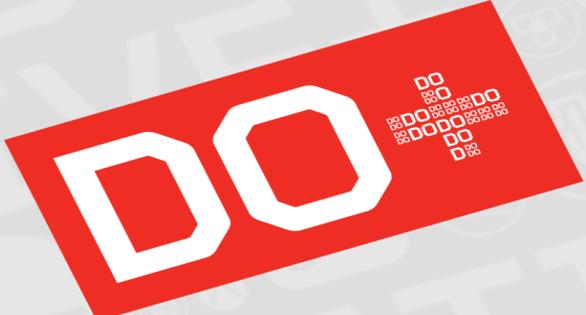




EBG Server Education: Resource Discovery, Management, Inventory

Jeanne Christensen | Team Lead - 4/15/15



- Resource Discovery
 - Automatic SLP Discovery
 - Manual Discovery
- Resource Management
- Managed Devices Inventory
- Unmanaging Resources

Resource Discovery

Automatic SLP Discovery

- LXCA periodically looks for compatible hardware
- Compatible hardware is displayed in the discovered hardware grid
- Supported endpoints can be selected for management from that grid
- Managed resources do not appear in the grid
- Can be turned off by deselecting the “Probe for Manageable Systems” option

Manual Discovery

- One or more endpoints can be discovered during the “Manual Input” and “Bulk Import” manage operations
- Allows for non-SLP discoverable systems to still be managed
- Non-compatible endpoints will fail the manage operation

Navigating to Resource Discovery Page

- Select the **Hardware Menu**
- Select the “**Discover and Manage New Devices**” sub-menu

The screenshot displays the Lenovo XClarity Administrator web interface. The top navigation bar includes 'Dashboard', 'Hardware', 'Provisioning', 'Monitoring', and 'Administration'. The 'Hardware' menu is expanded, showing a list of options: 'Inventory', 'All Servers', 'Flex Storage', 'Flex Switches', 'Flex Chassis', and 'Racks'. The 'Discover and Manage New Devices' option is highlighted with a red dashed border. Below the navigation bar, the 'Hardware Status' section is visible, featuring three main categories: 'All Servers' (26 total), 'Flex Chassis' (3 total), and 'Racks' (0 total). Each category includes a list of status indicators represented by colored squares and warning symbols.

Category	Total	Green	Yellow	Red	Grey	Unknown
All Servers	26	19	2	0	0	5
Flex Chassis	3	1	1	0	0	1
Racks	0	0	0	0	0	0

Discover and Manage New Devices Page

lenovo XClarity Administrator Status Jobs RAJ ?

Dashboard Hardware Provisioning Monitoring Administration

Discover and Manage New Devices

[+ Manual Input](#) [+ Bulk Import](#)

Probe for Manageable Systems

| Manage Selected |

<input type="checkbox"/>	Name	IP Addresses	Serial Number	Type	Type-Model	Manage Status
<input type="checkbox"/>	SN#Y031BG23200J	10.243.2.80, fe80::5ef3:f...	23DWN55	Chassis	8721-HC1	Ready
<input type="checkbox"/>	PIT-CMM-150	10.243.0.141, fe80::42f...	23DZX85	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y010BG3C902S	10.243.3.191, fe80::42f...	06YYML3	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y013BG25P0RA	10.243.6.200, fe80::364...	23DWN55	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y031BG23200B	10.243.3.43, fe80::5ef3:f...	23DWN55	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y010BG48D07C	10.243.7.151, fe80::42f...	06CAVWN	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y010BG48D01J	10.243.7.165, fe80::42f...	06CAVWP	Chassis	8721-HC1	Ready
<input type="checkbox"/>	SN#Y010BG35G03K	10.243.0.228, fe80::364...	71D1039	Chassis	8721-CTO	Ready

Resource Management

- The manage operation
 - Puts the endpoint into system inventory
 - Configures the endpoint to centralized authentication
 - Configures the endpoint to the setup NTP server
 - Configures the endpoint to forward events and audit events to LXCA

Resource Management

- Managing SLP Discovered Systems
 - Select one or more supported endpoints from the Manageable Systems grid
 - Press the “Manage Selected” button

