Lenovo_® XClarity[™] Administrator Performance

Tips and Techniques

Lenovo Enterprise Business Group

May 2015

©2015 Lenovo. All rights reserved.

Contents

Introduction	3
Virtual Machine Size	3
Performance Tips and Techniques	3
Use Bulk Import to Manage Hardware	3
Delay Deployment or Firmware Update Tasks After a Restart	4
Turn Off the Probe for Manageable Systems Function	5
Use Filters and System Selection to Create Subsets of Lists	5
Copy Update Compliance Policies to Create New Policies with Few Changes5	5
Use Global Update Compliance Policy Application	6

Introduction

This document aids the deployment of Lenovo XClarity Administrator by providing tips and techniques that will help IT administrators optimize its performance.

Virtual Machine Size

The Lenovo XClarity Administrator virtual appliance supports deployment to the following host operating systems:

- VMware ESXi, version 5.1 update 1 or version 5.5 or later
- Microsoft Windows Server 2012 or higher with Hyper-V installed

The minimum virtual machine requirements for the appliance are two virtual CPUS and 6 GB of RAM. Depending on the size of your managed environment and the pattern of use in your installation, you may find that you need to add more resources to maintain acceptable performance.

For Hyper-V environments using large amounts of memory for the virtual appliance, global Hyper-V settings will need to be adjusted to disable use of non-uniform memory access (NUMA). If you fail to make this adjustment, you will observe that the XClarity virtual appliance experiences a kernel panic at initial system startup. This is due to a limitation in Hyper-V when running Linux guests with a 2.6 kernel base. In your Hyper-V environment, disable NUMA spanning in the Hyper-V Settings Panel, accessed from Hyper-V Manager for your host. Changing this setting will require a restart of your Hyper-V service, which will also require restarting all of your running virtual machines.

Performance Tips and Techniques

Lenovo XClarity Administrator is easy to deploy into production. There is little that you need to do to tune it for performance. This section describes features implemented in the product to optimize the user experience in larger-scale managed environments. There are also some useful tips that will help with optimizing for large scale.

Use Bulk Import to Manage Hardware

Lenovo XClarity Administrator has a bulk import function located in the **Discover** and **Manage New Devices** panel available under the **Hardware** pulldown menu (see Figure 1). Bulk import allows you to batch-manage a list of a large number of endpoints to manage. Simply provide the list to the program when you are

lenovo	. XClarit	t y Administr	ator	¢	Status 🔹	🔕 Jobs 🔹	USERID *	0 -
🕰 Dashboard	Hardware 👻	Provisioning 🗸	Monitoring -	Administration ·	.			
✓ Hardware Status		Inventory All Servers Flex Storage Flex Switches Flex Cheeses						?
All Servers		 Racks 		Flex Cha	ISSIS	Racks		
a 150	Discover an	d Manage New Devices	7		14		8	
112 🗐 16 🔬 22 😵		0 📄 0 🐊 0 🔇	23 4 A 0 &	-	0 🗐 2 🔔 12 🔇	1 2 5	▲	
→ Provisioning Status								?
© Configuration Patterns 0 Servers with Profiles 147 Servers without Profiles			Operating Syst 1 Available OS Im	ages	Patrice .	Firmware Upda 46 Devices Con 124 Devices Non 22 Compliance		
0 Server Patter	rn Deploys in Pro	gress	0 Image Deploys	in Progress		0 Updates in Prog	gress	
✓ Lenovo® XClarity Adm	inistrator Activity	4						?
Jobs 0 Active Jobs		2	Active Session	S				

Figure 1 – Lenovo XClarity Administrator dashboard, showing *Hardware* pull down menu with the *Discover and Manage New Devices* option highlighted.

ready to manage and the endpoints are managed in parallel. You can download template import files from the bulk import user interface in either .xls or CSV format; the .xls version includes instructions. Note that to perform the bulk import you will need to upload your list of hardware in CSV format. You can monitor the progress of the bulk import job using the **Jobs** panel, located under the **Monitoring** menu.

Not all fields in the bulk import template are required to manage a system. These optional fields can be exploited to further automate the bulk management process. See the help text in the .xls and product documentation on bulk import for further detail.

Delay Deployment or Firmware Update Tasks After a Restart

After restarting Lenovo XClarity Administrator, it will re-inventory your systems, ensuring that the program has the current details of your hardware. The program also performs additional startup processing to optimize later use. After a restart, it is best to wait for approximately 30-45 minutes, depending upon the number of managed endpoints, before attempting firmware updates, configuration pattern deployments, or OS deployments, especially against multiple systems. This will allow more processing resources to be available for your task.

