# USER MANUAL LIVECHESS




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# 1 ABOUT THE DOCUMENT

## 1.1 DOC. VERSIONS

| Number | Date | Name | Remark |
|---|---|---|---|
| 0.1 | 20110912 | Jan Krabbenbos | Initial |
| 0.2 | 20111004 | Jan Krabbenbos | Adapted for first public release. |
| 0.3 | 20111011 | Jan Krabbenbos | Additions and new features. |
| 0.4 | 20111214 | Jan Krabbenbos | Corrections and additions for new features. |
| 0.5 | 20120208 | Jan Krabbenbos | Added warning for DGT XL 1.10 clocks and live PGN, usage of DGT 2000 TopMatch clock. Added more info for the virtual boards. Added DGT e-Board prerequisites. |
| 1.0 | 20120315 | Jan Krabbenbos | Changes made for DGT LiveChess version 1.2. |
| 1.1 | 20120326 | Jan Krabbenbos | Changes made for DGT LiveChess version 1.3 and added correction information. |
| 1.1b | 20120910 | Jan Krabbenbos | Added missing information for correcting moves and more. |
| 1.2 | 20121001 | Jan Krabbenbos | Changes made for DGT LiveChess version 1.4 for the Caïssa System. Added updating DGT e-Board modules. |
| 1.3 | 20121101 | Jan Krabbenbos | Changes for the DGT LiveChess 1.4 version, including the description for the Caïssa System Modules. |
| 1.4 | 20121120 | Jan Willem Brinks | Added and rewritten Caïssa System parts in the text. |
| 1.4.1 | 20130313 | Jan Krabbenbos | Changes for the DGT LiveChess 1.4.1 version: Added information about firewall issues, network necessity, time synchronization viewer and other smaller issues. |
| 1.4.2 | 20130314 | Jan Krabbenbos | Document split into a DGT LiveChess Manual and a DGT Caïssa System Manual. |
| 1.4.3 | 20130409 | Jan Krabbenbos | Linux, but not as root, information added. |
| 1.4.4 | 20130626 | Jan Krabbenbos | Added more information about the serial port “alive” states with the Caïssa System. Added troubleshooting guide. |
| 1.4.5 | 20130930 | Paul Roumen | Added, remarks about compatibility with older DGT e-Boards. |
| 1.4.6 | 20140604 | Jan Krabbenbos | Corrections made for DGT LiveChess version 1.4.3 |
| 1.4.7 | 20150105 | Frits Jansen | Corrections made for DGT LiveChess version 1.4.5, support new booster and collectors. General text updates. |
| 1.4.8 | 20150501 | Frits Jansen | Corrections made for improved DGT 3000 support. Release LiveChess version 1.4.6. |
| | | | |
| | | | |

## 1.2 LITERATURE AND REFERENCES

1. DGT Caïssa System Manual (Jan Krabbenbos / Frits Jansen)
2. DGT Quick setup Guide (Jan Krabbenbos / Frits Jansen)

## 1.3 COPYRIGHT

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## 1.4 TRADEMARKS

The following items are trademarks of Digital Game Technology B.V.: DGT π, DGT 3000, DGT XL, DGT2010, DGT2010SG, DGT2000, DGT Easy, DGT Easy Plus, DGT Cube, DGT Pyramid, DGT LiveChess, DGT Caïssa System.

# 2 INTRODUCTION

This is the manual for using DGT LiveChess in tournaments. It consists of three parts. The first part describes the software requirements. The second part describes more about how to setup the DGT e-Boards and connect them to a computer. The last part describes how to use the software in combination with the DGT e-Boards.

At the moment of writing, DGT LiveChess consists of two programs, the main program and the local DGT LiveChess viewer. Furthermore the internet display is available. The number of programs may vary in the future, as useful extensions and upgrades are scheduled.

**REMARK**: This document is not yet complete as the software is still evolving. DGT tries to adapt the documentation with the new releases as soon as possible. The current manual describes DGT LiveChess version 1.4.6.

This manual can be downloaded from the support section of the DGT web site: http://www.digitalgametechnology.com

# 3 REQUIREMENTS

## 3.1 JAVA

DGT LiveChess needs Oracle Java Run Time Environment 7 as a minimum. Please make sure this is installed on the computer used for DGT LiveChess.

During startup of the DGT LiveChess software, it checks for the Java version installed on your computer. If it is not recent enough, it will report that the version is too low via a pop-up screen before canceling the usage of the program. In that case you need to install a more recent version of the Java Run Time Environment. A recent or new version of Java can be downloaded from http://java.com.

Due to restriction implementations in the software, it is only possible to use Oracle Java versions.

## 3.2 MS WINDOWS

DGT LiveChess runs on Microsoft Windows Vista, 7 and 8. It needs about 10 MByte disk space to store the software. Furthermore internal free memory space of 1 GByte is sufficient to run the software.

It runs under both 32 and 64 bits versions of MS Windows. We strongly advise to use same bit version as used by your installed Windows version.

**Remark**: If you are running a 64bit MS Windows version and installing a 32bit Java version from http://java.com, the Java executables are not automatically added to the MS Windows path. The 64bit Java version does add itself to the path. This is especially necessary when you want to run DGT LiveChess from the command line.

## 3.3 MAC OS X

DGT LiveChess runs on Apple Mac OS X Snow Leopard and Lion. It needs about 10 MByte disk space to store the software. Further internal memory space of minimal 1 GByte is sufficient to run the software. Do note that extensive testing on a Mac OS X has not been done yet. Feedback on behavior is highly appreciated and will be used to further improve DGT LiveChess software.

## 3.4 LINUX

DGT LiveChess runs on Linux. It needs about 10 MByte disk space to store the software. Further internal memory of minimal 1 GByte is sufficient to run the software.

It has been briefly tested with the following distributions:

- Ubuntu 10.10
- Ubuntu 12.10

And with the following Java Run Times Environments (JRE):

- Oracle Java Run Time release

**Remark**: When running DGT LiveChess on Linux, due to the nature of the serial port accessibility the software must be run as *root*. This can be solved by creating a rule in /etc/udev/rules.d that allows to run DGT LiveChess and use the USB-ports as a normal user not as root. For this create e.g. a file named 80-ttyusb.rules and add the following lines:

```
KERNEL=="ttyUSB0", MODE="0666"
KERNEL=="ttyUSB1", MODE="0666"
```

## 3.5 NETWORK CONNECTION

The DGT LiveChess program needs a network. It will reveal itself to others on the network (through a so-called broadcast message) so the viewer instances can see the DGT LiveChess instance. DGT LiveChess uses the port 1980. If this port is already taken, the next higher port is used (maximum 1985).

**Remark** : In some network configurations the broadcast may not be working properly, due to settings within the network itself. Please contact your network administrator to check if broadcasts are allowed within the used network.

**Remark** : Broadcasting does not work on localhost (or 127.0.0.1). You always need a network connection for DGT LiveChess to communicate with the viewer.

**Remark** : Java must be added to the firewall so that it can build up connections to the internet. As there are local networks in several environments, there are restrictions in what is allowed to use. It might be that you need to contact the maintainer of the firewall (e.g. the network administrator) to open these ports for you.

## 3.6 INTERNET CONNECTION

For publishing the games on the internet, a reliable and fast working internet connection is necessary. With the default TFD Flash Display the approximate size of the necessary space is depending on the amount of games. It needs approximately 50 kBytes for the basic files and 5 kBytes per game.

Please keep in mind that the number of visitors on your website also determines the load on your website.

## 3.7 DGT LIVECHESS UPDATES

The latest version of the DGT LiveChess program will be posted in the download section of the DGT web site: http://www.digitalgametechnology.com . The program itself will also check on a regular basis if an update is available. If a newer version is available, the user is pointed to the location of the DGT web site for downloading. Also recent manual versions can be found on the same location of the web site.

**Remark**: The automatic check for newer versions generates some internet traffic. It is however only a check on the version which is available on the DGT web server. There will be no data sent back to DGT. No personal data login will take place.

**Remark**: At this moment there is not always compatibility between the configurations of the versions. For this please check the DGT LiveChess documentation on the web site. For future DGT LiveChess releases it will be a target to keep the configurations backward compatible, so the user can copy older set-ups on newer DGT LiveChess versions.

## 3.8 DGT E-BOARDS

The DGT LiveChess works with most of the DGT e-Boards that have been produced over the years. In the table below is an overview of DGT e-Board hardware versions and a comment if DGT LiveChess software works with it. Due to changes in the DGT e-Board protocol and hardware over the years, very old DGT e-Boards are not supported by DGT LiveChess.

| Serial e-Board Version number | Supported by DGT LiveChess? | Comments: |
|---|---|---|
| 1.0 (Olympiad) | No | |
| 1.01 | No | |
| 1.3 | Yes, | Works only with the built in Serial port. Not with a serial to USB converter. |
| 1.4 | Yes | Works only with the built in Serial port. Not with a serial to USB converter. |
| 1.5 | Yes | |
| 1.8 | Yes | |
| 1.9 | Yes | |
| BT DGT e-Board | Yes | See remark on the next page |

**REMARK**: The DGT Bluetooth DGT e-Boards work with DGT LiveChess from DGT e-Board firmware version 3.0 or higher. If you have a firmware version lower than 3.0 you can download the latest firmware version from the DGT website and update your Bluetooth DGT e-Board. In some cases the reliability of the Bluetooth communication cannot be guaranteed. If issues occur, like loss of communication, please use the Bluetooth DGT e-Board as a USB DGT e-Board by using a USB cable.

# 4 HARDWARE SETUP

## 4.1 WIRED DGT E-BOARD SETUP

For playing a tournament with a large number of boards it is recommended to use only serial DGT e-Boards only. With serial DGT e-Boards a longer distance can be reached (max. 100 meter), whereas wired USB DGT e-Boards only reach 15 meter maximum.

The serial DGT e-Boards can be setup in a bus/star network with a maximum of 12 DGT e-Boards per serial port on the PC.

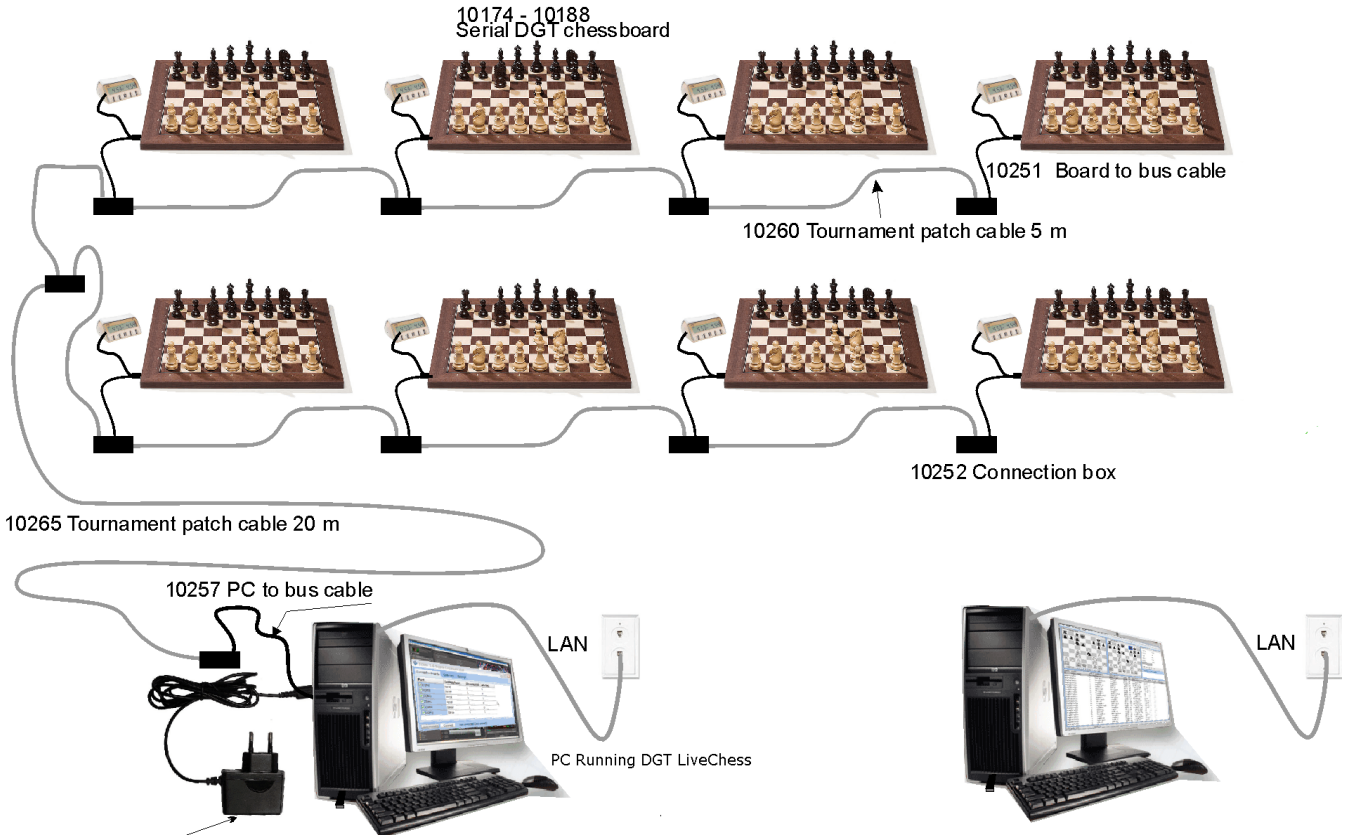


**FIGURE 1 WIRING BETWEEN THE DGT E-BOARDS AND PCS**

In Figure 1 you see the wiring of 8 DGT e-Boards to a PC. Each DGT e-Board has a board-to-bus cable which goes into a connection box. From the PC to the bus there is a PC-to-bus cable which also goes into a connection box.

Between the connection boxes regular Ethernet network or patch cables can be used. The transmission however is still via a serial protocol. Do not connect the DGT e-Board string to a LAN connection.

The serial bus is connected with a DGT PC-to-bus cable to a serial 9-pin port of the computer. If your computer has no serial connection, you can solve this by using a serial-to-USB convertor. A qualified USB convertor is included in the Caïssa system set or could be purchased at the DGT shop separately.

## 4.2 WIRELESS DGT E-BOARDS SETUP

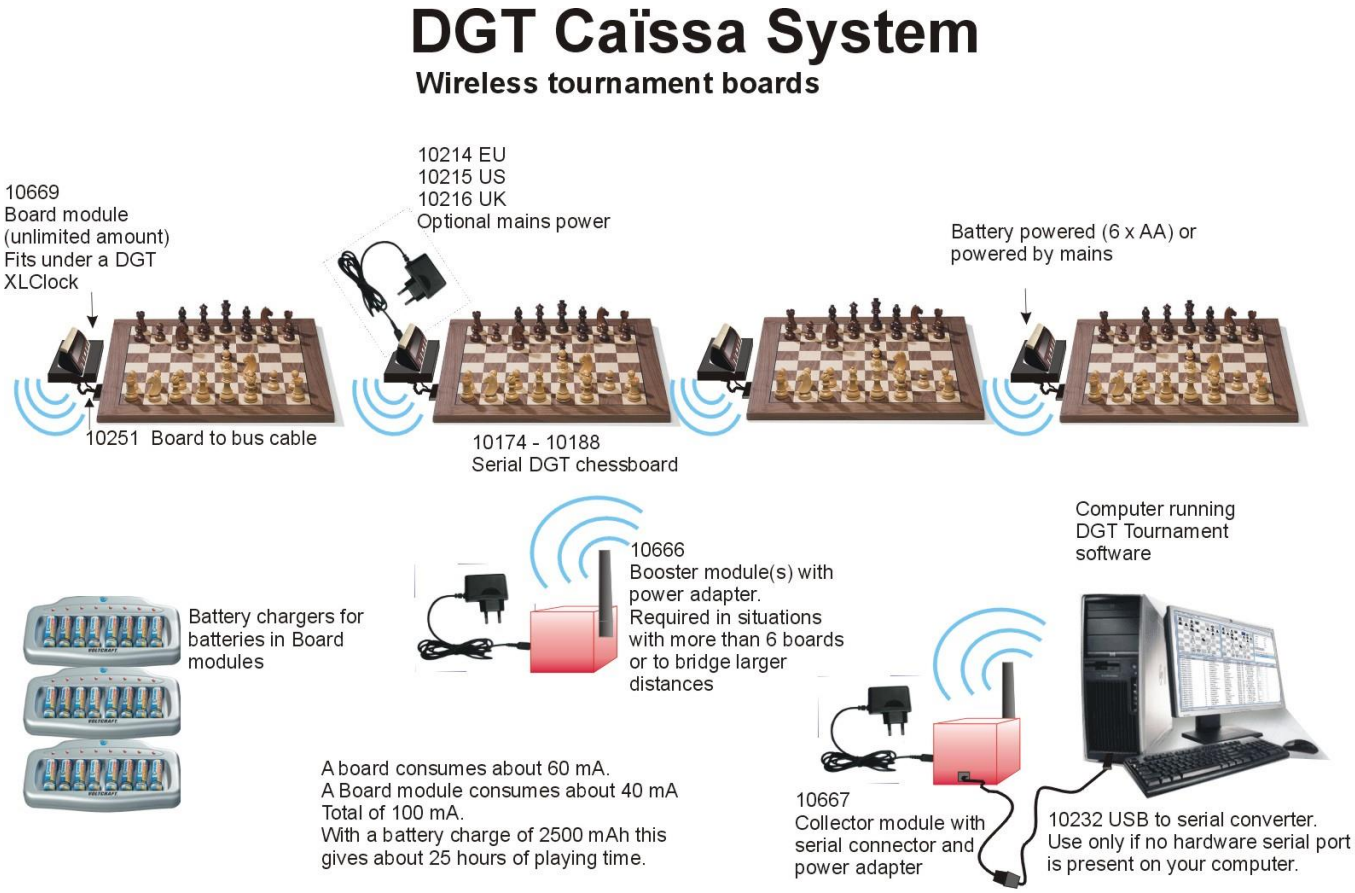


**FIGURE 2 THE CAÏSSA SYSTEM OVERVIEW**

The DGT Caïssa System is a special developed wireless system for reliable transmission of game data between the DGT e-Boards to DGT LiveChess. For the technical details see the Manual DGT Caïssa System. A hardcopy of the manual should be included in the DGT Caïssa system.

