CLERK Web service (beta)

Introduction

The CLERK Web service allows your CLERK data to be accessed via a standard web browser. It is also an essential component of Terrier Technologies' mobile data terminal (MDT) product. This help sheet provides a general overview of the CLERK Web service and detailed installation instructions. You are encouraged to read this entire document *before* beginning installation.

Costs and Benefits

The CLERK Web service (CWS) provides a number of benefits to CLERK administrators and end users, notably:

- Capability to access CLERK data from a computer without needing the CLERK client software to be installed.
- Faster access over slower (e.g. wireless) networks.
- Centralization of maintenance: since all updates occur at a single point (the web server), there is no need to update each client machine individually.
- Ability to access data from other devices using other operating systems, e.g. Apple OS/X or Palm OS.

It is important that you understand that a number of risks are associated with making data available via CWS, notably that your system could be more likely to be attacked by "hackers". With proper configuration, these risks can be minimized. The security section later in this document explains more.

System overview

Installing a regular CLERK system is a straightforward process. The client interacts directly with the database server. A simple system involving two clients is shown below.
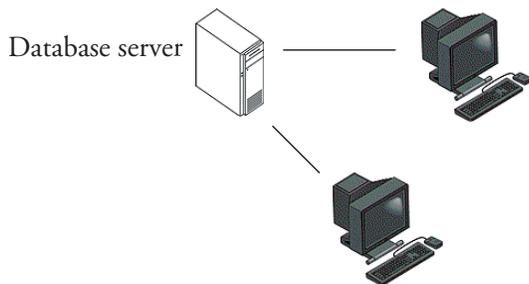
Database server

When using Terrier Technologies' mobile data terminal (MDT) product, clients interact with the database server via
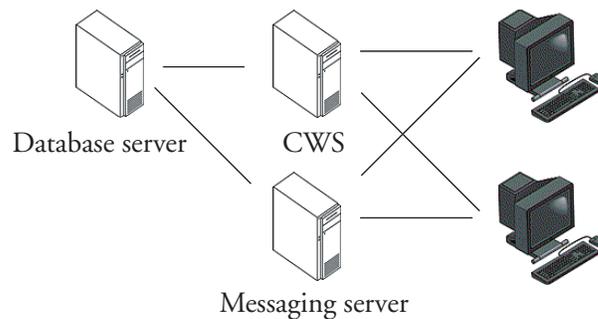
a web server and CLERK messaging server, as shown above.

Database server   CWS

Messaging server

Although three separate servers are shown in the diagram above to illustrate the concept, in reality these are likely to be running on the same computer, i.e. **only one server computer is required**. Each server has a unique function:

- The CWS responds to requests for data, e.g. the end user wants to view a specific case report.
- The Messaging server takes care of "pushing" data to the client, i.e. it sends data that the user needs to know about, even though the user did not specifically request it. Examples of such "push data" are CAD status displays and instant messages.
- The database server organizes and stores the actual data, and makes it available to the CWS and Messaging server.

Again, we emphasize that it is possible for one computer to perform all three functions. They have been separated above (a) to give you a better understanding of how the system works, and (b) because it is possible to use three different servers computers if you so choose.

Installing CLERK Web service

Having Microsoft IIS running on your server is a prerequisite for installing the CLERK Web service. On server editions of Microsoft Windows, or newer versions of Windows such as Windows XP Professional, IIS is already installed.

For Windows 2000 Professional, IIS is included on the CD-ROM but not installed by default. You can install it by going to the **Add or Remove Programs** control panel and clicking on the **Add/Remove Windows Components** icon. Detailed instructions for installing IIS are beyond the scope of this help sheet.

You can test that IIS is working by opening a web browser

(such as Internet Explorer) on the server, and entering the URL `http://127.0.0.1`. You should either see your department's home page (if one has already been created) or a "Page under construction" message. Once you have verified that Microsoft IIS is working, you're ready to install the CLERK Web service.

Download and run the CWS installer from Terrier Technologies' web downloads page. A "Typical" installation will be fine. The server will need to be rebooted after installation.

> You must be logged on as a user with Administrator privileges in order to install CWS.

After rebooting, locate the `WEB.GDB` file. By default it is in the `C:\Program Files\Terrier Technologies\ CLERK Web service` directory. This file needs to be moved to the same place as your CLERK datafile (normally `CLERK2.GDB`).

Next, go to the **CLERK Messaging** control panel. Under the **Profiles** section of the **Auto config** tab, click the **Add** button.

You should enter the IP address (or machine name) of your CLERK 2 server into the **Server name** field, or `127.0.0.1` if the CLERK 2 server is running on the same machine as CWS.

Enter the full path to your CLERK 2 datafile in the **Datafile** field. If you don't know it, you can find this by looking at the **Connection settings** in a CLERK client.

Enter a name in the **Profile name** field, and click **OK**. The other fields may be left unchanged.

Next, click the **Licensing** tab. Check that a CWS license

appears (a test license key should have been installed along with CWS). You should not need to modify anything.

Finally, click the **Messaging** tab and enter a password for the web user in the **Password** field. Then click **OK** to close the control panel.

Using the CLERK client, you should create an account with username `WEBUSER` if you have not already done so. The

password should match the one you entered in the control panel. For CWS, the permissions of this user are not important, but for MDT, this user will need to be able to perform the operations of a dispatcher.

> When you open the CLERK Messaging control panel, you may see an error message. This can generally be ignored; it is generated because the messaging server is not yet installed.

Now you're ready to test CWS. On the server, enter the URL `http://127.0.0.1/clerk/clerk.dll/dump` into the web browser. You should see a status page, showing most of the settings you entered into the control panel, and letting you know

- That the license key was validated
- The path to the `WEB.GDB` file that the server is using
- Any errors that CWS encountered while connecting to the database engine (listed as "Web page error").

