



## Download and Install CCS for Windows™

This procedure describes how to install CCS5 on a single Windows PC (client and server running on the same physical machine), and a single user. If you are setting up a more complex client/server system, with multiple users, under a dedicated contract then you will need access to our CCS Wiki; please request an account from your Terma contact point.

*Even if your ultimate goal is to setup and manage a full CCS, it may be worthwhile for you to try out these instructions first on a private machine; it may help you to understand CCS by starting with a simple installation first.*

The instructions were written for Windows 10.

*NOTE: detailed instructions - especially screen shots - may go slightly out of date over time. If you find an important inconsistency that we missed, please let us know.*

## Preparations

### Disable Firewall

For simplicity, these instructions assume that Windows firewall is off. The CCS is usually installed in a secure environment without Internet access. If you need to keep the firewall on, the Wiki lists ports that need to be opened in the firewall.

### When upgrading from an earlier version of CCS5...

If you previously had an older CCS installation, or if you are switching between projects with different settings, then it is probably best to clear your old CCS settings.

Start the SET application (available in the START menu or from the desktop), and the CCS settings editor will appear.

- Hit Clear Settings button
- Check all checkboxes, including “Clear global settings” if it is enabled
- Hit Yes to confirm
- Quit from the CCS settings editor

*NOTE: this will preserve your license.*

*NOTE: before clearing settings, make sure they are written down in your project's `InitSettings.tcl`, so that they can be restored afterwards.*

Then open the Apps control panel from the Windows menu, select CCS5 from the list of installed apps, click Uninstall, and follow the wizard instructions.

*WARNING: this will delete the CCS5 installation folder altogether. In case you have patched any data in that folder (generally not recommended), back it up beforehand. Of course, your `TESTENV` will remain intact.*

Check that the CCS installation folder is gone. If there are still some files left, make sure that no application is locking them, and delete them manually.

## Install Archive RDBMS

MySQL is the most commonly-used database back-end; these short instructions assume this is what you will use.

*NOTE: CCS5 supports PostgreSQL equally well. If you prefer this database, the setup instructions are equivalent.*

You can download the installer from:

<http://dev.mysql.com/downloads/installer/>

*HINT: Use the non-web download to avoid repeated downloads, or need for internet access when installing several CCS hosts : e.g. `mysql-installer-community-*.msi`. The Web installer (`mysql-installer-web-community-*.msi`) is more convenient to maintain your installation, e.g. add components or upgrade MySQL. Particularly MySQL Workbench is a handy tool for MySQL administration, e.g. adding users.*

Accept the default installation options or customise them according to your needs.

Notes:

- *Firewall:* should not block the default MySQL port 3306 (in general should be off)
- *Add a CCS user account:* the convention is to use
  - *Username:* **ccsuser**
  - *Host:* **%**
  - *Role:* at least **DBmanager** (CCS needs to be able to create and drop databases)
  - *Password:* **leiden1**
- You may need to repeat the above for another user account **ccsuser@localhost**, since in some cases the **%** wildcard does not include **localhost**.

## Install Notepad++

The recommended editor for TOPE sequences on Windows is Notepad++. It supports Tcl syntax highlighting out of the box, and CCS5 will detect Notepad++ automatically when you configure it.

<https://notepad-plus-plus.org/>

## Install Tortoise SVN (Optional)

We recommend keeping your user files (i.e. TESTENV) under configuration control. This can be any tool of your choice (e.g. git, Mercurial etc). The most popular choice is Tortoise SVN, and therefore CCS5 will automatically use some SVN features if the user files came from an SVN repository.

<https://tortoisesvn.net/>

When running the installer, make sure you enable the “command line tools” option, so that SVN is available from the Windows command shell.

## Install CCS5

Download the CCS5 installer from

<https://tgss.terma.com>

The software downloads are available from the Licenses tab. We recommend using an officially tested release, unless you really need a nightly build. Execute the installer. You may use the default options throughout.