The screenshot shows the Lenovo XClarity Administrator interface. The main heading is "Discover and Manage New Devices". There are two buttons: "+ Manual Input" and "+ Bulk Import". A checkbox labeled "Probe for Manageable Systems" is checked. Below this, there is a "Manage Selected" button and a "Filter" input field. A table displays the following data:

<input type="checkbox"/>	Name	IP Addresses	Serial Number	Type	Type-Model	Manage Status
<input checked="" type="checkbox"/>	SN#Y031BG23200J	10.243.2.80, fe80::5ef3.f...	23DWN55	Chassis	8721-HC1	Ready
<input type="checkbox"/>	PIT-CMM-150	10.243.0.141, fe80::42f...	23DZX85	Chassis	8721-HC1	Ready

Resource Management: Managing SLP Discovered System

- Fill in the required fields and select “Manage”

The screenshot shows the Lenovo XClarity Administrator interface. A modal dialog box titled "Manage" is open, displaying a message: "SN#Y031BG23200J is going to be managed." Below this, there are two sections for credential entry:

- Specify chassis management module (CMM) credentials:** This section contains two input fields. The first field, labeled "user name (supervisor name)", is highlighted with a red dashed border and has a red error message "This value is required." next to it. The second field is labeled "password".
- Specify the password for the CMM recovery ID:** This section contains two input fields: "RECOVERY_ID password" and "confirm RECOVERY_ID password".

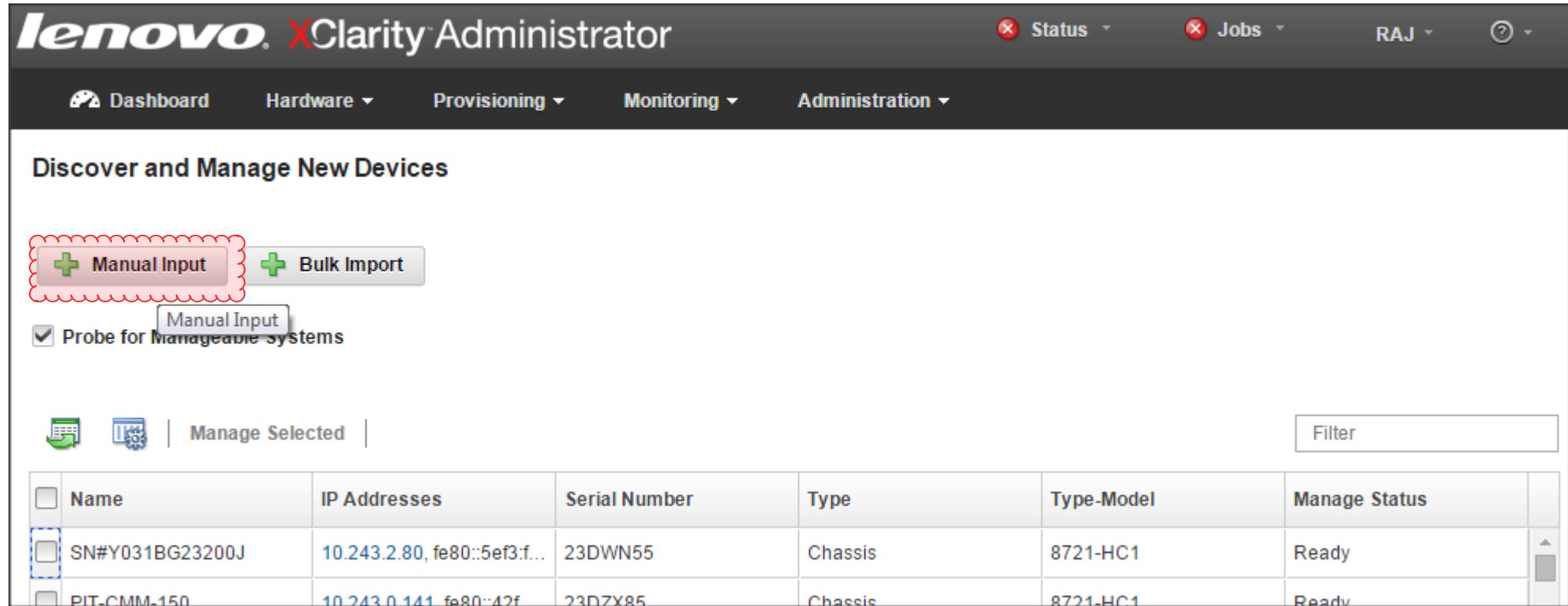
At the bottom of the dialog, there is a list of actions: "This will perform the following actions against chassis: 1. Configure NTP clients to use the NTP settings from Lenovo® XClarity Administrator 2. Configure for centralized user management". At the bottom right of the dialog are two buttons: "Manage" (highlighted with a red dashed border) and "Cancel".

