eTAKEOFF

eTakeoff/Sage Client/Server V12 Installation & Configuration

NOTE: Skip sections pertaining to <u>eTakeoff Bridge</u> if you're not using eTakeoff Bridge.

Contents

Overview

The Client/Server Software supports high-level database management, including:

- **Client/server computing** - Increases performance of workstations communicating with databases on a server or with users communicating with databases in a Terminal Server environment.

- Most importantly, it provides the ability to **maintain database integrity, especially in multi-user environments.** The basic principle of client/server computing is: applications, or "clients", interact with the server, which manages file operations and communicates with clients.

All eTakeoff Dimension information (except drawing files) is stored in two databases:

- The Project database keeps all project specific information (drawing file names, measurements, annotations, quantity worksheet items, etc.).

- The Standards database keeps information used across projects (standard scales, traces, layers, etc.)

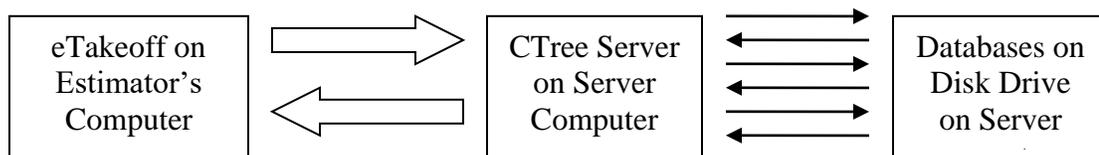## How eTakeoff Dimension works in a Workstation(client)-Server environment

Most eTakeoff users keep separate copies of this information for each user on that user's computer (stand-alone computer). But in some environments, multiple estimators may work on the same estimate at one time. This requires that they use common databases. So, all access to information is via the computer network from the estimator's computer to a server:
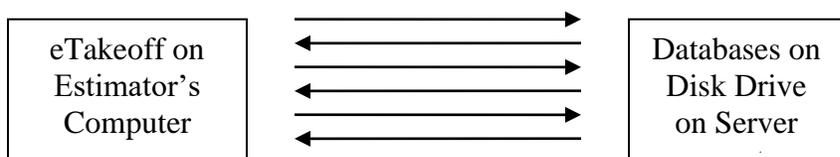
The standard (non-server) version of eTakeoff supports this configuration in a **stand-alone computer environment**. However, if you set up eTakeoff from a workstation to access the server, the transfer of information is done in many small steps because that's all that disk drives support. For each step, a request is sent to the server, the server gets the information from the disk drive and sends it back.

So the time for each step includes the time required for the two network messages. This is much more time than it actually takes to get the information off the disk drive. When lots of information needs to be transferred, the delays can be serious.

The Client/Server software (CTree Server) for eTakeoff avoids this problem. Instead of exchanging many messages, a general command is sent to a server application on the server computer. This application then performs the numerous steps required to get the information from the disk drive. The response is then returned in a single message.

This can improve performance by as much as 5,000%.

How eTakeoff Dimension works in a Terminal Server environment

Software Installation

In a Terminal Server environment, the eTakeoff software installation does the following:

- Load the application files – In an environment with multiple servers, these files must be installed on any server where an eTakeoff user may be assigned. This is done by performing the install on each server.
- Specify where the application files are located (the Application Folder). This information is provided by the user during installation and stored in the Local Machine section of the registry. Because this section of the registry is shared by all users on a server, all users will use the same Application Folder. This works well and is not a concern.

- Specify where the database files are located (the Database Folder). This information is provided by the installer during installation and stored in the Local Machine section of the registry. Because this section of the registry is shared by all users on a server, all users will use the same Database Folder. If multiple servers are used, the database folder can NOT be on the server's primary drive. It must be on a drive that will always be available and have the same name no matter which server the user is using.

User Preferences

eTakeoff remembers many preferences for each user. These include default functionality, window positions, last project used, etc. These are stored in the Current User section of the registry. Because each user has their own version of this part of the registry, the preferences are kept separate for each user.

But the registry is stored on the server. That means as a user moves from server to server, it will only have the preferences last set on each server. This is not critical but may be annoying to the user.

