

# Citrix SCOM Management Pack for License Server User Guide



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This document provides installation, configuration, and usage instructions for Citrix SCOM Management Pack for License Server.

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Contents

Chapter 1: Quick introduction ..... 2

    About License Server Management Pack ..... 2

    Product architecture ..... 3

Chapter 2: Installation and configuration ..... 4

    Preparing for the installation ..... 4

    Installing License Server Management Pack ..... 6

    Verifying the installation ..... 6

    Configuring agent nodes to act as SCOM proxies ..... 7

Chapter 3: Uninstallation ..... 8

    Removing dependent management packs (customizations) ..... 8

    Removing included management packs ..... 8

Chapter 4: Usage ..... 9

    Monitoring overview ..... 9

    Key monitoring scenarios ..... 10

    Optional configuration ..... 15

    Customizing sealed management packs ..... 16

Chapter 5: Support ..... 16

    General support resources ..... 16

    Contacting Citrix Customer Service ..... 16

Chapter 1: Quick introduction

About License Server Management Pack

Citrix SCOM Management Pack for License Server (**License Server Management Pack**) is an availability and performance management solution that extends end-to-end service monitoring capabilities of Microsoft System Center Operations Manager (**SCOM**) to include the Citrix Licensing (**Licensing**) infrastructure.

License Server Management Pack allows you to:

- Improve Licensing infrastructure availability and health

Licensing availability is being checked with continuous TCP port probing and active license server services checks, as well as health checks of the Citrix vendor daemon process.

- Gain deeper insight into the license server performance and License usage information
- Know what the amount of product licenses is and the ratio of license usage.

With License Server Management Pack you are notified when the license is about to expire or when the license usage is growing too fast. License server's critical processes are measured for high CPU usage and high memory consumption.

License Server Management Pack introduces a couple of license usage reports. These provide you with an overview of product license usage over time. There are also trending reports that help you plan your licensing resources.

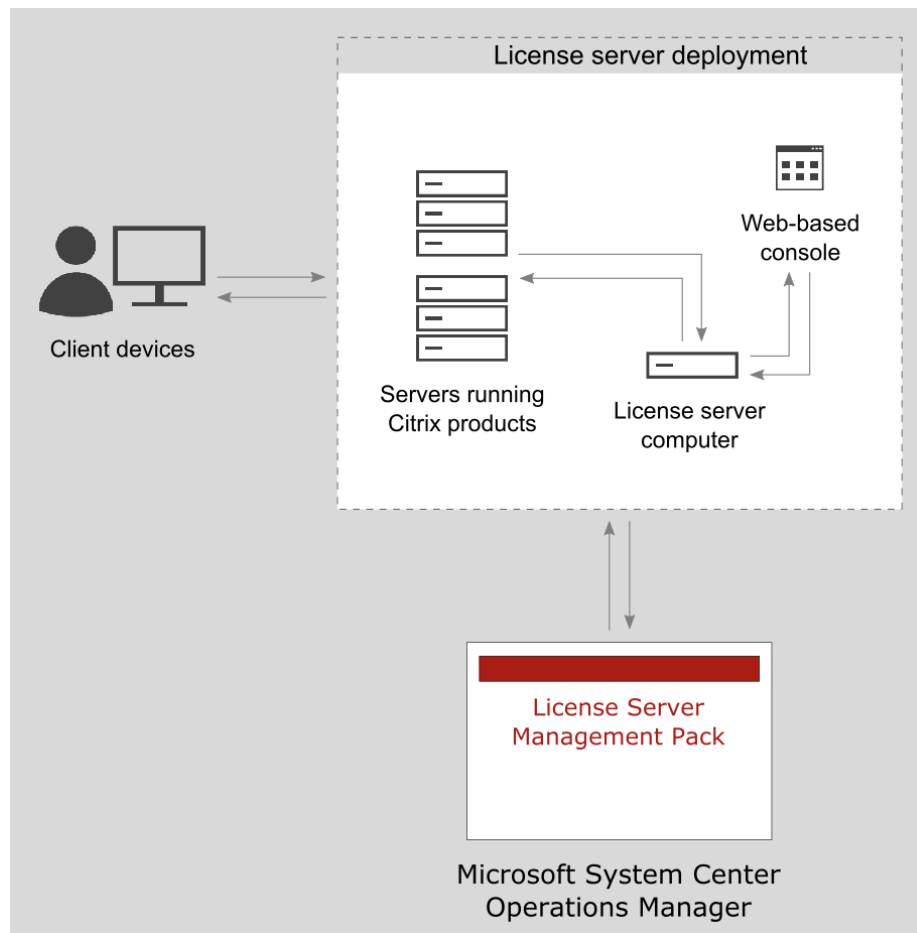
License Server Management Pack fully integrates the topology, health, and performance data into SCOM. It provides centralized monitoring in SCOM and covers the following key scenarios:

