March 2018

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E-mail: info@ucamco.com

About Ucamco

Ucamco (formerly Barco ETS) is a market leader in PCB CAM software, laser photoplotting and direct imaging systems, with a global network of sales and support centers. Headquartered in Ghent, Belgium, Ucamco has over 25 years of ongoing experience in developing and supporting leading-edge photoplotters and front-end tooling solutions for the global PCB industry. Key to this success is the company's uncompromising pursuit of engineering excellence in all its products.

Helpdesk

<table>
<thead>
<tr>
<th>Europe, Middle East, Africa, Latin Amerika</th>
<th>Asia Pacific</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Support for Plotters, Software en ManiaBarco AOI</td>
<td>Please contact our business partner for your country during support working hours</td>
<td>Customer Support for Plotters, Software en ManiaBarco AOI</td>
</tr>
<tr>
<td>Monday - Friday: 8.30 – 17.30 MET</td>
<td>see contacts page</td>
<td>Monday - Friday: 8.30 am - 5.30 pm Pacific Time</td>
</tr>
<tr>
<td>☏ +32 9 216 99 00</td>
<td></td>
<td>Saturday: 10 am to 4 pm Pacific Time</td>
</tr>
<tr>
<td>General support: <a href="mailto:support@ucamco.com">support@ucamco.com</a></td>
<td></td>
<td>+1 949 632 6895</td>
</tr>
<tr>
<td>License: <a href="mailto:license@ucamco.com">license@ucamco.com</a></td>
<td></td>
<td>General support: <a href="mailto:support@ucamco.us">support@ucamco.us</a></td>
</tr>
<tr>
<td>Java™ HyperTool: <a href="mailto:hypertext@ucamco.com">hypertext@ucamco.com</a></td>
<td></td>
<td>License: <a href="mailto:license@ucamco.us">license@ucamco.us</a></td>
</tr>
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<td>HyperScript: <a href="mailto:hyperscript@ucamco.com">hyperscript@ucamco.com</a></td>
<td></td>
<td>Java™ HyperTool: <a href="mailto:hypertext@ucamco.us">hypertext@ucamco.us</a></td>
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<td></td>
<td>HyperScript: <a href="mailto:hyperscript@ucamco.us">hyperscript@ucamco.us</a></td>
</tr>
<tr>
<td>Sales: <a href="mailto:sales@ucamco.com">sales@ucamco.com</a></td>
<td></td>
<td>General information: <a href="mailto:info@ucamco.com">info@ucamco.com</a></td>
</tr>
</tbody>
</table>
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1 Introduction

1.1 Ucamco’s CAM Products

This installer contains Ucamco’s range of CAM software products, including UCAMX and various machine frontends for AOI, Electrical Test and plotting.

UCAMX is Ucamco’s pre-production engineering solution for the electronics manufacturing industry. It is developed to provide PCB manufacturing with zero-defect tooling. UCAMX can accept a wide variety of PCB data as well as generate all data and process information for your production equipment.

UCAMX keeps all functionality of its predecessor UCAM and adds:

- A new graphical user interface with operator definable workspaces
- Optimal performance using parallel processing
- Multi job processing via load balanced sessions
- Support for new Gerber version 2 (X2)

1.2 About This Guide

This Installation Guide is aimed at customers who are ready to install or reinstall UcamX or another CAM product from Ucamco on a Windows PC.

The following conventions are used in this document:

<table>
<thead>
<tr>
<th>Note:</th>
<th>Provides essential extra information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip:</td>
<td>Provides useful extra information.</td>
</tr>
<tr>
<td>Example:</td>
<td>Contains examples of file syntax, commands, settings, etc.</td>
</tr>
<tr>
<td>Warning:</td>
<td>Contains an important warning.</td>
</tr>
</tbody>
</table>

Ucam v2014 Installation Manual for Windows

5
1.3 Other Available Documentation

Ucamco offers its customers a wide range of documentation on all its software - including installation requirements and procedures, release information, detailed task descriptions and info on customer support availability. Specifically for its range of CAM products the following documents are available.

Ucamco Software Installation Requirements

This Guide aims at prospective users and outlines the equipment required to run Ucamco’s CAM products, including UcamX and various machine frontends.

