

DEPLOYMENT OF ZOC TERMINAL

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1 Introduction

This document describes the basic steps to deploy an installation of ZOC Terminal to multiple computers in a large organization.

Since most large-scale users of ZOC Terminal will want to deploy a pre-configured version of the software, with configuration details that go beyond the options offered through the setup, e.g. a host-directory populated with hosts within the organization, user defined window appearance, limiting features available to end users, etc.

For mass deployment with preconfigured options, ZOC Terminal offers two possible solutions.

1. You can create a reference installation on a computer and then replicate the program folder and configuration data folder by means of a deployment tool of your choice. Depending on your deployment tools, this is probably the simpler choice.
2. Create a modified setup that runs without user interaction and which includes your reference configuration.

2 Creating a Reference-Installation

2.1 Creating a Reference-Installation

On one of your workstations, run the ZOC Terminal setup and make during setup make your choices according to your preference (e.g. location of configuration data, intended usage, etc.).

2.2 Configuring the Reference-Installation

After installing ZOC Terminal on the reference workstation, you can configure the program the way that you intend the program to present itself to your users.

Typical tasks would be to disable the automatic popup of the Quick-Connect window when the program starts (there is a check at the bottom of said window), tweaking the default communication methods, the appearance and color of the terminal and the availability of window elements (all through *Options-menu* → *Edit Session Profile*) and other program characteristics, e.g. the usage of the clipboard or the available emulations and/or communication methods (*Options-menu* → *Program Settings*).

Usually, you will also want to populate the host directory (*File-menu* → *Host Directory*) and/or create shortcuts to launch a connection to a host directly (*Host Directory* → *More* → *Create Shortcut*).

Another option that you may want to consider changing from the default is *Program Settings* → *Updates*, because you probably do not want your users to receive update notices when we release new versions.

2.3 Advanced Configuration Options

Inside the ZOC program folder (this depends on where the program was installed, the default locations are "C:\Program Files (x86)\ZOC9" or "C:\Program Files\ZOC9") you will find a file named `admin.ini`.

Loading this file into an editor will offer a variety of tweaks which large scale administrators may be interested in, e.g. settings that allow to change the location of some of the configuration files or turn off some of the features (e.g. stored passwords).

You will also find entries that allow disabling of menu choices or options, so that the user can only perform some of the functions or change some of the preconfigured settings.

3 Deploying the Software by Cloning an Installation

One way (and probably the easiest way) to deploy a ZOC installation is to simply clone the program folder and the data folder. This is possible because ZOC does not necessarily require to run its install program and because most deployment software offers a function to wrap existing folders into a deployment package.

3.1 Required Data

Once the installation and configuration of ZOC Terminal is complete, all that remains to be done is to replicate the program and configuration data to the client machines and create icons for the end users to start the program.

The files necessary to copy to the user machine include the program itself, and all files with changes/settings that were changed during configuration.

1. The program folder (usually “*C:\Program Files (x86)\ZOC9*” or *C:\Program Files\ZOC9*). It contains all files required to run the software plus the *admin.ini* file which sets the location of the data folder and administrator specific tweaks. With large-scale licensing you will also have received a license file (*zochook.zlc*) that needs to be placed in the program folder.
2. The configuration folder (usually *My Documents* → *ZOC9 Files*, or start ZOC → File-menu → Configuration Data → Show Configuration Data Folder). It contains the files which contain the settings from the ZOC Options-menu (Program Settings, Session Profiles, Keyboard Profiles, etc.), as well as the host directory and other program states (e.g. the list of windows that were suppressed through “Don’t show this again” checkmarks).
3. A program icon/shortcut. To launch the software, it is necessary to create a program icon. The icon can be a
 - copy of the ZOC Terminal program icon in the start-menu, or a
 - copy of an icon that was created as a shortcut to a connection (e.g. via the *More* button in the host directory), or a
 - custom icon (pointing to *zoc.exe* in the program folder) that has additional command line parameters as described in Help-menu → Commandline Parameters (e.g. a parameter that launches a REXX script after start).

