

# BETA LM

Setup Guide

v7.2

License Manager  
Installation and Maintenance

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# Section 0.

## Quick Installation Guide

### 0.1. Quick installation guide

Users familiar with license management software can quickly browse through the following steps in order to download and install beta\_lm\_tools. Numbers in the third column indicate the corresponding paragraphs where detailed information on each specific step is given.

Action	Paragraph
<p>1. Decide on the machine that will be used as license server. If a server redundancy scheme is to be used, decide on its type and on the machines that will be used as license servers.</p>	<p>1.2 2.2.1</p>
<p>2. Log on to BETA CAE Systems server and download beta_lm_tools for each machine and platform that will be used as a server.</p>	<p>2.2.2</p>
<p>3. On each of these servers, unpack beta_lm_tools and execute the command:</p> <pre>beta_lm -host_key</pre> <p>Store the outcome of the above command, which consists of the beta_lm version, the machine's hostname, the machine's ethernet card MAC address and a string of forty (40) characters, like:</p> <pre>BETA LM v7.x BETA LM Host Name = Gauss MAC = 00:0f:b0:43:34:9a BETA LM Host Key = 200a025ec00b5f5e0f1b2e1b3d5e020bd04e5144</pre> <p>On WINDOWS systems only, the administrator has the option to extract the above key based on another network interface, namely USB or WiFi. To produce such a key, use the command:</p> <pre>beta_lm -host_key -ni [network interface, e.g. USB   WiFi]</pre>	<p>2.2.4 2.2.5</p>
<p>4. Provide the above to BETA CAE Systems. Using these data, BETA CAE Systems will generate the corresponding license file, usually called license.dat</p>	<p>2.2.6 5.1</p>
<p>5. Copy the license.dat file on each server and install the beta_lm license daemon using the commands:</p> <p><u>Linux Systems:</u></p> <pre>beta_lm -f [full_path_to]license.dat -L [full_path_to]license.log</pre>	<p>2.2.7</p>

	<p><b>Windows Systems:</b></p> <pre>beta_lm -install -f [full_path_to]license.dat -L [full_path_to]license.log</pre> <p>Alternatively, the <u>single name</u> of the license (license.dat) and the license.log files can be used, if navigated to the directory where the license file is located.</p> <p>If the administrator used a USB or a WiFi network interface to extract the server host key, then this interface should also be declared during installation:</p> <pre>beta_lm -install -ni [USB   WiFi] -f [full_path_to]license.dat -L [full_path_to]license.log</pre> <p>Start the "BETA LM Service" from: Control Panel &gt; Administrative Tools &gt; Services</p>	
6.	<p>Verify that beta_lm is up and running on each server, using the command:</p> <pre>beta_lm_stat -h server_name</pre> <p>The outcome of the above command will display the features available within the license.dat file.</p> <p>Note that in the "hardware failover" redundant server scheme, only the server that is currently the "primary" will respond.</p> <p><b>! Note:</b> On the server machine, ensure that there is an inbound firewall rule which allows incoming traffic on the specific TCP port used by BETA LM, for example for the default TCP port 6007.</p>	2.2.7
7.	<p>On the client machines, modify the BETA_LIC_SRV environment variable to match the server settings.</p> <p>For example, in the three server "hardware failover" scheme, one can set a "permanent" environment variable with BETA_LIC_SRV as a name and port@server1,port@server2,port@server3 as a value.</p>	6.1.1 6.1.2
8.	<p>Launch a licensed application (e.g. ANSA, META) using the provided execution scripts.</p>	6.1

For troubleshooting actions please refer to section 8.

## 0.2. Updating to newer version

When updating to a newer version of beta\_lm\_tools and in case that the server machines have not changed, one needs to follow the steps as described below.

Action	Paragraph
1. Terminate the old version of beta_lm_tools.	3.1.1
2. Log on to BETA CAE Systems server and download beta_lm_tools for each machine and platform that are used as a server.	2.2.2

3.	<p>On each of these servers, unpack beta_lm_tools and install the beta_lm license daemon using the commands:</p> <p><b>Linux Systems:</b></p> <pre>beta_lm -f [full_path_to]license.dat -L [full_path_to]license.log</pre> <p><b>Windows Systems:</b></p> <pre>beta_lm -install -f [full_path_to]license.dat -L [full_path_to]license.log</pre> <p>and start the "BETA LM Service" from: <i>Control Panel &gt; Administrative Tools &gt; Services</i></p> <p>Alternatively, the <u>single name</u> of the license (license.dat) and the license.log files can be used, if navigated to the directory where the license file is located.</p> <p>If the administrator used a USB or a WiFi network interface to extract the server host key, then this interface should also be declared during installation:</p> <pre>beta_lm -install -ni [USB   WiFi] -f [full_path_to]license.dat -L [full_path_to]license.log</pre>	2.2.4 2.2.7
4.	<p>Verify that beta_lm is up and running on each server, using the command:</p> <pre>beta_lm_stat -h server_name</pre> <p>The outcome of the above command will display the features available within the license.dat file.</p> <p>Note that in the "hardware failover" redundant server scheme, only the server that is currently the "primary" will respond.</p>	2.2.7

When updating to a newer version of beta\_lm\_tools and in case that the server machines have changed or they are Virtual Machines one should follow the steps as described in section 0.1.

# Section 1.

## Introduction to beta\_lm\_tools

### 1.1. Basic components

---

**beta\_lm\_tools** is the license manager package for use with all products licensed by BETA CAE Systems and should be downloaded and installed on all machines that are designated as license servers. The package contains the following:

- **beta\_lm**: license daemon that handles the initial contact and communication with the licensed application through a TCP/IP network protocol. The communication itself is machine independent, so the licensed application and the license daemon can be running on different platforms and different operating systems
- **beta\_lm\_stat**: a reporting tool that provides information on license usage
- **beta\_lm\_kill\_user**: a tool to terminate process of specific users
- **beta\_lm\_control**: a tool to communicate with the license manager for various tasks
- an optional **administration options file** (usually called **license.opt**) that can be used by the license administrator to control various operating parameters of beta\_lm. All configurable parameters that appear in the administration options file remain within the license rights granted by BETA CAE Systems
- related **documentation** on the installation and maintenance of beta\_lm\_tools

Upon installation, the beta\_lm license daemon searches for and reads the **license file**, usually called **license.dat**. This is a standard ASCII file storing all licensing information necessary for the proper and uninterrupted use of the licensed application. This information is related to the license servers and the respective communication ports, the licensed software packages and features that the customer can use etc. The license file is created by BETA CAE Systems in accordance to the requirements set by the customer and is installed by the license administrator.

### 1.2. Overview of features

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The main features of the beta\_lm licensing system are the following:

- **License server redundancy**: two redundancy schemes are currently available - one for load distribution using more than one servers and one for hardware failover protection
- **Flexible short term licensing**
- **Group licensing**: where a group of specific software products or software features can be set to hold a specific amount of the total available licenses
- **Shared licensing**: multiple executions of the same application by the same user on the same machine/console and on the same license server will occupy a single license
- **Idle User** timeout and **Kill User** functionality

- **On-Line statistics and Logging**

### 1.3. Hardware requirements

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Minimum hardware requirements for the installation of beta\_lm\_tools package are given below:

<b>LINUX</b>	<b>64bit OS Version</b>
	AMD Athlon 64, glibc 2.3.2 AMD Athlon 64FX, glibc 2.3.2 AMD Opteron, glibc 2.3.2 INTEL Xeon EM64T, glibc 2.3.2
<b>WINDOWS</b>	<b>64bit OS Version</b>
	AMD Athlon, WinXP Pro x64, SP1 INTEL Pentium IV, WinXP Pro x64, SP1 Windows Server 2003/2008



## Section 2.

# Installing beta\_lm\_tools

### 2.1. Overview of actions

---

The license administrator should take the following actions prior to installing the license management package:

- **Select a suitable license server scheme and decide on the platforms to be used as servers**
- **Download beta\_lm\_tools package for the above platforms**
- **Provide to BETA CAE Systems all information needed to generate a valid license file**
- **Receive a valid license file**

Once the license file is received, then

- **beta\_lm license daemon must be launched on all license servers**

Details on these actions are given below.

### 2.2. Installation procedure

---

#### 2.2.1. Select a suitable license server scheme

The beta\_lm license management system supports a **stand-alone** scheme and two **server redundancy** schemes:

- **Stand-alone Scheme:** In this case beta\_lm is installed in a single machine that is designated by the customer as the license server. The server responds to all requests for license and serves the total number of available licenses. The stand-alone scheme is considered the **default**, unless a redundancy scheme is explicitly specified by the customer.
- **Hardware Failover Scheme:** This is a *quorum* scheme, i.e. a scheme of three license servers where if any two of the three machines are up and running, the system is functional and serves the total number of licenses. This scheme is commonly known as **two-over-three** scheme and is designed to provide hardware failover protection.
- **Multiple Servers Scheme:** The total number of licenses can be distributed (equally or not) to any number of machines that will be used as alternate license servers. Under this scheme, each time a license is requested, the client will try to engage this license from the first server. Upon denial, the client will automatically request license from the next available server and so on, until it succeeds or reaches the end. This type of redundancy is best suited for **distributing license** requests, but has the disadvantage that if one server becomes unavailable, the corresponding licenses that this server distributes become unavailable as well.

#### 2.2.2. Download beta\_lm\_tools

In order to get the beta\_lm\_tools license management package follow these steps:

- Decide on the machine(s) that will be used as license server(s)
- Visit <http://www.beta-cae.com> and sign in to BETA CAE Systems secure site
- Enter the LICENSE MANAGER section, under the **[Downloads]** area, located on the left.
- Locate the latest version of **BETA\_LM\_TOOLS** package and switch into the respective folder
- Download the compressed files that represent the hardware platforms to be used as license servers:

LINUX Platforms	WINDOWS Platforms
beta_lm_tools_[version]_[platform].tar.gz	beta_lm_tools_[version]_[platform].zip

For example,

- to install beta\_lm\_tools v7.x on a Linux 64bit machine, you need to download the beta\_lm\_tools\_v7.x\_linux.tar.gz file

- to install it on a 64bit Windows platform, you need to download the beta\_lm\_tools\_v7.x\_win64.zip file

- Optionally, download the license administration options file, **license.opt**

### 2.2.3. Verification of the download using Message Digest-5 (MD5) hash function

#### A. LINUX Platforms

On the download list of beta\_lm\_tools you will notice that each compressed file has a respective md5sum file. This can be used to verify that the compressed file was downloaded correctly using the standardized MD5 checksums.

For example, imagine that you need to verify the correctness of beta\_lm\_tools\_v7.x\_linux.tar.gz. To do so, download the beta\_lm\_tools\_v7.x\_linux.tar.gz\_md5sum file and place in the same location as beta\_lm\_tools\_v7.x\_linux.tar.gz:

PlatformFiles
beta_lm_tools_v7.x_linux.tar.gz, beta_lm_tools_v7.x_linux.tar.gz_md5sum

Then open a command shell, switch into this location where these files reside and type the command:

```
md5sum -c beta_lm_tools_v7.x_linux.tar.gz_md5sum
```

If the outcome of the above command is OK, then the compressed file was downloaded correctly; if not, you need to download it again.

#### B. WINDOWS Platforms

If the Windows version of the beta\_lm\_tools package is downloaded on a LINUX machine, then its correctness can be verified as above, by downloading the respective md5sum file and using the built-in md5sum command. For example:

PlatformFiles
beta_lm_tools_v7.x_win64.zip beta_lm_tools_v7.x_win64.zip_md5sum

Then open a command shell, switch into the location where the above files reside and type the command:

```
md5sum -c beta_lm_tools_v7.x_win64.zip_md5sum
```

If the outcome of the above command is OK, then the compressed file was downloaded correctly; if not, you need to download it again.

