

# Loquendo TTS

*Multilanguage Text-to-speech Synthesizer*

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## Installation Manual

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*Version 7.12.10*

*14 April 2010*

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## **What's New**

In the chapter “Installation and License Key” some details about installation have been added.



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## 1 Installation and License Key

In the next paragraph we will explain the Loquendo TTS installation procedure, and how to obtain a valid Loquendo TTS License Key (if needed).

The same procedure may be applied to any Loquendo TTS distribution type: Engine, SDK, Remote API, Language or Voice.

Please note that the Engine must be installed first. Language, voice, Remote API and SDK distributions cannot be installed without installing an Engine before. SDK needs the Remote API installed before.

It is mandatory to have system administrator rights in order to install the Loquendo TTS distributions.

For a single Voice distribution, no more than a coding flavour (Telephony, High Quality or Small Footprint) can be installed. Note that the Telephony Voices require The Full Engine Distribution.

If the SDK package has been purchased and you want to listen to a voice, for instance the “Allison” voice, using the TTSDirector<sup>1</sup> application, you will need to install five distributions: Engine (first), Remote API, SDK, English (the language distribution) and Allison (the voice distribution).

Essentially, for each of these five distributions, it is necessary to download the package, and run the executable file that installs it on your machine .

Language and Voice distributions from version 7.3.0 are not compatible with Engine distributions with version number lower than 7.3.0, and vice versa (with the exception of some old Voice distributions, which are still compatible with Engine versions from 7.3.0; the not compatible voices are signaled by the set-up program).

Should a Loquendo TTS setup procedure fail, one or more log files are produced. Log files are localized in the hard disk root (C:\) and are named LTTS\_7-<module>.log (where <module> = EngineFull, English, SDK, Spanish, etc.). They may help to possibly diagnose the most part of setup failures.

### 1.1 Windows

The next paragraph explains how to install this Loquendo TTS distribution software in the Windows Platform and how to obtain a Loquendo TTS Windows license key (if needed).

Pay attention: you must install a Loquendo TTS Engine as the first distribution, before all the other Loquendo TTS distribution types (SDK , Remote API, Languages and Voice). The installation procedure is common to all the Loquendo TTS distribution types. SDK, Languages and Voices distributions can be installed independently. An Engine is always necessary, with the exception of SDK that needs the Remote API too.

#### 1.1.1 System Requirements

- Pentium 1 GHz or better;
- 512 Mb RAM or more;
- The following Windows versions are supported: XP, Server 2003, Vista, Server 2008.

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<sup>1</sup> From the Start Menu, select Loquendo, Loquendo TTS 7, Loquendo TTS 7 Director

### 1.1.2 Installation

Run the setup program of the product: a standard Windows installation procedure will begin. The installation procedure, as usual, will allow the choice of a destination path for the Loquendo TTS SDK (the default path should be ...Program Files\Loquendo\LTTS7 or equivalent<sup>2</sup>).

As soon as the installation procedure has successfully finished, you should run one of the Windows applications just installed, to test the environment. It is possible to use the "Loquendo TTS 7 Diagnostic" application, or, if the SDK package has been purchased and installed, try for instance TTSDirector<sup>3</sup>. Enter some text, or simply some nonsense words and press button Play. You should hear a voice coming from your PC loudspeakers<sup>4</sup>. See the Loquendo TTS SDK User's guide for more information on TTSDirector.

If your copy of Loquendo TTS requires a license key, TTSDirector (or Loquendo TTS 7 Diagnostic) will issue a "Missing license code" error message<sup>5</sup>.

The next section of this manual will explain how to obtain a valid license code.

### 1.1.3 License Key

To obtain a valid license key for your copy of Loquendo TTS, you should access the Loquendo Customer Area on the WEB.

Please refer to <http://www.loquendo.com/customerarea> in order to get your license.

If you need to transfer the license to another computer, you should access the Loquendo Customer Area on the WEB and use the tool for transfer license.

This will remove your license from your computer and create a "License transfer request" file. Again, refer to <http://www.loquendo.com/customerarea> in order to send back your license to Loquendo. This license will be immediately available for a new TTS license request from another computer.

### 1.1.4 Uninstall

To completely remove Loquendo TTS for your computer, simply execute the standard Windows "Add/Remove Programs" procedure in the Control Panel. If your copy of Loquendo TTS includes **voices and/or languages**, you should **remove them first**. As soon as all the additional voices/languages have been removed, you can safely remove the Loquendo TTS Engine.

