Altova MapForce Server 2015

User and Reference Manual

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Chapter 1

Altova MapForce Server 2015

1 Altova MapForce Server 2015

Altova MapForce Server is an enterprise server product that runs on high-speed servers running Windows, Linux, and Mac OS X operating systems. It operates as a module of Altova's FlowForce Server, and it is also available as a standalone server product.

MapForce Server processes MapForce Server Execution files that have been deployed to a FlowForce Server. These transformations are initiated by FlowForce Server based on a variety of programmable time triggers, file triggers, or remote triggers. Additionally, MapForce Server functionality must be invoked via the command line in the standalone server product version.

System requirements, installation and licensing
MapForce Server is supported on the following operating systems:

- *Windows*
  Windows XP (SP2 for x64; SP3 for x86), Windows Vista, Windows 7, Windows 8, or newer

- *Windows Server*
  Windows Server 2008 R2 or newer

- *Linux*
  - CentOS 6 or newer
  - RedHat 6 or newer
  - Debian 6 or newer
  - Ubuntu 12.04 or newer

  Note that the Libidn library, available under GNU LGPL, must be installed.

- *Mac OS X*
  Mac OS X 10.7 or newer

MapForce Server is available for both 32-bit and 64-bit on Windows machines. For details about installation and licensing, see the setup sections for Windows, Linux, and Mac OS X.

Limitations
Note the following limitations:

- XML Signatures are not supported
- Global resources are not supported via the COM interface
- ODBC and ADO database connections are only supported on Windows systems. Other operating systems automatically connect via JDBC.

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1.1 Functionality

MapForce Server processes a MapForce Server Execution file (`.mfx` file) to generate the output file/s that were defined in the underlying MapForce design file.

MapForce Server can be used in two ways:

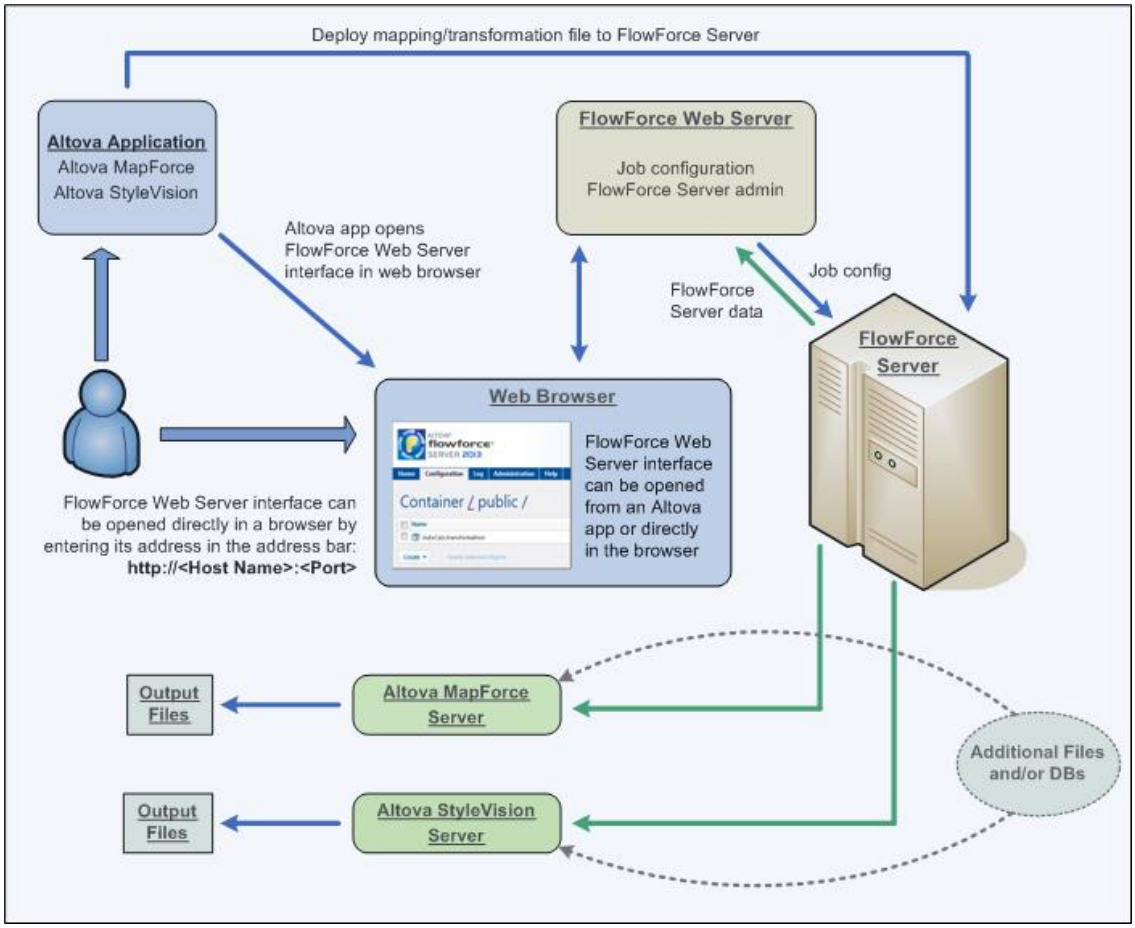
- As part of the Altova FlowForce workflow. For more information about Altova FlowForce, please visit the Altova website.
- As a standalone server product that is accessed via its command line interface (CLI).

A MapForce Server Execution file (`.mfx` file) is passed to MapForce Server, which processes the file and generates the output document/s.

1.1.1 In the FlowForce Server Workflow

A FlowForce job is created in Altova FlowForce Server. The FlowForce job specifies: (i) the inputs and outputs of a MapForce Server job execution; and (ii) the triggers for when the job is to be executed, such as a specific time every day. At execution time, Altova FlowForce Server passes the job instructions to MapForce Server, which then executes the job.

The role of MapForce Server in the FlowForce workflow is shown in the diagram below. (The role of StyleVision Server in the workflow is also displayed since FlowForce jobs can be created that send Altova StyleVision transformations to Altova StyleVision Server for execution.)



Additionally to being invoked by a FlowForce job, MapForce Server can also be invoked via the command line (see Command Line Usage).

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1.1.2 As a Standalone Server

MapForce Server can be installed as a standalone product on Windows, Linux, and Mac OS X systems.

In this version its functionality is invoked only via the command line. Usage is described in the section, Command Line Usage.

1.1.3 Deploying and Running an MFX File

The MapForce Server Execution file (`.mfx` file) that is processed by MapForce Server must be created in MapForce, and can be done in the following ways.

Please note: when deploying a mapping to FlowForce, make sure that your target language is Built-in, i.e. click the Built-In icon .

For deployment to FlowForce Server
Open a MapForce design file in MapForce and select the menu option **File | Deploy to FlowForce Server**. In FlowForce Server, define jobs and job triggers that will send the MFX file to MapForce Server for processing.

For more details and an example, see the MapForce documentation.

For use via the CLI of MapForce Server
A MapForce Server Execution file (`.mfx` file) can also be generated without having to deploy it to the FlowForce Server, in the following ways:

- By using the `COMPILE` command of the MapForce command line. For details, see the MapForce documentation.
- By using the MapForce menu command **File | Compile to MapForce Server Execution File**.

The `.mfx` file can then be executed with the `run` command of the MapForce Server CLI.

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1.2 Setup on Windows

This section describes the installation and licensing of MapForce Server on Windows systems.

Installation on Windows

- System requirements
- Installing MapForce Server
- Altova LicenseServer
- LicenseServer versions
- Trial license
- Application folder location

Licensing on Windows

- Start ServiceController
- Start LicenseServer
- Register MapForce Server
- Assign a license

1.2.1 Installation on Windows

MapForce Server is available for installation on Windows systems. Its installation and setup procedure is described below.

- System requirements
  - *Windows*
    Windows XP (SP2 for x64; SP3 for x86), Windows Vista, Windows 7, Windows 8, or newer

  - *Windows Server*
    Windows Server 2008 R2 or newer

- Installing MapForce Server
  MapForce Server can be installed on Windows systems as follows:

  - As a separate standalone server product called MapForce Server. To install MapForce Server, download and run the MapForce Server installer. Follow the onscreen instructions.
  - As part of the FlowForce Server installation package. To install MapForce Server as part of the FlowForce Server package, download and run the FlowForce Server installer. Follow the onscreen instructions and make sure you check the option for installing MapForce Server.

  The installers of both MapForce Server and FlowForce Server are available at the Altova website and will install the products with the necessary registrations. After installation, the MapForce Server executable will be located by default at:

  ```
  <ProgramFilesFolder>\Altova\MapForceServer2015\bin\MapForceServer.exe
  ```

- Altova LicenseServer
  - In order for MapForce Server to work, it must be licensed via an Altova LicenseServer on your network.
  - When you install MapForce Server or FlowForce Server on Windows systems, an option is available that allows you to download and install Altova LicenseServer together with MapForce Server or FlowForce Server.
  - If an Altova LicenseServer is already installed on your network, you do not need to install another one—unless a newer version of Altova LicenseServer is required. (*See next point, LicenseServer versions*.)
  - During the installation process of MapForce Server or FlowForce Server, check or uncheck the option for installing Altova LicenseServer as appropriate.

  See the section, Licensing on Windows, for more information about how to register and license MapForce Server with Altova LicenseServer.

- LicenseServer versions
  - Altova server products must be licensed either with the version of LicenseServer that is appropriate to the installed MapForce Server version, or with a later version of LicenseServer.
  - The LicenseServer version that is appropriate for a particular version of MapForce Server is displayed during the installation of MapForce Server. You can install this version of LicenseServer along with MapForce Server, or you can install LicenseServer

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separately.

- Before installing a newer version of LicenseServer, any older one must be de-installed. The LicenseServer installer will do this automatically if it detects an older version.
- LicenseServer versions are backwards compatible. They will work with older versions of MapForce Server.
- If you install a new version of MapForce Server and if your installed LicenseServer version is older than the appropriate LicenseServer, install the latest version available on the Altova website.
- At the time of LicenseServer de-installation, all registration and licensing information held in the older version of LicenseServer will be saved to a database on your server machine. This data will be imported automatically into the newer version when the newer version is installed.
- The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

Current version: 1.11

▼ Trial license

During the installation process, you will be given the option of requesting a 30-day trial license for MapForce Server. After submitting the request, a trial license will be sent to the email address you registered.

▼ Application folder location

The application will be installed in the following folder:

Windows XP	`C:\Program Files\Altova\`
Windows Vista, Windows 7/8	`C:\Program Files\Altova\`
32 bit Version on 64-bit OS	`C:\Program Files (x86)\Altova\`

1.2.2 Licensing on Windows

MapForce Server must be licensed with an Altova LicenseServer in order to run it. Licensing is a two-step process:

1. **Register MapForce Server** with LicenseServer. Registration is done from MapForce Server.
2. **Assign a license** to MapForce Server. License-assigning is done from LicenseServer.

The steps you need to carry out are given below.

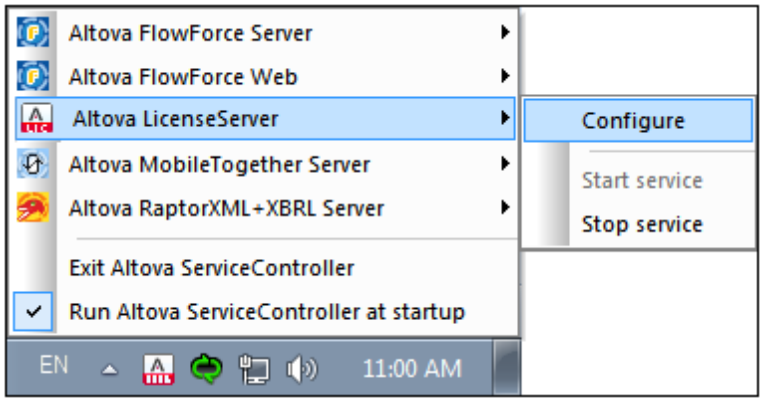
▼ Start ServiceController

Altova ServiceController is started in order to start Altova LicenseServer.

Altova ServiceController (ServiceController for short) is an application for conveniently starting, stopping and configuring Altova services **on Windows systems**.

ServiceController is installed with Altova LicenseServer and with *Altova server products that are installed as services* (FlowForce Server, RaptorXML(+XBRL) Server, and Mobile Together Server). It can be started by clicking **Start | Altova LicenseServer | Altova ServiceController**. (This command is also available in the **Start** menu folders of *Altova server products that are installed as services* (FlowForce Server, RaptorXML(+XBRL) Server, and Mobile Together Server).) After ServiceController has been started, it can be accessed via the system tray (*screenshot below*).

To specify that ServiceController starts automatically on logging in to the system, click the **ServiceController** icon in the system tray to display the **ServiceController** menu (*screenshot below*), and then toggle on the command **Run Altova ServiceController at Startup**. (This command is toggled on by default.) To exit ServiceController, click the **ServiceController** icon in the system tray and, in the menu that appears (*see screenshot below*), click **Exit Altova ServiceController**.



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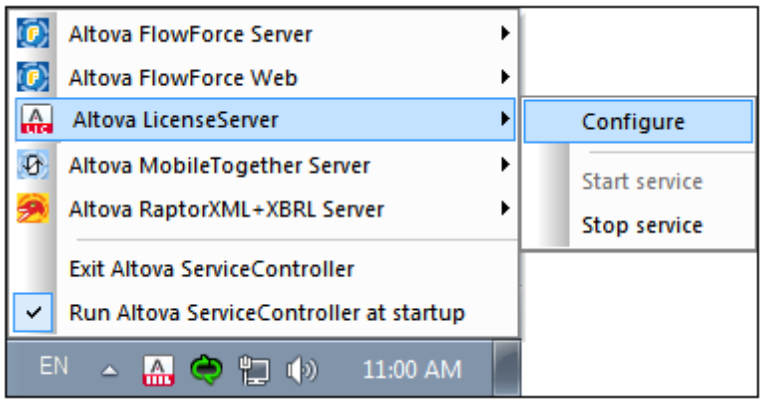
- Start LicenseServer
  To start LicenseServer, click the **ServiceController** icon in the system tray, hover over **Altova LicenseServer** in the menu that pops up (*see screenshot below*), and then select **Start Service** from the LicenseServer submenu. If LicenseServer is already running, the *Start Service* option will be disabled.



- Register MapForce Server

  - *Register MapForce Server through FlowForce Server*
    If MapForce Server was installed as part of a FlowForce Server installation, registering FlowForce Server with LicenseServer will automatically also register MapForce Server. How to register FlowForce Server is described in the FlowForce Server documentation. Essentially: (i) Start Altova FlowForce Web as a service via ServiceController (*see previous point*); (ii) Enter your password to access the Setup page; (iii) Select the LicenseServer name or address and click **Register with LicenseServer**.

    After successful registration, go to the Server Management tab of LicenseServer's configuration page to assign a license to MapForce Server.

  - *Register a standalone MapForce Server*
    Register MapForce Server via:

    - its CLI, using the `licenseserver` command:
      `MapForceServer licenseserver [options] ServerName-Or-IP-Address`

      For example, if `localhost` is the name of the server on which LicenseServer is installed:
      `MapForceServer licenseserver localhost`

    After successful registration, go to the Server Management tab of LicenseServer's configuration page to assign a license to MapForce Server.

- Assign a license
  After successfully registering MapForce Server, it will be listed in the Server Management tab of the configuration page of LicenseServer. Go there and assign a license to MapForce Server.

  Note on cores and licenses
  The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core

processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

******* MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

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1.3 Setup on Linux

This section describes the installation and licensing of MapForce Server on Linux systems (Debian, Ubuntu, CentOS, RedHat).

Installation on Linux

- System requirements
- Uninstall old versions of Altova server products
- Download the Linux package
- Install MapForce Server
- Altova LicenseServer
- LicenseServer versions
- Trial license

Licensing on Linux

- Start LicenseServer
- Register MapForce Server
- Assign a license

1.3.1 Installation on Linux

MapForce Server is available for installation on Linux systems. Its installation and setup procedure is described below.

- System requirements
  - *Linux*
    - CentOS 6 or newer
    - RedHat 6 or newer
    - Debian 6 or newer
    - Ubuntu 12.04 or newer

    Note that the Libidn library, available under GNU LGPL, must be installed.

- FlowForce Server integration

  If you are installing MapForce Server together with FlowForce Server, it is recommended to install FlowForce Server first. Otherwise, after having installed both MapForce Server and FlowForce Server, run the following command:

```
cp /opt/Altova/MapForceServer2015/etc/*.tool /opt/Altova/
FlowForceServer2015/tools
```

  This command copies the **.tool** file from **/etc** directory of MapForce Server to the FlowForce Server **/tools** directory. The **.tool** file is required by FlowForce Server; it contains the path to the MapForce Server executable. You do not need to run this command if you install FlowForce Server before installing MapForce Server.

- Uninstall old versions of Altova server products

  If you need to uninstall a previous version, do this as follows. On the Linux command line interface (CLI), you can check which Altova server products are installed with the following command:

  `[Debian, Ubuntu]:` **`dpkg --list | grep Altova`**
  `[CentOS, RedHat]:` **`rpm -qa | grep server`**

  If MapForce Server is not installed, go ahead with the installation as documented below in *Installing MapForce Server*.

  If MapForce Server is installed and you wish to install a newer version of MapForce Server, uninstall the old version with the command:

  `[Debian, Ubuntu]:` **`sudo dpkg --remove mapforceserver`**
  `[CentOS, RedHat]:` **`sudo rpm -e mapforceserver`**

  If you need to uninstall an old version of Altova LicenseServer, do this with the following command:

  `[Debian, Ubuntu]:` **`sudo dpkg --remove licenseserver`**
  `[CentOS, RedHat]:` **`sudo rpm -e licenseserver`**

- Download the Linux package

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MapForce Server installation packages for the following Linux systems are available on the Altova website.

Distribution	Package extension
Debian 6 and higher	.deb
Ubuntu12.04 and higher	.deb
CentOS 6 and higher	.rpm
RedHat 6 and higher	.rpm

After downloading the Linux package, copy it to any directory on the Linux system. Since you will need an Altova LicenseServer in order to run MapForce Server, you may want to download LicenseServer from the Altova website at the same time as you download MapForce Server, rather than download it at a later time.

- Install MapForce Server

  In a terminal window, switch to the directory where you have copied the Linux package. For example, if you copied it to a user directory called `MyAltova` (that is located, say, in the `/home/User` directory), then switch to this directory as follows:

  ```
  cd /home/User/MyAltova
  ```

  Install MapForce Server with the following command:

  ```
  [Debian]:   sudo dpkg --install mapforceserver-2015-debian.deb
  [Ubuntu]:   sudo dpkg --install mapforceserver-2015-ubuntu.deb
  [CentOS]:   sudo rpm -ivh mapforceserver-2015-1.x86_64.rpm
  [RedHat]:   sudo rpm -ivh mapforceserver-2015-1.x86_64.rpm
  ```

  The MapForce Server package will be installed in the folder:

  ```
  /opt/Altova/MapForceServer2015
  ```

- Altova LicenseServer

  In order for any Altova Server product—including MapForce Server—to run, that server product must be licensed via an Altova LicenseServer on your network.

  On Linux systems, Altova LicenseServer will need to be installed separately. Download LicenseServer from the Altova website and copy the package to any directory on the Linux system. Install it just like you installed MapForce Server (*see previous step*).

  ```
  [Debian]:   sudo dpkg --install licenseserver-1.11-debian.deb
  [Ubuntu]:   sudo dpkg --install licenseserver-1.11-ubuntu.deb
  [CentOS]:   sudo rpm -ivh licenseserver-1.11-1.x86_64.rpm
  [RedHat]:   sudo rpm -ivh licenseserver-1.11-1.x86_64.rpm
  ```

  The LicenseServer package will be installed in:

  ```
  /opt/Altova/LicenseServer
  ```

  For information about how to register MapForce Server with Altova LicenseServer and license it, see the section, Licensing on Linux.

- LicenseServer versions
  - Altova server products must be licensed either with the version of LicenseServer that is appropriate to the installed MapForce Server version, or with a later version of LicenseServer.
  - The LicenseServer version that is appropriate for a particular version of MapForce Server is displayed during the installation of MapForce Server. You can install this version of LicenseServer along with MapForce Server, or you can install LicenseServer separately.
  - Before installing a newer version of LicenseServer, any older one must be de-installed. The LicenseServer installer will do this automatically if it detects an older version.
  - LicenseServer versions are backwards compatible. They will work with older versions of MapForce Server.
  - If you install a new version of MapForce Server and if your installed LicenseServer version is older than the appropriate LicenseServer, install the latest version available on the Altova website.
  - At the time of LicenseServer de-installation, all registration and licensing information held in the older version of LicenseServer will be saved to a database on your server machine. This data will be imported automatically into the newer version when the newer version is installed.
  - The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

    Current version: 1.11

- Trial license
  During the installation process, you will be given the option of requesting a 30-day trial license for MapForce Server. After submitting the request, a trial license will be sent to the email address you registered.

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1.3.2 Licensing on Linux

MapForce Server must be licensed with an Altova LicenseServer in order to run it. Licensing is a two-step process:

1. **Register MapForce Server** with LicenseServer. Registration is done from MapForce Server.
2. **Assign a license** to MapForce Server. License-assigning is done from LicenseServer.

The steps you need to carry out are given below.

▼ Start LicenseServer

To correctly register and license MapForce Server with LicenseServer, LicenseServer must be running as a daemon on the network. Start LicenseServer as a daemon with the following command:

```
[Debian]:   sudo /etc/init.d/licenseserver start
[Ubuntu]:   sudo initctl start licenseserver
[CentOS]:   sudo initctl start licenseserver
[RedHat]:   sudo initctl start licenseserver
```

If at any time you need to stop LicenseServer, replace **start** with **stop** in the above command. For example:

```
sudo /etc/init.d/licenseserver stop
```

▼ Register MapForce Server

Register MapForce Server via:

- its CLI, using the `licenseserver` command:

  ```
  sudo /opt/Altova/MapForceServer2015/bin/mapforceserver licenseserver
  [options] ServerName-Or-IP-Address
  ```

  For example, if `localhost` is the name of the server on which LicenseServer is installed:

  ```
  sudo /opt/Altova/MapForceServer2015/bin/mapforceserver licenseserver
  localhost
  ```

  In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the MapForce Server executable is:

  ```
  /opt/Altova/MapForceServer2015/bin/
  ```

After successful registration, go to the Server Management tab of LicenseServer's configuration page to assign a license to MapForce Server.

▼ Assign a license

After successfully registering MapForce Server, it will be listed in the Server Management tab of the configuration page of LicenseServer. Go there and assign a license to MapForce Server.

Note on cores and licenses
The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

******* MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

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1.4 Setup on Mac OS X

This section describes the installation and licensing of MapForce Server on Mac OS X systems.

Installation on Mac OS X

- System requirements
- Uninstall old versions of Altova server products
- Download the Mac OS X package
- Install MapForce Server
- Altova LicenseServer
- LicenseServer versions
- Trial license

Licensing on Mac OS X

- Start LicenseServer
- Register MapForce Server
- Assign a license

1.4.1 Installation on Mac OS X

MapForce Server is available for installation on Linux systems. Its installation and setup procedure is described below.