However, if the Windows version of beta\_lm\_tools package is downloaded on a Windows machine, then a third party tool should be used for the verification, since Windows may not have a built-in md5sum utility. Please refer to <http://en.wikipedia.org/wiki/Md5sum>

## 2.2.4. Unpack beta\_lm\_tools package

### A. LINUX Platforms

- open a command shell and switch into the location where the beta\_lm\_tools package files reside
- unpack the package:

```
tar -zxvf beta_lm_tools_v7.x_linux.tar.gz
```

- when unpacked, the following directory structure will be created:

directory structure	notes
/beta_lm_tools	→ root-folder of beta_lm_tools package
/linux	→ sub-folder indicating the current platform
beta_lm	} contents of beta_lm_tools package
beta_lm_stat	
beta_lm_kill_user	
beta_lm_control	

- Optionally, if you have downloaded the license administration options file **license.opt**, copy this file to the location of the beta\_lm\_tools files, so the contents of the beta\_lm\_tools package now become:

directory structure	notes
/beta_lm_tools	→ root-folder of beta_lm_tools package
/linux	→ sub-folder indicating the current platform
beta_lm	} contents of beta_lm_tools package
beta_lm_stat	
beta_lm_kill_user	
beta_lm_control	
license.opt	

### B. WINDOWS Platforms

- Open a file explorer and double click on the beta\_lm\_tools compressed zip file. A currently installed archive package (like WinZIP, WinRAR) or the Windows built-in tool will be launched
- Select a suitable location to unpack beta\_lm\_tools

**NOTE:** It is recommended to avoid paths with empty spaces, like *..\Program files\ etc.* and prefer an exemplary path, like e.g. *C:\beta\_lm\ etc*

- when unpacked, the following directory structure will be created:

directory structure	notes
\beta_lm_tools	→ root-folder of beta_lm_tools package

<code>\win64</code>	→	sub-folder indicating the current platform
<code>beta_lm.exe</code> <code>beta_lm_stat.exe</code> <code>beta_lm_kill_user.exe</code> <code>beta_lm_control.exe</code>	}	contents of beta_lm_tools package

- Optionally, if you have downloaded the license administration options file **license.opt**, copy this file to the location of the beta\_lm\_tools files. So, the contents of the beta\_lm\_tools package now become:

directory structure		notes
<code>\beta_lm_tools</code>	→	root-folder of beta_lm_tools package
<code>\win64</code>	→	sub-folder indicating the current platform
<code>beta_lm.exe</code> <code>beta_lm_stat.exe</code> <code>beta_lm_kill_user.exe</code> <code>beta_lm_control.exe</code> <code>license.opt</code>	}	contents of beta_lm_tools package

### 2.2.5. Information required to build a valid license file

In order to build a valid license for the selected license scheme, BETA CAE Systems requires three pieces of information for all machines that will be used as license servers. This information, its description as well as the respective command that should be used to obtain it is given in the table below:

Item	description	command (all platforms)
1 <b>hostname</b>	name by which this machine is identified within the customer's network	<code>beta_lm -host_key</code>
2 <b>MAC address</b>	media access control address	
3 <b>host key</b>	beta_lm alphanumeric string	

**Important in WINDOWS platforms only:** By default, beta\_lm targets the ethernet card in order to generate the required host key. However, in Windows platforms only, the user can explicitly ask to generate a host key based on an existing USB or WiFi installed network adapter. To do so, the `-ni` (standing for **network interface**) flag should be used, followed by an argument pointing to the desired network interface:

Item	description	command (WINDOWS only)
1 <b>hostname</b>	name by which this machine is identified within the customer's network	<code>beta_lm -host_key -ni USB</code> or <code>beta_lm -host_key -ni WiFi</code>
2 <b>MAC address</b>	media access control address	<code>beta_lm -host_key -ni WiFi</code>
3a <b>host key from USB</b>	beta_lm alphanumeric string based on a USB network interface	<code>beta_lm -host_key -ni USB</code>
3b <b>host key from WiFi</b>	beta_lm alphanumeric string based on a wireless interface	<code>beta_lm -host_key -ni WiFi</code>

**NOTE:** In both LINUX and WINDOWS platforms, the required host key can also be generated based on the machine's Universally Unique Identifier (UUID), by using the `-ni` flag, followed by the argument `UUID`.

On Windows 10 OS, enabling the 'Virtual Machine Platform' feature (e.g. for the use of Windows Subsystems for Linux (WSL) v2) or the 'Hyper-V' feature, causes BETA LM to produce a Host Key based on the machine's UUID.

On Windows Servers OS, enabling the 'Hyper-V' role causes BETA LM to produce a Host Key based on the machine's UUID.

In addition, on Virtual Machines explicitly, executing `beta_lm -host_key` with or without `-ni UUID` or `USB` options, leads to the same `host_key` result.

Item	description	Command
1 <b>host key from UUID</b>	beta_lm alphanumeric string based on the UUID	<code>beta_lm -host_key -ni UUID</code>

In addition, when it comes to installation, the following commands should be used:

Linux Systems:

```
beta_lm -ni UUID -f [full_path_to]license.dat -L [full_path_to]license.log
```

Windows Systems:

```
beta_lm -install -ni UUID -f [full_path_to]license.dat -L [full_path_to]license.log
```

The process above should be followed on all machines that are designated as license servers. For example, for a three server hardware failover scheme the customer should provide three sets of information, one for each server:

server1	command	response
1 <b>hostname</b>		Gauss
2 <b>MAC</b>	<code>beta_lm -host_key</code>	00-11-D8-AA-5C-3C
3 <b>host key</b>		200a025ec00b5f5e0f1b2e1b3d5e020bd04e5144
server2	command	response
1 <b>hostname</b>		Riemann
2 <b>MAC</b>	<code>beta_lm -host_key</code>	00-11-D8-AA-5B-FD
3 <b>host key</b>		200a025ec00be1b3d5e020bd04e51445f5e0f1b2
server3	command	response
1 <b>hostname</b>		Hilbert
2 <b>MAC</b>	<code>beta_lm -host_key</code>	00-14-22-DC-C6-EC
3 <b>host key</b>		200a025ab5f5e0f1b2e1bec003d5ebd04e510203

### 2.2.6. Receive a valid license file

Upon acceptance of the above information, BETA CAE Systems will proceed to the generation of a valid license file, usually called **license.dat**. This file should be placed to all license server machines, preferably at the same location where `beta_lm_tools` files reside. Thus, the contents of the `beta_lm_tools` for a 64bit windows will become:

directory structure	notes
<code>\beta_lm_tools</code>	→ root-folder of <code>beta_lm_tools</code> package
<code>\win64</code>	→ sub-folder indicating the current platform
<code>beta_lm.exe</code> <code>beta_lm_stat.exe</code> <code>beta_lm_kill_user.exe</code> <code>beta_lm_control.exe</code> <code>license.opt</code> <code><u>license.dat</u></code>	} contents of <code>beta_lm_tools</code> package

Details on the contents of the license file are given in a dedicated paragraph later.

## 2.2.7. Launching the beta\_lm license manager

The license manager is installed by the license administrator using the beta\_lm command with the appropriate options. When this command is invoked, beta\_lm will look for a valid license file at the location indicated by the administrator. **The described process must be followed for all machines that will be used as license servers.**

### A. LINUX Platforms

- open a command prompt and switch into the folder containing the beta\_lm\_tools files, e.g. :  

```
cd ~/beta_lm_tools/linux_64
```

- issue the command:

```
beta_lm -f ~/beta_lm_tools/linux_64/license.dat -L
[full_path_to]license.log
```

**NOTE:** Alternatively and given that we have navigated to the directory where the license file is located, the **single name** of the license.dat and license.log files can be used, instead of the full file address.

The above command will launch the beta\_lm license daemon, read the license file (license.dat) and write any related messages into a log file (license.log).

- Verify that beta\_lm is installed and that the total number of available licenses is correct using the command:

```
beta_lm_stat -h server_name
```

the result should, for example, look like:

```
Trying 6007@server_name ....
```

```
Found License daemon on server_name
```

#### STATUS REPORT

PACKAGE	ISSUED	EXPIRE	CREDIT
PRE_POST	Wed Sep 11 2019	Mon Oct 26 2020	5000
NEW_ANSA_CATIA_V5	Wed Sep 11 2019	Mon Oct 26 2020	300

} first section

#### PACKAGE:FEATURE

PACKAGE:FEATURE	MAX CREDIT	CREDIT USED	USED PERCENTAGE	USAGE
PRE_POST:ANSA	5000	100	2 (%)	1
PRE_POST:ANSA_BATCH	5000	0	0 (%)	0
PRE_POST:META_POST	5000	0	0 (%)	0
PRE_POST:ANSA_CATIA_V4	250	0	0 (%)	0
NEW_ANSA_CATIA_V5	250	0	0 (%)	0

} second section

#### PACKAGE USAGE REPORT

PACKAGE	MAX CREDIT	CREDIT USED	USED PERCENTAGE
PRE_POST	5000	100	2 (%)

} third section

At the first section, we get information on the active licensed packages along with the duration and the corresponding credits of each package.

At the second section, we get information about the current usage of each feature, i.e. of each licensed application that is currently running.

At the third section, the current usage per package is shown. The information is available both as an absolute value of used credits, as well as a usage percentage, over the total amount of credits available for this package.

In addition, the contents of the license.log file should initially look like:

```
NEW LOG AT Tue May 05 08:12:33 2020
```

```
FEATURE | USER_NAME@HOST | PID | START | END | EXIT_INFO | OS | Version
```

## B. WINDOWS Platforms

- open a command prompt and switch into the folder containing the beta\_lm\_tools files, for example:

```
cd c:\beta_lm_tools\win64
```

- by default beta\_lm considers that the host key used to produce the license.dat file is based on the ethernet card of the server machine. In this default case, the beta\_lm installation command should be:

```
beta_lm -install -f C:\beta_lm_tools\win64\license.dat -L  
[full_path_to]license.log
```

However, if a USB or WiFi network interface was used to build the host key, then the same network interface must be declared at the installation command. For example, in the USB case the installation command should be:

```
beta_lm -install -ni USB -f C:\beta_lm_tools\win64\license.dat -L  
[full_path_to]license.log
```

**NOTE:** Alternatively and given that we have navigated to the directory where the license file is located, the **single name** of the license.dat and license.log files can be used, instead of the full file address.

The above command will install a SERVICE for the beta\_lm license daemon.

At this stage, licenses are still not available for use, since the SERVICE is not yet "Started".

- Go to **Start > Control Panel > Administrative Tools** and double-click on **Services**. This action will display a list with all services installed on the machine.
- Locate the **BETA LM Service** and verify that it has a **Stopped** status.
- Right-click on the BETA LM Service and ask to **Start** it. During initiation of the BETA LM Service, the beta\_lm license daemon is activated, it reads the license file (license.dat) and writes any related messages into the log file (license.log).
- Right-click again on the BETA LM Service, go to **Properties** and, under the **General** tab. If needed, change the **Startup Type** to **Automatic**. This will force the beta\_lm license daemon to automatically start after each reboot.
- Verify that beta\_lm is properly installed and that the total number of available licenses is correct using the command:

```
beta_lm_stat -h server_name
```

The result should, for example, look like:

```
Trying 6007@server_name ....
```

```
Found License daemon on server_name
```

```
STATUS REPORT
```

PACKAGE	ISSUED	EXPIRE	CREDIT
PRE_POST	Wed Sep 11 2019	Mon Oct 26 2020	5000
NEW_ANSA_CATIA_V5	Wed Sep 11 2019	Mon Oct 26 2020	300

} first section

PACKAGE:FEATURE	MAX CREDIT	CREDIT USED	USED PERCENTAGE	USAGE
PRE_POST:ANSA	5000	100	2 (%)	1
PRE_POST:ANSA_BATCH	5000	0	0 (%)	0

} second section

PRE_POST:METAL_POST	5000	0	0 (%)	0
PRE_POST:ANSA_CATIA_V4	250	0	0 (%)	0
NEW_ANSA_CATIA_V5	250	0	0 (%)	0

second section

PACKAGE USAGE REPORT

PACKAGE	MAX CREDIT	CREDIT USED	USED PERCENTAGE
PRE_POST	5000	100	2 (%)

third section

At the first section, we get information on the active licensed packages along with the duration and the corresponding credits of each package.

At the second section, we get information about the current usage of each feature, i.e. of each licensed application that is currently running.

At the third section, the current usage per package is shown. The information is available both as an absolute value of used credits, as well as a usage percentage, over the total amount of credits available for this package.

In addition, the contents of the license.log file should initially look like:

```
NEW LOG AT Tue May 05 08:12:33 2020
FEATURE | USER_NAME@HOST | PID | START | END | EXIT_INFO | OS | Version
```

### **A note on the firewall settings**

On each server machine, ensure that there is an inbound firewall rule which allows incoming traffic on the specific TCP port used by BETA LM, for example for the default TCP port 6007.

### **A note on launching the beta\_lm license manager on Virtual Machines**

Root privileges are required when running beta\_lm on a Linux Virtual Machine. The only exception is when the Virtual Machine is running on a Xen hypervisor. More details are available in the Knowledge Base article: [License Manager for Virtual Machines](#)

**Troubleshooting actions for installation problems are given at the end of this document.**

## **2.3. Supported beta\_lm features**

A short description of the available features of the beta\_lm license management system is summarized in the following table:

Feature	Description	Available through
<b>Server Redundancy</b>	The total number of licenses can be distributed (equally or not) to a number of machines that will be used as alternate license servers. Two redundancy schemes are available: a hardware failover and a license distribution scheme through multiple servers	license.dat
<b>Flexible Short Term Licensing</b>	Any number of additional short term licenses that will cover peak workload will be provided upon request. These will be integrated into the existing licensing file and will expire on prescribed dates.	license.dat



<b>Group Licensing</b>	Combinations of specific software products as well as software features can be set to hold a specific amount of the total available credits, provided by the standard license system (e.g. metapost, ansa-catia).	license.dat
<b>Shared Licensing</b>	No extra licenses will be held for multiple software executions provided that these are requested from the same user, on the same physical machine/console and from the same license server.	license.dat
<b>Disconnect Idle Users</b>	<p>If a user remains idle within a specific time interval, then the current session will be considered as disconnected and the corresponding licenses will become available to other users.</p> <p>Note that the idle session will not be lost, but any attempt to resume working will subject to current license availability.</p> <p>If no licenses are available, a dialogue menu appears giving the option to Retry to acquire license or to save the working session and/or exit.</p>	licence.opt and license.dat
<b>Configure Feature usage and Idle user timeout rules</b>	Specific filters can <b>deny</b> , <b>limit</b> or exclusively <b>allow</b> usage of particular features by particular users. Likewise, the idle user timeout can be configured to be applicable only to particular users or during specific timeframes within a day.	licence.opt and beta_lm_control
<b>"Kill" Selected Users</b>	The Administrator (with full administrative privileges) has the option to terminate the processes of a specific user, or to terminate processes on specific machines.	beta_lm_kill
<b>Statistics and Logging</b>	<p>A general log-file records all activities related to license requests, denials due to saturation, license usage, application versions, exit conditions, server changes etc.</p> <p>Also, on-line statistics report the current licensing status.</p>	license.log  beta_lm_stat

## 2.4. More on FEATURES, CREDITs and PACKAGEs

---

There are some important keywords used in every portion of the license file that control the way that licenses are distributed among the licensed applications. These keywords are:

- **FEATURE:** It represents any application or procedure that is asking for a license. For example, ANSA or META constitute FEATURES. In addition, procedures like running a script (ANSA\_BATCH), META\_POST\_BATCH post-processing, ANSA\_CATIA\_V4 translation etc. are FEATURES as well. FEATURES can be stand-alone or can belong to a PACKAGE.
- **PACKAGE:** This defines a group of FEATURES, i.e. a group of licensed applications or procedures (as defined above). FEATURES that belong to the same PACKAGE draw credits from the pool of credits that is assigned to this PACKAGE.
- **WEIGHT:** It is the currency of the transaction between the license server and the licensed FEATURE.
- **CREDIT:** It represents the total amount of credits that become available through the license file, as well as the amount of credits necessary to launch a specific application or procedure.