You can always download the latest version from the support section on the DGT web site: http://www.digitalgametechnology.com .

**Remark:** For testing and learning the DGT LiveChess program we have included Virtual boards. These can be selected and be used to simulate a real LiveChess tournament set-up. See chapter 7.8 for more details.

# 5 DGT LIVECHESS

## 5.1 INTRODUCTION

The DGT LiveChess application is the program to manage the DGT e-Boards, games, players and tournaments. It is the central command utility for the administration of broadcasted live chess tournaments.

## 5.2 INSTALLATION

The software comes in a zipped file. Create a directory where you have read and write rights and unzip the software into this directory. If you have installed Java, the JAR files (files with the .jar extension) are executable by double clicking.

Installation requires approximately 10 MByte disk space.

**Remark**: On MS Windows systems you should not use the Program Files or any other system bound directories. In these directories you do not have the rights to write data from a program.

## 5.3 START-UP

There are two ways to start the applications (make sure that the correct Java version is installed):

1. Go to the LiveChess directory and double click on the livechess-1.4.6.jar file to start the main application.
2. On a command line, enter “java -jar livechess-1.4.6.jar” to start the main application

## 5.4 WORKFLOW

The workflow describes the steps required how to transfer the view of the live DGT e-Boards straight to the internet display inside your tournament website. When you start a new session you always have to go through the following basic steps:

1. Connect your DGT e-Boards to the application by selecting the correct serial port(s).
2. Create one or more tournaments.
3. Connect the DGT e-Boards to the tournaments (only once per tournament set-up).
4. Start live registration of the DGT e-Boards.
5. Take care of broadcasting the games on the Internet.

Most entered data is persistent, meaning that information you add to the program will be remembered. If you stop the application and restart it, all information will be recovered from your hard drive. However for restarting the live registration, some of the steps must be taken again after a restart is reqired.

## 5.5 SERIAL PORTS

Select in the tree window on the left side the **Serial Ports**. The screen in Figure 3 will be shown. Please note that the number of available serial ports depends on the situation on your computer. It may take some time before all ports are recognized, please have some patience.

Select the ports to where you have the DGT e-Boards connected to by checking the accompanying checkbox. After checking the box it will take a few minutes before all the DGT e-Boards are found. Especially using a Caïssa system will take some time to recognize the DGT e-Boards.

Do note that a USB DGT e-Board will also show up as a serial port with an assigned port number.

On Microsoft Windows, serial ports are called COM ports. On Unix like systems, like Linux and Mac OS X, they are called TTY devices. The TTY devices can be found in the /dev directory of your system.

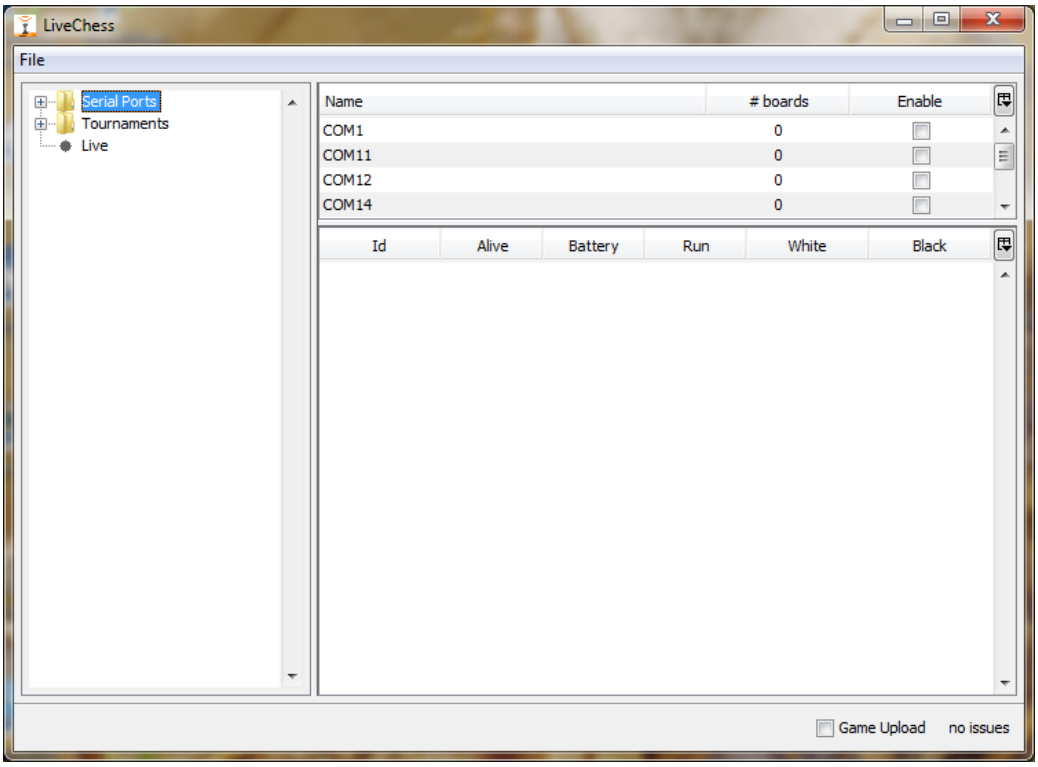


**FIGURE 3 SERIAL PORTS**

After enabling the desired serial port(s) you can select one line and see what DGT e-Boards are found on that COM port. Alternatively you can click on the "+" sign (left screen) in front of Serial Ports to open the tree of selected serial ports and select one in that listed tree. The DGT e-Boards will be shown with clock information when clocks are connected. See Figure 4 for this hardware overview. In the overview given, in which 8 DGT e-Boards are connected on a serial bus on COM6 (Microsoft Windows), you see four DGT e-Boards that have a clock connected. One of these clocks is running, the one with an DGT e-Board ID: 10016. Please keep in mind that it can take some time before all DGT e-Boards on a serial port are detected.

If you are using the Caïssa System, the connected Collector Module will show up as a single serial port. After enabling the port for the wireless system and if you have switched them on, the Board Module(s) with same channel number will be detected. It can take several minutes before all DGT e-Boards are detected and visible as active (green) on your DGT LiveChess screen.

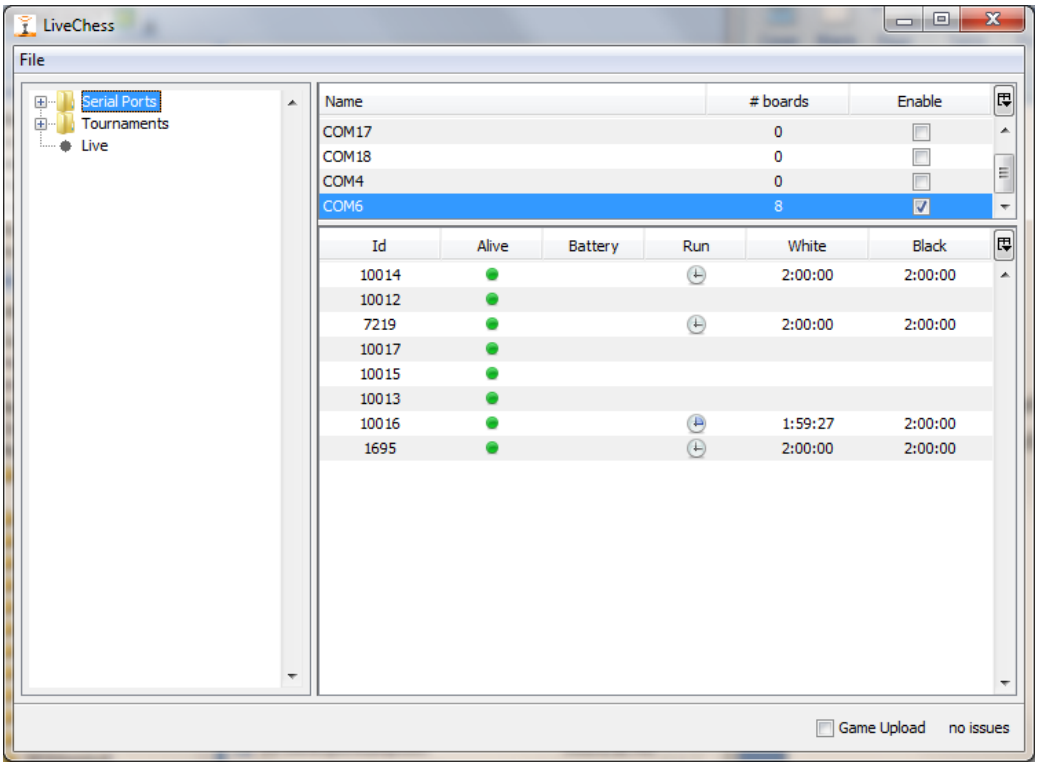


**FIGURE 4 WITH DGT E-BOARDS CONNECTED**

This overview only gives information on the hardware and the connection to the computer. No information about the position of the pieces on the DGT e-Board can be found here. The columns in the lower right section show:

- **Id:** The DGT e-Board unique identifier. (Normally DGT e-Board serial number as listed on the side of the board.
- **Alive:** Shows green if the DGT e-Board can be read and has no errors. If red, then there is a technical error with the DGT e-Board. With the Caïssa System there is also a yellow state. This means that DGT LiveChess is out of sync with the memory of the Board Module and waiting for information to arrive from the DGT e-Board.
- **Source:** The source will show serial bus if the DGT e-Board is connected on a serial bus. It will show the Caïssa Board Module MAC address if the DGT e-Board is connected through a wireless Caïssa System.
- **Caïssa Battery:** If the Caïssa Board Module battery goes to a low voltage, the battery sign is shown here (Currently the actual voltage value is given).
- **Clock Battery:** If the clock battery goes to a too low voltage, the battery sign is shown here. Remark: the battery low indication shows-up approximately 15 minutes earlier on DGT LiveChess then on the DGT 3000 or DGT XL itself!
- **Run:** Shows if the clock is running or not. A running clock shows as a clock symbol with a grey area. A stopped clock will have NO clock symbol within this area.

- **White:** The clock time of white.
- **Black:** The clock time of black.
- **Flag:** Shows a flag symbol, in white or black, in case one of the flags has fallen (in default not visible).
- **Lever:** Shows the position of the lever of the clock (in default setting not visible).
- **Information:** Shows the hardware version information of the connected DGT e-Board (in default setting not visible).

If the clock is switched off or not connected, no clock information is shown.

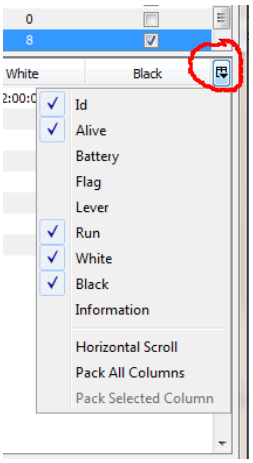


**FIGURE 5 COLUMN SELECTION SERIAL PORTS**

It is possible to change the columns that are shown in the overview of the serial ports. For this you have to click on the button in the upper right corner of the list, see the red encircled location in Figure 5. A popup window will appear in which you can switch on or off the columns you prefer to see on the screen. It is also possible to change the sequence of the columns in the overview by clicking on the header of the column and drag it to the wanted position. If you close the DGT LiveChess application, this information is stored on your hard drive. So after a restart, it shows the last configuration. Resizing of the columns is done by clicking on the edge between two columns and drag the edge to left or right.

## 5.6 DGT E-BOARD MEMORY

DGT LiveChess uses the internal DGT e-Board memory for temporary storage. At startup it reads the DGT e-Board memory to see if it needs to reconstruct the game in play or if there is a new game startup.

With the use of the DGT e-Board memory, data failure recovery is guaranteed as long as the DGT e-Boards keep their power supply. If, during a round, you have a computer failure and have to stop DGT LiveChess for some time, no moves on the DGT e-Boards are lost unless you remove the power supply from the DGT e-Boards. The DGT e-Boards however will keep their memory without power, but no new information will be stored. In case of a total power failure the tournament can be resumed after the power is up again. If no moves are played during the power down time, the tournament can be resumed without data loss.

To prevent failure because power loss, there is a preferred option to use an uninterruptable power supply unit (UPS) for all devices (PC and DGT e-Boards).

## 5.7 TOURNAMENTS

After connecting the DGT e-Boards to the program, the tournament must be managed. To add or manage a tournament, click on **Tournaments** in the left tree window. See Figure 6.

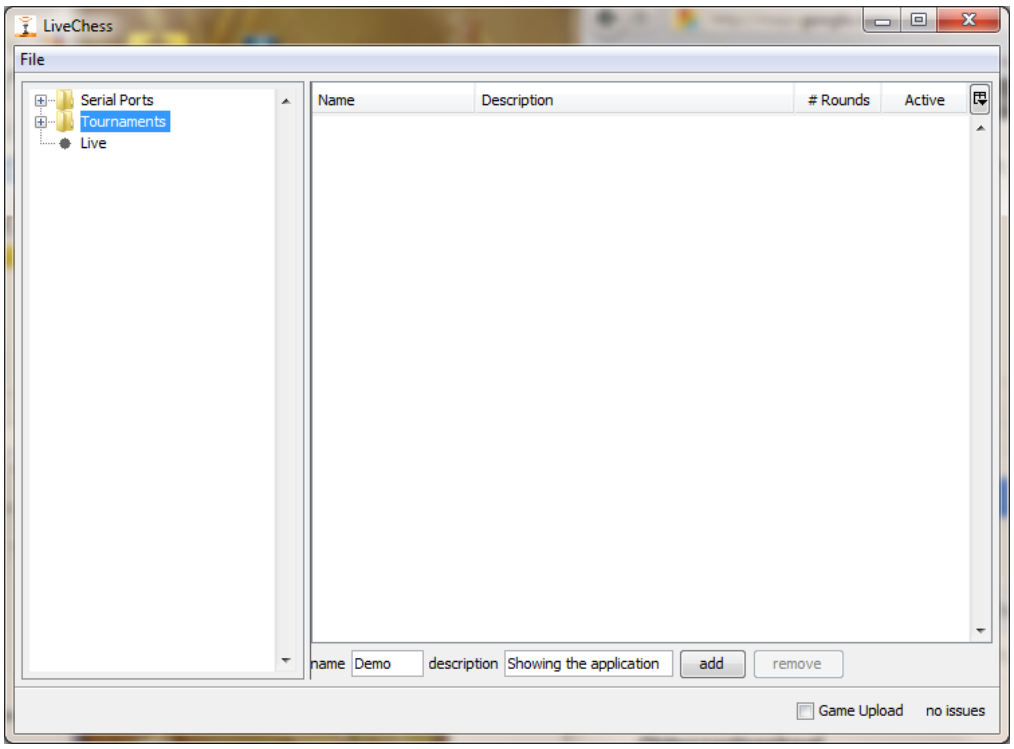


**FIGURE 6 TOURNAMENT CREATION**

After filling out the fields **name** and **description** you need to click on the **add** button to add a new tournament. Figure 6 shows an example before the user has clicked on the **add** button.

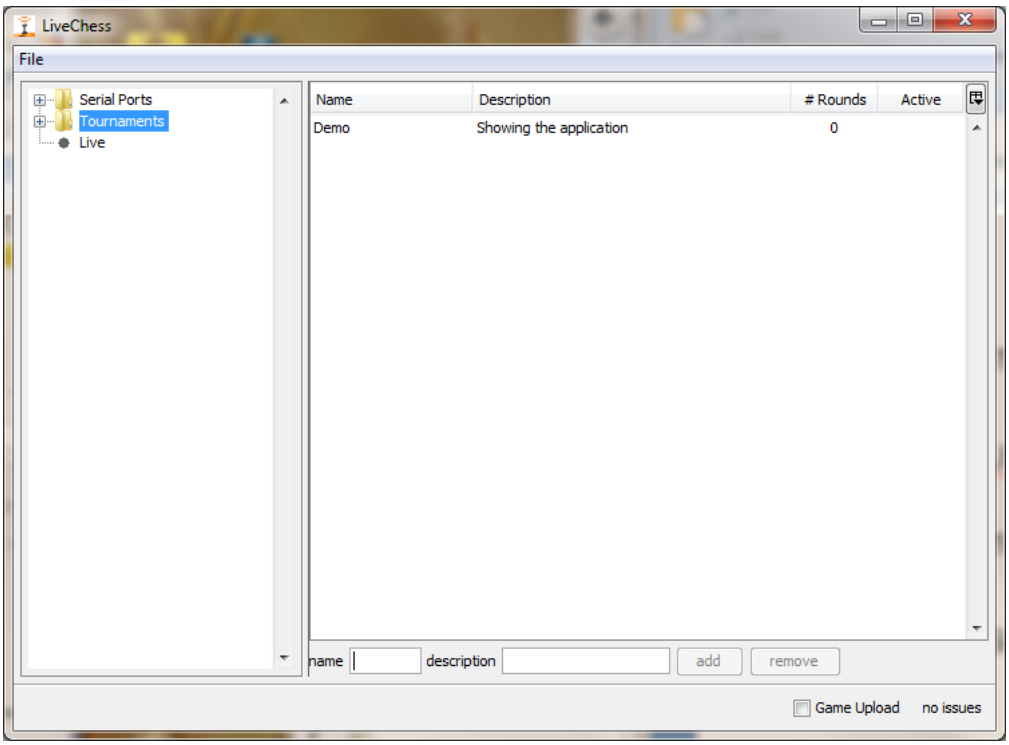


**FIGURE 7 AFTER TOURNAMENT CREATION**

Also in the tournament table you can select or deselect the columns you want to see. Click on the symbol and Figure 8 will show up. You now are able to select the columns you want to see by selecting the preferred tick box.