## Create a Test Environment

CCS5 expects a TESTENV folder under your “Documents” folder, with a MIB database, TOPE scripts and Mimic pictures. If it doesn’t exist, an empty one will be created, but it is more useful to have some pre-prepared contents.

You have these options:

- Copy existing project files into place
- Check out from SVN

### Option 1: Copy Test Environment files into place

This option may be possible if you already have some example files from an existing project. The installation directory contains “TestPacks” directory with several example TESTENV for self-test and training.

In this option simply copy and rename the folder to TESTENV in your Documents folder. The files should follow the standard structure under TESTENV, for example TSEQ, TSEQLIB, data/ASCII, QML, SYN, etc. By convention, the TSEQ folder should contain InitSettings.tcl that will initialise CCS5 settings for your project (e.g. spacecraft epoch).

### Option 2: Check out from configuration control

Alternatively, you can check out from your own SVN/git/etc repository, or if appropriate the TESTENV may be one from Terma. The URL of the Terma SVN server is here:

<https://projects.nl.terma.com/SVN/SYNOPTER/trunk/TestPacks>

A read-only SVN account can be used (you will not be able to check in any changes):

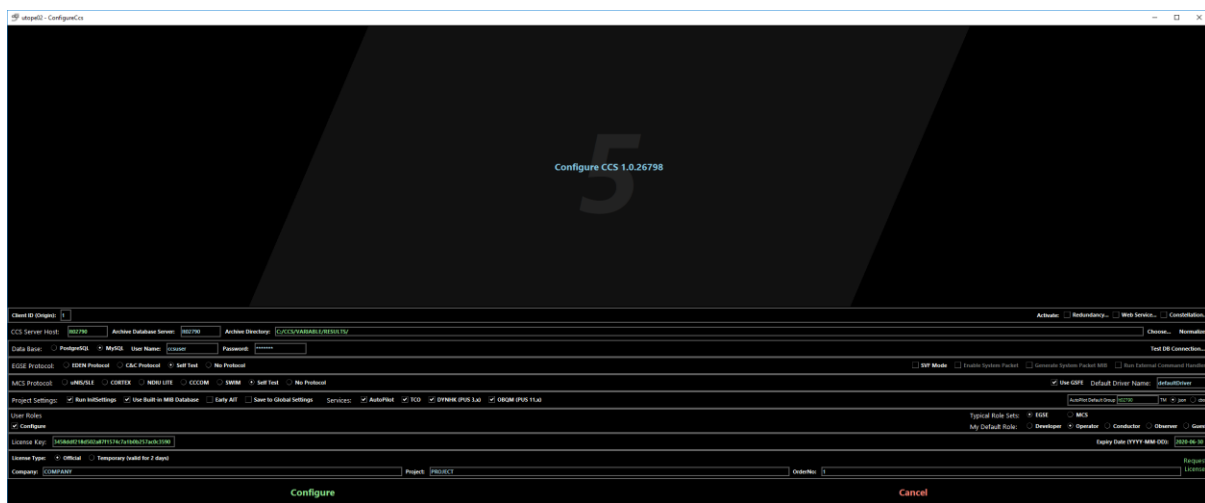
- **User:** TestPacks
- **Password:** TestPacks

Check out the selected test pack into your “Documents” folder. The checkout should be into a single directory with subdirectories, under which you should see TSEQ, data/ASCII, TSEQLIB, SYN, etc. Then rename the resulting folder to TESTENV (moving or removing any existing folder).

## Configure CCS5

Select the Windows Start Menu, and navigate to Start > CCS > Configure...

A window like this should appear



Please fill in the details as follows...

## Network and Archive Settings

**CCS Server Host:** enter the host name of your CCS server. The current hostname is set up by default.

*NOTE: do not enter 'localhost' and do not enter an IP address.*

**Archive Database Server:** enter the host name of your RDBMS if different from the CCS server host.

**Client ID:** This must be a number between 1 and 15. It is a unique identifier for the CCS client application (or workstation in a real deployment) on the CCS network. For a single host setup, the default value 1 is fine.