### 2.4.1. FEATURES and their important keywords (WEIGHT, CREDIT and OPTIONS)

The stand-alone applications that our licensing system, beta\_lm, is called to manage are:

- ANSA
- META
- CAD Translators
- KOMVOS
- RETOMO
- NEERE
- ...and others...

In addition to the above, there exist features (i.e. aspects of functionality or procedures) embedded in these applications that are also licensed when used, for example:

- special "operation modes" of an application (e.g. running an automatic, unsupervised instance of the application without any user interface, for example ANSA Batch Mesh, when running through script)
- the conversion of a CAD-data file (e.g. conversion of a CATIA V4 or V5 file into ANSA format)
- a special reduced environment for the communication with a third-party tool (e.g. the TOSCA optimizer)
- EPILYSIS solver (when called though ANSA)
- Machine Learning Environment (available through KOMVOS)
- ...and others...

In our licensing system language, all above are called FEATURES:

- FEATURE=ANSA
- FEATURE=META\_POST

- FEATURE=NEW\_ANSA\_CATIA\_V5
- FEATURE=ANSA\_BATCH
- FEATURE=ANSA\_TOSCA
- FEATURE=TOMO
- ... ..

In essence, a FEATURE can represent either a stand-alone application or an aspect of its functionality.

When an instance of a FEATURE is called to run it will need to engage a specific number of credits. This number is determined by the keyword WEIGHT:

- FEATURE=ANSA, WEIGHT=100 (*ANSA needs 100 credits to launch*)
- FEATURE=META\_POST, WEIGHT=33 (*META needs 33 credits to launch*)
- FEATURE=NEW\_ANSA\_CATIA\_V5, WEIGHT=25 (*a CATIA V5 to ANSA translation needs 25 credits*)
- FEATURE=ANSA\_TOSCA, WEIGHT=30 (*the reduced ANSA-TOSCA Environment needs 30 credits to launch*)
- FEATURE=TOMO, WEIGHT=100 (*RETOMO needs 100 credits to launch*)
- ... ..

As mentioned before, the CREDIT determines the maximum number of credits that a FEATURE is allowed to engage:

- FEATURE=ANSA, WEIGHT=100, CREDIT=2300 (*total ANSA credits cannot exceed 2300*)
- FEATURE=META\_POST, WEIGHT=33, CREDIT=100 (*total META credits cannot exceed 100*)
- FEATURE=TOMO, WEIGHT=100, CREDIT=100 (*total RETOMO credits cannot exceed 100*)
- ... ..

In other words, the CREDIT keyword assigns an individual pool of credits that can be used by this FEATURE only.

Finally, the OPTIONS keyword determines whether a new instance of the FEATURE will engage additional credits or not, if launched by the same user on the same machine. The '**shared**' OPTIONS implies that no extra credits whereas the 'blank' OPTIONS implies additional credits.

- FEATURE=ANSA, WEIGHT=100, ... .., OPTIONS='shared' (*no extra credits for new ANSA instances*)
- FEATURE= NEW\_ANSA\_CATIA\_V5,WEIGHT=25,... .., OPTIONS=' ' (*a new CATIA V5 translation would need another 25 credits*)

#### **A note on the 'shared' OPTIONS**

If an instance of a FEATURE is launched remotely on a machine/display where another instance of the same FEATURE already runs (locally), the "sharing" of credits is disabled and additional credits will be required. Also, "sharing" of credits is disabled among different license servers. More details are available in the Confluence KB article: [Sharing license credits error](#)

#### **2.4.2. The pre-post PACKAGE**

The PACKAGE is a collection of FEATURES. The most frequently used PACKAGE is the PRE\_POST:

- PACKAGE=PRE\_POST

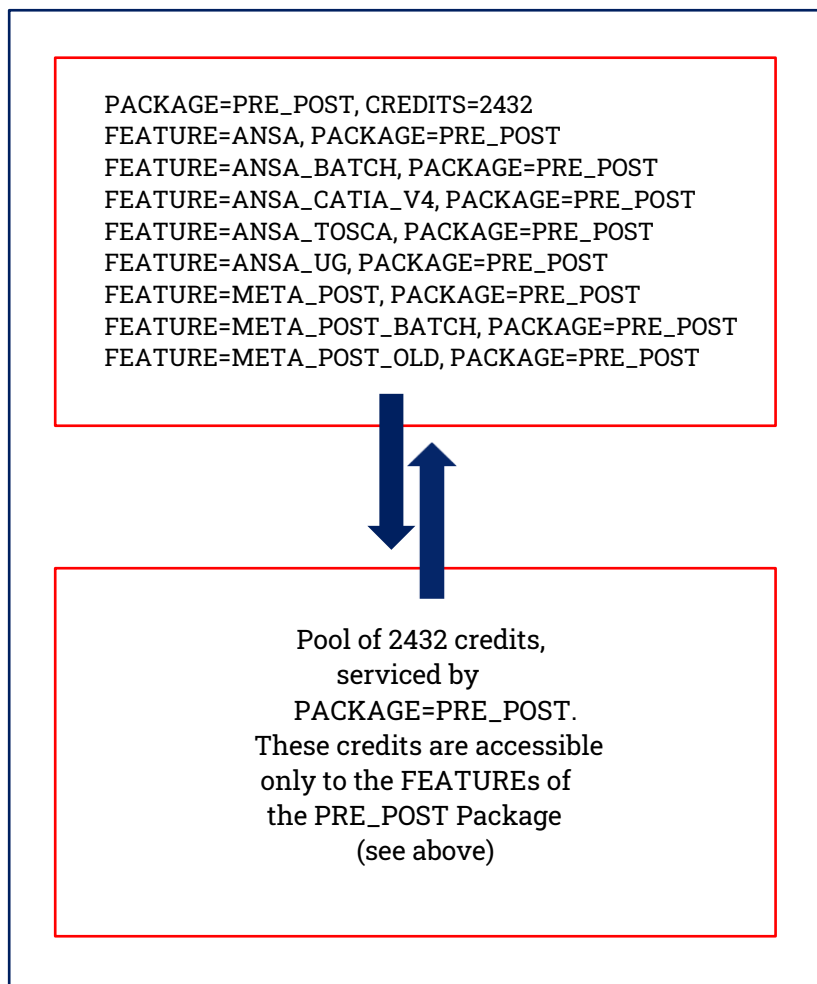
Each PACKAGE contains a CREDIT keyword to designate a pool of credits that becomes available to its members:

- PACKAGE=PRE\_POST, CREDIT=2300

In essence, each FEATURE within a license file can exist either independently or as a member of a PACKAGE:

- When a FEATURE is standing independently within a license file, then this FEATURE occupies credits from its own, individual, pool of credits that is defined in the CREDIT= value of the FEATURE
- When a FEATURE becomes a member of a PACKAGE, then the number of credits stated in the CREDIT= value of the FEATURE represent the maximum number of credits that this FEATURE is allowed to engage from the total number of credits that this PACKAGE can deliver.

A license file may contain more than one PRE\_POST PACKAGE, each distributing a different pool of credits to its contents (FEATUREs):



### 2.4.3. Examples

Now, let's try to interpret some sections of the license file in order to gain a better understanding of these keywords, their interaction and how they control licensing:

```
21 SN=1, PACKAGE=PRE_POST, CREDIT=2432, ISU=10-oct-2014, EXP=31-jan-2015, SIGNATURE=1e\
```

- PACKAGE=PRE\_POST: A package called PRE\_POST is defined
- CREDIT=2342: This package can serve a total of 2432 credits to its FEATURES (see below)
- The package was issued on 10-oct-2014 and will expire on 31-jan-2015

```
24 SN=1, FEATURE=ANSA, PACKAGE=PRE_POST, WEIGHT=100, CREDIT=2300, OPTIONS='shared', SIG\
```

- FEATURE=ANSA: A licensed application called ANSA is defined as a FEATURE
- PACKAGE=PRE\_POST: This FEATURE (i.e. ANSA) belongs to a PACKAGE, namely the PRE\_POST package
- WEIGHT=100: The WEIGHT of ANSA is 100 credits; so when ANSA is called to launch, the license server will have to engage 100 credits; these will have to be deducted from the total of 2432 credits that the PRE\_POST package can serve (line 21)
- CREDIT=2300: There is an upper limit on the total number of credits that a FEATURE can occupy within a PACKAGE. In this example, this limit for ANSA is set by CREDIT=2300. So, although the PRE\_POST package can serve a total of 2432 credits (as seen in line 21), ANSA can utilize only 2300 credits; in other words, there can be no more than 23 individual ANSA instances running at the same time. It will be seen later that the remainder 132 credits of the package are utilized by META
- OPTIONS='shared': FEATURES having the 'shared' option will not engage additional credits if launched by the same user on the same machine. We have seen in this example that the first instance of ANSA will need 100 credits to launch; but, since ANSA is 'shared', any additional instance launched by the same user on the same machine will continue to use the same 100 credits engaged by the first ANSA instance.

```
30 SN=1, FEATURE=ANSA_CATIA_V4, PACKAGE=PRE_POST, WEIGHT=25, CREDIT=2300, OPTIONS=' ', \
```

- FEATURE=ANSA\_CATIA\_V4: A licensed procedure, the conversion of CATIA\_V4 files into ANSA native format, is defined as a FEATURE
- PACKAGE=PRE\_POST: This procedure belongs to the PRE\_POST package; it will therefore engage credits from the same pool of credits that is made available to all applications that belong to PRE\_POST
- WEIGHT=25: When the CATIA\_V4 to ANSA conversion procedure is launched, it will ask for and engage 25 credits
- CREDIT=2300: The maximum number of the total PRE\_POST credits that can be engaged by this feature is limited to 2300
- OPTION=' ' 'Unlike ANSA in line 24, this feature is not 'shared'. This effectively means that each of the CATIA\_V4 to ANSA instances will ask for and will have to engage 25 credits (regardless if launched by the same user on the same machine). In other words, 2 instances will need 50 credits, 3 will need 75 and so on.

```
42 SN=1, FEATURE=META_POST, PACKAGE=PRE_POST, WEIGHT=33, CREDIT=2432, OPTIONS='shared'\
```

- In this line, an application called META is defined, that belongs to the PRE\_POST package. Its WEIGHT is 33 credits so, if called to launch, META will ask for and engage 33 credits. It is also seen that META is 'shared', so addi-

tional instances by the same user on the same machine will still use the already engaged 33 credits

- What is important in line 42 is that the maximum number of credits that META can use is 2432. This effectively means that (unlike the rest of the licensed FEATURES), META can use all the credits that PRE\_POST package can deliver.

```
52 SN=1,FEATURE=NEW_ANSA_CATIA_V5,WEIGHT=25,CREDIT=25,ISU=10-oct-2014,EXP=31-jan-\
53 2015,OPTIONS=' ',SIGNATURE=f7f5776ba498a9730fe1ddfdbde52acbde76432ec0ef5809147\
```

- This is an example of a stand-alone FEATURE. As such, the NEW\_ANSA\_CATIA\_V5 does not belong to any PACKAGE, it has its own validity period (ISU and EXP) and it will use its own pool of credits (CREDITS=25). Each instance of this feature will engage 25 credits (WEIGHT=25), so effectively there can be only 1 instance running at any given time. Notice also that the FEATURE is not 'shared', meaning that if additional instances were to be launched, each would have to engage 25 credits.

```
118 SN=5,FEATURE=TOMO,WEIGHT=100,CREDIT=100,ISU=28-jan-2020,EXP=31-jan-2021,OPTION\
S='shared',SIGNATURE=fdbf1abf1313fa0cccfefd934b73b0aa08e4e16438d55a10d0dc38f74\
```

- This is an example of a stand-alone FEATURE, corresponding to an application called RETOMO. As such, the TOMO does not belong to any PACKAGE, it has its own validity period (ISU and EXP) and it will use its own pool of credits (CREDITS =100). Each instance of this feature will engage 100 credits (WEIGHT=100), so effectively there can be only 1 instance running at any given time. Notice also that the TOMO FEATURE is 'shared', so additional instances by the same user on the same machine will still use the already engaged 100 credits.

## 2.5. BETA Licensed applications: credits/user

---

BETA License Manager should be up and running prior to the installation of any BETA application.

- Pre-processing Software System ANSA, (100 credits/user)
- ANSA Batch Mode (100 credits/session)
- ANSA CAD-data Translation for CATIA V4 (25 credits/user)
- ANSA CAD-data Translation for UG/NX (25 credits/user)
- ANSA-TOSCA feature for optimization (30 credits/user)
- Post-processing Software System META, (33 credits/user)
- META Batch Mode (33 credits/session)
  
- ANSA CAD-data Translation for CATIA V5 (25 credits/user)
- ANSA CAD-data Translation for Pro Engineer (100 credits/user)
- ANSA CAD-data Translation for JT Open (25 credits/user)
- RETOMO (100 credits/user)
- SPDRM / Simulation Process, Data and Resources Management (follows separate licensing scheme)
  
- EPILYSIS solver requires the corresponding license FEATURE (100 credits/user)

When EPILYSIS is called through ANSA, by selecting SOLVE IN ANSA, the ANSA session freezes and EPILYSIS starts solving, switching the occupied credits from ANSA to EPILYSIS FEATURE. When solving finishes, credits are switched back to ANSA.