Licensing

eTakeoff allocates licenses to each user login. The license is installed for each user, but there is no limit to the number of computers a single concurrent license can be installed on. A three-user concurrent license could be installed on a hundred computers. Each time a user starts eTakeoff, a license is allocated from the license manager (in the cloud). Once all the licenses are in use, other users lose functionality until a license is freed up.

Configuring the Client/Server software is a complex configuration requiring expertise to set up and maintain. The following expertise is needed within the user's organization:

1. How to install software on the server.
2. How to configure an application so that it starts each time the server starts.
3. How to configure the eTakeoff server and backup scripts so that the files are backed up. (This is described in Appendix A).
4. How to determine the IP address of the server.

Typically, the network administrator will have this expertise. The eTakeoff support staff can assist but we have little or no knowledge of your network configuration.

QUICK START Installation & Configuration in a Workstation(client)-Server environment

Use this "Quick Start" section to install and configure the Client/Server software using all recommendations and defaults.

Steps	Details
1. **Install Server Software & copy license file**	a. Download the client/server install package to the Server: • Go to eTakeoff Software Links • Click on "eTakeoff Server v12 - NEW or UPGRADE Install" b. ***Run the client/server install file as Administrator.*** • By default, the server software is installed in the folder "**C:\Faircom\eTkoServer**". We will use that folder in the rest of these instructions. c. **Copy your license activation file to the server software folder.,** "**C:\Faircom\eTkoServer**"

2. **Determine where to locate Databases on the Server**	Create the folder, "**eTakeoffDataBases**", on the drive dedicated to storing data.
	• Create a subfolder, **Dimension**
	  i.e.: D:\eTakeoffDataBases\Dimension
	• Create a subfolder, **Bridge**
	  i.e.: D:\eTakeoffDataBases\Bridge

3. **Locate the databases in the corresponding folders**	a. **New Users:** • Download empty database files • Go to eTakeoff Software Links • Click on "Empty Data Files" for eTakeoff Dimension v8. b. **Existing Users:** • Copy over Dimension databases from user that has the MOST projects to the respective folders
4. **Configure the Server**	a. **Manually start the CTree Server** • Double click on the "C:\Faircom\eTkoServer\faircom.exe" b. Determine the **IPv4 Address** (**or domain name**) of the server. • The Windows program "ipconfig" will display it as the "IPv4 Address" for your Ethernet adapter. You will need this and the database folder name when installing the clients or configuring the users in Terminal Server environment.
5. **Configure the Server as a <mark>client workstation</mark> *before* configuring client workstations to test client/server setup**	a. Download and install the latest version of eTakeoff Dimension • eTakeoff Software Links • Click on "eTakeoff Dimension v8 - NEW Install" b. Double click on C:\Program Files (x86)\eTakeoff\RView**ETkoCnfg.exe** e eTakeoff Dimension Server Configuration ✕ ☑ Use Client/Server Configuration Server User Name : ADMIN Server Password : ***** Server IP Address : Server Data Folder D:\eTakeoffDataBases\Dimension\ ← As seen by the SERVER Copy Paste OK Cancel c. Open Dimension – Click on File/Help/ About Application Window should show the Data folder **ON SERVER** Dimension Data Folder ON SERVER