- Is the license server up and running?
- Is the Licensing infrastructure (that is, the Citrix Licensing, Citrix Web Services for Licensing, and other related Windows services) operational?
- Are the Citrix Licensing and Citrix Web Services for Licensing responsive for Citrix Products?
- Are the product licenses about to expire?
- Is the Subscription Advantage membership about to expire?
- Has license usage reached or exceeded the configured thresholds?
- Are there any events that indicate a problem with license server?
- How well the license server processes are performing?
- Have any performance thresholds been violated?

## **Product architecture**

The following diagram shows how License Server Management Pack connects the SCOM management platform and the Licensing infrastructure.

**Figure 1.1** A high-level view of the License Server Management Pack architecture



## Chapter 2: Installation and configuration

This chapter contains instructions that you must follow to install and configure License Server Management Pack. Perform all procedures in the documented order of precedence.

### Preparing for the installation

Before installing License Server Management Pack, make sure the following prerequisites are fulfilled:

- You environment meets the hardware and software requirements.  
For software requirements, see the *Citrix SCOM Management Pack for License Server Compatibility Matrix*. For hardware and/or other requirements, see the *Citrix SCOM Management Pack for License Server Release Notes*.

- A SCOM management group is chosen for License Server monitoring. The computer that hosts the SCOM management server of this management group is referred to as **management server computer**.
- SCOM agent is installed on all the computers that host Licensing, and these computers are configured as **agent nodes** in the management group.
- The default management packs that the included management packs depend on are imported in SCOM:
  - Citrix Management Pack Library depends on the following:
    - Health Library
    - System Center Core Library
    - System Library
    - Windows Core Library
  - Citrix Management Pack for License Server depends on the following:
    - **Citrix Management Pack Library**
    - Data Warehouse Library
    - Health Library
    - Performance Library
    - Process Monitoring Library
    - Synthetic Transactions Library
    - System Application Log Library
    - System Center Core Library
    - System Library
    - Windows Core Library
    - Windows Service Library
  - Citrix Management Pack for License Server Reports depends on the following:
    - **Citrix Management Pack for License Server**
    - Data Warehouse Library
    - Health Library
    - Microsoft Generic Report Library
    - System Center Core Library
    - System Library
    - Windows Core Library

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**Note** If you accidentally delete any of the listed default management packs, you can import them back from the files in the SCOM installation directory.

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- The License Server Management Pack files (files with the \*.mp file extension) are extracted from the installation archive. The archive file name is Citrix\_SCOM\_Management\_Pack\_for\_LicenseServer\_<Version>.zip (where <Version> is the current software version).