If the option SOLVE OUT OF ANSA is selected, then ANSA remains active for the user to continue working and EPILYSIS starts by occupying additional 100 credits from the EPILYSIS FEATURE, (200 credits in total).

If the user needs to run EPILYSIS from ANSA and then load (automatically) the results in META which is launched, 133 credits are in overall occupied.

Finally, when EPILYSIS solver is called independently, through a command prompt, 100 EPILYSIS FEATURE credits are used.

- Since v22.1.0, upon launching KOMVOS, 30 credits/user are occupied.

In prior versions, the credits were shared with ANSA, namely, when ANSA and KOMVOS were both up and running, 100 credits were overall occupied.

Since v21.1.0 however, the two products do not share credits, thus an extra KOMVOS license FEATURE is needed in the license file.

- Machine Learning Environment, available through KOMVOS, requires the ML\_SERVER license FEATURE (100 credits/user).
- ANSA Embedded Clips identification via Utilities>Isolate>Embedded Clips or Feature Manager>Recognize>Fastener>Emvedded Clips, requires the ML\_SERVER license FEATURE (100 credits/session)

- ANSA Kinetics>Simulation>SPH, requires the SPH\_SOLVER license FEATURE (100 credits/user)
- DEEN requires the corresponding DEEN license FEATURE (33 credits/user).
- Fatigue live prediction application requires the corresponding FATIQ FEATURE (100 credits/user).
- FATIQ in batch mode requires the FATIQ\_BATCH FEATURE (100 credits/user).
- NEERE requires 3 specific license FEATURES:

NEERE\_SERVER (100 credits)

NEERE\_ROOM (10 credits / active room, i.e at least one user is in the room)

NEERE\_USER (1 credit / active user in a room)

All three NEERE license features are acquired from the server so the clients are not required to have any of them.

- ANSERS server requires 100 credits of the ANSERS\_SERVER feature.

If there is at least one connection to an SPDRM server, ANSERS requires additionally 50 credits of the ANSERS\_DM\_SPDRM feature, but further connections to SPDRM servers do not increase the credits required.

If there is at least one connection to a file-based DM, ANSERS requires additionally 50 credits of the ANSERS\_DM\_FS feature, but further connections to file-based DMs do not increase the credits required.

If there is at least one connection to an ASAM-ODS server, ANSERS requires additionally 50 credits of the ANSERS\_DM\_ASAM feature, but further connections to ASAM-ODS servers do not increase the credits required.

If there is at least one connection to a SimManager server, ANSERS requires additionally 50 credits of the ANSERS\_DM\_SIMMANAGER feature, but further connections to SimManager servers do not increase the credits required.

Each active front-end user requires 10 credits of the ANSERS\_USER feature.



## Section 3.

# Options and usage of License Administration Tools

### 3.1. The beta\_lm options

As discussed in earlier paragraphs the beta\_lm command initiates the license daemon. The corresponding command is:

```
beta_lm -f [full_path_to_the_license_file]*
```

**NOTE:** Alternatively, the single name of the license.dat and license.log files can be used, if navigated to the directory where the license file is located.

Additional flags are:

-L [full_path_to_the_log_file]	: write report log information to this file (recommended)
-h [hostname or ip_address]	: specify the license server machine
-p [portnumber]	: specify the communication port
-install	: installation option (Windows only)
-debug	: run in interactive mode for debugging (Windows only)
-remove	: remove the beta_lm service (Windows only)
-host_key	: generate a license key based on ethernet adapter
-ni [USB, WiFi]	: generate a license key based on USB, WiFi
-noadmin	: run beta_lm as a console app in case the user does not have Administrator rights (Windows only). In this case, the beta_lm command should be:

```
beta_lm -noadmin -f C:\beta_lm_tools\win64\license.dat -L  
[full_path_to]license.log
```

Then a licensed application can start using the flag:

```
-h port@server_name flag
```

**NOTE:** The Command Prompt needs to stay open (Windows only)

\* In its simplest form, the "-f" for Linux and "-install -f" flags for Windows would suffice to initiate the license daemon. However, it is strongly suggested that the "-L" flag followed by a log filename is also used:

```
beta_lm -f [full_path_to]license.dat -L [full_path_to]license.log  
beta_lm -install -f [full_path_to]license.dat -L  
[full_path_to]license.log
```

In this way the license daemon is able to print in the license.log file useful messages concerning the service installation, debugging or license monitoring.

### 3.1.1. Terminating beta\_lm

#### A. LINUX Platforms

- open a command prompt and terminate beta\_lm by issuing a "kill" command followed by any signal - **except "-9"** - and the PID of the parent beta\_lm process. It is recommended to use the **"-3" (QUIT)** or **"-15" (TERMINATE)** signal for this action.

**NOTE:** Killing beta\_lm using the "-9" signal will cause abnormal termination and the licensing system will not function correctly, especially in cases where a server redundancy scheme is used.

#### B. WINDOWS Platforms

- In order to terminate beta\_lm in WINDOWS systems, the administrator should access the "BETA LM Service" from Control Panel > Administrative Tools > Services and select to "stop" the service. Moreover, in order to remove the beta\_lm service, the administrator should open a command prompt, navigate to the beta\_lm\_tools folder and use the `beta_lm -remove` command.

## 3.2. The beta\_lm statistical tools

---

Basically there are two statistical tools for the BETA License Manager service:

First, the beta\_lm\_stat report, which is used to provide information about the **current licensing status**.

Second, the license.log file (optional), where the full license communication between the License Manager and the client machines is recorded, along with several other useful information.

### 3.2.1 The beta\_lm\_stat options

The corresponding command is:

```
beta_lm_stat -options
```

with options:

<code>-h [server hostname]</code>	: specify the server that information is required from
<code>-a</code>	: request individual information about <b>all</b> users
<code>-u [username]</code>	: request information about a specific user
<code>-u [username@hostname]</code>	: to request information about a specific user, at a specific host
<code>-s</code>	: request extra information about shared sessions. Must be combined with one of the -a,-u flags
<code>-x</code>	: request extra information about active features (application version, OS, GPU info etc). Must be combined with one of the -a,-u flags

Depending on the used option, the following information is acquired:

- (a) **using the -h [server hostname] flag.** For example, if we want to see the status of a specific license server called `server_name`, we type:

```
beta_lm_stat -h server_name
```

and the result looks like:

```
Trying 6007@server_name
Found License daemon on server_name
```

STATUS REPORT					
PACKAGE	ISSUED	EXPIRE	CREDIT		
PRE_POST	Wed Sep 11 2019	Mon Oct 26 2020	5000		
NEW_ANSA_CATIA_V5	Wed Sep 11 2019	Mon Oct 26 2020	300		

first section

PACKAGE:FEATURE	MAX CREDIT	CREDIT USED	USED PERCENTAGE	USAGE
PRE_POST:ANSA	5000	100	2 (%)	1
PRE_POST:ANSA_BATCH	5000	0	0 (%)	0
PRE_POST:META_POST	5000	0	0 (%)	0
PRE_POST:ANSA_CATIA_V4	250	0	0 (%)	0
NEW_ANSA_CATIA_V5	250	0	0 (%)	0

second section

PACKAGE USAGE REPORT			
PACKAGE	MAX CREDIT	CREDIT USED	USED PERCENTAGE
PRE_POST	5000	100	2 (%)

third section

- At the first section, we get information on the currently licensed packages along with the duration and the corresponding credits of each package.

- At the second section, we get information about the current usage of each feature, i.e. of each licensed application that is currently running.

-At the third section, the current usage per package is shown. The information is available both as an absolute value of used credits, as well as a usage percentage, over the total amount of credits available for each package.

**NOTE:** All the above sections are repeated when using the `-a` and `-u` flags.

(b) using the `-a` flag returns information about all active users. We type:

```
beta_lm_stat -a
```

and the result looks like:

```
Trying 6007@server_name ....
```

```
Found License daemon on server_name
```

```
Usage Report for users: all
```

USER NAME@HOST	FEATURE	PID	START
user1@host1 (:0)	ANSA	0	Mon Apr 6 15:00:17 2020
user2@host2 (:0)	ANSA	0	Mon Apr 6 16:07:14 2020
user3@host4 (:0)	ANSA	0	Mon Apr 6 16:11:07 2020
user4@host3 (:0)	ANSA	0	Mon Apr 6 16:19:44 2020

logged users

STATUS REPORT			
PACKAGE	ISSUED	EXPIRE	CREDIT
PRE_POST	Wed Sep 11 2019	Fri Oct 23 2020	5000
ANSA_CATIA_V5	Wed Sep 11 2019	Fri Oct 23 2020	300

first section (as before)

PACKAGE:FEATURE	MAX CREDIT	CREDIT USED	USED PERCENTAGE	USAGE
PRE_POST:ANSA	5000	400	8 (%)	4
PRE_POST:META_POST	5000	0	0 (%)	0
PRE_POST:ANSA_OLD	5000	0	0 (%)	0
PRE_POST:ANSA_CATIA_V4	250	0	0 (%)	0
ANSA_CATIA_V5	300	0	0 (%)	0

second section (as before)

PACKAGE USAGE REPORT			
PACKAGE	MAX CREDIT	CREDIT USED	USED PERCENTAGE
PRE_POST	5000	400	8 (%)

third section (as before)

**NOTE:** A zero PID indicates a **shared** process.

- (c) using the `-u [username]` flag returns information about a specific user. For example, if we type:

```
beta_lm_stat -u user2
```

we will get information about user2 on all machines:

```
Trying 6007@server_name ....
Found License daemon on server_name

Usage Report for users: user2
  USER NAME@HOST      | FEATURE | PID | START
  user2@host2(:0)     | ANSA    |    | Mon Apr 6 15:00:17 2020
  user2@host1(:0)     | META_POST |    | Mon Apr 6 15:06:26 2020

STATUS REPORT
  PACKAGE              | ISSUED      | EXPIRE      | CREDIT
  PRE_POST             | Wed Sep 11 2019 | Fri Oct 23 2020 | 5000
  ANSA_CATIA_V5       | Wed Sep 11 2019 | Fri Oct 23 2020 | 300

  PACKAGE:FEATURE      | MAX CREDIT | CREDIT USED | USED PERCENTAGE | USAGE
  PRE_POST:ANSA        | 5000       | 200         | 4 (%)           | 2
  PRE_POST:META_POST   | 5000       | 0           | 0 (%)           | 0
  PRE_POST:ANSA_OLD    | 5000       | 0           | 0 (%)           | 0
  PRE_POST:ANSA_CATIA_V4 | 250        | 0           | 0 (%)           | 0
  ANSA_CATIA_V5       | 300        | 0           | 0 (%)           | 0

PACKAGE USAGE REPORT
  PACKAGE              | MAX CREDIT | CREDIT USED | USED PERCENTAGE
  PRE_POST             | 5000       | 200         | 4 (%)
```

- (d) We can restrict information by indicating the hostname where a user is logged by typing:

```
beta_lm_stat -u user2@host1
```

and the result will be:

```
Trying 6007@server_name ....
Found License daemon on server1.localdomain
Usage Report for users: user2@host1
  USER NAME@HOST      | FEATURE | PID | START
  user2@host1(:0)     | META_POST |    | Mon Apr 6 15:06:26 2020

STATUS REPORT
  PACKAGE              | ISSUED      | EXPIRE      | CREDIT
  PRE_POST             | Wed Sep 11 2019 | Fri Oct 23 2020 | 5000
  ANSA_CATIA_V5       | Wed Sep 11 2019 | Fri Oct 23 2020 | 300

  PACKAGE:FEATURE      | MAX CREDIT | CREDIT USED | USED PERCENTAGE | USAGE
  PRE_POST:ANSA        | 5000       | 0           | 0 (%)           | 0
  PRE_POST:META_POST   | 5000       | 33          | 0 (%)           | 1
  PRE_POST:ANSA_OLD    | 5000       | 0           | 0 (%)           | 0
  PRE_POST:ANSA_CATIA_V4 | 250        | 0           | 0 (%)           | 0
  ANSA_CATIA_V5       | 300        | 0           | 0 (%)           | 0

PACKAGE USAGE REPORT
  PACKAGE              | MAX CREDIT | CREDIT USED | USED PERCENTAGE
  PRE_POST             | 5000       | 33          | 0 (%)
```

- (e) We can request more information by using the `-x` and/or `-s` options, combined with either `-a` or `-u`:

```
beta_lm_stat -a -x
```

which will result in additional information in the Usage Report:

```

USER_NAME@HOST | FEATURE | PID | START | VERSION | OS |
user2@host1(:0) | META_POST | 0 | Mon Apr 6 15:06:26 2020 | 21.0.0 | Linux (GPU card info) |

```

```
beta_lm_stat -a -s
```

which will result in detailed report for all active shared sessions of each user:

```
Trying 6007@server_name ....
```

```
Found License daemon on server_name
```

```
Usage Report for users: all
```

```

USER_NAME@HOST | FEATURE | PID | START
+user1@host1(:0) | ANSA | 0 | Mon Apr 6 15:00:17 2020
|user1@host1(:0) | ANSA | 15352 | Mon Apr 6 15:00:17 2020
|user1@host1(:0) | ANSA | 13255 | Mon Apr 6 16:07:14 2020
+user2@host2(:0) | ANSA | 0 | Mon Apr 6 16:11:07 2020
|user2@host2(:0) | ANSA | 15476 | Mon Apr 6 16:11:07 2020

```

logged users

```
STATUS REPORT
```

```

PACKAGE | ISSUED | EXPIRE | CREDIT
PRE_POST | Wed Sep 11 2019 | Fri Oct 23 2020 | 5000
ANSA_CATIA_V5 | Wed Sep 11 2019 | Fri Oct 23 2020 | 300

```

first section  
(as before)

```

PACKAGE:FEATURE | MAX CREDIT | CREDIT USED | USED PERCENTAGE | USAGE
PRE_POST:ANSA | 5000 | 200 | 4 (%) | 2
PRE_POST:META_POST | 5000 | 0 | 0 (%) | 0
PRE_POST:ANSA_OLD | 5000 | 0 | 0 (%) | 0
PRE_POST:ANSA_CATIA_V4 | 250 | 0 | 0 (%) | 0
ANSA_CATIA_V5 | 300 | 0 | 0 (%) | 0

```

second section  
(as before)

```
PACKAGE USAGE REPORT
```

```

PACKAGE | MAX CREDIT | CREDIT USED | USED PERCENTAGE
PRE_POST | 5000 | 200 | 4 (%)

```

third section  
(as before)

The logged users section shows all the active shared sessions in detail. The initial session, that engaged the license credits, is recorded with a line starting with (+) and holds a zero PID. All the rest shared sessions are recorded with a line starting with (|). In this case, user 1 has launched 2 different ANSA instances, while user2 has launched 1 ANSA instance only. The total credits used are shown on the rest of the sections, as normal.