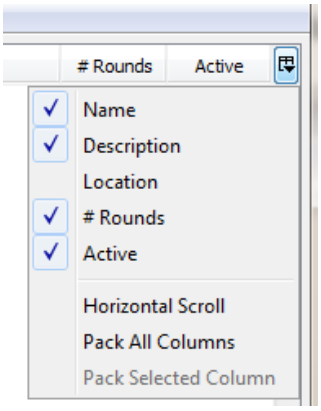


**FIGURE 8 COLUMN SELECTION TOURNAMENT**

### 5.7.1 SUMMARY

Figure 7 gives the result of clicking the **add** button. Now click on the little "**+**" symbol in front of **Tournaments** in the left tree window. Then select the created tournament (in our example tournament "Demo"). Now additional tournament information can be added, including player information and rounds. It is also possible to change the sequence of the columns in the overview by clicking on the header of the column and drag it to the wanted position. If you close the application this information is stored. After a restart, DGT LiveChess shows the last created configuration. Resizing of the columns is done by clicking on the edge between two columns and drag the edge to left or right.

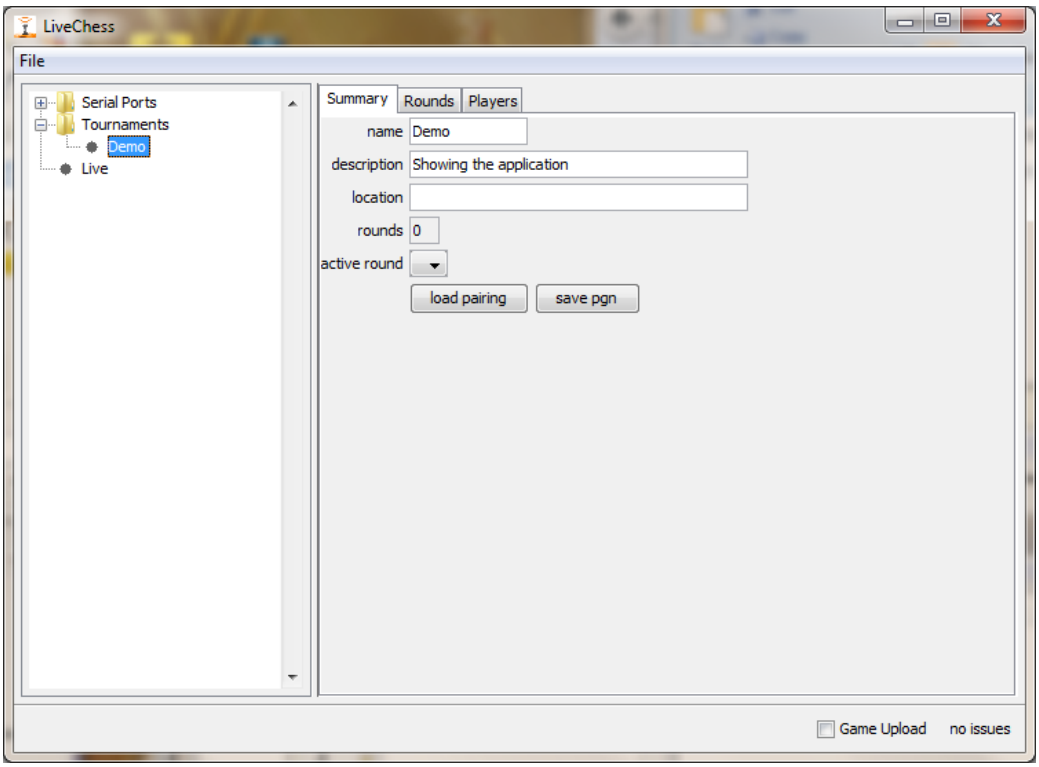


**FIGURE 9 ENTRY OF TOURNAMENT INFORMATION**

The fields ***name*, description** and **location** will be transferred to the resulting PGN file and to other publication locations. The rounds field shows the current number of available rounds. DGT LiveChess keeps all information of all rounds for you on your local hard drive.

Important possible user actions:

- **Active round:** In this field you select the active round for live registration and publishing of the moves.
- **Load pairing:** This button opens a file selection. You can select a PGN file generated by a pairing program. It can also read a TXT file from a specific pairing program (currently only PairTwo is supported).
- **Save pgn:** This button saves the PGN file of all played games in all rounds for this tournament to your hard drive.

### 5.7.2 LOAD PAIRING

In today's tournaments a pairing program is normally used to create the pairing for the next round, especially for tournaments based on a Swiss pairing system but also for other types of pairing system (e.g. Round Robin). These programs are capable of generating a PGN file after a new round is paired. This file can be used to be loaded into DGT LiveChess. The round, games and players will be automatically created.

**Remark:** In case you load the same file again, changes in DGT LiveChess will be made when there are any changes in the new file. It is not possible to add moves to DGT LiveChess games this way. Only the header information of the PGN file is used.

If the round number is not sequential to the last round, all rounds between the last round and this round will be created without games. In this way your pairing program becomes the main source for all game information.

To load pairing information for a tournament, select the tournament in the **tournament** section in the right tree window and click on the button **load pairing**. A file selection popup will appear where you can select the PGN file you want. The round, games and players will automatically be created if they do not yet exist yet. Otherwise the information will be updated only.

Sometimes you have, for example, only four DGT e-Boards to broadcast games live and 30 other DGT e-Boards for the rest of the, non-broadcasted, tournament. If you add the PGN file with the pairing for this tournament, all 34 games will be added. The first four DGT e-Boards will automatically be connected with the games added through the PGN. The other 30 DGT e-Boards will also be available for displaying on the internet, unless you delete them from the round first. If you do not delete them, they can be used to broadcast the results directly on the net. Also the game itself can be added manually from the notation form and after the game is finished.

## 5.8 MANUAL TOURNAMENT MANAGEMENT

The following paragraphs will describe how you can add rounds, games and players manually.

### 5.8.1 ROUNDS

After creating a tournament, there are no yet rounds available. You have to create a round, or more rounds, by clicking on the **add** button. With the **remove** button it is possible to remove only the last round available.

You can add a date for the round as well by clicking on the little arrow pointing down behind the **date** field. A date selection screen appears when you click on this field.

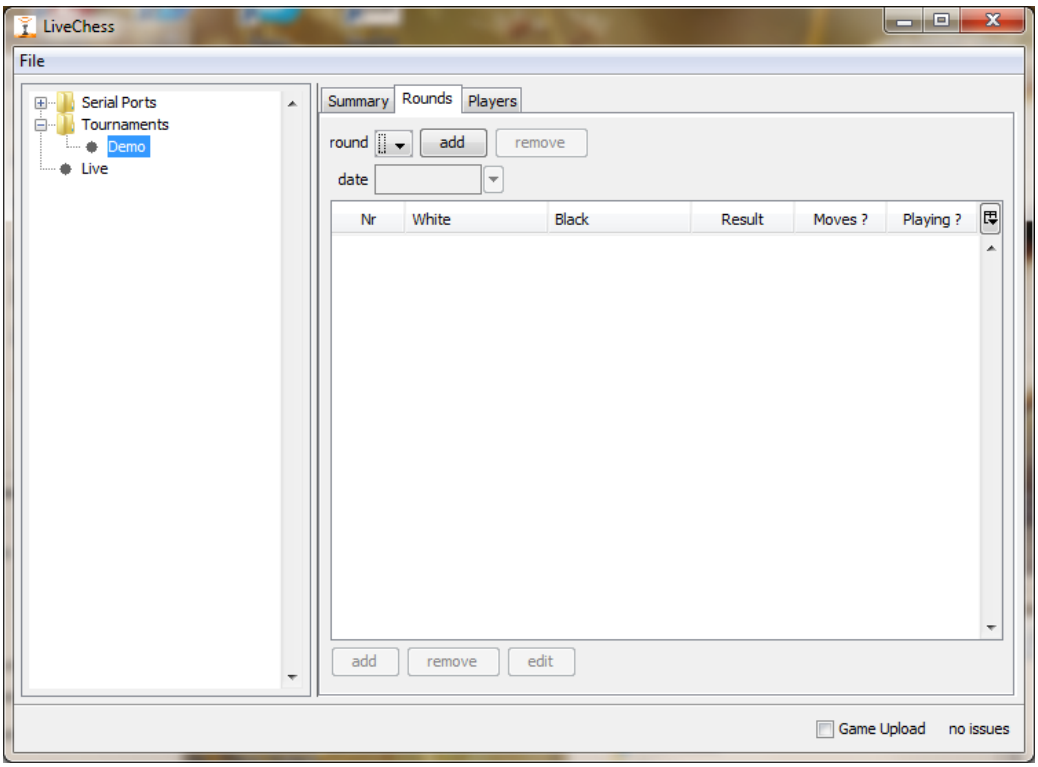


**FIGURE 10 EMPTY ROUNDS**

Once a round is created and selected, the first round will be selected automatically. You can add all games to the tournament with the buttons listed on the bottom of the list of games. The DGT e-Board numbers of the games will automatically match the connected DGT e-Boards.

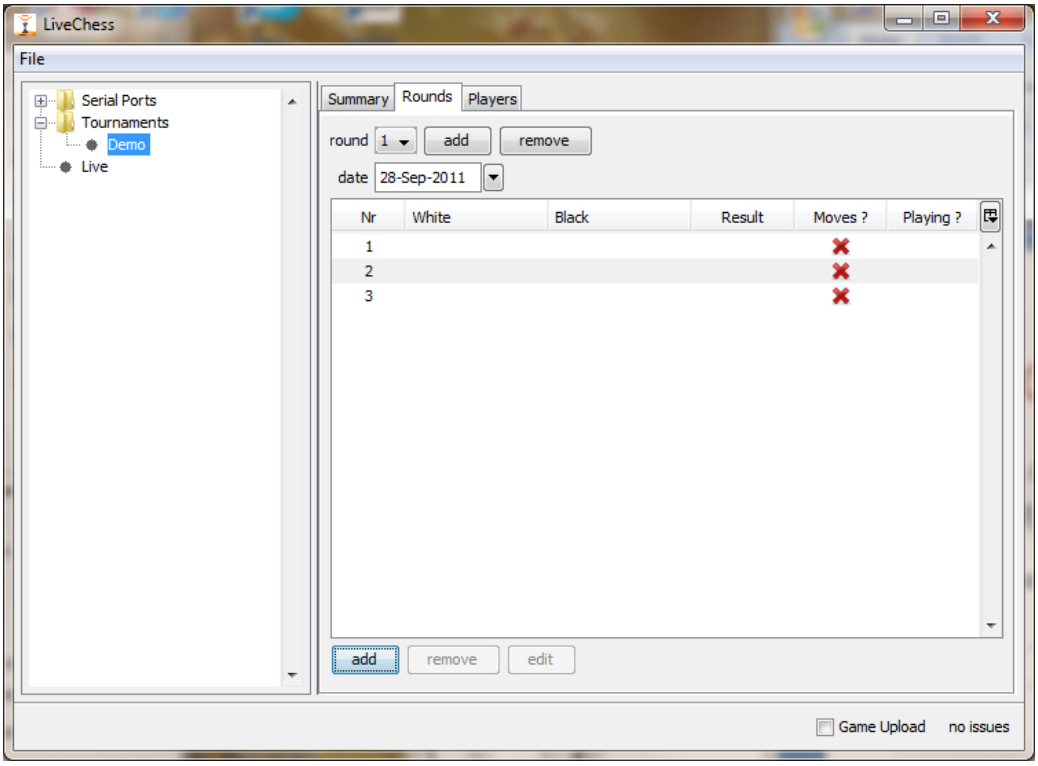


**FIGURE 11 GAMES ADDED MANUALLY**

If you have created a new round that is not (yet) necessary, you can remove this round. Do note that it is only possible to remove the last round. Select the last round and click on the **remove** button. In Figure 12 you will see how this is displayed in DGT LiveChess. The **remove** button is circled with a red line. It is only possible to remove the last round. The display will show automatically the previous (now last) round after the **remove** button has been clicked.

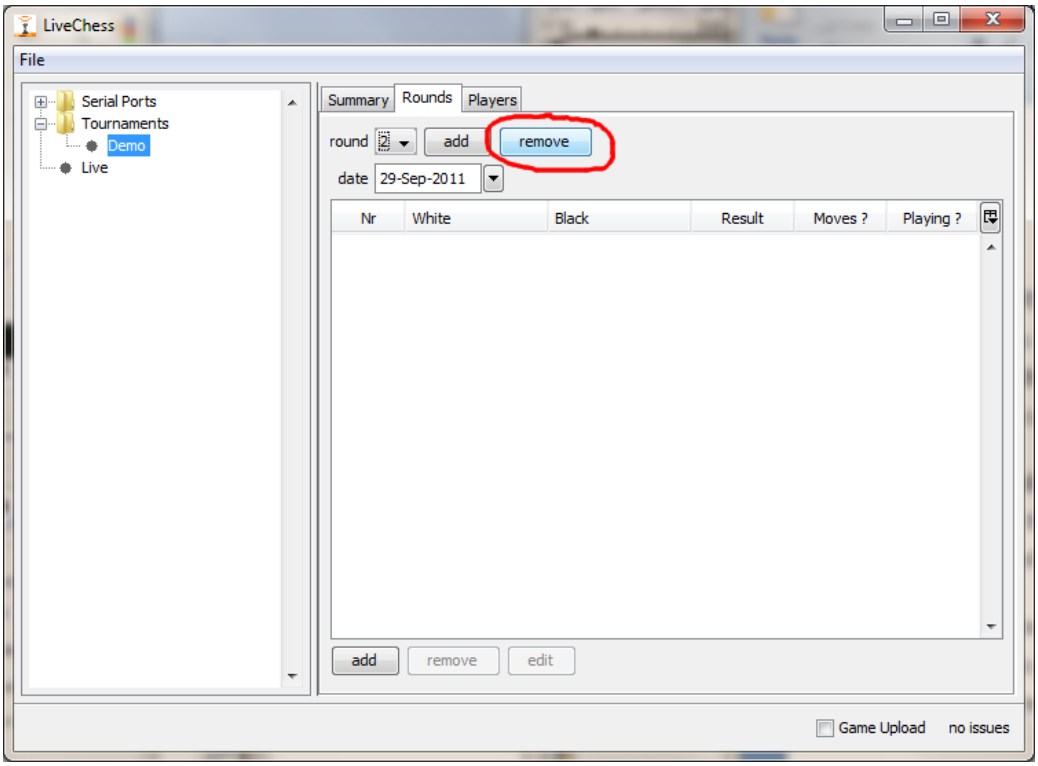


**FIGURE 12 REMOVE A ROUND**

### 5.8.2 PLAYERS

A chess tournament without players cannot exist. Therefore you can add players via DGT LiveChess. Go to the **Players** tab in the tournament ("Demo" in our example) and use the **add** button at the bottom of the screen and add new players. These players get a default name: ***player <seq. nr.>*.**

After adding the players you are able to edit the players name, title, rating and country by clicking on the field in the row of the player. See Figure 13 for an example: Four players were added and two of them have already their names and other information entered.

It is possible to navigate through the player list with the cursor and to select a field that needs to be changed. When you start typing in that field the information will automatically be added to the content and saved on your hard drive.