3.2 Deployment

Actual deployment depends on the deployment software used.

Using the features of the deployment software available, create a deployment package consisting of the above folders and icon and replicate these to the end user computers.

3.3 License Distribution

After deployment, your software can call setup.exe to fetch a license from a license pool and store it on the computer. See chapter 5.

3.4 Support

For any questions or further technical details please contact EmTec support or m.schmidt@emtec.com directly.

4 Deploying the Software via Silent Install/Uninstall

The ZOC installation program can be run as a silent installation.

Achieving this in combination with a custom configuration is slightly more complex than merely cloning an installation, but it has the additional benefit of the installer making the file type associations (registering ZOC as the handler for file extensions like `.zrx` and for URL types like `telnet://` and `ssh://`).

4.1 Requirements

Depending on your exact needs, the creation of a silent install may require a ZIP and an UNZIP tool. Either use shell commands like `zip.exe` and `unzip.exe` or a GUI manager like 7-zip.

Also, we assume you have downloaded a ZOC installation file (`zocxxxx_x64.exe`) and stored it somewhere in a folder named `zoc_setup`.

4.2 Creating the Silent-Install Response File

Go to a computer that matches the ones that you want to deploy ZOC to later. This usually means a computer that does not have ZOC installed already and which uses at least the same processor platform (32-bit or 64-bit). Go to a command prompt and run `zocXXXX_x64.exe /extract` from the `zoc_setup` folder. This will extract the files from the installation program into a sub-folder named `setup_unzipped` (alternately you can use any unzip tool to unpack `zocXXXX_x64.exe`).

Go to the `setup_unzipped` folder, run `setup.exe` and proceed through the setup (choose the installation type, choose program and data folder, etc.).

Please note that some questions in the installer will be skipped if ZOC has already been installed on a computer, or if the installer finds existing ZOC configuration data in the user data location. E.g., if you choose “My Documents → ZOC9 Files” as your data location and if there already is such a folder and if it contains a valid ZOC configuration, the user will not be asked about experience with previous terminals or about intended use of ZOC.

After completing the setup, you will find a new file named `silentsetup_tmp.ini` in the `setup_unzipped` folder. This file contains your installation choices.

Now uninstall ZOC (select to also let the uninstaller remove the ZOC configuration data folder), then rename the file from the last step to `silentsetup.ini`, and run the `setup.exe` command again.

This time the setup should perform the same steps without user interaction.

If you use `setup.exe` together with the `/HIDE` command-line option, the setup will perform completely hidden.

4.3 Adding and Replacing Files to the ZOC Program Folder via CUSTOM.ZIP

If you need to add files to the ZOC program folder for your customized install, the setup recognizes an optional ZIP file named `custom.zip` that can reside the `setup_unzipped` folder. Its content will automatically be added to the ZOC program folder (typically `C:\Program Files\ZOC9\`) during setup. This way you can easily add files to the installation (e.g. a custom designed `admin.ini` file or a `zochook.zlc` license file).

4.4 Providing a Custom Configuration via 'newuserprofile_custom'

Custom Configuration via newuserprofile:

Background: When installing ZOC on a new computer and when running ZOC for the first time, ZOC will check the location of the ZOC configuration (usually `My Documents → ZOC9 Files`) for the existence of valid configuration files. If none exists on the first start, ZOC will create the user's default configuration. This will be done by copying the contents of the `newuserprofile_english` folder (inside the ZOC program folder) to the chosen configuration folder.

After copying the `newuserprofile_english` folder, the user will be asked about terminal emulators he might have used previously and about his intended use of ZOC. Then, the default session profile (`Standard.zoc`) and program settings (`Standard.zfg`) of the new configuration will be modified according to these answers given in order to provide more tailored defaults.

In order to generate an installation that will start with configuration that is modified by the system administrator, you can create a `newuserprofile_custom` folder containing a default configuration inside the ZOC program folder. In that case, when ZOC starts and when no ZOC configuration exists (usually `My Documents → ZOC9 Files`) the `newuserprofile_custom` folder will take precedence over the `newuserprofile_english` folder and the initial configuration will be created by copying this folder to the destination.