### 3.2.2. Monitoring license usage

When the beta\_lm license manager is installed using the "-L" flag, the license log file records all the licensing communication information along with several other useful information. The content of this log file looks like:

```

      FEATURE                USERNAME@HOST                PID                START
ANSA                        user1@host1 (:0)            2467               Wed Mar 23 21:23:14 2020
ANSA_BATCH                  user2@host2 (:0.0)         1554               Wed Mar 23 21:32:10 2020
META_POST                   user1@host1 (:0)           0                  Wed Mar 23 21:33:52 2020
-----
      END                    EXIT_INFO                    OS                 Version
Wed Mar 23 21:24:47 2020  NORMAL_PROGRAM_EXIT         Windows            21.0.0
Wed Mar 23 21:38:02 2020  CLIENT_LOST                  Linux              20.1.2
Wed Mar 23 21:40:24 2020  IDLE_USER_TIMEOUT           Windows            21.0.0
-----

```

} Continuation  
of .log file

where:

**FEATURE** : corresponds to the running licensed application (e.g. ANSA)

**USERNAME@HOST** : indicates the user, machine and display console (linux) or session id (windows) of the running application

**PID** : the corresponding Process ID (Zero PID indicates a **shared** feature)

**START / END** : starting and termination time of the application

**EXIT\_INFO** : indicates the condition under which the application is stopped. Available messages are:  
**NORMAL\_PROGRAM\_EXIT**, **CLIENT\_LOST**, **IDLE\_USER\_TIMEOUT**,  
**RELEASED\_BY\_USER**, **KILL\_USER\_BY\_ADMIN**, **TIMED\_CREDITS\_CHARGED**,  
**FEATURE\_RELEASED**, **NOT ENOUGH PRE\_POST CREDITS**

**OS** : the operating system of the machine that the application is launched

**Version** : the version of the running application (available since ANSA/ META version 20.1.2 and onwards)

The license.log file also records license request denials due to saturation (**NOT ENOUGH PRE\_POST CREDITS**). The users that have asked for a license and are currently in the queue are listed and shown in the .log file. Extra information on the total (the sum of waiting time, so that all the clients in the queue get a license) and average waiting time is also provided.

Additionally, a more advanced style of the license.log file can be provided. This recording mode is invoked through the `license_opt` file (see next chapter), using the keyword "LOG\_STYLE=1".

More specifically, detailed license traffic information, per application session, is reported.

Every single license call, successful or not, is recorded, like shown next:

```

Mon May 18 14:25:08 2020(beta_lm) IN:      "ANSA"          "21.0.0" user@apollon(:0.0) [27349]
Mon May 18 14:26:38 2020(beta_lm) IN:      "ANSA_BATCH"    "21.0.0" user@apollon(:0.0) [27629]
Mon May 18 14:26:52 2020(beta_lm) OUT:     "ANSA_BATCH"    "21.0.0" user@apollon(:0.0) [27629] (FEATURE_RELEASED)
Mon May 18 14:26:52 2020(beta_lm) IN:      "ANSA"          "21.0.0" user@apollon(:0.0) [27629]
Mon May 18 14:27:02 2020(beta_lm) DENIED:  "ANSA"          "20.1.2" user2@host8 (:2) [7988]
(NOT ENOUGH CREDITS ( WAITING TIME FROM BETA_LM STARTUP: TOTAL=89702 sec , AVERAGE=150 sec ))
Mon May 18 14:27:03 2020(beta_lm) OUT:"ANSA" "21.0.0" user@apollon(:0.0) [27629] (NORMAL_PROGRAM_EXIT)
Mon May 18 14:27:13 2020(beta_lm) OUT:"ANSA" "21.0.0" user@apollon(:0.0) [27349] (NORMAL_PROGRAM_EXIT)

```

It is possible to reset the starting time from which statistics for the license.log are calculated, without terminating the process (see section 3.4).

All information acquired either from the global log file or through the current licensing status is suitable for input to standard spreadsheet tools (e.g. EXCEL, OpenOffice etc.) for further statistical processing.

### 3.3. The beta\_lm\_kill\_user options

---

This tool is used in order to **terminate** the processes of a specific user. The command is:

```
beta_lm_kill_user -options
```

with options:

```
-u [username@hostname]      : kill all processes of a specific user at a specific host
-i [proc_id]                : kill a specific process-id
-n [hostname]               : kill all processes of a specific host
```

An example of killing a user could be:

```
beta_lm_kill_user -u user2@host1(:0)
```

which will kill all processes of `user2` that run on `host1` using the default display `(:0)`.

**NOTE:** The `beta_lm_kill_user` command can be issued **only** from the user that initiated the `beta_lm` daemon (i.e. the Administrator with full administrative privileges). On **WINDOWS** systems, the Administrator should be logged in as **Root** (i.e. as **Administrator** with full administrative privileges).

### 3.4. The beta\_lm\_control options

---

This tool is used to communicate with the license manager for various tasks. The appropriate syntax to be used is:

```
beta_lm_control -options
```

with options:

```
-h [hostname] -reloadopt    : define the server hostname and reload the
                             license.opt file without the need to restart the BETA
                             LM service
-h [hostname] -resetstats   : define the server hostname and reset the time from
                             which statistics for the license.log are calculated
```

## Section 4.

# The Administrator Options File

### 4.1. The administrator options file

---

The administrator options file (license.opt) is a single text file that can be downloaded from BETA CAE Systems secure site and used by the administrator in order to configure several parameters of the licensing system. Its use is optional and it serves cases where the administrator wishes to customize the behavior of the license service with regards to various features.

One or more valid parameters, as outlined in the next sections, can be used. The file should be edited accordingly and saved in a specific directory, for example at the directory where the license.dat is located. Additionally the license file (license.dat) should also be edited, using a reliable editor, concerning the line starting with: `OPTIONS=...` Enter there the full path of the license.opt file and save.

For example:

```
##### START OF EDITABLE SECTION

# Replace FULL_PATH_TO in the next line with the full path of the directory
# where license.opt file resides.
OPTIONS=C:/beta-cae/beta_lm_tools_v7.x/win64/license.opt
```

The license.opt file is read upon the beta\_lm service startup. However, it can also be reloaded, without interrupting the service, using the command:

```
beta_lm_control -h [hostname] -reloadopt
```

#### 4.1.1. Idle User Timeout

One of the configurable parameters in the options file is the maximum time (in minutes) that a user may remain idle, before the corresponding reserved credits are released. In general, as **Idle** is considered a user that has not taken any action in ANSA/META for longer than the time defined as **Idle User Timeout**. When such a user will take action again, there are two cases:

- If there are available license credits, BETA License Manager will provide the needed credits and the user will continue working, without any notification
- If there are no available license credits any more, the application will be interrupted, asking the user to **SAVE & Quit** or to retry re-acquiring license

The respective syntax in the license.opt file is: `IDLE_USER_TIMEOUT=`

So if, for example, the administrator wishes license credits to be released after a user being idle for 30 minutes, the keyword that should be used in the options file is:

```
IDLE_USER_TIMEOUT=30
```

The minimum acceptable value is **10 minutes**. If the `IDLE_USER_TIMEOUT` parameter is set below the minimum value (except zero), it will be switched automatically to the minimum, i.e. 10 min. If the parameter is missing or set to zero, then no limitations are applied.

**NOTE:** When the Idle User Time Out option is active, the respective notification appears in the application's terminal upon start-up. Older application versions report at starting that `IDLE_USER_TIMEOUT` less than 20min is not accepted. In those versions, the idle time setting automatically switches to 20min, releasing credits after 20min, as expected.



Apart from setting the idle time limit, it is also possible to configure the applicability of this limit per user, group of users, IP addresses or hostnames. The filtering options for configuring the idle user timeout are applicable since versions 19.1.7, 20.0.4, 20.1.2 and 21.0.0 onwards. It is also possible to configure the idle time limit to be enabled or disabled during specific timeframes within the day (since version 21.0.0 onwards). The appropriate syntax and some examples of each filtering option are provided in the tables below:

Syntax in .opt file	Description
<b>IDLE_DISABLE</b> {FEATURE} users=.../groups=.../hosts=.../ips=...	The idle user timeout will be ignored for the defined feature, when launched by the defined users, groups, hosts or IP addresses.
<b>IDLE_ONLY</b> {FEATURE} users=.../groups=.../hosts=.../ips=...	The idle user timeout will only be applied to the defined feature, when launched by the defined users, groups, hosts or IP addresses.
<b>IDLE_TIME_RANGE_DISABLE</b> =...	The idle user timeout will be ignored during the defined time range.
<b>IDLE_TIME_RANGE_ONLY</b> =...	The idle user timeout will only be applied during the defined time range.

Example	Description
<b>IDLE_DISABLE</b> ANSA users=demo,demo1	The feature ANSA will not be subject to the idle user timeout for the listed users.
<b>IDLE_DISABLE</b> ANSA groups=group1,group2	The feature ANSA will not be subject to the idle user timeout for users belonging to the listed groups.
<b>IDLE_DISABLE</b> ANSA hosts=WIN100,LIN200	The feature ANSA will not be subject to the idle user timeout when it is launched by the listed hosts.
<b>IDLE_DISABLE</b> ANSA ips=192.168.2.1,192.168.2.3 <b>IDLE_DISABLE</b> ANSA ips=192.168.2.1-192.168.2.6 <b>IDLE_DISABLE</b> ANSA ips=192.168.2.0/8	The feature ANSA will not be subject to the idle user timeout when it is launched by the listed IP addresses. <b>NOTE:</b> The syntax 192.168.2.0/8 means that the last 8 bits of the defined IP address will be ignored.
<b>IDLE_ONLY</b> ANSA users=demo,demo1	Only the feature ANSA will be subject to the idle user timeout and only for the listed users.
<b>IDLE_ONLY</b> ANSA groups=group1,group2	Only the feature ANSA will be subject to the idle user timeout and only for users belonging to the listed groups.
<b>IDLE_ONLY</b> ANSA hosts=WIN100,LIN200	Only the feature ANSA will be subject to the idle user timeout and only when it is launched by the listed hosts.
<b>IDLE_ONLY</b> ANSA ips=192.168.2.1,192.168.2.3 <b>IDLE_ONLY</b> ANSA ips=192.168.2.1-192.168.2.6	Only the feature ANSA will be subject to the idle user timeout and only when it is

**IDLE\_ONLY** ANSA ips=192.168.2.0/8

launched by the listed IP addresses.

**NOTE:** The syntax 192.168.2.0/8 means that the last 8 bits of the defined IP address will be ignored.

**IDLE\_TIME\_RANGE\_DISABLE**=08:00-14:00

The idle user timeout will be disabled between 08.00-14.00 hours.

**IDLE\_TIME\_RANGE\_ONLY**=08:00-14:00

The idle user timeout will only be applicable between 08.00-14.00 hours.

#### NOTES:

- a) All the filters above can be used with the syntax “=\*” to include all users, groups, IPs, hosts, respectively.
- b) The groups of users (given after the syntax “groups=”) should be defined in the system by the system administrator, for example on the LDAP and/or in the client machines and/or on an Active Directory. This means that users should see themselves belonging in these groups on their (client) machines. To verify this, depending on the operating system, users can use the command `whoami /groups` for Windows OS and `id <username>` for Linux OS. Please note that in case of inappropriately defined groups, for example in the case of mixed Windows and Linux OS users, the defined filters might erroneously seem not to be applied.