- System requirements
  - *Mac OS X*
    Mac OS X 10.7 or newer

- FlowForce Server integration
  If you are installing MapForce Server together with FlowForce Server, it is recommended to install FlowForce Server first. Otherwise, after having installed both MapForce Server and FlowForce Server, run the following command:

```
cp /usr/local/Altova/MapForceServer2015/etc/*.tool /usr/local/Altova/
FlowForceServer2015/tools
```

  This command copies the **.tool** file from **/etc** directory of MapForce Server to the FlowForce Server **/tools** directory. The **.tool** file is required by FlowForce Server; it contains the path to the MapForce Server executable. You do not need to run this command if you install FlowForce Server before installing MapForce Server.

- Uninstall old versions of Altova server products
  In the Applications terminal, right-click the MapForce Server icon and select **Move to Trash**. The application will be moved to Trash. You will, however, still need to remove the application from the `usr` folder. Do this with the command:
  `sudo rm -rf /usr/local/Altova/MapForceServer2015/`

  If you need to uninstall an old version of Altova LicenseServer, you must first stop it running as a service. Do this with the following command:
  `sudo launchctl unload /Library/LaunchDaemons/com.altova.LicenseServer.plist`

  To check whether the service has been stopped, open the Activity Monitor terminal and make sure that LicenseServer is not in the list. Then proceed to uninstall in the same way as described above for MapForce Server.

- Download the Mac OS X package
  After downloading the MacOS X package from the Altova website, copy the package to any directory on the Mac OS X system. Since you will need to have an Altova LicenseServer installed in order to run MapForce Server, you may want to download LicenseServer from the Altova website at the same time as you download MapForce Server, rather than download it at a later time. The Mac OS X installer file has a `.pkg` file extension.

- Install MapForce Server
  In a terminal window, switch to the directory where you have copied the installer file, and double-click it. Go through the successive steps of the installer wizard. These are self-explanatory and include one step in which you have to agree to the license agreement before

being able to proceed.

The MapForce Server package will be installed in the folder:
/usr/local/Altova/MapForceServer2015

Clicking the MapForce Server icon in the Application terminal pops up the onscreen help (this documentation).

Altova LicenseServer

In order for any Altova Server product—including MapForce Server—to run, that server product must be licensed via an Altova LicenseServer on your network.

On Mac OS X systems, Altova LicenseServer will need to be installed separately. Download Altova LicenseServer from the Altova website and double-click the installer package to start the installation. Follow the onscreen instructions. You will need to accept the license agreement for installation to proceed.

The LicenseServer package will be installed in the folder:
/usr/local/Altova/LicenseServer

For information about how to register MapForce Server with Altova LicenseServer and license it, see the section, Licensing on Mac OS X.

LicenseServer versions

- Altova server products must be licensed either with the version of LicenseServer that is appropriate to the installed MapForce Server version, or with a later version of LicenseServer.
- The LicenseServer version that is appropriate for a particular version of MapForce Server is displayed during the installation of MapForce Server. You can install this version of LicenseServer along with MapForce Server, or you can install LicenseServer separately.
- Before installing a newer version of LicenseServer, any older one must be de-installed. The LicenseServer installer will do this automatically if it detects an older version.
- LicenseServer versions are backwards compatible. They will work with older versions of MapForce Server.
- If you install a new version of MapForce Server and if your installed LicenseServer version is older than the appropriate LicenseServer, install the latest version available on the Altova website.
- At the time of LicenseServer de-installation, all registration and licensing information held in the older version of LicenseServer will be saved to a database on your server machine. This data will be imported automatically into the newer version when the newer version is installed.
- The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

  Current version: 1.11

Trial license

During the installation process, you will be given the option of requesting a 30-day trial license for MapForce Server. After submitting the request, a trial license will be sent to the email

address you registered.

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1.4.2 Licensing on Mac OS X

MapForce Server must be licensed with an Altova LicenseServer in order to run it. Licensing is a two-step process:

1. **Register MapForce Server** with LicenseServer. Registration is done from MapForce Server.
2. **Assign a license** to MapForce Server. License-assigning is done from LicenseServer.

The steps you need to carry out are given below.

▼ Start LicenseServer

To correctly register and license MapForce Server with LicenseServer, LicenseServer must be running as a daemon. Start LicenseServer as a daemon with the following command:

```
sudo launchctl load /Library/LaunchDaemons/com.altova.LicenseServer.plist
```

If at any time you need to stop LicenseServer, replace **load** with **unload** in the above command:

```
sudo launchctl unload /Library/LaunchDaemons/com.altova.LicenseServer.plist
```

▼ Register MapForce Server

Register MapForce Server via:

- its CLI, using the `licenseserver` command:

  ```
  sudo /usr/local/Altova/MapForceServer2015/bin/MapForceServer
  licenseserver [options] ServerName-Or-IP-Address
  ```

  For example, if `localhost` is the name of the server on which LicenseServer is installed:

  ```
  sudo /usr/local/Altova/MapForceServer2015/bin/MapForceServer
  licenseserver localhost
  ```

  In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the MapForce Server executable is:

  ```
  /usr/local/Altova/MapForceServer2015/bin/
  ```

After successful registration, go to the Server Management tab of LicenseServer's configuration page to assign a license to MapForce Server.

▼ Assign a license

After successfully registering MapForce Server, it will be listed in the Server Management tab of the configuration page of LicenseServer. Go there and assign a license to MapForce Server.

Note on cores and licenses

The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be

greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

******* MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

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1.5 Command Line Usage

This section:

- Default location of MapForce Server executable
- Usage and list of valid CLI commands

Default location of MapForce Server executable
Given below are the default locations of the MapForce Server executable:

Windows	`<ProgramFilesFolder>\Altova\MapForceServer2015\bin\`**`MapForceServer.exe`**
Linux	`\opt\Altova\MapForceServer2015\bin\`**`mapforceserver`**
Mac	`\usr\local\Altova\MapForceServer2015\bin\`**`mapforceserver`**

Usage and list of valid CLI commands
General command line syntax for `MapForceServer` is:

Windows	**`MapForceServer --h | --help | --version | <command> [options] [arguments]`**
Linux	**`mapforceserver --h | --help | --version | <command> [options] [arguments]`**
Mac	**`mapforceserver --h | --help | --version | <command> [options] [arguments]`**

▼ Casing on the command line

`MapForceServer` *on Windows*
`mapforceserver` *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

where

`--h | --help`	Displays the help text.
`--version`	Displays the version of MapForce Server.

Valid CLI commands are listed below and are explained in the sub-sections of this section.

`licenseserver`	Register MapForce Server with LicenseServer on the local network.

assignlicense	Upload a license to LicenseServer and assign it to MapForce Server on this machine.
verifylicense	Check if the current MapForce Server is licensed; optionally, check if a given license key is assigned.
run	Executes a MapForce Server Execution file (.mfx)
exportresourcestrings	Exports all application resource strings to an XML file.
setdeflang | sdl	Sets the default language.
help	Displays help for a specific command. For example: help run

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1.5.1 licenseserver

This section:

- Command syntax
- Command description
- Examples
- Command options

Command syntax

Windows **`MapForceServer licenseserver [options] Server-Or-IP-Address`**
Linux **`mapforceserver licenseserver [options] Server-Or-IP-Address`**
Mac **`mapforceserver licenseserver [options] Server-Or-IP-Address`**

Command description

On execution, the `licenseserver` command registers MapForce Server with the LicenseServer specified by the *`Server-Or-IP-Address`* argument. ***`Server-Or-IP-Address`*** identifies the machine on the network on which Altova LicenseServer is installed and running. It can be the machine's name or its IP address.

For the `licenseserver` command to be executed successfully, the two servers must be connected on the network and LicenseServer must be running. You must have administrator privileges to be able to register MapForce Server with LicenseServer.

Once MapForce Server has been successfully registered with LicenseServer, you will receive a message to this effect. The message will also display the URL of the LicenseServer. You can now go to LicenseServer to assign MapForce Server a license. *For details, see the LicenseServer documentation*.

Examples

Examples of the `licenseserver` command:

```
mapforceserver licenseserver DOC.altova.com
mapforceserver licenseserver localhost
mapforceserver licenseserver 127.0.0.1
```

The commands above specifiy, respectively, the machine named `DOC.altova.com`, and the user's machine (`localhost` and `127.0.0.1`) as the machine running Altova LicenseServer. In each case, the command registers MapForce Server with the LicenseServer on the machine specified.

- Casing on the command line

  `MapForceServer` *on Windows*
  `mapforceserver` *on Unix (Linux, Mac)*

  * Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

Command options
Options are listed in their short forms (in the first column) and long forms (second column), together with their descriptions (third column). On the command line, one or two dashes can be used for both short and long forms.

`--j`	`--json`	Prints the result of the registration attempt as a machine-parsable JSON object. Form: `--json=`*`true`*`|`*`false`*

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1.5.2 assignlicense (Windows only)

This section:

- Command syntax
- Command description
- Examples
- Command options

Command syntax

Windows **`MapForceServer assignlicense [options] FILE`**

Note: This command is supported only on Windows systems. It is not supported on Linux or Mac systems.

Command description

On execution, the `assignlicense` command uploads the license file specified by the *`FILE`* argument to the registered LicenseServer, and assigns the license to MapForce Server on this machine. The *`FILE`* argument takes the filepath of the license file.

The `--test-only` option allows you to upload to LicenseServer and validate the license, without assigning the license to MapForce Server. *For details about licensing, see the LicenseServer documentation.*

Examples

Examples of the `assignlicense` command:

```
mapforceserver assignlicense C:\MapForce Server12345.altova_licenses
mapforceserver assignlicense --test-only=true C:\MapForce
Server12345.altova_licenses
```

The first command above uploads the specified license to LicenseServer and assigns it to MapForce Server.
The second command uploads the specified license to LicenseServer and validates it, without assigning it to MapForce Server.

▼ Casing on the command line

`MapForceServer` *on Windows*
`mapforceserver` *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

Command options

Options are listed in their short forms (in the first column) and long forms (second column), together with their descriptions (third column). On the command line, one or two dashes can be used for both short and long forms.

`--t`	`--test-only`	Values are `true|false`. If `true`, then the license file is only uploaded to LicenseServer and validated. It is not assigned to MapForce Server. Form: `--test-only=true|false`. Set to `true` if the option is specified without a value.

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1.5.3 verifylicense (Windows only)

This section:

- Command syntax
- Command description
- Examples
- Command options

Command syntax

Windows **`MapForceServer verifylicense [options]`**

Note: This command is supported only on Windows systems. It is not supported on Linux or Mac systems.

Command description

Checks whether the current product is licensed. Additionally, the `--license-key` option enables you to check whether a specific license key is already assigned to the product. *For details about licensing, see the LicenseServer documentation.*

Examples

Examples of the `verifylicense` command:

```
mapforceserver verifylicense
mapforceserver verifylicense --license-key=ABCDEFG-HIJKLMN-OPQRSTU-VWXYZ12-3456789
```

The commands above check, respectively, whether the product has been licensed, and whether the product has been licensed with the license key given as the value of the `--license-key` option.

▼ Casing on the command line

`MapForceServer` *on Windows*
`mapforceserver` *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

Command options

Options are listed in their short forms (in the first column) and long forms (second column), together with their descriptions (third column). On the command line, one or two dashes can be used for both short and long forms.

`--l`	`--license-key`	Checks whether the submitted license key has already been assigned to the product. Form: `--license-key=`*VALUE*

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1.5.4 run

This section:

- Command syntax
- Command description
- Examples
- Command options

Command syntax

Windows	**MapForceServer run [options] MfxFile [> logfile.log]**
Linux	**mapforceserver run [options] MfxFile [> logfile.log]**
Mac	**mapforceserver run [options] MfxFile [> logfile.log]**

Command description

The `run` command executes a MapForce Server Execution file (`.mfx` file). It requires an input `.mfx` file (**`MfxFile`**) as its argument.

Examples

In Altova MapForce, open a MapForce Design file (`.mfd` file), say, `ChainedPersonList.mfd`. from the MapForce Examples folder. Compile it to a MapForce Execution file (`.mfx` file) with the MapForce command **File | Compile to MapForce Server Execution File**. Say that the compiled file is saved to `C:\temp\ChainedPersonList.mfx`.

Now, in MapForce Server, you can use the `run` command to execute `ChainedPersonList.mfx`:

```
mapforceserver run C:\temp\ChainedPersonList.mfx
```

The two output files of this MapForce Design file (`PersonList.xml` and `Contacts.xml`) are generated in the MapForce Examples folder.

To create a log file, use the redirect operator **>** at the end of the `run` command. So, for example:

```
mapforceserver run C:\temp\ChainedPersonList.mfx > Mylog.log
```

▼ Casing on the command line

`MapForceServer` *on Windows*
`mapforceserver` *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac),

while upper-lower (`MapForceServer`) works only on Windows and Mac.

Command options
Options are listed in their short forms (in the first column) and long forms (second column), together with their descriptions (third column). On the command line, one or two dashes can be used for both short and long forms.

For information about global resources and input parameters, see the Altova MapForce documentation.

	`--catalog`	Specifies the absolute path to a root catalog file that is not the installed root catalog file. The default value is the absolute path to the installed root catalog file. Form: `--catalog=FILE`
`--gc`	`--globalresourceconfig`	The name of the global resource configuration. Form: `--gc=VALUE`
`--gr`	`--globalresourcefile`	The path of the global resource definition file. Form: `--gr=FILE`.
`--l`	`--lang`	The language used for displaying messages. Form: `--lang=VALUE (en,de,ja,es)`
`--p`	`--param`	Assigns a value to a parameter defined in the mapping. Form: `--param=`*`ParamName:ParamValue`*. The `--param` switch must be used before each parameter. Use quotes if *`ParamName`* or *`ParamValue`* contains a space. For example: `--p=company:"Nanonull Inc"`.

Note: On Windows systems: Avoid using the end backslash and closing quote on the command line `\"`, forexample, as in: `"C:\My directory\"`. These two characters are interpreted by the command line parser as a literal double-quotation mark. Use the double backslash `\\` if spaces occur in the command line and you need the quotes (for example: `"C:\My Directory\\"`). Alternatively, try to avoid using spaces and, therefore, quotes at all.

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1.5.5 exportresourcestrings

This section:

- Command syntax
- Arguments
- Command description
- Examples
- Creating localized versions of MapForce Server

Command syntax

Windows **`MapForceServer exportresourcestrings LanguageCode XMLOutputFile`**
Linux **`mapforceserver exportresourcestrings LanguageCode XMLOutputFile`**
Mac **`mapforceserver exportresourcestrings LanguageCode XMLOutputFile`**

Arguments

The `exportresourcestrings` command takes the following arguments:

`LanguageCode`	Specifies the language of resource strings in the exported XML file. Supported languages are: `en`, `de`, `es`, `ja`
`XMLOutputFile`	Specifies the location and name of the exported XML file.

Command description

The **`exportresourcestrings`** command outputs an XML file containing the resource strings of the MapForce Server application. It takes two arguments: (i) the language of the resource strings in the output XML file, and (ii) the path and name of the output XML file. Allowed export languages (with their language codes in parentheses) are: English (`en`), German, (`de`), Spanish (`es`), and Japanese (`ja`).

Examples

An example of the `exportresourcestrings` command:

```
mapforceserver exportresourcestrings de c:\Strings.xml
```

This command creates a file called `Strings.xml` at `c:\` that contains all the resource strings of the MapForce Server application in German.

- Casing on the command line

  `MapForceServer` *on Windows*
  `mapforceserver` *on Unix (Linux, Mac)*

  * Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

Creating localized versions of MapForce Server
You can create a localized version of MapForce Server for any language of your choice. Four localized versions (English, German, Spanish, and Japanese) are already available in the `C:\Program Files (x86)\Altova\MapForceServer2015\bin` folder, and therefore do not to be created.

Create a localized version as follows:

1. Generate an XML file containing the resource strings by using the `exportresourcestrings` command (*see command syntax above*). The resource strings in this XML file will be one of the four supported languages: English (`en`), German (`de`), Spanish (`es`), or Japanese (`ja`), according to the ***LanguageCode*** argument used with the command.
2. Translate the resource strings from one of the four supported languages into the target language. The resource strings are the contents of the `<string>` elements in the XML file. Do not translate variables in curly brackets, such as `{option}` or `{product}`.
3. Contact Altova Support to generate a localized MapForce Server DLL file from your translated XML file.
4. After you receive your localized DLL file from Altova Support, save the DLL in the `C:\Program Files (x86)\Altova\<%APPFOLDER\bin` folder. Your DLL file will have a name of the form `MapForceServer2015_lc.dll`. The `_lc` part of the name contains the language code. For example, in `MapForceServer2015_de.dll`, the `de` part is the language code for German (Deutsch).
5. Run the `setdeflang` command to set your localized DLL file as the MapForce Server application to use. For the argument of the `setdeflang` command, use the language code that is part of the DLL name.

Note: Altova MapForce Server is delivered with support for four languages: English, German, Spanish, and Japanese. So you do not need to create a localized version of these languages. To set any of these four languages as the default language, use MapForce Server's `setdeflang` command.

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1.5.6 setdeflang

This section:

- Command syntax
- Command description
- Examples
- Supported languages

Command syntax

Windows **`MapForceServer setdeflang | sdl`** ***`LangaugeCode`***
Linux **`mapforceserver setdeflang | sdl`** ***`LangaugeCode`***
Mac **`mapforceserver setdeflang | sdl`** ***`LangaugeCode`***

Command description

The **`setdeflang`** command (short form is `sdl`) sets the default language of MapForce Server. It takes a mandatory `LanguageCode` argument.

Examples

An example of the `setdeflang` command:

```
mapforceserver setdeflang DE
```

The command above sets the default language for messages to German.

▼ Casing on the command line

`MapForceServer` *on Windows*
`mapforceserver` *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

Supported languages

The table below lists the languages currently supported together with their language codes.

`EN`	English

DE	German
ES	Spanish
JA	Japanese

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1.5.7 help

This section:

- Command syntax
- Command description
- Examples
- The --help option

Command syntax

Windows	**MapForceServer help *Command***
Linux	**mapforceserver help *Command***
Mac	**mapforceserver help *Command***

Command description

The **help** command takes a single argument (*Command*): the name of the command for which help is required. It displays the correct syntax of the command and other information relevant to the correct execution of the command.

Examples

An example of the `help` command:

```
mapforceserver help exportresourcestrings
```

The command above contains one argument: the command `exportresourcestrings`, for which help is required. When the example command above is executed, information about the `exportresourcestrings` command will be displayed in the terminal.

▼ Casing on the command line

MapForceServer *on Windows*
mapforceserver *on Unix (Linux, Mac)*

* Note that lowercase (`mapforceserver`) works on all platforms (Windows, Linux, and Mac), while upper-lower (`MapForceServer`) works only on Windows and Mac.

The `--help` option

Help information about a command is also available by using the `--help` option with the

command for which help information is required. For example, using the `--help` option with the `exportresourcestrings` command, as follows:

```
mapforceserver exportresourcestrings --help
```

achieves the same result as does using the `help` command with an argument of `exportresourcestrings`:

```
mapforceserver help exportresourcestrings
```

In both cases, help information about the `exportresourcestrings` command is displayed.

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1.6 MapForce Server API

MapForce Server provides an application programming interface (API) that you can access programmatically from your .NET, Java, or COM-based code.

For an introduction to each platform, refer to the following topics:

- About the .NET Interface
- About the COM Interface
- About the Java Interface

For code examples, refer to the Code Examples section.

For a technical description of the API, refer to the following topics:

- API Reference (COM, .NET)
- API Reference (Java)

1.6.1 About the .NET Interface

The .NET interface is built as a wrapper around the COM interface. It is provided as a primary interop assembly signed by Altova and uses the namespace `Altova.MapForceServer`.

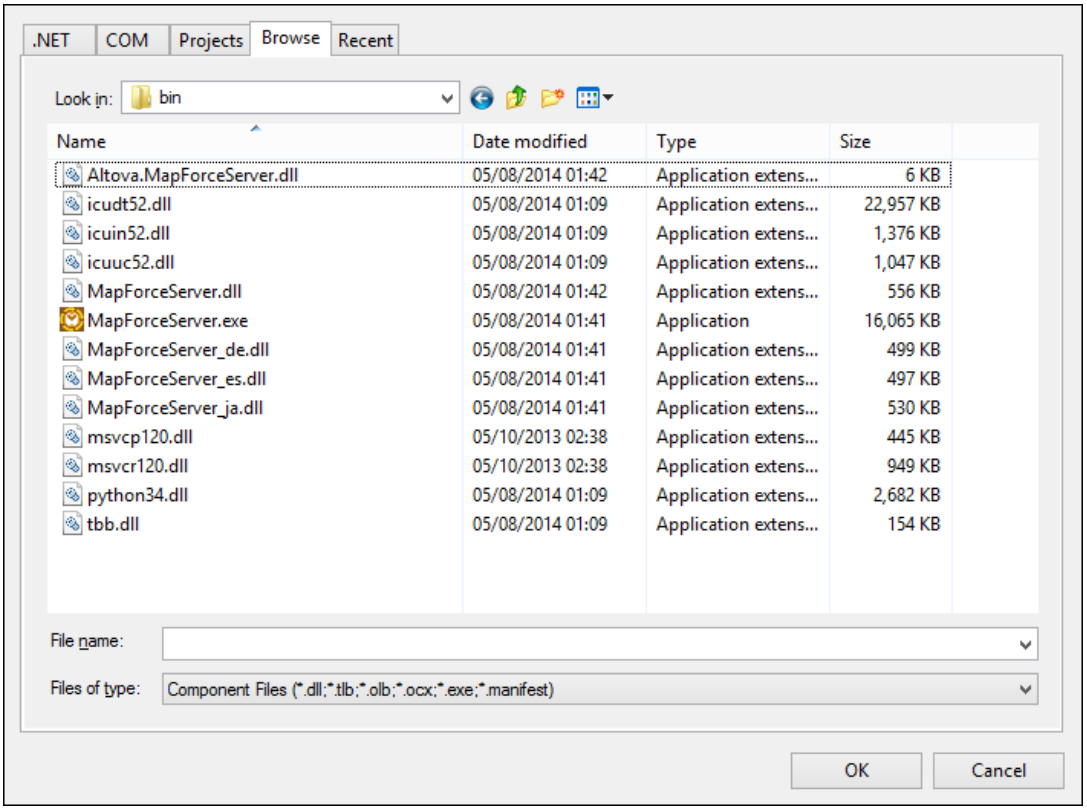
During installation, MapForce Server will be registered automatically as a COM server object, so there is no need for a manual registration. If you receive an access error, open the Component Services and give permissions to the same account that runs the application pool containing MapForce Server.

In order to use MapForce Server in your .NET project, add a reference to the `Altova.MapForceServer.dll` file (see the instructions below). The `Altova.MapForceServer.dll` is located in the `bin` folder of the MapForce Server installation folder. This .dll file is automatically added to the global assembly cache (GAC) during MapForce Server installation (the GAC is typically located in the `C:\WINDOWS\assembly` folder).