*NOTE: the CCS server console is client ID 0. In addition to the CCS server you can have up to 15 workstations. A client on the CCS server might be client ID 1, so workstations attached to a CCS might use client numbers 2 to 15.*

**Archive Directory:** this is the 'RESULTS' directory that will contain all the session data for the CCS installation. The default is **C:/CCS/VARIABLE/RESULTS**. When setting up a distributed CCS system, this should be a shared folder on the server that is accessible to all workstations.

## Data Base Settings

Enter the back-end RDBMS settings, e.g:

**Engine:** select **MySQL** or **PostgreSQL** as appropriate.

**User Name:** ccsuser

**Password:** leiden1

*NOTE: these must match the credentials that have been created in the database above. Click on "Test DB connection" to check that it works.*

## Protocols

Configure the protocols that will be used in your system.

If you are just trying out CCS, leave these as default.

Most projects will use either pure CCS or pure MCS protocols. However, it is permitted to set up a hybrid system in which both EGSE and MCS protocols are active.

**EGSE Protocol:** choose an EGSE (SCOE and Front End) protocol for checkout systems.

*HINT: In a "pure" MCS, this should be "No Protocol"*

**MCS Protocol:** choose a ground station protocol for operation systems.

*HINT: In a "pure" CCS, this should be "No Protocol"*

## Project Settings

**Run InitSettings:** if you have already put in place a TESTENV, this will automatically run the standard "InitSettings.tcl" script to further configure CCS5 for your specific project.

**Use Built-in MIB database:** this database contains some absolutely minimal MIB definitions needed for normal use of CCS5. It is compiled into the program, so you can't edit it. Uncheck this option, if these definitions conflict with your project's MIB.

**Early AIT:** when checked, this option disables excessive logging of warnings that are common at early AIT stages.

## License Key

If you don't have a license key yet, you can acquire it from our website [ccs.terma.com](https://ccs.terma.com). Log in using your personal credentials and allocate a new license. You will need to specify a MAC address of your computer. If it has multiple network interfaces, we advise choosing the most stable and "real" NIC. The loopback address 00:00:00:00:00:00 will not be accepted. If your MAC address changes later, you will need to deallocate the old license key and allocate a new one.

If the license has been accepted, the license key and corresponding end date will show, and both fields will turn green.

*HINT: If you are just trying out CCS5 you can opt for a "Temporary license".*

The remaining options of “Configure CCS” are described in detail in the CCS5 user manual. For now, you can leave them in default.

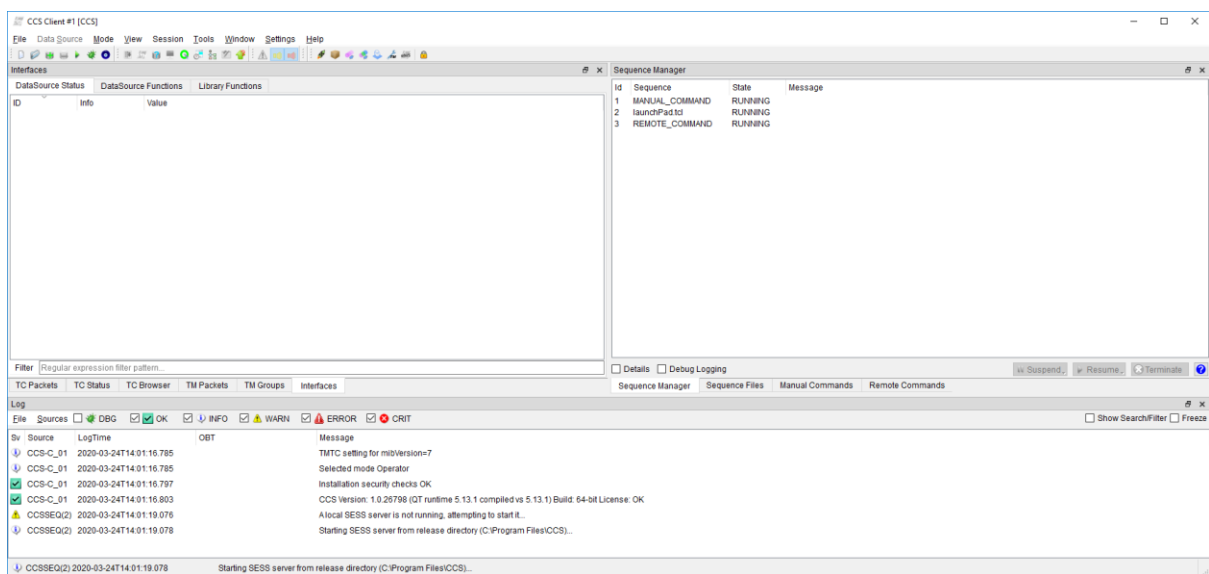
Click the 'Configure' button to save the configurations.