Occasionally the Loquendo TTS uninstall procedure may report that some elements could not be removed. A possible reason: something has changed in the Loquendo TTS directory after set-up (e.g. custom lexicons), and the uninstall procedure was unable to delete it. In this case you can manually remove it.

### 1.1.5 SAPI 4 support

Note that, in order to use the Microsoft SAPI 4 interface, the Microsoft SAPI 4 run time files are necessary. These files could be missing in some Windows Operating Systems versions: in this case, please install them from the LoquendoTTS Engine distribution, running the included "spchapi.exe".

<sup>2</sup> This may be slightly different for International Windows versions.

<sup>3</sup> From the Start Menu, select Loquendo, Loquendo TTS 7, Loquendo TTS 7 Director

<sup>4</sup> Your PC must be equipped with a Multimedia audio board (and relative Windows drivers) for this.

<sup>5</sup> Depending on the software version, the error message may be read by the TTS instead.



## 1.2 Unix/Linux

The next paragraph explains how to install this Loquendo TTS distribution in a Unix/Linux Platform and how to obtain a Loquendo TTS Unix license key.

### 1.2.1 Linux System Requirements

- Pentium 1 GHz or better;
- 512 Mb RAM or more;
- libc version: GLIBC\_2.3.2 or greater

Tested Platforms:

- Red Hat Enterprise 3
- Red Hat Enterprise 4
- Red Hat Enterprise 5
- CentOS 5
- Suse 10
- Debian 4

### 1.2.2 Installation

Pay attention: you must install a Loquendo TTS Engine as the first distribution, before all the other Loquendo TTS distribution types (SDK , Remote API, Languages and Voice). The installation procedure is common to all the Loquendo TTS distribution types. SDK, Remote API, Languages and Voices distributions can be installed independently. An Engine is always necessary, with the exception of SDK that needs the Remote API too.

To install this Loquendo TTS distribution extract the files from your <distribution>.tar.gz using the command `tar -xzf <distribution>.tar.gz` and in the directory <distribution> run the `install.sh` bash file.

The script asks an installation directory (default: `/opt/Loquendo/LTTS7`); in this directory you must have read, write and execution permission, otherwise the installation will end prematurely.

The next section of this manual will explain how to obtain a valid license code.

### 1.2.3 License Key

Loquendo TTS uses a license key to protect itself against illegal copying.

The license is host-based: each computer has a different license key.

You can license your product inserting the serial number or via the customer area procedure.

#### *1.2.3.1 Licensing using the serial number (only for Multimedia Engine)*

Once Loquendo TTS has been installed on a computer, you need to run the program TTSLicenseSN `"/opt/Loquendo/LTTS7/bin/TTSLicenseSN"` and insert your serial number.

#### *1.2.3.2 Licensing via Customer area Procedure (for Multimedia and Full Engine)*

To obtain a valid license key for your copy of Loquendo TTS, you should access the Loquendo Customer Area on the WEB.

Please refer to <http://www.loquendo.com/customerarea> to get your license.

When you receive from Loquendo the license file pay attention to "TTSLicense.txt" and the path where it has been deployed. Check that the LTTS configuration file `default.session` contains the key:

```
"LicenseFile" = "/opt/Loquendo/LTTS7/TTSLicense.txt"
```

File "default.session" gives specifications for Loquendo TTS parameters. Verify that LicenseFile path reflect the path of your TTSLicense.txt file.

### **1.2.4 Uninstall**

To uninstall Loquendo TTS, run the `uninstall.sh` bash file.

### **1.2.5 A minimal C sample for Loquendo TTS: HelloTTS**

With HelloTTS.c (available only in the SDK distributions) you can build an executable that sends samples to the audio board:

```
> cd samples/c/HelloTTS
> make
> cd ../../../../bin
```

Try an installed voice (for example "Susan") with:

```
> ./HelloTTS Susan
```

If you need to move the executable in another directory, in order to find the configuration file `default.session` you may set the environment variable `LTTS7_DEFAULTSESSION`. For example:  
`setenv LTTS7_DEFAULTSESSION /opt/Loquendo/LTTS7/bin/default.session`

In some environment it may happen that when you start the application it returns the error:

`libLTTS7Util.so: cannot open shared object file.`

In this case the environment variable `LD_LIBRARY_PATH` may be set (or extended) to allow run time linkage.