You can download this manual from our download page www.ucamco.com/downloads

License Server Installation Manual for Windows

A document explaining how to setup/upgrade a license server and how to obtain and install a valid license file.

You can download this manual from our download page www.ucamco.com/downloads

Online Help

Each new software installation comes with an updated version of the extensive, context-sensitive online help system.

The online help contains referential information as well as step-by-step task descriptions, a detailed index, a glossary and a full text search function to facilitate quick troubleshooting and swift problem-solving for complex issues.
2 Upgrading from Ucam to UcamX

If you are upgrading from Ucam to UcamX v2018.x, make sure to read and follow the procedure below.

2.1 License Manager Compatibility

Upgrading to UcamX v2018 from Ucam (v9.x, v8.x, ...) requires a new license manager. Make sure your license manager is updated before installing UcamX v2018.x. More information can be found in the License Server Installation Manual.

2.2 License File Compatibility

Upgrading to v2018.x requires a new license file.

2.3 Download UcamX v2018.x from our FTP Server

If you qualify for an upgrade you can find the installer, utilities and documentation on the Ucamco FTP server (ftp.ucamco.com). Login using the user and password you received from Ucamco and go to the Ucam/UcamX_2018.xx directory. If you have problems to access the FTP site, please contact your local customer care responsible.

For installation you need to download the following files:
- X2018_yymmdd_win32.exe – UcamX installer for 32 bit systems
- X2018_yymmdd_win64.exe – UcamX installer for 64 bit systems
- Ucamco Software Installation Requirements
  - the preinstallation guide for Ucamco’s CAM products.
- UcamX v2018 Installation Manual for Windows – this document

For installation of a license server or to retrieve the host-id of your PC you need to download the following files:
- License/v1.1/license_v11_win.exe – the license server installer
- License/v1.1/mbhostid_win.exe – the hostID utility

2.4 Install the Downloaded Software

Install the new software following the installation instructions in the Installation Manual.

In case of problems during the installation, please contact Ucamco support (support@ucamco.com).
3 Before you install

Before you start installing UCAMX, please follow the instructions in this chapter to make sure your system is configured for the type of installation you want to perform.

3.1 System Requirements

Check if your hardware meets the minimum requirements to run UcamX v2018.x. See the Ucamco Software Installation Requirements document.

3.2 Backup

We recommend you make a complete backup of your current configuration before starting the UCAMX installation.

3.3 Server/Client Configurations

If you want to install and use UcamX on only one machine, skip this section and continue with section 3.4 About Installing Versions in Parallel.

If you want to install UcamX in a server/client environment, where the client can use the UcamX installation of a server machine, you first need configure the machines that are going to be used as server and client.

In a server/client environment, the client can use the software of the server only when the disk of the server is mounted on the client.

To install the server/client configurations, please follow these instructions.

**Note:** In this procedure `s_hostname` stands for server hostname and `c_hostname` for the client hostname. We assume that UCAMX is installed on the server in `c:\ucamco`

1. On the server, share the directory where UCAMX is installed. For detailed instructions, please refer to your Windows 7/8 manual.
2. To map the server directory where UCAMX is installed, open Windows Explorer on the client and choose Map Network Drive from the Tools menu.
3. Specify the drive to which you want to map (e.g.: `α:`) and the path you want to map.

**Example:** `\s_hostname\ucamco`

3.4 About Installing Versions in Parallel

If you are either
- installing UcamX for the first time, or
- upgrading an existing Ucam installation and replacing that old version with the new one,

you can now start the general install procedure described in the following chapters.

It is however also possible to install different versions of UCAMX in parallel, so you can keep a previous installation. To do this you need to make a few modifications to your system.
Shortcuts
The UCAMX installer will create two shortcuts to start UCAMX: one on the desktop and one in a UcamX folder in the Windows Start menu. These shortcuts will be named: UCAMX vx.y (e.g.: UCAMX v2018.2).

If shortcuts with this name already exist, they will be overwritten. Therefore, rename the UcamX shortcuts before installing another version of UCAMX.

Environment variables
When you install UCAMX the following environment variables will be set.