Once MapForce Server has been registered as a COM server object, and the `Altova.MapForceServer.dll` is available to the .NET interface, the MapForce API functionality becomes available in your .NET project.

To add a reference to the MapForce Server DLL in a Visual Studio .NET project

1. With the .NET project open in Visual Studio, click **Project | Add Reference**. The Add Reference dialog box pops up.



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2. On the Browse tab, browse for the folder: <*MapForceServer application folder*>/bin, select the Altova.MapForceServer.dll, and click **OK**.

You can view the structure of the Altova.MapForceServer assembly using the Visual Studio Object Browser (to display the Object Browser, click **Object Browser** on the **View** menu).

1.6.2 About the COM Interface

MapForce Server is automatically registered as a COM server object during installation. To check whether the registration was successful, open the Registry Editor (for example, by typing `regedit.exe` command at the command line). If registration was successful, the Registry will contain the classes `MapForce.Server`. These two classes will typically be found under `HKEY_LOCAL_MACHINE\SOFTWARE\Classes`.

Once the COM server object is registered, you can invoke it from within applications and scripting languages that have programming support for COM calls. If you wish to change the location of the MapForce Server installation package, it is best to uninstall MapForce Server and then reinstall it at the required location. In this way, the necessary de-registration and registration are carried out by the installer process.

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1.6.3 About the Java Interface

To access the MapForce Server API from Java code, the following references must be added to the .classpath file of your Java project.

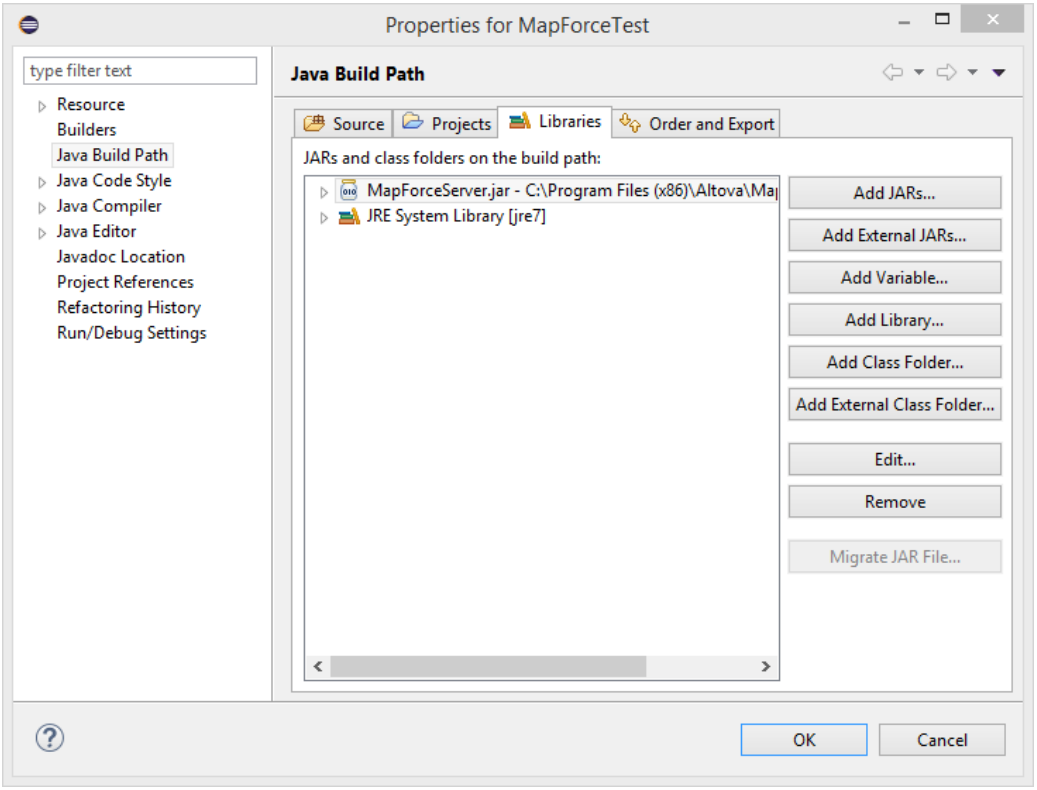
`MapForceServer.jar`	The library that communicates with MapForce Server.
`MapForceServer_JavaDoc.zip`	A Javadoc archive file containing documentation for the Java MapForce Server API.

Both files are available in the `bin` folder of the MapForce Server installation folder. You can either reference the file from their original location or copy them to another location if this fits your project setup.

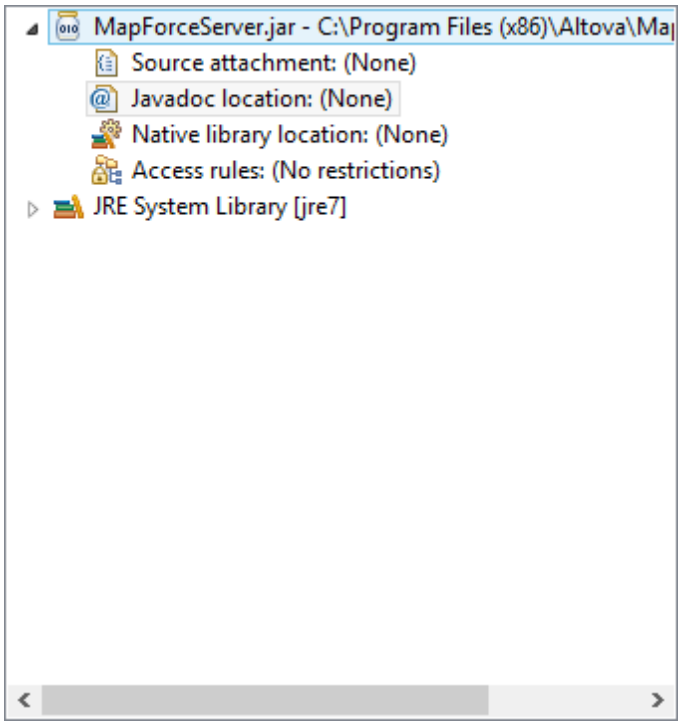
In Eclipse, you can add the classpath references by editing the properties of the Java project, as shown in the sample instructions below (notice the instructions apply to Eclipse 4.4).

To add the MapForce Server library references in Eclipse

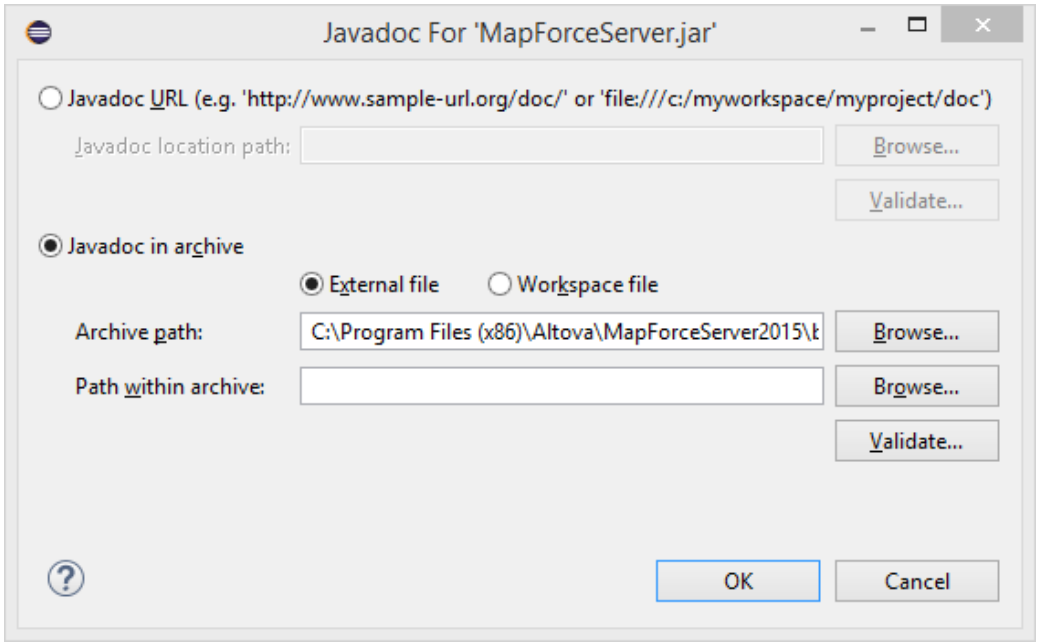
1. With the project open in Eclipse, on the **Project** menu, click **Properties**.
2. On the **Libraries** tab, click **Add External JARs**, and then browse for the `MapForceServer.jar` file located in the MapForce Server installation folder.



3. Under **JARs and class folders on the build path**, expand the **MapForceServer.jar** record, and then double click on the **Javadoc location: (None)** record.



4. Ensure that the **Javadoc in archive** and **External file** options are selected, and then browse for the `MapForceServer_JavaDoc.zip` file located in the MapForce Server installation folder.



5. Click OK. The reference to the MapForce Server library and Javadoc archive has now been added to the .classpath file of the project.

   Below is an example of how the .classpath file might look if you are referencing the files

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from the original installation folder, on a 64-bit operating system running 32-bit MapForce Server (the relevant lines are highlighted in yellow):

```
<?xml version="1.0" encoding="UTF-8"?>
<classpath>
    <classpathentry kind="src" path="src"/>
    <classpathentry kind="con"
path="org.eclipse.jdt.launching.JRE_CONTAINER/
org.eclipse.jdt.internal.debug.ui.launcher.StandardVMType/jre7"/>
    <classpathentry kind="lib" path="C:/Program Files (x86)/Altova/
MapForceServer2015/bin/MapForceServer.jar">
        <attributes>
            <attribute name="javadoc_location" value="jar:file:/C:/
Program%20Files%20(x86)/Altova/MapForceServer2015/bin/
MapForceServer_JavaDoc.zip!/"/>
        </attributes>
    </classpathentry>
    <classpathentry kind="output" path="bin"/>
</classpath>
```

1.6.4 Code Examples

This section includes sample code which illustrates how to run a MapForce mapping programmatically. Samples are included for the following languages:

- C#
- C++
- VBScript
- Visual Basic

C#

The following example illustrates how to run a mapping execution file (.mfx) from C# code.

Before testing this example, ensure the following prerequisites are met:

- MapForce Server is installed and licensed
- A reference to the MapForce Server DLL has been added in your Visual Studio project (see About the .NET Interface).

```
namespace MapForceServerAPI_sample
{
    class Program
    {
        static void Main(string[] args)
        {
            //Create a MapForce Server object
            Altova.MapForceServer.Server objMFS = new
Altova.MapForceServer.Server();

            //Set a working directory used as a base for relative paths
            objMFS.WorkingDirectory = "c:\\temp";

            //Default path to the MapForce Server executable is the
installation path (same dir as the MapForceServer.dll)
            //If you moved the binaries on the disk, you need to explicitly
set the path to the .exe file
            //objMFS.ServerPath = "C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\bin\\MapForceServer.exe";

            //Prepare the parameters, if your mapping uses parameters
            //objMFS.AddParameter( "testparam1", "value 1" );

            //Run the mapping; input and output paths are stored inside the
MFX file
            // NOTE Please adapt the path to the input file in order to run
the sample
            if (objMFS.Run("C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\etc\\Examples\\CompletePO.mfx"))
                System.Console.WriteLine("Success - finished execution");
            else
                System.Console.WriteLine(objMFS.LastExecutionMessage);
        }
    }
}
```

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C++

The following example illustrates how to run a mapping execution file (.mfx) from C++ code.

Before testing this example, ensure the following prerequisites are met:

- MapForce Server is installed and licensed
- MapForce Server is available as a COM server object (normally, this process takes place automatically during MapForce Server installation; to check if registration was successful, see About the COM Interface).

```
// MapForceServerAPI_sample.cpp : Defines the entry point for the console
application.
//
#include <iostream>
#include "atlbase.h"


// 32-bit StyleVision Server
#import "progid:MapForce.Server"
// 64-bit StyleVision Server
//#import "progid:MapForce_x64.Server"

int _tmain(int argc, _TCHAR* argv[])
{
	CoInitialize( NULL );

	try
	{
		//Create a MapForce Server object
		MapForceServerLib::IServerPtr pMFS;
		CoCreateInstance( __uuidof( MapForceServerLib::Server ), NULL,
CLSCTX_ALL, __uuidof( MapForceServerLib::IServer ), reinterpret_cast< void**
>( &pMFS ) );

		//Set a working directory - used as a base for relative paths
		pMFS->WorkingDirectory = "c:\\temp";

		//Default path to the MapForce Server executable is the
installation path (same dir with the MapForceServer.dll)
		//In case you moved the binaries on the disk, you need to
explicitly set the path to the .exe file
		//pMFS->ServerPath = "C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\bin\\MapForceServer.exe";

		//Prepare the parameters, if your mapping uses parameters
		//pMFS->AddParameter( "testparam1", "value 1" );

		//Run the mapping; the output will be stored at C:\temp
\ExpReport.rtf
		// NOTE Please adapt the path to the input file in order to run
```

```
the sample
              if (pMFS->Run("C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\etc\\Examples\\CompletePO.mfx"))
                     std::cout << "Success - finished execution" << std::endl;
              else
                     std::cout << pMFS->LastExecutionMessage << std::endl;

       }
       catch (_com_error& err )
       {
              BSTR  bstrMessage;
              (err).ErrorInfo()->GetDescription( &bstrMessage );
              std::cout << "Exception occurred: " <<
_com_util::ConvertBSTRToString( bstrMessage ) << std::endl;

       }


       CoUninitialize();
       return 0;

}
```

Java

The following example illustrates how to run a mapping execution file (.mfx) from Java code.

Before testing this example, ensure the following prerequisites are met:

- MapForce Server is installed and licensed
- MapForce Server libraries are added to the .classpath file in your project (for an example, see About the Java Interface).

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```
public class Program
{

   public static void main(String[] args)
   {
      try
      {

         //Create a MapForce Server object
         com.altova.mapforceserver.MapForceServer objMFS = new
com.altova.mapforceserver.MapForceServer();

         //Set a working directory - used as a base for relative paths
         objMFS.setWorkingDirectory( "C:\\temp" );

         //Default path to the MapForce Server executable is the installation
path (same dir with the StyleVisionServer.jar)
         //In case you copied the JAR file to a new location, you need to
explicitly set the path to the .exe file
         //objMFS.setServerPath( "C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\bin\\MapForceServer.exe" );

         //Prepare the parameters, if your design uses parameters
         //objMFS.AddParameter( "testparam1", "value 1" );

         //Run the mapping; input and output paths are stored inside the MFX
file
         // NOTE Please adapt the path to the input file in order to run the
sample
         if ( objMFS.run( "C:\\Program Files (x86)\\Altova\
\MapForceServer2015\\etc\\Examples\\CompletePO.mfx" ) )
            System.out.println( "Success - finished execution" );
         else
            System.out.println( objMFS.getLastExecutionMessage() );
      }
      catch ( Exception e)
      {
         e.printStackTrace();
      }
   }

}
```

VBScript

The following example illustrates how to run a mapping execution file (.mfx) from VBScript code.

Before testing this example, ensure the following prerequisites are met:

- MapForce Server is installed and licensed
- MapForce Server is available as a COM server object (normally, this process takes place automatically during MapForce Server installation; to check if registration was successful, see About the COM Interface).

```
Option Explicit

'Create a MapForce Server object; use "MapForce_x64.Server" if you want to
use the 64-bit installation
Dim objMFS
Set objMFS = WScript.GetObject( "", "MapForce.Server" )

'Set a working directory - used as a base for relative paths
objMFS.WorkingDirectory = "C:\temp"

'Default path to the MapForce Server executable is the installation path
(same dir with the MapForceServer.dll)
'In case you moved the binaries on the disk, you need to explicitly set the
path to the .exe file
'objMFS.ServerPath = "C:\Program Files (x86)\Altova\MapForceServer2015\bin
\MapForceServer.exe"

'Prepare the parameters, if your mapping uses parameters
'Call objMFS.AddParameter( "testparam1", "value 1" )

' Run the mapping; input and output paths are stored inside the MFX file
' NOTE Please adapt the path to the input file in order to run the sample
If ( objMFS.Run( "C:\Program Files (x86)\Altova\MapForceServer2015\etc
\Examples\CompletePO.mfx" ) ) Then
       WScript.Echo( "Success - finished execution" )
Else
       WScript.Echo( objMFS.LastExecutionMessage )
End If
```

Visual Basic

The following example illustrates how to run a mapping execution file (.mfx) from Visual Basic code.

Before testing this example, ensure the following prerequisites are met:

- MapForce Server is installed and licensed
- A reference to the MapForce Server DLL has been added in your Visual Studio project (see About the .NET Interface).

```
Option Explicit On

Module Program

    Sub Main()

        'Create a MapForce Server object; use "MapForce_x64.Server" if you
want to use the 64-bit installation
        Dim objMFS As Altova.MapForceServer.Server = New
Altova.MapForceServer.Server

        'Set a working directory - used as a base for relative paths
        objMFS.WorkingDirectory = "C:\temp"
```

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```
        'Default path to the MapForce Server executable is the installation
path (same dir with the MapForceServer.dll)
        'In case you moved the binaries on the disk, you need to explicitly
set the path to the .exe file
        'objMFS.ServerPath = "C:\Program Files (x86)\Altova
\MapForceServer2015\bin\MapForceServer.exe"

        'Prepare the parameters, if your mapping uses parameters
        'objMFS.AddParameter( "testparam1", "value 1" )

        ' Run the mapping; input and output paths are stored inside the MFX
file
        ' NOTE Please adapt the path to the input file in order to run the
sample
        If (objMFS.Run("C:\Program Files (x86)\Altova\MapForceServer2015\etc
\Examples\CompletePO.mfx")) Then
            System.Console.WriteLine("Success - finished execution")
        Else
            System.Console.WriteLine(objMFS.LastExecutionMessage)
        End If
    End Sub

End Module
```

1.6.5 API Reference (COM, .NET)

This section provides general reference to the MapForce Server API elements (such as interfaces and methods) applicable to code written for the COM or .NET platforms.

Interfaces

The MapForce Server API exposes the following interface:

- IServer

IServer Interface

Purpose

The `IServer` interface creates a new MapForce Server object instance, and provides access to the MapForce Server engine. The `IServer` interface has the following members:

- Methods
- Properties

Methods

AddParameter method

Assigns a value to a parameter defined in the mapping.

C#

```
void AddParameter(string bstrName, string bstrValue)
```

C++

```
HRESULT AddParameter([in] BSTR bstrName, [in] BSTR bstrValue );
```

VB

```
Sub AddParameter(ByVal bstrName As String, ByVal bstrValue As String)
```

ClearParameterList method

Clears the list of parameters.

C#

```
void ClearParameterList()
```

C++

```
HRESULT ClearParameterList();
```

VB

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```
Sub ClearParameterList()
```

Run method

Executes a MapForce Server Execution file (.mfx file). Returns TRUE in case of success; FALSE otherwise.

C#

```
bool Run(string bstrMappingPath)
```

C++

```
HRESULT Run( [in] BSTR bstrMappingPath, [out, retval] VARIANT_BOOL*
pbSuccess );
```

VB

```
Function Run(ByVal bstrMappingPath As String) As Boolean
```

Properties

APIMajorVersion property

Gets the major version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

C#

```
int APIMajorVersion { get; }
```

C++

```
HRESULT APIMajorVersion([out, retval] INT* pnVal);
```

VB

```
ReadOnly Property APIMajorVersion As Integer
```

APIMinorVersion property

Gets the minor version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

C#

```
int APIMinorVersion { get; }
```

C++

```
HRESULT APIMinorVersion([out, retval] INT* pnVal);
```

VB

```
ReadOnly Property APIMinorVersion As Integer
```

APIServicePackVersion property

Gets the service pack version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

C#

```
int APIServicePackVersion { get; }
```

C++

```
HRESULT APIServicePackVersion([out, retval] INT* pnVal);
```

VB

```
ReadOnly Property APIServicePackVersion As Integer
```

Is64Bit property

Returns TRUE if the MapForce Server engine is a 64-bit executable.

C#

```
bool Is64Bit { get; }
```

C++

```
HRESULT Is64Bit([out, retval] VARIANT_BOOL* pbVal);
```

VB

```
ReadOnly Property Is64Bit As Boolean
```

LastExecutionMessage property

Gets the message received during the last Run command.

C#

```
string LastExecutionMessage { get; }
```

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- C++

```
HRESULT LastExecutionMessage([out, retval] BSTR* pbstrResult );
```

- VB

```
ReadOnly Property LastExecutionMessage As String
```

MajorVersion property

Gets the major version of the product (for example, "16" for Altova MapForce Server 2014 r2 sp1 (x64)).

- C#

```
int MajorVersion { get; }
```

- C++

```
HRESULT MajorVersion([out, retval] INT* pnVal);
```

- VB

```
ReadOnly Property MajorVersion As Integer
```

MinorVersion property

Gets the minor version of the product (for example, "2" for Altova MapForce Server 2014 r2 sp1 (x64)).

- C#

```
int MinorVersion { get; }
```

- C++

```
HRESULT MinorVersion([out, retval] INT* pnVal);
```

- VB

```
ReadOnly Property MinorVersion As Integer
```

ProductName property

Gets the name of the product (for example, "Altova MapForce Server" for Altova MapForce Server 2014 r2 sp1 (x64)).

- C#

```
string ProductName { get; }
```

C++

```
HRESULT ProductName([out, retval] BSTR* pstrVal);
```

VB

```
ReadOnly Property ProductName As String
```

ProductNameAndVersion property

Gets the complete name and version of the product (for example, "Altova MapForce Server 2014 r2 sp1 (x64)").

C#

```
string ProductNameAndVersion { get; }
```

C++

```
HRESULT ProductNameAndVersion([out, retval] BSTR* pstrVal);
```

VB

```
ReadOnly Property ProductNameAndVersion As String
```

ServerPath property

Gets or sets the path of the MapForce Server executable.

C#

```
string ServerPath { set; get; }
```

C++

```
HRESULT ServerPath([in] BSTR bstrServerFile );
HRESULT ServerPath([out, retval] BSTR* pbstrServerFile );
```

VB

```
Property ServerPath As String
```

ServicePackVersion property

Gets the service pack version of the product (for example, "1" for Altova MapForce Server

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2014 r2 sp1 (x64)).

- C#

```
int ServicePackVersion { get; }
```

- C++

```
HRESULT ServicePackVersion([out, retval] INT* pnVal);
```

- VB

```
ReadOnly Property ServicePackVersion As Integer
```

WorkingDirectory property

Gets or sets the current directory for running jobs (relative paths will be evaluated against the working directory).

- C#

```
string WorkingDirectory { set; get; }
```

- C++

```
HRESULT WorkingDirectory([in] BSTR bstrWorkingDirectory );
HRESULT WorkingDirectory([out, retval] BSTR* pbstrWorkingDirectory );
```

- VB

```
Property WorkingDirectory As String
```

1.6.6 API Reference (Java)

This section provides general reference to the MapForce Server API elements (such as classes and methods) applicable to code written for the Java platform.

Package com.altova.mapforceserver

The package `com.altova.mapforceserver` consists of the following classes:

- MapForceServer Class
- MapForceServerException Class

MapForceServer Class

Purpose

The `MapForceServer` class creates a new MapForce Server object instance, and provides access to the MapForce Server engine.

Methods

addParameter method

Assigns a value to a parameter defined in the mapping.