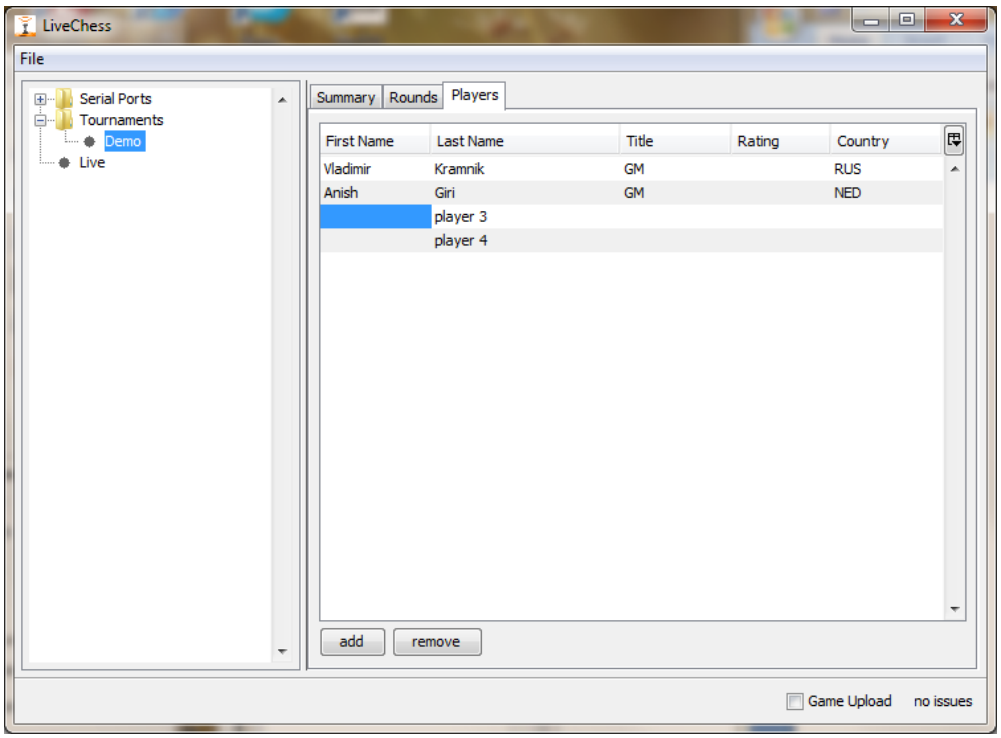


**FIGURE 13 PLAYER SCREEN**

It is also possible to make changes in the player's names which are already added through a loaded pairing. However do keep in mind that the source for these names in that case is the pairing program and will be restored to the previous name when a the PGN is reloaded.

It is highly recommended to make necessary changes in player data in the pairing program to keep the information consistent in future rounds.

Now you have the players, so you can add them to the games to be played. Go back to the **Rounds** tab and click on the **white** field to select a player and on the **black** field to select the opposite player. Do enter the names for all games. It is also possible to add a result, but this is only necessary if the game is finished or, for some reason, not played. See, as example, figure 14 how to add players to a round.

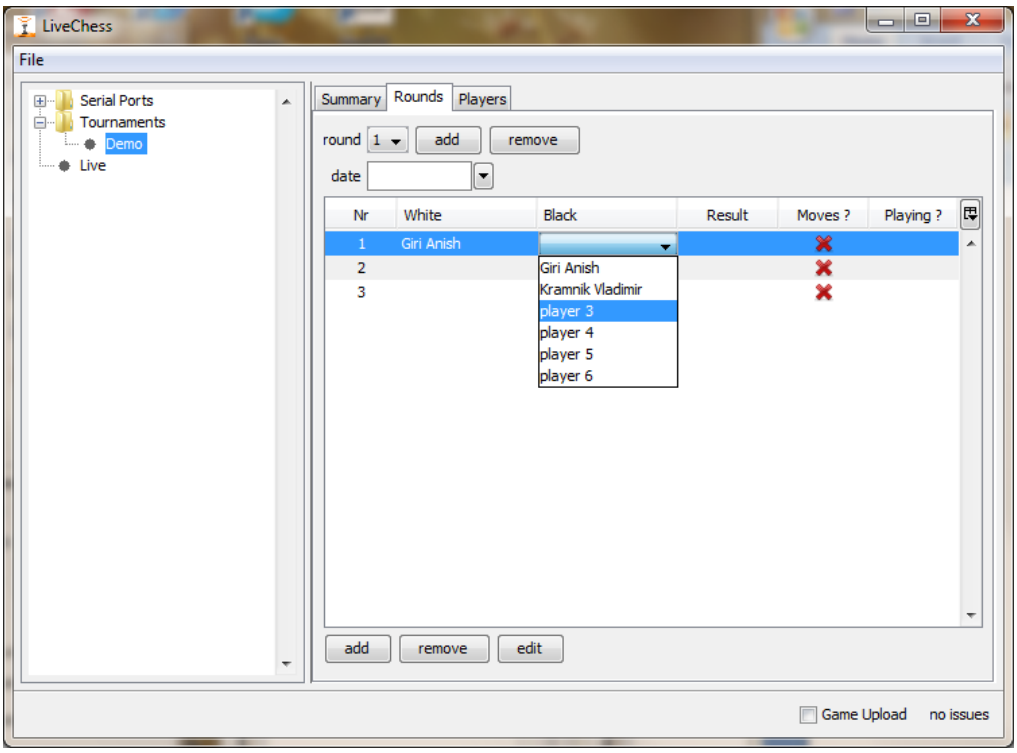


**FIGURE 14 ADDING PLAYERS TO THE ROUND**

In the games list it is possible to easily move the game information from one DGT e-Board to another DGT e-Board. For example, you have created games in the list and just before the round the arbiter decides that the tables where the games are played are changed: DGT e-Board 2 will become DGT e-Board 4. Select DGT e-Board 4, click the line and do not release. You are now able to drag this row to the position just before the current DGT e-Board 2 (shown by a thicker line). Release the mouse and DGT e-Board 4 has become DGT e-Board 2. Now move (drag) the former DGT e-Board 2 to the correct position the same way.

## 5.9 CORRECTIONS

### 5.9.1 DURING THE GAME

In case the reconstruction of a game has gone wrong (the reconstruction does not know how the sequence of piece movements originally was), you are able to make manual corrections during the game. To do this go to the position were the error occurs by clicking in the move sequence (in the **moves** tab). Now you can click inside the chess DGT e-Board for moving pieces. The best way to do this is by first selecting the field where to go. Now the allowed possibilities for pieces to move are highlighted by a yellow edge around the field. Click the wanted piece and move it. This move is now added to the move list. All other moves will be removed, unless the reconstruction sees a way to reconstruct a correct game. Therefor if only one move went wrong and you correct it manually, the game reconstruction will automatically go further constructing the game.

The moves that have been corrected manually will be shown in green in the moves list. See Figure 15 for example. Keep in mind that in the **memory** tab all piece movements and clock times are available. You can always see step by step what happened on the DGT e-Board.

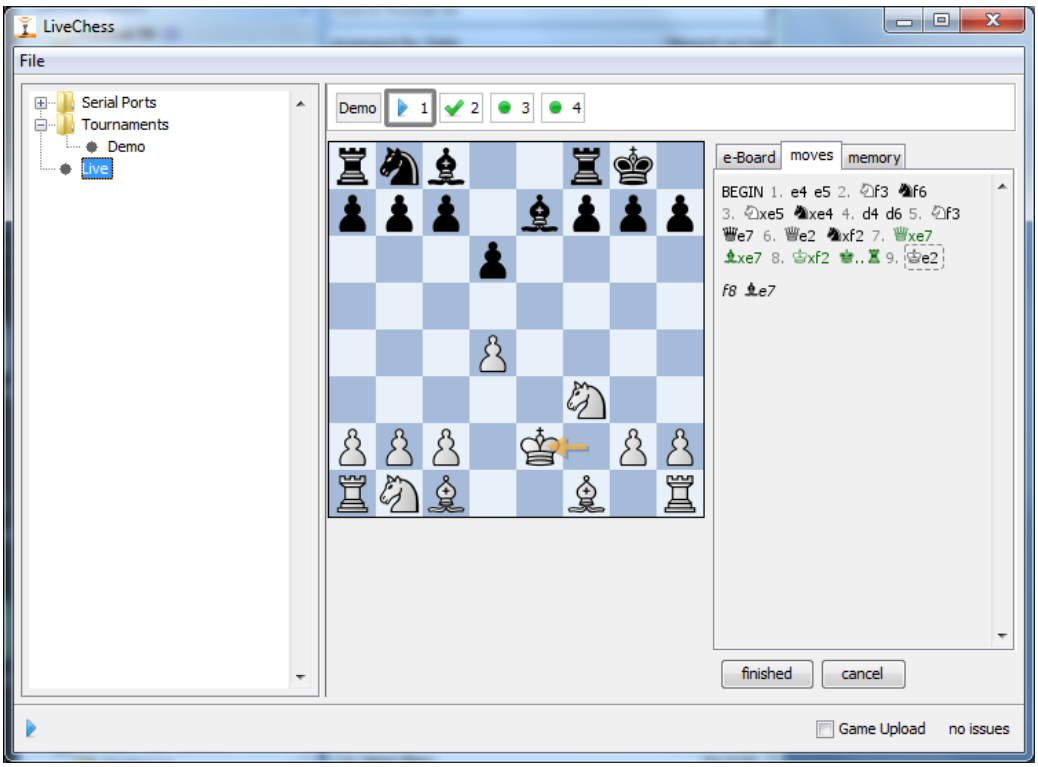


**FIGURE 15 CORRECTED MOVES**

### 5.9.2 AFTER THE GAME

After the game has ended, one the players or the arbiter puts the kings in the center fields to inform DGT LiveChess the result of the game. In a number of cases, players start to analyze the game before putting the kings in the center. Unfortunately there is no automatic way to detect if a game was already finished. This is a situation where you manually need to correct the game and therefore such situation should be avoided. Do instruct the players that, before analyzing any game, a correct endgame (with the 2 kings) is required for correct reporting the final results.

After putting the kings in the center fields, the game in DGT LiveChess will show the final result and the button completed and a blue square at the corresponding DGT e-Board number. This means that the DGT LiveChess operator needs to verify if the game if is completed and has the correct result, or if extra moves are to be added to the game (because of analyzing too soon or by putting the king on the center field).

In Figure 16 a game is played and has a result (indicated by the blue square of DGT e-Board 4). Next action to do for the operator is to check with the notation form if this is the correct result and with the correct number of moves. The operator sees that there are extra moves played: 26. …, dxe5 27. Bxh7. These extra moves can be removed from the moves list as follows:

- Select the correct last move.
- Right click for a separate menu (see Figure 17).
- Select **Set last move**.
- Finish with pressing the **completed** button.

The DGT e-Board number will now show a green check meaning the game is finished correctly.

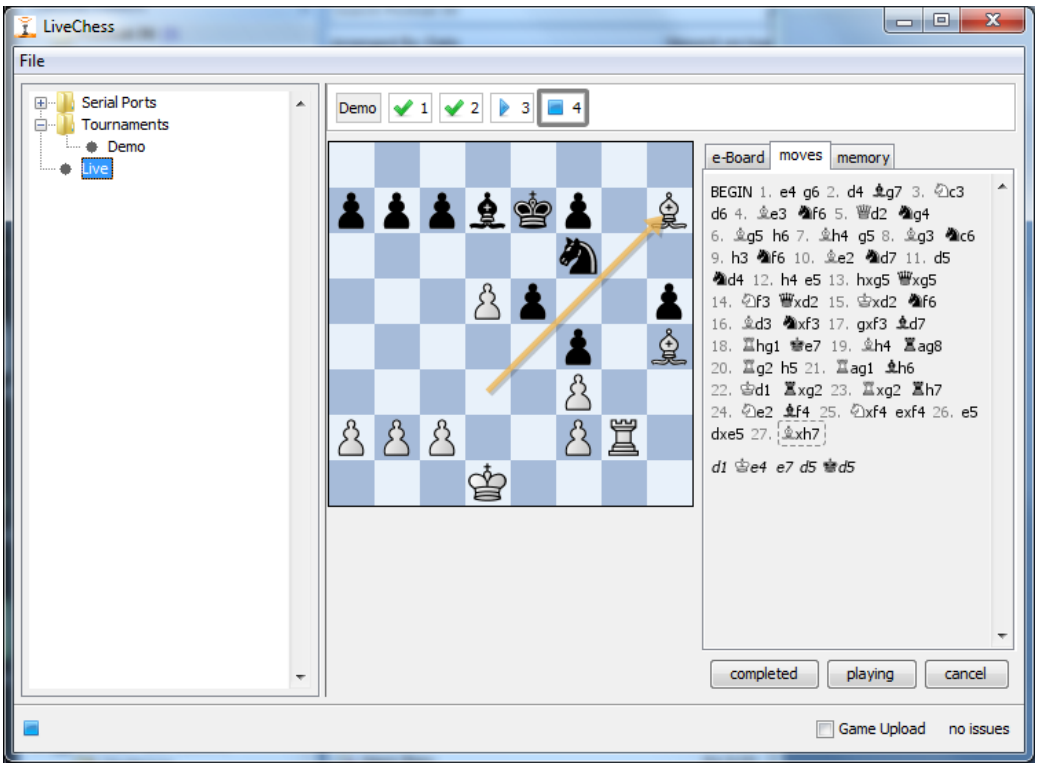


**FIGURE 16 EXTRA MOVES AFTER 26. E5**

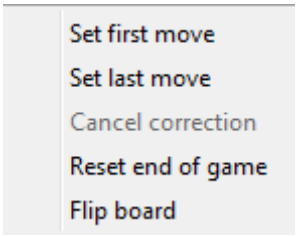


**FIGURE 17 RIGHT CLICK MOVE MENU**

If you really need to edit the game, click on the edit button in the **DGT e-Board** tab.

**REMARK**: To add a castling you have to click on the king first and then on the rook on the side you are castling.

**REMARK**: Completing the game is always necessary. If this is not done, it will cause the wrong game set-up being shown in the next round.

### 5.9.3 START OF GAME INCORRECT

In some cases the start of the game has been missed due to an incorrect start position or a missing piece in the start position. The piece movements are shown in the moves list, but no legal moves are available (see Figure 18 where the pawn on b2 was removed). To have the automatic move reconstruction on track the following steps should be taken :

- Select the first piece movement that is correct (in Figure 18 this is the e2).
- Right click on this move.
- Select **Set first move**.
- It might be useful to click on the last move.

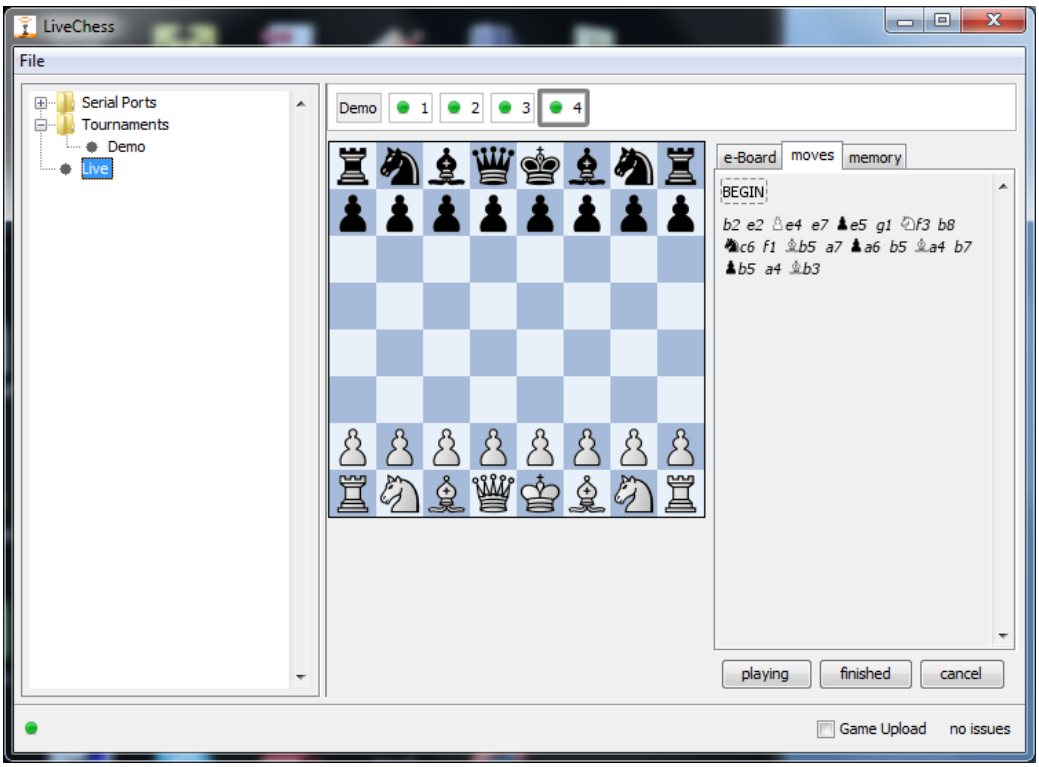


**FIGURE 18 MISSING PIECE AT START**

The game should be reconstructed further as normal and missing moves can be added. The missing piece will be assumed to be on the correct spot. If this piece shows up in a possible correct move, this is taken into account as well.

### 5.9.4 ADDING COMPLETE GAMES

In a lot of tournaments there are more games played than DGT e-Boards available. In a number of cases these games are also wanted to be published either in PGN or live via the internet. This can be organized by adding all games in the tournament (e.g. by reading in the pairing), select the DGT e-Board numbers for the DGT e-Boards and add the results and moves for the other games manually.

To add a result :

- Click on **finished.**
- Select the result in the **DGT e-Board** tab.

To add a game manually, take the following steps :

- Select the **moves** tab.
- Add all the moves.

The results and moves are published automatically on the internet and in the PGN file.

## 5.10 CLOCK AT START

In the tournament overview there is a field called *clock at* **start**. In this field you can add the starting time of the clock at the beginning of the round. For example, if you have a first time

control of 2 hours for the first 40 moves, you fill out 2:00:00 in this field. However only if you want it to be checked at the start of the round and to see if all clocks are set correctly.

The arbiter also has to check if the full clock setting is correct!! Currently it is not possible to request the setup values from the DGT 3000 and XL clocks. If you leave the field blank, the clock time will not be checked at the start of each round.

**Remark:** If you are using Fischer mode, do not forget to add the bonus time at the start of the game. So if you play 90 minutes + 30 seconds, you fill out 1:30:30.