In the background, a table of discovered systems is visible. The first row is selected and matches the system being managed:

Name	IP Address	Manage Status
<input checked="" type="checkbox"/> SN#Y031BG23200J	10.243.2...	Ready
<input type="checkbox"/> PIT-CMM-150	10.243.0...	Ready
<input type="checkbox"/> SN#Y010BG3C902S	10.243.3...	Ready
<input type="checkbox"/> SN#Y013BG25P0RA	10.243.6...	Ready
<input type="checkbox"/> SN#Y031BG23200B	10.243.3...	Ready
<input type="checkbox"/> SN#Y010BG48D07C	10.243.7...	Ready

Resource Management

- Managing via **Manual Input**
 - Select the “**Manual Input**” button



The screenshot displays the 'Discover and Manage New Devices' section of the Lenovo XClarity Administrator. At the top, there are navigation tabs: Dashboard, Hardware, Provisioning, Monitoring, and Administration. The main content area features two buttons: '+ Manual Input' (highlighted with a red dashed box) and '+ Bulk Import'. Below these buttons is a checkbox labeled 'Probe for Manageable Systems' which is checked. A 'Manual Input' tooltip is visible over the checkbox. At the bottom, there is a 'Manage Selected' button and a 'Filter' input field. A table of discovered devices is shown below, with columns for Name, IP Addresses, Serial Number, Type, Type-Model, and Manage Status.

<input type="checkbox"/>	Name	IP Addresses	Serial Number	Type	Type-Model	Manage Status
<input type="checkbox"/>	SN#Y031BG23200J	10.243.2.80, fe80::5ef3:f...	23DWN55	Chassis	8721-HC1	Ready
<input type="checkbox"/>	PIT-CMM-150	10.243.0.141, fe80::42f...	23DZX85	Chassis	8721-HC1	Ready

Resource Management: Manual Input

- Select “Single System” or “Multiple Systems” radio button

The screenshot displays the Lenovo XClarity Administrator web interface. A modal dialog box titled "Manual Input" is open in the center. The dialog contains two radio buttons: "Single System" (which is selected) and "Multiple Systems". Below the radio buttons is a text input field labeled "IP Address:". The dialog also features "OK" and "Cancel" buttons at the bottom. In the background, the main interface shows a "Discover and Manage New Devices" section with a table of devices. The table has columns for "Name" and "IP Address".

Name	IP Address
SN#Y031BG23200J	10.243.2
PIT-CMM-150	10.243.0
SN#Y010BG3C902S	10.243.3
SN#Y013BG25P0RA	10.243.6
SN#Y031BG23200B	10.243.3
SN#Y010BG48D07C	10.243.7
SN#Y010BG48D01J	10.243.7

Resource Management: Manual Input – Single System

- Enter the IP of the single targeted system and select “OK”

The screenshot shows the Lenovo XClarity Administrator interface. A modal dialog box titled "Manual Input" is open in the foreground. Inside the dialog, the "Single System" radio button is selected, and the "Multiple Systems" radio button is unselected. The "IP Address:" label is followed by a text input field containing the IP address "10.243.3.61". The "OK" button at the bottom of the dialog is highlighted with a red dashed border. In the background, the main interface shows a table of systems with columns for Name, IP Address, and Manage Status. The "Manage Status" column shows "Ready" for all listed systems.

