Local License Server

Quick Start Guide

for Windows®

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Overview

This guide provides a list of configuration steps and the corresponding guidelines to ensure that your Local License Service (LLS) is configured in a quick and easy manner. The purpose is to use the below checklist for quick questions when configuring the LLS. Keep the latest version of the Local License Server Administrator Guide for Windows accessible as references will be made.

NOTE: Before attempting to perform any LLS configuration on your computer, please ensure that you have read through the system requirements and meet all minimum requirements. This service can be functionally intensive and will not function correctly if your computer does not meet these standards.

Installing the LLS Software Package

End-to-end process of installing the LLS on a fresh computer. Not all steps apply to computer's that have been previously configured or if certain software is already present on your computer (see Upgrading the LLS to a New Version on page 8 for upgrade instructions). In the case that you have already configured some of these elements, then go onto the next step. Before beginning these steps, please reach out to your regional technical support team to be granted access to the LLS installer files.

1. Download the latest LLS Package Installer (.exe file).
2. Install LLS Package on the host computer.
3. Verify Java on host computer.
4. Verify Environment Variables for the host computer.
5. Verify Apache TomCat on host computer.

See Configuration Checklist on page 5 for questions and links concerning these set-up steps.

NOTE: For users of version 3.1 of the Windows LLS, you can run the LLS Configurator that will run a script to assist with all the items covered in the Configuration Checklist. This option is highly recommended for first time users of the LLS.

After completing these steps, go to the Online vs Offline Configurations on page 4 for finalizing the LLS set up. Review the criteria listed in each configuration section to determine which works best for the setup.

NOTE: If you have any questions or that you require a more customized approach to configuring the LLS, refer to the Local License Service User Guide. This guide provides a detailed technical approach to setting and configuring the LLS in a wide variety of environments.

Host System Requirements

Hardware Requirements

Minimum hardware requirements for the license server:

- Hard drive: 500 MB
- RAM: 4 GB
- CPU: 2 GHz, two cores.

Supported Platforms

The Embedded local license server is supported on the following platforms:

- Windows* x86/x86-64 (.NET Framework 4.5 or later is required)

Supported Browsers

The License Server Manager UI supports the following browsers:

- Mozilla Firefox version 43 or higher
- Google Chrome version 47 or higher
- Microsoft Internet Explorer version 10 or higher
- Microsoft Edge 38.1.

Online vs Offline Configurations

Online LLS Pre-Requisite

- The network for the host computer must allow for direct connections to the IP address 64.14.29.39 (if a proxy is required refer to the separate Proxy Configuration guide).
  - If the network can be opened for occasional connections to 64.14.29.39 then it is highly suggested to go down the Online LLS configuration route.
- The LLS device has been created in the Licensing Portal with the correct Ethernet / MAC address set as the device ID (same has been set in the ACTIVE_HOSTID field in the `zebrals.settings` file in the `server` folder of the LLS installation directory prior to registering the LLS service).
  - See Creating an LLS Device in the Licensing Portal on page 11 for detailed steps.

IMPORTANT: Only proceed to the registration steps if you pass all of the above criteria.

Registering Online LLS

1. Find your computer's Ethernet or MAC address for the internet server that will be used by the devices to reach your LLS computer.
2. Set the Ethernet / MAC address as the "ACTIVE_HOSTID" in the `zebrals.settings` file in the `server` folder.

   Example: `ACTIVE_HOSTID=648099FA2F26/Ethernet`

   For more information see Assigning an Ethernet/MAC Address for the LLS on page 10.
3. Run the `zebra_local_license_server.exe` file as an Administrator and register the service:
   a. User Security Disabled
      i. Use Option **Register the LLS as Windows Service** (Z)
      ii. Use Option **LLS with Internet Connectivity** (1)
   b. User Security Enabled
      i. Use Option **User Security Commands** (S)
      ii. Use Option **Enable User Security** (1)
      iii. Use Option **LLS with Internet Connectivity** (y)
4. Wait for the LLS to finish syncing and building its trusted storage (approximately one to five minutes).

Offline LLS Pre-Requisite

- The network for the host computer and the devices running the software to be handled by the LLS is not and cannot at any time be configured to allow connections to the IP address 64.14.29.39.
- The LLS device has been created in the Licensing Portal with the correct Ethernet / MAC address set as the device ID (same has been set in the ACTIVE_HOSTID field in the `zebrals.settings` file in the `server` folder of the LLS installation directory prior to registering the LLS service).