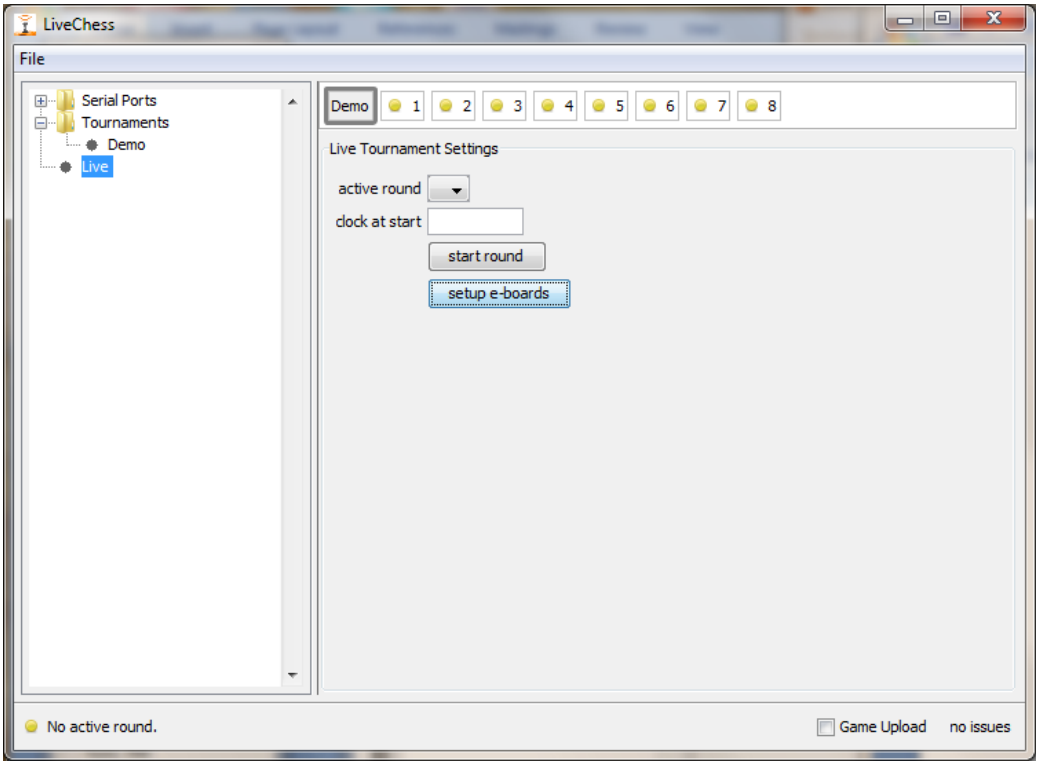


**FIGURE 19 BOARDS ADDED TO THE TOURNAMENT**

If, after selecting the active round and starting the round, something is incorrect on the DGT e-Boards, this will be shown in the **status icon** from the DGT e-Board. In Figure 19 this is a yellow dot. For example in Figure 21 all DGT e-Boards have errors. When DGT e-Board 8 is selected then in the lower left corner it says “Board not setup correctly”. “Clock not present.”. The first sentence can be seen from the selected tab DGT e-Board because the king is still on e4 which is an incorrect setup. Putting the king back to e1 solves this first problem. The second issue is the missing clock. It could be that the clock is not switched on, the jack plug is not pushed / connected correctly or the cable is defective. To solve this, switch the clock on, press the jack plug or replace the clock cable.

It is also possible to start the round game by game. For this option you select the DGT e-Board by clicking on it. The information with the DGT e-Board is shown including some buttons. Click on the **start** button for starting only this DGT e-Board.

Board message symbols (see also the paragraph DGT e-Board Status messages in the Appendices) are:

 - This DGT e-Board needs attention. Nothing serious, but something that needs DGT LiveChess operator attention. For example if a DGT e-Board is finished, but the result is not known.

 - This DGT e-Board is ready to start a game.

 - This DGT e-Board is currently playing a game.

 - This DGT e-Board has an error. The error is shown in the lower left corner of the screen once you click on this DGT e-Board symbol. (See Figure 20 for an example error message or Figure 21 for more error details).

 - The DGT e-Board as finished playing, result is known.

If there is no symbol with the DGT e-Board, this DGT e-Board has been disabled by the DGT LiveChess operator or not detected by the DGT LiveChess set-up .

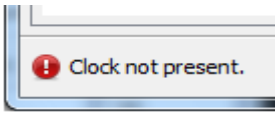


**FIGURE 20 DGT E-BOARD ERROR MESSAGE**




**FIGURE 21 ERRORS**

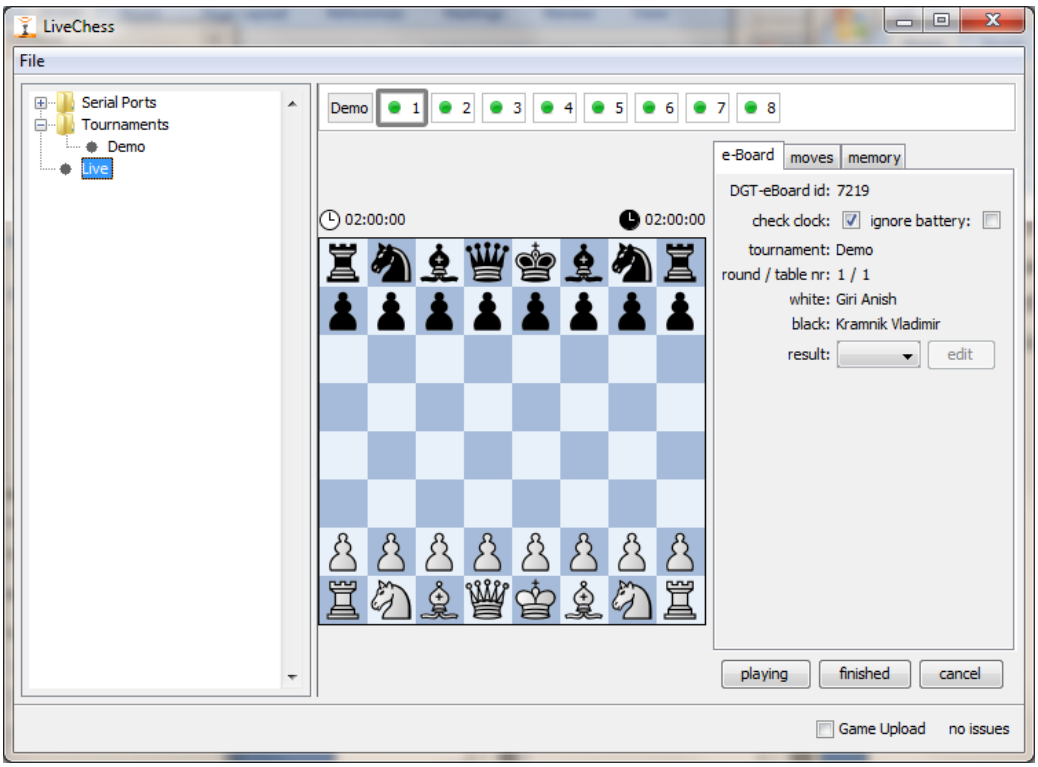


**FIGURE 22 ALL E- BOARDS READY**

If all DGT e-Boards have no errors, the games can be started, which is of course done by the players themselves. When the game is started, the status icon of that game switches to a **blue arrow**.

Below the DGT e-Board, information buttons will appear. Which buttons appear are depending on the state of the game. In Figure 22 the following buttons are shown:

- Button **playing:** When clicking this button, the DGT e-Board will go into playing mode. Even if already moves have been played, clicking this button let the game go into playing mode, reconstructing any available moves.
- Button **finished:** If the game should be finished, however no end of game command is given at the DGT e-Board, this button can be clicked.
- Button **cancel:** Clicking on this button cancels the game and takes the game offline. No reconstruction of the game can take place until the game is restarted from the starting position again.

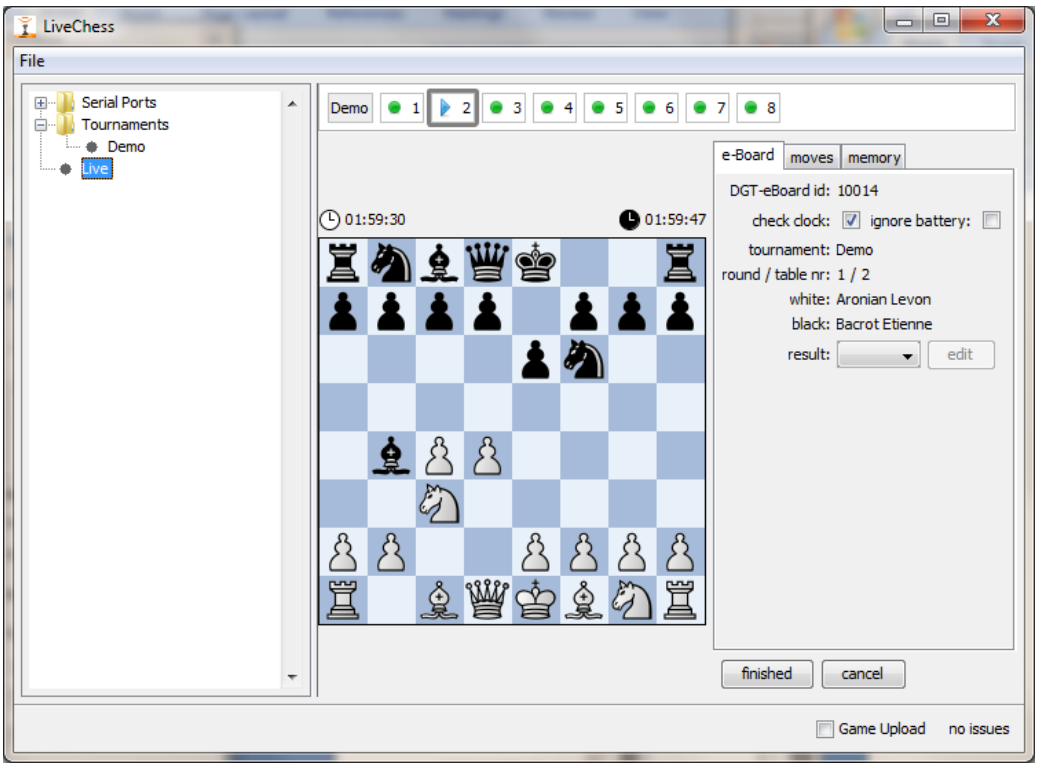


**FIGURE 23 GAME IN PLAY**

Available buttons during playing as shown in Figure 23:

- Button **finished**: The game is officially recorded as finished.
- Button **cancel**: The game is cancelled and recording of moves is stopped.

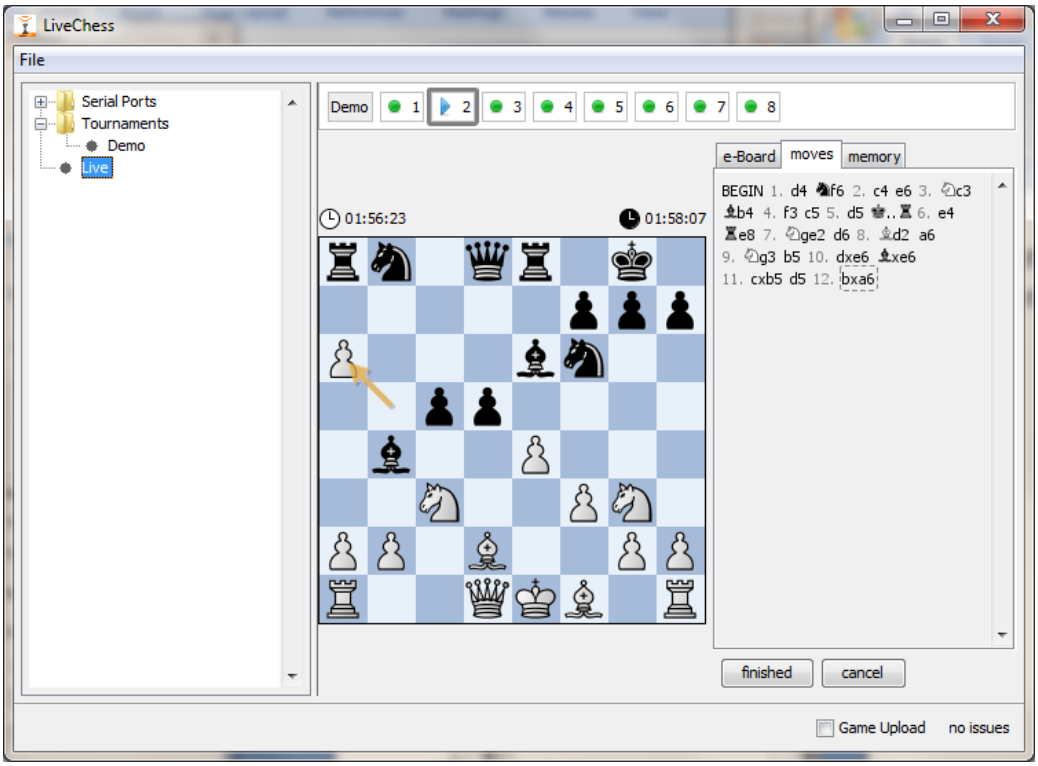


**FIGURE 24 THE MOVES LIST**

In the DGT e-Board information there are three tabs available:

- Tab **DGT e-Board***:* This shows all the information that belongs to the game. The position shown is the DGT e-Board position as it is currently on the DGT e-Board.
- Tab **moves:** The reconstructed moves which results in the registered game.
- Tab **memory:** This is a representation of all the changes that have been detected on the DGT e-Board, including the clock time.

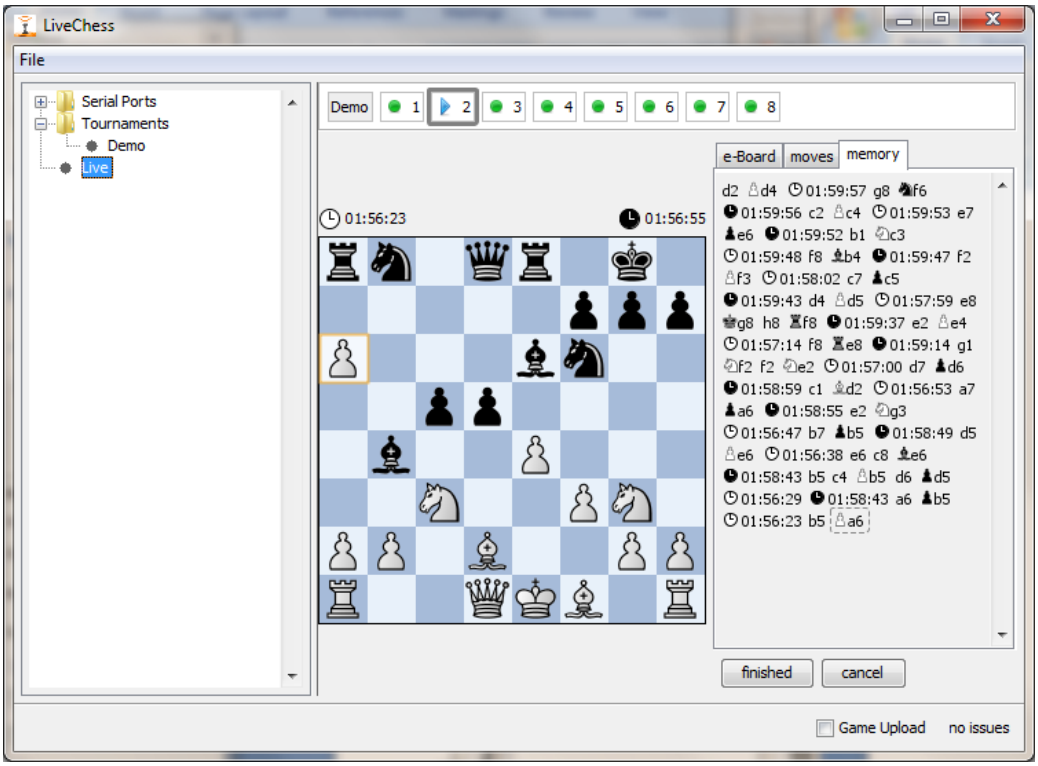


**FIGURE 25 THE MEMORY WITH THIS GAME**

When a game is finished, the players or the arbiter can tell this result to DGT LiveChess program in two options:

1. The **DGT option** for setting the result with the two kings in the center:
    1. **Both kings on white in the center** (d5, e4). Score: 1-0
    2. **Both kings on black in the center** (d4,e5). Score:0-1
    3. **Kings on opposite colors in the center** ([d4,d5],[e4,e5]). Score: ½-½

2. The **FIDE option** of showing the result on the DGT e-Board by putting the pieces back in start position and placing the winning king in the center or for a draw, both kings in the center.