## Installing License Server Management Pack

Installation of License Server Management Pack consists of importing the included management packs into SCOM. To import the management packs, do the following:

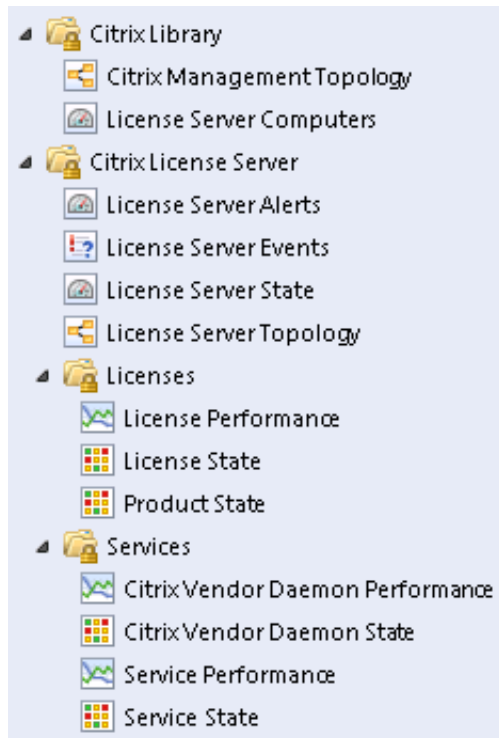
1. Log on to the management server computer.
2. Launch the SCOM Operations console.
3. In the Administration view, click **Management Packs**.
4. Make sure all required default management packs are present in the list in the middle pane. For a list of requirements, see “Preparing for the installation”.
5. In the Tasks pane, expand **Actions**, and then click **Import Management Packs**.
6. In the Import Management Packs dialog box, click **Add**, and then select **Add from disk**.
7. In the Online Catalog Connection, click **No**.
8. In the Select Management Packs to import dialog box, browse to the folder that contains the following management pack files, select those files, and then click **Open**.
  - Comtrade.Citrix.Library.mp
  - ComTrade.Citrix.LicenseServer.mp
  - ComTrade.Citrix.LicenseServer.Reports.mp
9. Click **Install**.

## Verifying the installation

To verify that the License Server Management Pack installation is correct, do the following:

1. Log on to the management server computer.
2. Launch the SCOM Operations console.
3. In the Monitoring view, expand the items in the left pane until they match the following figure.

**Figure 2.1** Elements of License Server Management Pack as seen in the SCOM Operations console



### Configuring agent nodes to act as SCOM proxies

Each agent node where Licensing is installed must be configured to act as a SCOM proxy computer. This configuration enables the agent to relay or forward information from or about other computers or network devices to the management server.

To configure the agent nodes to act as SCOM proxy computers, do the following:

1. Log on to the management server computer.
2. Launch the SCOM Operations console.
3. In the **Administration** view, expand **Device Management**, and then click **Agent Managed**.
4. For each License Server computer (agent-managed), follow the steps:
  - a. Right-click the host name, and select **Properties**.
  - b. Click the **Security** tab.
  - c. Select the **Allow this agent to act as proxy and discover managed objects on other computers** option.

- d. Click **OK**.

## Chapter 3: Uninstallation

This chapter contains instructions that you must follow to effectively uninstall License Server Management Pack. Perform all procedures in the documented order of precedence.

### Removing dependent management packs (customizations)

To remove the customizations that you made to the management packs included in License Server Management Pack, do the following:

1. Log on to the management server computer.
2. Launch the SCOM Operations console.
3. In the Administration view, click **Management Packs**.
4. In the middle pane, locate the management packs that depend on the management packs included in License Server Management Pack.
5. For each such dependent management:
  - a. Right-click it and then click **Delete**.
  - b. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.

### Removing included management packs

To remove the management packs included in License Server Management Pack, do the following:

1. Log on to the management server computer.
2. Launch the SCOM Operations console.
3. In the Administration view, click **Management Packs**.
4. In the middle pane, right-click **Citrix Management Pack for License Server Reports**, and then select **Delete**.
5. On the message stating that deleting the management pack might affect the scoping of some user roles, click **Yes**.



6. Repeat steps 4 and 5 with **Citrix Management Pack for License Server**.
7. Check if other Citrix SCOM Management Pack products are installed on the management server computer. If none of them is installed, repeat steps 4 and 5 with **Citrix Management Pack Library**.







## Chapter 4: Usage

### Monitoring overview

#### *Monitoring License Server components*

The following table summarizes the Citrix Licensing components that are monitored with License Server Management Pack.

