Lenovo

ThinkSystem Intelligent Monitoring OneCollect Installation and Setup Guide

OneCollect 1.9

Contents

Chapter 1. Overview of ThinkSystem Intelligent Monitoring OneCollect

ThinkSystem Intelligent Monitoring OneCollect is a web-based user interface that helps you collect data. In addition to collecting data from storage area network (SAN), it collects data from network-attached storage (NAS) environments. The diagnostic content related to your environment can be either sent to Lenovo for further analysis or analyzed on premises.

You can use ThinkSystem Intelligent Monitoring OneCollect to collect data from storage systems, hosts, and switches. You can also extend the profiles available in the ThinkSystem Intelligent Monitoring OneCollect to collect data from new types of systems. You can send the collected data back to Lenovo for better support and assessment of operations, such as nondisruptive upgrades and data migration. ThinkSystem Intelligent Monitoring OneCollect supports data collection through multiple data collection protocols.

For more information about Solution-based and Device-based collection types, see “Supported device types and protocols for data collection.” on page 4

Solution-based collection profile and device-based collection profile are two types of data collection profiles. The Solution-based collection profile is a predefined environment, whereas the Device-based collection profile allows the user to create your own environment.

ThinkSystem Intelligent Monitoring OneCollect compiles data about all the host operating systems, switches, storage arrays and other devices, which comprise most systems found in a typical enterprise ecosystem. The typical systems include Windows, Linux, VMware, FreeBSD, Solaris, AIX, HP-UX, Cisco IOS/NXOS/SANOS/UCS, Brocade, Lenovo ONTAP, DE-Series, and others. You can view the raw data from each collection. ThinkSystem Intelligent Monitoring OneCollect uses native administrative methods, including SSH, HTTPS, and WMI protocols to communicate with systems and devices.

To perform data collection against remote hosts, it is necessary that you provide administrative credentials. If you decide to store credentials, ThinkSystem Intelligent Monitoring OneCollect provides password-protected encryption (pass phrase) to keep your credentials confidential. The credentials are stored in a database and encrypted using Advanced Encryption Standard (AES).

As you start using ThinkSystem Intelligent Monitoring OneCollect, it is important that you understand some of the basic terms that you can expect to see throughout the ThinkSystem Intelligent Monitoring OneCollect user interface.

Table 1.

Persona	**Description**
General	Collects basic commands for the target device
Diagnostic	Collects additional diagnostic commands and logs from the device other than the ones that run in General mode
SnapDrive	Collects SnapDrive specific diagnostic logs
SnapManager	Collects SnapManager specific logs
SnapManager for Oracle (SMO)	Collects SnapManager for Oracle specific logs
SnapManager for SAP (SMSAP)	Collects SnapManager for SAP specific logs

Table 1. (continued)

Orchestrator	Runs commands or collects logs related to VMware orchestrator
Analysis	Runs commands for Config Advisor analysis
InsightIQ_Perf	Collects performance data from InsightIQ
OneFS7	Collects data from Isilon OneFS version 7
OneFS8	Collects data from Isilon OneFS version 8
Dblade	Collects ONTAP Dblade related commands
Log Analysis	Runs **log analysis** commands for SnapCenter

Note: For generating report or parsing in the Unified Parser, you must use Diagnostic persona in ThinkSystem Intelligent Monitoring OneCollect to collect all the required commands and logs.

Chapter 2. Installing and setting up ThinkSystem Intelligent Monitoring OneCollect

Before you can start collecting data using ThinkSystem Intelligent Monitoring OneCollect, you must download and install ThinkSystem Intelligent Monitoring OneCollect. After installing, you can add a plug-in to extend the data collection capabilities of the tool.

System requirements for ThinkSystem Intelligent Monitoring OneCollect

You must ensure that you have the required host system configuration, operating system, browser, and ports to run ThinkSystem Intelligent Monitoring OneCollect.

ThinkSystem Intelligent Monitoring OneCollect can run on the following operating systems:

- Windows 7 (64-bit)
- Windows 8 (64-bit)
- Windows 10 (64-bit)
- Windows 2008 R2 Server (64-bit)
- Windows 2012 R2 Server (64-bit)
- Mac OS X 10.10 and later (64-bit)
- Red Hat Enterprise Linux (RHEL) 6.3 and later (64-bit)
- Ubuntu 12.0 and later (64-bit)

ThinkSystem Intelligent Monitoring OneCollect supports the following browsers:

- Mozilla Firefox 55 and later
- Google Chrome 61 and later
- Apple Safari 11 and later
- Microsoft Edge 40 and later

ThinkSystem Intelligent Monitoring OneCollect uses the following configurable ports for launching by default.

- HTTP(8044)
- HTTPS(7443)

On target systems, to connect, ThinkSystem Intelligent Monitoring OneCollect uses the native protocols of the system, such as SSH, HTTP, HTTPS API, WMI, and others. Following are the default ports for these services:

- SSH(22)
- HTTP(80)
- HTTPS(443)
- WMI(135 and 445)

The system, (virtual machine or a physical server or a laptop) on which ThinkSystem Intelligent Monitoring OneCollect is installed, must have a minimum of 2GB RAM and 2 cores. You can increase the capacity and accordingly ThinkSystem Intelligent Monitoring OneCollect can scale multiple processes in the case of large data collection.

Supported device types and protocols for data collection

ThinkSystem Intelligent Monitoring OneCollect supports profiles that help you in collecting data from devices and solutions. You should learn more about these profiles to help you decide which one to use.

Each profile contains the credentials for the database associated with the profile. The credentials enable ThinkSystem Intelligent Monitoring OneCollect to connect to and work with the database. The stored credentials include the user name and password for accessing the host, the repository, the database, and the required information.

Device-based collection types

Table 2.

