deploying the Agent on Citrix Servers

After deploying the ZENworks Adaptive Agent on Citrix servers, do either of the following on the Citrix servers before launching a terminal session with the server:

- ◆ Rename NWGina.dll.
  1. In the `c:\windows\system32` directory, rename `NWGina.dll`.
  2. In the Registry Editor, go to `HKLM\Software\Microsoft\WindowsNT\CurrentVersion\Winlogon`, and change the value of the `CtxGinaDLL` key to the new name of `NWGina.dll`.
  3. Reboot the server.
- ◆ Install the Novell Client.

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**IMPORTANT:** If you fail to perform the preceding tasks, you will encounter ICA login session issues when you try to launch a terminal session with the Citrix server. For more information about the ICA login session issues, see “Unable to launch a terminal session with a Citrix Server that has ZENworks Adaptive Agent installed” in the [ZENworks 10 Configuration Management System Administration Reference](http://www.novell.com/documentation/zcm10/index.html) (<http://www.novell.com/documentation/zcm10/index.html>).

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## 1.5 ZENworks Configuration Management Agent Architecture

For information on the ZENworks Configuration Management architecture, see *The ZENworks Configuration Management Architecture* in the [System Deployment and Best Practices Guide](http://www.novell.com/documentation/zcm10/index.html) (<http://www.novell.com/documentation/zcm10/index.html>).

## 1.6 ZENworks Configuration Management Tuning Parameters

This section provides information about the scenarios you might encounter if the parameters configured for a Citrix server are not appropriately tuned as per the deployment environment:

- ♦ [Section 1.6.1, “User Sessions on a Citrix Server Fail to Terminate,” on page 11](#)
- ♦ [Section 1.6.2, “High Utilization of Resources on a Citrix Server,” on page 11](#)
- ♦ [Section 1.6.3, “High Consumption of Memory on a Citrix Server,” on page 12](#)
- ♦ [Section 1.6.4, “Disabling Random Refresh Might Cause the ZENWorks Adaptive Agent to Crash on a Citrix Server,” on page 12](#)
- ♦ [Section 1.6.5, “Logging in to the User Source on a ZENworks Server is Slow,” on page 12](#)

### 1.6.1 User Sessions on a Citrix Server Fail to Terminate

Terminating a thin client application that is running on a Citrix server might not close the user session on the server. Consequently, when the user logs out of the server, the roaming profile data for the user session is not saved.

To close the user session on the Citrix server, perform the following steps on the server:

- 1 Open the Registry Editor.
- 2 Go to  
`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Citrix\wfshell\TWI.`
- 3 Change the value of `LogoffCheckSysModules` from `ZCMUMHelper.exe` to `ZenUserDaemon.exe`.
- 4 Reboot the device.

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**NOTE:** This issue has been fixed in Update for ZENworks 10 Configuration Management SP3 (10.3.1) release.

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### 1.6.2 High Utilization of Resources on a Citrix Server

During a partial or general refresh of the ZENworks Adaptive Agent on a terminal session of a Citrix server, the agent simultaneously refreshes the sessions of all the users logged into the terminal server. If too many users have logged into the terminal server, this might cause high usage of system resources, and subsequently the ZENworks Adaptive Agent might take considerable time to refresh the terminal server.

To avoid high utilization of resources on the Citrix server:

- 1 Open the Registry Editor.
- 2 Go to `HKLM\Software\Novell\ZCM\`.
- 3 Create a string called `EnableBatchRefresh` and set its value to 1. By default, the number of user sessions that can be simultaneously refreshed is 5.
- 4 (Optional) If you want to change the default number of user sessions that must be simultaneously refreshed, create a string called `maxUserRefreshThreads` and set the desired value.

### 1.6.3 High Consumption of Memory on a Citrix Server

On a Citrix server or a terminal server, if a user disconnects a session without logging out from it, the session exists in the disconnected state. This might cause high memory consumption of the agent service.

To avoid high consumption of memory on the Citrix server, do one of the following:

- ◆ Ensure that the users log out from a session instead of just disconnecting the session.
- ◆ Set a time limit to automatically log out from a disconnected session. For detailed information, see the [Microsoft Knowledgebase \(http://support.microsoft.com/kb/186566\)](http://support.microsoft.com/kb/186566).

### 1.6.4 Disabling Random Refresh Might Cause the ZENWorks Adaptive Agent to Crash on a Citrix Server

If Random Refresh for the ZENWorks Adaptive Agent is disabled and if multiple users log in to the Citrix server at the same time, then all the sessions try to refresh at the same time. This can cause resource contention, and subsequently causes the agent to crash because the cache access is not synchronized. To avoid this, Random Refresh must be enabled for the ZENWorks Adaptive Agent.

### 1.6.5 Logging in to the User Source on a ZENworks Server is Slow

Logging in to the user source on a ZENworks Server from the managed device might take some time because the login process executes the device refresh synchronously.

To speed up the login process, perform the following steps to execute the device refresh asynchronously:

- 1 Open the Registry Editor.
- 2 Go to `HKEY_LOCAL_MACHINE\Software\Novell\ZCM`.
- 3 Create a string called `ZENLoginUserRefreshAsync` and set its value to `TRUE`.
- 4 Log in to the device again.

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**IMPORTANT:** If you change the login process to execute the device refresh asynchronously, the latest policies might not be immediately available. With this change, you make the login performance more important than the accuracy of the policies.

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