#### 4.1.2. Allow, deny or limit the access to specific features

A series of options is offered in order to configure the usage of specific features according to the user, group of users, IP addresses and hostnames. The access to particular features by particular users may be denied, exclusively allowed or limited to a specific number. These filtering rules are applicable from versions 19.1.7, 20.0.4, 20.1.2 and 21.0.0 onwards. The appropriate syntax and some examples of each filtering option are provided in the tables below:

Syntax in .opt file	Description
<b>DENY</b> {FEATURE} users=.../groups=.../hosts=.../ips=...	The defined feature will not be available, when launched by the defined users, groups, hosts or IP addresses.
<b>DENY</b> {FEATURE} users=.../groups=.../hosts=.../ips=... <b>exclude</b> users=.../groups=.../hosts=.../ips=...	The users, groups, hosts or IP addresses defined after the “exclude” word are excluded from the DENY filter and will be the only ones able to launch the defined feature.
<b>ALLOW_ONLY</b> {FEATURE} users=.../groups=.../hosts=.../ips=...	Only the defined feature will be available and only when launched by the defined users, groups, hosts or IP addresses.
<b>LIMIT</b> {FEATURE}: {instance_LIMIT} users=.../groups=.../hosts=.../ips=...	The number of instances that the defined feature can be launched by the defined users, groups, hosts or IP addresses is limited to a specific number.
<b>LIMIT</b> : {subgroup_name} {FEATURE}: {instance_LIMIT} users=.../groups=.../hosts=.../ips=...	The number of instances that the defined feature can be launched by the defined subgroup of users, groups, hosts or IP addresses is limited to a specific number.

**LIMIT:**{subgroup\_name}:{credit\_LIMIT} {FEATURE}  
users=.../groups=.../hosts=.../ips=...

This syntax allows defining different limitations to different subgroups.

**LIMIT:**{subgroup\_name}:{credit\_LIMIT} {FEATURE}  
users=.../groups=.../hosts=.../ips=... **exclude**  
users=.../groups=.../hosts=.../ips=...

The number of credits that the defined feature can be launched by the defined subgroup of users, groups, hosts or IP addresses is limited to a specific value.

This syntax allows defining different limitations to different subgroups.

The users, groups, hosts or IP addresses defined after the “exclude” word are excluded from the limitation.

**GROUP** {group\_name} users=...

The defined users will belong to the defined group.

**LIMIT:**GR1\_GR2\_GR3:TOTAL- RES\_GR1 - RES\_GR2 -  
RES\_GR3 {FEATURES}/\* users=\* **exclude**  
groups=GR1,GR2,GR3

Credits reservation is also possible by applying limits in combinations. Assume the following scenario:

- All credits = TOTAL
- Reserve RES\_GR1 credits for GR1 group
- Reserve RES\_GR2 credits for GR2 group
- Reserve RES\_GR3 credits for GR3 group

**LIMIT:**GR1\_GR2:TOTAL- RES\_GR1 - RES\_GR2  
{FEATURES}/\* users=\* **exclude** groups=GR1,GR2

The syntax to achieve the above reservation is the one presented on the left. Note that this syntax can be used for fewer or more groups as well. In the case of more groups, extra lines are needed (1 for each new group) and extra excluded groups at each line.

**LIMIT:**GR1\_GR3:TOTAL- RES\_GR1 - RES\_GR3  
{FEATURES}/\* users=\* **exclude** groups=GR1,GR3

**LIMIT:**GR2\_GR3:TOTAL- RES\_GR2 - RES\_GR3  
{FEATURES}/\* users=\* **exclude** groups=GR2,GR3

Example	Description
<b>DENY</b> ANSA users=demo,demo1	The feature ANSA will not be available to the listed users.
<b>DENY</b> ANSA groups=group1,group2	The feature ANSA will not be available to the users belonging to the listed groups.
<b>DENY</b> ANSA hosts=WIN100,LIN200	The feature ANSA will not be available when launched by the listed hosts.
<b>DENY</b> ANSA ips=192.168.2.1,192.168.2.3	The feature ANSA will not be available when launched by the listed IP addresses. <b>NOTE:</b> The syntax 192.168.2.0/8 means that the last 8 bits of the defined IP address will be ignored.
<b>DENY</b> ANSA ips=192.168.2.1-192.168.2.6	
<b>DENY</b> ANSA ips=192.168.2.0/8	
<b>DENY</b> ANSA users=* <b>exclude</b> users=demo1,demo2	The feature ANSA will be available only to users demo1 and demo2.
<b>ALLOW_ONLY</b> ANSA users=demo,demo1	Only the feature ANSA will be available for launching and only by the listed users.
<b>ALLOW_ONLY</b> ANSA groups=group1,group2	Only the feature ANSA will be available for launching and only by users belonging to the listed groups.
<b>ALLOW_ONLY</b> ANSA hosts=WIN100,LIN200	Only the feature ANSA will be available for launching and only when launched by the listed hosts.
<b>ALLOW_ONLY</b> ANSA ips=192.168.2.1,192.168.2.3	Only the feature ANSA will be available for launching and only when launched by the listed IP addresses. <b>NOTE:</b> The syntax 192.168.2.0/8 means that the last 8 bits of the defined IP address will be ignored.
<b>ALLOW_ONLY</b> ANSA ips=192.168.2.1-192.168.2.6	
<b>ALLOW_ONLY</b> ANSA ips=192.168.2.0/8	
<b>LIMIT</b> ANSA:1 users=demo,demo1	Only one instance of ANSA will be available among the listed users. As long as one user has launched ANSA, the other listed users will be denied access.
<b>LIMIT</b> ANSA:2 groups=group_1,group_2	Only two instances of ANSA will be available among users belonging to the listed groups. The third attempt to launch the feature by one of the users belonging to the listed groups will lead to access denial.
<b>LIMIT</b> ANSA:1 hosts=WIN100,LIN200	Only one instance of ANSA will be available among the listed hosts. The second attempt to launch the feature by one of the listed hosts will lead to access denial.
<b>LIMIT</b> ANSA:3 ips=192.168.2.1,192.168.2.3	Only three instances of ANSA will be available when launched by one of the listed IP addresses. The fourth attempt to launch the feature by one of the listed IP addresses will lead to access denial.
<b>LIMIT</b> ANSA:3 ips=192.168.2.1-192.168.2.6	
<b>LIMIT</b> ANSA:3 ips=192.168.2.0/8	
	<b>NOTE:</b> The syntax 192.168.2.0/8 means that

**LIMIT ANSA:3** groups=group1,group2

**LIMIT ANSA:3** users=demo,demo1

**LIMIT:subgroupA ANSA:2** groups=group1,group2

**LIMIT:subgroupB ANSA:1** users=demo,demo1

**LIMIT ANSA:4** users=\*

**LIMIT: subgroupA ANSA:2** groups=group1,group2

**LIMIT: subgroupA ANSA:2** users=demo3,demo4

**LIMIT:subgroupA:200 \*** groups=group1,group2

**LIMIT:subgroupA:200 \*** users=demo1,demo2

**LIMIT:subgroupB:100 \*** users=demo3,demo4

**LIMIT:subgroupA:200 \*** groups=group1,group2 **exclude**  
users=demo1,demo2

**GROUP** group1 users=demo1,demo2,demo3

**LIMIT:ALL:900 \*** users=\* **exclude** groups=N VH,CRASH,CFD

**LIMIT:grA:1000 \*** users=\* **exclude** groups=CRASH,CFD

**LIMIT:grB:1100 \*** users=\* **exclude** groups=N VH,CFD

**LIMIT:grC:1200 \*** users=\* **exclude** groups=N VH,CRASH

## NOTES:

- a) All the filters above can be used with the syntax “=\*” to include all users, groups, IPs, hosts, respectively.
- b) It is also possible to use negative values as limits for the allowed features. In such cases, when a feature is subject to shared licensing, the total number of shared feature sessions is limited. For instance, assuming ANSA has been granted shared licensing:

the last 8 bits of the defined IP address will be ignored.

In total only three instances of ANSA will be available among users belonging to the listed groups and the listed users. The fourth attempt to launch ANSA by one of the aforementioned users will lead to access denial.

This syntax is used in order to define extra pools of users/groups of users/hosts/IP addresses to the same rule in a different command line.

Two instances of ANSA will be available among the users belonging to group1 and group2; one instance of ANSA will be available for users demo and demo1, while the general limitation will be four licenses for all the users in total.

In total only two licenses of ANSA will be available among the users belonging to group1 and group2 and users demo3 and demo4.

This syntax is used in order to define extra pools of users/groups of users/hosts/IP addresses to the same LIMIT sub-rule in a different command line.

Two hundred credits for all features will be available among the users belonging to group1 and group2 and users demo1 and demo2; one hundred credits for all features will be available for users demo3 and demo4.

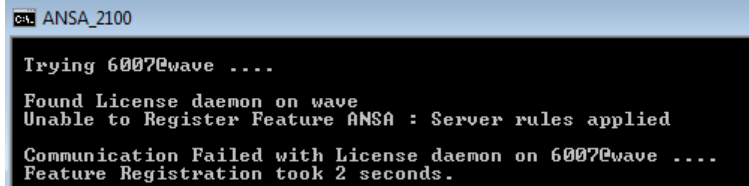
Users demo1 and demo2 are excluded from the limitation, meaning that the number of credits they can use is unlimited.

Users demo1, demo2 and demo3 compose a group named as group1.

Assume there is a pool of 1500 credits in total and there is need to reserve 100 credits for NVH group of users, 200 for CRASH and 300 for CFD. The syntax to achieve this reservation is the one presented on the left.

LIMIT ANSA:-2 users=demo1,demo2 means that if a user launches two instances of ANSA in the same machine, the limit will have been reached hence no third ANSA will be allowed to be launched, by anyone. This serves cases where limiting of hardware resources is required. It is noted that although the two instances of the same feature by the same user in the same machine will be counted as individual, the credits occupied will still be counted once, as expected due to the shared licensing nature of the particular feature.

- c) When a license is denied due to one of the above options, the following message (or a similar one, based on the application version), appears in the terminal window:



```

c:\ ANSA_2100
Trying 6007@wave ...
Found License daemon on wave
Unable to Register Feature ANSA : Server rules applied
Communication Failed with License daemon on 6007@wave ...
Feature Registration took 2 seconds.

```

- d) All the filters above are listed when running beta\_lm\_stat.
- e) The groups of users (given after the syntax "groups=") are the groups defined in the system by the system administrator, for example on the LDAP and/or in the client machines and/or on an Active Directory. This means that these users see themselves belonging in these groups on their (client) machines. To verify this, depending on the operating system, users can use the command `whoami /groups` for Windows OS and `id <username>` for Linux OS. Please note that in case of inappropriately defined groups, for example in the case of mixed Windows and Linux OS users, the defined filters might erroneously seem not to be applied.
- f) When the same group of users is defined both in the system and in the license.opt file using the GROUP syntax, then priority is given to license.opt GROUPs definition.
- g) Multiple lines definition for the same LIMIT filter or the same LIMIT:{subgroup\_name} sub-filter should be followed by the same licenses number limitation.
- h) The {FEATURE} definition in the LIMIT:{subgroup\_name}:{credit\_LIMIT} filter can be replaced with the "\*" character to include all features.

### 4.1.3. Privacy Level Options

Since beta\_lm version 7.1 onwards, in order to cater for reveal of personal information concerns, it is possible to define the required privacy level through the license.opt file.

Setting the option `UserPrivacyLevel=1` in the license.opt file will disable listing of usernames and hostnames, when executing beta\_lm\_stat.

In addition, since versions 22.0.0, 21.1.2., 21.0.3 and 20.1.6, listing of usernames and hostnames from the applications' terminals upon startup is disabled. The only options from the license.opt file that appear in the users' terminals are the ones referring to the idle user timeout and any potential filters set for it.

#### NOTE:

Regardless of the presence of `UserPrivacyLevel=1`, the user running the beta\_lm service will still be able to see the usernames and hostnames of all users either in beta\_lm\_stat or in the terminal window of the applications.

## Section 5. The License.dat File

### 5.1. The license.dat file

The license file `license.dat` holds all information that is necessary for the proper and uninterrupted use of the licensed application. This file is unique and is created for use with the customer's designated license servers and respective license scheme. Moreover, since it is a file required by the `beta_lm` to manage all licensed applications, it should be installed to every server that is running a `beta_lm` daemon.

A typical license file contains:

1. An editable section for the optional administration options file (to be discussed later)
2. License server names and host-ids and corresponding communication ports
3. A not-editable section with the licensing specifications and any possible features of the licensed applications (any unauthorized modifications of this section will result in license termination)

and has the following structure:

Line	Typical License File
1	#
2	# This file is a license file for use with beta_lm License Manager
3	# Run as Administrator : beta_lm -f full_path_to_this_file
4	#
5	
6	##### START OF EDITABLE SECTION
7	
8	# Replace FULL_PATH_TO in the next line with the full path of the directory
9	# where license.opt file resides.
10	OPTIONS=FULL_PATH_TO
11	
12	# Replace SERVER_NAME in the next line with the hostname of your server
13	SERVER=SERVER_NAME,PORT=6007
14	
15	##### END OF EDITABLE SECTION
16	
17	SN=1,HOSTID=200a025ec00b5f5e0f1b2e1b3d5e020bd04e5144,ISU=08-jul-2003,EXP=25-s\
18	ep-2004,OPTIONS='COMPANY="yourcompany_name",Tn=10,Tm=40,Ts=20,WCL=60,nodebug,\
19	ACD=10,ART=5,FRC=15,SSC=3,SIGNATURE=07ab9e1920137cb1f0137cb07ab9e19207ab9e192\
20	0137cb1f0137cb07ab9e192cb011d719207ab9e192019e1920137cb1f0137c9e1920137c07ab9\
21	e1920137cb1f0137cb07ab1f01e4432d2f3dd7c9e1920137cb1f0137c
22	SN=1,PACKAGE=PRE_POST,CREDIT=3000,SIGNATURE=9e1920137c07ab9e1920137cb1f0137c7\
23	cdb1f013719207ab9e192019e1920137cb1f0137c9e1920137c07ab9e1920137cb1f0137cb07a\
24	b1f0137c21e2d401cb9e1920137cb1f0137cb07a
25	SN=1,FEATURE=ANSA,PACKAGE=PRE_POST,WEIGHT=100,CREDIT=3000,ISU=08-jul-2003,EXP\
26	=25-sep-2004,OPTIONS='shared',SIGNATURE=90a137c07ab9e1920137cb1f0137cb07acdb1\
27	7137cb07aeacd2d223419207ab9e192019e1920137cb1f0137c9e1920137c07ab9e1920137cb1f\
28	0137cb07ab1f0137
29	SN=1,FEATURE=ANSA_CATIA,PACKAGE=PRE_POST,WEIGHT=25,CREDIT=200,ISU=08-jul-20-0\
30	3,EXP=25-sep-2004,OPTIONS=' ',SIGNATURE=9e19d12037c07ab9e1920137cb1f0137cb07a\
31	1f013712da37c\aeacd2211ceab9e12019e1920137cb1f0137c9e1920137c07ab9e1920137cb1f\
32	0137cb07ab1f0137c201cb
33	SN=1,FEATURE=META_POST,PACKAGE=PRE_POST,WEIGHT=33,CREDIT=300,ISU=08-jul-2003,\
34	EXP=25-sep-2004,OPTIONS=' ',SIGNATURE=9e19d201317c07ab9e1920137cb1f0137cb07ae\
35	b1f0137137cb07332c37137cb07332caecd223407ab9e1920137cb1f0137cb07aeacdb1f013713\
36	7cb01f0137

- Lines 1-4 contain information about the license daemon installation.
- Lines 6-15 represent the editable section of the license file. In line 10 the administrator may optionally provide the location of the "administration options file", which contains all configurable parameters of the licensing system (see Section 4).