Name	IP Address	Manage Status
SN#Y031BG23200J	10.243.2	Ready
PIT-CMM-150	10.243.0	Ready
SN#Y010BG3C902S	10.243.3	Ready
SN#Y013BG25P0RA	10.243.6	Ready
SN#Y031BG23200B	10.243.3	Ready
SN#Y010BG48D07C	10.243.7	Ready
SN#Y010BG48D01J	10.243.7	Ready

Resource Management: Manual Input – Multiple Systems

- Enter the IP ranges of the target systems and select “OK”

Manual Input

Single System Multiple Systems

10.243.3.61 - 10.243.3.63 X

10.243.3.71 - 10.243.3.73 X +

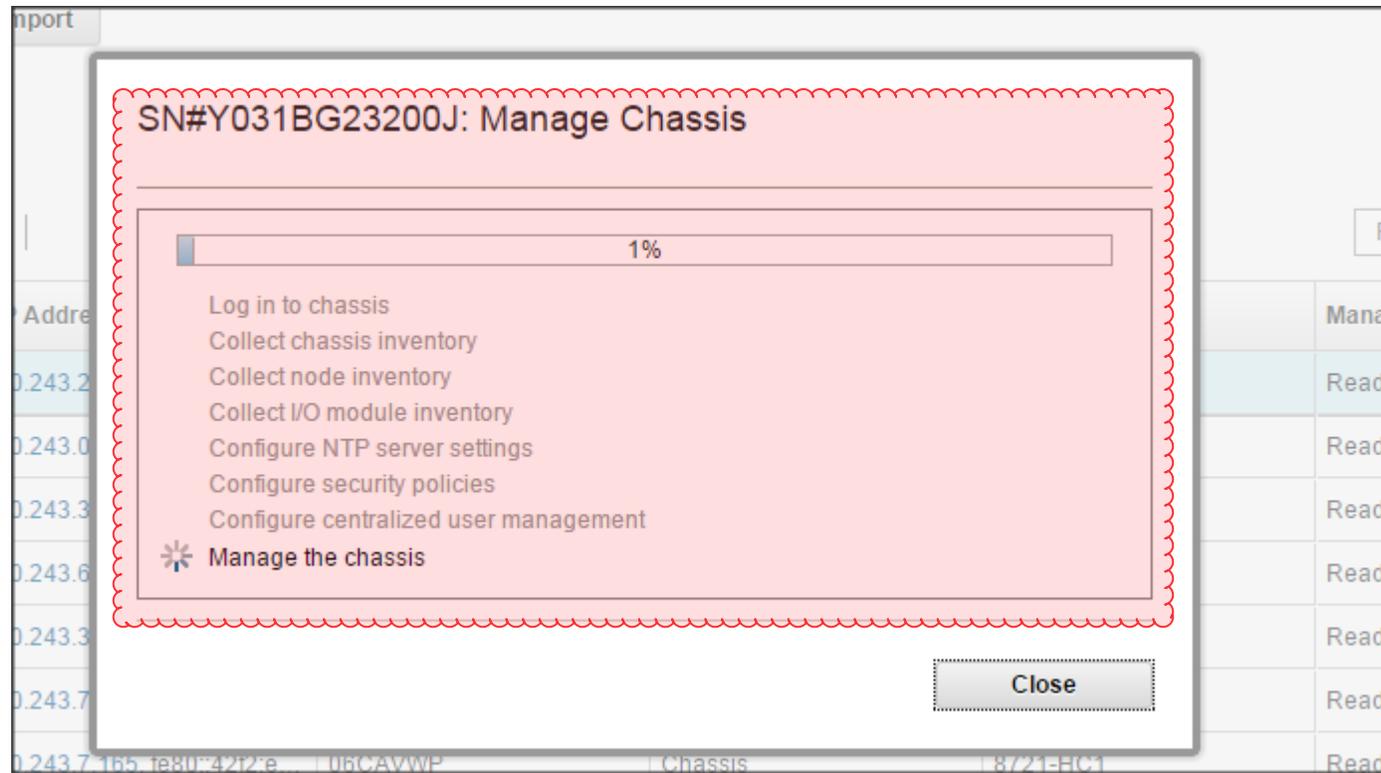
6 addresses to be added.