If the status is correctly displayed and nothing appears next to "Web page error", you're ready to log on! Enter the URL `http://127.0.0.1/clerk/clerk.dll/login` into the web browser. Log in using your regular CLERK username and password. Remember that capitalization is important.

If you get a "Web page error", check that the `WEB.GDB` file is in the location shown in the status display. If your CLERK 2 server is on a different machine to the CWS, make sure you have entered its correct address in the profile, and that no firewall (on either the CLERK 2 server or the CWS machine) is blocking the connection.

After you have successfully logged on from the server, next you can try logging on from another computer. If you can connect locally but not from another machine, there is a network or firewall issue unrelated to CWS.

Using CWS

Using CWS is fairly self-explanatory. Only a names plugin is provided in the first release, but other modules will follow shortly. You can view records, navigate, search and print (CWS generates a PDF file automatically and displays it in your web browser). You can not yet edit or view photographs.

Maintaining/updating CWS

There are two things you need to know about maintaining and updating CWS.

First, if you are instructed to replace the `WEB.GDB` file, you will need to stop the Clerk server before doing so. From Windows' **Start** menu, choose **Settings|Control Panels**, then double-click on the **Firebird Server Manager** icon. In the control panel window, click the **Stop** button.


> This will abruptly disconnect anyone currently using CLERK. Be sure to warn users first!

Secondly, if CWS crashes or if you need to update it with a newer version, you will need to restart Microsoft IIS. This is done by going to the control panels, double-clicking **Administrative Tools** then **Internet Information Services**.

Right-click on your local computer, choose **All Tasks**, then **Restart IIS**. Provided no-one visits the CWS URL in the meantime, you can now replace or remove the CWS files.

Note that if you have other documents (besides CWS) installed on the web server, access will be temporarily denied while IIS is restarting. If you have installed an application that uses ASP sessions, user session information would be lost.
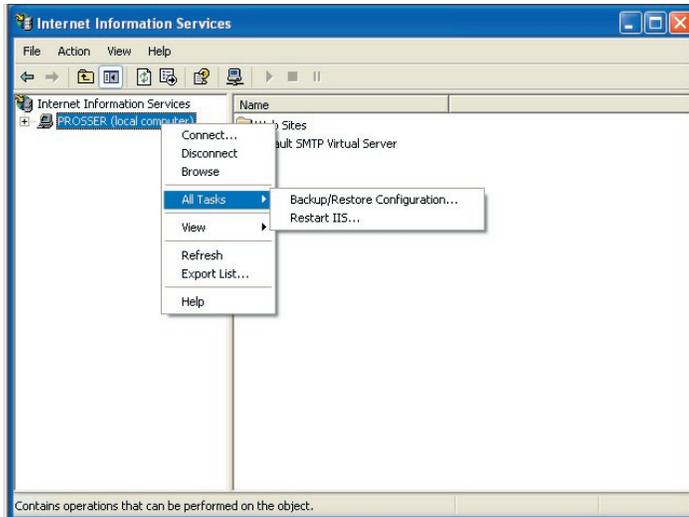
Security issues

There is some risk associated with making data available via CWS, and it is important that you understand those risks so that they can be mitigated.

With a regular CLERK server, specialized software was required to access the data; that software is installed on a tiny fraction of computers connected to the Internet. However, almost every computer has a web browser, and thus the number of potential "hackers" who might simply stumble across the login page is increased. Secondly, some firewalls allow access to web servers by default, whereas they block outside access to CLERK clients by default. Thirdly, because CWS is a more complex system, there is a greater potential for security flaws. For example, CWS uses Microsoft IIS, so if there is a security flaw in Microsoft IIS, it potentially affects CWS as well.

Having said this, there are steps that you can take to help ensure that you can use CWS while maintaining the security of your data.

- Use a firewall to block access to your web server from outside of the department.
- Run the web server on a non-standard port, i.e. not port 80, 8080, etc.
- Apply any software patches/updates/service packs from Microsoft or other software providers promptly.
- Use a VPN or secure web server (https).

Terrier Technologies provides this general advice as a service to you, but you are strongly encouraged to consult an IT security specialist if you have further questions.

As always, Terrier Technologies recommends that you back up your data prior to making any system changes.

Frequently Asked Questions

Can CWS run on web servers other than Microsoft IIS?

Yes, it can run on any web server that supports ISAPI DLL's, such as Apache. However, Terrier Technologies has not tested CWS adequately on Apache, so we are not prepared to support it for the time being.

What is the session timeout?

CWS sessions time out after 20 minutes. You can change this setting in the registry; we will make an easier way to change it in a future version.

Can I customize the department logo?

Yes, replace the `dept_logo.jpg` file in the `C:\Program Files\Terrier Technologies\CLERK Web service\clerk_data` directory.

Can I customize the PDF printouts?

Yes, but you need to know how to use the CLERK form designer.

Where are the other modules?

We have initially focused on getting CWS running reliably. Once we're satisfied with the performance of CWS, we will add other modules.

Why does CWS seem slow?

The first time you connect to CWS, it needs to perform some administrative tasks (such as downloading your permissions and settings). After you have used CWS to browse a few pages, it will have configured itself and performance should improve.

How can I make it faster?

Have the CLERK server and CWS running on the same computer, and use the IP address `127.0.0.1` for the server name. The speed you see when browsing on the server itself is the "upper limit". To improve on that performance, you need to upgrade the server, or compact/archive data from your Clerk datafile. If data is slower to load from other computers than from the server, then there is an issue with those computers or with the network.