Further analysis

Collecting event logs and service data (FFDC) for further investigation

Further analysis workflow

Servicers need to collect system event logs and/or service data, and then upload the logs to Lenovo System Care, where logs will be parsed for further analysis. Service data is also known as First Failure Data Capture (FFDC).

Log collection
Event logs, FFDC

→

Lenovo System Care
Upload logs
Parse logs

→

Analyze logs
Tech tips

Event logs

Light path diagnostic LEDs do not always give servicers enough information for troubleshooting. In these cases, it will often be necessary to collect event logs from the failing system to complete a diagnosis. Event logs contain alerts generated by Lenovo XClarity Controller (XCC) or by UEFI in the servers. If the server is managed by the Chassis Management Module (CMM) or by Lenovo XClarity Administrator (LXCA), alerts are automatically forwarded to those management applications.
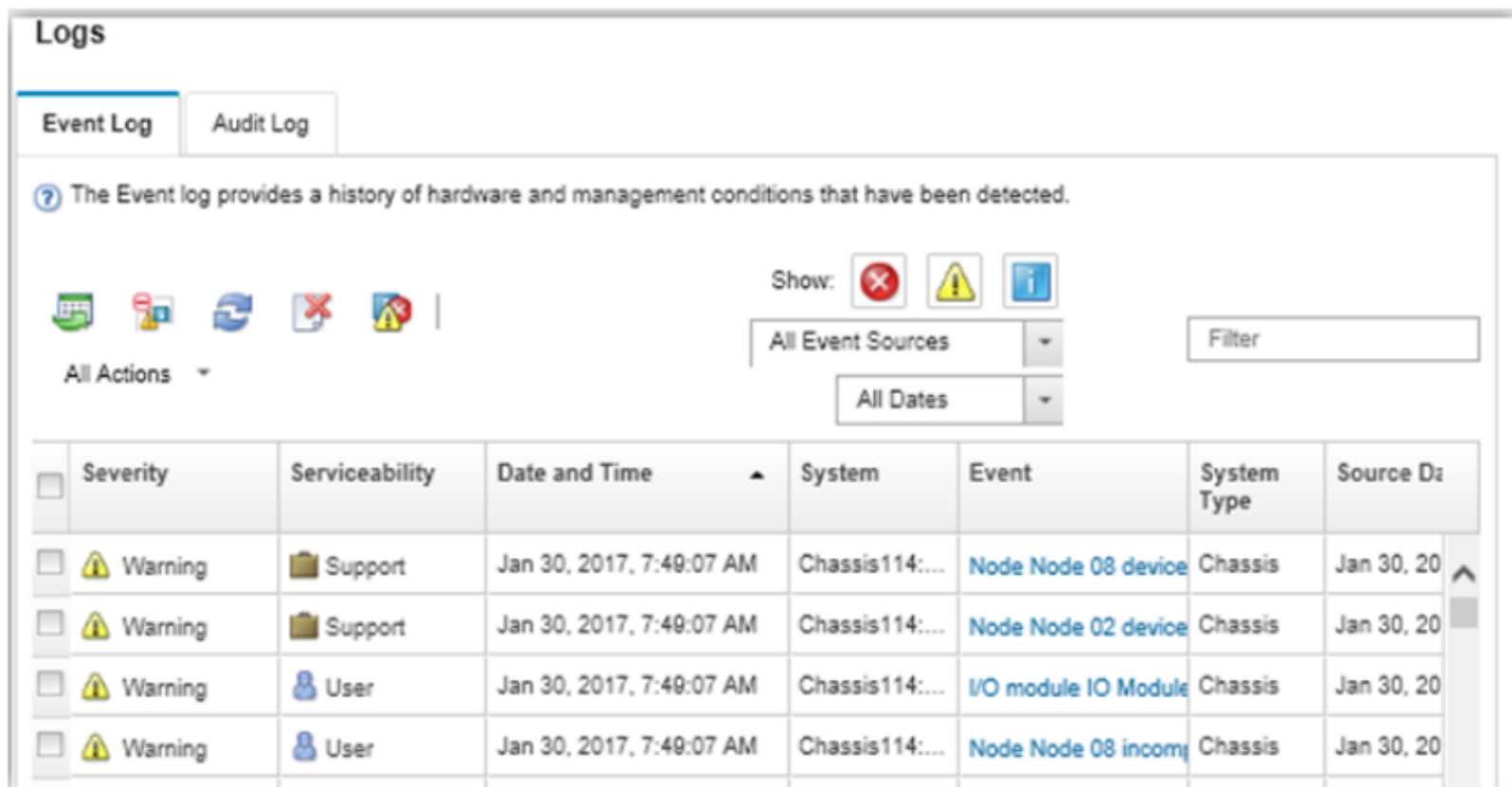
Users can find event logs at following locations:

- LXCA event log
- CMM event log
- XCC event log
- Lenovo XClarity Orchestrator (LXCO) events
- System Management Module (SMM) event log (only available for the ThinkSystem D2 enclosure)

LXCA event log

If LXCA is being used to manage servers, networks, and storage hardware, the tool can be used to check the events for all managed devices. To see the event log, select **Monitoring --> Event Logs** from the LXCA menu bar, and then click the **Event Log** tab.

Attention: Users can export the event log to ensure that they have a complete record of all hardware and management events. To export the event log, click the Export as CSV icon 📥.

Logs

Event Log	Audit Log

ⓘ The Event log provides a history of hardware and management conditions that have been detected.

Show: ❌ ⚠️ ℹ️

All Event Sources ▾

All Dates ▾

Filter

All Actions ▾

	Severity	Serviceability	Date and Time ▲	System	Event	System Type	Source Da
☐	⚠️ Warning	🗂 Support	Jan 30, 2017, 7:49:07 AM	Chassis114:...	Node Node 08 device	Chassis	Jan 30, 20
☐	⚠️ Warning	🗂 Support	Jan 30, 2017, 7:49:07 AM	Chassis114:...	Node Node 02 device	Chassis	Jan 30, 20
☐	⚠️ Warning	👤 User	Jan 30, 2017, 7:49:07 AM	Chassis114:...	I/O module IO Module	Chassis	Jan 30, 20
☐	⚠️ Warning	👤 User	Jan 30, 2017, 7:49:07 AM	Chassis114:...	Node Node 08 incom	Chassis	Jan 30, 20

Lenovo

CMM event log

The CMM event log contains all the events received by the CMM from all the components in the chassis including switch modules, compute nodes, fans, and power supplies. To access the CMM event log and configure event recipient notifications in the CMM web interface, select **Event Log** from the **Events** menu.

Further analysis

XCC event log

XCC monitors the physical state of the server and its components using sensors that measure internal physical variables such as temperature, power-supply voltages, fan speeds, and component status. The events are then posted in the XCC event log.
To access the XCC event log from the XCC web interface, select **Events** and then click **Event Log**.

Click the image to enlarge.

Further analysis

XCC event log

	Severity	Source	Common ID	Message	Date
	i	Power	FQXSPPW2008I	Host Power has been turned on.	June 2, 2017 7:01:49 AM
	i	Power	FQXSPPW0008I	Host Power has been turned off.	June 1, 2017 6:42:34 PM
	i	Power	FQXSPPW2008I	Host Power has been turned on.	June 1, 2017 6:32:36 PM
	i	Power	FQXSPPW0008I	Host Power has been turned off.	June 1, 2017 1:04:57 PM
	i	Power	FQXSPPW2061I	Sensor PSU2 IN Failure has transitioned to a less severe state from critical.	June 1, 2017 12:57:16 PM
	i	System	FQXSPPW2005I	Power Supply 2 has returned to a Normal Input State.	June 1, 2017 12:57:16 PM
	i	System	FQXSPPW2006I	Power Supply 2 has returned to a Normal Input State.	June 1, 2017 12:57:16 PM
	i	System	FQXSPPW2001I	Power Supply 2 has been removed from container power supply 2.	June 1, 2017 12:57:16 PM
	i	Power	FQXSPPW2008I	Host Power has been turned on.	June 1, 2017 3:15:11 AM
	i	System	FQXSFSR0003G	The number of boot attempts has been exceeded. No bootable device found.	May 30, 2017 6:47:37 PM
	i	Power	FQXSPPW0008I	Host Power has been turned off.	May 30, 2017 6:47:36 PM
	i	Power	FQXSPPW2008I	Host Power has been turned on.	May 30, 2017 6:44:49 PM
	i	Power	FQXSPPW0008I	Host Power has been turned off.	May 30, 2017 6:44:44 PM
	i	Power	FQXSPPW2008I	Host Power has been turned on.	May 30, 2017 6:42:09 PM

XClarity Controller — ThinkSystem SR550   System name: SR550-1   Export   USERID   7:46 AM

Home   Events   Inventory   Utilization   Remote Console   Firmware Update   Server Configuration   BMC Configuration