Type	Sub type	Supported persona	Supported protocol
Hybrid switch	• Cisco Nexus 5000/6000/ 9000 series • Cisco Nexus 7000 series	• General • Diagnostic	• SSH
Ethernet switch	• Cisco • Lenovo • Brocade • Cisco Catalyst	• General • Diagnostic	• SSH • Shell and SSH • SSH • SSH
Fibre Channel (FC) switch	• Cisco • Brocade • QLogic • McData • McData i10k	• General and Diagnostic • Diagnostic • Diagnostic • Diagnostic	• SSH
Hypervisor	• Citrix XenServer • HMC • KVM • Microsoft Hyper-V • OracleVM Manager • OracleVM Server • PowerVM • VMware ESXi • VMware vCenter Server	• General • Diagnostic	• SSH • SSH • SSH • SSH • SSH • SSH • SSH • SSH • vCenter Web API

Table 2. (continued)

Host	• Cisco UCS • Linux (RedHat Enterprise and SuSe) • Solaris • HPUX • Windows • AIX	• General • General, Diagnostic, SnapDrive, SMO, SMSAP, and Orchestrator • General, Diagnostic, SMO, SnapDrive, and SMSAP • General, Diagnostic, SMO, SnapDrive, and SMSAP • Diagnostic, DMR, and SnapManager • General, Diagnostic, SMO, SnapDrive, and SMSAP	• UCSM XML API • SSH • SSH • SSH • WMI • SSH
Storage Controller	• DE-Series-SMCli • DE-Series-Web Services Proxy • ONTAP • Service Processor-ONTAP	• General and Diagnostic • General and Diagnostic • Diagnostic • Diagnostic • General • General	• SMCli • DE-Series WebServices API • ONTAPI, HTTPS, SSH, and WMI • SSH

Solution-based collection types

Table 3.

Profile	Sub profile	Corresponding device	Supported protocol
ONTAP	Network	• Cluster Node • Cluster Switch • Management Switch	• HTTPS and SSH • SSH • SSH
MetroCluster	All MetroCluster configurations	• Cluster Node/Simulation Node • Fabric switch • ATTO bridges	• SSH, HTTPS, and Telnet • SSH • Telnet
DE-Series	• Host • SMCli • SANtricity Web Services Proxy	• Host • SMCli • Web Services Proxy	• SSH • SMCli • Web Services API
SnapCenter	• Configuration • SnapCenter Server Post-Install • SnapCenter Server Pre-Install	• SnapCenter Server • ONTAP cluster • ONTAP SVM • Windows hosts • Linux hosts • vCenter	• SnapCenter API • SSH • WMI

Installing ThinkSystem Intelligent Monitoring OneCollect on Windows using the installation wizard

You can install ThinkSystem Intelligent Monitoring OneCollect either on your system or you can host it in a central server that can be accessed by multiple users.

Before you begin

- You must have the required host system configuration, operating system, and browser to run ThinkSystem Intelligent Monitoring OneCollect. “System requirements for ThinkSystem Intelligent Monitoring OneCollect ” on page 3
- You must have downloaded the lnvgy_utl_onecollect_1.9_windows_x86-64.exe; lnvgy_utl_onecollect_1.9_windows_x86-64.zip for your platform.

Step 1. Install ThinkSystem Intelligent Monitoring OneCollect by completing the steps in the installation wizard.
The default installation folder for ThinkSystem Intelligent Monitoring OneCollect on the Windows operating system is as follows:

Table 4.

Operating system	Default installation folder
Windows 64-bit	C:\Program Files\Lenovo\OneCollect

Note: In the ThinkSystem Intelligent Monitoring OneCollect Setup wizard, select `Yes` if you want to perform tasks related to User Management and enable HTTPS for ThinkSystem Intelligent Monitoring OneCollect.

Step 2. Choose a different path for data directory, if you want to change the default path.ThinkSystem Intelligent Monitoring OneCollect will launch automatically.

Note: To configure the application to run on a different port, modify PORT value in the CONFIG file located in the `<user_home_directory>\Lenovo\OneCollect\Config` and restart the application (for example, PORT = 8040). To host the ThinkSystem Intelligent Monitoring OneCollect server centrally to be accessed from remote hosts, you can edit the config file and append the IP address to bind prefix to port (for example: PORT = 0.0.0.0:8044 will make it open to all hosts on all IPs. Alternatively, PORT = <dedicated_IP>:8044 will make it available on the specific IP configured on host).

After you finish

If you want to run ThinkSystem Intelligent Monitoring OneCollect automatically during system startup, perform the following steps:

1. Navigate to `<Install_directory>\Lenovo\OneCollect\>`, right-click ‘onecollect.exe’ and select copy.
2. Find the **Startup** folder in **All Programs** and right-click it.
3. Click **Open**, and it opens up in the Windows Explorer.
4. Right-click anywhere inside that window and click the shortcut.ThinkSystem Intelligent Monitoring OneCollect shortcut should pop up inside the folder, and the next time you log into Windows, ThinkSystem Intelligent Monitoring OneCollect launches automatically.

Installing ThinkSystem Intelligent Monitoring OneCollect on Windows using software archive

You can install ThinkSystem Intelligent Monitoring OneCollect either on your system or you can host it in a central server that can be accessed by multiple users.

Before you begin

- You must ensure that you have the required host system configuration, operating system, and browser to run the ThinkSystem Intelligent Monitoring OneCollect. “System requirements for ThinkSystem Intelligent Monitoring OneCollect” on page 3
- You must have downloaded the ThinkSystem Intelligent Monitoring OneCollect executable binary for your platform.

Step 1. Browse to the folder where you have downloaded the software archive (.zip file).

Step 2. Right-click the zip file and select "Extract here." Change directory to the extracted folder `<download path>\Lenovo\OneCollect`.

Step 3. If you want to customize the ThinkSystem Intelligent Monitoring OneCollect data directory path, create a file with "data_dir.txt" in the `<install dir>\Lenovo\OneCollect\` and enter the path where you want to place the database and result files.

Step 4. If you are upgrading from an earlier version of ThinkSystem Intelligent Monitoring OneCollect or reinstalling ThinkSystem Intelligent Monitoring OneCollect, you will need to remove any previous versions of OneCollect that may be previously installed before installing ThinkSystem Intelligent Monitoring OneCollect. For information about uninstalling ThinkSystem Intelligent Monitoring OneCollect on Windows, see “Uninstalling ThinkSystem Intelligent Monitoring OneCollect from a Windows host” on page 25.