```
public void addParameter(java.lang.String name,
                         java.lang.String value)
```

clearParameterList method

Clears the list of parameters.

```
public void clearParameterList()
```

getAPIMajorVersion method

Gets the major version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

```
public int getAPIMajorVersion()
```

getAPIMinorVersion method

Gets the minor version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

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```
public int getAPIMinorVersion()
```

getAPIServicePackVersion method

Gets the service pack version of the MapForce Server API. This can be different from the product version if the API is connected to another server.

```
public int getAPIServicePackVersion()
```

getLastExecutionMessage method

Gets the message received during the last Run command.

```
public java.lang.String getLastExecutionMessage()
```

getMajorVersion method

Gets the major version of the product (for example, "16" for Altova MapForce Server 2014 r2 sp1 (x64)).

```
public int getMajorVersion()
                   throws MapForceServerException
```

getMinorVersion method

Gets the minor version of the product (for example, "2" for Altova MapForce Server 2014 r2 sp1 (x64)).

```
public int getMinorVersion()
                   throws MapForceServerException
```

getProductName method

Gets the name of the product (for example, "Altova MapForce Server" for Altova MapForce Server 2014 r2 sp1 (x64)).

```
public java.lang.String getProductName()
                                throws MapForceServerException
```

getProductNameAndVersion method

Gets the complete name and version of the product (for example, "Altova MapForce Server 2014 r2 sp1 (x64)").

```
public java.lang.String getProductNameAndVersion()
                                                throws
MapForceServerException
```

getServicePackVersion method

Gets the service pack version of the product (for example, "1" for Altova MapForce Server 2014 r2 sp1 (x64)).

```
public int getServicePackVersion()
                          throws MapForceServerException
```

is64Bit method

Returns `true` if the MapForce Server engine is a 64-bit executable.

```
public boolean is64bit()
                throws MapForceServerException
```

run method

Executes a MapForce Server Execution file (.mfx file). Returns `true` in case of success; `false` otherwise.

```
public boolean run(java.lang.String mappingPath)
            throws MapForceServerException
```

setServerPath method

Sets the path of the MapForce Server executable.

```
public void setServerPath(java.lang.String serverFile)
```

setWorkingDirectory method

Sets the current directory for running jobs (relative paths will be evaluated against the working directory).

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```
public void setWorkingDirectory(java.lang.String workingDirectory)
```

MapForceServerException Class

Purpose

The `MapForceServerException` class provides programmatic access to exceptions thrown by the `MapForceServer` class.

```
public class MapForceServerException extends Exception
```

1.7 Altova LicenseServer

Altova LicenseServer (hereafter also called **LicenseServer** for short) provides a central location for the management of licenses for Altova products. Altova applications running in a network can have licenses assigned to them from the LicenseServer, thus giving administrators the flexibility to manage and monitor licenses.

Current version: 1.11

Licensing process with Altova LicenseServer
To assign an Altova server product a license via Altova LicenseServer, you need to do the following:

1. Start LicenseServer
2. Open the LicenseServer Configuration page, which is the Web UI of LicenseServer, on Windows, Linux, or Mac OS X.
3. Upload the license/s you have received from Altova to LicenseServer. Do this in the License Pool tab of the Configuration page.
4. Register Altova server products (FlowForce Server, MapForce Server, StyleVision Server, RaptorXML(+XBRL) Server) with LicenseServer.
5. Assign licenses to Altova server In the Server Management tab of the Configuration page.

Licenses can thereafter be conveniently monitored and managed centrally with LicenseServer. See the Configuration Page Reference for available functionality.

Note: The LicenseServer Configuration page does not support SSL.

▼ **LicenseServer versions and their compatibility with Altova server products**
New versions of Altova server products can only be licensed with the version of LicenseServer that is the latest at the time of the server product's release. However, older versions of Altova server products will work with newer versions of LicenseServer.

So, if you are installing a new version of an Altova server product and if your current LicenseServer version is not the latest, de-install this older version and install the latest version available on the Altova website. All registration and licensing information held in your older version of LicenseServer will be saved at the time of de-installation to a database on your server machine, and will be imported automatically into the newer version. When you install a newer version of LicenseServer, the older version will be de-installed before the newer version is installed.

The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

Current version: 1.11

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About this documentation

This documentation is organized into the following parts:

- Introductory information about: network requirements; installation on Windows, Linux, and Mac OS X; and Altova ServiceController.
- How to Assign Licenses, which describes in a step-by-step way how to assign licenses with Altova LicenseServer.
- Configuration Page Reference: A description of the administrator's interface with LicenseServer.

Last updated: 09-15-2014

1.7.1 Network Information

Altova LicenseServer must be installed on a server machine that is accessible by all clients running Altova products that require a license. Any firewall on both the client and server must allow the network traffic to and from the LicenseServer that is necessary for the LicenseServer to operate correctly.

On the LicenseServer machine, **port 35355** is used to distribute licenses, and therefore it must be open for network traffic with client machines.

The following are the default networking parameters and requirements of LicenseServer:

- *For LicenseServer license distribution:*
  Either one or both of
  IPv4 TCP connection on port 35355
  IPv6 TCP connection on port 35355

For administrative tasks, the LicenseServer is accessed by a web interface that uses port 8088. The port used can be configured to suit your requirements.

Connection to the Master Licensing Server at altova.com
The Altova LicenseServer needs to be able to communicate with the Master Licensing Server at `altova.com` to validate and authenticate license-related data and to ensure continuous compliance with the Altova license agreements. This communication occurs over HTTPS using port 443. If the Altova LicenseServer, after making the initial verification with the `altova.com` Master Licensing Server, is unable to again connect with `altova.com` for a duration of more than 5 days (= 120 hours), then the Altova LicenseServer will no longer permit the usage of any Altova software products connected to the Altova LicenseServer.

Any such loss of connection with the `altova.com` master servers will be logged in the Messages tab of the Configuration page of the Altova LicenseServer. In addition, the administrator can configure the Altova LicenseServer to automatically send an alert email when the connection to `altova.com` is lost. Alert Mail settings are available in the Settings tab of the Configuration page.

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1.7.2 Installation (Windows)

Altova LicenseServer can be installed on Windows systems in one of two ways:

- As an independent installation.
- As part of an Altova server product installation. (Altova server products are: Altova FlowForce Server, Altova MapForce Server, Altova StyleVision Server, and Altova RaptorXML(+XBRL).)

If LicenseServer is not installed on your system at the time an Altova server product is installed, the option to install LicenseServer is selected by default during installation setup. If LicenseServer is already installed, the option to install it is deselected by default. You can change the default option if you like.

For information about how to proceed with assigning licenses, see the section How to Assign Licenses.

▼ **LicenseServer versions and their compatibility with Altova server products**

New versions of Altova server products can only be licensed with the version of LicenseServer that is the latest at the time of the server product's release. However, older versions of Altova server products will work with newer versions of LicenseServer.

So, if you are installing a new version of an Altova server product and if your current LicenseServer version is not the latest, de-install this older version and install the latest version available on the Altova website. All registration and licensing information held in your older version of LicenseServer will be saved at the time of de-installation to a database on your server machine, and will be imported automatically into the newer version. When you install a newer version of LicenseServer, the older version will be de-installed before the newer version is installed.

The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

Current version: 1.11

The version number of the LicenseServer that is appropriate for any particular version of a server product is displayed during the installation of that version of the server product. You can choose to install this version of LicenseServer along with the server product, or you can install the newer version of LicenseServer separately. In both cases, the installer will automatically de-install the previous version and install the new version.

1.7.3 Installation (Linux)

Altova LicenseServer can be installed on Linux systems (Debian, Ubuntu, CentOS, RedHat).

Uninstalling old versions of LicenseServer
On the Linux command line interface (CLI), you can check whether LicenseServer is installed with the following command:

```
[Debian, Ubuntu]:   dpkg --list | grep Altova
[CentOS, RedHat]:   rpm -qa | grep server
```

If LicenseServer is not installed, go ahead with the installation as documented in the next steps. If LicenseServer is installed and you wish to install a newer version of it, uninstall the old version with the command:

```
[Debian, Ubuntu]:   sudo dpkg --remove licenseserver
[CentOS, RedHat]:   sudo rpm -e licenseserver
```

Installing Altova LicenseServer
On Linux systems, LicenseServer must be installed independently of other Altova server products. It is not included as part of the installation packages of Altova server products. Download Altova LicenseServer from the Altova website and copy the package to any directory on the Linux system.

Distribution	Installer extension
Debian	.deb
Ubuntu	.deb
CentOS	.rpm
RedHat	.rpm

In a terminal window, switch to the directory where you have copied the Linux package. For example, if you copied it to a user directory called MyAltova (that is located, say, in the /home/User directory), then switch to this directory as follows:

```
cd /home/User/MyAltova
```

Install LicenseServer with the following command:

```
[Debian]:   sudo dpkg --install licenseserver-1.11-debian.deb
[Ubuntu]:   sudo dpkg --install licenseserver-1.11-ubuntu.deb
[CentOS]:   sudo rpm -ivh licenseserver-1.11-1.x86_64.rpm
[RedHat]:   sudo rpm -ivh licenseserver-1.11-1.x86_64.rpm
```

The LicenseServer package will be installed in:

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```
/opt/Altova/LicenseServer
```

For information about how to proceed with assigning licenses, see the section How to Assign Licenses.

LicenseServer versions and their compatibility with Altova server products

New versions of Altova server products can only be licensed with the version of LicenseServer that is the latest at the time of the server product's release. However, older versions of Altova server products will work with newer versions of LicenseServer.

So, if you are installing a new version of an Altova server product and if your current LicenseServer version is not the latest, de-install this older version and install the latest version available on the Altova website. All registration and licensing information held in your older version of LicenseServer will be saved at the time of de-installation to a database on your server machine, and will be imported automatically into the newer version. When you install a newer version of LicenseServer, the older version will be de-installed before the newer version is installed.

The version number of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page (all tabs).

Current version: 1.11

1.7.4 Installation (Mac OS X)

Altova LicenseServer can be installed on Mac OS X systems (version 10.7 or higher). Since you might need to uninstall a previous version, uninstalling is described first.

Uninstalling old versions of LicenseServer
Before uninstalling LicenseServer, stop the service with the following command:

```
sudo launchctl unload /Library/LaunchDaemons/com.altova.LicenseServer.plist
```

To check whether the service has been stopped, open the Activity Monitor terminal and make sure that LicenseServer is not in the list.

In the Applications terminal, right-click the LicenseServer icon and select **Move to Trash**. The application will be moved to Trash. You will, however, still need to remove the application from the `usr` folder. Do this with the command:

```
sudo rm -rf /usr/local/Altova/LicenseServer
```

Installing Altova LicenseServer
Download Altova LicenseServer from the Altova website (the installer file has a `.pkg` file extension), and double-click the installer package to start the installation. Follow the on-screen instructions. You will need to accept the license agreement for installation to proceed.

The LicenseServer package will be installed in the folder:

```
/usr/local/Altova/LicenseServer
```

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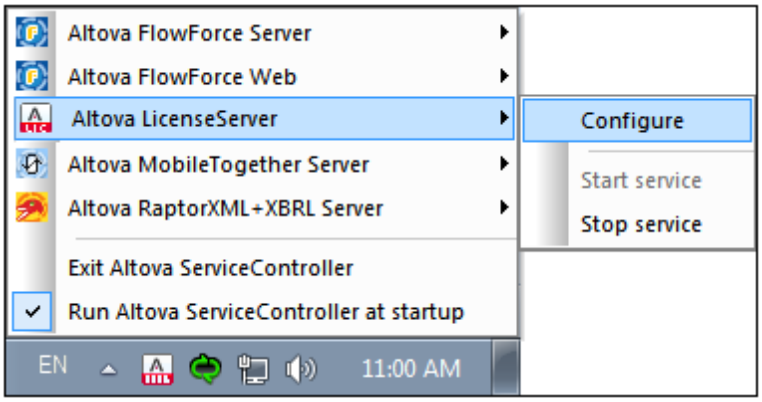
1.7.5 Altova ServiceController

Altova ServiceController (ServiceController for short) is an application for conveniently starting, stopping and configuring Altova services **on Windows systems**.

ServiceController is installed with Altova LicenseServer and with *Altova server products that are installed as services* (FlowForce Server, RaptorXML(+XBRL) Server, and Mobile Together Server). It can be started by clicking **Start | Altova LicenseServer | Altova ServiceController**. (This command is also available in the **Start** menu folders of *Altova server products that are installed as services* (FlowForce Server, RaptorXML(+XBRL) Server, and Mobile Together Server).) After ServiceController has been started, it can be accessed via the system tray (*screenshot below*).

To specify that ServiceController starts automatically on logging in to the system, click the **ServiceController** icon in the system tray to display the **ServiceController** menu (*screenshot below*), and then toggle on the command **Run Altova ServiceController at Startup**. (This command is toggled on by default.) To exit ServiceController, click the **ServiceController** icon in the system tray and, in the menu that appears (*see screenshot below*), click **Exit Altova ServiceController**.



Starting and stopping Altova services
Each installed Altova service component will have an entry in the ServiceController menu (*see screenshot above*). An Altova service can be started or stopped via a command in its ServiceController sub-menu. Additionally, important administration tasks of individual services can be accessed via the ServiceController menu. In the screenshot above, for example, Altova LicenseServer service has a sub-menu in which you can choose to access LicenseServer's Configuration page via the **Configure** command.

1.7.6 How to Assign Licenses

To assign an Altova server product a license using Altova LicenseServer, do the following:

1. Start LicenseServer
2. Open the LicenseServer Configuration page, which is the administrator's interface with LicenseServer, on Windows, Linux, or Mac OS X.
3. Upload the license/s you have received from Altova to the license pool of your Altova LicenseServer. Do this in the License Pool tab of the LicenseServer Configuration page.
4. Register the Altova server product (FlowForce Server, MapForce Server, StyleVision Server, RaptorXML(+XBRL) Server) with LicenseServer. Depending on the product's type, the method of registering it with LicenseServer will be different: either via the product's Web UI or its command line. See the documentation of your Altova server product for additional information.
5. In the Server Management tab of the LicenseServer Configuration page, assign a license to the Altova server product according to the number of cores on the product machine.

Note on cores and licenses
The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

******* MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

Start LicenseServer

This section:

- How to start LicenseServer on Windows systems
- How to start LicenseServer on Linux systems
- How to start LicenseServer on Mac OS X systems
- Note about Connection to altova.com

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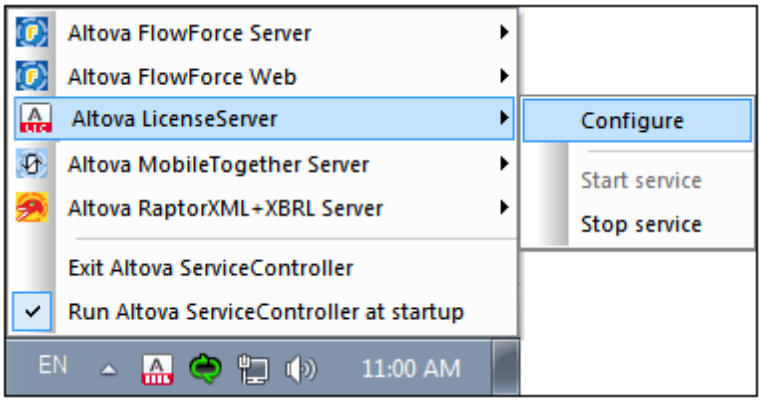
Windows systems
You can start LicenseServer via the Altova ServiceController, which is available in the system tray.

First, click **Start | All Programs | Altova LicenseServer | Altova ServiceController** to start Altova ServiceController and display its icon in the system tray (*see screenshot below*). If you select the *Run Altova ServiceController at Startup* option, Altova ServiceController will start up on system start and its icon will be available in the system tray from then onwards.



To start LicenseServer, click the Altova ServiceController icon in the system tray, hover over **Altova LicenseServer** in the menu that pops up (*see screenshot below*), and then select **Start Service** from the LicenseServer submenu. If LicenseServer is already running, the *Start Service* option will be disabled.

Linux systems
To start LicenseServer as a service on Linux systems, run the following command in a terminal window.

```
[Debian]:          sudo /etc/init.d/licenseserver start
[Ubuntu]:          sudo initctl start licenseserver
[CentOS]:          sudo initctl start licenseserver
[RedHat]:          sudo initctl start licenseserver
```

(If you need to stop LicenseServer, replace **`start`** with **`stop`** in the above command.)

Mac OS X systems
To start LicenseServer as a service on Mac OS X systems, run the following command in a terminal window:

```
sudo launchctl load /Library/LaunchDaemons/com.altova.LicenseServer.plist
```

If at any time you need to stop LicenseServer, use:

```
sudo launchctl unload /Library/LaunchDaemons/com.altova.LicenseServer.plist
```

Connection to the Master Licensing Server at altova.com
The Altova LicenseServer needs to be able to communicate with the Master Licensing Server at `altova.com` to validate and authenticate license-related data and to ensure continuous compliance with the Altova license agreements. This communication occurs over HTTPS using port 443. If the Altova LicenseServer, after making the initial verification with the `altova.com` Master Licensing Server, is unable to again connect with `altova.com` for a duration of more than 5 days (= 120 hours), then the Altova LicenseServer will no longer permit the usage of any Altova software products connected to the Altova LicenseServer.

Any such loss of connection with the `altova.com` master servers will be logged in the Messages tab of the Configuration page of the Altova LicenseServer. In addition, the administrator can configure the Altova LicenseServer to automatically send an alert email when the connection to `altova.com` is lost. Alert Mail settings are available in the Settings tab of the Configuration page.

Open LicenseServer's Config Page (Windows)

This section:

- Opening the Configuration page if LicenseServer is on the same machine
- Opening the Configuration page if LicenseServer is on another machine
- Logging in with the initial password
- Setting a fixed port for the Configuration page

Opening the Configuration page if LicenseServer is on the same machine
On Windows systems, if LicenseServer is on the same machine, you can open the Configuration page of LicenseServer in one of two ways:

- Click **Start | All Programs | Altova LicenseServer | LicenseServer Configuration Page**. The Configuration page opens in a new tab of your Internet browser.
- Click the Altova ServiceController icon in the system tray, mouse over **Altova LicenseServer** in the menu that pops up (*see screenshot below*), and then select **Configure** from the LicenseServer submenu.

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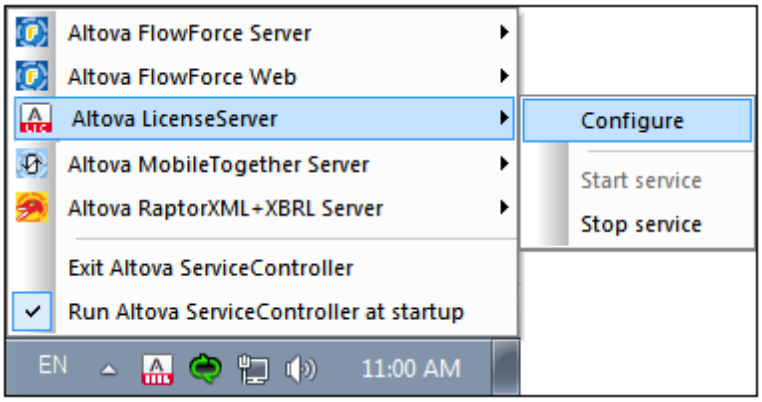


The Configuration page opens in a new browser window, and its login mask is displayed (*screenshot below*).

Opening the Configuration page if LicenseServer is on another machine
To open the LicenseServer Configuration page from some other Windows machine on the local network (than that on which LicenseServer is installed), enter the URL of the LicenseServer Configuration page in the address bar of a browser and press **Enter**. By default, the URL of the Configuration page will be:

`http://<serverIPAddressOrName>:8088/`

The URL is present in the HTML code of the Configuration page itself, which is named **`WebUI.html`** and is located at:

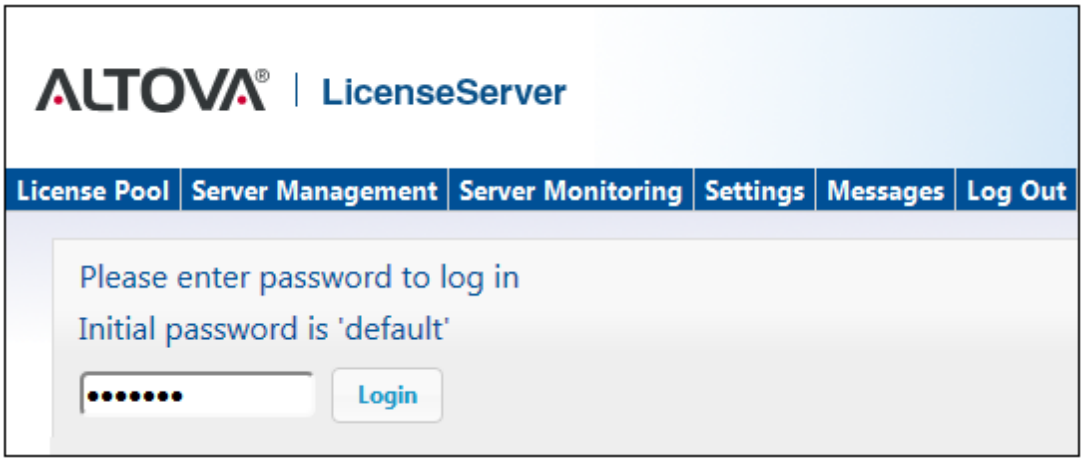
`C:/ProgramData/Altova/LicenseServer/WebUI.html`

If you have set the URL of the Configuration page to be generated dynamically (in the Settings tab of the Configuration page), then a new URL is generated each time LicenseServer is started. You will need to check the current version of **`WebUI.html`** to find out the current URL of the Configuration page.