  See Creating an LLS Device in the Licensing Portal on page 11 for detailed steps.
- An alternate computer with internet connectivity is required to complete LLS license acquisition and syncing functionality (see Offline Sync Functionality on page 5 for a brief overview of the requirements).

IMPORTANT: Only proceed to the registration steps if you pass all of the above criteria.

Registering Offline LLS

1. Find your computer's Ethernet or MAC address for the internet server that will be used by the devices to reach your LLS computer.
2. Set the Ethernet / MAC address as the "ACTIVE_HOSTID" in the `zebrals.settings` file in the `server` folder.

   Example: `ACTIVE_HOSTID=648099FA2F26/Ethernet`

   For more information see Assigning an Ethernet/MAC Address for the LLS on page 10.
3. Run the `zebra_local_license_server.exe` file as an Administrator and register the service:
   a. User Security Disabled
      i. Use Option **Register the LLS as Windows Service** (Z)
      ii. Use Option **LLS without Internet Connectivity** (2).
   b. User Security Enabled
      i. Use Option **User Security Commands** (S)
      ii. Use Option **Enable User Security** (1)
      iii. Use Option **Offline LLS** (n).

Offline Sync Functionality

Requirements:

- Host computer of the LLS.
- Computer with internet connectivity that can access the page: zebra-licensing.flexnetoperations.com.
- The two computers must be able to transfer binary files from one computer to the other.

NOTE: Refer to the Local License Server Administrator Guide for a list of Offline Sync steps.

Configuration Checklist

- Have you already installed an older version of the LLS on your computer?
  - If yes, see Upgrading the LLS to a New Version on page 8 for upgrade steps.

- Have you installed Java on your computer?
  - If not, see Java Requirements on page 8 for Java requirements.
- Are your host computers environment and system variables configured?
  - If not, see Configuring Environment Variables on page 9 for information on Environment Variables in Windows.
- Have you installed and configured Apache TomCat so that you can view the LLS Web Manager page in a web browser?
  - If not, see Apache TomCat Configuration on page 9 for Apache TomCat configuration guidelines.
- Is there a firewall for the internet your host computer is using?
  - If yes, see Open a Firewall for the LLS on page 10 for information to open your firewall for licensing.
- Do you know the Ethernet / MAC address of your LLS host computer and how to properly configure its settings to point to this address?
  - If not, see Assigning an Ethernet/MAC Address for the LLS on page 10 for identifying and setting the LLS Host ID.
- Has a device been created for your LLS in the Zebra Licensing Portal?
  - If not, see Creating an LLS Device in the Licensing Portal on page 11 for steps on how to create the device in the Licensing Portal.

LLS Configurator

As part of v3.1 of the Windows LLS package, the terminal UI has been updated with a new function to streamline the LLS configuration process of your host machine to get your LLS software running with minimal manual intervention. This offering is to get your LLS running as quickly as possible without having to worry about the specifics of each step in the configuration process. If needed, you can always take care of the more specific or advanced configurations later.

To start the LLS configuration process, you need to have version 3.1 of the package downloaded and installed on your machine, open the terminal UI via the zebra_local_license_server.exe, and then enter 'C' in the window.

LLS Configurator should only be used for the initial registration of your LLS service. Any subsequent registrations where host machine configuration is not required should be done via the 'Z' command.

Below are all the items covered as part of the configuration function:

- Physical vs Virtual Machine Identification
- RAM requirements of the host computer
- Java identification and configuration
  - Verification of required version (v8 or higher)
  - JAVA_HOME or JRE_HOME Environment variable configuration
- Tomcat identification and configuration
  - Verification of required version (v7 or higher)
  - Port 8080 availability if TomCat is not installed
- System Path Environment Variable configuration for Java and system directory
- Host ID identification and configuration
- Connectivity to the licensing server back-end

- Registration of the Local License Service (based off connectivity state and user selection).

IMPORTANT: Please ensure that the command line terminal window is always closed and reopened whenever changes have been made to your host computer's Environment Variables to allow for the program to recognize the changes. Failure to do so will result in failures in the configuration code.

What is still required from the user after completing the configuration workflow?

- Creating the LLS device in the Licensing Portal
- Assigning licenses to the LLS device in the portal
- Setting the LLS to the User Security mode
- Licensing and management of the devices served by the LLS.