Step 5. Click and launch onecollect.exe in `<install dir>\Lenovo\OneCollect\`.

Step 6. Launch ThinkSystem Intelligent Monitoring OneCollect from the URL: `http://localhost:8044/OC`

Note: To configure the application to run on a different port, modify PORT value in the CONFIG file located in the `<user_home_directory>\Lenovo\OneCollect\Config` and restart the application (for example, PORT = 8040). To host the ThinkSystem Intelligent Monitoring OneCollect server centrally to be accessed from remote hosts, you can host it using https by editing the CONFIG file and enter ‘HOSTED = True’.

After you finish

If you want to run ThinkSystem Intelligent Monitoring OneCollect automatically during system startup, perform the following steps:

1. Navigate to `<Install_directory>\Lenovo\OneCollect\>`, right-click ‘onecollect.exe’ and select Copy.
2. Find the **Startup** folder in **All Programs** and right-click it.
3. Click **Open**, and it opens up in the Windows Explorer.
4. Right-click anywhere inside that window and click the shortcut.ThinkSystem Intelligent Monitoring OneCollect shortcut should pop up inside the folder, and the next time you log in to Windows, ThinkSystem Intelligent Monitoring OneCollect launches automatically.

Installing ThinkSystem Intelligent Monitoring OneCollect on Linux

You can install ThinkSystem Intelligent Monitoring OneCollect on your Linux system through the command-line interface. You must perform this task if you are installing ThinkSystem Intelligent Monitoring OneCollect for the first time.

Before you begin

- Your Linux host system must either run a version of RHEL (later than 6.4) or an Ubuntu (later than 12.0).
- You must have downloaded the ThinkSystem Intelligent Monitoring OneCollect executable binary for your platform.
- You must have the necessary privileges to install the application.

Step 1. Browse to the directory where you have downloaded the tar.gz installer.

Step 2. Extract it by running tar -xzf ThinkSystem Intelligent Monitoring_OneCollect1.8_Linux64.tar.gz. If you have admin privileges, or else run sudo tar -xzf ThinkSystem Intelligent Monitoring_ OneCollect1.8_Linux64.tar.gz.

Note: If you are downloading ThinkSystem Intelligent Monitoring OneCollect using the Chrome browser, it automatically extracts in to a .tar file. In this case, run **tar -xf ThinkSystem Intelligent Monitoring_OneCollect1.8_Linux64.tar.gz**.

Step 3. Change directory (cd) to the extracted folder.

Step 4. If you want to customize the ThinkSystem Intelligent Monitoring OneCollect data directory path, create a file with a name as "data_dir.txt" under <install dir>/Lenovo/OneCollect/and enter the path where you want to place the database and result files.

Step 5. Type ./onecollect if you have admin privileges or sudo ./onecollect if you do not have admin privileges, then press Enter.Use "nohup ./onecollect &" to run process in the background. ThinkSystem Intelligent Monitoring OneCollect will start running on port 8044. Ensure that the port is free before running ThinkSystem Intelligent Monitoring OneCollect. Database will be saved in your home directory under `Lenovo/onecollect/Db` folder.

Note: To configure the application to run on a different port, modify PORT value in the CONFIG file located in the <user_home_directory>/Lenovo/OneCollect/Config and restart the application (for example, PORT = 8040). To host the ThinkSystem Intelligent Monitoring OneCollect server centrally to be accessed from remote hosts, you can edit the config file and append the IP address to bind prefix to port (for example: PORT = 0.0.0.0:8044 opens it to all hosts on all the IP addresses. Alternatively, PORT = <dedicated_IP>:8044 makes it available on the specific IP address configured on host).If you are not installing the application as root, use **sudo** while running the commands mentioned in the preceding steps.

After you finish

If you want to run ThinkSystem Intelligent Monitoring OneCollect automatically during system startup, perform the following steps:

1. Edit the rc.local file (vi /etc/rc.local).
2. Add a line at the end of file to start the ThinkSystem Intelligent Monitoring OneCollect process (nohup /path_to_onecollect/onecollect &).
3. Modify the permission for rc.local (chmod +x /etc/rc/local) The ThinkSystem Intelligent Monitoring OneCollect process will start up automatically in the next reboot.

Editing data collection preferences

You can edit user settings—such as collection, encryption, and Email notification.

Before you begin

The following information must be available:

- Email address from which the alert notification is sent.
- Host name, default port, user name, and password to configure the SMTP server.

About this task

When you modify the settings, the changes are applied immediately.

Step 1. Click **Settings** on the upper-right corner.

Step 2. In the **Basic Settings** dialog box, modify the appropriate settings.

If you want to...	Then...
• Configure Proxy	1. Select the **Configure Proxy** check box to access the Internet (for posting).
Set up email notification — Email Notifications	You can configure SMTP to enable email notification for completed jobs. Optionally, you can enable email notification for scheduled jobs. The email will contain details about the devices that are part of job, job status, and parameters. 1. Select the **Enable Notifications for Scheduled Jobs** check box, if you want to receive notifications for scheduled jobs. 2. Select the **Enable Notifications for Unscheduled Jobs** check box, if you want to receive notifications for unscheduled jobs.
Enable or disable Telnet — Collection Settings	You can either enable or disable Telnet across all data collection (to avoid flags/alerts in a secure environment).
Set up encryption option — Encryption Settings	You can set one-time pass phrase to encrypt saved credentials for the device.

Step 3. Click **Save** to save the settings.

Storing credentials

You can save the default credentials for all the device types in your environment that can be used during auto-discovery or data collection.

Step 1. Click the **Credential Management** tab.

Step 2. Click **New Credentials**.

Step 3. Select the device types for which you want to store and apply credentials.

Step 4. Provide the Alias name to identify the credentials.

Note: To use saved credentials during auto-discovery or in the Device-based data collection, select "Use saved credentials" check box.

Step 5. Enter the credentials.

Step 6. Set the priority for the credentials. The saved credentials would be verified against the devices based on the priority that you have set.