*NOTE: the configuration is saved only for the current user. If you login as another user, you will need to re-run “Configure CCS”.*

You can re-run this tool whenever needed but remember to restart all CCS applications (including SESS\_SERVER) afterwards, so that they read updated settings.

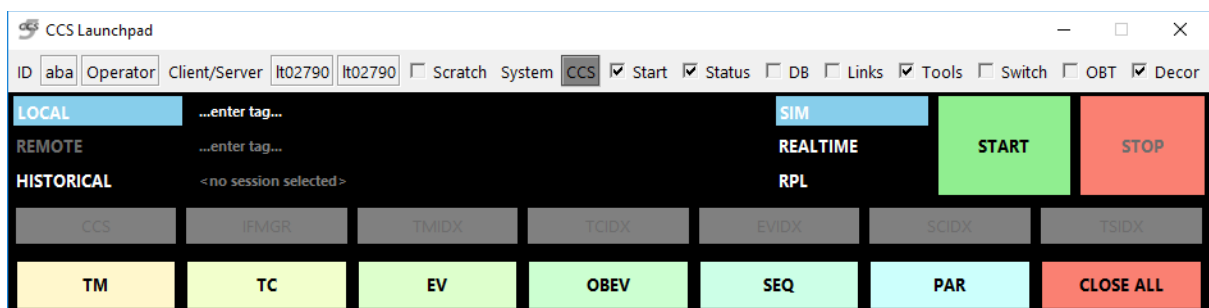
## Starting the CCS Client

If you now click the CCS icon on your desktop, the CCS Client Console will appear.



The CCS Launch Pad will also pop up.

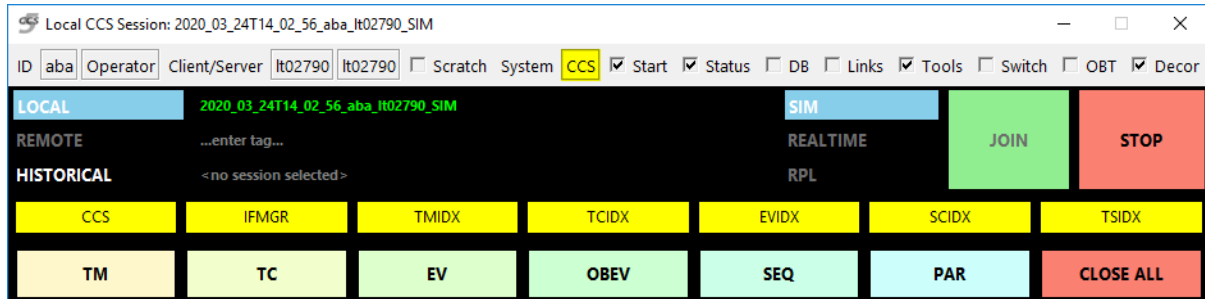
*HINT: appearance may be slightly different: you can check / uncheck options in the top panel to make the different panels appear or disappear. Launch Pad will “remember” its position and which panels have been hidden or revealed. We want to see the START button.*



## Starting a CCS session

Select SIM and session type, and the big green START button. A session name is automatically set and the session starts.