**Table 4.1** Citrix Licensing components

Component	Description
 Citrix vendor daemon	A process that is responsible for core operations of Citrix License Server.
 License	A Citrix license file, which can be of one of the following types: User/Device, Concurrent user, Concurrent system, Named user license.
 License Server	A system that allows licenses to be shared across the network. It stores and manages Citrix license files.
 License server TCP Probe	TCP ports on the license server host: vendor daemon port, license server manager port, and console web server port.
 Product	A group of license files for a Citrix product, such as XenDesktop or XenApp.
 Service	A Windows service that is part of Citrix License Server.

## Key monitoring scenarios

### *Product license usage*

After a user connects to a computer running a Citrix product, the product requests a license from the license server and license gets checked out. License can be checked out to a user, device, session, server, or appliance, depending on the licensing model for a particular product.

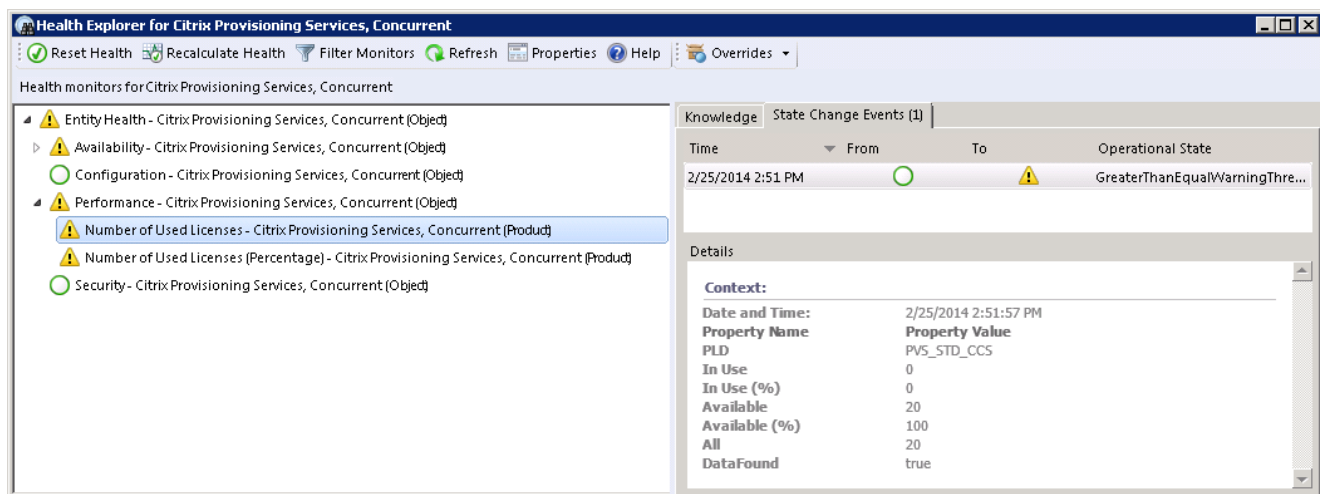
Users can eventually run out of available licenses. License Server Management Pack handles this situation in various ways.

## Monitors

- `Number of used licenses`: This monitor checks if the number of used licenses has exceeded the threshold value. The Warning and Critical thresholds can be configured.

- `Number of used licenses (Percentage)`: This monitor checks whether the percentage of used licenses has exceeded the threshold value. The Warning and Critical thresholds can be configured.

**Figure 4.1** License usage monitors (Health Explorer)



## Performance collection rules

License Server Management Pack provides the following rules that collect metrics for a license:

- `Number of All Licenses Performance DB DW`: This rule collects the number of all licenses for a Citrix product.

- `Number of Used Licenses Performance DB DW`: This rule collects the number of used licenses for a Citrix product.
- `Number of Used Licenses (Percentage) Performance DB DW`: This rule collects the percentage of used licenses
- `Number of Available Licenses Performance DB DW`: This rule collects the number of available licenses

Values are displayed in the License Performance view.