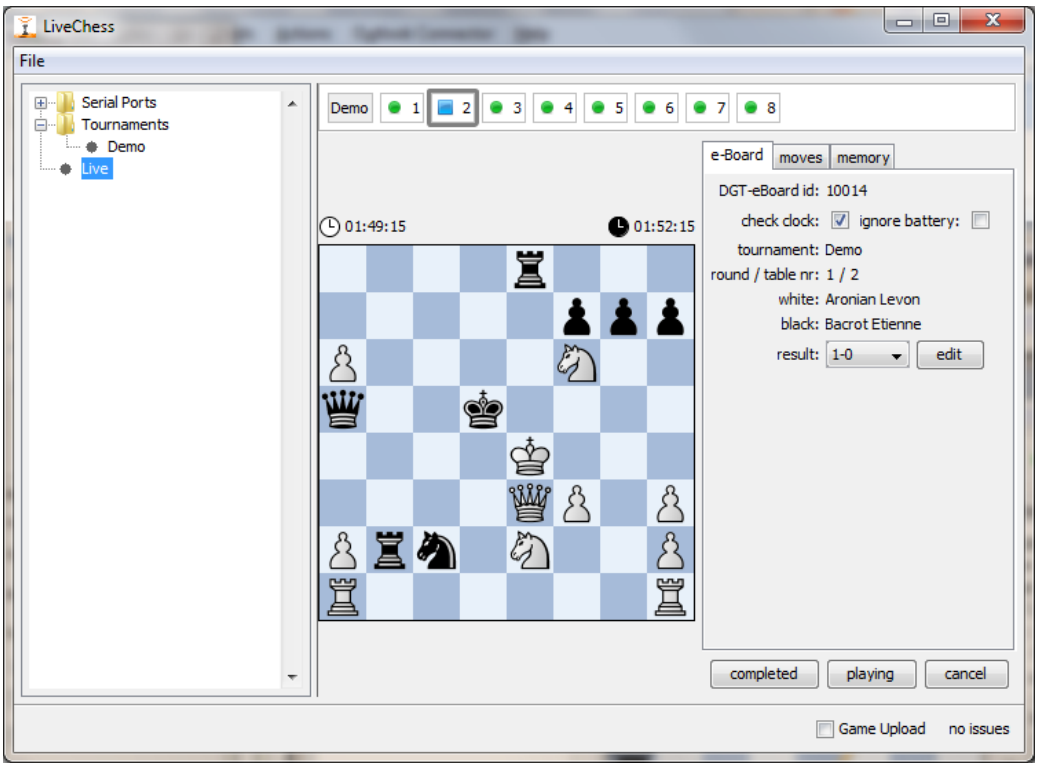


**FIGURE 26 GAME FINISHED**

If a game is finished, the available buttons are (see Figure 26):

- Button **completed:** The game is completed by the DGT LiveChess operator after the arbiter has checked the result and last moves.
- Button **playing:** Puts the game back into playing mode.
- Button **cancel:** Cancels the complete game.

**Remark:** When completing a game, you always should check if the result is correct and if the last played move on the score sheet is equal to the move in the registration. Especially when players start to analyze immediately after the game, this must be checked carefully. If the game is correct the DGT LiveChess operator must click on the **completed** button. If this is not done, it can result into inconsistencies on this board when starting a new round.

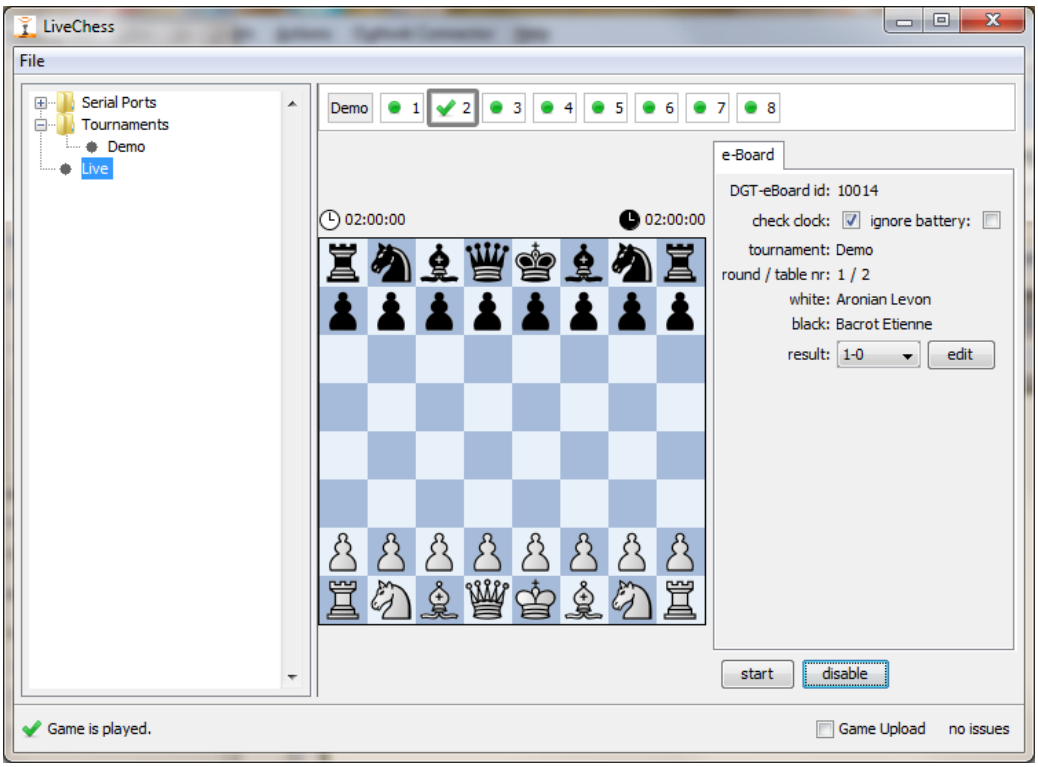


**FIGURE 27 GAME COMPLETED**

Available buttons when a game is completed:

- Button **start:** To start the game on this DGT e-Board again, it will give a warning that there is already a game playing. It will asks the DGT LiveChess operator to delete that game and restart. If you decline, nothing happens.
- Button **disable:** This disables the DGT e-Board for further game registration.

## 5.11 Multiple (sub-)Tournaments

Sometimes there are tournaments with several groups called sub-tournaments. DGT LiveChess is able to manage multiple tournaments with their own group of DGT e-Boards. To add a tournament, just prepare more tournaments as described for the single tournament. In the **Live** overview (left screen) a second tournament will show up with its own set of DGT e-Boards. Management for this tournament is similar as described for the single tournament.

There is no limit in the number of tournaments or players of DGT e-Boards that you can add to DGT LiveChess. The only restrictions are technical and depend on the computer you are working with. More internal memory means normally that you can allow more tournaments, players and DGT e-Boards.

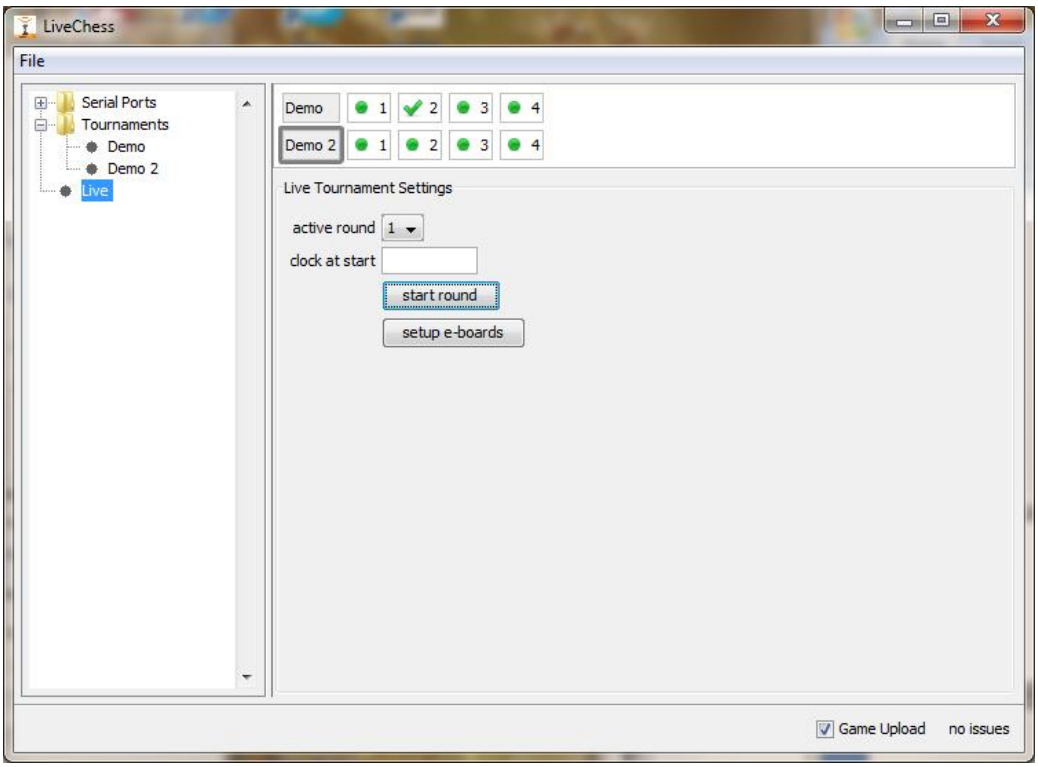


**FIGURE 28 TWO TOURNAMENTS WITH DGT E-BOARDS**

If you have one or more tournaments with a limited set of DGT e-Boards, it may happen that, when the pairing is loaded, there are more games than DGT e-Boards. This is not a problem for the live move registration of DGT LiveChess.

It is possible to manage also the moves and results for these games from inside DGT LiveChess. Select the game line and click on the button **edit**. A popup window now shows an DGT e-Board and the related game information. Moves can now be entered by clicking on the pieces to be moved. Also the result can be already set in this stage. The game will be added to the generated PGN file.

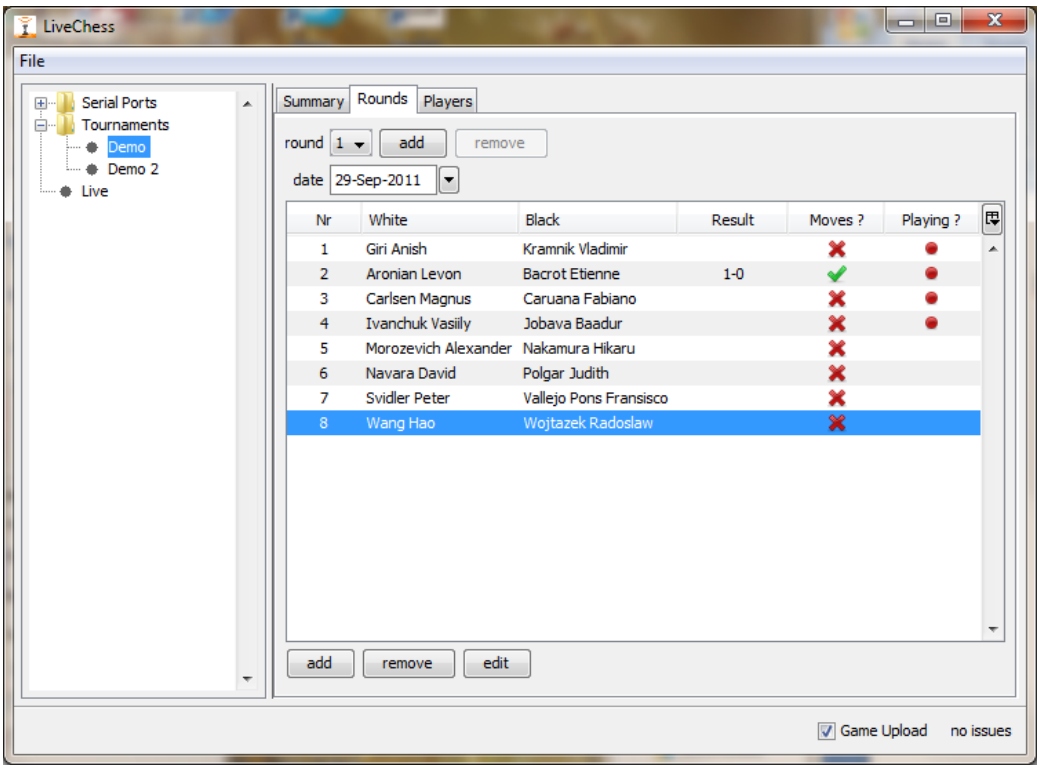


**FIGURE 29 NO DGT E-BOARDS CONNECTED**

## 5.12 BROADCASTING DGT LIVECHESS

Broadcasting the games live on the internet is one of the great features of DGT LiveChess and important for most DGT LiveChess tournaments. DGT LiveChess has an option to broadcast chess games live on the Internet through FTP. For this function you need to set the FTP preferences before a tournament is set-up and live broadcast is started.

### 5.12.1 FTP

DGT LiveChess contains a lightweight FTP client for uploading the games to the internet. If you want to upload the games to multiple locations or want to process the games before publishing, you will need a more complex FTP client which is not included in this package. See paragraph 5.12.2 for more information on distributing the live files.

The FTP client will transfer the games in two formats to the web server:

1. With the well-known DGT TOMA Flash Display.
2. As a PGN file with the file name **games.pgn**.

Publishing the PGN file on the internet is optional. Normally the DGT TOMA Flash Display is sufficient for a live internet broadcast.

**WARNING**: If you are using an DGT XL v1.10, you will not find clock times in the live PGN. This version of the DGT XL is not supported by DGT LiveChess.

**WARNING**: Also do not use a DGT 2000 TopMatch clock as this model is not supported by DGT LiveChess.

For the FTP client, its preferences need to be filled out correctly. Via the menu **File** select the **Preferences** menu item. You will see the popup as shown in Figure 30.

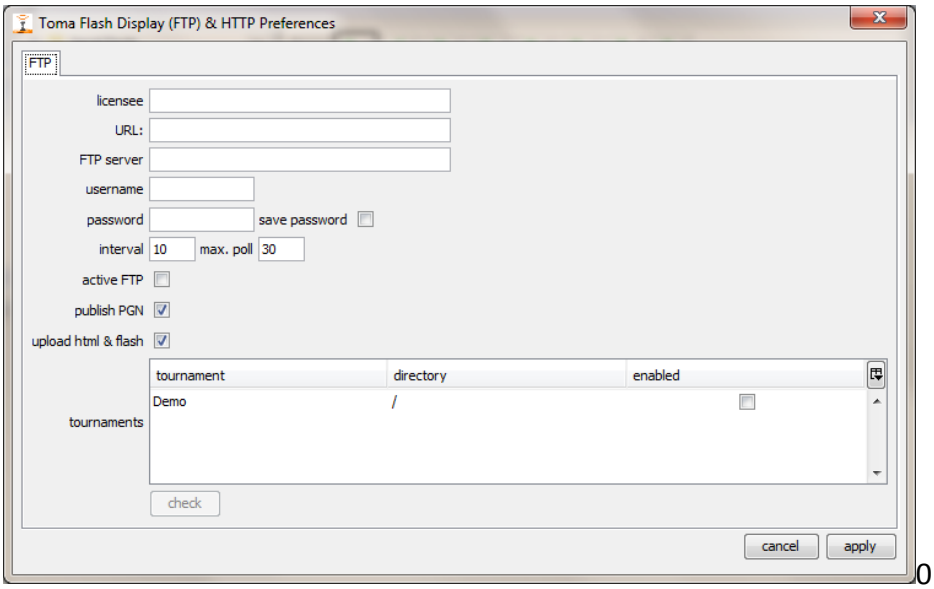


**FIGURE 30 FTP PREFERENCES**

The following preferences should be filled out:

- **Licensee**: The name that should appear in the DGT Toma Flash Display. This can be, for example, the name of the tournament or the name of a sponsor. Entry is optional.
- **URL**: The web location to go to if you click on the Licensee in the DGT Toma Flash Display. Entry is optional.
- **FTP server:** Your FTP server. Entry is required.
- **Username:** Your user name for the FTP server. Entry is required to secure your FTP server.
- **Password:** Your password for the FTP server. Entry is required to secure your FTP server.
- **Save password:** If checked, the password will be stored in the settings of DGT LiveChess.
- **Interval:** The time for checking the web server for files. Default is 10.
- **Max. poll:** The minimum time interval between two readings by the web server for the game files. Default is 30.
- **Active FTP:** In some cases you need to use an active FTP on your location. Check contents with your network administrator if you are not sure what is used. Selection is optional.
- **Publish PGN:** Check this checkbox if you want the games also to be published on the web server. The file name is always: games.pgn. The PGN file contains always the clock times only if a clock is connected. Also check and mate symbols will be added to the PGN. Selection is optional.
- **Upload html & flash:** If there is no default html and DGT Toma Flash Display file on the web server, check this checkbox and the normally required files will be uploaded once to the directories of the tournaments.

**Remark:** The tournaments must always be enabled if you want to broadcast them. To enable a tournament for broadcast, click on the checkbox with the tournament in the column ***enabled*.**

Please be aware that every directory for each tournament must be unique!

You can edit the (sub) directory for every tournament within the tournament window by double clicking the field in the tournament section as shown in Figure 31. If the directory does not exist on the web server, this directory will be created automatically on the web server. The directory name may not be trailed by a "/". Keep in mind that the directory path should be the full path from the entry point as defined by your FTP environment.

**Important**: You will see an error message (Figure 32), in case a directory does not exist on your site or if you do not have enough rights to create a directory on that position. Please ask the web administrator for assistance.