Event Log   Audit Log   Maintenance History   Alert Recipients

Customize Table   Clear Logs   Refresh   Type: All Source ▼   All Date ▼

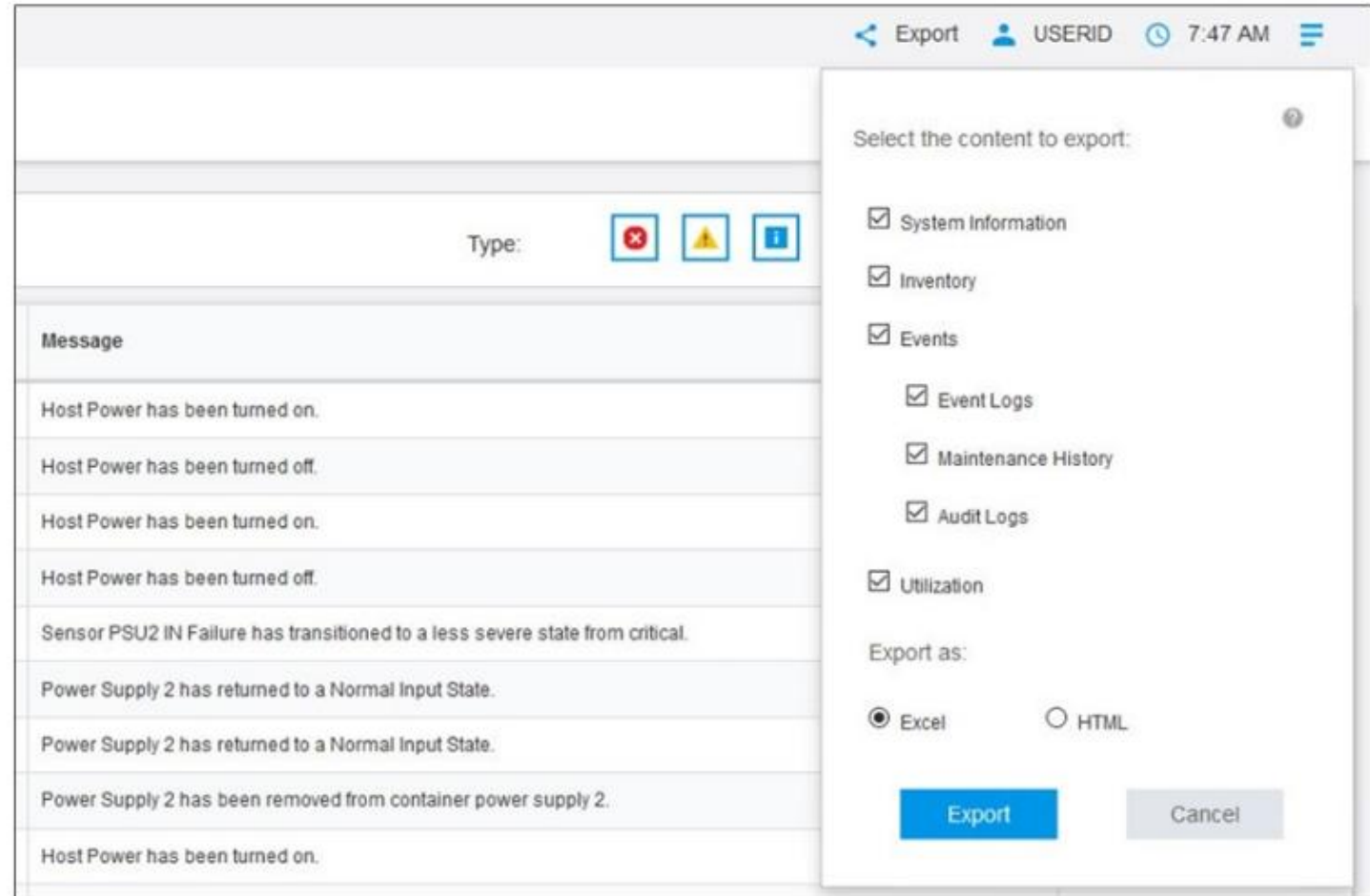Lenovo

How to export the event log from XCC

Users can export the event log to ensure that they have a complete record of all hardware and management events.

Click each number in turn to see the procedure.

Step **1**—**2**—**3**

Lenovo

How to export the event log from XCC

From the XCC web interface, open the **Event Log** page and click **Export**.

Step ①——②——③

How to export the event log from XCC

Select the content you want to export. Select an export file type, **Excel** or **HTML**, and then click **Export**.

Step ①—②—③

How to export the event log from XCC

Save the file.

Step ①—②—③

LXPM event log

LXPM is a UEFI application embedded in all ThinkSystem servers as the default F1 System Setup.
LXPM provides system inventory information, the graphical UEFI Setup, a platform update function, and the RAID Setup wizard. It also enables users to install the supported operating systems and associated device drivers, run diagnostics, see the event log, and collect service data.

Click each number in turn to see the procedure.

Step **1**—**2**—**3**

Lenovo
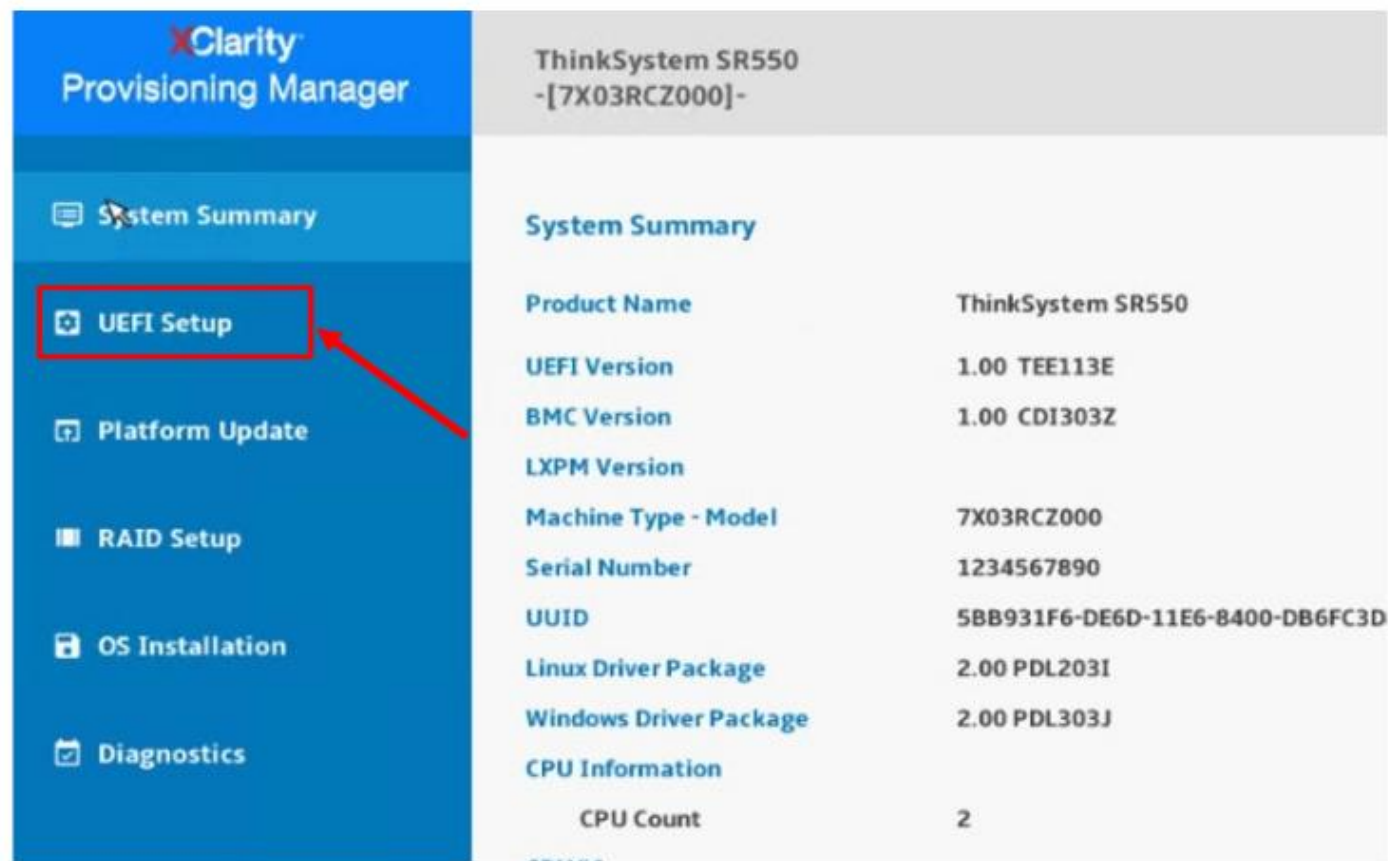
LXPM event log

Select **UEFI Setup**.

Step ①—❷—❸

LXPM event log

Select **System Event Logs** from the navigation menu on the left.
In the details section on the right, users can then select to either view or clear the system event logs

Step ①─②─③
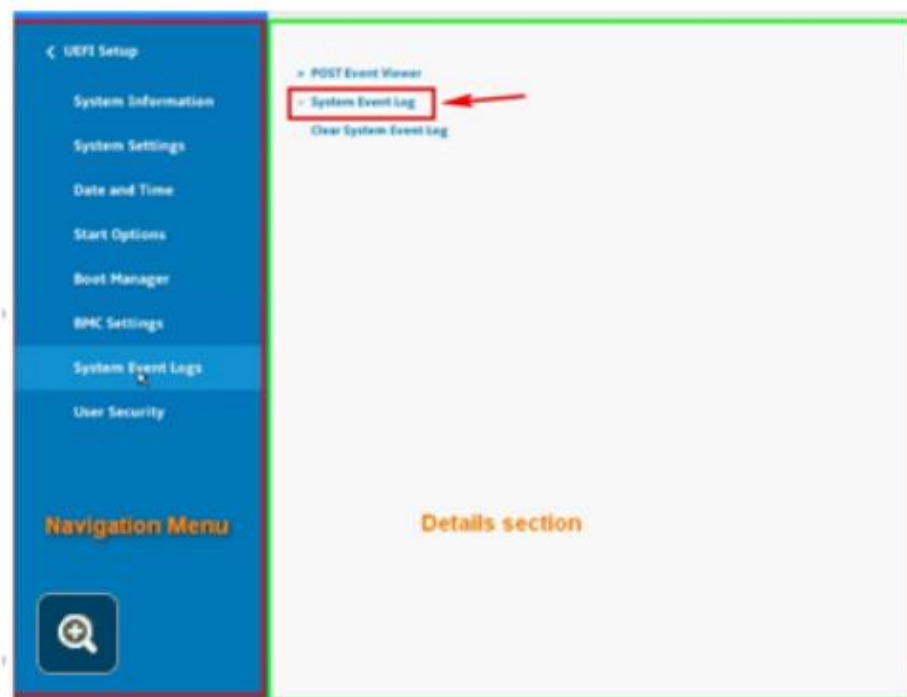
LXPM event log

If **System Event Log** is selected in the details section, the system event logs will be displayed.

XClarity Provisioning Manager

ThinkSystem SR550 -[7X03RCZ000]-

< UEFI Setup

System Information

System Settings

Date and Time

Start Options

Boot Manager

BMC Settings

System Event Logs

User Security

Total SEL entries	198
[1] Firmware Progress	
[2] Firmware Progress	
[3] Power Unit	
[4] Power Unit	
[5] Power Unit	
[6] Firmware Progress	
[7] Firmware Progress	
[8] Power Unit	
[9] Power Unit	
[10] Firmware Progress	
[11] Firmware Progress	
[12] Power Unit	
[13] Power Unit	

Step ①—②—③

Lenovo

SMM event log

The SMM event log is only available for the ThinkSystem D2 enclosure.
The SMM network is disabled by default. To adjust the SMM network settings, issue the following IPMI commands to XCC.
Note: The `<XCC's IP>` is the XCC's IP address
- To query:
  - `ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x00`
- To enable:
  - `ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x01`
- To disable:
  - `ipmitool -I lanplus -H <XCC's IP> -U USERID -P PASSWORD raw 0x3A 0xF1 0x02`

Click each number in turn to see the procedure for accessing the SMM log.

Step **1**—**2**—**3**

Lenovo

SMM event log

Log in to SMM.
When SMM has been enabled, users can connect to the SMM web interface by using DHCP or static IP. The default static IP will be 192.168.70.100. The default user ID will be USERID, and the default password will be PASSW0RD (zero, not an uppercase o).