Providing a Custom Configuration via `newuserprofile_custom.zcfg`:

While it is possible to create a `newuserprofile_custom` folder through the `custom.zip` file (see above), easier way to do this is by adding an archive with a preconfigured ZOC-configuration to your `setup_unzipped` folder.

The easiest way to achieve this, is to go to your reference installation (see chapter 2) and use the 'Export' function from ZOC's *Main-menu* → *Files* → *ZOC Configuration Data* and rename the resulting file to `newuserprofile_custom.zcfg`.

Alternately go to your reference installation and put the contents of the ZOC configuration folder (usually *My Documents* → *ZOC9 Files*) directly into a ZIP archive named `newuserprofile_custom.zip` (note that the ZIP file should not have a ZOC9 Files folder within it, but instead should contain the files and folders from within the ZOC9 Files folder).

Then add the `newuserprofile_custom.zcfg` or `newuserprofile_custom.zip` file to the `setup_unzipped` folder and run `setup.exe`.

This way the setup will unpack its contents into the `newuserprofile_custom` folder within the ZOC program folder.

When ZOC subsequently starts for the first time, it will create a new default configuration based on from the `newuseprofile_custom` folder and it will skip the questions about previous terminals and usage intention, because it assumes that the files from your `newuserprofile_custom.zip` (or `newuserprofile_custom.zcfg`) archive is already tailored to the end user's needs.

4.5 License Distribution

If you have a volume-license or site-license file (`zochook.zlc`), which needs placed in the ZOC program folder), you can achieve that via a `custom.zip` file as mentioned above.

Otherwise, you can create a license pool from your available licenses and have `setup.exe` automatically pull licenses from the pool and install them on the client computer. This is done by simply placing a `Licensing.ini` file into your `setup_unzipped` folder. See chapter 5 for Licensing.

4.6 Summary/Recommendations for Silent Install

To wrap up the optional/alternate processes described above, unless you have very specific needs, the recommended process for silent install with least complexity which should work in most cases is the following:

1. Download the program installer into a folder named `zoc_setup`.
2. Extract files from the program installer by running it with the `/extract` command in order to place the extracted files into the `setup_unzipped` sub-folder.
3. Run a fresh setup from within the new `setup_unzipped` folder. After completing the setup, rename the `silentsetup_tmp.ini` file to `silentsetup.ini`.
4. Configure your newly installed ZOC the way you want it to appear for your users (see chapter 2), e.g. via ZOC's *Options-menu* and populate the *Host Directory*. If necessary, tweak the program features via the `admin.ini` file in the ZOC program folder.
5. Depending on tweaks and license, put the modified `admin.ini` file, a possible site license file (`zochook.zlc`) and a menu template file into a zip archive named `custom.zip`.
6. Put the contents of your preconfigured `My Documents → ZOC9 Files` into a compressed `newuserprofile_custom.zip` archive or alternately use ZOC's *Main-menu → ZOC Configuration Data → Export* function to create a configuration archive and rename the exported file to `newuserprofile_custom.zcfg`.
7. If you don't have a site license file, instead create a `Licensensing.ini` file (see chapter 6).
8. Copy all the files from these steps (`silentsetup.ini`, `custom.zip`, `newuserprofile_custom.zcfg`, etc) to the `setup_unzipped` folder, copy that folder to a destination computer and run the `setup.exe` from that folder. If you are sure all works as expected run `setup.exe /hide` on for deployment on all other machines.

4.7 Silent Update

The easiest way to perform a silent update is to call the downloaded file directly with `/autoupdate`, and optionally `/hide` e.g. `zocXXXX_x64.exe /autoupdate` or `zocXXXX_x64.exe /autoupdate /hide`

Alternately, if you do not want to run the program with command-line parameters, you can rename the executable and embed the parameter strings at the end of the file name. For example, renaming the file to `zoc9-autoupdate-hide.exe` is equivalent to providing `/autoupdate /hide` as command-line parameters.