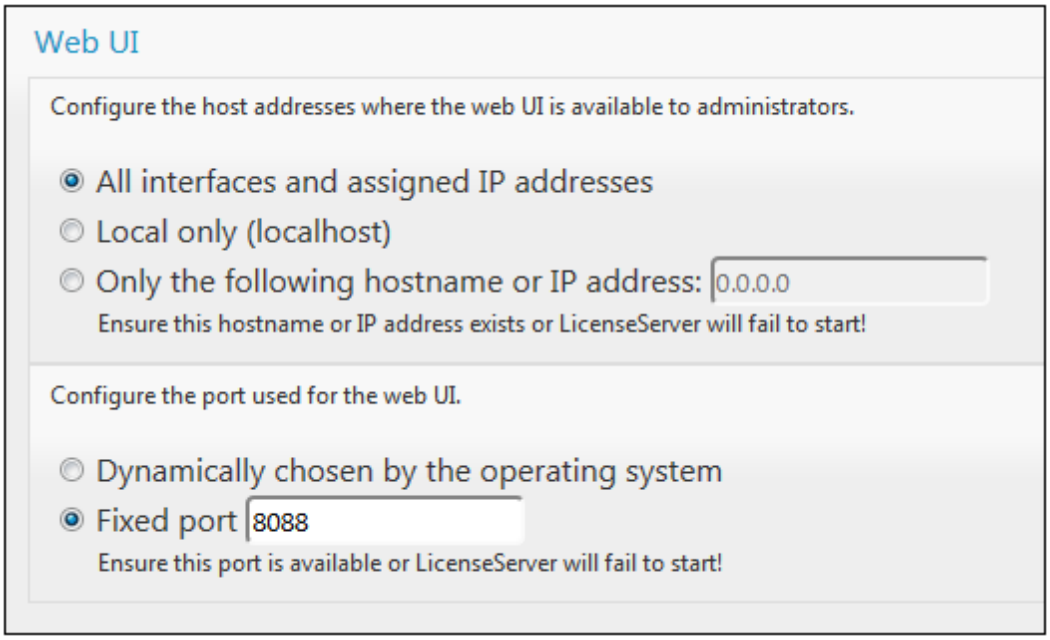
The dynamically generated URL in **`WebUI.html`** will have a form something like: `http://127.0.0.1:55541/optionally-an-additional-string`, and it is located in the function `checkIfServiceRunning()`in a script near the end of the `<head>` element. While the port number in the URL is dynamically assigned, the IP address part identifies the server on which LicenseServer has been installed. If you wish to access the LicenseServer Configuration page from another machine, make sure that the IP address part of the URL has the correct IP address or name of the server on which LicenseServer has been installed. For example, the URL could be something like: `http://MyServer:55541`.

Logging in with the initial password
After going through the steps above, the Configuration page is opened with the login mask displayed (*screenshot below*). You can log in with the initial password of `default`. After you have

logged in, you can change your password in the Settings tab.



Setting a fixed or dynamic port for the Configuration page
The port of the Configuration page (Web UI)—and consequently its address—can be specified in the Settings page. By default the port is `8088`. You can set any other port you want for the LicenseServer Configuration page (*see screenshot below*). Alternatively, you allow the port to be selected dynamically each time LicenseServer starts up. In this case, you will need to find out the URL of the Configuration page from the file `WebUI.html` (see Open LicenseServer Config Page (Windows) and Open LicenseServer Config Page (Linux)).



The advantage of a fixed port is that the page URL is known in advance and therefore can be accessed easily. If the port is assigned dynamically, the port part of the URL will have to be looked up in the file `WebUI.html` each time LicenseServer is started.

Open LicenseServer's Config Page (Linux)

This section:

- Opening the Configuration page for the first time with the returned URL
- URL of the LicenseServer Configuration page
- Logging in with the initial password
- Setting a fixed port for the Configuration page

Opening the Configuration page for the first time with the returned URL
On Linux systems, when you register your Altova server product with LicenseServer via the CLI, the URL of the LicenseServer Configuration page is returned. On opening this URL in a browser, you are prompted to read and accept the license agreement. After accepting the license agreement, the Configuration page's login mask is displayed (*screenshot below*).

URL of the LicenseServer Configuration page
To open the LicenseServer Configuration page at any time, enter its URL in the address bar of a browser and press **Enter**. By default, the URL of the Configuration page will be:

```
http://<serverIPAddressOrName>:8088/
```

The URL is present in the HTML code of the Configuration page itself, which is named **webUI.html** and is located at:

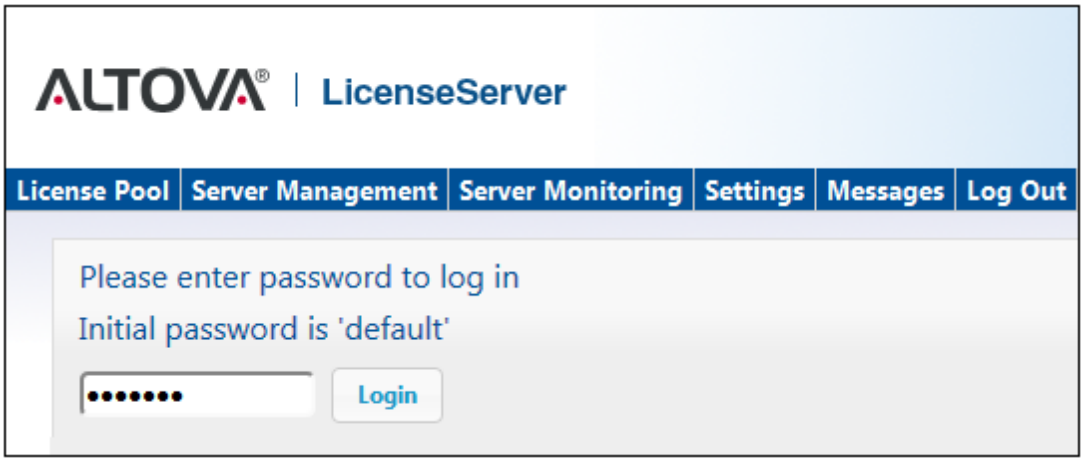
```
/var/opt/Altova/LicenseServer/webUI.html
```

If you have set the URL of the Configuration page to be generated dynamically (in the Settings tab of the Configuration page), then a new URL is generated each time LicenseServer is started. You will need to check the current version of **webUI.html** to find out the current URL of the Configuration page.

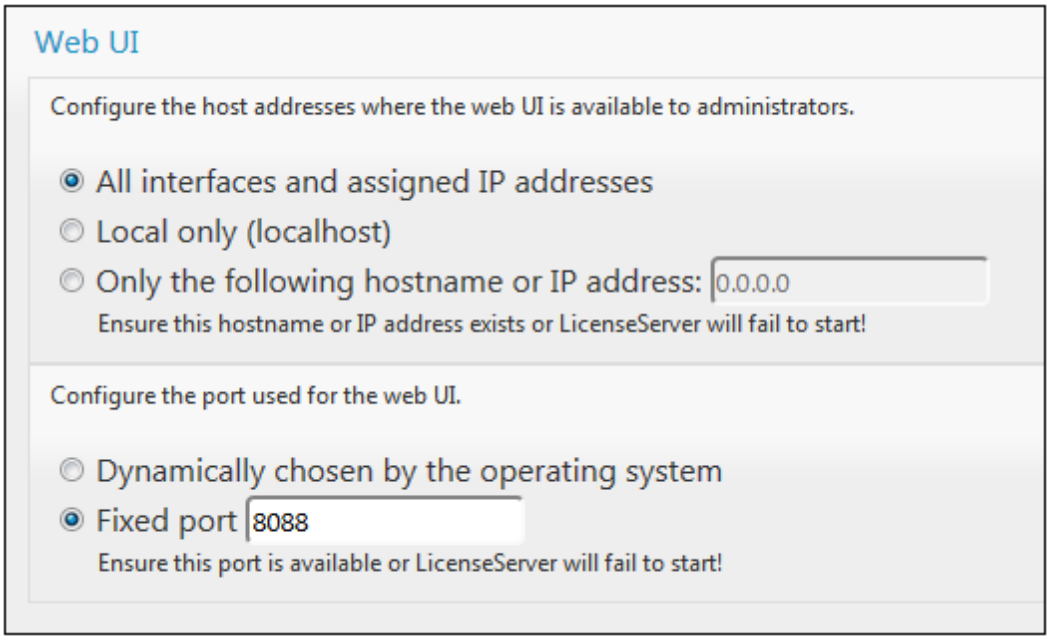
The dynamically generated URL in **webUI.html** will have a form something like: `http://127.0.0.1:55541`, and it is located in the function `checkIfServiceRunning()` in a script near the end of the `<head>` element. While the port number in the URL is dynamically assigned, the IP address part identifies the server on which LicenseServer has been installed. If you wish to access the LicenseServer Configuration page from another machine, make sure that the IP address part of the URL has the correct IP address or name of the server on which LicenseServer has been installed. For example, the URL could be something like: `http://MyServer:55541`.

Logging in with the initial password
After going through the steps above, the Configuration page is opened with the login mask displayed (*screenshot below*). You can log in with the initial password of `default`. After you have

logged in, you can change your password in the Settings tab.



Setting a fixed or dynamic port for the Configuration page
The port of the Configuration page (Web UI)—and consequently its address—can be specified in the Settings page. By default the port is `8088`. You can set any other port you want for the LicenseServer Configuration page (*see screenshot below*). Alternatively, you allow the port to be selected dynamically each time LicenseServer starts up. In this case, you will need to find out the URL of the Configuration page from the file `WebUI.html` (see Open LicenseServer Config Page (Windows) and Open LicenseServer Config Page (Linux)).



The advantage of a fixed port is that the page URL is known in advance and therefore can be accessed easily. If the port is assigned dynamically, the port part of the URL will have to be looked up in the file `WebUI.html` each time LicenseServer is started.

Open LicenseServer's Config Page (Mac OS X)

This section:

- Opening the Configuration page for the first time with the returned URL
- URL of the LicenseServer Configuration page
- Logging in with the initial password
- Setting a fixed port for the Configuration page

Opening the Configuration page for the first time with the returned URL
On Mac OS X systems, when you register your Altova server product with LicenseServer via the CLI, the URL of the LicenseServer Configuration page is returned. On opening this URL in a browser, you are prompted to read and accept the license agreement. After accepting the license agreement, the Configuration page's login mask is displayed (*screenshot below*).

URL of the LicenseServer Configuration page
To open the LicenseServer Configuration page at any time, enter its URL in the address bar of a browser and press **Enter**. By default, the URL of the Configuration page will be:

```
http://<serverIPAddressOrName>:8088/
```

The URL is present in the HTML code of the Configuration page itself, which is named **webUI.html** and is located at:

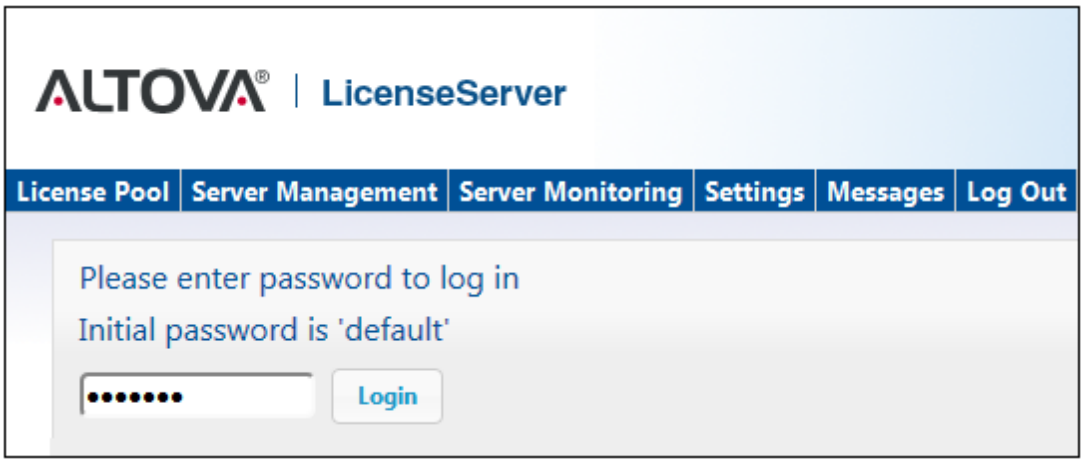
```
/var/Altova/LicenseServer/webUI.html
```

If you have set the URL of the Configuration page to be generated dynamically (in the Settings tab of the Configuration page), then a new URL is generated each time LicenseServer is started. You will need to check the current version of **webUI.html** to find out the current URL of the Configuration page.

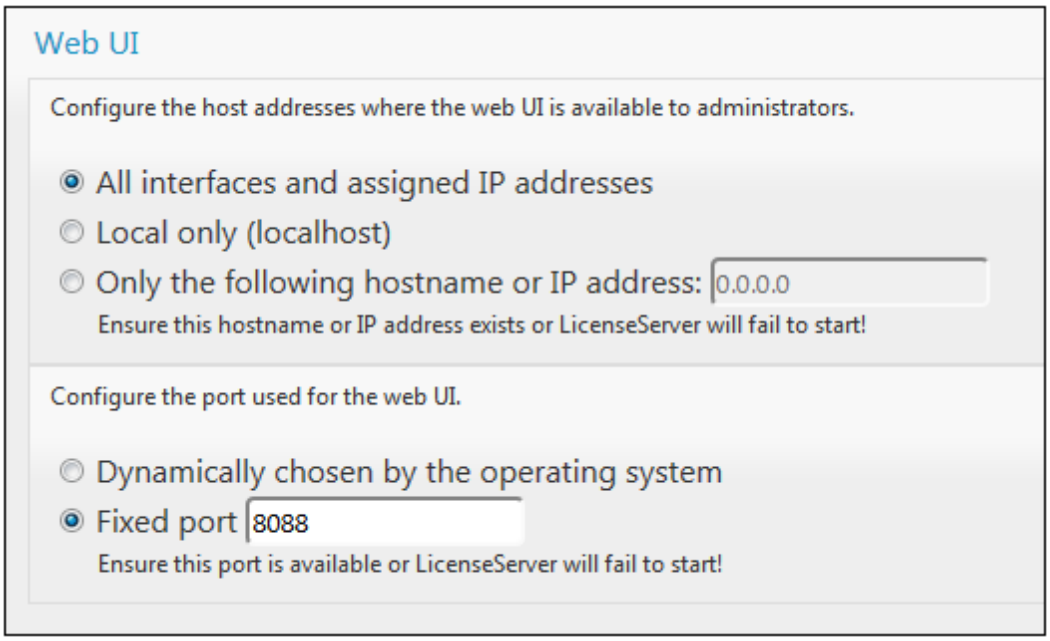
The dynamically generated URL in **webUI.html** will have a form something like: `http://127.0.0.1:55541`, and it is located in the function `checkIfServiceRunning()` in a script near the end of the `<head>` element. While the port number in the URL is dynamically assigned, the IP address part identifies the server on which LicenseServer has been installed. If you wish to access the LicenseServer Configuration page from another machine, make sure that the IP address part of the URL has the correct IP address or name of the server on which LicenseServer has been installed. For example, the URL could be something like: `http://MyServer:55541`.

Note: The Configuration page can also be accessed directly via the **Finder | Applications | Altova License Server** icon.

Logging in with the initial password
After going through the steps above, the Configuration page is opened with the login mask displayed (*screenshot below*). You can log in with the initial password of `default`. After you have logged in, you can change your password in the Settings tab.



Setting a fixed or dynamic port for the Configuration page
The port of the Configuration page (Web UI)—and consequently its address—can be specified in the Settings page. By default the port is `8088`. You can set any other port you want for the LicenseServer Configuration page (*see screenshot below*). Alternatively, you allow the port to be selected dynamically each time LicenseServer starts up. In this case, you will need to find out the URL of the Configuration page from the file `WebUI.html` (see Open LicenseServer Config Page (Windows) and Open LicenseServer Config Page (Linux)).



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The advantage of a fixed port is that the page URL is known in advance and therefore can be accessed easily. If the port is assigned dynamically, the port part of the URL will have to be looked up in the file `WebUI.html` each time LicenseServer is started.

Upload Licenses to LicenseServer

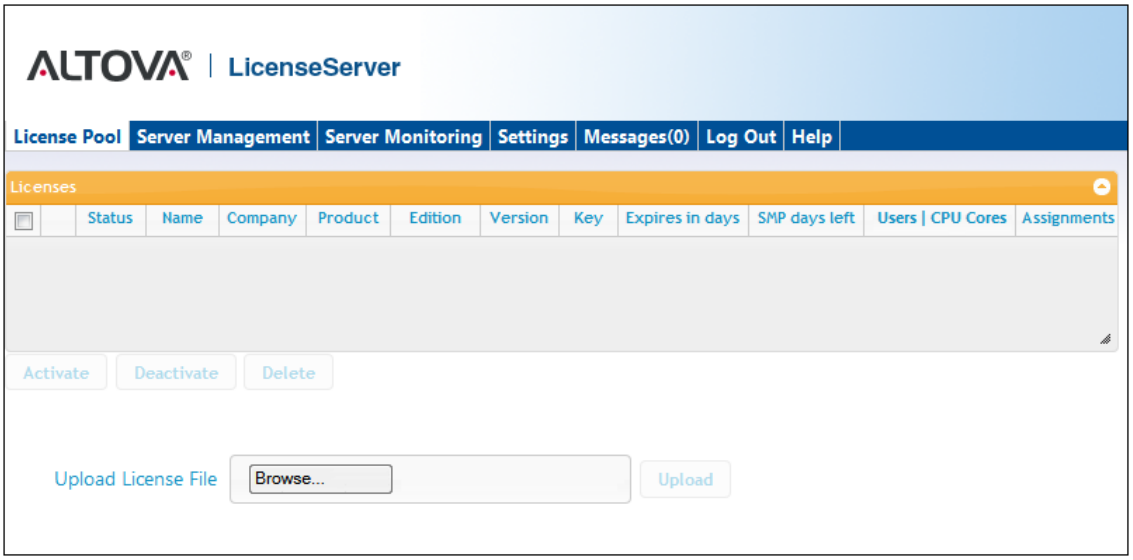
This section:

- Uploading a license file to the license pool of LicenseServer
- License status
- Activating the licenses you wish to use
- Next steps

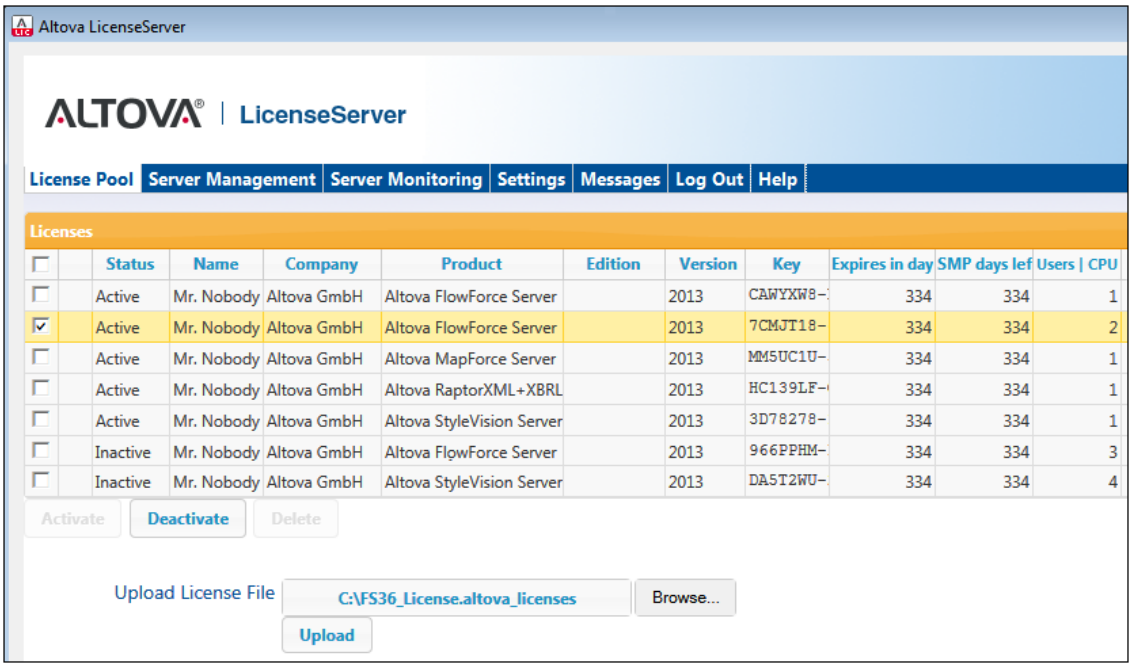
Uploading a license file to the license pool of LicenseServer

After you have obtained a license file from Altova, you must upload it to the Altova LicenseServer. (How to do this is described below.) Each license file can contain one or more licenses and depends on your purchase. When you upload a license file, all the licenses in it will be uploaded to LicenseServer and can be assigned to an Altova product that has been registered with that LicenseServer. All the uploaded licenses, from one or more license files and for all Altova products, are collected in a license pool on the LicenseServer. The license pool is displayed in the License Pool tab of the LicenseServer Configuration page (*screenshot below*).

License files are uploaded to the LicenseServer using the Upload function of the License Pool tab (*see screenshot below*).



Click the **Browse** button and select the license file you want. The license file will appear in the Upload License File text field and the **Upload** button will be enabled. Click the **Upload** button to upload the license file. All the licenses in the file are uploaded and displayed in the License Pool tab. The screenshot below shows multiple licenses, uploaded from multiple license files.



License status
License status values are as follows:

- *Activating:* When a license is uploaded into the license pool of LicenseServer, the server will transmit license-related data to the `altova.com` master licensing server to validate, authenticate, and activate the license that was supplied. This is necessary to ensure compliance with the Altova license agreements. During this initial activation and authentication transaction—which typically lasts between 30 seconds and a couple of minutes, depending on your Internet connection, speed, and overall network traffic—the status of the license will be indicated as *Activating...*.

- *Failed Verification:* If a connection with the `altova.com` master licensing server cannot be made, then the status of the license in the pool will be shown as *Failed Verification*. If this happens, check your Internet connection and firewall rules to ensure that LicenseServer is able to communicate with the `altova.com` master licensing server.

- *Active:* Once the license has been authenticated and activated, the status in the pool will change to *Active*.

- *Inactive:* If a license has been verified, but is present on another LicenseServer on the network, the status in the pool will be shown as *Inactive*. An *Inactive* status also results when a license is manually deactivated in the license pool by the administrator.

- *Blocked:* A license is shown in the license pool as *Blocked* if there was a problem authenticating the license and the `altova.com` master licensing server has not granted permission to the LicenseServer to use this license. This could be the result of a license agreement violation, over-usage of a license, or other compliance issues. Should you see a license showing up as *Blocked*, please contact Altova Support with your license

information and any other relevant data.

These statuses are summarized in the table below:

Status	Meaning
Activating...	On upload, license information is sent to `altova.com` for verification. Refresh the browser to view the updated status. Verification and activation can take a few minutes.
Failed Verification	A connection to `altova.com` could not be made. After establishing a connection, either restart the service or activate the license (with the **Activate** button).
Active	Verification was successful, the license is active.
Inactive	Verification was successful, but the license is on another LicenseServer on the network. Licenses can be made inactive with the **Deactivate** button.
Blocked	Verification was not successful. License is invalid and is blocked. Contact Altova Support.

Note: After a license has been sent to `altova.com` for verification, the browser must be refreshed to see the updated status. Verification and activation can take a few minutes.

Note: If a connection to `altova.com` could not be made, the status will be *Failed Verification*. After establishing a connection, either restart the service or try activating the license with the **Activate** button.

Note: When a license is given a status of *Inactive* or *Blocked*, a message explaining the status is also added to the Messages log.