Step ①—❷—❸
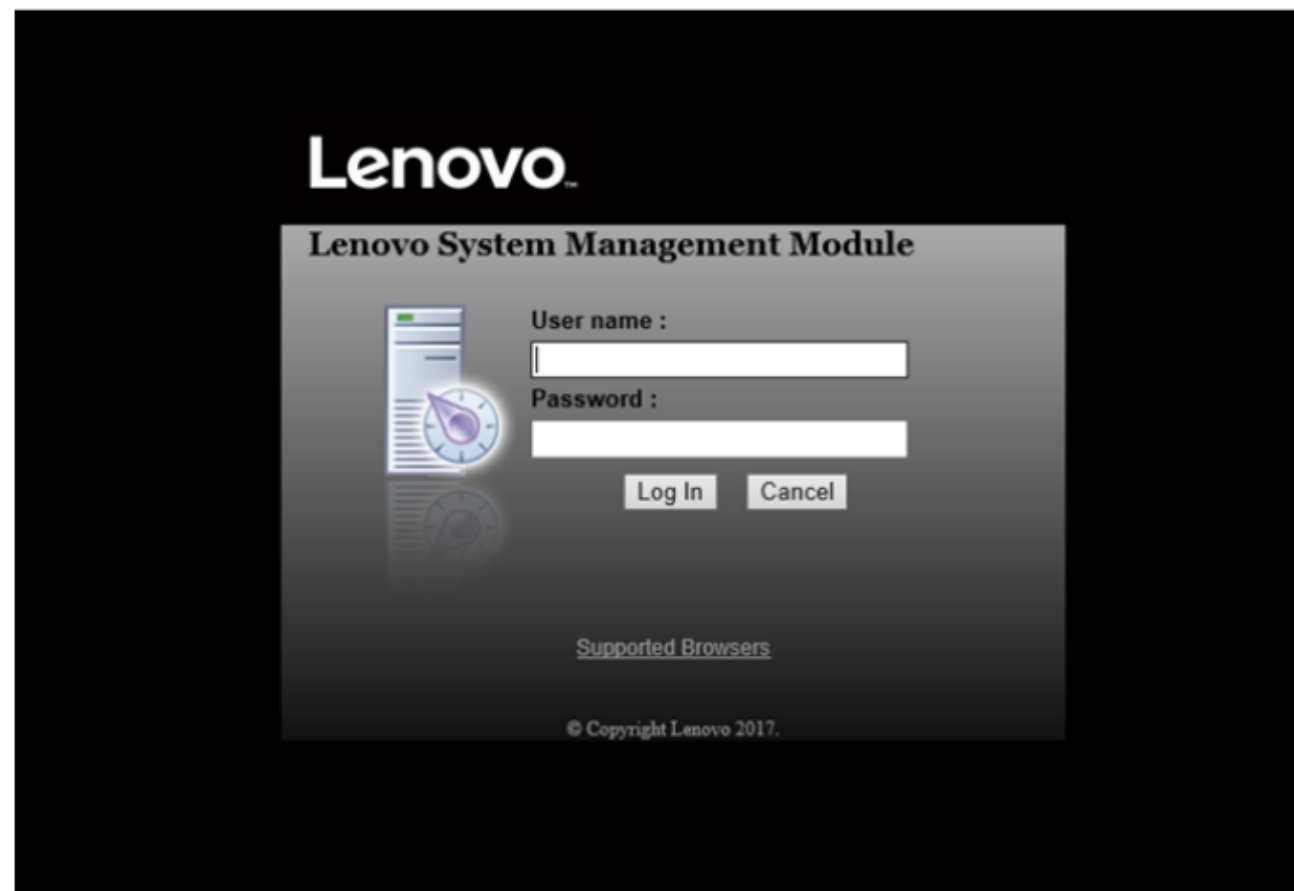
Lenovo

SMM event log

Select **Event Log**.

Step ①—②—③

SMM event log

The **Event Log** page will be displayed. The log can be refreshed, saved, or cleared.

Step ①—②—③

Service data

Service data is also known as First Failure Data Capture (FFDC).
To clearly identify the root cause of a server issue, users might need to collect service data that can be used for further analysis. Service data includes information such as event logs and hardware inventory. Service data can be collected using the following tools:
- LXCA
- XCC
- LXPM
- Lenovo XClarity Essentials CLI (OneCLI)
- Lenovo XClarity Orchestrator (LXCO)

Collecting service data – XCC web interface

The XCC web interface can be used to collect service data for the server, and the file can be saved and sent to Lenovo Support.

Click each number in turn to see the procedure.

Step **1**—**2**—**3**—**4**

Collecting service data – XCC web interface

Log in to the XCC web interface. On the **Home** tab, select **Service** from the **Quick Actions** section.

Step ① — ❷ — ❸ — ❹
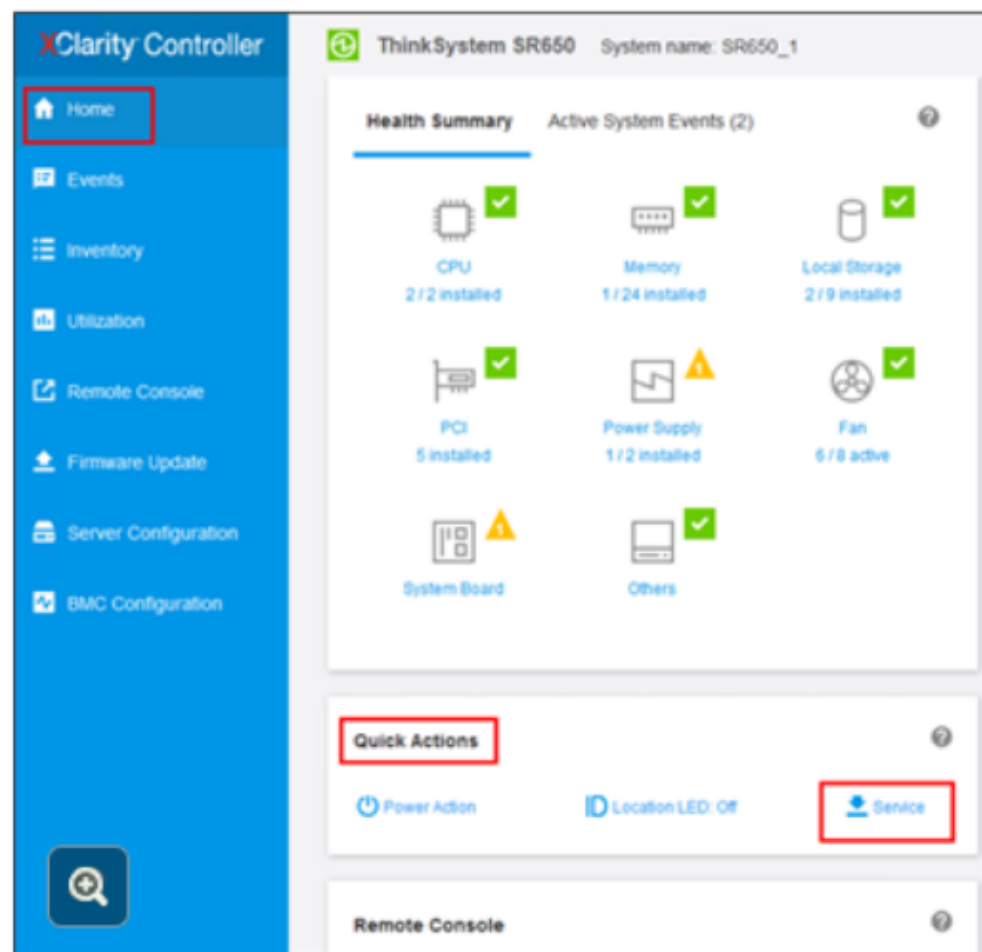
Collecting service data – XCC web interface

Select **Download Service Data**.
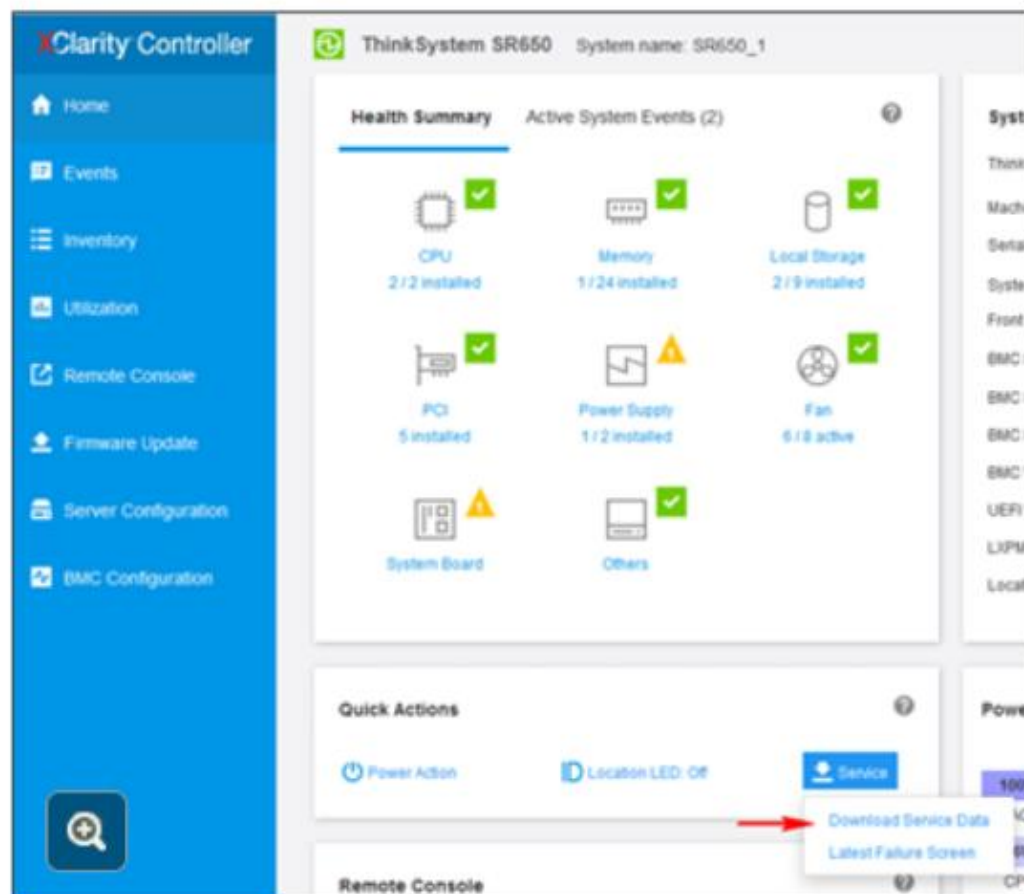
Step **1** — **2** — **3** — **4**

Collecting service data – XCC web interface

A prompt window will be displayed. Click **OK**.