In the C shell type:

```
setenv LD_LIBRARY_PATH [INSTALL_DIR]/LTTS7/bin
```

In the Bourne shell, type:

```
LD_LIBRARY_PATH=[INSTALL_DIR]/LTTS7/bin  
export LD_LIBRARY_PATH
```

[INSTALL\_DIR] is the place where you have installed LTTS7 (/opt/Loquendo by default).

## 2 Loquendo Remote API

Loquendo Remote API is a java layer of APIs allowing the use of Loquendo Remote Text-to-Speech technology (Loquendo RTTS) through an instance of Loquendo TTS Engine Client, as shown in the following picture:

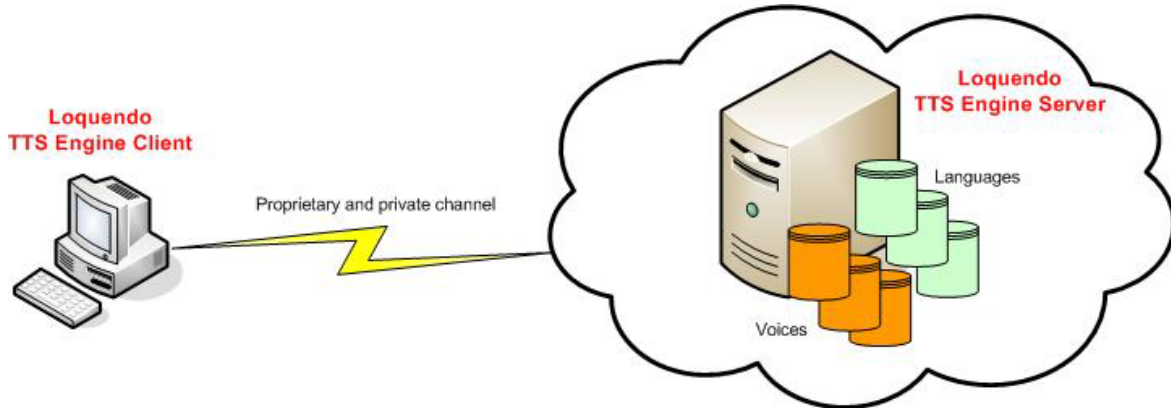


Figure 1: Loquendo Remote Text-to-Speech architecture

**Note:** Loquendo RTTS has been designed to be used within a LAN. Using this technology with other network configurations could produce latency issues.

Loquendo Remote Text-to-Speech is a system-independent technology; it is possible to install and use Loquendo RTTS in Windows or Linux systems, as well as to install the server layer in a Linux PC and the clients in a Windows PC, and vice versa.

During setup it will be possible to choose between the "client layer" option, that will install the Loquendo TTS Engine Client, and the "full installation" option, that will install both the Loquendo TTS Engine Server and the Loquendo TTS Engine Client.

After the installation, a new link (TTS Engine Server Administrator Launcher) or script on Linux (TTSEngineServerAdministratorLauncher.sh) will be available, allowing the running and monitoring of the server through the TTS Engine Server Administrator Control application (see the Figure 2).

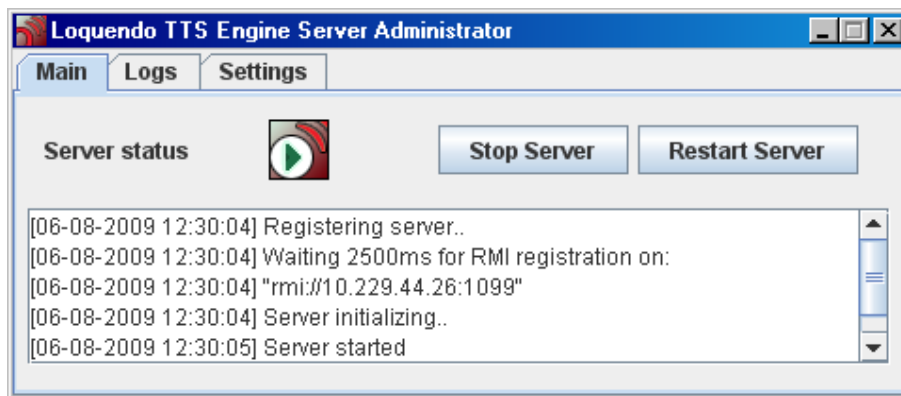


Figure 2: Loquendo TTS Engine Server Administrator main panel

By default, the server application will use the TCP port 1099, and will automatically select an IP address associated with an Ethernet card installed in the computer, but it is possible to change the port number and the IP address in the "Settings" panel (see the Figure 3).