Step 7. Enter the passphrase if you have not saved it in the **Settings** menu. It is mandatory to save the credentials along with the passphrase, which is saved in the encrypted format.

Step 8. Confirm the passphrase.

Step 9. Click **Save**.

Chapter 3. Hosting ThinkSystem Intelligent Monitoring OneCollect with nginx (HTTPS)

You can host ThinkSystem Intelligent Monitoring OneCollect, at a centralized location, for using ThinkSystem Intelligent Monitoring OneCollect with nginx (HTTPS).

Note: To enable user management feature on Mac and Linux, edit the CONFIG file located at ~/Lenovo/OneCollect/Config/ and add this entry: HOSTED = TRUE

The information is applicable for the following operating systems:

On Mac

- Command to install nginx - **brew install nginx**

Install paths:

- nginx executable install path - /usr/local/bin/nginx
- nginx config dir - /usr/local/etc/nginx

On Linux – RHEL

Command to install nginx - **yum install nginx**

Install paths:

- nginx executable install path - /usr/sbin/nginx
- nginx config dir - /etc/nginx

On Linux- Ubuntu

- Command to install nginx - **sudo apt-get install nginx**

Install paths:

- nginx executable install path - /usr/sbin/nginx
- nginx config dir - /etc/nginx

Generate SSL domain_name.key and domain_name.cert on the system:

Commands:

- **sudo openssl genrsa 1024 > domain_name.key**
- **sudo chmod 400 domain_name.key**
- **sudo openssl req -new -x509 -nodes -sha1 -days 365 -key domain_name.key -out domain_name.cert**

Creating user accounts

If multiple people in your organization need to use ThinkSystem Intelligent Monitoring OneCollect, then you need to create user accounts for each user. When you are using the User Management feature of ThinkSystem Intelligent Monitoring OneCollect, you can create two types of users: Admin and User. The Admin and User have the privilege to create jobs, manage jobs, and manage users.

About this task

The two roles that are assigned to the users are Admin and User. The following table lists two of the user-interface operations.

Table 5.

Roles	Operation
Admin	You can add, delete, or edit user account(s). In addition, you can also view and delete jobs, saved projects, and scheduled jobs across all the users. You also have the privilege to reset passwords for the user accounts. As an Admin, you can assign one of the users with the Admin privileges. **Note:** You can create a maximum of 10 user accounts.
User	As a user, you can only view and manage jobs that you have created. You can create, delete, and change the settings of only your account.

When you create a new user, the user is added to use ThinkSystem Intelligent Monitoring OneCollect with applicable permission settings.

Step 1. Click the **User Management** tab.

Step 2. Click **Create User**.
The Create a User prompt is displayed.

Step 3. In the Username box, enter your user name.

Step 4. In the Password box, enter the password.

Step 5. Enter the email addresses of the role that you want to select for a particular account.

Step 6. Select one of the roles, **Admin** or **User**, which you want to assign to the user.

Step 7. Click **Submit**.

Replacing nginx.conf file

You can replace nginx.conf file in ThinkSystem Intelligent Monitoring OneCollect for using ThinkSystem Intelligent Monitoring OneCollect with HTTPS.

Step 1. Copy nginx.conf from ThinkSystem Intelligent Monitoring OneCollect install directory and replace it with the nginx.conf file that is located at the config directory specified in the preceding section.

Step 2. Edit the server_name with the IP address or host name, ssl_certificate with the path of domain_name.cert generated on the system and ssl_certificate_key with the path of domain_name.key generated on the system. For example, server_name - 10.141.39.131 (IP address of the system); ssl_certificate /home / domain_name.cert; ssl_certificate_key /home / domain_name.key;

Running ThinkSystem Intelligent Monitoring OneCollect with nginx on Mac and Linux hosts

You can run ThinkSystem Intelligent Monitoring OneCollect with nginx on Mac and Linux hosts for using ThinkSystem Intelligent Monitoring OneCollect with HTTPS.

Before you begin

Make sure that you have installed nginx on your system.

Step 1. Go to nginx installed folder (for example, /usr/sbin) and type chmod 777 nginx (to provide all permissions).

Step 2. Type **./nginx -t** to check if configuration is correct.

Step 3. Kill all the earlier nginx processes running on the system: Use the command **ps -ef|grep nginx / kill -9 pid**.

Step 4. Run **nginx as: sudo ./nginx**.

Step 5. Extract the ThinkSystem Intelligent Monitoring OneCollect install directory.

Step 6. Navigate to the ThinkSystem Intelligent Monitoring OneCollect install directory.

Step 7. Create a file "https" in the ThinkSystem Intelligent Monitoring OneCollect install directory. Use the command: **touch https**.

Step 8. Run ./OneCollect.

Step 9. Launch ThinkSystem Intelligent Monitoring OneCollect with "https". For example, https://10.141.39.131 from your browser.

Note:

- In case port 443 is used by another application, change the port to any other available port by editing nginx.conf and changing the value listen 443; to listen 8043;.
- When running nginx as sudo ./nginx, If you get '/etc/nginx/log/access.log" failed' error on Linux, create the directory as 'sudo mkdir -p /etc/nginx/log'.

Chapter 4. Upgrading ThinkSystem Intelligent Monitoring OneCollect

You can upgrade to a different version of ThinkSystem Intelligent Monitoring OneCollect or reinstall the same version on either Windows, Mac, or Linux system(s). You can use one of the two options for upgrading ThinkSystem Intelligent Monitoring OneCollect.

About this task

When you upgrade ThinkSystem Intelligent Monitoring OneCollect and install it on your system, you will get two options:

Step 1. Based on your requirement, select one of the options on your Windows system.

If you want to...	Then...
Perform a clean install	Click **Yes** for clean installation. The installer will delete the database and perform a clean installation.
Perform an upgrade	Click **No** to upgrade. The installer will retain the database files, which in turn retains the user preferences. **Note:** For ThinkSystem Intelligent Monitoring OneCollect 1.9, you will need to perform a clean installation.

Step 2. Select one of the options to upgrade ThinkSystem Intelligent Monitoring OneCollect on either Mac or Linux system.