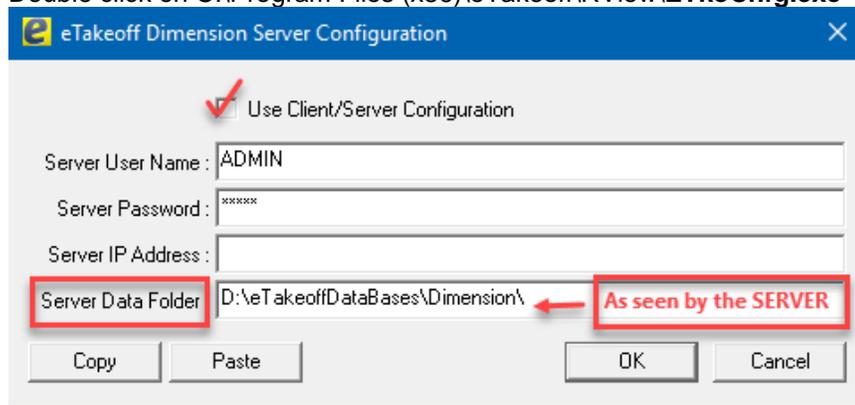| Steps	Details

6. **Configure the client workstations**	**Dimension :**
	• **New users** - Repeat steps in #5 on each workstation
	• **Existing users** – Perform the steps below on each workstation.
	   1. Install the latest version of Dimension –
	     Go to eTakeoff Software Links
	     - Click on "eTakeoff Dimension v8 - UPGRADE Install"
	   2. Click on the link below to:
	     Merge Dimension workstation databases into one database on server
	   3. Repeat steps "b." & "c." in #5
	Bridge : Perform the steps below on each workstation
	• Download and install the latest version: - eTakeoff Software Links and click on "eTakeoff Bridge v4 - NEW or UPGRADE Install"
	• "C:\Program Files (x86)\eTakeoff\eTakeoffBridge**eTakeoffBridgeCnfg.exe**
	
	• Open Bridge – Click on File/Help/ About the application
	   Window should show the Data folder **ON SERVER**

7. **Finish fine-tuning the Server Configuration**	• Modify the Dump backup Scripts in the C:\Faircom\eTkoServer folder with the locations and names of the databases. (Appendix A) • Create a Windows Service for C:\Faircom\eTkoServer\faircom.exe (Appendix B)

QUICK START Installation & Configuration in a Terminal Server environment

Use this "Quick Start" section to install and configure the Client/Server software using all recommendations and defaults.

Steps	Details

1. **Install Server Software & copy license file**	a. Download the client/server install package to the Server:
	  • Go to eTakeoff Software Links
	  • Click on "eTakeoff Server v12 - NEW or UPGRADE Install"
	b. ***Run the client/server install file as Administrator***.
	  • By default, the server software is installed in the folder "**C:\Faircom\eTkoServer**".
	    We will use that folder in the rest of these instructions.
	c. **Copy your license activation file to the server software folder**., "**C:\Faircom\eTkoServer**"

2. **Determine where to locate Databases on the Server**	Create the folder, "**eTakeoffDataBases**", on the drive dedicated to storing data.
	  • Create a subfolder, **Dimension**
	    i.e.: D:\eTakeoffDataBases\Dimension
	  • Create a subfolder, **Bridge**
	    i.e.: D:\eTakeoffDataBases\Bridge

3. **Locate the databases in the corresponding folders**	Download empty database files
	  • Go to eTakeoff Software Links
	  • Click on "Empty Data Files" for Dimension v8.

4. **Configure the Server**	• **Manually start the CTree Server -** Double click on the "C:\Faircom\eTkoServer\faircom.exe" • Determine the **IPv4 Address** (**or domain name**) of the server. – The Windows program "ipconfig" will display it as the "IPv4 Address" for your Ethernet adapter. You will need this and the database folder name when installing the clients or configuring the users in Terminal Server environment.

5. **Configure the Server as a ==Terminal Server User== to test client/server setup**	a. Download and install the latest version of eTakeoff Dimension
	  • eTakeoff Software Links
	  • Click on "eTakeoff Dimension v8 - NEW Install"
	b. Double click on C:\Program Files (x86)\eTakeoff\RView**ETkoCnfg.exe**
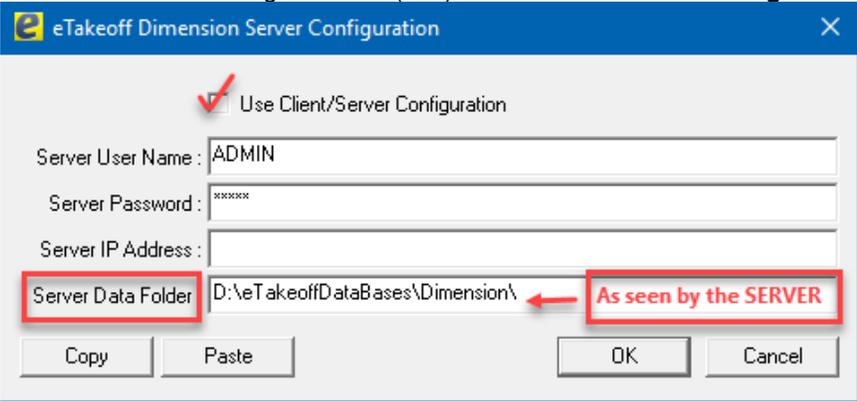	
	c. Open Dimension – Click on File/Help/ About Application
	d. Window should show the Data folder **ON SERVER**