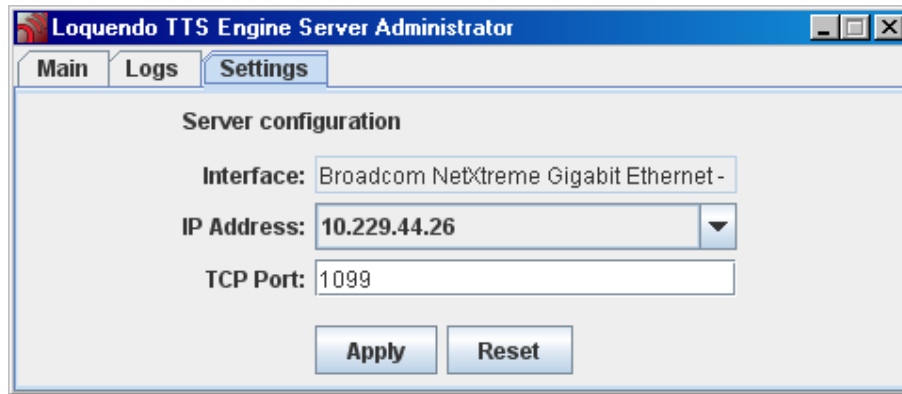


Figure 3: Loquendo TTS Engine Server Administrator settings panel

Be sure to make the correct configuration on your firewall to open the relative port.

## 2.1 Windows service and Linux daemon

When installing the “full installation” option it is possible to choose Windows service (or a Linux daemon) in order to start the Loquendo TTS Engine Server at the system start-up.

In the Windows system, “Loquendo TTS Engine Server” service is found in services list.

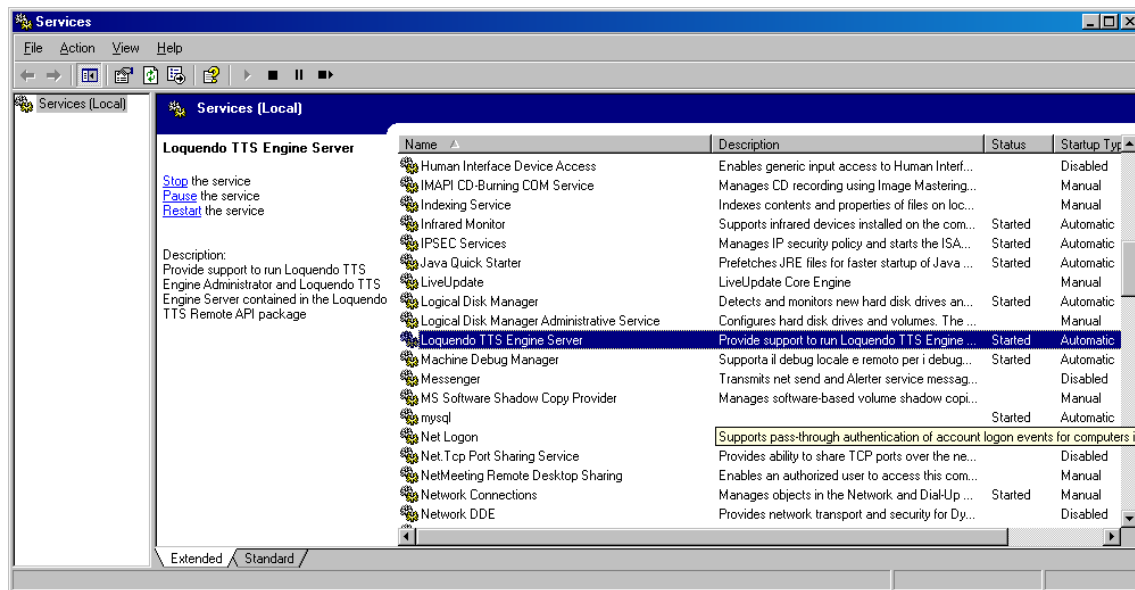


Figure 4: Loquendo TTS Engine Server Windows service

Before to start the service, make sure the appropriate properties are set: the service must be executed with administrator policies; if necessary, changes can be made in the Log On account panel (see fig. 5.1).

It is possible to specify all the starting parameters (ie. the TCP port, the IP address...). Please refer to the “Loquendo RemoteAPI Programmer’s Guide” for a complete list of start parameters, which can be input into the “Start parameters” text box (see fig. 5.2).