Step ❶—❷—③—❹

Lenovo
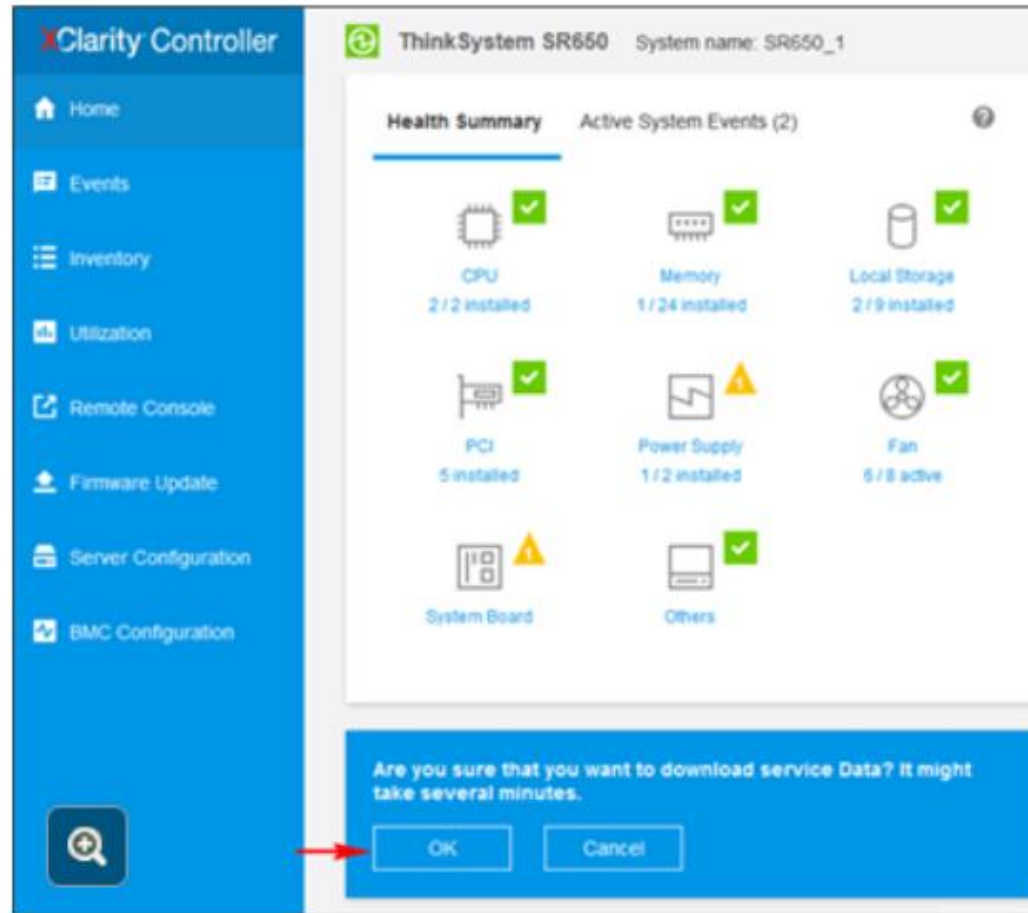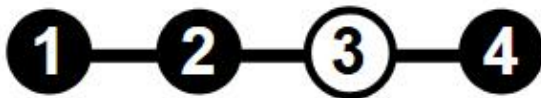
Collecting service data – XCC web interface

Save the service data to the local system.

Step ①—②—③—④
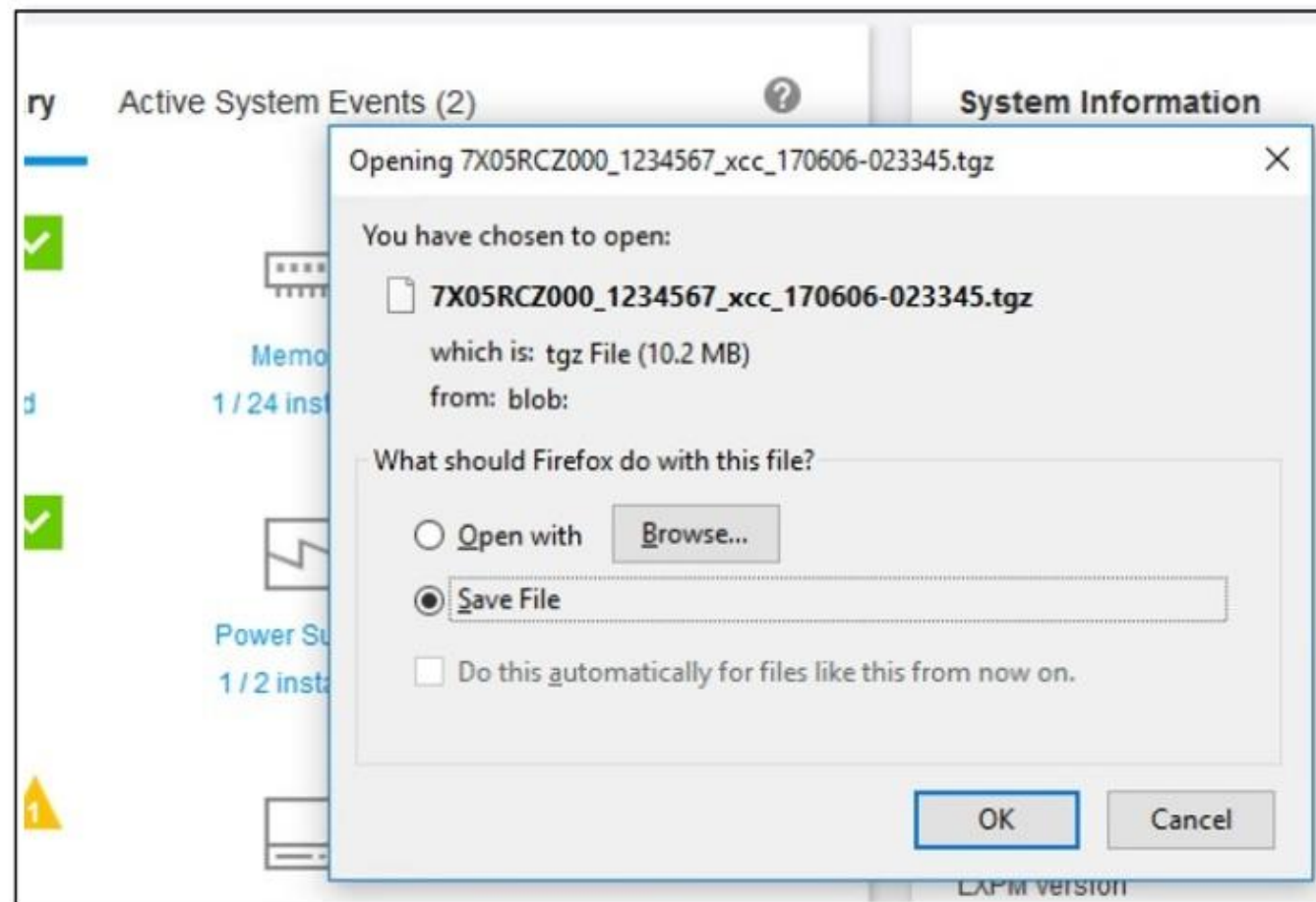
Collecting service data – LXCA

To download the LXCA service files, work through the following procedure.

Click each number in turn to see the procedure.

Step ❶—❷—❸—❹

Lenovo

Collecting service data – LXCA

Select **Service and Support** from the **Administration** drop-down menu.

Step ①──❷──❸──❹

Collecting service data – LXCA

Lenovo XClarity Administrator

| Dashboard | Hardware ▾ | Provisioning ▾ | Monitoring ▾ | Administra |

Service and Support

Click the **Device Actions** tab.

From this page, you can download diagnostic files and collect diagnostics from managed devices. Y

| Management Server Files | Endpoint Service Data | **Device Actions** | Call Home Configu |

Perform Call Home Test | Perform Manual Call Home |

☐	Systems	Status	Pro
☐	SR530-2	❌ Critical	Thin
☐	sd350-4	🟩 Normal	Thin

Step **1**—**2**—**3**—**4**

Lenovo

Collecting service data – LXCA

Select the device or devices you want to collect service data from, and then click the Collect Service Data icon (📥).

Lenovo XClarity Administrator

🎛 Dashboard   Hardware ▾   Provisioning ▾   Monitoring ▾   Administrati

Service and Support

From this page, you can download diagnostic files and collect diagnostics from managed devices. Yo

| Management Server Files | Endpoint Service Data | Device Actions | Call Home Configu |

Perform Call Home Test | Perform Manual Call Home   📥   ▨   ✎   ✗ | 🔁

Collect Service Data

	Systems	Status	Prodi
☑	SR530-2	❌ Critical	Think
☐	sd350-4	🟩 Normal	Think
☐	sd350-1	🟩 Normal	Think

Step ❶—❷—③—❹

Lenovo

Collecting service data – LXCA

Save the service data to the
local system.

Opening SelectedServiceData.tar.gz   ✕

You have chosen to open:

☐ **SelectedServiceData.tar.gz**

which is: gzip
from: https://10.10.1.56

What should Firefox do with this file?

○ Open with   Browse...

◉ Save File

☐ Do this automatically for files like this from now on.

OK   Cancel

Close

nostics from manage

Actions   Call H

Manual co

☑ Manual co
☑ Collec

ThinkSystem SR630

Step **1**—**2**—**3**—④

Lenovo
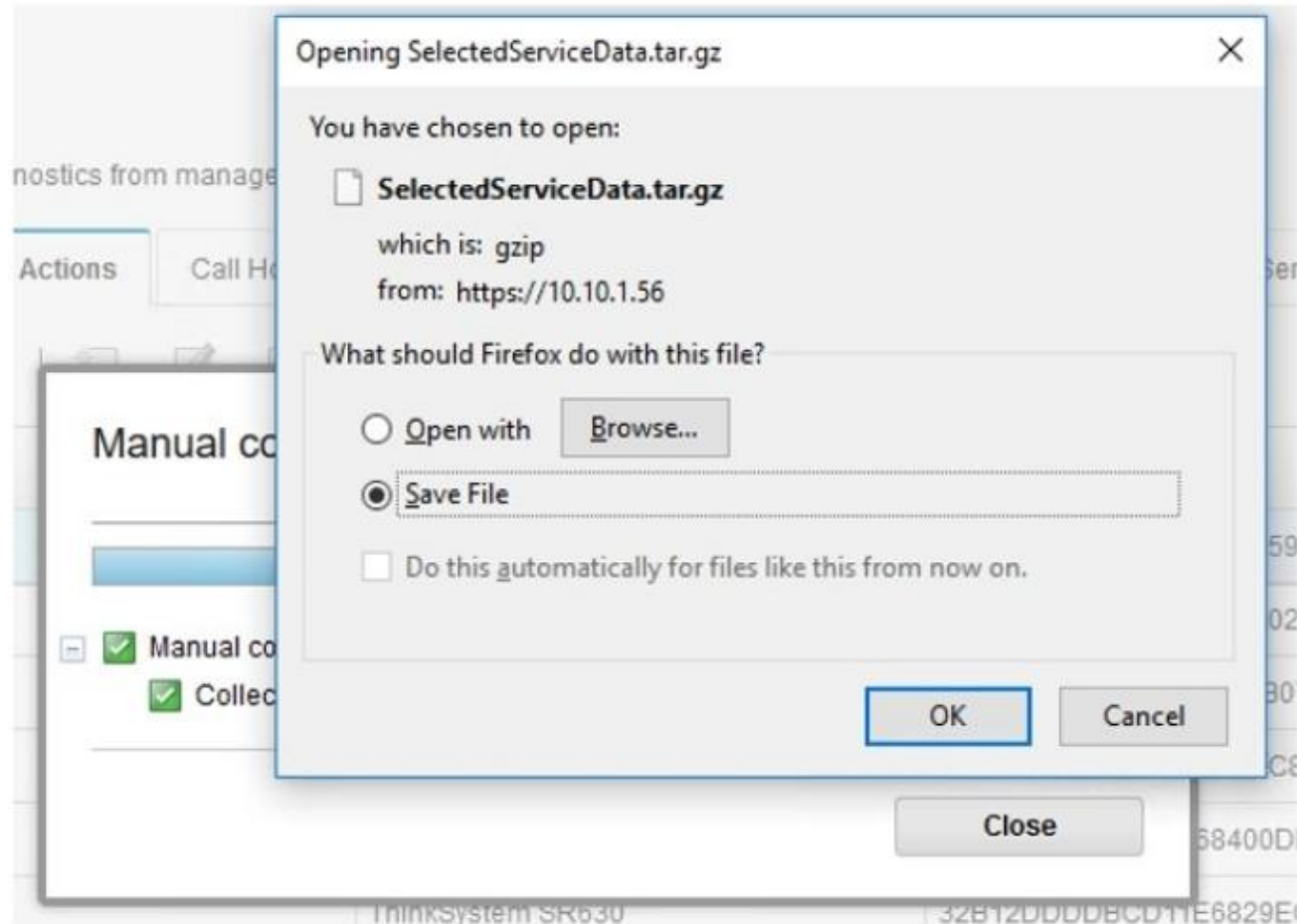
Collecting service data – LXPM

Using the Collect Service Data function on LXPM, users can collect existing system service data logs or run diagnostic tests to collect new data.