Alternately, if you do not want to run the update with the default choices (e.g., about program group creation), a silent update can be performed in the same way as a silent install (see above): Extract the setup files, run the setup, choose "Upgrade" and proceed with the options of your choice. This will create a `silentseup_tmp.ini` in the `zoc_setup` folder. Then rename this file to `silentsetup.ini`. and run `setup.exe` again on the target machine with the `silentsetup.ini` file present and provide the optional `/hide` parameter.

4.8 Silent Uninstall

In order to perform a silent uninstall, simply call `setup.exe` from the ZOC program folder with the following parameters:

```
"C:\Program Files\ZOC9\setup.exe" /remove:zoc9 /silent [/deletedatafolder]
[/hide]
```

4.9 Support

For any questions or further technical details please contact EmTec support or m.schmidt@emtec.com directly.

5 License Distribution

The ZOC installation program can be used to assign and install licenses from a license pool to a user or workstation. This is suitable for a medium number of users, i.e. when you receive individual license codes for approximately 10 to 50 users.

The assignment of a license to a user workstation can be done either

1. Implicitly: during manual or automated/silent installation, by placing a `Licensing.ini` file in the same folder with the installer and providing the `/licensing` parameter to the installer, e.g.
`zocXXXX_x64.exe /silentsetup /licensing`
2. Explicitly: by unpacking the installer and running `setup.exe /LICENSING:licensing.ini`

5.1 Server Side: The License Pool File

A license pool is a text file in semicolon-separated CSV format with three columns (support id, part-a, parta-b), but without column headers.

Example: A file named `LicensePool.csv` could look like this:

```
"Z7100BCA"; "00040/06006/50400"; "01690/45000"  
"Z7100BDA"; "05500/00044/54646"; "01900/10069"  
"Z7100BEA"; "11500/50400/00001"; "65100/60410"  
"Z7100BFA"; "00011/04046/55605"; "01444/00900"  
"Z7100C0A"; "00009/00064/50504"; "50905/50450"  
"Z7100C1A"; "15005/40066/05600"; "00050/00000"  
"Z7100C2A"; "46040/04100/00090"; "61060/00050"  
"Z7100C3A"; "50051/00006/50009"; "49104/06441"
```

There is an alternate file format. It matches the order emails from our U.S. distributor BMT Micro. If you ordered your licenses there, you can copy the lines from their license-email directly into a pool file:

```
Key[1] Part A: 00040/06006/50400 Part B: 01690/45000 Part C: Z7100BCA  
Key[2] Part A: 05500/00044/54646 Part B: 01900/10069 Part C: Z7100BDA
```

5.2 Server Side: Running the License Deployment Server

The license-server is a process that runs on a central computer. It listens to licensing-requests from client-setups and assigns licenses to the clients. The client-setup then stores the license on the client workstation the same way as if the user had entered it manually.

This is a static license model. Hence the license server is required to run only during deployment. Once a license was assigned to the client computer, it is stored in the client's Windows registry and remains there. This is merely an automated version of the user entering the license code on the client computer manually. If you are instead interested in a floating license model (assigning licenses to users for a day only, but requiring a license server service that is available around the clock), please contact us.

The server tracks license assignments by adding client information to the license pool file. It does this by adding the client's username (or computer name) as an extra column to the license pool file. This allows the administrator to keep track of which license went where (e.g. in case computers are decommissioned) and it allows the license server to re-issue the same license in case the user runs his setup twice or on a new computer.

To run a license server, unpack the ZOC install archive (see chapter 5) and copy `setup.exe` and the `setup*.dll` files to a folder. Then place the license pool file in the same folder.

Then run: `setup.exe /LICENSESERVER:<localipaddr:port> /LICENSEFILE:<pool-filename>`, e.g.
`setup.exe /LICENSESERVER:192.168.1.2:10203 /LICENSEFILE:LicensePool.csv`

5.3 Client Side: Creating the Licensing.ini File

The `licensing.ini` file is a text file that tells the client-side setup where to find the license server and how to apply the license.