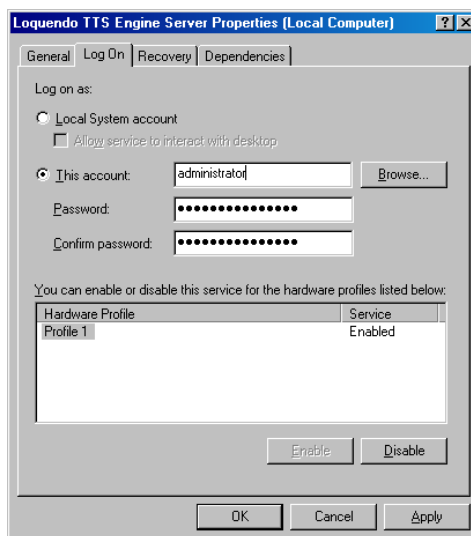


Figure 5.1: Loquendo TTS Engine Server Windows service “Log On” properties panel

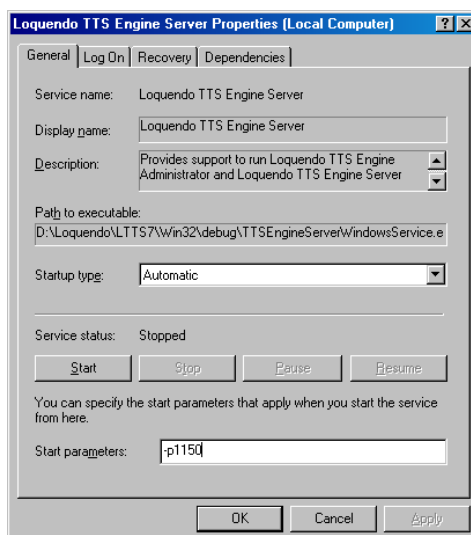


Figure 5.2: Loquendo TTS Engine Server Windows service “General” properties panel

In a Linux system the daemon shell script “ttsengineserver” will be in /etc/init.d/ path. Possible options for this script are: start, stop, and restart. In order for the script properly work user must be root.

### 3 SDK installation details

The SDK contains several examples of use and integration of Loquendo TTS technology, along with the documentation and the Loquendo TTS tools, including the Loquendo TTS Director.

#### 3.1 Loquendo TTS Director

Loquendo TTS Director is a multi-platform Java development authoring suite, which helps users to write effective vocal messages (prompts) for their applications.

Loquendo TTS Director's architecture is client-server (from version 7.4.0 of the SDK) based on the Loquendo Remote Text-to-Speech technology provided in the Loquendo Remote API package.

Such architecture, through Loquendo Remote Text-to-Speech (see the previous paragraph), allows the installation onto a computer of the Loquendo TTS Engine Server (together with the Loquendo TTS libraries for the Engine, languages and voices), while installing one or more Loquendo TTS Engine clients on different computers. Alternatively, you may install Server and Client on the same machine.

Loquendo TTS Director (which is part of the SDK package) can be installed in the client side or where Loquendo RTTS is installed as "full"; in this case, it is possible to execute TTS Director in "stand-alone" mode, so avoiding having to start the server with an explicit command.

The execution of the Loquendo TTS Director client is possible by clicking the TTS Director client link in the Loquendo menu (on Windows OS) or by running the TTSDirectorClient.sh script (on Linux OS); it will be necessary to specify, in the proper panel, the IP address and the port number of the computer where the server is running.

In the "stand-alone" case, the execution of Loquendo TTS Director will be possible by clicking the TTS Director link in the Loquendo menu (on Windows OS) or by running the TTSDirector.sh script (on Linux OS).

By default, the server application will use the TCP port 1099, but it is possible to change the port number. Be sure to make the correct configuration on your firewall to open the relative port.

It is possible to change the server for TTS Director without restarting the application, by using the control panel in the Configuration → Settings menu



Figure 6: TTS Director settings menu

## 4 Support for MP3 format

With Loquendo TTS, users can create audio files in the MP3 format.

To activate MP3 support, users should download and compile the LAME library (lame\_enc.dll for Windows, or libmp3lame.so for Linux).

LAME is a free software application used to encode audio into the MP3 file format: the LAME terms of use can be found here: <http://lame.sourceforge.net/using.php>

The LAME source files can be downloaded from: <http://lame.sourceforge.net/>

The library should be copied into the TTS installation directory. Alternatively, in the LIBMP3LAME environment variable, users can set the full path where the library is installed (for example: /usr/lib/libmp3lame.so).

It is advisable to obtain a patent license for the rights to use the compression algorithm utilized in the LAME software.