If you want to...	Then...
Perform a clean install	1. You must delete the database and Config file by running **rm -rf ~\Lenovo \OneCollect**. 2. Delete the older install directory. 3. Install the new version by running **./onecollect** from the extracted installer package under <download path>\Lenovo \OneCollect>.
Perform an upgrade	1. Delete the older install directory. 2. Install the new version by running **./onecollect** from the extracted installer package under <download path>\Lenovo \OneCollect>.

Chapter 5. Collecting and uploading data from devices using ThinkSystem Intelligent Monitoring OneCollect

ThinkSystem Intelligent Monitoring OneCollect enables you to collect diagnostic, SAN, NAS, and performance data from hosts, switches, and storage systems. ThinkSystem Intelligent Monitoring OneCollect provides additional content, which can be sent back to Lenovo or analyzed on premises to understand customers' environments. You can use three different profiles to collect data. In addition, you can schedule a data collection job, edit the saved job, view the collected data.

Collecting data using ThinkSystem Intelligent Monitoring OneCollect

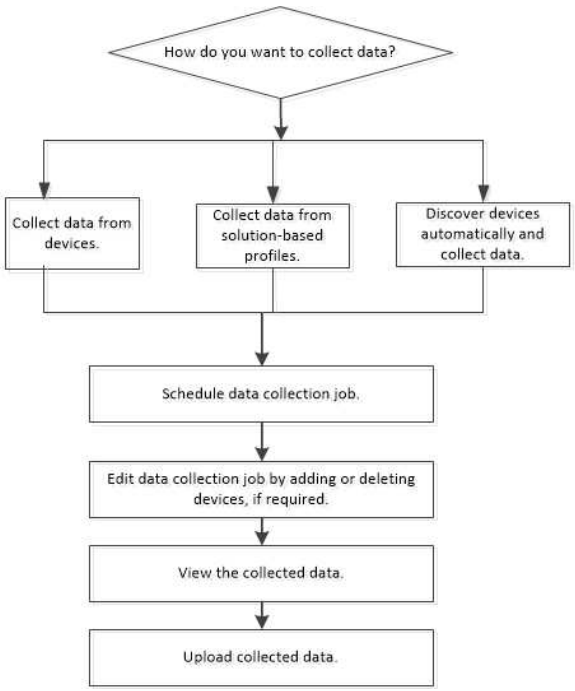
ThinkSystem Intelligent Monitoring OneCollect enables you to collect data from different types of devices and solutions.

About this task

Using ThinkSystem Intelligent Monitoring OneCollect, you can collect data by configuring a new collection profile:

- **Device Based** profile: This helps you collect data from single or multiple homogenous/heterogeneous set of devices that could be storage controllers, switches, or hosts. You need to enter the credentials of the device or component for collecting data.
- **Solution Based** profile: This helps you collect data from a set of preconfigured solution stacks.

  Note: You can collect data using any of these preceding profiles, but if the size of the collected data exceeds 50MB, then the data cannot be uploaded.



- **Discover IP/IP Range** profile: This helps you discover devices automatically using an IP, IP range, or subnet.

- **Import Devices** profile: This helps you to load the file that have the device information. After you import, Config Advisor displays the IPs that were identified from the imported data.
- **Import Collected Data Files** profile: This helps you to load the data collected from another system using either ThinkSystem Intelligent Monitoring OneCollect or Config Advisor and import the collected data files for analysis.

Collecting data using the device-based collection method

You can collect data from storage controllers, hypervisors, hosts, and switches (FC and Ethernet switches). You can also collect data either from one device or multiple homogeneous and heterogeneous devices.

Step 1. Click **Data Collection Jobs** tab.

If you want to...	Then...
Manually enter device details	Add the components, choose the device type and subtype, and then choose its relevant credentials. **Note:** SnapCenter plug-in is added in ThinkSystem Intelligent Monitoring OneCollect to gather the Job logs from a SnapCenter server. You can either enter a single Job ID, a range, or a comma-separated list of Job ID values. ThinkSystem Intelligent Monitoring OneCollect will save the collected log files in the Job directory.
Automatically load device credentials from a file	Select the collection type **Import Devices** and browse a file that has device details in a predefined format (Import_Credentials.csv). This .csv file is available in the ThinkSystem Intelligent Monitoring OneCollect install directory.

For optimal performance, Lenovo recommends adding a maximum of 25 devices.

Step 2. By default, the **Device-Based** collection type is loaded.

Step 3. By default, one row relevant to one device is loaded. If you want to add more devices, click the **Clone** button under the Actions column.

Step 4. ThinkSystem Intelligent Monitoring OneCollect validates the credentials of device(s) in two ways:

a. **Auto validation for one device**: Enter the host name, username, and password and move to the next row, the validation of the previous device starts automatically.

b. **Manual validation for all the devices**: Enter the host name, username, and password and click the **Validate** button.

Step 5. By default, all the commands are selected for the device. If you need to modify the commands, click the **Commands** icon under Actions column.

Step 6. Click the **Save/Collect** button to proceed with data collection.

Collecting data from ONTAP enabled with Multifactor authentication

Starting with ONTAP 9.4, you can enable SSH multifactor authentication (MFA) for local administrator accounts. When SSH MFA is enabled, users are authenticated by using a public key and a password.

About this task

If you have enabled SSH multifactor authentication (MFA) on ONTAP system, then you must perform the following steps:

Step 1. Click the **Data Collection Jobs** tab.

Step 2. Select **Device Based** from the **Collection Type** drop-down list.

Step 3. Select **Storage Controller** from the **Type** drop-down list.

Step 4. Select **ONTAP** from the **Sub Type** drop-down list.

Step 5. Select the persona that you want from the **Persona** drop-down list.

Step 6. Enter the credentials.

Step 7. Select the **Enable MFA** check box, and then enter the absolute path to SSH private key under the **SSH MFA Key Path** field.

Step 8. Click **Validate** button to validate the devices.

Step 9. Click **Save/Collect** button to save or collect the data.

Collecting data using the solution-based collection method

Solution-based profile is a predefined profile. By using this profile, you can configure data collection for solutions, such as ONTAP, SnapCenter, DE-Series and MetroCluster.