Click each number in turn to see the procedure.

Step **1**—**2**—**3**—**4**—**5**

Collecting service data – LXPM

Press **F1** during POST, and LXPM will be launched by default.

Step ① ➋ ➌ ➍ ➎

Collecting service data – LXPM

Select **Diagnostics** from the Navigation menu.

Step ❶—②—❸—④—⑤

Collecting service data – LXPM

Select **Collect Service Data**, and then click the blue arrow.

Step ❶—❷—③—❹—❺

Collecting service data – LXPM

LXPM will begin to collect and package the service data into an archive file named ffdc.tgz. When the progress bar reaches 100%, click the blue arrow on the right to go to the next step.

Diagnostics: Collect Service Data-Collecting Data

100%

Collect ffdc.tgz completed, click next to save it.

Step ❶—❷—❸—④—❺
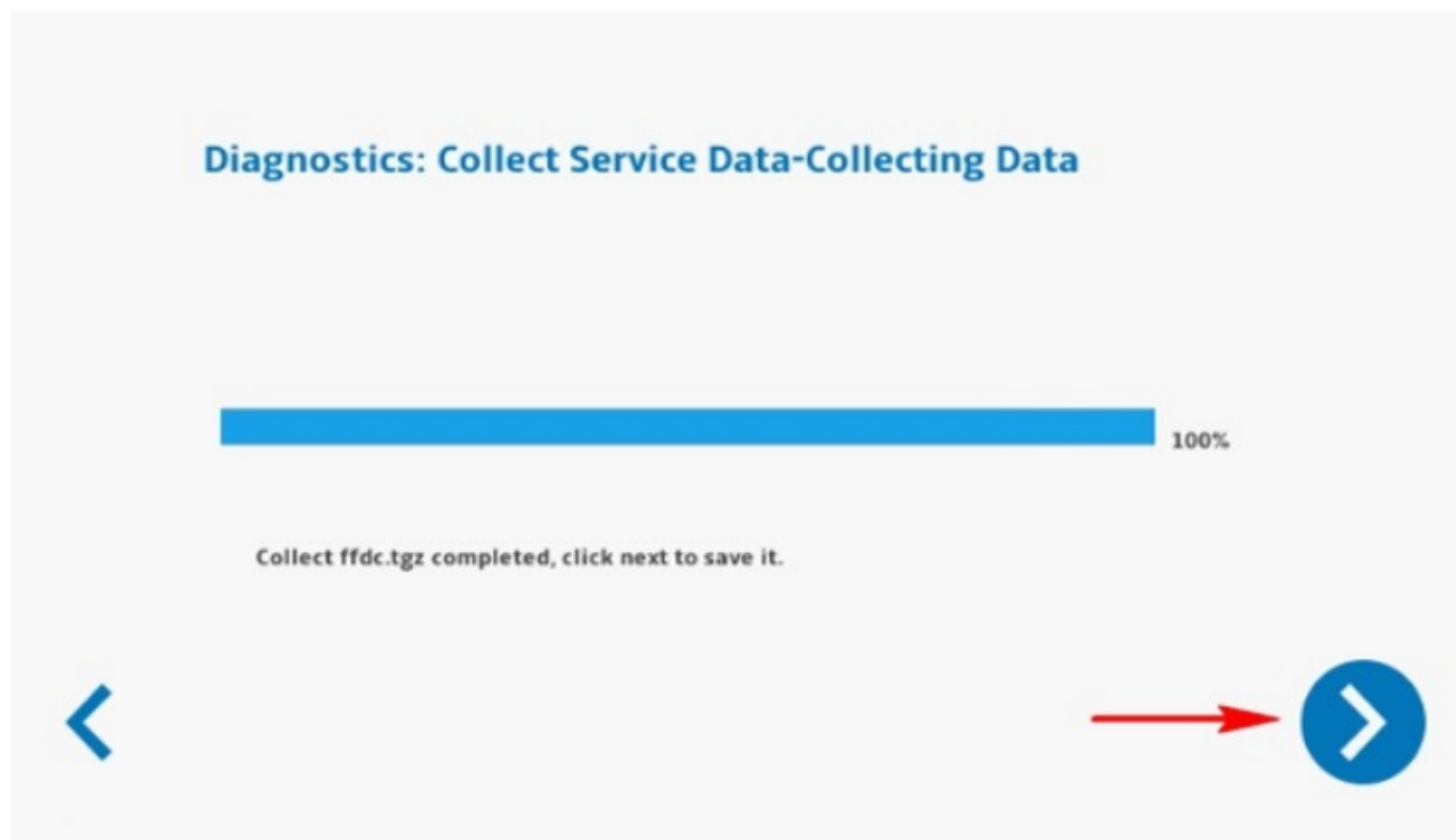
Collecting service data – LXPM

Specify the location (USB drive or network folder) where the service data package should be saved.

Diagnostics: Collect Service Data-Save Data

Choose the location where the .tgz file will be saved.

Save

Saved in :\ffdc.tgz

Step **1**—**2**—**3**—**4**—**5**

Collecting service data – OneCLI

OneCLI can be run in-band from the operating system. In addition to hardware service data, OneCLI can collect operating system information, such as the operating system event log.

- Use the following command to save the HTML output report to the c:\onecli\log folder.
    - `onecli inventory getinfor --htmlreport --output c:\onecli\log`

    Note: This report also contains the OS event logs.

- Use the following command to save the FFDC log to the c:\onecli\log folder.
    - `onecli inventory getinfor --ffdc --output c:\onecli\log`

    Note: This report will not contain OS event logs.

OneCLI can also collect hardware service data from a remote server.

- Assuming the remote server IP address is 10.240.252.102, the user ID is USERID, and the password is PASSW0RD (zero not capital O), use the following commands to save the HTML output report to the c:\onecli\log folder.
    - `onecli inventory getinfor --htmlreport --bmc USERID:PASSW0RD@10.240.252.102 --output c:\onecli\log`
    - `onecli inventory getinfor --ffdc --bmc USERID:PASSW0RD@10.240.252.102 --output c:\onecli\log`

Note: For more information regarding examples of OneCLI commands, download the OneCLI User Guide from

Collecting service data – LXCO

Users can manually collect service data from LXCO and then save the information to the local system in tar.gz format.

Click each number in turn to see the procedure.