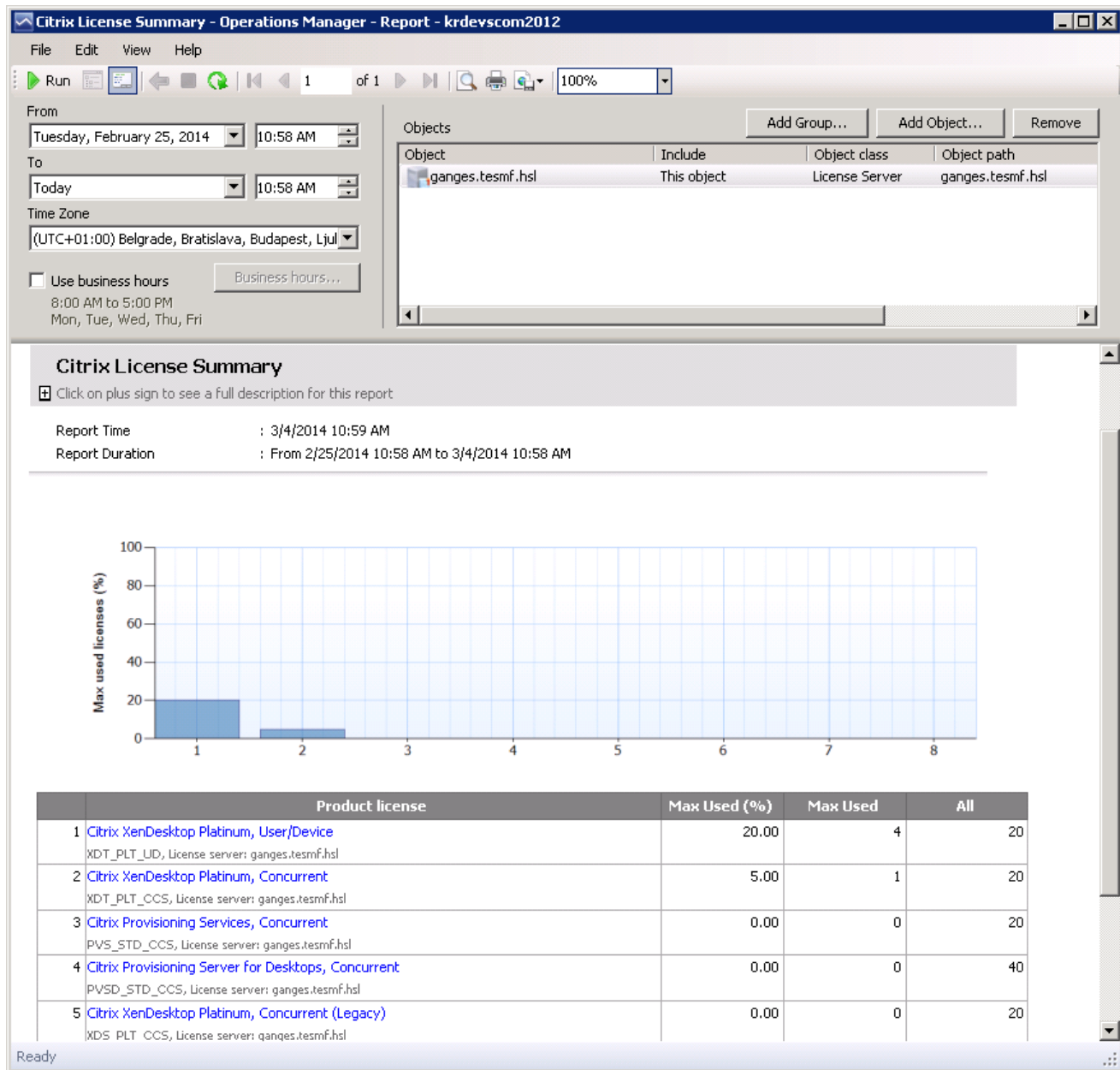
## Reports

With the License Server Management Pack reports, administrators have an overview of license usage on Citrix license servers. Reports show summarized data as well as details for the amount of licenses and the license usage for each Citrix product.