About this task

To perform a minimal data collection, you should enter the credentials for switch, node, cluster, and server.

Step 1. Click the **Data Collection Jobs** tab.

Step 2. Choose **Solution Based** option from the **Collection Type** drop-down list.

Step 3. From the **Profile** drop-down list, select the required profile, for example, **ONTAP**.

Step 4. Select **Network** from the **Sub Profile** drop-down list.

Step 5. From the **Persona** drop-down list, select **General**.For more information about **Personas**, see Chapter 1 “Overview of ThinkSystem Intelligent Monitoring OneCollect” on page 1

Step 6. Select the appropriate cluster switch model and management switch option.

Step 7. By default, one row relevant to one solution is loaded. If you want to add more solutions, click the **Clone** icon under the Actions column.

Step 8. ThinkSystem Intelligent Monitoring OneCollect validates the credentials of solution(s) in two ways:

a. **Auto validation for one solution**: Enter the host name, username, and password and move to the next row, the validation of the previous solution starts automatically.

b. **Manual validation for all the solution**: Enter the host name, username, and password and click the **Validate** button.

Step 9. By default, all the commands are selected for the solution. If you need to modify the commands, click the **Commands** icon under the Actions column.

Step 10. Click the **Save/Collect** button to proceed with data collection.

Collecting data using Serial port

You can use the Serial port if you do not have access to the customer’s network. Direct access to the controller firmware is gained through the serial port. It appears in the Solution-based profile.

Step 1. Connect Serial ports from ONTAP system (optionally switches) to the laptop on which ThinkSystem Intelligent Monitoring OneCollect is installed.

Step 2. Click **New Data Collection**.

Step 3. Select the **Solution-based** profile.

Step 4. From the **Profile** drop-down list, select the required profile, for example, ONTAP.

Step 5. From the **Persona** drop-down list, select any one persona from the drop-down list.For more information about Personas, see Chapter 1 “Overview of ThinkSystem Intelligent Monitoring OneCollect” on page 1.

Step 6. From the **Sub profile** drop-down list, select **Serial**.

Step 7. Enter credentials for the systems.

Step 8. To validate, click **Next**.

Step 9. Click **Next** to view the summary of devices from which the data will be collected.

Discovering devices automatically and collecting data

You can automatically discover devices using IP address, IP range, or subnet. ThinkSystem Intelligent Monitoring OneCollect uses Simple Network Management Protocol (SNMP) v2 for automatic discovery. If the automatic discovery is successful, ThinkSystem Intelligent Monitoring OneCollect also identifies the device type and its operating system.

Step 1. From the **Collection Types** drop-down list, select **Discover IP / IP Range**.

Step 2. Enter either the IP address, IP Range, or subnet in the field.
If you want to discover the IP address range, for example, 10.238.192.90-100 or subnet using CIDR notation, for example,10.238.190.0/24.

Step 3. To secure SNMP responses, enter the community string in the **SNMP Community String** field. You have an option to enter more than one community string comma-separated values. This allows you to discover your lab environment using common set of credentials to be used and save the credentials in the **Credentials Management** tab. You can save the credentials for data collection and discovering IP addresses and subnet.

If there is custom community string set for SNMP responses, enter the community string. By default, ThinkSystem Intelligent Monitoring OneCollect uses 'public' community string for automatic discovery.

Note: For performing Inventory collection, you should not enter subnet below 20, whereas for using other personas for data collection, you should enter subnet value below 22.

Step 4. Click **Use saved credentials** check box. The saved credentials will be checked against the IP addresses available online.

Step 5. Click **Discover**.

You can view the progress of the search on the right. The filter option allows you to view results that are displayed after the search. ThinkSystem Intelligent Monitoring OneCollect can filter the devices that are offline, online, mapped, unmapped, and can also display the consolidated result of the devices in all the preceding categories.

The result page displays the hardware, operating system, kernel version, serial number, hostname. These device details, for example, for Host Linux, UUID, and serial number are identified. From hardware, manufacturer and the model names are identified.

You can also export the displayed results to an Excel spreadsheet. This Excel spreadsheet can be used to create a lab report. After automatic discovery process is completed, you can collect the data from these devices.

Step 6. Click **Save/Collect**.

Step 7. If you want the inventory details, hardware and software details, such as hotfixes and patches, select the **Inventory Collection** from the **Purpose of Data Collection** drop-down list.

Step 8. Click **Save & Collect**.
You can view the collected data as a new data collection job.

Importing devices

This helps you add large number of devices for data collection by uploading a .csv file containing credentials of the devices.

Step 1. From the **Collection Types** drop-down list, select **Import Devices**.

Step 2. Click **Choose Files** to load the devices from either the .csv file or .txt file.

Note: The .csv template can be found in the ThinkSystem Intelligent Monitoring OneCollect install directory.

The devices are displayed in a tabular format for editing and updating the credentials. You can update the credentials for multiple devices in the list given using **Update Credentials** link.

Step 3. It is optional to validate the credentials. If you are sure about the credentials and devices added, you can click **Save & Collect**.

Importing collected data files

You can import and upload the collected data file. The file must either be in the .tar.gz, .tgz, .zip, or .xml.gz format.

Step 1. From the **Collection Types** drop-down list, select the **Import Collected Data Files**.

Step 2. Click **Choose Files** to select the files containing the collected data.

Note: The file must be in any of the following formats: .tar.gz, .tgz, .zip, or .xml.gz.

Step 3. Load the ThinkSystem Intelligent Monitoring OneCollect data file that has been shared by another user.

It will directly get added as a job and you can view the collected data in **Data View**.

Note: Using this option, you can load the data collected from another system using ThinkSystem Intelligent Monitoring OneCollect or ThinkSystem Intelligent Monitoring OneCollect Config Advisor.

Scheduling a data collection job

You can create a scheduled backup job by selecting an entire job start time and recurrence pattern for the saved job. You can also view all backup jobs on the **Saved Projects** page.

Before you begin

ThinkSystem Intelligent Monitoring OneCollect must have at least one of the jobs saved for scheduling a job.