Step **1**—**2**

Lenovo

Collecting service data – LXCO

After logging in to LXCO, select **Administration –> Service and Support –> Service Data**.
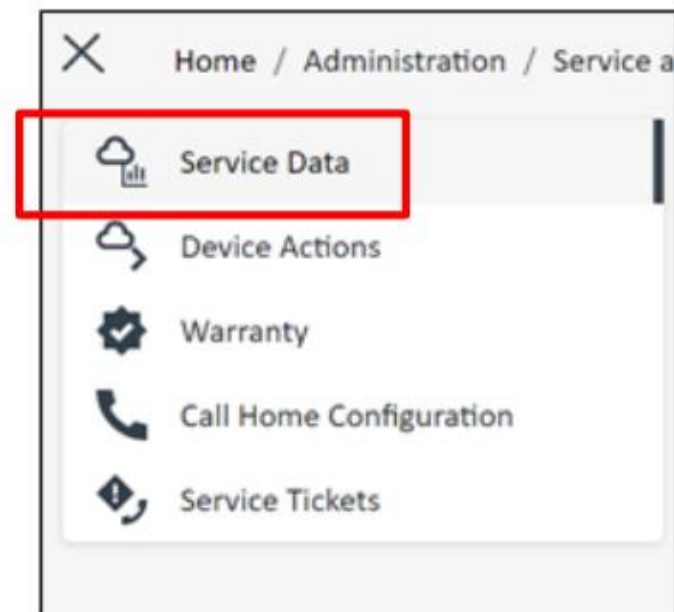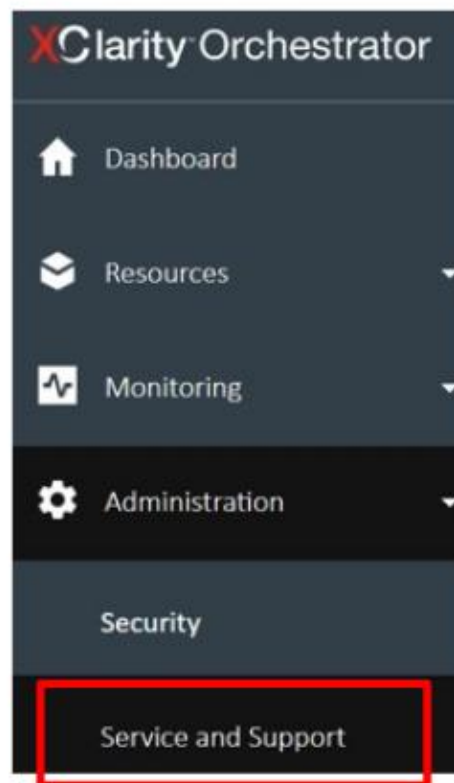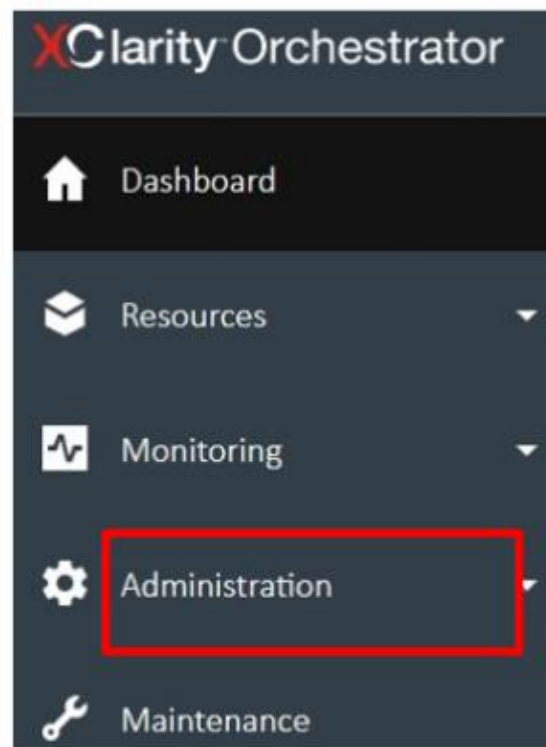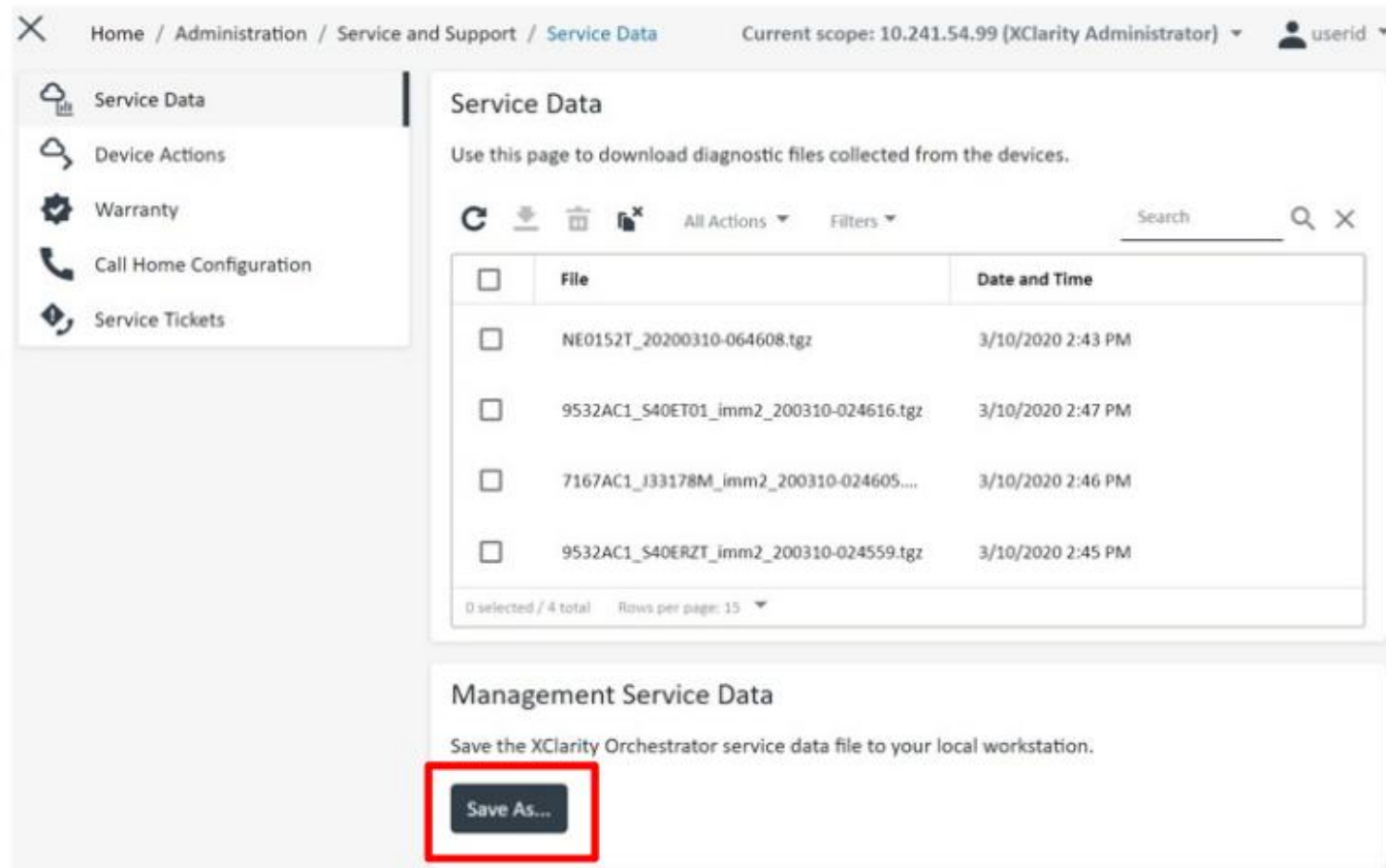
Step ①—❷

Collecting service data – LXCO

The **Service Data** page contains service data archives for all managed devices and for specific resources. Click **Save As** to save the service data file to your local workstation.
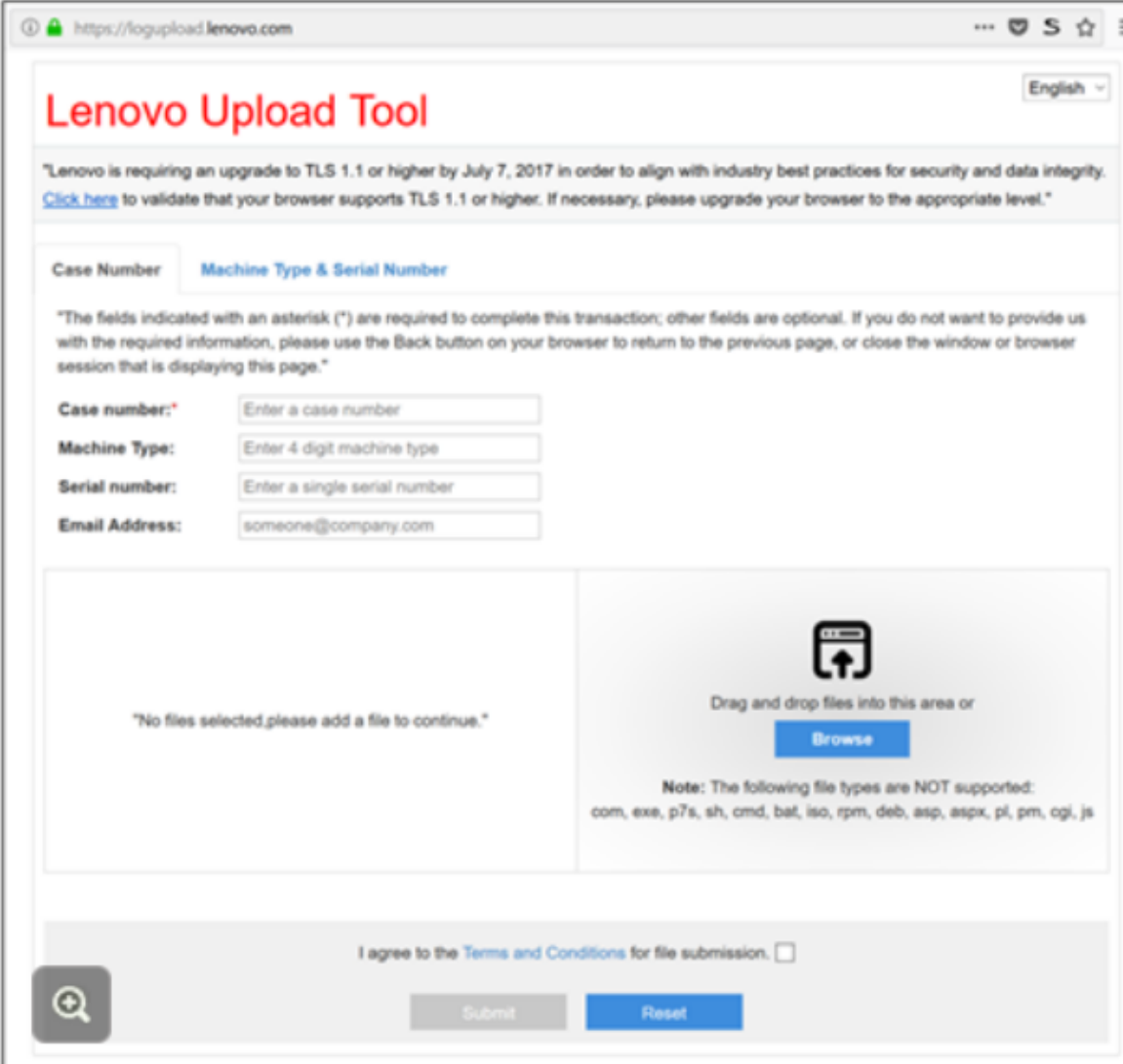
Step ①—②

Uploading files to Lenovo Upload Tool

After collecting logs from the server, the servicer, agents, or users can follow the steps set out below to upload files using Lenovo Upload Tool:

1. Select either the **Case Number** tab or **Machine Type & Serial Number** tab.
2. Enter the necessary information, and then select the files to be uploaded.
3. Agree to the Terms and Conditions by clicking the check box.
4. Click **Submit**.
5. The files will be visible in Customer Logs when they have been uploaded.

Lenovo Systems CARE

Lenovo Systems CARE is a web-based application suite designed to help with problem resolution for Enterprise x86 customers. It is used in over 60 countries around the world. When a customer calls for technical support, Systems CARE will
- Help with problem determination by analyzing system information
- Provide multiple tools to quickly parse logs, analyze the data, identify potential problems, and generate action plans
- Highlight any firmware that needs to be updated or any mismatched firmware within a system
- Provide visual aids to quickly identify potential problem areas

Refer to the GLOSSE Lenovo Systems CARE Tools page to learn how to register for a Systems CARE user ID, and how to use the tools within the application suite.