Turn Off the Probe for Manageable Systems Function

On the Discover and Manage New Devices panel, the **Probe for Manageable Systems** function is selected by default. This option automatically provides a convenient list of hardware available to manage in the same subnet as the Lenovo XClarity Administrator virtual appliance. The hardware is discovered with a Service Location Protocol (SLP) broadcast, and the broadcast is repeated periodically to ensure the hardware list is current. After you have finished discovering and managing systems, uncheck this option to reduce the processing and network traffic that it requires. If you need to discover and manage more hardware later, simply check the option again if you would like to generate the list of manageable systems in the virtual appliance's subnet.

Use Filters and System Selection to Create Subsets of Lists

The Lenovo XClarity Administrator offers two ways in the user interface to select a subset from a large list. The **Filter** input field is available for most lists, and it dynamically creates a subset based on character input found in any of the available columns. The system selector pull down control is available on selected lists in the user interface; it allows you to limit a list to the components within a single Flex chassis or rack. When available, these controls are just above the top right corner of the list as shown in Figure 2. When a list of items is large, it is extremely helpful to use these powerful methods to create a smaller list that is easier to work with.

Copy Update Compliance Policies to Create New Policies with Few Changes

Lenovo XClarity Administrator Updates function utilizes a compliance policy to dictate the update recipe for a given set of managed endpoints. The product comes with a default compliance policy for all supported Flex endpoints. Users are free to create their own custom policies from the available updates in the update repository for the virtual appliance. This can be done efficiently from scratch if the policy will only apply to a single machine type or small set of machine types. In instances where the policy is intended to be a new global policy for all supported elements, you may find it easier to start with a copy of the Lenovo-supplied policy which you can then tailor to your specification, while retaining the recommendations from Lenovo for elements that you are not changing from the default policy setting.

lenovo.	Clarity Adm	ninistrat	or		(s s	tatus =	🙆 Jobs 🕚		USERID -	Ø •
🔊 Dashboard Hardwa	are - Provision	ning - M	onitoring 👻	Administ	ration +						
Servers) de Q ₂ (Unmanage Ra	ck Server	All Actions	•			Show:			
							SN#Y011BG32302H *			node0	×
	1 Jacobio	- Carallan		284	lane sea		All Systems	1			
Server	Status	Power	IP Addresses	Rack Name/Unit	Chassis/B	Pro	Chassis	•	SN#Y034	034BG16F03V	mware EFI)
		(F) 0//	And in case of		011010100	1011	Rack Name	•	SN#Y	013BG25P0NJ	E A JE CHAT
node04	Mormal	M OII	Number of	Scale R	SN#YU11BC	IBM	Flex System X	240 Compute	SN#Y	034BG16F03A	E145HU
node08	Mormal	Off Off	Contraction -	Scale R	SN#Y011BC	IBM	Flex System x2	240 Compute	SN#Y030BG168001 SN#Y030BG168001 SN#Y011BG38E032		E105JU
node03	📄 Normal	🕑 Off	1200	Scale R	SN#Y011BC	IBM	Flex System x2	240 Compute			E105JU
node05	📄 Normal	Off	-	Scale R	SN#Y011BC	IBM	Flex System x2	240 Compute	SN#Y011BG32302H		E105JU
node08_1	Normal	@ Off	102407	Scale R	SN#Y011BC	IBM	Flex System x2	222 Lower Co	SN#Y	034BG17L019	∞E146D
node08_2	Normal	Ø Off	12025	Scale R	SN#Y011BC	IBM	Flex System x2	222 Upper Co	mput	7916-99X	CCE146D

Figure 2 – Lenovo XClarity Administrator server list, showing the system selector pull down selecting a single chassis, and the filter text field creating a subset of rows containing the text "node0."

Use Global Update Compliance Policy Application

Lenovo XClarity Administrator updates function automatically assigns a default compliance policy to newly-managed endpoints if there is only one applicable policy to apply. To change assignments after management, or in the event that multiple compatible policies exist for an endpoint, you can use the bulk policy apply option, located on the table menu bar within the **Apply/Activate** updates user interface to the left of the "All Actions" button. There are three variants of bulk application: Apply the policy to all applicable endpoints, apply the policy to all applicable endpoints. This final option can be combined with the filter function and the select-all check-box in the **Apply/Activate** table user interface. For example, to assign a policy to all elements in a Flex Chassis named "Chassis1", type "Chassis1" in the filter box, then use the select-all checkbox in the upper left of the table, then the bulk apply with the "Only Selected Endpoints" option.

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This information could include technical inaccuracies or typographical errors. Changes may be made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any performance data contained herein was determined in a controlled environment; therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems, and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk.

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. These and other Lenovo trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by Lenovo at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of Lenovo trademarks is available on the Web at http://www.lenovo.com/legal/copytrade.html.