OK Cancel

Name	IP Address	Manage Status
SN#Y031BG23200J	10.243.2...	Ready
PIT-CMM-150	10.243.0...	Ready
SN#Y010BG3C902S	10.243.3...	Ready
SN#Y013BG25P0RA	10.243.6...	Ready
SN#Y031BG23200B	10.243.3...	Ready
SN#Y010BG48D07C	10.243.7...	Ready
SN#Y010BG48D01J	10.243.7...	Ready

Resource Management: Manage Dialogue

- Wait for manage dialogue to complete
- Optionally **close** the dialogue for the manage operation to **run as a background job**



Resource Management: Potential Errors

■ Potential Manage Errors:

Manage task:

- 1) **Validate network address and connectivity**
Fail if unable to connect or **unable to determine management IP address**
Verify IP address, account credentials, slp response
- 2) **Determine if already managed by either xClarity or FSM**
Fail if a CIM subscription from one of those products is **already configured on the endpoint**
Manually remove the subscription from the endpoint
- 3) **Gather initial inventory**
This could fail for **TCP command mode** or **CIM errors** that must first be resolved
Verify endpoint is configured to allow these protocols
- 4) **Verify interoperability**
Fail if **endpoint is not supported**
- 5) **Update DNS settings**
Does not fail management if this fails
- 6) **Update NTP settings and sync time**
Does not fail management if this fails
- 7) **Retrieve endpoint certificate(s) needed**
Will fail if **unable to retrieve appropriate certificates** and add to **trust store** (CMM **CA certificate**,
rack server **LDAP** and **CIM certificates**)

Potential Manage Errors (cont)

Manage Task (cont)

- 8) Update connections to make use of certificate(s)
Does not fail management
- 9) Install xClarity certificate on endpoint LDAP service
Fail management if unable to install certificate on endpoint
Review endpoint event logs and xClarity logs for errors
- 10) Install CIM indication subscription on endpoint
Fail management
Review endpoint and xClarity logs for errors
- 11) Configure LDAP settings
Fail management
Review endpoint and xClarity logs for errors
- 12) Update connections to make use of xClarity user accounts
Fail management
Review endpoint and xClarity logs for errors
- 13) Enable centralized management
Fail management
Review endpoint and xClarity logs for errors

Resource Inventory

- Managed resource inventory is provided throughout the LXCA user interface
- Provided inventory includes:
 - System description information (MTM/SN/UUID)
 - Installed components
 - System firmware levels
 - Health status
 - System LEDs
- LXCA refreshes resource inventory on event and on periodic intervals

Unmanaging Resources

- The unmanage operation
 - Removes the endpoint from system inventory
 - Removes the centralized authentication configuration from the endpoint
 - Removes the NTP configuration from the endpoint
 - Removes event forwarding from the endpoint

Unmanaging Resources

- Navigate to an endpoint hardware grid (Chassis or Rack)
- Select one or more endpoint to unmanage
- Select the “Unmanage” button

The screenshot displays the Lenovo XClarity Administrator interface. The top navigation bar includes the logo and menu items: Dashboard, Hardware, Provisioning, Monitoring, and Administration. The main content area is titled "Chassis" and features a table of chassis resources. A red dashed box highlights the "Unmanage Chassis" button in the top left of the table area. Another red dashed box highlights the row for chassis SN#Y030BG4B900D, which is currently selected (checkbox checked) and has a status of "Offline".

<input type="checkbox"/>	Chassis	Status	IP Addresses	Type-Model	Serial Number	Product Name	Firmware (CMM)
<input type="checkbox"/>	Demo - Lenovo demo ch	Warning	169.254.1.3, 169.25...	8721-HC1	00001X8721	Lenovo Flex System ...	2PET10N / 2.4.0 (De...
<input type="checkbox"/>	SN#Y031BG19G009	Offline		8721-FT3	B080SPb	IBM Accipiter Midplane	
<input checked="" type="checkbox"/>	SN#Y030BG4B900D	Offline	10.243.3.61, 10.243...	8721-HC1	23DGL39	Lenovo Flex System ...	1AON598 / Version ...