<table>
<thead>
<tr>
<th>Environment Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETSCAM_CFG</td>
<td>Path to the UCAMX CFG directory</td>
</tr>
<tr>
<td>HOME</td>
<td>Path to the UCAMX Home directory</td>
</tr>
<tr>
<td>MANIAB_LICENSE_FILE</td>
<td>Path to the UCAMX License File</td>
</tr>
<tr>
<td>MT_UCAM_OPTIONS</td>
<td>This string adds one or more parameters to the UcamX call at startup. eg to set the default unit to mm: “-unit=mm”</td>
</tr>
<tr>
<td>UCAM_BASEPATH</td>
<td>Default location for installation of UcamX. eg “c:\ucamco”</td>
</tr>
</tbody>
</table>

When you install UCAMX on a system with UCAMX already installed on it, the UCAMX installer might modify the value of these three environment variables.

However, we recommend you install UCAMX in such a way that the value of these three environment variables will be the same for each installation (i.e. each UCAMX installation uses the same CFG directory, Home directory and License File).

💡 Tip: If you want to know the current value of an environment variable, start a DOS session and type `echo %variable_name%` at the command prompt.

🔍 Example: `echo %ETSCAM_CFG%`
4 Installation Procedure

4.1 Starting the Installer

The installer is an executable called x2018_yymmdd_winxx.exe. Double-click the file from within Windows Explorer to start the installer.

4.2 Welcome

The Welcome screen shows important info regarding the installation procedure.

1. Read the info carefully
2. Click Next to continue

4.3 What's New?

The What's New screen shows all Maintenance Updates for this version.

1. Read the info
2. Click Next to continue
4.4 License Agreement

The License Agreement contains the license information.

1. Read the entire License Agreement carefully
2. Scroll down and select “I accept the terms of the License Agreement” to agree with the license agreement
3. Click Next to continue

4.5 What To Install?

In the What To Install screen you select which components to install.

With every new CAM installation comes a new licence file and new or upgraded UCAMX users. You can install each of these 3 components separately, but make sure that each component has been installed before running the CAM product.
### Install Set

<table>
<thead>
<tr>
<th>Install Set</th>
<th>Contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAM products</td>
<td>Allows you to install one or more Ucamco CAM products, including UCAMX various <strong>machine frontends</strong> for plotting, optical inspection and electrical test and OEM frontends. At any time you can install any of the available software products in this installer. However, to be able to use the installed software, you need a valid license file.</td>
</tr>
<tr>
<td>License file</td>
<td>Allows you to install or update a <strong>license file</strong>. Note: License files can also be requested and installed using the License Server Installer (see 1.3)</td>
</tr>
<tr>
<td>User account management</td>
<td>Allows you to enable the current user for UCAMX and to create or modify this user’s Home directory.</td>
</tr>
</tbody>
</table>

1. Select one or more install sets
2. Click **Install** to continue

### 4.6 Choose CAM product

**Note:** This screen is only displayed if you selected “Install CAM products”.

In the **Choose CAM products** screen you can specify which CAM products to install.

1. Select one or more products to install
2. You can choose to install any of the available CAM products in this installer. However, to be able to use the installed software, you need a valid license file.
3. Click **Next** to continue

### 4.7 File Associations

UCAMX extensions like .job and .dpf can be associated to the UCAMX application. Double clicking a file with this extension will open the file in UCAMX.
1. Check option to associate .job and .dpf extensions to Ucam
2. Click Next to continue

4.8 SELECT DEFAULT UNIT
Select which unit is used by default.
The selected option is stored in environment variable MT_UCAM_OPTIONS

⚠️ Note: This screen will not appear if the environment was already set by a previous installation

1. Select default unit
2. Click Next to continue

4.9 Choose Install Folder

⚠️ Note: This screen is only displayed if you selected “Install CAM products”

In the **Choose Install Folder** screen you have to specify where to install the chosen components.
1 Specify the directory in which to install the chosen components by either
   - typing the path in the input field, or
   - clicking the Choose button, selecting the appropriate directory, and clicking the Open button in the file dialog box.

   To restore the default path suggested by the installer, click the Restore Default Folder button.