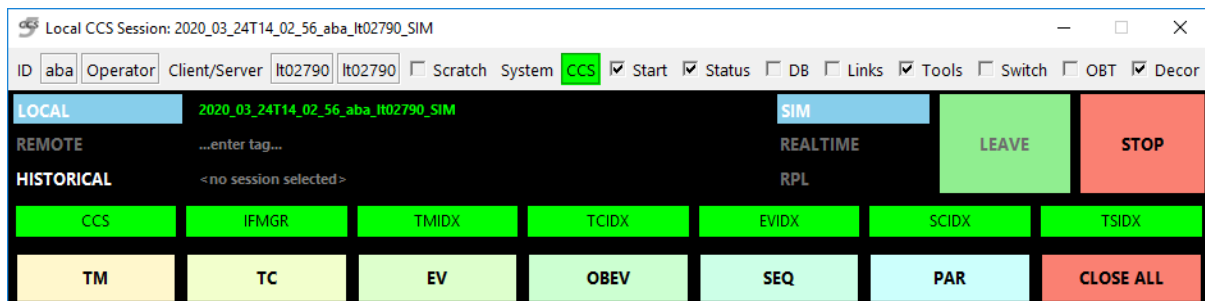
While CCS is starting (a few seconds), the Launch Pad will look like this:



During session start-up:

- The SESS\_SERVER creates a new session directory in the RESULTS directory
- The clients and server will connect to RDBMS
- The MIB database(s) will be loaded
- The clients will listen for the heartbeat signals from the server
- The Launch Pad window should eventually display all server processes (CCS Server Console, Interface Manager and Indexers) in green

When the session is running, Launch Pad looks like this:



**HINT:** if you accidentally close Launch Pad and want to restart it, you can find it in the toolbar on the CCS client console (look for the green “rocket” icon).

**Congratulations, CCS is now running!**

## Simple Demonstration

If you are using the CCS SelfTest environment, and want to see something interesting, try this

- Click Sequence Files (top-right panel of CCS Console) and switch to the COMMONSEQ tab
- Right-click on DemoOrbitPositionScheduling.tcl and hit Exec
- Go to LaunchPad and hit the TC button
- Click View -> AND View in CCS Client, and in the resulting display click on the “Quicks” tab
- Open the “orbit” view





- Mistake in the configuration of RDBMS users or connectivity
- Empty MIB database (nothing in your TESTENV)
- You may need to re-index your TOPE directories

You should be able to solve these problems by repeating the above procedure and looking closely for incorrect input.

To re-index all TOPE sequences, go to the Sequence Files pane, **hold down** the Check Tcl Indices button and select **Index All**.

Licensed customers have access to our CCS5 Wiki at:

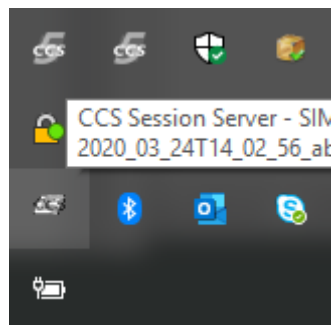
[http://dewiki.terma.com/CCS5/index.php/CCS5\\_and\\_TSC](http://dewiki.terma.com/CCS5/index.php/CCS5_and_TSC)

This gives all kinds of advice about system configuration and troubleshooting more obscure issues.

### Killing a Dangling or Zombie CCS Session

The CCS uninstall wizard attempts to close any running CCS sessions but there are ways that a CCS session can be left in a not-properly-shut-down state. These instructions should help you to reset the CCS.

If you look in your Windows desktop icon tool bar, you may see a CCS SESS Server:



Right-click on this icon and a terminal window appears.

You can kill / abort a CCS session by typing "SessServer::abort". Then quit the SESS server by typing "exit". The server will normally be restarted by the next CCS client attempting to start a session.