Lenovo

Lenovo Systems CARE – Customer Logs
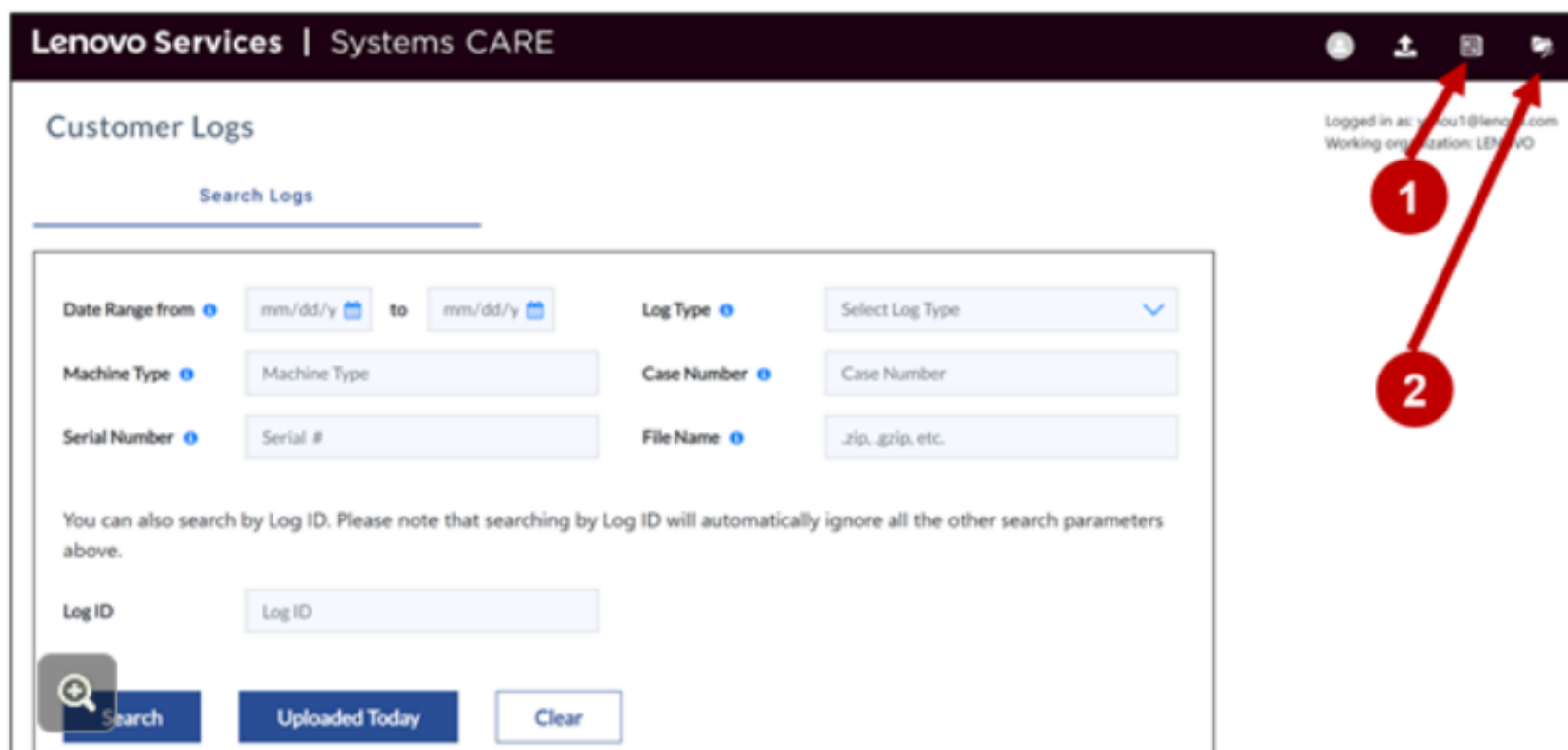
On the **Customer Logs** page, you can locate uploaded files and parse file collections to see the log information in an easy-to-read HTML format.
The following buttons can be found in the top right corner:

1. 📰 Latest Tech Tips link
2. 📁 Published Tech Tips link
(Click the items for screenshots)

Note: For more information about the parsing of files, refer to the following GLOSSE links:
- Parsing a DSA File
- Parsing an AMM/CMM File
- Parsing an IMM or XCC File

Lenovo Services | Systems CARE

Logged in as: you1@lenovo.com
Working organization: LENOVO

Customer Logs

Search Logs

Date Range from ⓘ	mm/dd/y 📅	to	mm/dd/y 📅	Log Type ⓘ	Select Log Type ⌄
Machine Type ⓘ	Machine Type			Case Number ⓘ	Case Number
Serial Number ⓘ	Serial #			File Name ⓘ	.zip, gzip, etc.

You can also search by Log ID. Please note that searching by Log ID will automatically ignore all the other search parameters above.

| Log ID | Log ID |

🔍 Search | Uploaded Today | Clear

1
2

IMM/XCC service data on Systems CARE – example

Fill in either the **Case Number** or **Machine Type** and **Serial** fields to search for a customer log. After locating the log, users can select from the following Action menu options for further analysis:

- Download File
- IMM FFDC Parser
- Log Insight
- Universal Parser

Note: The log analysis tool has not been fully developed for Intel v4 machines.

IMM FFDC Parser tool in Systems CARE

Wait for the log to be parsed, which might take up to three minutes.
A new window containing a system summary will be opened. Users can then select files from the left menu.

Log Insight in Systems CARE

Log Insight is a server problem determination tool that uses AI analytics.

After a server log has been submitted, the tool will complete an analysis and then provide the following information:

- Overall Report
- Hardware Diagnosis
- Firmware Diagnosis
- Advisory Analysis
- Others

Lenovo Services | Log Insight v1.3.14 ❶ | Product: **ThinkServer SR588 - Type 7D4M** | Warranty: ● | Serial # **J6003Z21** | ⊟ Manage Reports | ⊕ UTC +00.00

Overall | Hardware | Firmware | Tips | Others | Case #: | Log Capture Time: **2024-09-26 12:41:45** | Report ID: **240926011705_C42F3E** | ⊕ FFDC Parser

Suggestions ❶

| Actions | 0 action plan for 1 active system event. |
| Updates | Update XCC firmware to version 5.48 for enhancements & fixes. |

Warranty

| Status | The warranty information for machines shipped to China are not supported yet. |

Basic Information

| Log File |
| 7D4MCTO1WW_J6003Z21_xcc_240926-124052.tzz ⤓ |

| Analysis Start Time | Analysis End Time | Operating System |
| 2024-09-26 05:17:22 | 2024-09-26 05:18:14 | Windows Boot Manager |

Analysis Result

Hardware Status	- Active events: 0 error, 1 warning - Last 30 days' events: 12 errors, 5 warnings - LED Status: 0 anomaly - Inventory: 0 anomaly
Firmware Status	- 0 UEFI release behind. Latest updated on 2024-09-13 10:47:56 - 2 XCC releases behind. Latest updated on 2023-06-28 20:29:54
Security Status	- 0 critical CVE found - 0 high CVE found

FeedBack

Time stamp mismatch after parsing a log

The server of the LSC parser is located in the UTC time zone. When a customer log comes from a different time zone, the time stamp in the **Critical Event Log Entries** section will be different to the actual time in the customer's time zone.

Click **Parsing Log** to see the parsing process.

Log was captured in the JST time zone

The time stamp here is from the UTC time zone

LSC tech tips search tool

The tech tips search tool provides access to all the available, active, published tech tips about Lenovo x86 systems. It is suggested that you check tech tips to see if your case is a known issue that already has a solution.

Click each number in turn to see the procedure.

Step **1**—**2**—**3**—**4**—**5**

LSC tech tips search tool

Select ⊞ **Techtips Latest** to see the latest tech tips, or select 🗁 **Techtips Search** and then enter the necessary information to search for relevant tips.

Logged in as: ychou1@lenovo.com
Working organization: LENOVO

Step ①—②—③—④—⑤
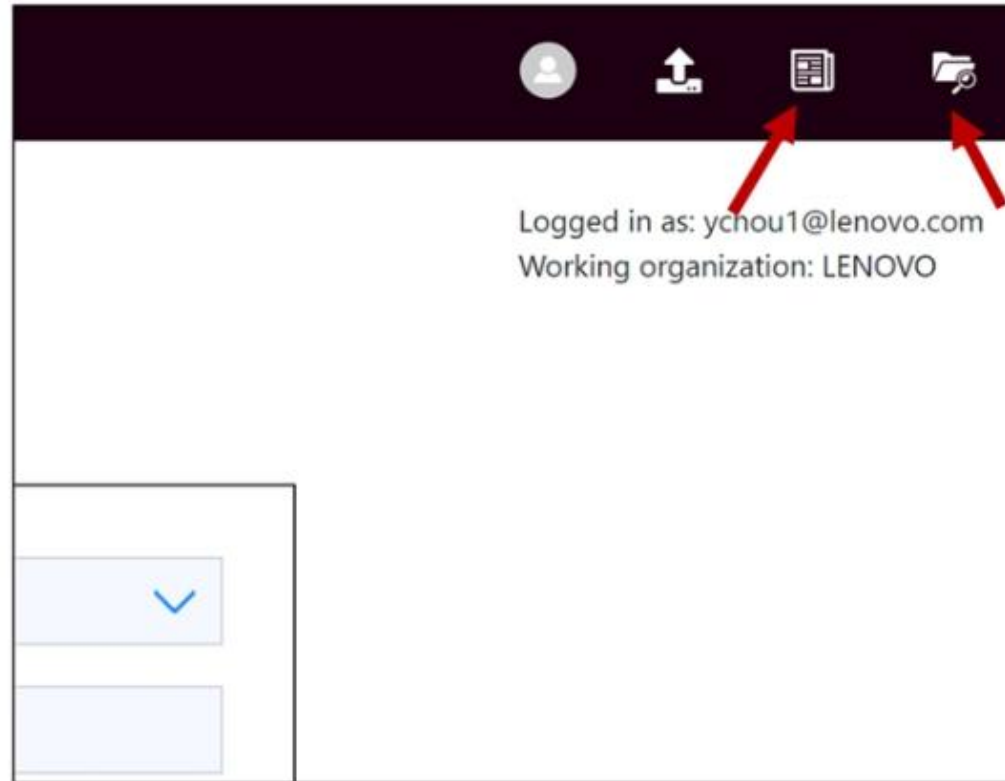
LSC tech tips search tool

If **Tech Tips Latest** is selected, the latest tech tips will be shown. Enter terms in the **Search** field to narrow down your search.

Step ①━②━③━④━⑤

LSC tech tips search tool

In this example, "SR650" was entered, so the latest SR650 tips have been displayed.

Step **1**─**2**─③─**4**─**5**

LSC tech tips search tool

Select **Tech Tips Search** to search through all the available, active, published tech tips. In this example, "SR650 M.2" was entered in the search field.

Step ①—②—③—④—⑤

LSC tech tips search tool

Every tip related to the SR650 M.2 adapter/drive will be listed on the **Search Results** tab. Check the tips to see if any match your issue.
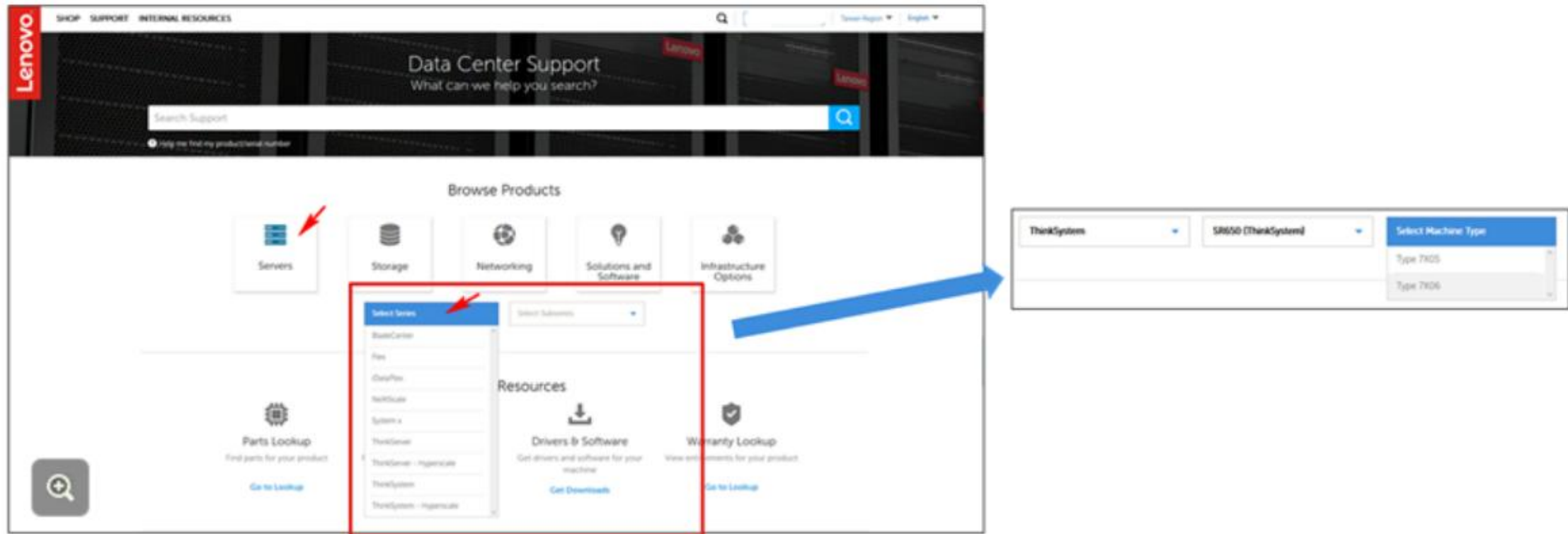

Step ①—②—③—④—⑤

Searching for tech tips on the Lenovo Data Center Support website

Lenovo continually updates the Support website with the latest tips and techniques that users can implement to solve issues with their servers. These tips include workaround procedures for issues related to the operation of servers.