6. **Configure the ==users in a Terminal Server==**	**Dimension :** a. Login to server as User (Repeat this process for **EACH** User login)

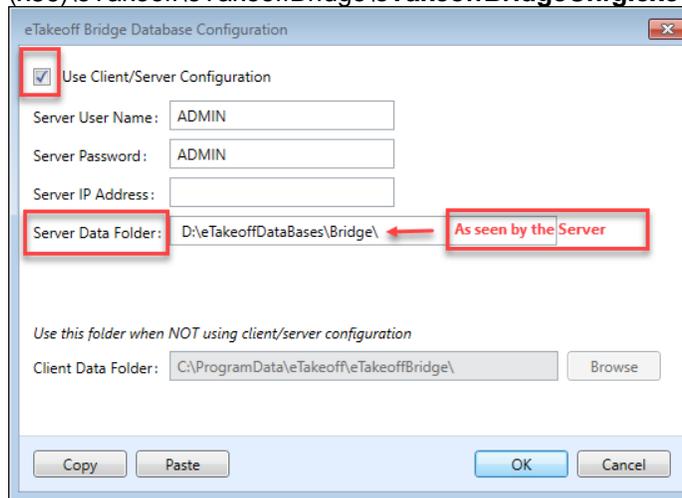| environment	b. Double click on C:\Program Files (x86)\eTakeoff\RView**ETkoCnfg.exe**
	eTakeoff Dimension Server Configuration
	c. Open Dimension – Click on File/Help/ About Application
	d. Window should show the Data folder **ON SERVER** Dimension Data Folder ON SERVER
	Bridge : Perform the steps below on each User login :
	• Double click on "C:\Program Files (x86)\eTakeoff\eTakeoffBridge**eTakeoffBridgeCnfg.exe**
	eTakeoff Bridge Database Configuration
	• Open Bridge – Click on File/Help/ About the application Window should show the Data folder **ON SERVER** Bridge Database Folder ON SERVER
7. **Finish fine-tuning the Server Configuration**	• Modify the Dump backup Scripts in the C:\Faircom\eTkoServer folder with the locations and names of the databases. (Appendix A) • Create a Windows Service for C:\Faircom\eTkoServer\faircom.exe (Appendix B)

Appendix A – Backup Scripting

While the server is running, you can't make copies of the databases. The server caches a lot of data so simply copying the files will copy incomplete data.

You could shut down the server, copy the files and restart the server but this causes problems. Any users logged into the server at the time of the shutdown will get errors the next time they access the database (even if the server is restarted).

Faircom provides a facility called "Dynamic Dumping" that dumps data while the server is still running. The databases can then be restored from the dump file. Dumps are driven by dump scripts. eTakeoff provides a dump script for Dimension. The script as provided assume you are using the default folder structure:

Server Software:	C:\Faircom\eTkoServer
Dimension Databases:	D:\eTakeoffDataBases\Dimension

If you override these folders you will need to modify the backup scripts. The scripts are simple text files you can edit with Notepad or any other text editor.

Warning: These scripts simply create a copy of the databases on the same disk drive in a different folder. That has two drawbacks:

- ***If the disk is damaged, both the active databases and the copies will be lost. We recommend the files be moved to another drive after they are created.***

- ***Each time the backup scripts are executed, if the previous copies are still in the same place, they will be overwritten. This means you will only have the most recent backup. If you need earlier (or later) information you will be out of luck.***

You should consult with your IT staff on a complete backup procedure.