License Server Management Pack provides the following reports:

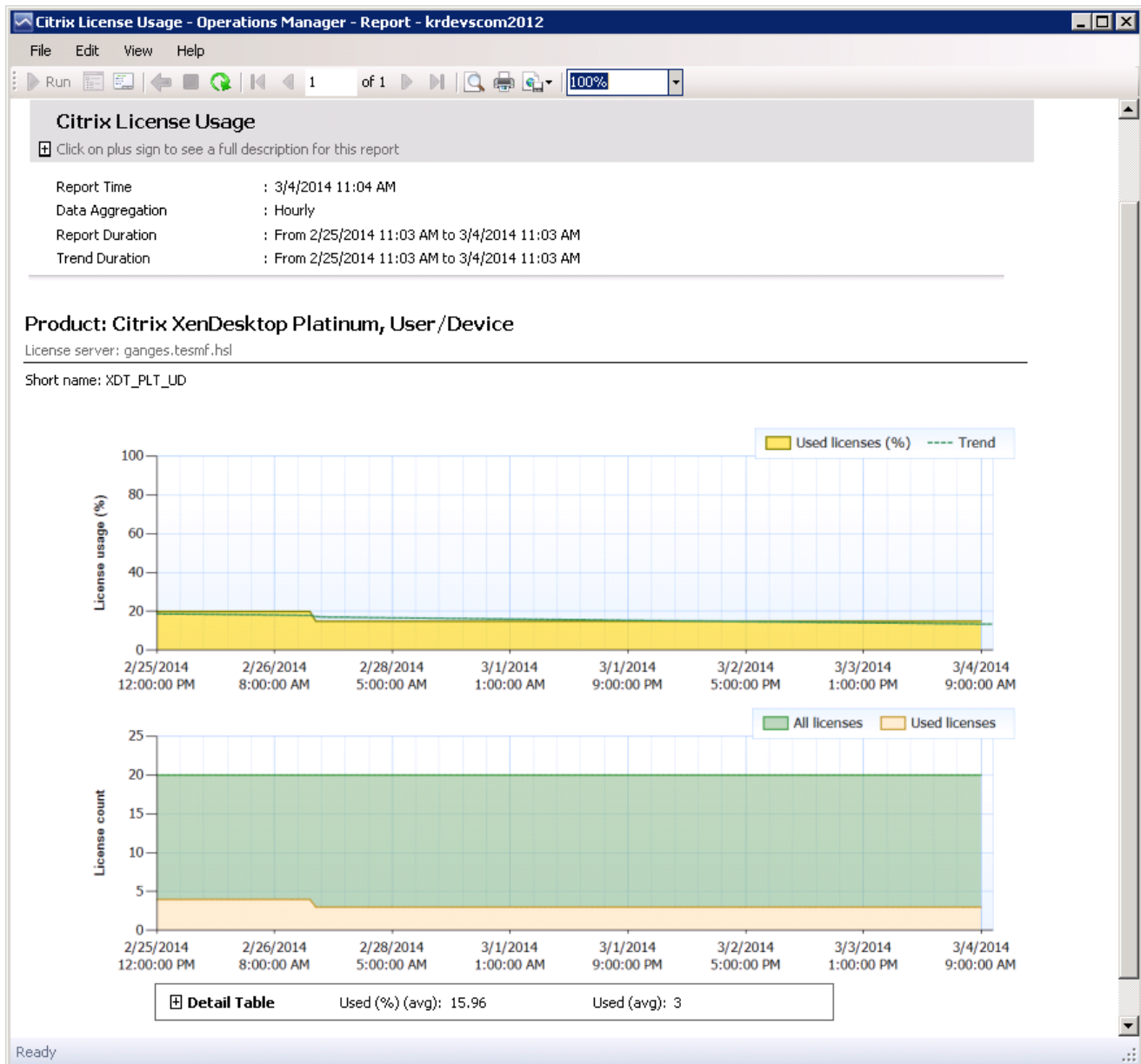
- `Citrix License Summary`: This report shows product license usage summary for the selected time range. The following values are displayed:
  - Percentage of used licenses (maximum value)
  - Number of used licenses (maximum value)
  - Number of all licenses