NOTE: If you have already run the configuration code and then later assign licenses to your LLS device in the portal, you can retrieve the licenses on your host machine by running the Restart function in the terminal UI and waiting for the sync to complete.

Upgrading the LLS to a New Version

- Stop the current LLS Windows service via the command prompt UI (Option 3)
- Unregister the current LLS service via the command prompt UI (Option U)
- Exit the command prompt interface (Option X).
- Install the new LLS version executable.
- Update the `zebrals.settings` file for the MAC address of the LLS host computer – should be the same as before upgrading the LLS service.
- Stop the Apache Tomcat service.
- Delete the `flsm` directory and `flsm.war` file from the Tomcat `webapps` folder.
- Move the `flsm.war` file from the Zebra LLS `ui` folder to the Tomcat `webapps` folder.
- Start the Apache Tomcat service.
- Start the `zebra_local_license_server.exe` and register the Zebra LLS with 'Z' command for connections without User Security.

Java Requirements

The following are the Java prerequisites for the computer where the embedded local license server is installed.

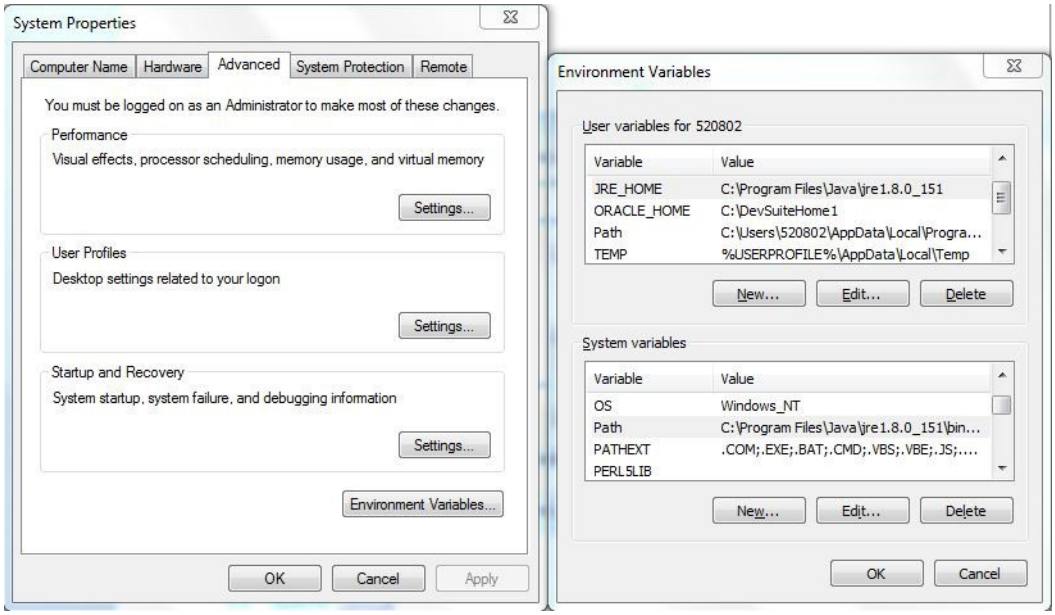
- Oracle JRE 1.8; Oracle Java SE 8 or Java SE 11; OpenJDK 8 or OpenJDK 11.
  - Similar versions of Open Source Java packages can be utilized by the LLS. For example: Amazon Corretto version 8 and 11 are compatible (aws.amazon.com/corretto/).
  - The JAVA_HOME (or JRE_HOME) environment variable on your system set to the path for your default JDK (or JRE) installation.

NOTE: The license server requires only the JRE component. If JRE is your default Java installation, set the JRE_HOME environment variable; if JDK is your default installation, set JAVA_HOME.

Configuring Environment Variables

1. Go to **Computer > Properties > Advanced System Settings > Environment Variables**.

   Alternatively, enter `env` into the search bar and click **Edit the system environment variables** to get the **System Properties** window.
2. In the **System Variables** section, add `C:\Windows\System32` to the Variable name **Path.**
3. Add **`C:\Program Files\Java\jre1.8.0_151\bin;`** to the Variable name **Path**. Do not override the existing values. Append to the existing values.
4. In the **User Variables**: Create a New User variable with Variable name = JRE_HOME and variable value = **`C:\Program Files\Java\jre1.8.0_151`**.