Only an active license can be assigned to a product installation. An inactive license can be activated or deleted from the license pool. If a license is deleted from the license pool, it can be uploaded again to the pool by uploading the license file containing it. When a license file is updated, only those licenses in it that are not already in the pool will be uploaded to the pool. To activate, deactivate, or delete a license, select it and then click the **Activate**, **Deactivate**, or **Delete** button, respectively.

Activate the license/s you wish to use
Before you can assign a license to an Altova product, it must be active. So do ensure it is active. If it is inactive, select it and click **Activate**.

Next Steps
After you have uploaded the license file to the LicenseServer and checked that the license you

want is active, do the following:

1. Register the Altova server product (FlowForce Server, MapForce Server, StyleVision Server) with LicenseServer. (If you have already done this prior to uploading the license file, you can now start assigning licenses.)
2. Assign a license to your Altova product that has been registered with the LicenseServer.

Register Product/s

Before you can assign a license to an Altova server product, you must register the product installation with LicenseServer. The registration is done from the Altova server product, and the process is different for those server products that have Web UIs and those that are run from the command line only. You will need the server name or IP Address of the machine on which LicenseServer is installed to carry out the registration.

This section describes how to register different Altova server products:

- Register FlowForce Server
- Register MapForce Server
- Register StyleVision Server
- Register RaptorXML(+XBRL) Server
- Register MobileTogether Server

Register FlowForce Server

This section:

- Methods of registering FlowForce Server with LicenseServer
- Accessing the FlowForce Server Setup page (Windows)
- Accessing the FlowForce Server Setup page (Linux)
- Registering FlowForce Server via the Setup page
- Registering FlowForce Server via the FlowForce CLI (Windows)
- Registering FlowForce Server via the FlowForce CLI (Linux)
- Next steps

Methods of registering FlowForce Server
FlowForce Server can be registered with LicenseServer using any of the following methods:

- Via the FlowForce Server Setup page
- Via the FlowForce CLI (Windows)
- Via the FlowForce CLI (Linux)

Accessing the FlowForce Server Setup page (Windows)
The FlowForce Server Setup page can be accessed in one of the following ways:

- Via the **Start** menu:

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Start | *Altova FlowForce Server 2015* | *FlowForce Server Setup Page*

- Via Altova ServiceController: Click the ServiceController icon in the system tray. In the menu that pops up, select *Altova FlowForce Web* | *Setup*.

This pops up the FlowForce Server Setup page (*screenshot above*).

Accessing the FlowForce Server Setup page (Linux)
After you have installed FlowForce Server on Linux (see the FlowForce Server user documentation for information about how to do this), start FlowForce Web Server as a service with the following command:

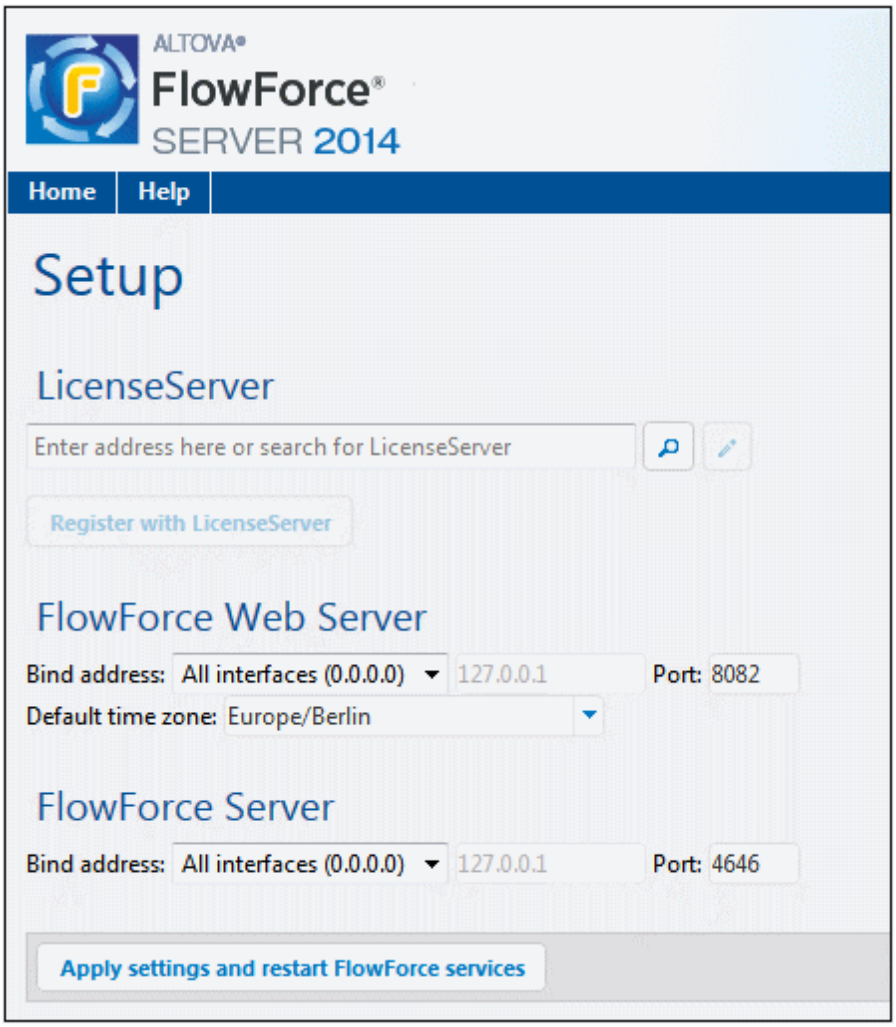
```
sudo /etc/init.d/flowforcewebserver start
```

A message containing the URL of the FlowForce Server Setup appears in the terminal window:

```
FlowForceWeb running on http://127.0.1.1:3459/setup?key=52239315203
```

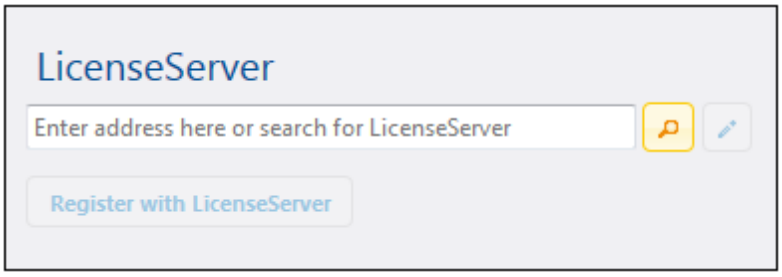
Enter the URL in the address field of a browser and hit **Enter** to access the FlowForce Server Setup page (*screenshot below*).

Registering FlowForce Server via the Setup page
In the Setup page (*screenshot below*)—how to access it is described above—the LicenseServer field specifies the Altova LicenseServer to be used for registration.



The LicenseServer can be specified in one of two ways.

- You can search for Altova LicenseServers that are currently available on the network—that is, those that are currently running. Do this by clicking the **Search for Altova LicenseServers** button (*highlighted yellow in the screenshot below*).



The search returns a list of available Altova LicenseServers on the network. One LicenseServer will be selected (*screenshot below*) and the others will be available in the dropdown list of the combo box. Select the LicenseServer on which your FlowForce license is stored.

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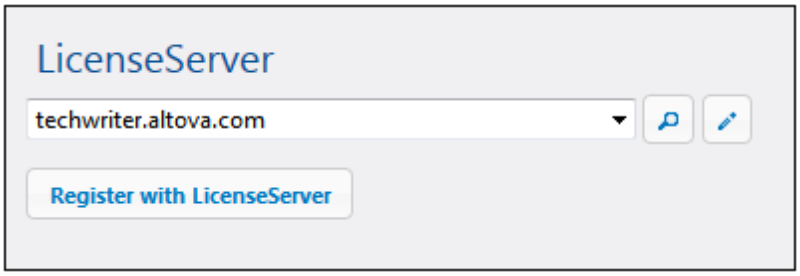
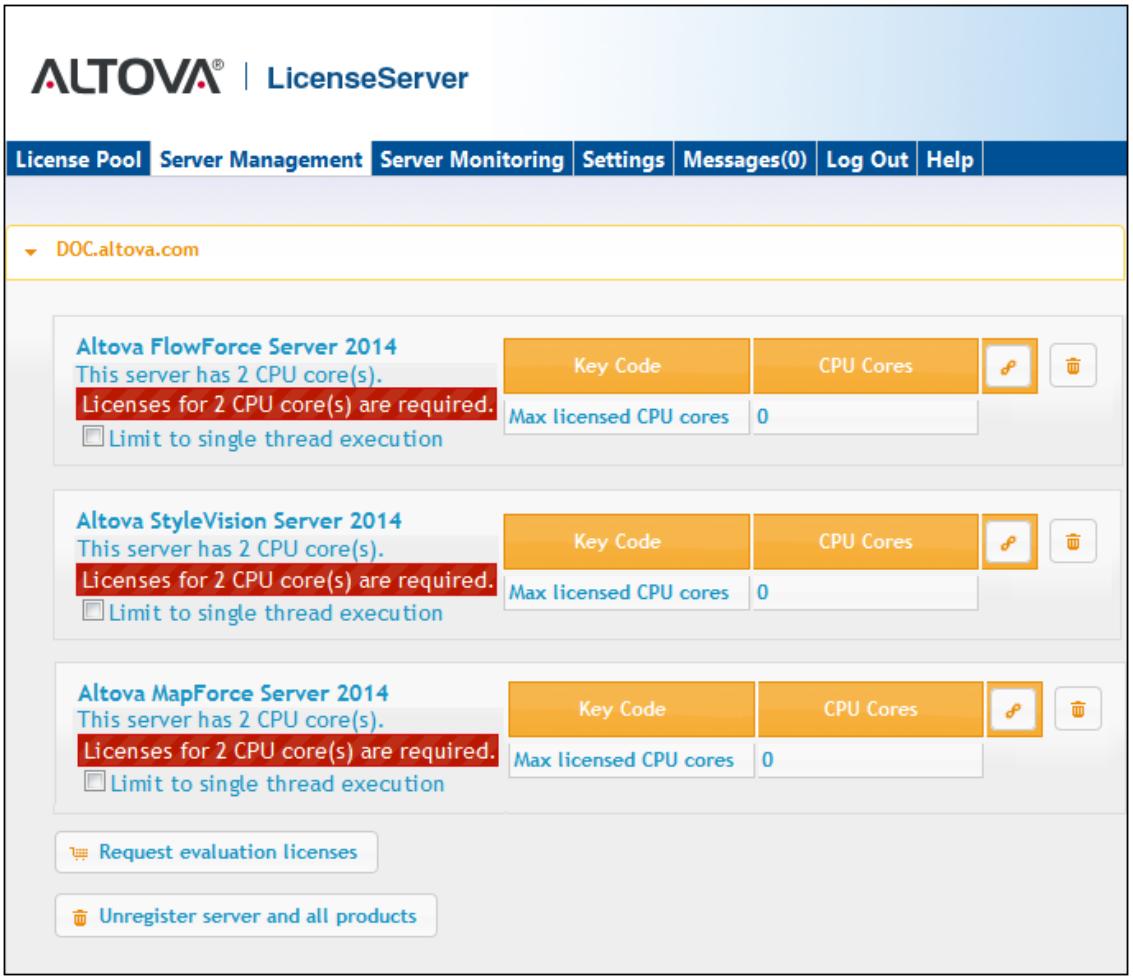


- Alternatively, you can enter the address of the LicenseServer in the LicenseServer field. If the currently running LicenseServers are available as a dropdown list, you must click the **Manually Enter Address** button to be able to enter an address in the LicenseServer field.

After you have specified the LicenseServer, click **Register with LicenseServer**. The Altova server application will be registered with the specified LicenseServer, and that LicenseServer's Configuration page will open in a browser with its Server Management tab active (*screenshot below*).

Note: You may need to allow pop-ups in order for the LicenseServer Configuration page to be displayed.



In the screenshot below, three Altova products have been registered with the Altova LicenseServer at `DOC.altova.com`. How to assign licenses is described in the next section, Assign Licenses to Registered Products.

Registering FlowForce Server via the FlowForce CLI (Windows)

On Windows machines, FlowForce Server can also be registered with an Altova LicenseServer on your network via the command line (CLI) by using the `licenseserver` command:

```
FlowForceServer licenseserver Server-Or-IP-Address
```

For example, if LicenseServer is running on `http://localhost:8088`, then register FlowForce Server with:

```
FlowForceServer licenseserver localhost
```

If FlowForce Server was installed with other Altova server products as sub-packages, registering FlowForce Server will automatically also register the Altova server products. After successfully

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registering FlowForce Server, you can go to LicenseServer and assign a license to FlowForce Server. How to do this is described in the section Assign Licenses to Registered Products.

Registering FlowForce Server via the FlowForce CLI (Linux)
On Linux machines, FlowForce Server can be registered with LicenseServer by using the `licenseserver` command of the FlowForce Server CLI. Note that FlowForce Server must be started with root rights.

```
sudo /opt/Altova/FlowForceServer2015/bin/flowforceserver licenseserver
localhost
```

In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the FlowForce Server executable is:

```
/opt/Altova/MapForceServer2015/bin
```

After successfully registering FlowForce Server, you can go to LicenseServer and assign a license to FlowForce Server. How to do this is described in the section Assign Licenses to Registered Products.

Next Steps
After you have registered your Altova product with LicenseServer, do the following:

1. If you have not already uploaded your license file/s to the LicenseServer (see previous section, Upload the license/s), upload the license file now and check that the license you want is active. If you have already done this, carry on to the next step, Assign Licenses.
2. Assign a license to your Altova product that has been registered with the LicenseServer.

Register MapForce Server

This section:

- Registering MapForce Server from FlowForce Server (Windows)
- Registering a standalone MapForce Server (Windows)
- Registering MapForce Server (Linux)
- Next steps

MapForce Server can be installed as part of the FlowForce Server package or as a standalone server product. In either case, it must be registered with Altova LicenseServer. Only after it has been registered with LicenseServer can a license be assigned to it from LicenseServer. On Windows systems, if MapForce Server was installed as part of the FlowForce Server package, it will automatically be registered when FlowForce is registered. On Linux systems, only if MapForce Server is installed after FlowForce Server will it be registered automatically when

FlowForce Server is registered subsequently.

Registering MapForce Server from FlowForce Server (Windows)
MapForce Server is packaged with FlowForce Server, so when FlowForce Server is registered with an Altova LicenseServer on your network, MapForce Server will automatically also be registered with LicenseServer. How to register FlowForce Server is described in the FlowForce Server documentation and in the section, Register FlowForce Server with LicenseServer.

After the registration, you can go to LicenseServer and assign a MapForce Server license to MapForce Server. How to do this is described in the section, Assign Licenses to Registered Products.

Registering a standalone MapForce Server (Windows)
If you have installed MapForce Server as a standalone package, you must register it with an Altova LicenseServer on your network and then license it from the Altova LicenseServer. You can register MapForce Server via its command line interface (CLI) by using the `licenseserver` command:

```
MapForceServer licenseserver Server-Or-IP-Address
```

For example, if LicenseServer is running on `http://localhost:8088`, then register MapForce Server with:

```
MapForceServer licenseserver localhost
```

After successfully registering MapForce Server, you can go to LicenseServer and assign a license to MapForce Server. How to do this is described in the section, Assign Licenses to Registered Products.

Registering MapForce Server (Linux)
On Linux machines, MapForce Server can be registered with LicenseServer by using the `licenseserver` command of the MapForce Server CLI. Note that MapForce Server must be started with root rights.

```
sudo /opt/Altova/MapForceServer2015/bin/mapforceserver licenseserver localhost
```

In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the MapForce Server executable is:

```
/opt/Altova/MapForceServer2015/bin
```

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After successfully registering MapForce Server, you can go to LicenseServer and assign a license to MapForce Server. How to do this is described in the section Assign Licenses to Registered Products.

Next Steps
After you have registered your Altova product with LicenseServer, do the following:

1. If you have not already uploaded your license file/s to the LicenseServer (see previous section, Upload the license/s), upload the license file now and check that the license you want is active. If you have already done this, carry on to the next step, Assign Licenses.
2. Assign a license to your Altova product that has been registered with the LicenseServer.

Register StyleVision Server

This section:

- Registering StyleVision Server from FlowForce Server (Windows)
- Registering a standalone StyleVision Server (Windows)
- Registering StyleVision Server (Linux)
- Next steps

StyleVision Server can be installed as part of the FlowForce Server package or as a standalone server product. In either case, it must be registered with Altova LicenseServer. Only after it has been registered with LicenseServer can a license be assigned to it from LicenseServer. On Windows systems, if StyleVision Server was installed as part of the FlowForce Server package, it will automatically be registered when FlowForce is registered. On Linux systems, only if StyleVision Server is installed after FlowForce Server will it be registered automatically when FlowForce Server is registered subsequently.

Registering StyleVision Server from FlowForce (Windows)
StyleVision Server is packaged with FlowForce Server, so when FlowForce Server is registered with an Altova LicenseServer on your network, StyleVision Server will automatically also be registered with LicenseServer. How to register FlowForce Server is described in the FlowForce Server documentation and in the section, Register FlowForce Server with LicenseServer.

After the registration, you can go to LicenseServer and assign a StyleVision Server license to StyleVision Server. How to do this is described in the section Assign Licenses to Registered Products.

Registering a standalone StyleVision Server (Windows)
If you have installed StyleVision Server as a standalone package on Windows, you must register it with an Altova LicenseServer on your network and then license it from the Altova LicenseServer. You can register StyleVision Server via its command line interface (CLI) by using the `licenseserver` command:

```
StyleVisionServer licenseserver Server-Or-IP-Address
```

For example, if LicenseServer is running on `http://localhost:8088`, then register StyleVision Server with:

```
StyleVisionServer licenseserver localhost
```

After successfully registering StyleVision Server, you can go to LicenseServer and assign a license to StyleVision Server. How to do this is described in the section Assign Licenses to Registered Products.

Registering StyleVision Server (Linux)
On Linux machines, StyleVision Server can be registered with LicenseServer by using the `licenseserver` command of the StyleVision Server CLI. Note that StyleVision Server must be started with root rights.

```
sudo /opt/Altova/StyleVisionServer2015/bin/stylevisionserver licenseserver
localhost
```

In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the StyleVision Server executable is:

```
/opt/Altova/StyleVisionServer2015/bin
```

After successfully registering StyleVision Server, you can go to LicenseServer and assign a license to StyleVision Server. How to do this is described in the section Assign Licenses to Registered Products.

Next Steps
After you have registered your Altova product with LicenseServer, do the following:

1. If you have not already uploaded your license file/s to the LicenseServer (see previous section, Upload the license/s), upload the license file now and check that the license you want is active. If you have already done this, carry on to the next step, Assign Licenses.
2. Assign a license to your Altova product that has been registered with the LicenseServer.

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Register RaptorXML(+XBRL) Server

This section:

- Registering RaptorXML(+XBRL) Server (Windows)
- Registering RaptorXML(+XBRL) Server (Linux)
- Next steps

RaptorXML(+XBRL) Server must be installed on the server machine or network to which LicenseServer is connected and then be started as a service. It must then be registered with LicenseServer. Only after registration can a license be assigned to it from LicenseServer. This section describes how to register RaptorXML(+XBRL) Server with LicenseServer.

Registering RaptorXML(+XBRL) Server (Windows)
You can register RaptorXML(+XBRL) Server via its command line interface (CLI) by using the `licenseserver` command:

RaptorXML Server:	**`RaptorXML licenseserver Server-Or-IP-Address`**
RaptorXML+XBRL Server:	**`RaptorXMLXBRL licenseserver Server-Or-IP-Address`**

For example, if LicenseServer is running on `http://localhost:8088`, then register RaptorXML(+XBRL) Server with:

RaptorXML Server:	**`RaptorXML licenseserver localhost`**
RaptorXML+XBRL Server:	**`RaptorXMLXBRL licenseserver localhost`**

After successfully registering RaptorXML(+XBRL) Server, you can go to LicenseServer and assign a license to RaptorXML(+XBRL) Server. How to do this is described in the section Assign Licenses to Registered Products.

Registering RaptorXML(+XBRL) Server (Linux)
On Linux machines, RaptorXML(+XBRL) Server can be registered with LicenseServer by using the `licenseserver` command of the RaptorXML(+XBRL) Server CLI. Note that RaptorXML(+XBRL) Server must be started with root rights.

```
sudo /opt/Altova/RaptorXMLServer2015/bin/raptorxmlserver licenseserver
localhost
```

```
sudo /opt/Altova/RaptorXMLXBRLServer2015/bin/raptorxmlxbrlserver licenseserver
localhost
```

In the command above, `localhost` is the name of the server on which LicenseServer is installed. Notice also that the location of the RaptorXML(+XBRL) Server executable is:

```
/opt/Altova/RaptorXMLServer2015/bin
/opt/Altova/RaptorXMLXBRLServer2015/bin
```

After successfully registering RaptorXML(+XBRL) Server, you can go to LicenseServer and assign a license to RaptorXML(+XBRL) Server. How to do this is described in the section Assign Licenses to Registered Products.

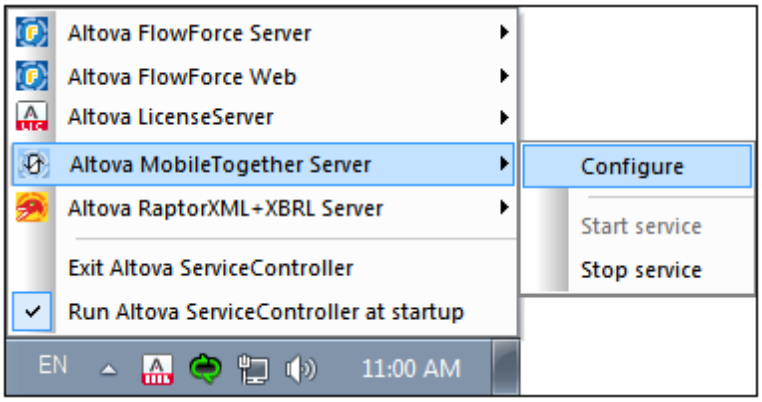
Next Steps

After you have registered your Altova product with LicenseServer, do the following:

1. If you have not already uploaded your license file/s to the LicenseServer (see previous section, Upload the license/s), upload the license file now and check that the license you want is active. If you have already done this, carry on to the next step, Assign Licenses.
2. Assign a license to your Altova product that has been registered with the LicenseServer.

Register MobileTogether Server

To start MobileTogether Server, click the **ServiceController** icon in the system tray, hover over **Altova MobileTogether Server** in the menu that pops up (*see screenshot below*), and then select **Start Service** from the MobileTogether Server submenu. If MobileTogether Server is already running, the *Start Service* option will be disabled.



Register MobileTogether Server via:

- The Settings tab of the MobileTogether Server Web UI: (i) Start MobileTogether Server via ServiceController (*see previous point*); (ii) Enter your password to access the Setup page; (iii) Select the LicenseServer name or address, and click **Register with LicenseServer**.
- its CLI, using the `licenseserver` command:

`MobileTogetherServer licenseserver [options] ServerName-Or-IP-Address`
For example, if `localhost` is the name of the server on which LicenseServer is installed:
`MobileTogetherServer licenseserver localhost`

After successful registration, go to the Server Management tab of LicenseServer's configuration page to assign a license to MobileTogether Server.