Click each number in turn to see the procedure for finding tech tips.

Step **1**—**2**—**3**
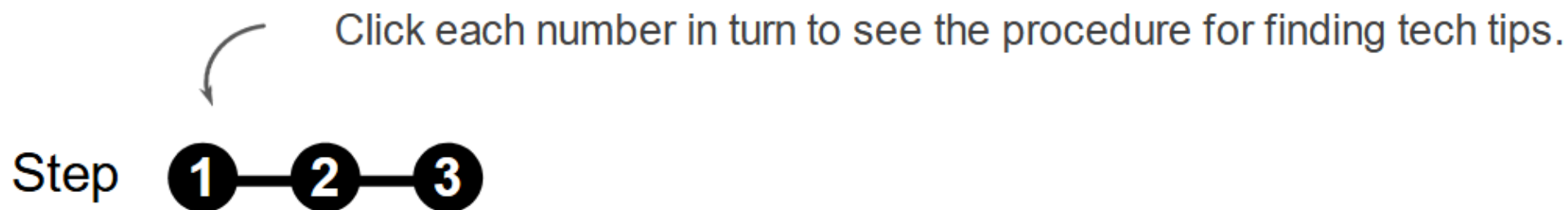
Lenovo

Searching for tech tips on the Lenovo Data Center Support website

Go to the Lenovo Data Center Support website and click **Servers**. Select a product type and enter the necessary information to find tips related to any specific machine.
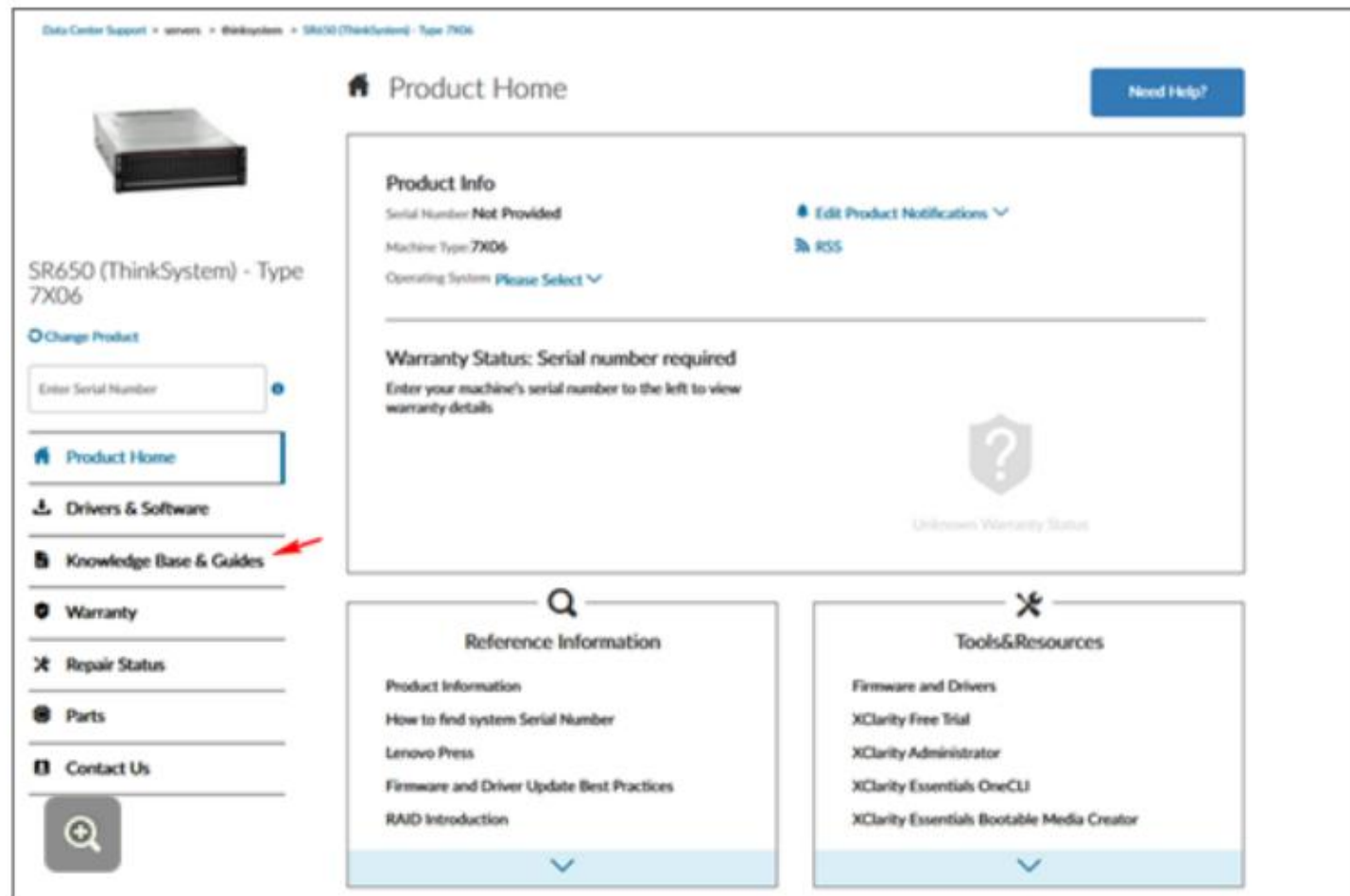In this example, a ThinkSystem SR650 is being searched for.

Step ①—②—③

Searching for tech tips on the Lenovo Data Center Support website
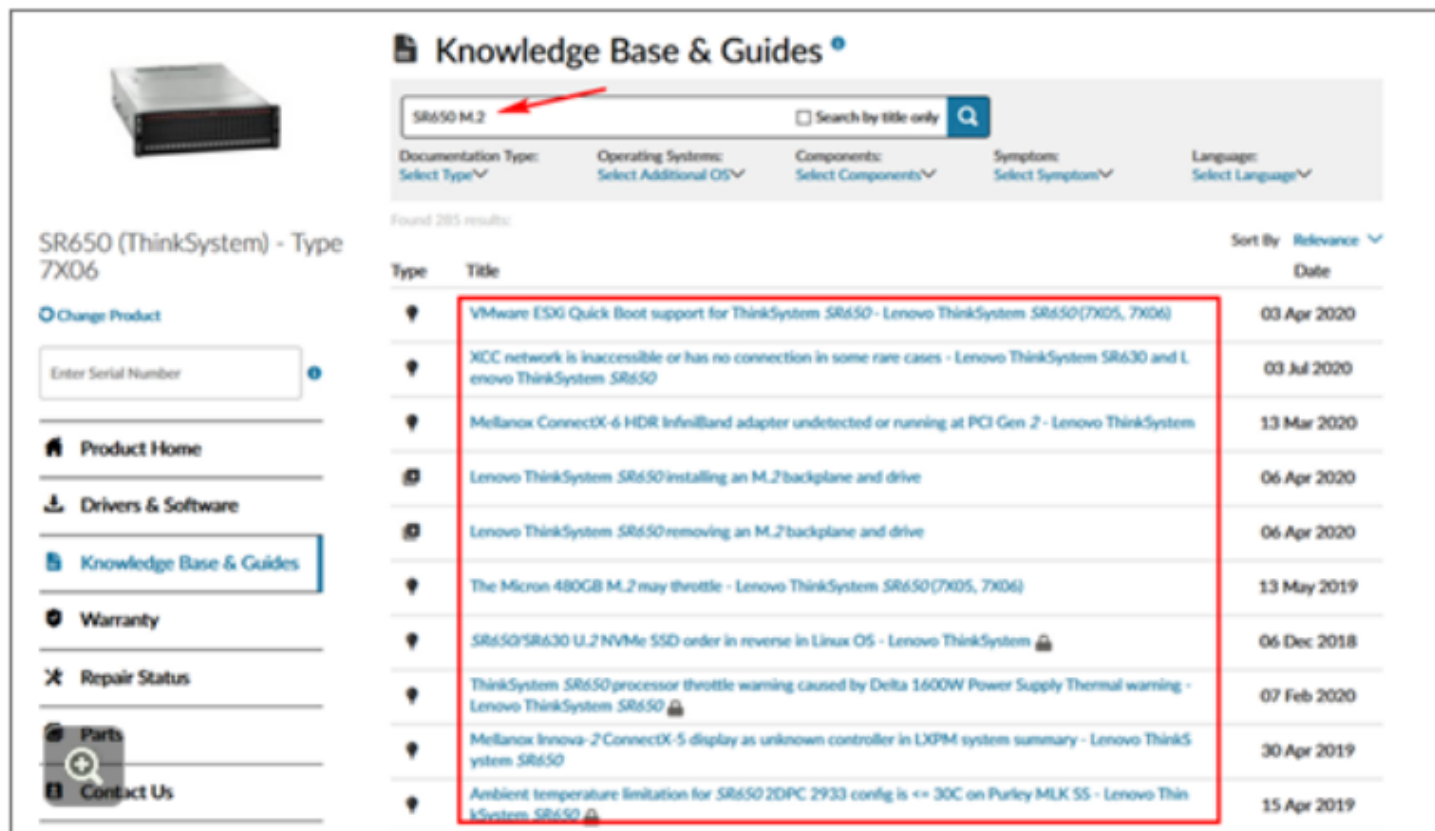

Select **Knowledge Base & Guides.**

Step **1** — **2** — **3**

Lenovo

Searching for tech tips on the Lenovo Data Center Support website

Enter your keywords in the search field, and related tips will be displayed.

In this example, "SR650 M.2" has been entered.

Step ①—②—③

Quiz

Q: Which tool does not contain server log information?

Lenovo XClarity Controller (XCC)

Lenovo XClarity Administrator (LXCA)

Lenovo Capacity Planner (LCP)