Apache TomCat Configuration

To perform the below steps, the LLS package must be downloaded and installed on your host computer.

1. If port 7070 is already being utilized, then custom configurations must be followed when installing TomCat to ensure a different port is used for incoming connections.
2. Install the Tomcat server if one does not already exist on your system. Tomcat installers are available from the Apache Tomcat website at tomcat.apache.org/ or you can find it available in the **`Add Ons`** directory.
3. Locate the `flsm.war` file in your license server installation (in the `ui` folder).
4. Copy the `flsm.war` file to the `webapps` directory in the Tomcat installation.
5. If necessary, change the port on which the License Server Manager tool listens for browser requests. (By default, the License Server Manager listens on port 8080.) Use these steps:
   a. Locate the `server.xml` file in the `conf` directory of the Tomcat installation.
   b. Within the `server.xml` file, locate the appropriate connector element and modify its port attribute value to the desired port number.
6. Start the Tomcat server.

To update the Local License Server Web UI to the new version:

1. Stop the Apache Tomcat service.
2. Delete the `flsm.war` file and `flsm` directory in the `webapps` folder of Tomcat.
3. Copy and paste the `flsm.war` file from the `ui` folder to the `webapps` folder of Tomcat.
4. Start the Apache Tomcat service.

Open a Firewall for the LLS

For the LLS to reach the licensing back-end, it will need to be able to ping the following URL:

zebra-licensing.flexnetoperations.com/

IP address correspondent to this URL = 64.14.29.39

What needs to be done:

- Firewall incoming / outgoing rule created to allow for communications with the IP address of the licensing back-end.
- If you cannot manually configure your firewall settings, reach out to your IT internal team to update their firewall configurations.
- The firewall need only be opened for the sync function which is a short 5-10 minute activity so the firewall can be opened intermittently for syncing functions if that is preferable.

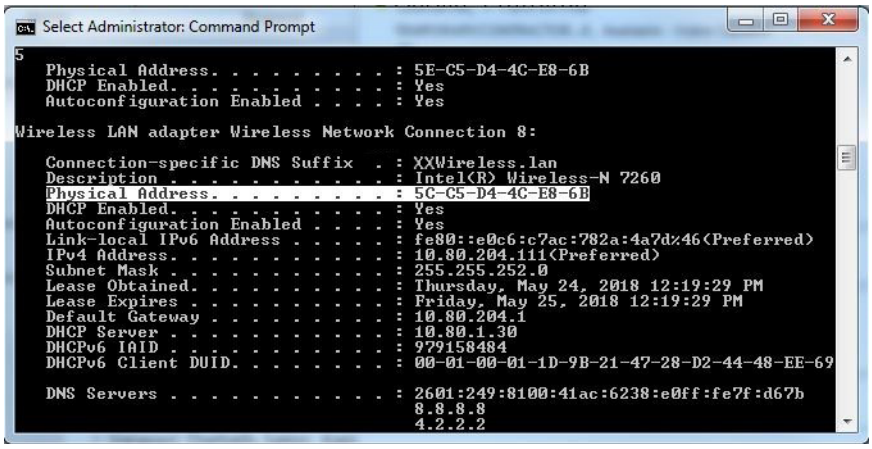
Assigning an Ethernet/MAC Address for the LLS

Prior to starting up the LLS, the software needs to be assigned a unique identifier for the host computer that will be running the LLS. The unique identifier will be Ethernet / MAC address of the host computer running in the network that will be used for communications between the LLS and its served devices (i.e. the devices running the licensed software). This section covers configuring the settings files in the LLS host computer.

Finding the Ethernet / MAC Address

Open a command prompt in your LLS host computer and enter the following command:

