

DEPLOYMENT OF ZOC TERMINAL

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Table of Contents:

DEPLOYMENT OF ZOC TERMINAL	1
1 Introduction	4
2 Creating a Reference-Installation	5
2.1 Creating a Reference-Installation	5
2.2 Configuring the Reference-Installation	5
2.3 Advanced Configuration Options.....	5
3 Deploying the Software by Cloning an Installation	6
3.1 Required Data.....	6
3.2 Deployment.....	7
3.3 License Distribution	7
3.4 Support	7
4 Deploying the Software via Silent Install/Uninstall	8
4.1 Requirements	8
4.2 Unpacking the Program Installer	8
4.3 Creating the Silent-Install Response File	8
4.4 Modifying the Installation via SETUP.FIL	9
4.5 Adding and Replacing Files to the ZOC Program Folder via CUSTOM.ZIP	9
4.6 Providing a Custom Configuration via ZOCFILES.ZIP or ZOCFILES.ZCFG	9
4.7 License Distribution	11
4.8 Summary/Recommendations for Silent Install	11
4.9 Silent Uninstall.....	12
4.10 Support	12

5	License Distribution	13
5.1	Server Side: The License Pool File	13
5.2	Server Side: Running the License Deployment Server	14
5.3	Client Side: Creating the Licensing.ini File	14
5.4	Client Side: License Call.....	16
5.5	Summary/Recommendations for License Deployment	16

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*).

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)\ZOC7" or "C:\Program Files\ZOC7") 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)\ZOC7*” or *C:\Program Files\ZOC7*). 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.ini*) that needs to be placed in the program folder.
2. The configuration folder (usually *My Documents* → *ZOC7 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

The creation of a silent install requires a ZIP and UNZIP tools. Either shell command `zip.exe` and `unzip.exe` or a GUI manager like 7-zip.

4.2 Unpacking the Program Installer

First download the ZOC package of your choice, e.g. `zoc7200_x64.exe`. This `exe` file is a compressed ZIP archive. Unpack its content into a folder named `zoc_setup` (any other name will work as well, but for the remainder of this document, we will refer to the folder by that name). You should get a few files like `setup.exe`, `setup.fil`, `setup*.dll`, etc.

4.3 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). Now run `setup.exe` from the `zoc_setup` folder which you created in the previous step. Then 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 → ZOC7 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 previous terminals used before or about intended use of ZOC.

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

Now uninstall ZOC (also let the uninstaller remove the ZOC configuration data folder), then rename that file to `silentsetup.ini`, and run `setup.exe` again. This time the setup will 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.

4.4 Modifying the Installation via SETUP.FIL

The `setup.fil` file in the `zoc_setup` folder is also a ZIP archive. It contains the actual files for the ZOC installation. By modifying this file, it is possible to change details about the installation (e.g. by adding a license file or `admin.ini`, providing a different initial user configuration, deleting emulations or communication method DLLs, etc.).

However, we recommend to do this only if you want to remove files from the installation. The main reason why we do not recommend it is, that you will have to perform these steps again for every new ZOC version which you will install in the future.

Instead, for typical tasks (like adding or replacing files), you should use the `custom.zip` file.

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

`custom.zip` is an optional ZIP file that can also reside in the `zoc_setup` folder. Its content will be unpacked into the program folder after `setup.fil` was processed.

This way you can easily add files to the installation (e.g. a custom designed `admin.ini` file or a `zochook.ini` license file).

To do that, place such files into a `custom.zip` archive and then copy the archive to the `zoc_setup` folder.

4.6 Providing a Custom Configuration via ZOCFILES.ZIP or ZOCFILES.ZCFG

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 → ZOC7 Files`) for the existence of valid configuration files. If none exists on first start, ZOC will create the user's default configuration by copying the contents of the `newuserprofile_english` folder from inside the ZOC program folder to the chosen configuration folder.

After copying the `newuserprofile_english` folder, the session profile (`Standard.zoc`) and program settings (`Standard.zfg`) will be modified according to the questions from the setup about previous terminals and intended usage (the answers to these are stored in the `admin.ini` file as `SetupTerminalType`).

So, technically speaking, to generate an installation that will start with a custom configuration, you can modify or overwrite the `newuserprofile_english` files to provide a modified initial configuration for your users. In this case, be aware that the `SetupTerminalType` entry from the `admin.ini` file may modify some of the settings during first start. So, to make sure that the user gets your intended configuration, you will want to make sure that there is no `SetupTerminalType` entry in your `admin.ini` file.

Custom Configuration via `zocfiles.zip/zocfiles.zfg` (recommended):

In most cases it will be easier to not modify the `setup.fil/newuserprofile` and instead add a `zocfiles` archive to your `zoc_setup` folder.

One way of doing this, is go to your reference installation (see chapter 2), take the contents of the ZOC configuration folder (usually `My Documents → ZOC7 Files`) and put it into a ZIP archive named `zocfiles.zip`.

Alternately use the export function from ZOC's *Main-menu → ZOC Configuration Data → Export* and rename the resulting file to `zocfiles.zcfg`.

Then add the `zocfiles.zip` or `zocfiles.zcfg` file to the `zoc_setup` folder.

When the installer finds this file, it will directly unpack its contents into the ZOC configuration folder and it will skip the questions about previous terminals and usage intention, because it assumes that the files from your `zocfiles.zip` (or `zocfiles.zcfg`) archive is already configured that way.

When ZOC subsequently starts for the first time, it will find a valid configuration (i.e. the unpacked content from your `zocfiles.zip/zcfg`) and it will work with that rather than creating a new default configuration from the `newuseprofile_english` folder.

4.7 License Distribution

Unless you have a large volume license file (`zochook.ini`, which is placed in the ZOC program folder), 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 placing a `Licensing.ini` file into your `zoc_setup` folder. See chapter 5 for Licensing.

4.8 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. Unpack the program installer into a folder named `zoc_setup`.
2. Run a fresh setup from this folder, then rename the `silentsetup_tmp.ini` file to `silentsetup.ini`.
3. 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*. Tweak the program via the `admin.ini` file in the ZOC program folder.
4. Put the modified `admin.ini` file and a possible site license file (`zochook.ini`) and a menu template files into a `custom.zip` archive.
5. Put the contents of your `My Documents` → `ZOC7 Files` into a compressed `zocfiles.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 `zocfiles.zcfg`.
6. If you don't have a site license file, instead create a `Licensensing.ini` file (see chapter 5) and put it into the `zoc_setup` folder.
7. Copy the files from previous steps (`silentsetup.ini`, `custom.zip`, `zocfiles.zip`) to the `zoc_setup` folder and run the `setup.exe` from that folder on the deployment computers.

4.9 Silent Uninstall

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

```
setup -remove zoc8 -silent [-deletedatafolder] [-hide]
```

This call will first copy `setup.exe` to the temp folder and will then run it again from there, because otherwise, when running `setup.exe` from within the ZOC program folder, the program would be locked and thus would be unable to delete itself and the enclosing folder.

If you choose to run `setup.exe` from a different location (e.g. through your packaged deployment packet), you can add the `-final` parameter to the command to avoid the extra copying step, e.g.

```
setup -remove zoc8 -silent -final -deletedatafolder
```

Note: Silent uninstall requires at least ZOC versions 7.26.5 or version 8.01.5.

4.10 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. Explicitly: by running `setup.exe /LICENSING:licensing.ini` or
2. Implicitly: during manual or automated/silent installation, by placing a `Licensing.ini` file in the same folder from which `setup.exe` is running the installation.

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 4) 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_setup` folder of a silent install or run `setup.exe /LICENSING:Licensensing.ini`