Dimension Dump Script

The script for Dimension is **DimensionDump12.txt**. Its contents as provided by eTakeoff are:

```
!DUMP C:\Faircom\eTkoServer\Backup\DimensionDump.bak
!FREQ 24
!TIME 03:00:00
!IMMEDIATE_RESTORE
!REDIRECT C:\Faircom\eTkoServer\data\ D:\eTakeoffDataBases\Dimension\Backup\
!REDIRECT D:\eTakeoffDataBases\Dimension\ D:\eTakeoffDataBases\Dimension\Backup\
!DELETE
!FILES
C:\Faircom\eTkoServer\data\FAIRCOM.FCS
D:\eTakeoffDataBases\Dimension\Dimension80ProjData.ctr
D:\eTakeoffDataBases\Dimension\Dimension80StdsData.ctr
!END
```

The specification of the Server Software folder is highlighted in yellow. If you change the server software folder, change these parts of the script.

The specification of the Dimension Database folder is highlighted in light blue. If you change the server software folder, change these parts of the script.

The time and frequency of the dump is highlighted in light green. !TIME 03:00:00 means the dump will be performed at 3:00 AM. The dump time is specified as HH:MM:SS. PM hours are 12:00:00 through 23:59:59. !FREQ 24 means the dump will be repeated every 24 hours.

The !DELETE option means that the backup files created by the previous dump will be deleted and overwritten if they still exist when the next backup is done.

Bridge Dump Script

The script for Bridge is **BridgeDump12.txt**. Its contents as provided by eTakeoff are:

```
!DUMP C:\Faircom\eTkoServer\Backup\BridgeDump.bak
!FREQ 24
!TIME 03:15:00
!IMMEDIATE_RESTORE
!REDIRECT C:\Faircom\eTkoServer\data\ D:\eTakeoffDataBases\Bridge\Backup\
!REDIRECT D:\eTakeoffDataBases\Bridge\ C:\ProgramData\eTakeoff\eTakeofBridge\Backup\
!DELETE
!FILES
C:\Faircom\eTkoServer\data\FAIRCOM.FCS
D:\eTakeoffDataBases\Bridge\eTakeoffBridge.{Version#}Data.ctr
!END
```

The specification of the Server Software folder is highlighted in yellow. If you change the server software folder, change these parts of the script.

The specification of the Bridge Database folder is highlighted in light blue. If you change the server software folder, change these parts of the script.

The name of the Bridge Database file is highlighted in grey. Since database files are dependent on their version #, enter in the name of the Bridge Database file that you downloaded to install and configure Bridge.

The time and frequency of the dump is highlighted in light green. !TIME 03:15:00 means the dump will be performed at 3:00 AM. The dump time is specified as HH:MM:SS. PM hours are 12:00:00 through 23:59:59. !FREQ 24 means the dump will be repeated every 24 hours.

The !DELETE option means that the backup files created by the previous dump will be deleted and overwritten if they still exist when the next backup is done.

Note: If you have separate dump scripts for Dimension and Bridge, be sure to offset the start times so they don't simultaneously. 15 minutes should be plenty of offset.

CTSTATUS.FCS Log File

If you want to review the result of the dumps, you can read this file using Notepad or any other text editor:

> C:\Faircom\eTkoServer\Backup\CTSTATUS.FCS

The dumps should take place before the actual backup. When the backup is done, it should not backup the database files used by the server but rather the dumped/restored files:

eTakeoff Dimension
D:\eTakeoffDataBases\Dimension**Backup**\Dimension80ProjData.ctr
D:\eTakeoffDataBases\Dimension**Backup**\Dimension80StdsData.ctr

CTSRVR.CFG Configuration File

The execution of the dump scripts can be done manually, but it's easier to put a simple command in the CTSRVR.CFG file to invoke them. The default CTSRVR.CFG includes the following commands:

> ; CUSTOM FOR ETAKEOFF
> DUMP C:\Faircom\eTkoServer\DimensionDumpV12.txt

The first and third lines have a semicolon prefix. This means they are comments. The second line loads the dump script for Dimension.