Step 1. Select a saved job.

Step 2. Click the **Add Schedule**.

Step 3. In the **Scheduler**, enter the exact time that you want the scheduler to set for the saved job.

Step 4. In the **Recurrence Pattern** pane, enter the details in the respective fields.

If you want to...	Then...
Set the interval	1. Select the **Hours** and **Minutes** from the Trigger Every field. 2. Enter the occurrence of the job in the **Occurrence** field for the job to be scheduled. 3. Click **Save Schedule**. 4. Click **Close**.
Set for daily schedule	1. In the **Start Time** drop-down list, enter the time in the **Hours** and **Minutes** fields. 2. Enter the frequency of days in the **Recur Every How Many Days?** field for the job to be scheduled. 3. Enter the occurrence of the job in the **Occurrence** field for the job to be scheduled. 4. Click **Save Schedule**. 5. Click **Close**.
Set for weekly schedule	1. Select **Weekly** from the **Recurrence Pattern** drop-down list. 2. In the **Start Time** drop-down list, enter the time in the **Hours** and **Minutes** fields. 3. Select either one day of the week or you can also select all the days of the week. 4. Enter the occurrence of the job in the **Occurrence** field for the job to be scheduled. 5. Click **Save Schedule**. 6. Click **Close**.

Step 5. Monitor the job progress and execution logs for scheduled jobs.

Editing a saved job

You can edit a job even after you have saved the job.

Step 1. In the **Saved Projects** tab, under the **Actions** column, click the **Edit Project** icon.

Step 2. In the **Data Collection Jobs** tab, modify the information that you want.

Step 3. Alternatively, click **Validate** to verify the information.

Step 4. Click **Save/Collect** to save or collect data.

Step 5. In the **Collect Options** dialog box, you have an option to enter the name of the Project Name, Group Name, Pass Phrase, and Confirm Pass Phrase.

Step 6. Click **Save Project** button.

Viewing collected data

You can view the collected data from hosts, switches, and storage systems.

About this task

A new feature has been introduced to group jobs by the saved project name. You can switch the view between "Jobs Grouped By Project" or "Latest Jobs Across Projects" which is sorted based on created timestamp. If the recent running collection job is from the scheduled job or Host Performance profile, by default, the jobs' page is redirected to the "Jobs Grouped By Project" view.

Step 1. To view collected data, perform any one of the following methods:

If you want to...	Then...
View data of all the recent job files	1. Click the **Data Collection Jobs** tab. 2. Select the icons to perform any one of the following operations: a. Expand to view more information about the job. b. Collect data. c. View the command viewer. d. View and analyze the collected data. e. Delete the collected data. The **Command Viewer** will be launched. 3. View the collected data in an .xml format. 4. Click the expand symbol **(>>)** to view a realtime log console.You can view the path of the file. You can select either one or more jobs to export the data into a consolidated report in PDF, Word, or Excel formats. 5. Click the file under the Job Name column. You will reach the **Data View** page to view the health report, device details, visualization diagram, and storage utilization pertaining to that particular job. The information under these boxes are clickable. For example, when you click the Lenovo storage controller in the Device Type column inside the Device Details box, you have an option to narrow down your search to obtain information about the system configuration summary, aggregate info, volume info, and LUN info in addition to viewing the stack and visualization diagrams. 6. Click **Export** to export the job information. 7. Click **Command Viewer** to view the commands used in the selected job.
View data for one job file	1. Click **Data View** tab. 2. On the left-hand side, click the job link. 3. View all the recent jobs that are listed out. 4. Select the job that you want to view for additional information.

Chapter 6. Uninstalling ThinkSystem Intelligent Monitoring OneCollect

You can upgrade to the current version from earlier versions of the product. You can uninstall ThinkSystem Intelligent Monitoring OneCollect to troubleshoot issues if they persist.

Uninstalling ThinkSystem Intelligent Monitoring OneCollect from a Windows host

You can uninstall ThinkSystem Intelligent Monitoring OneCollect by using the Windows Uninstall program utility.

Before you begin

- ThinkSystem Intelligent Monitoring OneCollect database file is available under `<user_home_directory>\Lenovo\OneCollect\Db>`. To either avoid accidental deletion or losing your data forever, it is advised to back up the database before you uninstall ThinkSystem Intelligent Monitoring OneCollect.
- If ThinkSystem Intelligent Monitoring OneCollect is running, it must be closed.

Step 1. Uninstall ThinkSystem Intelligent Monitoring OneCollect from a Windows host if ThinkSystem Intelligent Monitoring OneCollect was installed using the installation wizard or the software archive.

If you want to...	Then...
Uninstall ThinkSystem Intelligent Monitoring OneCollect that was installed using the installation wizard	1. Browse to the user directory path and delete Lenovo and ThinkSystem Intelligent Monitoring OneCollect folders. 2. Click **Control Panel**. 3. Select **Programs and Features**. 4. In the wizard, right-click ThinkSystem Intelligent Monitoring OneCollect and select **Uninstall**.You have successfully uninstalled ThinkSystem Intelligent Monitoring OneCollect from your system.
Uninstall ThinkSystem Intelligent Monitoring OneCollect that was installed using the software archive	1. Stop the ThinkSystem Intelligent Monitoring OneCollect process from the Task Manager. 2. Delete the ThinkSystem Intelligent Monitoring OneCollect install directory at `<Install_directory>\Lenovo\OneCollect`. 3. If you want a clean uninstallation, delete the data directory folders from `<user home directory>\Lenovo\OneCollect`. You can retain this, if you want the settings and job data to be retained for upgrading or reinstalling ThinkSystem Intelligent Monitoring OneCollect.

Uninstalling ThinkSystem Intelligent Monitoring OneCollect from the Mac and Linux hosts

You can uninstall the ThinkSystem Intelligent Monitoring OneCollect from the Mac and Linux hosts by using the command-line interface.

Before you begin

- ThinkSystem Intelligent Monitoring OneCollect database file is available under `<user_home_directory>\Lenovo\OneCollect\Db>`. To either avoid accidental deletion or losing your data forever, it is advised to back up the database before you uninstall ThinkSystem Intelligent Monitoring OneCollect.
- If ThinkSystem Intelligent Monitoring OneCollect is running, it must be closed.