Assign Licenses to Registered Products

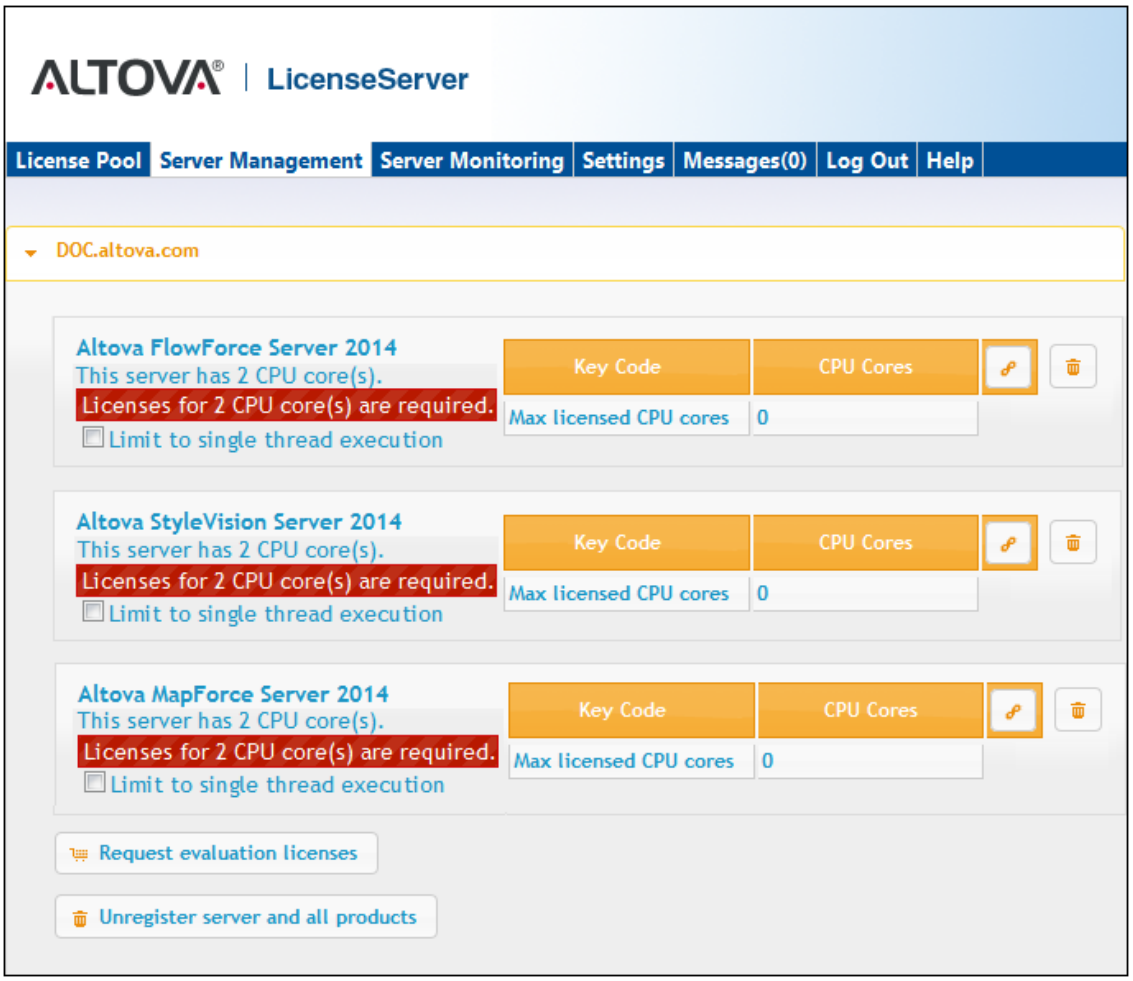
This section:

- Before assigning a license
- The Server Management tab
- Icons in the Server Management tab
- Note on cores and licenses
- Assigning a license
- Unregistering products from LicenseServer

Before assigning a license
Before you assign a license to an Altova product, make sure that:

- The relevant license has been uploaded to the license pool of LicenseServer and that the license is active.
- Your Altova product has been registered with LicenseServer.

The Server Management tab
Licenses are assigned in the Server Management tab of the LicenseServer Configuration page (*screenshot below*). The screenshot shows that three Altova products have been registered with LicenseServer. (Since MapForce Server and StyleVision Server are bundled with FlowForce Server, registering FlowForce Server with LicenseServer automatically also registers MapForce Server and StyleVision Server. No additional registration of the latter two products are required if FlowForce Server is registered.)



Note the following points about the Server Management tab:

- Each product is listed under the name of its client machine. In the screenshot above, one client machine, named `Doc.altova.com`, is listed. This client machine (`Doc.altova.com`) has three Altova products registered with the LicenseServer. If an Altova product on a different client machine is registered with this LicenseServer, then that client machine, with its registered products, will also be listed in the Server Management tab.
- Each registered Altova product on a client machine has its own *Key Code* entry, which takes the key code of a license. A registered product's key code is assigned by clicking its **Edit Assigned Licenses** button (*see icon list below*) and selecting the required license from those available for that product (for example, FlowForce Server) in the license pool. This procedure is explained in more detail below.
- Each product also has a line stating how many CPU cores need to be licensed to run that product on that client. If the number of licensed cores is less than the number required, then the information is marked in red (*see screenshot above*). (The number of CPU cores that need to be licensed is the number of CPU cores on that client and is obtained from the client machine by LicenseServer.)
- If **multiple versions** of a single product (for example, StyleVision Server 2013 and StyleVision Server 2014) have been installed on one machine and if each of these installations has been registered with a single LicenseServer, then the multiple registrations are consolidated in a single registration in the Server Management tab and displayed as a single registration. When a license is assigned to this single registration,

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all the installations indicated by that registration will be licensed. However, multiple instances of only one installation can be run simultaneously on the client machine. For example, multiple instances of StyleVision Server 2013 or multiple instances of StyleVision Server 2014 can be run simultaneously, but not one instance of StyleVision Server 2013 and one instance of StyleVision Server 2014. Note that newly installed versions must be registered for them to run.

- New versions of Altova server products can only be licensed with the latest version of LicenseServer at the time of the product's release. Older Altova server products will work with newer versions of LicenseServer. So, if you are installing a new version of an Altova server product and if your current LicenseServer version is not the latest, de-install the older version of LicenseServer and install the latest version. All registration and licensing information held in your older version of LicenseServer will be saved, at the time of de-installation, to a database on the server, and will be imported automatically into the newer version. (The version number of the LicenseServer that is appropriate for any particular version of a server product is displayed during the installation of that server product. You can choose to install this version along with the server product. The version of the currently installed LicenseServer is given at the bottom of the LicenseServer configuration page.)

Icons in the Server Management tab

Edit Assigned Licenses. Available with each product. Pops up the Manage Licenses dialog, in which new licenses can be assigned to the product and already assigned licenses can be edited.

Show Licenses. Appears with each license. Switches to the License Pool tab and highlights the selected license, so that license details can be read.

Unregister This Product. Available with each product. The selected product (on the selected client machine) will be unregistered from LicenseServer.

Note on cores and licenses

The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

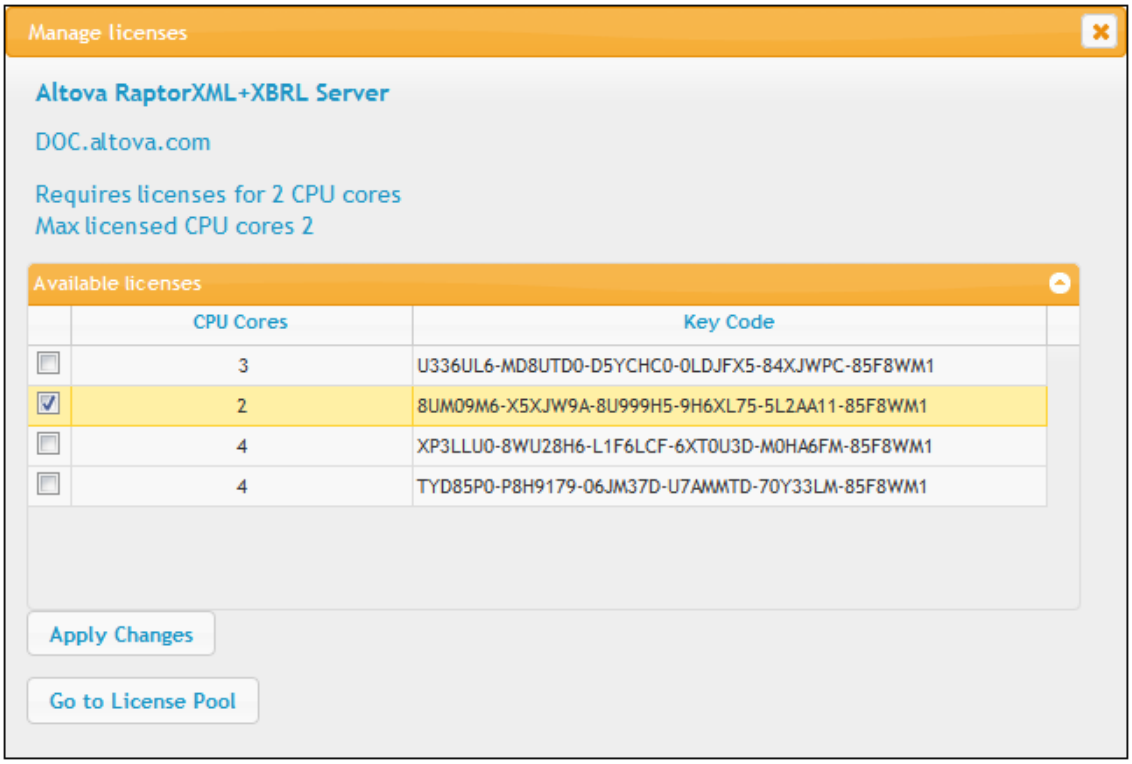
If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

*** MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

Assigning a license

To assign a license to a registered product, click the **Edit Assigned Licenses** button of that product. This pops up the Manage Licenses dialog (*screenshot below*).



Note the following points about the licenses displayed in the Manage Licenses dialog:

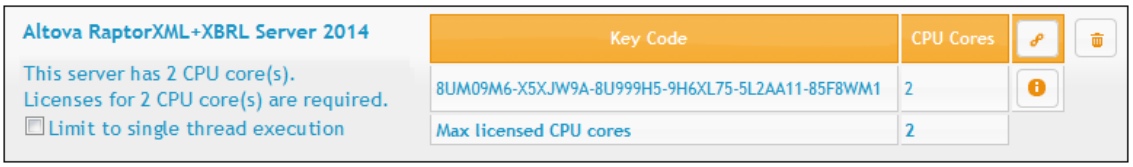
- The product to be licensed is listed at the top left of the dialog. In the screenshot above the product is Altova FlowForce Server 2013.
- The dialog displays all the currently active licenses for that product in the license pool. In our screenshot, four currently active FlowForce Server licenses are in the license pool. LicenseServer will automatically detect from each license in the pool the product for which it has been issued.
- The licenses in the screenshot above have been licensed, respectively, for 3 CPU cores, 2 CPU cores, 4 CPU cores, and 4 CPU cores.
- You need to know the number of processor cores on the server on which the Altova server product has been installed. If the machine has a dual-core processor, you need a two-

core (the CPU Cores count) license. This license could be, for example, the second license in the list shown in the screenshot above. You can also combine licenses. So, if the machine's processor is octa-core (eight-core), you can combine two 4-core licenses; for example, the third and fourth licenses in the list shown in the screenshot above.

- The Manage Licenses dialog will list only currently active licenses for that product. Licenses for other Altova products will not be listed.
- Licenses that have been assigned already—for example, to another installation of the product on the network—will have their check boxes checked. So only unchecked licenses may be selected.
- CPU cores indicates for how many CPU cores a license is valid.
- If you wish to make modifications to the license pool—for example, to upload, activate, deactivate, or delete a license—click the **Go to License Pool** button.

Select the license you wish to assign. The license's check box will be checked. Also, the total number of CPU cores licensed for that product on that client is listed near the top left of the dialog as *Max licensed CPU cores (see screenshot above)*. You can select more licenses if you wish to increase the number of licensed CPU cores for that product on that client. The *Max licensed CPU cores* in this case will be the sum of the CPU cores of all the selected licenses.

After selecting the license/s, click **Apply Changes**. The license/s will be assigned to that product and displayed in the Server Management tab (*see screenshot below*). The screenshot below shows that a 2-CPU-core license for Altova FlowForce Server has been assigned (to the client machine `Doc.altova.com`).



Unregistering products

Each Altova product registered with LicenseServer is listed in the Server Management tab under its client machine name and has an **Unregister** icon to its right. Click this icon to unregister the product. If a license was assigned to the product, the assignment will be terminated when the product is unregistered. To unregister all products, click the **Unregister Server and All Products** button at the bottom of the Server Management tab (*see first screenshot in this section*).

To re-register a product, go to the product's pre-configuration page.

1.7.7 Configuration Page Reference

The LicenseServer Configuration page is the administrator's interface with LicenseServer (Web UI). It allows the management of LicenseServer and the licensing of Altova products that have been registered with LicenseServer (FlowForce Server, MapForce Server, StyleVision Server, RaptorXML(+XBRL) Server). The LicenseServer Configuration page is viewed in a web browser. How to open the Configuration page is described in the sections, Open LicenseServer Config Page (Windows) and Open LicenseServer Config Page (Linux).

This section is a user reference for the Configuration page and is organized by the tabs of the Configuration page:

- License Pool
- Server Management
- Server Monitoring
- Settings
- Messages, Log Out

For a step-by-step guide of how to assign licenses with LicenseServer, see the section How to Assign Licenses.

License Pool

This section:

- Uploading a license
- License status
- Activating, de-activating, and deleting a license
- Icons in the License Pool tab
- License information
- Note on cores and licenses

The **License Pool** tab displays all the licenses that are currently on the LicenseServer (*see screenshot below*). When a license file is uploaded to the LicenseServer with the **Upload** button on this page, all the licenses contained in the license file are placed in the license pool on the server and are displayed on the License Pool page.

The License Pool page displays information about all the licenses currently on the LicenseServer and thus provides a convenient overview of all Altova product licenses. On this page you can also activate, deactivate, and delete selected licenses.

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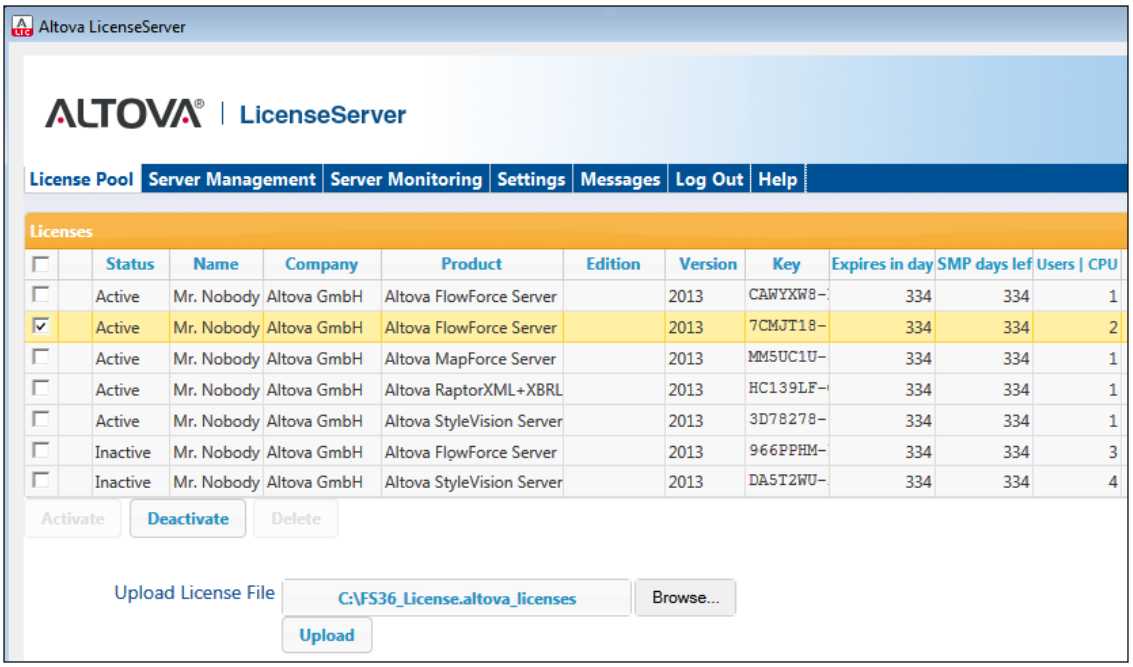

Uploading a license
To upload a license file (which you receive from Altova GmbH for your Altova server product), click the **Browse** button, browse for the license file and select it. On clicking **Upload**, all the licenses contained in the license file are placed in the license pool and displayed on the License Pool page (*screenshot above*).

License status
License status values are as follows:

- *Activating:* When a license is uploaded into the license pool of LicenseServer, the server will transmit license-related data to the `altova.com` master licensing server to validate, authenticate, and activate the license that was supplied. This is necessary to ensure compliance with the Altova license agreements. During this initial activation and authentication transaction—which typically lasts between 30 seconds and a couple of minutes, depending on your Internet connection, speed, and overall network traffic—the status of the license will be indicated as *Activating...*.

- *Failed Verification:* If a connection with the `altova.com` master licensing server cannot be made, then the status of the license in the pool will be shown as *Failed Verification*. If this happens, check your Internet connection and firewall rules to ensure that LicenseServer is able to communicate with the `altova.com` master licensing server.

- *Active:* Once the license has been authenticated and activated, the status in the pool will

change to *Active*.

- *Inactive:* If a license has been verified, but is present on another LicenseServer on the network, the status in the pool will be shown as *Inactive*. An *Inactive* status also results when a license is manually deactivated in the license pool by the administrator.

- *Blocked:* A license is shown in the license pool as *Blocked* if there was a problem authenticating the license and the `altova.com` master licensing server has not granted permission to the LicenseServer to use this license. This could be the result of a license agreement violation, over-usage of a license, or other compliance issues. Should you see a license showing up as *Blocked*, please contact Altova Support with your license information and any other relevant data.

These statuses are summarized in the table below:

Status	Meaning
Activating...	On upload, license information is sent to `altova.com` for verification. Refresh the browser to view the updated status. Verification and activation can take a few minutes.
Failed Verification	A connection to `altova.com` could not be made. After establishing a connection, either restart the service or activate the license (with the **Activate** button).
Active	Verification was successful, the license is active.
Inactive	Verification was successful, but the license is on another LicenseServer on the network. Licenses can be made inactive with the **Deactivate** button.
Blocked	Verification was not successful. License is invalid and is blocked. Contact Altova Support.

Note: After a license has been sent to `altova.com` for verification, the browser must be refreshed to see the updated status. Verification and activation can take a few minutes.

Note: If a connection to `altova.com` could not be made, the status will be *Failed Verification*. After establishing a connection, either restart the service or try activating the license with the **Activate** button.

Note: When a license is given a status of *Inactive* or *Blocked*, a message explaining the status is also added to the Messages log.

Only an active license can be assigned to a product installation. An inactive license can be activated or deleted from the license pool. If a license is deleted from the license pool, it can be uploaded again to the pool by uploading the license file containing it. When a license file is updated, only those licenses in it that are not already in the pool will be uploaded to the pool. To activate, deactivate, or delete a license, select it and then click the **Activate**, **Deactivate**, or **Delete** button, respectively.

Connection to the Master Licensing Server at altova.com

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The Altova LicenseServer needs to be able to communicate with the Master Licensing Server at `altova.com` to validate and authenticate license-related data and to ensure continuous compliance with the Altova license agreements. This communication occurs over HTTPS using port 443. If the Altova LicenseServer, after making the initial verification with the `altova.com` Master Licensing Server, is unable to again connect with `altova.com` for a duration of more than 5 days (= 120 hours), then the Altova LicenseServer will no longer permit the usage of any Altova software products connected to the Altova LicenseServer.

Any such loss of connection with the `altova.com` master servers will be logged in the Messages tab of the Configuration page of the Altova LicenseServer. In addition, the administrator can configure the Altova LicenseServer to automatically send an alert email when the connection to `altova.com` is lost. Alert Mail settings are available in the Settings tab of the Configuration page.

Activating, deactivating, and deleting a license

An active license can be deactivated by selecting the license and clicking **Deactivate**. An inactive license can be activated (**Activate** button) or deleted (**Delete** button). When a license is deleted it is removed from the license pool. A deleted license can be added again to the license pool by uploading the license file containing it. If a license file is re-uploaded, only licenses that are not already in the license pool will be added to the license pool; licenses that are already in the pool will not be re-added.

Icons in the License Pool tab

Edit Assigned Licenses. Appears with each license (in the Assignments column). Pops up the Manage Licenses dialog, in which new licenses can be assigned to the product and already assigned licenses can be edited.

Show License Information. Appears with each license (in the Assignments column). Provides information about the currently active clients.

License information

The following license information is displayed:

- *Status:* Can be one of the following values: *Failed Verification* | *Activating* | *Active* | *Inactive* | *Blocked*. See License status above.
- *Name, Company:* The name and company of the licensee. This information was submitted at the time of purchase.
- *Product, Edition, Version:* The version and edition of the licensed products.
- *Key, Expires in days, SMP (days left):* The license key to unlock the product, and the number of days left before the license expires. Each licensed purchase comes with a Support & Maintenance Package, which is valid for a certain number of days. The *SMP*

column notes how many SMP days are still left.
- *Users | CPU Cores:* The number of users or CPU cores that the license allows. In the case of Altova's MobileTogether Server product, licenses are assigned on the basis of the number of MobileTogether client devices that connect to MobileTogether Server. In the case of all other Altova server products, licenses are assigned on the basis of CPU cores (*see note below*).
- *Assignments:* Access to editing dialogs and information of individual licenses.

Note on cores and licenses
The licensing of Altova server products, *except MobileTogether Server****, is based on the number of processor cores available on the product machine. For example, a dual-core processor has two cores, a quad-core processor four cores, a hexa-core processor six cores, and so on. The number of cores licensed for a product on a particular server machine must be greater than or equal to the number of cores available on that server, whether it's a physical or virtual machine.

For example, if a server has eight cores (an octa-core processor), you must purchase at least an 8-core license. You can also combine licenses to achieve the core count. So, two 4-core licenses can also be used for an octa-core server instead of an 8-core license.

If you are using a computer server with a large number of CPU cores but only have a low volume to process, you may also create a virtual machine that is allocated a smaller number of cores, and purchase a license for that number. Such a deployment, of course, will have less processing speed than if all available cores on the server were utilized.

Note: Each license can be used for only one client machine at a time, even if it has unused licensing capacity. For example, if a 10-core license is used for a client machine that has 6 CPU cores, then the remaining 4 cores of the license cannot be used simultaneously for another client machine.