Unmanaging Resources

- Confirm the unmanage operation
 - Optionally force the operation to unmanage unreachable endpoints

The screenshot shows the Lenovo XClarity Administrator interface. The main content area displays a table of chassis resources. One chassis, SN#Y030BG4B900D, is selected. A confirmation dialog is open, asking if the user is sure they want to unmanage this chassis. The dialog lists the actions that will be performed, including starting the unmanage process, clearing configuration, removing certificates, and finally unmanaging the chassis. There is a checkbox for 'Force unmanage even if the endpoint is not reachable.' and two buttons: 'Unmanage' and 'Cancel'.

Chassis	Status
<input type="checkbox"/> Chassis	
<input type="checkbox"/> Demo - Lenovo demo ch	Warning
<input type="checkbox"/> SN#Y031BG19G009	Offline
<input checked="" type="checkbox"/> SN#Y030BG4B900D	Offline

Product Name	Firmware (CMM)
Lenovo Flex System ...	2PET10N / 2.4.0 (De...
IBM Accipiter Midplane	
Lenovo Flex System ...	1AON598 / Version ...

Are you sure that you want to unmanage the SN#Y030BG4B900D ?

This will perform the following actions against SN#Y030BG4B900D:

1. Start to unmanage the chassis
2. Clear the configuration for centralized management
3. Remove the CMM certificate from the management server trust store
4. Remove access to the NTP server from the CMM
5. Remove CIM subscriptions from the management server
6. Unmanage the chassis

Force unmanage even if the endpoint is not reachable.

Unmanage Cancel

Unmanaging Resources

- Wait for the unmanage progress dialogue to complete

The screenshot shows the Lenovo XClarity Administrator web interface. The main navigation bar includes 'Dashboard', 'Hardware', 'Provisioning', 'Monitoring', and 'Administration'. The current view is 'Chassis', with a sub-section for 'Unmanage Chassis'. A table lists several chassis units, with the one having SN#Y030BG4B900D selected. A modal dialog box is open, titled 'SN#Y030BG4B900D: Unmanage Chassis'. Inside the dialog, a progress bar shows 0% completion. Below the progress bar, a list of tasks is displayed: 'Start to unmanage the chassis', 'Clear the configuration for centralized management', 'Remove the CMM certificate from the management server trust store', 'Remove access to the NTP server from the CMM', 'Remove CIM subscriptions from the management server', and 'Unmanage the chassis'. An 'OK' button is located at the bottom right of the dialog.

Chassis	Status
<input type="checkbox"/> Chassis	Status
<input type="checkbox"/> Demo - Lenovo demo ch	Warning
<input type="checkbox"/> SN#Y031BG19G009	Offline
<input checked="" type="checkbox"/> SN#Y030BG4B900D	Offline

Name	Firmware (CMM)
ex System ...	2PET10N / 2.4.0 (De...
ter Midplane	
ex System ...	1AON598 / Version ...

Resource UnManage: Potential Errors

Potential UnManage Errors

UnManage Task:

If for any reason you can not unmanage an endpoint, you can select the 'Force' option. But the endpoint may need to be cleaned up to allow management again (i.e. clear CIM subscriptions)

1) **Connectivity** check to the endpoint

If we are **unable** to **communicate** with the **endpoint management IP address** we will fail

Use the force option

2) **Disable NTP settings**

Will not fail the unmanage task

3) **Remove CIM subscription**

Will not fail the unmanage task, may require additional cleanup later

4) **Delete EHCM node account** on chassis

Will not fail the unmanage task

5) **Disable centralized management**

If we fail this we will fail the unmanage task

Most typical failure is a **timeout** on the **disable centralized management** on a CMM. Try again or clean up endpoint manually and do a force option in xClarity.

6) **Remove endpoint certificate(s)** from xClarity trust store

Will not fail the unmanage task

THANK YOU GRACIAS OBRIGADO
MERCI DANKE GRAZIAS 謝謝 СПАСИБО
DANK TAKK BEDANKT DAKUJEM