Restoring from Backup

1. Stop the CTree server
2. Restore the database files from the saved backup.
3. Restart the CTree server.

Appendix B – Windows Service

You can set up the server to run as a Windows Service. Then it will be started automatically when Windows starts on the server and shutdown when Windows shuts down. There are three batch files included in the install:

ServiceCreate.bat

Run this script **AS ADMINISTRATOR** to create the Windows Service. Its contents as provide by eTakeoff are:

sc create eTakeoffServer binPath= "C:\FairCom\eTkoServer\faircom.exe" start= auto DisplayName= "eTakeoff Database Server"

The specification of the Server Software folder is highlighted in yellow. If you change the server software folder, change this part of the script.

ServiceStart.bat

Creating the service in the step above does NOT start the service the first time. Run this script **AS ADMINISTRATOR** to start the service the first time.

ServiceDelete.bat

Run this script **AS ADMINISTRATOR** to delete the service if you longer want the server to run as a Windows Service,

If you want to manage Windows Services in Windows, simply type "services.msc" at the command prompt.

Appendix C – Troubleshooting

ISSUE	CAUSE	SOLUTION
C-Tree Error Code	All C-Tree Error Codes	**C-Tree Reference Guide Errors**
Error installing Client/Server Software - Unable to save file: \~Server 5.0.0.msi		You need to run the install ***As Administrator.***
"Server Operation Now Stopped" message received when trying to start faircom.exe	1. The license file has not been copied into the server software folder. **OR** 2. The server may already be running.	1. You should have received a license file that has a name ***like "ctsrvr######.lic"*** from eTakeoff. Copy the license file into the server software folder (C:\Faircom\eTkoServer by default). **OR** 2. The server may already be running. Check task manager to see if the Background Process, "**c-tree Server (32 bit)**" is running.
Firewall Port Numbers	to open for Client workstation to communicate with Server	1. Using Notepad or any text editor, open the file "CTSTATUS.FCS" in the C:\Faircom\eTkoServer\data folder. 2. **Search for "Socket Port Number:"** 3. Have IT open Port(s).
C-Tree Error 12	The program could not open the database file(s). Either the file(s) does not exist, the configuration points to an incorrect file name, or the file is locked by another process.	1. Verify that the Server Data Folder path in the C:\Program Files (x86)\eTakeoff\RView\eTkoCnfg.exe is the correct path ***as seen*** **by the server.** 2. Compare the data in the C:\Program Files (x86)\eTakeoff\RView\eTkoCnfg.exe on a workstation that is working to the same file on the client station that is having the issue. 3. Test to see if the server's firewall is blocking the client. Turn it off temporarily and try to open eTakeoff on the client's system. 4. If you discover it is a firewall issue, on the server, open the text file, C:\Faircom\eTkoServer\data\CTSTATUS.FCS and search for "Socket Port Number". Open that port # in your server's firewall.
C-Tree Error 14	File appears corrupt at open.	1. Rebuild Database files - **CTree Error 14 opening Dimension80ProjData.ctr**

ISSUE	CAUSE	SOLUTION
		OR
		2. Restore Database files from a backup.
C-Tree Error 133 when client workstation tries to open program.	Workstation cannot communicate with the Server	1. Make sure that the background process, faircom.exe is running on the Server.
		2. Navigate to C:\Program Files (x86)\eTakeoff\RView and open ETkoCnfg.exe file. Enter the correct the server settings.
		3. **Open Port Numbers on Server Firewall.**
The server is running but the client is still using local database files.		You may not have configured the client to use the server. Make sure the "Use Client/Server Configuration" box is checked in the client's C:\Program Files (x86)\eTakeoff\RView\ETkoCnfg.exe file.
When we switched to client/server, we lost the Dimension projects for most of our estimators.	Chances are your estimators had independent databases before you switched. When you switched you used the databases from just one estimator.	Click on the link below and perform the steps on each workstation. **Merge Dimension workstation databases into one database on server**
Can't Find the Answer?		Refer to the following document to determine what service works best for you. Technical Assistance for Sage Estimating and eTakeoff

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