**Figure 4.2 Citrix License Summary report**



- **Citrix License Usage:** This report shows license usage for each installed Citrix product for the selected time range. The following values are displayed:
  - Percentage of used licenses (maximum value in aggregation period) with a trend line
  - Number of used licenses (maximum value in aggregation period)
  - Number of all licenses

Figure 4.3 Citrix License Usage report



### License and Citrix Subscription Advantage membership expiration

#### License expiration monitoring

Citrix licenses can have a limited lifetime. After a license expires, it can no longer be checked out and users are unable to use the product. License Server Management Pack provides a monitor that alerts administrators if a license is about to expire soon or if it has already expired.

## Citrix Subscription Advantage membership expiration monitoring

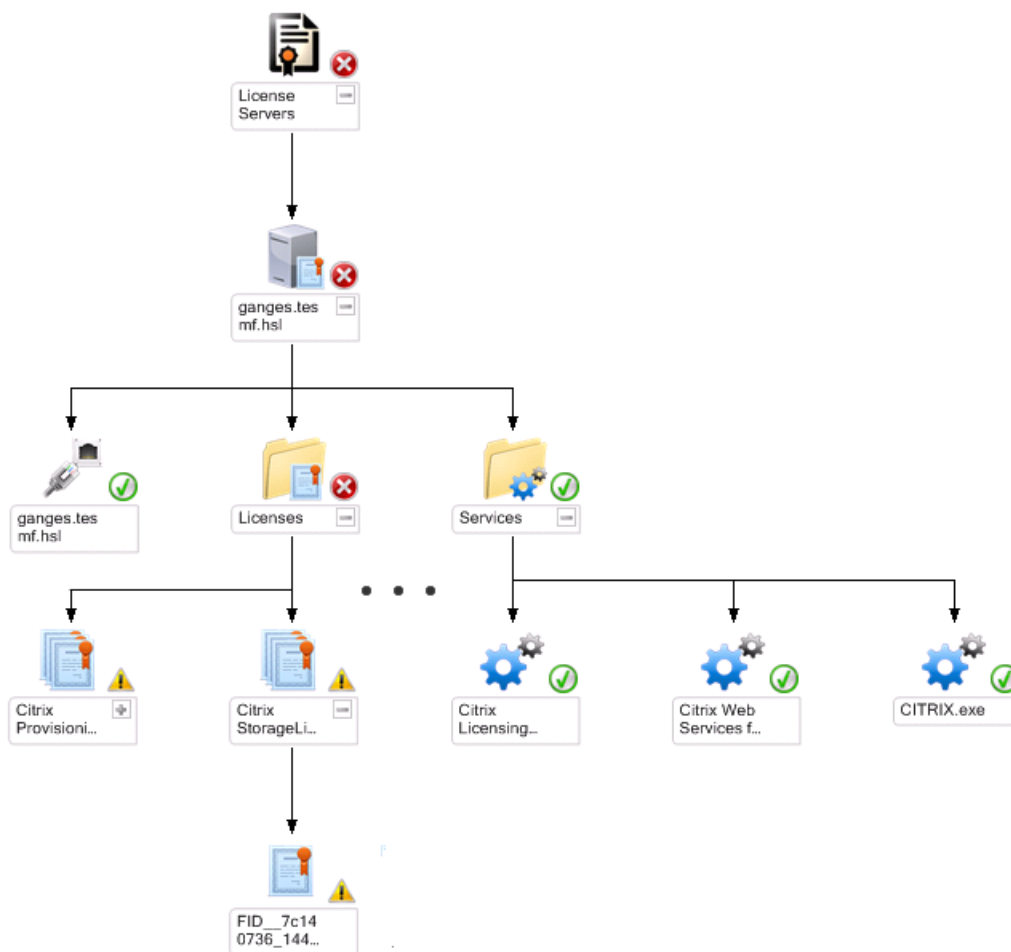
When purchasing a new Citrix product, your purchase includes a one-year membership in a Citrix Subscription Advantage. This membership entitles you to, among other benefits, any product updates, including major and minor releases, released during your membership period.