The `licensing.ini` file consists of three entries.

Source: This entry tells the client how to find the license pool. The value has the format
`SERVER@<ip>:<port>`

LicenseID: This value is used to track the license assignments. It will be stored in the license pool file, so that you can track of which license was assigned to which client. Also, the server will assign the same license to the same id repeatedly, e.g. if the setup is run again. The value `%USERNAME%` will be replaced by the Windows login-name under which the client runs the setup. The value `%COMPUTERNAME%` will be replaced by the respective workstation name. User defined values are

possible, although they have to be unique (e.g. your deployment software could put a different identifying string there, if it generates the file on the fly).

Hive: This governs in which part of the Windows registry the license is stored. Either in the user's personal hive (HKEY_CURRENT_USER), which usually goes together with a LicenseId of %USERNAME%, or in the computer's hive (HKEY_LOCAL_MACHINE), which is usually paired with %COMPUTERNAME%.

Example 1 (recommended):

```
Source="SERVER@192.168.1.2:30201"  
LicenseID="%USERNAME%"  
Hive="HKEY_CURRENT_USER"
```

This example will contact the license-server at IP 192.168.1.2 at port 30201 and request a license to be assigned based on the windows login name and will then store it in the user's part of the registry.

This is typical for installations, where the user either runs ZOC on a personal physical workstation, or where the user runs ZOC in terminal session on a shared server (Terminal Server, Citrix, etc.).

Example 2:

```
Source="SERVER@192.168.1.2:30201"  
LicenseID="%COMPUTERNAME%"  
Hive="HKEY_LOCAL_MACHINE"
```

This will also contact the license-server at IP 192.168.1.2 at port 30201, but will request a license to be assigned base on the workstation name and stores it in the local-machine branch of the registry.

This however only makes sense in limited situations, where a physical computer is shared by multiple users at different times, e.g. when user A logs in during the day-shift and user B uses the same workstation during the night-shift. Or where one user logs in under different names (e.g. using administrative and a limited account) on his personal computer. These user accounts will run ZOC under the same license (the computer's), which will only work if they are not running ZOC at the same time.

This example however does not apply to terminal-server environments. If the terminal server was licensed per-machine, each user would run ZOC under the same license, which could result in license collisions for concurrent sessions. (Note: If instead the user's physical workstation computer was licensed, but if the user uses a terminal session to run ZOC in a terminal-session, then technically the user would be running ZOC on the terminal server (not on the local workstation), so the ZOC process running on the terminal-server would not be able to access the license stored on the local computer).

5.4 Client Side: License Call

As mentioned earlier, there are two ways to install a license from a pool on the client:

Explicit: To get a license from the license server and install it according to the `Licensing.ini` file, you can call `setup.exe` like this:

```
setup.exe /LICENSING:licensing.ini
```

Implicit: If you unpacked the installation archive and if you are running the setup from the unpacked folder (e.g. to run a silent setup), setup will perform the licensing automatically during installation, if it detects the `Licensing.ini` file in the setup folder.

5.5 Summary/Recommendations for License Deployment

To wrap up the optional/alternate methods described above, unless you have very specific needs, the recommended process for license deployment is this:

1. On the computer, which will be taking the role of the license deployment server, unpack the ZOC program installer and copy `setup.exe` and `setup*.dll` into a folder named `license_server`.
2. Using an editor, create a license pool file by placing the licenses in semicolon separated CSV-format (or BMT-Micro email format) to a file named `LicensePool.csv`.
3. From that folder, run `setup.exe /LICENSESERVER:192.168.1.2:30201 /LICENSEFILE:LicensePool.csv` (using the license server's IP instead of 192.168.1.2).
4. For the clients create a `Licensing.ini` file like this:

```
Source="SERVER@192.168.1.2:30201"  
LicenseID="%USERNAME%"  
Hive="HKEY_CURRENT_USER"
```

5. On the clients, put the `Licensensing.ini` file into the `zoc_unzipped` folder of a silent install or run `setup.exe /LICENSING:Licensensing.ini`