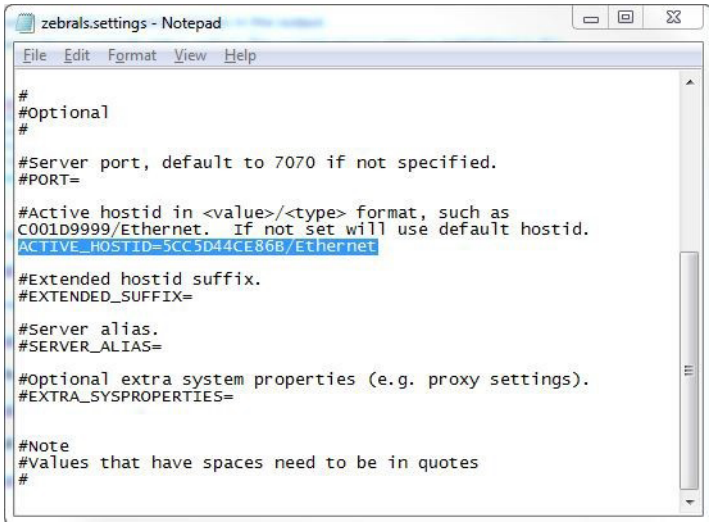
```
ipconfig -all
```



Find the network that will be used for communications between the LLS and its served devices to identify the correct Ethernet / MAC address. See below for an example where the Ethernet / MAC address is 5C-C5-D4-4C-E8-6B.

Updating the zebrals.settings File

The Ethernet / MAC address value we will be using for this file will be the value we identified above without the hyphens between every two characters (for example: 5CC5D44CE86B). Update the zebrals.settings file under the server directory for the Active Host ID entry as below and save the file. (Remove the # in front of the line to activate this setting and don't forget to append /Ethernet to the end!)



Creating an LLS Device in the Licensing Portal

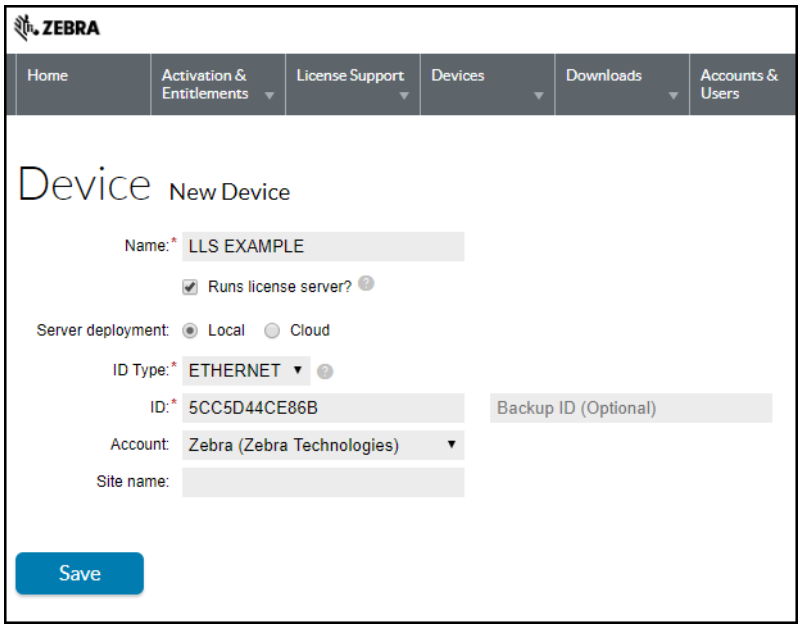
After identifying the Ethernet / MAC address of your LLS, a device will need to be created in the Zebra Technologies licensing portal using that value as a unique identifier prior to registering your LLS service. To begin, navigate to the following URL (to reach this page, your email address must be registered for access using the steps provided in your **Software License Entitlement Notification** email):

zebra-licensing.flexnetoperations.com/

1. Hover over the **Devices** tab and click **Create Device**. From the **Create Device** page, first check the box next to **Runs license server?** which updates the fields for the device creation.
2. In the **Name** field, enter an appropriate unique name for the server.
3. In the **Server deployment** radio buttons, select **Local**.
4. In the **ID Type** drop-down, select **Ethernet**.
5. In the **ID** field, enter the ID as the Host ID mentioned earlier from your zebrals.settings file (For example: ID Value = 5CC5D44CE86B).

   Do not add the /Ethernet to the **ID** field; value is just the Ethernet ID of the server.
6. Verify the information entered and ensure that the Host ID matches the Ethernet address of the ACTIVE_HOSTID used earlier and then click **Save** to complete the device creation process.

See below for an example completed form for creating an LLS device with Ethernet Address / Host ID = 5CC5D44CE86B (the Account field will auto-populate to your corresponding account):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New Device
Name:*
LLS EXAMPLE
Runs license server?
Server deployment:
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Cloud
ID Type:*
ETHERNET
ID:*
5CC5D44CE86B
Backup ID (Optional)
Account:
Zebra (Zebra Technologies)
Site name:
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