License Server Management Pack provides a monitor that alerts administrators if Subscription Advantage Membership is about to expire soon or has already expired.

### *License Server infrastructure health*

License Server Management Pack allows you to monitor the crucial services and processes of a Citrix License Server instance and analyze the CPU performance and memory consumption on its host system.

**Figure 4.4** License Server topology



The following Windows services of License Server are monitored:

- Citrix Licensing
- Citrix Licensing Config Service (the service is present only in specific Citrix Licensing versions)
- Citrix Licensing Support Service
- Citrix Licensing WMI
- Citrix Web Services for Licensing

Besides service monitoring, License Server Management Pack checks the health of the Citrix vendor daemon process. Citrix vendor daemon is responsible for the core operations of License Server, such as tracking how many licenses are checked out and who uses them. The vendor daemon can manage all of your Citrix license files and is fully backward compatible with any license files you have.

### *License Server TCP port probing*

The Citrix License Server installation configures communication channels through several ports:

- Console Web server port: Web server uses the HTTP TCP/IP port for communication with clients connecting to the License Administration Console. By default, its port number is 8082. If you are using HTTPS, the default port number is 443.
- License server manager port: This port is used by the license server manager, which handles the initial communication between the products, starts the vendor daemon, and relays check out and check in requests to the vendor daemon. By default, its port number is 27000.
- Vendor daemon port: This port is used by the Citrix vendor daemon, which is responsible for the core operations of the license server, including license allocation. By default, its port number is 7279.

License Server Management Pack executes TCP port probes on license server from SCOM server perspective for each configured TCP port. Monitors alert the following states:

- Connection Refused
- Connection Timeout
- DNS Resolution Failure
- Host Unreachable

## **Optional configuration**

### *Tuning thresholds for performance monitors and rules*

Some monitors and rules have default thresholds that might need additional tuning to suit your environment. You should evaluate monitors and rules to determine whether the default thresholds are

appropriate for your environment. If a default threshold is not appropriate for your environment, you should baseline the relevant performance counters, and then adjust the threshold by overriding them.

For a complete list of monitors and rules, see the *License Server Management Pack Reference Guide*, which you can find in the `Citrix_MPLS_ReferenceGuide.html` file.

### **Customizing sealed management packs**

Similarly to customizing the default SCOM management pack, you can customize the sealed management packs that License Server Management pack provides. For details, see the Microsoft TechNet website:

- For general information about customization of management packs, see the [Customizing Management Packs](#) webpage.
- For instructions on how to customize a management pack, see the [Create a New Management Pack for Customizations](#) webpage.

## **Chapter 5: Support**

### **General support resources**

Citrix® offers a variety of resources for support with your Citrix environment, including the following:

- The Knowledge Center is a self-service, Web-based technical support database that contains thousands of technical solutions, including access to the latest hotfixes, service packs, and security bulletins.
- Technical Support Programs for both software support and appliance maintenance are available at a variety of support levels.
- The Subscription Advantage program is a one-year membership that gives you an easy way to stay current with the latest product version upgrades and enhancements.
- Citrix Education provides official training and certification programs on virtually all Citrix products and technologies.

For more information about Citrix services and support, see the [Citrix Support Services and Resources](#) website.

You can also participate in and follow technical discussions offered by the experts on various Citrix products at the [Welcome to the Citrix Community](#), [Citrix Discussions](#), and [Citrix Services](#) websites.

### **Contacting Citrix Customer Service**

To contact Citrix Customer Service, see the [Contact Support](#) website.