   **Notes:**
   - For upgrades: choose the existing UcamX directory
   - For parallel versions: choose a directory other than the one used for the previous installation
   - Folder names: we advise you to choose a path which does NOT contain spaces in the folder names

2 Click Next to continue

### 4.10 Choose CFG Directory

**Note:** This screen is only displayed if you selected “Install CAM products”

In the Choose CFG Directory screen you have to specify where company wide configuration files for UcamX will be stored. UCAMX configuration files exist on three levels.

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dat</td>
<td>On this level configuration files are stored that are provided by Ucamco. These files may not be changed, in order to guarantee the correct functioning of UCAMX at all times.</td>
</tr>
<tr>
<td>CFG</td>
<td>These are the company wide configuration files which define some settings that are specific for your company and that are used for all your UCAMX installations.</td>
</tr>
<tr>
<td>Home</td>
<td>These are the settings that may differ for each UCAMX user.</td>
</tr>
</tbody>
</table>
Different procedures are recommended for a first-time installation and for an upgrade or a parallel installation.

### 4.10.1 First Install

To ensure that only one set of CFG configuration files exists in your company, we recommend that you install a new CFG directory only the first time you install UCAMX in your company.

1. Select *Create new CFG directory* button.
2. Specify the directory in which to install the CFG files by either
   - typing the path in the input field, or
   - clicking ![file selection button], selecting the appropriate directory and then clicking the *Open* button in the file dialog box.
3. Click *Next*.

### 4.10.2 Upgrade or Parallel Install

If you are upgrading a previous UcamX installation, or if you want to install the newer version alongside an existing installation, we recommend that you use the CFG configuration files of the existing installation.

1. Select *Use existing CFG directory*
2. Specify the path to the existing CFG directory by either
   - typing the path in the input field, or
   - clicking ![file selection button], selecting the appropriate directory and then clicking the *Open* button in the file dialog box.
3. Select the appropriate option:
   - *Add non-existing files* will keep the configuration files from the previous installation and only add the new files.
   - *Overwrite all files* will replace the configuration files from the previous installation with the new files and add the files that are new in this version.
4. Click *Next*
   
   A warning appears, indicating that you are overwriting an existing installation of UCAMX.
5. Click *OK* to continue
6. Click *Next*
4.11 Install License File

Note: Please skip this section if you did not select the License option in the Choose Install Set screen.

1 Specify the directory in which to install the chosen components by either
   - typing the path in the input field, or
   - clicking the Choose button, selecting the appropriate directory, and clicking the Open button in the file dialog box.
   To restore the default path suggested by the installer, click the Restore Default Folder button.
2 Click Next to continue

4.12 Pre-Installation Summary

Before launching the actual installation you can review all selected options in the following summary screen:

Click Install to start the UcamX installation

4.13 Installation

During the installation some new UcamX features for this version are presented:
4.14 User Account Management

In the User Account Management screen you can create an (empty) UCAMX Home directory for the current user. If you want to add a Home directory for another user on this workstation, you have to log into Windows XP/VISTA/7/8 as that user and then run the installer again.

Case 1 - When upgrading / first install

If you are (re)installing a CAM product or a license, it is highly recommended that you also upgrade the current user by clicking Enable for UcamX. This ensures that all parameters and environment variables modified during installation will be set correctly.

If you do not do this, the current user may not be able to start up or use the installed v2018.x CAM product(s) correctly.

Case 2 - When installing versions in parallel

If you are installing a v2018.x CAM product in parallel with a previous version, and you want to continue using both versions, you should NOT upgrade the user that will use the previous CAM installation. This is because after enabling a user for version v2018.x, that user will no longer be able to use a previous CAM installation.

To enable the current user for UCAMX:

1. Specify the user you want to enable for UCAMX in the Login Name field.
2. Specify the home directory for this user in the Home Directory field.
3. Click Enable for UcamX.

The following dialog appears.
4 Click OK
5 Click Next to continue

4.15 Install Complete

1 Click Done to quit the installer
   If you installed a CAM product the Release Notes for this product are displayed.
2 Reboot your system to ensure that all changes made to your system during the installation process take effect.
3 You can start each of the installed CAM products for which you have a valid license by either double-clicking the shortcuts on your desktop, or selecting the CAM product from the Windows Start menu.
   If an appropriate license has been installed, then the chosen application should start up correctly.
5 License Manager Troubleshooting

UCAMX uses the FLEXlm license system. The UcamX Installer is able to install the necessary License Files, but you can also do this manually, after having installed UcamX.