Step 1. Kill the ThinkSystem Intelligent Monitoring OneCollect process.

Step 2. Delete the ThinkSystem Intelligent Monitoring OneCollect install directory.
You have successfully uninstalled ThinkSystem Intelligent Monitoring OneCollect from your system.

Chapter 7. Troubleshooting

You can find information about how to troubleshoot some of the issues that you might come across when you use the OneCollect plug-ins. You can find details of the issue, possible cause, and workaround for the issue.

Resolving ThinkSystem Intelligent Monitoring OneCollect launching error

ThinkSystem Intelligent Monitoring OneCollect does not launch on Windows, Mac or Linux system after installation.

About this task

To launch ThinkSystem Intelligent Monitoring OneCollect on either Windows, Mac, or Linux system, perform the following steps:

Step 1. In a browser, manually enter the URL:
`http://localhost:8044/OC`

If you want to...	Then...
Resolve ThinkSystem Intelligent Monitoring OneCollect launching error on Windows	1. Check whether the ThinkSystem Intelligent Monitoring OneCollect process is running in the Task Manager in Windows. 2. If the process is not running, go to the installation directory, by default <C:\Program Files (x86)\Lenovo\OneCollect> and launch the ThinkSystem Intelligent Monitoring OneCollect process by clicking onecollect.exe.If it still does not work, the port might be used by other application (check **netstat -an**). 3. To rectify this issue, edit the CONFIG file in the user directory <user home directory>\Lenovo\OneCollect\Config> and set the PORT number to an available port. Restart ThinkSystem Intelligent Monitoring OneCollect.If you are trying to access ThinkSystem Intelligent Monitoring OneCollect from the other systems, make sure the firewall allows the port used by ThinkSystem Intelligent Monitoring OneCollect.
Resolve ThinkSystem Intelligent Monitoring OneCollect launching error on Mac and Linux	1. Check whether the process is running by executing **ps aux | grep onecollect**. 2. If the process is not running, go to the installation directory, by default <install_dir>/OneCollect> and launch the ThinkSystem Intelligent Monitoring OneCollect process by running **./onecollect**. If it still does not work, the port might be used by other application (check **netstat -an**). 3. To rectify this issue, edit the CONFIG file in the user directory <user home directory>/Lenovo/OneCollect/Config> and set the PORT number to an available port. Restart ThinkSystem Intelligent Monitoring OneCollect.If you are trying to access ThinkSystem Intelligent Monitoring OneCollect from the other systems, make sure the firewall allows the port used by ThinkSystem Intelligent Monitoring OneCollect.

Backing up the database

The device credentials, saved jobs, and user preferences are saved in the database.

About this task

If you want to delete ThinkSystem Intelligent Monitoring OneCollect, it is advised to back up the database to avoid losing your saved data.

Step 1. Navigate to <user_home_directory>\Lenovo\OneCollect\Db>.

Step 2. Back up the database folder.

Changing the default timeout for command execution

You can change the default timeout for command execution using the COLLECTION_TIMEOUT variable in the Config file.

Step 1. Open the Config file.

Windows: <user_home_directory>\Lenovo\OneCollect\Config

Mac and Linux: <user_home_directory>/Lenovo/OneCollect/Config

Step 2. Change the value of COLLECTION_TIMEOUT to the desired time value (in seconds).

Step 3. Save the file.

Step 4. Restart the server.
The framework will include the new timeout value.

Restarting the ThinkSystem Intelligent Monitoring OneCollect server

You can restart the server on a host using either Windows, Mac, or Linux.

Step 1. Use one of the following methods to restart the ThinkSystem Intelligent Monitoring OneCollect server.

If you want to...	Then...
Restart ThinkSystem Intelligent Monitoring OneCollect on a Windows system	1. Right-click and select **Start Task Manager**. 2. Click **Processes** tab and select onecollect.exe. 3. Click **End Process**.
Restart ThinkSystem Intelligent Monitoring OneCollect on a Mac or Linux system	1. Search for ThinkSystem Intelligent Monitoring OneCollect process using **ps aux | grep onecollect**. 2. Note down the process ID of ThinkSystem Intelligent Monitoring OneCollect and kill the process using **kill <pid>**. 3. Restart the process by running **./onecollect** from the ThinkSystem Intelligent Monitoring OneCollect install directory.

Sending the feedback

You must notify Lenovo technical support if you want to send us your feedback, report a problem, or need assistance in using ThinkSystem Intelligent Monitoring OneCollect.

Step 1. Go to ThinkSystem Intelligent Monitoring Community Forum.

Step 2. If you are a new user, register on the Lenovo Community Forum.

Step 3. If you are an existing user, sign in.

Step 4. Enter the subject in the **Subject** line.

Step 5. You must provide the description of your feedback, problem, or query related to ThinkSystem Intelligent Monitoring OneCollect in the **Body** section.

Step 6. Add a file, if any, to the **Attachment** section.

Step 7. You must either type ThinkSystem Intelligent Monitoring OneCollect in the **Label** field or click ThinkSystem Intelligent Monitoring OneCollect link provided under the **Choose a Label** section.

Step 8. Click **Post** to send your feedback to Lenovo.

Searching for the result and log files

After you have successfully collected the data, the result and log files are saved.

About this task

You can access the result and log files as listed in the table below:

Table 6.

Type of file	File location
Log File	<user home dir>/OneCollectData/LogFiles>
Result file	<user home dir>/OneCollectData/JobFiles>

On Mac

/Users/*<username>*

On Linux

/home/*<username>*(~)

Appendix A. Contacting Support

You can contact Support to obtain help for your issue.

You can receive hardware service through a Lenovo Authorized Service Provider. To locate a service provider authorized by Lenovo to provide warranty service, go to https://datacentersupport.lenovo.com/serviceprovider and use filter searching for different countries. For Lenovo support telephone numbers, see https://datacentersupport.lenovo.com/supportphonelist for your region support details.

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