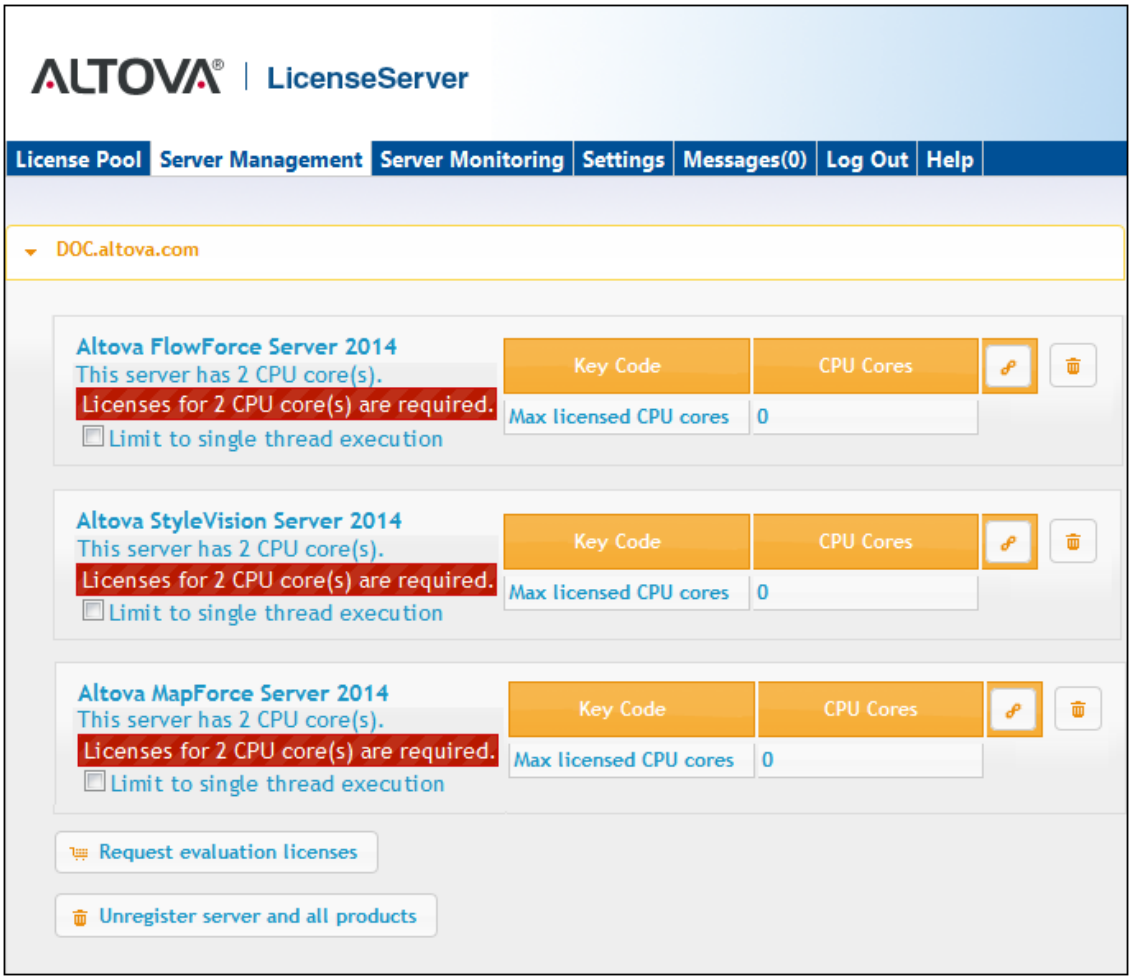
******* MobileTogether Server licenses are assigned on the basis of the number of users, that is, the number of client devices that connect to MobileTogether Server.

Server Management

This section:

- Icons in the Server Management tab
- Assigning licenses
- One client machine under different names
- Requesting an evaluation license
- Unregistering products

In the **Server Management** tab (*screenshot below*), you can assign licenses to registered products.



Note the following points about the Server Management tab:

- Each product is listed under the name of its client machine. In the screenshot above, one client machine, named `Doc.altova.com`, has three Altova products registered with the LicenseServer. If an Altova product on a different client machine is registered with this LicenseServer, then that client machine, with its registered products, will also be listed in the Server Management tab.
- Each registered Altova product on a client machine has its own *Key Code* entry, which takes the key code of a license. A registered product's key code is assigned by clicking its **Edit Assigned Licenses** button and selecting the required license from those available for that product (for example, FlowForce Server) in the license pool. This procedure is explained in more detail below.
- Each product (except MobileTogether Server) also has a line stating how many CPU cores need to be licensed to run that product on that client. If the number of licensed cores is less than the number required, then the information is marked in red (*see screenshot above*). (The number of CPU cores that need to be licensed is the number of CPU cores on that client and is obtained from the client machine by LicenseServer.)

Single thread execution

If a product license for only one core is available in the license pool, a machine with multiple cores can be assigned this one-core license. In such a case, the machine will run that product on a single core. Processing will therefore be slower as multi-threading (which is possible on multiple cores) will not be available. The product will be executed in single thread mode on that machine.

To assign a single-core license to a multiple-core machine, select the *Limit to single thread execution* check box for that product.

Icons in the Server Management tab

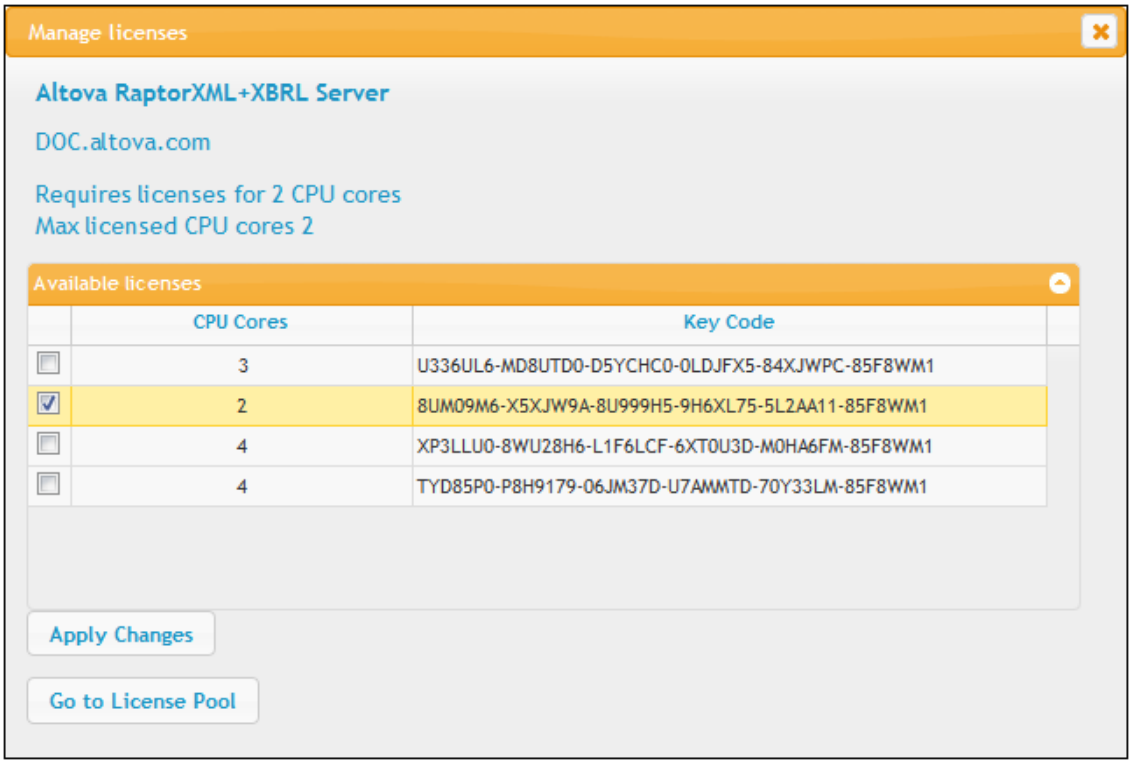
Edit Assigned Licenses. Available with each product. Pops up the Manage Licenses dialog, in which new licenses can be assigned to the product and already assigned licenses can be edited.

Show Licenses. Appears with each license. Switches to the License Pool tab and highlights the selected license, so that license details can be read.

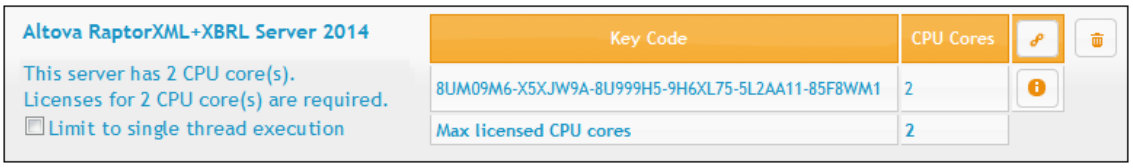
Unregister This Product. Available with each product. The selected product (on the selected client machine) will be unregistered from LicenseServer.

Assigning a license

To assign a license to a registered product, click the **Edit Assigned Licenses** button of that product. This pops up the Manage Licenses dialog (*screenshot below*).



Select the license you wish to assign. After selecting the license/s, click **Apply Changes**. The license/s will be assigned to that product and displayed in the Server Management tab (*see screenshot below*).



One client machine under different names

If a client machine is registered more than once with LicenseServer, it might appear in the Server Management tab under multiple names, that is, with multiple entries. This could happen, for example, if a machine is re-registered with the host name given in a different form.

To ensure that additional licenses are not redundantly assigned to the same machine under its different names, you should unregister redundant client machine entries by clicking the **Unregister server and all products** button of these machines. *(Note: While the client machines are considered for the purposes of this documentation to be clients of LicenseServer, they are in effect servers of their own products.)* Also, if the same license is assigned multiple times to the same machine under its different names, licensing conflicts could arise. So, to avoid these two situations (redundant licensing and multiple assignments of a single license), it is recommended that redundant entries of a single client machine be unregistered.

Given below are forms a machine name might take in the Server Management tab:

- *Host name with domain name (the fully qualified domain name, FQDN), such as: "win80-x64_1.my.domain.com" or "Doc3.my.domain.com".* This happens when the host name of the machine (with or without the domain information) is passed as the argument of the `licenseserver` CLI command that is used to register the server product with LicenseServer. For example: `<AltovaServerProduct> licenseserver Doc3`. This produces an FQDN such as: `Doc3.my.domain.com`.

  An FQDN is also produced when `localhost` is supplied on Windows 7 systems as the host name.

- *Host name without domain name. For example: "win80-x64_1" or "Doc3".* This happens on Windows 8 systems when `localhost` is given as the machine name.

- *localhost*. In some cases, `localhost` is also displayed as a machine name.

Note: If, during installation of the Altova server product on Windows machines, the machine is automatically registered with LicenseServer, `localhost` is used by the installer as the machine name.

Requesting an evaluation license
You can obtain a 30-day free evaluation license for each of a client's installed Altova products that have been registered with LicenseServer. Click the **Request Evaluation Licenses** button near the bottom of the Server Management tab. A dialog pops up containing a list of the Altova server products (on that client machine) which have been registered with LicenseServer. Make sure that the products for which you want an evaluation license are checked, then fill in the registration fields, and send the request. You will receive an e-mail from Altova containing the 30-day evaluation license/s. The number of cores for which the license will be valid per product will be exactly the number required by the product at the time the request is sent. Save the license/s to disk and upload to the license pool.

Unregistering products
Each Altova product registered with LicenseServer is listed in the Server Management tab under its client machine name and has an **Unregister** icon to its right. Click this icon to unregister the product. If a license was assigned to the product, the assignment will be terminated when the product is unregistered. To unregister all products, click the **Unregister Server and All Products** button at the bottom of the Server Management tab (*see first screenshot in this section*).

To re-register a product with LicenseServer, go to the product's Setup page or its CLI and register it. *See:* Register FlowForce Server, Register MapForce Server, Register StyleVision Server, and Register RaptorXML(+XBRL) Server.

For more information, see the section, Assigning Licenses to Registered Products.

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Server Monitoring

The **Server Monitoring** tab provides an overview of servers currently running licensed Altova products. It contains product information along with information about users and licenses.

Settings

This section:

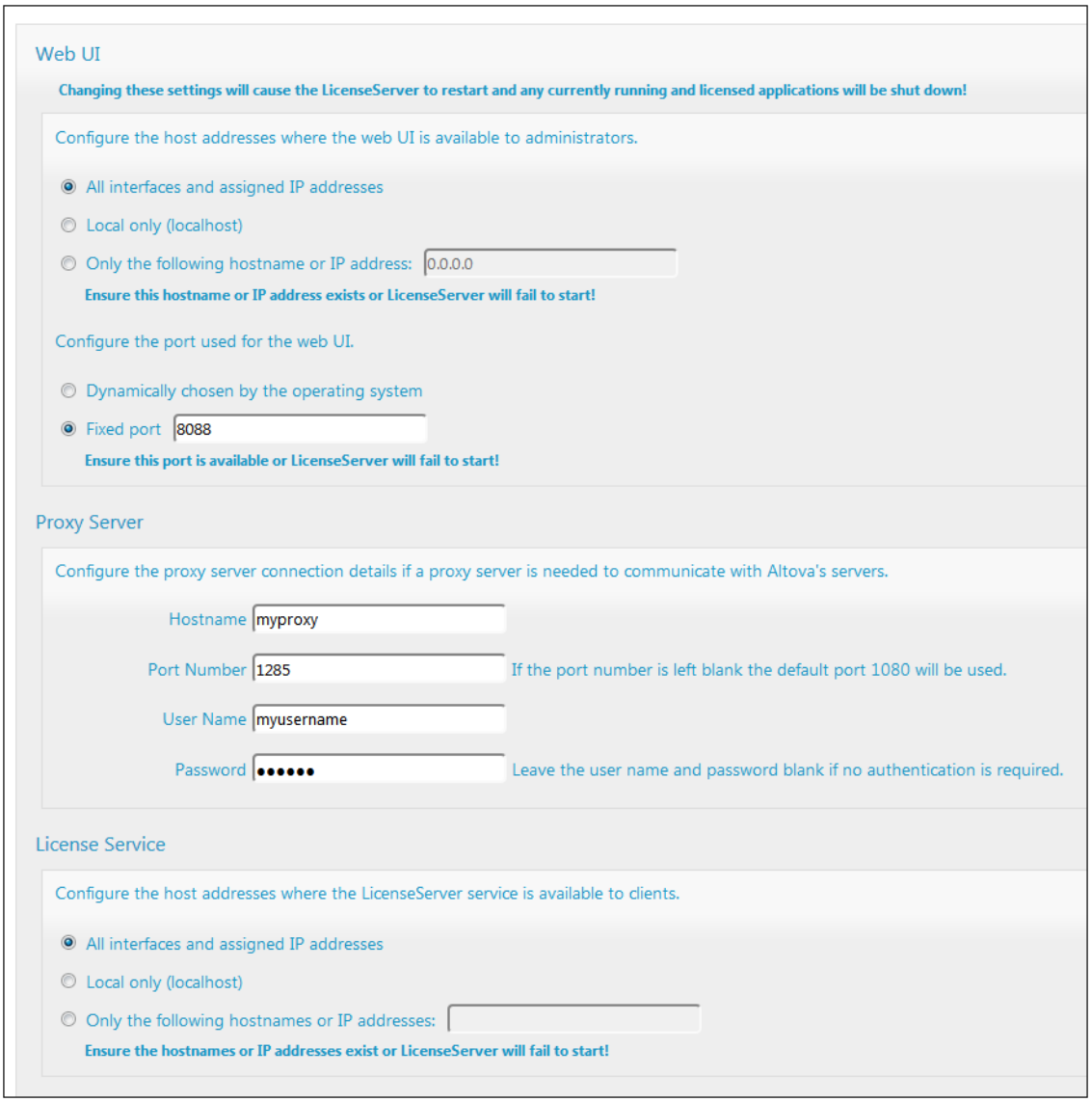
- Network settings
- Alert Mail settings
- Miscellaneous settings

The **Settings** tab is described below. You can set the following:

- The password for logging in to LicenseServer. Enter the desired password and click **Change Password**.
- Test connectivity to Altova by clicking **Test Connection to Altova**. Note that you must save new settings (by clicking the **Save** button at the bottom of the pane) before testing the connection. The **Test Connection to Altova** button is disabled while the test is in progress, and becomes enabled again when the test has been completed.
- Client statistics
- Network settings for the web-based configuration page (Web UI), the proxy server used to connect to the Internet (if any), for and for LicenseServer (License Service). These settings are described in Network settings below.
- Email server settings and the alert mail recipient to contact in the event of a significant LicenseServer occurrence. These settings are described in Alert Mail settings below.
- After you change a setting, click **Save** at the bottom of the pane. A changed setting will not take effect till it is saved.

Network settings

Administrators can specify network access points to the LicenseServer configuration page and to LicenseServer.



- *Web UI:* Allowed IP addresses can vary from all interfaces and IP addresses on that machine to a fixed address, and ports can be either dynamically calculated or fixed. This allows a wide range of allowed IP-Address:Port settings. The default port setting is **8088**.
- *Proxy Server (available from v1.3 onwards):* If a proxy server is being used to connect to the Internet, the details of the proxy server must be entered in the Proxy Server pane (*see screenshot above*). These fields need to be filled in only if a proxy server is being used. Also, proxy servers often do not need authentication (a user-name and password), in which case these two fields can be left blank. To configure LicenseServer for the proxy server, enter the proxy server's host name, and, if required, a port number.
- *License Service:* IP addresses can vary from all interfaces and IP addresses on that machine to a fixed address. If you list hostnames and/or IP addresses, use a comma-separated list without any spaces (for example: `hostname1,IPAddress1,hostname2`).The port number is fixed at **35355**.

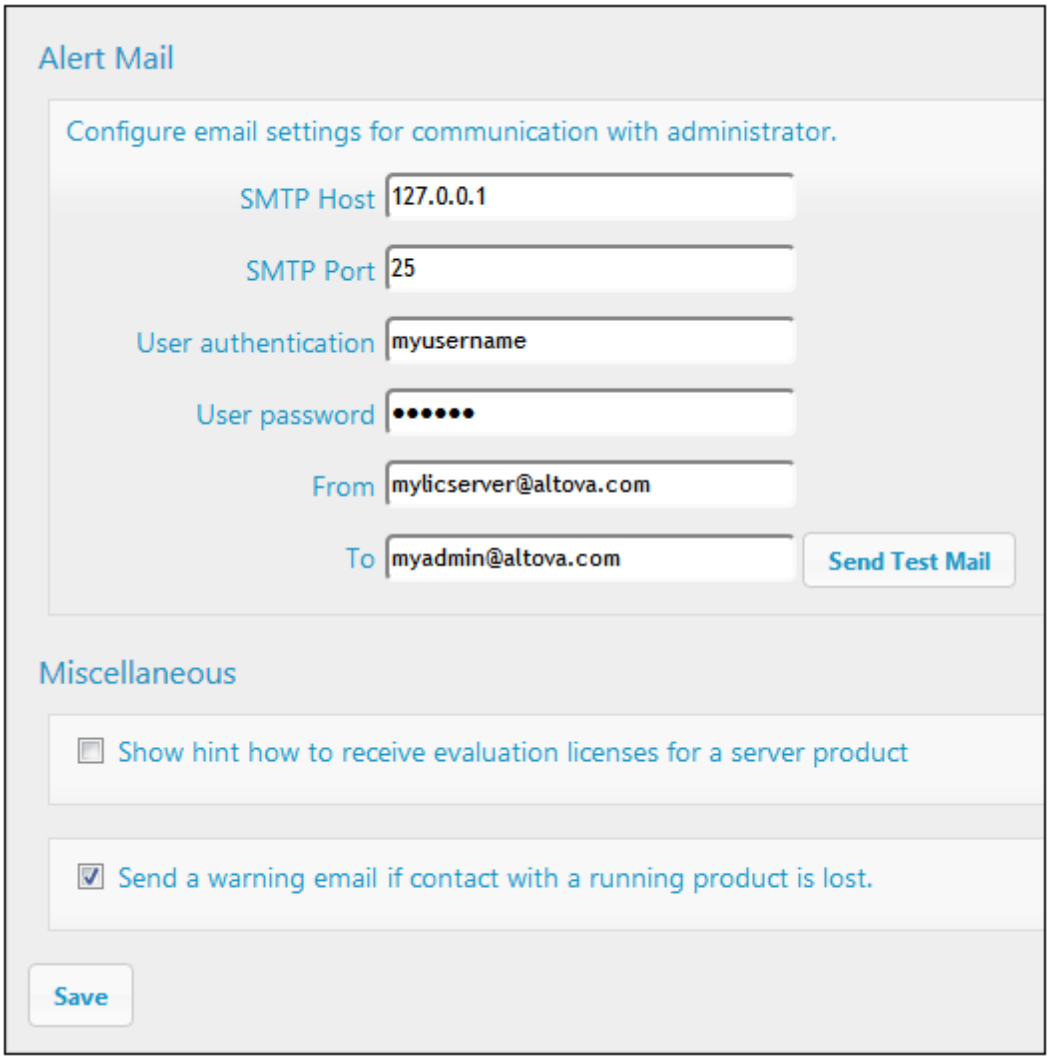
By default, these settings allow unrestricted access to LicenseServer and its configuration page from within the networks to which LicenseServer is connected. If you wish to restrict access to

either LicenseServer or its configuration page, enter the appropriate settings and click **Save**.

Run a connectivity test (*see above*) to check that the settings are correct.

Alert Mail settings
Altova LicenseServer needs to be connected to the `altova.com` server. If the connection is broken for more than 24*5 hours (5 days), LicenseServer will not allow licenses. As a result, work sessions with Altova products licensed by LicenseServer could be disrupted.

In order to alert the administrator that a connection is broken, an alert mail can be sent to an email address. The Alert Mail pane (*see screenshot below*) is where you enter settings for sending alert mails to an administrator's email address.



SMTP Host and *SMTP Port* are the access details of the email server from which the email alert will be sent. *User Authentication* and *User Password* are the user's credentials for accessing the

email server. The *From* field takes the address of the email account from which the email will be sent. The *To* field takes the recipient's email address.

Click **Save** when done. After saving the Alert Mail settings, email alerts will be sent to the address specified whenever a significant event occurs, such as when connection to `altova.com` is lost. Note that such events are also recorded in the Messages tab, and can be looked up there.

Miscellaneous settings

Show hints for receiving and deploying evaluation licenses
Checking this box (*see secreenshot above*) displays, at the top of the configuration page, brief instructions about how to evaluate and deploy evaluation licenses.

Send a warning email if contact with a running product is lost
A warning message is sent from the *From* address to the *To* address if a connection with a product that is licensed and running is lost.

Messages, Log Out

The **Messages** tab displays all messages relevant to licenses in the license pool of the LicenseServer. Each message has a **Delete** button that allows you to delete that particular message.

The **Log Out** tab serves as the Log Out button. Clicking the tab logs you out immediately and then displays the Login mask.

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