- Line 13 holds information about the license server machine and communication port, so the administrator should fill in the corresponding values. Note that the default communication port is 6007. Normally, a license file has one SERVER line. If more SERVER lines appear it means that a license scheme with redundant servers is used.
- Whatever follows below line 15 belongs to the not-editable section and any modifications will result in license termination. This not-editable section contains all licensing specifications (such as software groups, total number of credits and duration of each group etc) and is created by BETA CAE Systems based on a **unique key** that is supplied by the customer.

The licensing specifications are divided into sections which in turn are characterized by a serial number, an identification, the duration and an encrypted digital signature key. A brief description of the corresponding flags used in these sections is given below:

Flag	Description
<b>SN=</b>	This is the serial number of the current section of the license file.
<b>HOSTID=</b>	This is the host-id of the License Server. It corresponds to the server_name given in line 13. See next paragraph on how to obtain a valid host-id.
<b>ISU= &amp; EXP=</b>	Line 17: Duration of the license file. Lines 25, 29 and 33: Duration of the current section of the license file. Can be different from the total duration that is set for the license file but cannot exceed the duration set for the license file.
<b>OPTIONS=</b>  <b>'shared'</b>	Line 17: This is the company name for which the license file is prepared for and installed. Lines 26, 30 and 34: Additional options related to the current section. Note that in line 26, the 'shared' option specifies that the current licensed application (ANSA) will reserve a <b>single</b> license if it is requested by the same user for the same machine/console.
<b>Tn= , Tm= , Ts= , WCL= , ACD= , FRC= , SSC=</b>	Reserved Flags.
<b>SIGNATURE=</b>	Encrypted digital key of the current section.
<b>PACKAGE=</b>	This flag is used in order to define a licensed application "group". For example, in line 22 a group called "PRE_POST" is defined and 3000 credits are assigned to this group.
<b>CREDIT=</b>	Total credits available for this section. If this section belongs to a PACKAGE or FEATURE, then these are the total credits for this package or feature.
<b>FEATURE=</b>	A "feature" can be either a specific licensed application (like ANSA in line 25), or a specific software-feature that consumes a different number of credits (like the ANSA_CATIA translation in line 29). Such FEATURES can either belong to a software PACKAGE or can be stand-alone.
<b>WEIGHT=</b>	This is the "weight" of a FEATURE, i.e. the number of credits that are reserved by one instance of the FEATURE. The weight of all currently running FEATURES cannot exceed the corresponding number of CREDITS assigned to this FEATURE. For example, in line



	<p>29, it is apparent that up to a total of 8 ANSA_CATIA instances are allowed to run, since the weight of each one is 25 and the total credits are 200.</p>
<b>MAINTENANCE=</b>	<p>This is the maintenance expiration date for either the PACKAGE or the FEATURE. <b>It is used only for licenses that do not include unlimited maintenance or for perpetual licenses.</b> The message: FEATURE [Feature_Name] EXCEEDED MAINTANANCE PERIOD will appear in the log file monitoring the license.</p>
<b>TZOFFSETMIN=</b> <b>TZOFFSETMAX=</b>	<p>This only appears when a license file is locked to machines that have a Time Zone which falls between the minimum and maximum offset – TZOFFSETMIN and TZOFFSETMAX, respectively, compared to the server. The message: FEATURE [Feature_Name] EXCEEDED TIMEZONE RANGE will appear in the log file monitoring the license.</p>

## 5.2. Additional short term licenses and license extensions

---

When a license.dat file is created for the very first time by BETA CAE Systems, the serial numbers of all packages / features are set to SN=1. If an additional short term license is requested by the customer for one or more of packages / features, then BETA CAE Systems will issue a new license file having a higher SN for the respective packages / features. In order beta\_lm to realize such changes, the administrator should:

- **Stop the beta\_lm service**
- **Replace the license.dat file with the updated one**
- **Restart the beta\_lm service**

## Section 6.

# Running a Licensed Application

### 6.1. Searching for a valid license

When the end-user launches an application, this client application will search on several locations to find the license server name(s). On each server it will search for available floating licenses. The locations are searched in a sequential order and are given below:

#	Location	Contents	Notes
1.	<code>-h &lt;port@server,...&gt;</code>	A list of ports and servers where a license can be retrieved from	command argument
2.	<code>-f &lt;path/license.dat&gt;</code>	Path to the license file	command argument
3.	<code>BETA_LIC_FILE</code>	Path to the license file	environment variable
4.	<code>ANSA_HOME</code> <code>META_POST_HOME</code>	Search the ANSA and META installation directories for the license file	ANSA and META inherent variables
5.	<code>current directory</code>	Search the current working directory for the license file	-
6.	<code>BETA_LIC_SRV</code>	A list of ports and servers where a license can be retrieved from	environment variable
7.	<code>ANSA_SRV</code>	A list of ports and servers where a license can be retrieved from	environment variable
8.	<code>ansa_srv</code>	A list of ports and servers configured by the administrator where a license can be retrieved from	DNS alias
9.	<code>localhost</code>	Search for a license at localhost	-

**!NOTE:** If the search fails in all above locations, the application will not start. The license server name(s) is indicated at the `SERVER` line of the `license.dat` file provided by BETA CAE Systems.

Locations 1, 6, 7 and 8 point directly to the provided server name, while locations 2, 3, 4 and 5 point to the `SERVER` line of the `license.dat` file.

**Location 1.** The end-user has the option to declare a specific license server by its name or IP-address, using the `-h` flag:

```
ansa -h port@server
```

or

```
ansa -h port@ip
```

When a redundancy scheme is used, the above command should be like:

```
ansa -h port@server1,port@server2,port@server3
```

**Location 2.** In addition, it is possible to run the application using the `-f` option to point to the `license.dat` e.g.:

```
ansa -f [full_path_to]license.dat
```

**Locations 3, 6, 7.** `BETA_LIC_FILE`, `BETA_LIC_SRV` and `ANSA_SRV` are set as environment variables (see paragraph 6.1.1 and 6.1.2).

**Location 4.** `ANSA_HOME` (or `META_POST_HOME`) is a variable defined by the application and corresponds to the pathname of the `config` folder inside the application's installation directory. This option requires the `license.dat` file to be placed within this folder.

**Location 5.** This option requires the `license.dat` file to be placed within the current directory. The current directory corresponds to a directory that can be defined in three ways:

- The directory where the application is invoked when called from a shell or command prompt.
- The “Start in” directory when the application is invoked through a Windows shortcut.
- The directory defined with the `-changedir` running argument.

**Location 8.** This option points to the server name set as `ansa_srv` in the DNS server.

**Location 9.** This option matches the server name with the `localhost` name.

**NOTE:** The `-h` option prevails over `-f`, when given together.

In its simplest form, a licensed application needs to know *where* in the network, does the BETA\_LIC\_SRV environment variable points to. In turn, BETA\_LIC\_SRV should point to the server or servers (single server or redundant servers), as these are listed in the corresponding `license.dat` file. Related examples are given in the following paragraphs.

### 6.1.1. Stand-alone server scheme

In a stand-alone server scheme the `SERVER=`line of the `license.dat` file indicates the server and port used by `beta_lm` to communicate with clients. For example:

```
SERVER=plank,PORT=6007
```

Consequently, the BETA\_LIC\_SRV environment variable should be set as a variable with `BETA_LIC_SRV` as name and `6007@plank` as value.

#### LINUX systems:

Environment variables can be defined globally along with other variables used. For instance, in the case of bash Unix shell, their definition is declared in the `/etc/profile` file, and for csh or tcsh Unix shell in the `/etc/profile.d/csh.local` file. Alternatively, users can declare variables in their private account workspaces, for example in the `.login` file or in the resource file of the preferred Unix shell. In the case of bash Unix shell, the resource file is `.bashrc`, and for csh or tcsh Unix shell it is `.cshrc`.

The command for setting up the environment variable depends on the Unix shell used. Examples for setting up the BETA\_LIC\_SRV environment variable for bash, csh and tcsh Unix shells are given below:

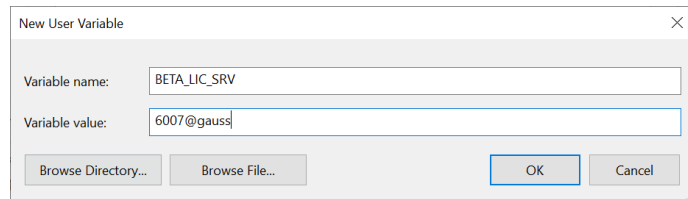
- `export BETA_LIC_SRV=6007@plank` for bash Unix shell
- `setenv BETA_LIC_SRV 6007@plank` for csh or tcsh Unix shell.

Type the `echo $shell` command to get the shell type (e.g. `/bin/tcsh`).

**WINDOWS systems:**

Environment variables can be defined via two different menus, one for system (global) variables where administrative privileges are required and another one for user variables. To access either of these follow the path:

*Control Panel > All Control Panel Items > System > Advanced system settings > Advanced tab > Environment variables > System variables or User variables > New.*



The ANSA\_SRV is defined in a similar manner by setting a variable with ANSA\_SRV as name and 6007@plank as value.

Accordingly, the BETA\_LIC\_FILE is defined by setting a variable with BETA\_LIC\_FILE as name and the `[full_path_to]license.dat` as value.

**6.1.2. Redundant server scheme**

As mentioned in paragraph 2.1.1, beta\_lm supports two server redundancy schemes; one uses multiple servers for license distribution and one is for hardware failover protection. The scheme which is currently used is reflected in the license file (license.dat) delivered by BETA CAE Systems to the customer. For example a hardware failover scheme would look like:

```
SERVER=gauss, PORT=6007
SERVER=hilbert, PORT=6007
SERVER=riemann, PORT=6007
```

In such cases, the licensed application needs to know all alternate servers that may provide the requested license. Consequently, the BETA\_LIC\_SRV environment variable should be set as a variable with BETA\_LIC\_SRV as name and 6007@gauss, 6007@hilbet, 6007@riemann as value.

**LINUX Systems:**

Environment variables can be defined globally along with other variables used. In the case of bash Unix shell, their definition is declared in the `/etc/profile` file, and for csh or tcsh Unix shell in the `/etc/profile.d/csh.local` file. Alternatively, each user can declare variables in his private account workspace, for example in the `.login` file or in the resource files of the preferred Unix shell. In the case of bash Unix shell, the resource file is `.bashrc`, and for csh or tcsh Unix shell it is `.cshrc`.

The command for setting up the environment variable depends on the Unix shell used. Examples for setting up the BETA\_LIC\_SRV environment variable for bash, csh and tcsh Unix shells are given below:

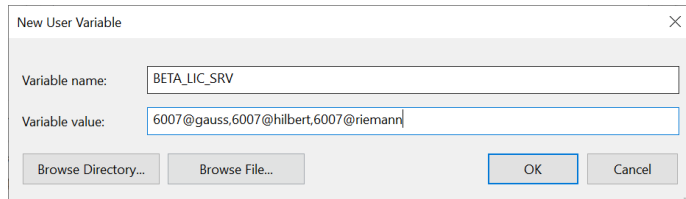
- `export BETA_LIC_SRV=6007@gauss,6007@hilbet,6007@riemann` for bash Unix shell
- `setenv BETA_LIC_SRV 6007@gauss,6007@hilbet,6007@riemann` for csh or tcsh Unix shell.

Type the `echo $shell` command to get the shell type (e.g. `/bin/tcsh`).

**WINDOWS Systems:**

Environment variables can be defined via two different menus, one for system (global) variables where administrative privileges are required and another one for user variables. To access either of these follow the path:

*Control Panel> All Control Panel Items> System> Advanced system settings> Advanced tab> Environment variables> System variables or User variables> New.*



The ANSA\_SRV is defined in a similar manner by setting a variable with ANSA\_SRV as name and 6007@gauss, 6007@hilbert, 6007@riemann as value.

Accordingly, the BETA\_LIC\_FILE is defined by setting a variable with BETA\_LIC\_FILE as name and the [full\_path\_to]license.dat as value.