In order to understand the way UCAMX licenses are used it is important to be familiar with the following terminology:

<table>
<thead>
<tr>
<th>License server</th>
<th>A system that runs (or can run) the license software.</th>
</tr>
</thead>
<tbody>
<tr>
<td>License client</td>
<td>This is a system that does not run the license software but requires a license server. The License File on this system has to be the same License File as the one on the License Server. If the License File has 3 server lines then all 3 servers and all clients must have identical License Files (only the Daemon path may differ).</td>
</tr>
<tr>
<td>Shared license</td>
<td>One license can be used on different systems. The system that uses the license locks it. As soon as this system frees the license, another system can use it.</td>
</tr>
</tbody>
</table>

5.1 Format of a License File

The license file is a file named mb_license.dat. The format of this License File is:

1 or 3 SERVER lines

\[\text{SERVER} \ \text{hostname} \ \text{MBVDHID=} \ \text{hostid} \ \text{[portnumber]}\]

1 DAEMON line

\[\text{DAEMON} \ \text{maniab} \ \text{daemonpath}\]

1 or more FEATURE/INCREMENT lines

See complete License File example below.

Example

\[\text{SERVER (abccol) MBVDHID=00E0C962A888 (L701)}\]
\[\text{DAEMON maniab (c:\\mb\\files\\lm) (The daemon path)}\]
\[\text{FEATURE g9670g1 maniab 7.000 30-DEC-2004 1 VENDOR_STRING=View SIGN=764C9C3C03FA}\]
\[\text{FEATURE g967002 maniab 7.000 30-DEC-2004 1 VENDOR_STRING=Edit SIGN=2700CF6C6622}\]

Editable Elements in a License File

Three data elements can be modified in the License File:

- Host names on SERVER lines
- Port numbers on SERVER lines
- Path name on the DAEMON line

Note: Everything else is used to compute the encryption code and can only be changed by Ucamco personnel.
5.2 Manual installation of a License File

Use the following procedure:

1. Open an MS-DOS Window. (Select Start - Run then type CMD in the dialog box and press enter. This opens a Command Prompt.)
2. Type `set MANIAB_LICENSE_FILE`.
   This returns a line starting with MANIAB_LICENSE_FILE and then the path where the current license can be found. Use either DOS or Windows Explorer to go to that indicated directory.
3. Make a safety copy of your current license.
4. Copy the new License File to the same location as your old License File and give it the same name.
   
   **Example:** `copy customer.dat mb_license.dat`
5. Make sure that on the server line the following information is the same in both the old and new License File:
   - The host name
   - The host ID (the value next to MBVDHID)
   - The port number.
   
   You can modify the host name and port number if required.
   - The Daemon name and path should be the same in both Daemon lines.
   - You can modify the path if required
   
   **Note:** You cannot copy and paste information from the old license to the new one.
6. Reboot your computer.

5.3 License Management using LMTOOLS

LMTOOLS is a graphical user interface for the license manager that can help you during installation, de-installation and troubleshooting. This tool is automatically installed in the ..\flexlm directory and can be used at any time.

Some of the functions LMTOOLS performs include:
- starting, stopping, and configuring FLEXlm license servers
- viewing system information
- viewing server status

In order to use LMTOOLS on your license server you must have a License Manager Service installed. This is called the `MBUcamLMService` and can be found in the List of installed Services.

5.3.1 Manual Startup of License manager service

Once the license manager service (MBUcamLMService) is configured, you can stop and start this service using the LMTOOLS interface:

1. Start LMTOOLS.
   - LMTOOLS appears with the **Service/License File** tab displayed.
2 Select **Configuration using Services**.
3 Select the service name from the list presented in the selection box.
   In this example, the service name is **MBUcamLMService**. This means that all following actions will affect the selected service MBUcamLMService.
4 Click the **Start/Stop/Reread** tab.