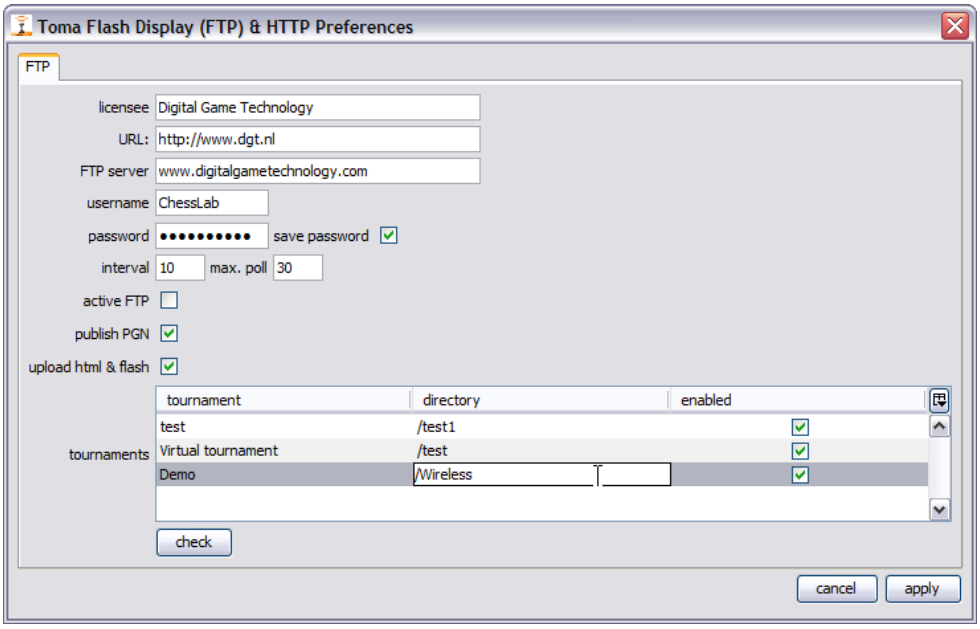


**FIGURE 31 FILLED OUT FTP PREFERENCES**

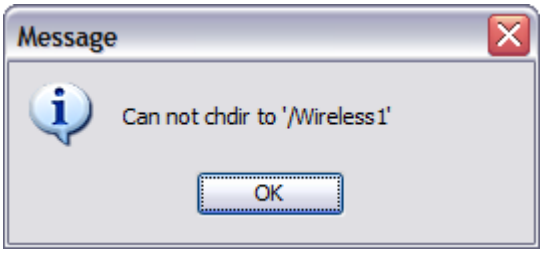


**FIGURE 32 MESSAGE WHEN A DIRECTORY DOES NOT YET EXIST ON YOUR SITE**

After setting the FTP preferences, the step to upload the games to the web server should be started. Selecting the checkbox **Game Upload** in the lower right corner of the DGT LiveChess program does activate the game upload. See Figure 33.

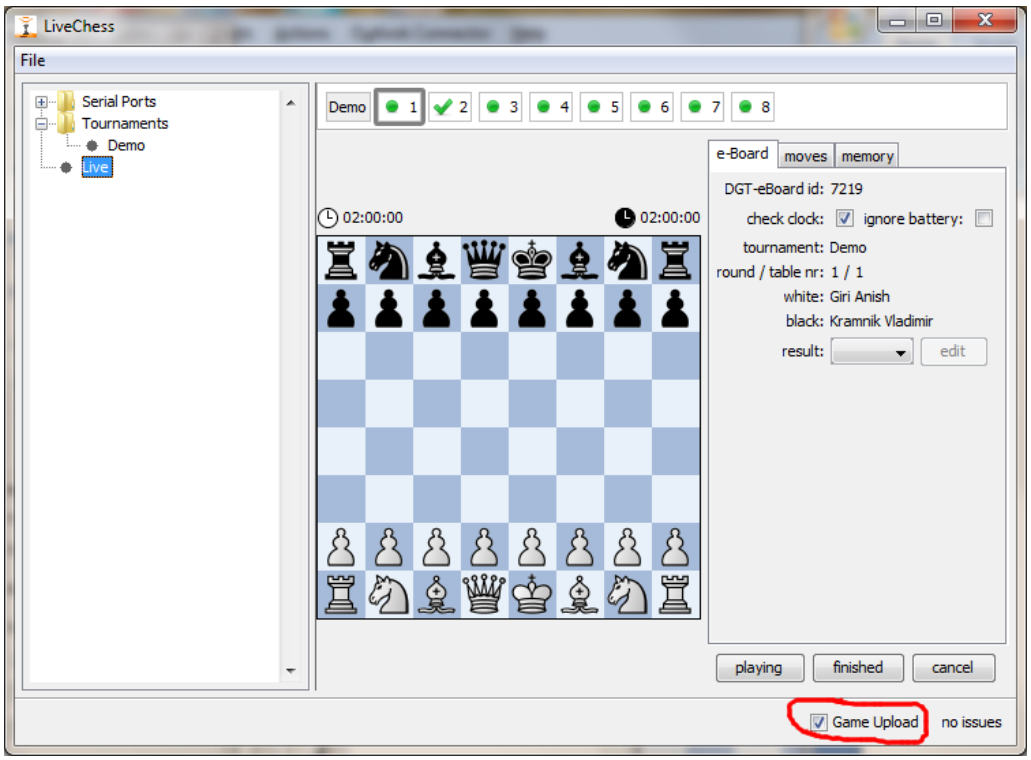


**FIGURE 33 GAME UPLOAD**

**WARNING**: It happens in certain cases that a firewall blocks any connection with the internet. As DGT LiveChess uses Java, also Java must be added to the exceptions that may use the internet connection. Otherwise this will result in an issue and no data will be uploaded to the selected FTP server.

### 5.12.2 TFD FILES ON YOUR HARD DRIVE

From DGT LiveChess version 1.3 onward, the TFD files and PGN file will always be written to your hard drive if the tournament has been **enabled** in the preferences. Therefore a directory *tfd* is created inside the directory from where DGT LiveChess is running. Inside the *tfd* directory a directory per tournament with the given tournament name is created. Inside each tournament directory you find the TFD files and, if enabled, the PGN file.

If you only want the live files and want to use another FTP program, you only have to enable the tournament in the preferences. At that moment the directory tfd, the tournament directories and the live files will be created. See Figure 34. This can, for example, be used to process the PGN file or to FTP the files to multiple locations with another, more featured, FTP client. Please be aware that such data is NOT encrypted by DGT LiveChess and therefore can be used by other parties.

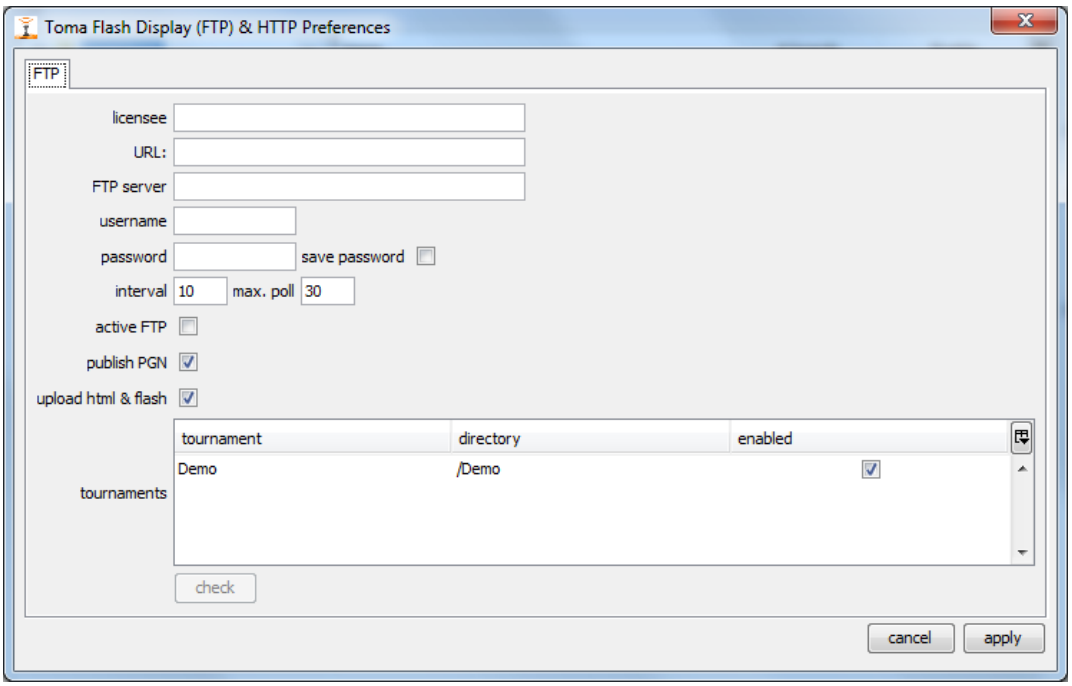


**FIGURE 34 PREFERENCES ONLY LIVE FILES**

## 5.13 PERSISTENCY

On the background of the program all data, that can and is necessary to be stored, will automatically be stored on your hard drive. This is called persistent data recovery. The reason that this data is stored is to prevent data loss problems with the software when it crashes or DGT LiveChess is accidently shut down.

If you restart DGT LiveChess, after an accidental shut down, the important information is still available as it is stored on your hard drive. You have to connect the DGT e-Boards again and bring everything back to live. You do not have to retype all player names or other data.

Worst case scenario may happen. This means that you have to instruct every DGT e-Board to start again and tell that it is playing. A game that was already finished and put back in the start position again should not be started again. Otherwise you will lose the finished game of this DGT e-Board.

Another persistent type of memory that is used by DT LiveChess is the internal DGT e-Board memory. If the program stops working, but the DGT e-Boards keep their power, than after the restart the program, DGT LiveChess will check the DGT e-Board memory for changes that happened on the DGT e-Board during the program outage and try to recover the moves that are still stored in the DGT e-Board memory but not yet have been passed on to DGT LiveChess hard drive location.

## 5.14 MULTIPLE INSTANCES IN THE NETWORK

It is possible to have multiple instances of DGT LiveChess in your (local) network without any restrictions. However it is not yet possible to control all instances from one central location. DGT is planning add such feature in the near future.

# 6 DGT LIVECHESS VIEWER

## 6.1 INTRODUCTION

In the local environment for public, there is often a request to show the games on a beamer or a screen. The DGT LiveChess Viewer can now show the games that are playing. Double click on the livechess-viewer-1.4.6.jar to open the viewer program.

You can use it on the same computer as where the registration of the DGT e-Boards is done. This means however that you are not able to control the registration. It is possible to run the DGT LiveChess Viewer on a different computer in a local area network, or on more computers in the local network. If you have multiple DGT LiveChess instances active in the network, all games from all DGT LiveChess instances will be available for displaying.

**Remark:** If you want to use the DGT LiveChess Viewer, you always need a network connection on your computer even if you want to run the viewer and DGT LiveChess on the same computer. This is required because all communication between the applications is organized via the network.

**Remark:** There might be local firewall restrictions in the network. Please check network security with your network operator when connection issues are causing any problems.

## 6.2 SELECTING GAMES

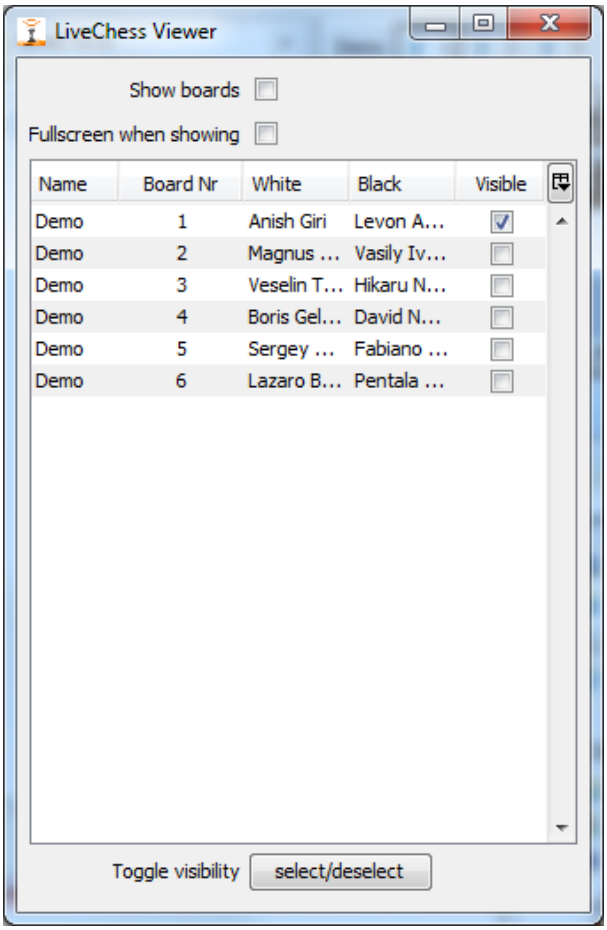


**FIGURE 35 VIEWER SELECTION SCREEN**

After DGT LiveChess is started, a screen like in Figure 35 will be visible. The screen contains all the games that are already registered. When starting DGT LiveChess for the first time, no games will be visible as default. You can select the games (with the mouse or with the cursor keys with the shift key pressed) and when you click on the button **select/deselect** the selection will be selected, (or deselected in case the games where already selected). Of course it is also possible to select via the checkbox.

If you close DGT LiveChess and restart it, the same DGT e-Boards as selected before will be selected. The program remembers which DGT e-Boards the DGT LiveChess operator has selected before. This data is stored on your hard drive.

## 6.3 DISPLAYING THE GAMES

You can select the games to be viewed by checking the checkbox at the end the game line.

If you check the tick box **Show boards**, a screen like Figure 36 will appear. If you put the focus on that screen by clicking in the window. Pressing the space bar will cause the viewer to go into full screen mode. Pressing the escape button will return to your normal screen mode.

If you check the tick box **Full screen when showing**, the screen will go to full screen immediately. This is very helpful in case you have a beamer or a second screen connected to display the active games.

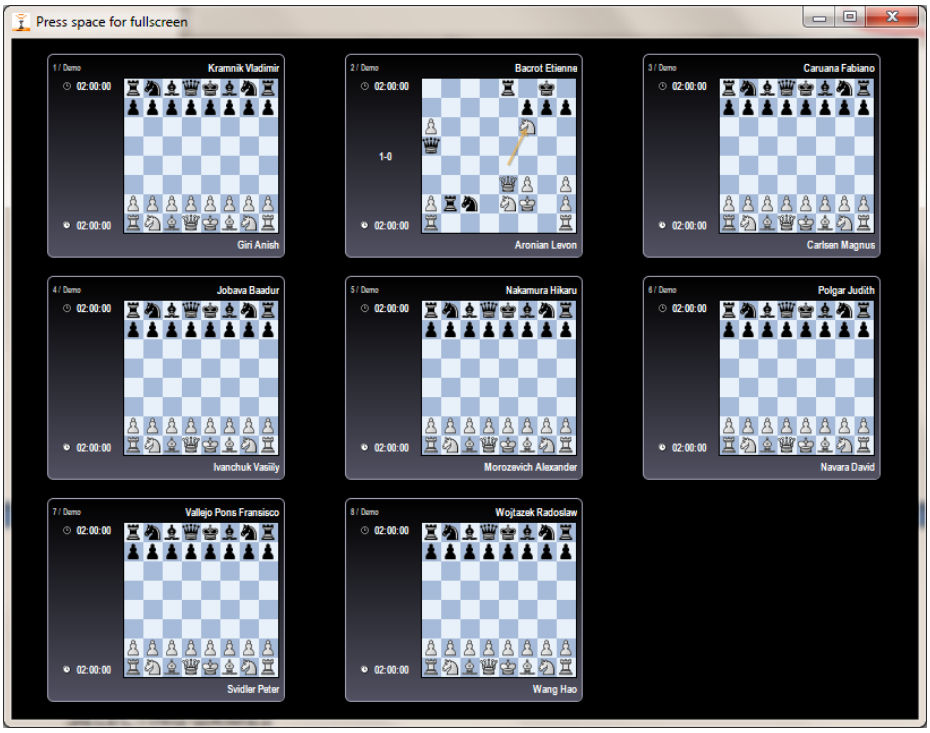


**FIGURE 36 ALL 8 GAMES ON SCREEN**

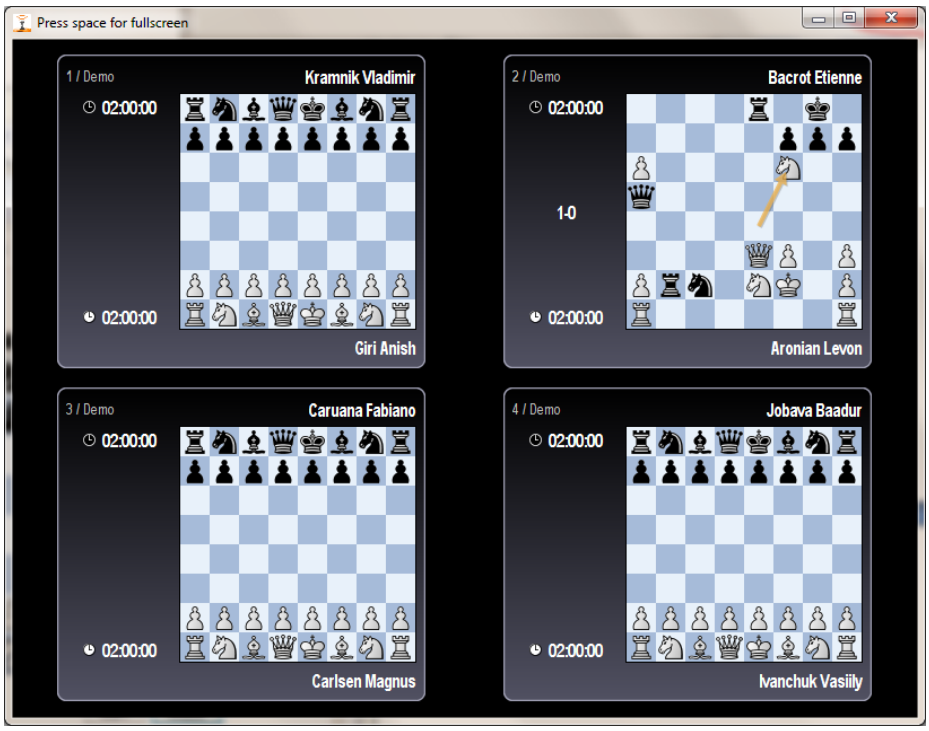


**FIGURE 37 ONLY A SELECTION ON SCREEN**

**Remark**: For displaying the clock times correctly, the internal clocks of the computers used should be synchronized for the time values. If this is not the case, faulty results in a time difference between the real clock times and the clock times are displayed by the viewer.