**NOTE:** When defining more than one server, “blank spaces” should not exist in-between the server names.

**A note on the server searching order**

When more than one servers are declared in the BETA\_LIC\_SRV variable, the client application will request for a license by checking these servers in a specific search order: At first, the client will check the first declared server and then will start checking backwards from the last server to the second.

As an example consider a server scheme consisting of  $n$  servers. The respective BETA\_LIC\_SRV environment variable should be declared as a variable with BETA\_LIC\_SRV as name and server1, server2, . . . . server ( $n-1$ ), server ( $n$ ) as value.

In such cases the client will check the servers in the following order:

- |   |    |                  |                             |
|---|----|------------------|-----------------------------|
| ↓ | 1. | server1          | (first declared server)     |
|   | 2. | server ( $n$ )   | (last declared server)      |
|   | 3. | server ( $n-1$ ) | (second to the last server) |
|   |    | .....            |                             |
| ↓ | n. | server2          | (second server)             |

**A note on Licensed Applications running on Virtual Machines**

The launching of any application licensed by BETA CAE Systems (e.g. ANSA or META) from within any type of Virtual Machine may (depending on the application’s version) disable the “sharing” of credits for this application. In other words, any instance of an application launched through a Virtual Machine may not share the same license and will occupy the prescribed number of credits.

## 6.2. Releasing a license

---

Since ANSA/META version 21.0.0 onwards, the end-user has the option, to temporarily release the reserved license without exiting the application. This functionality is accessible within ANSA or META application via “File > Release License” option. When the license is released, a Confirmation window appears.



By pressing the OK button, the application can search again for available licenses. With this option, the end-user can practically bypass the Idle User Timeout setting.

## Section 7. beta\_lm On The Go

### 7.0. Introduction to beta\_lm On The Go

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#### 7.0.1. What is beta\_lm On The Go

**Problem:** Need for an ANSA leasing for a small period of time (short-term), in order to use it on trips on laptops.

From version 6.1 and on, beta\_lm fully supports the usage of a USB Ethernet/WiFi card for the license server.

For more detailed information regarding the USB Ethernet/WiFi card and the general beta\_lm On The Go features and functionalities, you may refer to the following section.

### 7.1. Basic Components and Requirements

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#### 7.1.1. What is a USB Ethernet/WiFi card

With USB Ethernet/WiFi card, we mean Wireless USB Adapter. Wireless USB is a short-range, high-bandwidth wireless radio communication protocol. A Wireless USB adapter enables wireless internet access to either a desktop or a notebook PC. The adapter simply plugs into the external USB port of the PC. The antenna technology built into the adapter will give full mobility with the notebook, or enable to place the desktop anywhere at home without the need to use unsightly Ethernet cables. This device looks like a simple USB, but is a bit bigger, including Ethernet.

#### 7.1.2. Scheme and Hardware requirements

Scheme requirements, as well as Hardware requirements for the beta\_lm On The Go application are given below:

beta\_lm On The Go is supported ONLY for **Single server scheme** for **Windows** and **Linux platforms**.

Scheme	Availability
Single server	YES
Redundant	NO

Platform	Availability
Windows (64bit OS Version)	YES
LINUX (64bit OS Version)	YES

**Note:** A prerequisite for beta\_lm On The Go operation is that MAC address spoofing is disabled.

## 7.2. Procedure and Application

### 7.2.1. Overview of actions

When it's time to get a general license from BETA CAE Systems, the customer can order **x-1 license** for the main server and one license for a USB Ethernet /WiFi card that will be installed on another server. The client machines will look for licenses first in the main server and if there is saturation, then they will look for the "USB" server.

In case someone needs to go on a trip with a laptop and needs to launch a Licensed Application (ANSA/META), then they can take the USB adapter and connect it on the laptop. In this way they will have an active license at the laptop that can be "returned" upon their return.

The advantage of this scheme is that there is one license that can be taken and used by any computer with no interaction from our side, and this license's cost can be included on the total year budget.

Of course, the disadvantage is that when the USB is away, there is one less license available.

When the USB based license is docked back at the office:

**Multiple Server scheme:** e.g. server\_1 and one USB license on server\_2, then the client machines will have BETA\_LIC\_SRV = server\_1,server\_2

*NO Redundant Server scheme available.*

### 7.2.2. Installation procedure

In order to receive a license file with the required information

- **Select a USB Ethernet adapter and plug it on a Windows platform machine**
- **Download beta\_lm\_tools** from BETA CAE Systems secure site
- **Unpack beta\_lm\_tools package**
- **Fetch the information required to build a valid license file**, via the command:

```
beta_lm -host_key -ni USB
```

The execution of this command will provide the three pieces of information that BETA CAE Systems requires in order to build a valid license for the selected license scheme. This information, its description as well as the respective command that should be used to obtain, is given in the table below:

Item	description	command (WINDOWS only)
<b>1. hostname</b>	name by which this machine is identified within the customer's network	beta_lm -host_key -ni USB
<b>2. MAC address</b>	media access control address	
<b>3. host key from USB</b>	beta_lm alphanumeric string based on a USB network interface	

**Note:** After receiving the license file (license.dat) please mind to change the SERVER line from SERVER=<hostname> to SERVER=localhost or IP address.



## Section 8.

# Troubleshooting beta\_lm

### 8.1. Troubleshooting beta\_lm

Troubleshooting actions for problems encountered during installation or operation of the beta\_lm license management tools are given in this paragraph. Since most of these problems are reported in the "license log" file, it is recommended to use the -L flag during the installation of the beta\_lm license daemon (see paragraph 2.2.7). Also, troubleshooting articles for common problems are available at the link [License Manager](#).

The following table presents a list of common errors along with the corresponding description and recovery action.

Error Message	Error Description and Recovery Actions
<p><b>ERROR 1067: The process terminated unexpectedly</b></p>	<p><b>platform:</b> WINDOWS</p> <p><b>description:</b> The beta_lm service could not be started.</p> <p><b>recovery:</b> Open a command prompt, switch to the beta_lm_tools folder and remove the current beta_lm service using the "beta_lm -remove" command. Then, follow the steps below:</p> <ol style="list-style-type: none"> <li>1- Make sure that the network interface is active, even though there is no physical connection to any network.</li> <li>2- Make sure that the server NAME specified in the SERVER= line of the license.dat file is correct and it corresponds to the machine that will be used as license server. It might also be necessary to edit this line and change from:                        SERVER=hostname,PORT=6007 to            SERVER=hostname.localdomain,PORT=6007 or            SERVER=localhost,PORT=6007 or            SERVER=IP_ADRESS,PORT=6007         </li> <li>3- Verify that beta_lm is installed on the same machine that was declared to BETA CAE Systems as license server; the HOSTID within license.dat should be identical to the key reported by running the "beta_lm -host_key" command</li> <li>4- Make sure that the PORT number specified in the SERVER= line of the license.dat file is not already used by another application or is blocked by a firewall.</li> <li>5- Make sure that there are no "blank spaces" in the full path leading to the license.dat file. Replace the location of the file to avoid blank spaces.</li> <li>6- Make sure that all complete lines in the non-editable section of the license.dat file are not wrapped and they end with a back-slash "\".</li> </ol>

	<p>7- In rare occasions, it might be necessary to login as "Administrator" and not as a user with administrative privileges.</p> <p>8- Confirm that the date and time settings on the workstation are correct.</p> <p>Finally, reinstall beta_lm as described in paragraph 2.2.7. If the problem persists, contact BETA CAE Systems for assistance.</p>
<b>ERROR 1063: StartServiceCtrlDispatcher failed</b>	<p><b>platform:</b> WINDOWS</p> <p><b>description:</b> The beta_lm service could not be started.</p> <p><b>recovery:</b> Use the full path of the license file during the installation procedure.</p>
<b>ABORTING SERVER: COULD NOT INSTALL SERVER</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The machine where beta_lm is launched and will be used as license server is different from the machine that is declared as server within the license.dat file. As a result, the installation process is aborted.</p> <p><b>recovery:</b> Verify that beta_lm is installed on the same machine that was declared to BETA CAE Systems as license server; the HOSTID within license.dat should be identical to the key reported by running the "beta_lm -host_key" command.</p>
<b>SERVER UNDEFINED MODE</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The license.dat file does not contain comprehensive instructions to the server. beta_lm cannot serve any licenses.</p> <p><b>recovery:</b> Contact BETA CAE Systems for assistance.</p>
<b>SERVER APPLICATION ERROR</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> beta_lm has encountered a serious system error.</p> <p><b>recovery:</b> Contact BETA CAE Systems for support.</p>
<b>SERVER Invalid License File</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The license.dat file has an invalid SERVER= line.</p> <p><b>recovery:</b> Contact BETA CAE Systems for assistance.</p>
<b>Failed FILE address resolution</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> beta_lm cannot resolve the server name or IP address.</p>

	<p><b>recovery:</b> Verify that the SERVER= line of the license.dat file has the correct server hostname. If the error persists, replace the hostname with the corresponding IP-address or with "localhost". To obtain the IP address, open a command prompt window and use the "ping" command: ping server_hostname.</p> <p>Check also if the port is used by any other application.</p>
<b>ERROR Option -L, file name TOO BIG</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> the file name specified for the log file is too big.</p> <p><b>recovery:</b> Specify a smaller file name for the log file.</p>
<b>ERROR Options : check syntax ERROR Option -c : REMOVE ERROR Option -F : REMOVE</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> Invalid options were used during installation.</p> <p><b>recovery:</b> Use valid options. Refer to paragraph 3.1.</p>
<b>ERROR License File not found No License File found</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> There is no license file specified or the path leading to the license.dat file is wrong.</p> <p><b>recovery:</b> Verify that the license.dat file exists and reinstall beta_lm using the full path to the license.dat file. See paragraph 2.2.7 for details.</p>
<b>ERROR License File could not be opened for read</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> There is no license file specified or the path leading to the license.dat file is wrong, or the user has no "read" privileges for the license file.</p> <p><b>recovery:</b> Verify that the license.dat file exists, has the proper privileges, and reinstall beta_lm using the full path to the license.dat file. See paragraph 2.2.7 for details.</p>
<b>ERROR in License File: Could not locate HOSTID match</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The HOSTID string within the license.dat file does not match the one created by the current beta_lm_tools version.</p> <p><b>recovery:</b> Verify that the HOSTID string inside the license.dat file is identical to the one produced by the currently installed version of beta_lm_tools. If not, install the latest beta_lm_tools and create a new host key.</p>
<b>NOT A VALID LICENSE FILE FOUND</b>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The specified license.dat file is invalid.</p> <p><b>recovery:</b> Verify that the HOSTID within license.dat is identical to the key reported by running the "beta_lm -host_key" command. Contact BETA CAE Systems for assistance.</p>

<p><b>ERROR in License File : Signatures did not verify</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The alphanumeric strings at the SIGNATUE= lines are not valid.</p> <p><b>recovery:</b> Contact BETA CAE Systems for assistance.</p>
<p><b>Signatures don't verify with hostid line</b> <b>Signatures don't verify with feature line</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> The alphanumeric strings at the SIGNATUE= lines are not valid.</p> <p><b>recovery:</b> Follow the steps below: 1- Make sure that all complete lines in the non-editable section of the license.dat file are not wrapped and end with a back-slash "\". 2- Verify that the HOSTID within license.dat is identical to the key reported by running the "beta_lm -host_key" command.</p>
<p><b>License Error at Line : #</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> There is an error in this particular line of the license.dat file.</p>
<p><b>Disabled # Credits of Package</b> <b>Disabled # Credits of Feature</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> These particular credits of the specific feature or package contained in the license.dat file are disabled (possibly the feature or package has expired).</p>
<p><b>Communication Failed</b></p>	<p><b>platform:</b> ALL, in hardware failover redundancy scheme</p> <p><b>description:</b> The communicated server does not currently serve any licenses, i.e. is a secondary server. Please circle through the rest of the redundant servers.</p>
<p><b>Not a Primary instance of License daemon</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> In redundant server schemes, Secondary servers lose contact with the Primary. Usually occurs after multiple continuous license requests to the Primary server.</p> <p><b>recovery:</b> Follow the steps below: 1- Upgrade to beta_lm_v7.x 2- Circle through all servers via the 'beta_lm_stat' command, in order to verify their status</p>

<p><b>ERROR In License File: Address in file cannot be resolved. Check SERVER Lines for misspelled or duplicated entries.</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> <i>The license file lists servers by name. However, the system needs their IP-Addresses.</i></p> <p><b>recovery:</b> Check whether you have DHCP (Dynamic Host Configuration Protocol) -i.e. Dynamic Address detection- on your computer. DHCP System has an automatic and dynamic allocation of IP-Addresses and, therefore, it should find all.</p>
<p><b>OpenSC manager failed</b></p>	<p><b>platform:</b> WINDOWS Vista</p> <p><b>description:</b> <i>During installation of beta_lm license daemon on Windows Vista, the specific Error Message appears.</i></p> <p><b>recovery:</b> Follow the steps below: 1- Just before beta_lm installation, go to 'User Accounts' 2- At the respective window go to 'Turn User Account ..... on/off' 3- At the new window notice the flag 'Use User Account Control' ---&gt; this should be UNCHECKED ! 4- Restart your PC, as the corresponding message prompts you, and go ahead with the installation.</p>
<p><b>Error 193:0xc1</b></p>	<p><b>platform:</b> ALL</p> <p><b>description:</b> <i>During installation of beta_lm license daemon, the specific Error Message appears.</i></p> <p><b>recovery:</b> Cross-check and confirm that the installation path of beta_lm package, as well as the location of the respective license.dat file, do not contain empty spaces like ..\Program files\ etc. It is recommended to choose an exemplary path instead, like C:\beta_lm\ etc.</p>