5 Start MBUcamLMService by clicking the [Start Server] button.
   MBUcamLMService license server starts and writes its log output to the log file that was specified in the log field of the **Config Services** tab.

5.3.2 **Checking the logfile**

   If you experience any problems with the License Manager, check the messages in the log file using the LMTOOLS Utility.
- Use the [View log] button to see and the [Close Log] button to close the log.
- Use the [Server Status] tab to get more info.

- Or use the [Server Diagnostics] tab to get more info
If the problems persist, you can send your log files to your local Customer Care Contact.

5.4 LMTools Troubleshooting

5.4.1 License Manager Doesn’t Start

Launch the LMTOOLS utility from `<Install_Dir>\flexlm\` and use the “View_Log” option on the “Config Services” tab to view the log entries.

Verify that the License Manager is installed as a Windows Service (see 5.5) and that the instructions for automatic startup are taken into account (see 5.3.1).

If the Service is not running use the “Start Server” button on the “Start/Stop/Reread” tab.

When failed check the Server Status Tab page for messages why the action failed.

5.4.2 Locked License

If a license remains locked, you have two options.
- Exit UCAMX on all clients and reboot the license server.
- Exit UCAMX on all clients and launch LMTOOLS from `<Install_Dir>\flexlm\`.
- Use the [Stop Server] and [Start Server] buttons on the Start/Stop/Reread tab to unlock the license.

5.4.3 Licensed Number of Users Already Reached

All available licenses are in use.
- Check by using the “Server Status” tab of LMTOOLS
  - If you have less UCAMs running than there are licenses in use, it may be that a system did not free its license (crash or power down without a shut down).
  - Reboot the systems (if you have a server system with three servers in the License File, make sure that they are down together).

5.4.4 Encryption Code in License File Is Inconsistent

The License File is corrupt.
This may be because the file was not correctly copied. (When using FTP, make sure you use Binary mode to transfer files)

- The version of the License Manager cannot read your License File. You must update the License Manager (install as license server: yes).

  Call your local Customer Care Contact if you do not have a recent version.

- The License File pointed to by MANIAB_LICENSE_FILE is not the License File that was pointed to when the license server was started. You must restart the license server.

5.4.5 Invalid Host

- The hostname of the license server is not valid.

  If you have more than one license server, check whether you are using the correct License File on this machine. In the case of 3 license servers grouped together all three servers must use the same license file.

- The License File may contain “any” as the hostname of the license server name. Change “any” to the host name of your server.

5.4.6 Cannot Find SERVER Hostname

If the server hostname cannot be located in the network database, please see the advice offered for Invalid Host above.

5.4.7 License Server Does Not Support this Feature

The License File used to start the License Manager is not the same as the one pointed to by MANIAB_LICENSE_FILE.

- Restart the server.

  - The License File could also be corrupt. (see point 4.5.4)

5.4.8 License File Does Not Support this Version

The version of UCAMX is higher than the version of the License File.

Contact your local Customer Care Organization for help.

5.4.9 FLEXlm Bad System Date

The system has located some manipulations with the system dates on the UCAMX stations which are not permitted.

- Check the system date on the UCAMX workstation and change it back to today’s date.

  Note: If UCAMX can’t be started, contact your Local Customer Care Contact for further assistance.

5.5 Configuring the License Manager as a Windows Service

The UCAMX Installer allows you to automatically install the License Manager as a Windows Service. If for some reasons you need to change the default setup or even manually (re-)install this Service you can use the LMTOOLS utility to do so.

To configure or install a License Manager as a service, you must have Administrator privileges:
1 Run LMTOOLS.
2 Click the Configuration using Services radio button, then click the Config Services tab.
3 In the Service Name, type the name of the service that you want to define, for example, MBUcamLMService.
4 In the Path to the lmgrd.exe file field, enter or browse to lmgrd.exe for this license server. 
   Path: \Install_Dir\flexlm
5 In the Path to the license file field, enter or browse to the license file for this license server.
   Default Path: \Install_Dir\ucam\env\cfg\mb_license.dat.
6 In the Path to the log file field, enter or browse to the log file that this license server writes.

Make sure the Start Server at Power Up and the Use Services toggles are activated.

7 To save the new MBUcamLMService service, click the [Save Service] button.