### 6.4 MULTIPLE VIEWERS

It is possible to have multiple viewers in the local network. There is no limitation on the number of viewers active. Each viewer sees all the games available on the network and you are able to show the same games on different locations or to select a different set of games to view.

If you have a computer with multiple monitors, it is also possible to run multiple viewers on one computer and show different games on each monitor.

## 7 APPENDICES

### 7.1 DGT E-BOARD STATUS MESSAGES

DGT LiveChess can give the following status messages with the DGT e-Boards. It also shows the icons that are shown with the message.

- Unknown result.
- Game is played.
- No board present.
- No game in tournament.
- No active round.
- Board not setup correctly.
- Clock not present.

- Clock not setup correctly.
- Wrong Clock lever position.
- Problem reconstructing game.
- Clock is running.
- Clock is not running.
- Clock battery low.
- Round activated, board available but round is not yet started.
- When no icon is visible, the board is disabled.

## 7.2 SERIAL-TO-USB CONVERTORS

The DGT e-Boards are connected to the computer through a serial connection. However current laptops and computers do not always have a serial port that can be used as a peripheral connection. In such case a serial-to-USB convertor can be used. The software has been tested with the following brands (or hardware vendors) of serial-to-USB convertors:

- FTDI
- Aten
- Prolific

## 7.3 WEB FILES TFD.HTM AND TFD.SWF

Currently for displaying the games live, the DGT Toma Flash Display is used. The necessary files are tfd.htm and tfd.swf.

If these files are not on the web location, they will be uploaded once as selected in the preferences. Some users like to change the default look of the tfd.htm. With DGT Toma Flash Display this is possible by finding the tfd.htm on your hard drive. Make a copy, change the file and upload it manually to the web server. With DGT LiveChess this is not possible as the files are not separately available on hard drive with the software. However there are three ways to do this:

1. Manually download the files from the web server after DGT LiveChess has uploaded them. Then change the tfd.htm for your own needs and put it back on the web server.
2. As soon as you have selected the tournament for uploading via FTP and in the directory where you are running DGT LiveChess from, a new directory *tfd* is created. Per tournament it contains a subdirectory with all the files to be uploaded to your website with FTP. The tfd.htm is also available in that directory.
3. Download the files from the DGT web site download section. Then change the tfd.htm for your own needs and put them on the web server.

If you want to change the height of the block that contains the Flash application, open the tfd.htm in an editor and look for:

```
#livegames
{
     width: 600px;
```

```
        height: 900px;
        border: 1px solid black;
        padding: 5px;
    }
```

Change the height (or width or border) to your broadcast requirements.

## 7.4 MULTIPLE DGT LIVECHESS INSTANCES

It is possible to have multiple DGT LiveChess instances in the network. Each instance will coordinate and make registrations of the DGT e-Boards connected to this DGT LiveChess instance. There is currently no option to manage multiple instances of DGT LiveChess from a central position. Future DGT LiveChess updates may have this implemented.

**Remark**: You could, of course, use the remote access to the computers where DGT LiveChess runs.

If you are using the DGT LiveChess Viewer in a network with multiple DGT LiveChess instances, all DGT e-Boards from all DGT LiveChess instances will be available for viewing.

## 7.5 ISSUES

Sometimes there is a serious problem detected in the software. When this happens, a message is stored and the user sees in the lower right corner a text in red, making the user aware that there are one or a number of issues. See for example Figure 38 where it shows there are 2 issues.

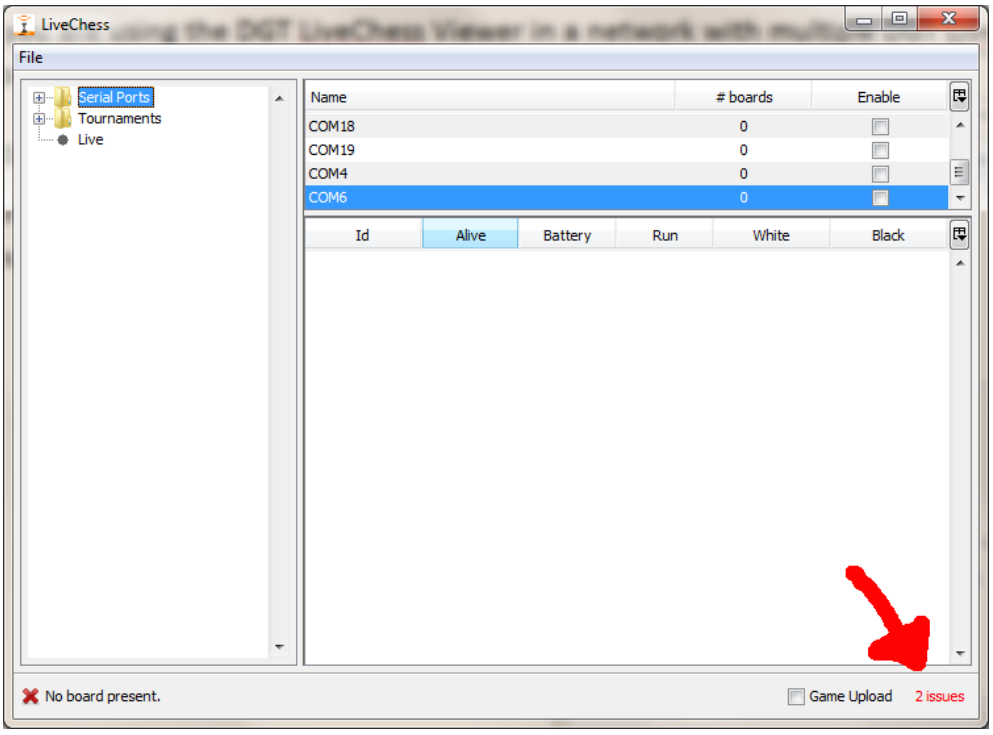


**FIGURE 38 THERE ARE ISSUES**

To see details on the reported issue, move with your mouse cursor over this red colored text. A popup window appears. (See Figure 39) showing error information.

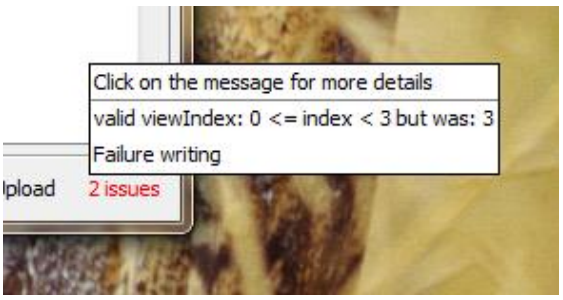


**FIGURE 39 ISSUE LIST**

This popup contains the list of issues atone issue per line. You can click on an issue to receive further detailed information of the error that has been occurred on the Java programming level. (See Figure 40). You can fix the issue or if it repeats or is persistent, mail this information to support@dgtprojects.com . Please add within this mail also more information about how and when this problem occurred.

Issues will only appear once in the list to prevent information overloading. If the same error happens multiple times in a time frame, it will only be shown once.

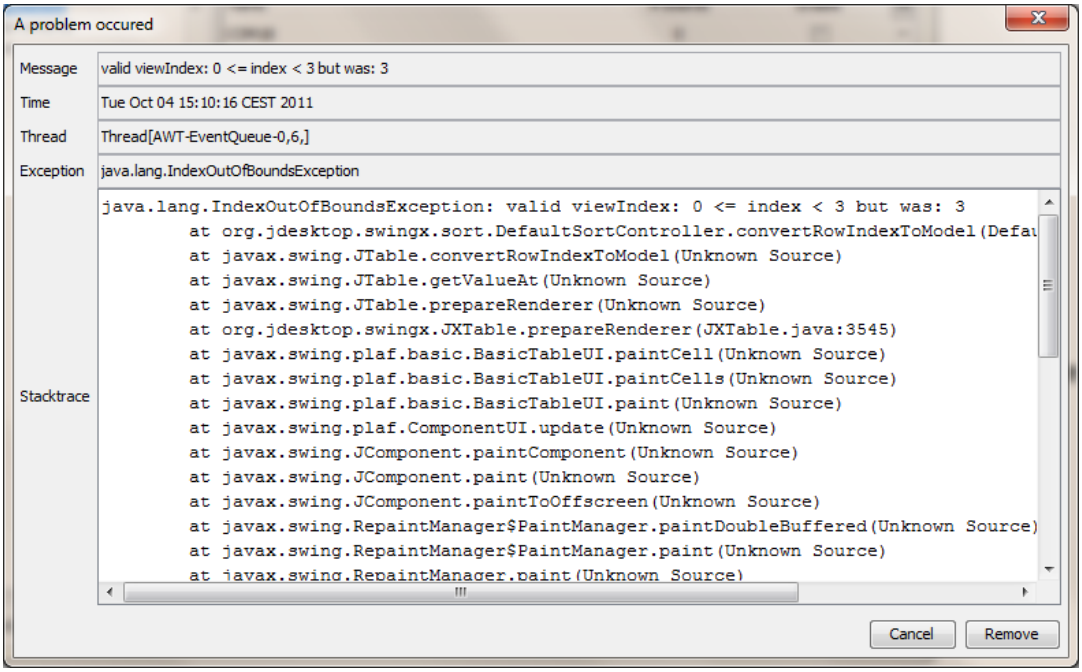


**FIGURE 40 RAW JAVA ERROR MESSAGE**

You can copy the stack trace if you want to mail DGT the error message. For example the above report was displayed when the serial-to-USB convertor was pulled from the computer.

After resolving the issue you can remove any message with the **Remove** button.

## 7.6 TROUBLE SHOOTING

The root cause of a problem can have different reasons. Below is a list of problems and their possible ways for troubleshooting. DGT realizes that this list is not complete, however already contains a list of known and regular causes.

1. **Ghost pieces**

   These are pieces that popup at some location on the DGT e-Board where no physical pieces are actually placed. Sometimes they flash on and off or sometimes it shows different pieces at the same field. This is often caused by an electromagnetic field like a CRT monitor, plasma screen, computers or other sources. Another possible cause is metal in or under the table on which the DGT e-Board is used. Such tables influences and sometimes could disturb also the electromagnetic fields used in the DGT e-Board. The best solution is to make the distance between the device causing disturbance to the DGT e-Board larger or remove the device.

2. **Missing DGT e-Boards**

   If you are unable to see all or some of the DGT e-Boards in a wired setup, there can be several causes. The main cause is that the serial connection with the computer has been disconnected or broken. This can be caused by a faulty cable, connection box or just a cable not properly connected. Sometimes a faulty DGT e-Board is the root cause. Another cause could be a faulty power supply. Take the following steps to solve these issues:

   a. Check the power supply (1000 mA version, for a maximum of twelve DGT e-Boards). Is it plugged in an AC power inlet and into the PC-to-bus cable?
   b. Is the PC-to-bus cable connected to the computer?
   c. Disconnect all except the first DGT e-Board and check if this connects properly. If it still does not work, change one by one the cable, connection box and a DGT e-Board-to-bus cable to resolve the issue. If all was replaced and the problem still exists, replace the DGT e-Board.
   d. Add the next DGT e-Board and check this same way as with the first DGT e-Board. Extend your network: DGT e-Board by DGT e-Board until all DGT e-Boards are connected and working.

3. **Long serial lines (cables)**

   The maximum length of the serial line from computer to the last DGT e-Board in the row is 100 meter maximum. However this cannot always be reached. The influence of long cables, connection boxes and DGT e-Boards on the used power adapter could have the effect that there are DGT e-Boards not working correctly. This can be resolved by adding a second power supply at the end of the line. To do this you do need an extra PC-to-bus cable and an extra power adapter.

4. **Power loss**

   Unfortunately it sometimes happens that there is a power loss. If it is only the computer that has lost power, or just crashed, this is a problem that can easily be resolved. Just restart the computer, restart DGT LiveChess, connect DGT LiveChess to the serial lines and restart uploading the data from the DGT e-Boards. In worst case you have to start each

DGT e-Board inside DGT LiveChess and define again that it is playing. All moves are still registered inside the DGT e-Boards as long as they have kept power from the connected adapter during the whole game.

However if the DGT e-Boards loose power, you need to restore the power to the DGT e-Boards. If players have played moves during this power down period, you manually have to add these moves. It is known that there are tournaments using uninterruptable power supplies for powering the e-Boards. Please consider this option when reliable game information is crucial.

If you still have a problem you can contact DGT support during European office hours (09:00-17:00 CET) or mail support@dgtprojects.com.

## 7.7 PGN FILES ISSUES

In DGT LiveChess there are two ways of generating PGN files :

1. **Games.pgn:** This is the live pgn file which is created automatically during a round and used for live displaying purposes only.
2. **Tournament PGN file**: This is created from the Tournament Summary tab and contains all recorded games of the tournament over all the rounds. This file is used for archiving and publishing the games.

The PGN files have been created as much as possible complying to the PGN Standard and the Extension to the PGN standard. Furthermore the resulting PGN contains the clock times recorded with a move, in line with the moment of pressing the clock. It is known that Chessbase and other database or computer chess programs filter out this information when the PGN is imported into these programs. In some programs there is an option to keep the clock information available.

## 7.8 VIRTUAL CHESS BOARDS

For testing and demonstration purposes, a separate mode has been introduced called the test mode. In this mode you have six via software created virtual DGT e-Boards to be used for testing or demonstrating the DGT LiveChess features and settings. Also if you want to learn how DGT LiveChess works and needs to be administrated, this is a very useful mode. In this mode it also gives more information, for example, if errors occur.

To enter this mode you can start DGT LiveChess from a command line with an extra parameter:

*java -Dcom.novotea.livechess.mode=test -jar livechess-1.4.6.jar*

A command line can be created by opening a terminal in Linux or OS X or by opening the DOS window in Microsoft Windows via the Start menu (type *cmd* in the “Search programs and files” in Windows 7). Copy the above line and paste it into the terminal or DOS window. For an example in Microsoft Windows see Figure 41.

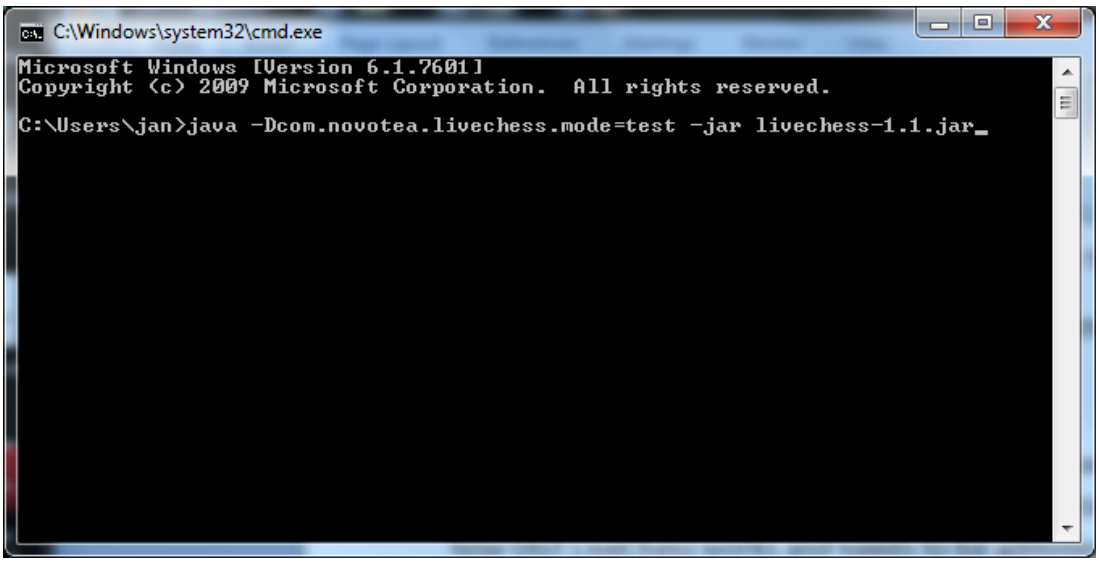


**FIGURE 41 MS WINDOWS DOS WINDOW**

The command results in an extra serial port that shows up in the list of Serial Ports: Virtual DGT board. See the blue highlighted line in Figure 42.

For this command there is also a separate zip-file available for download on the DGT Website, which contains the batch file and the shell script with the correct command as displayed above. Unzip the downloaded file and copy the batch file and/or shell script into the DGT LiveChess directory. To start DGT LiveChess with the Virtual DGT e-Boards you only have to click on the batch file (or shell script).

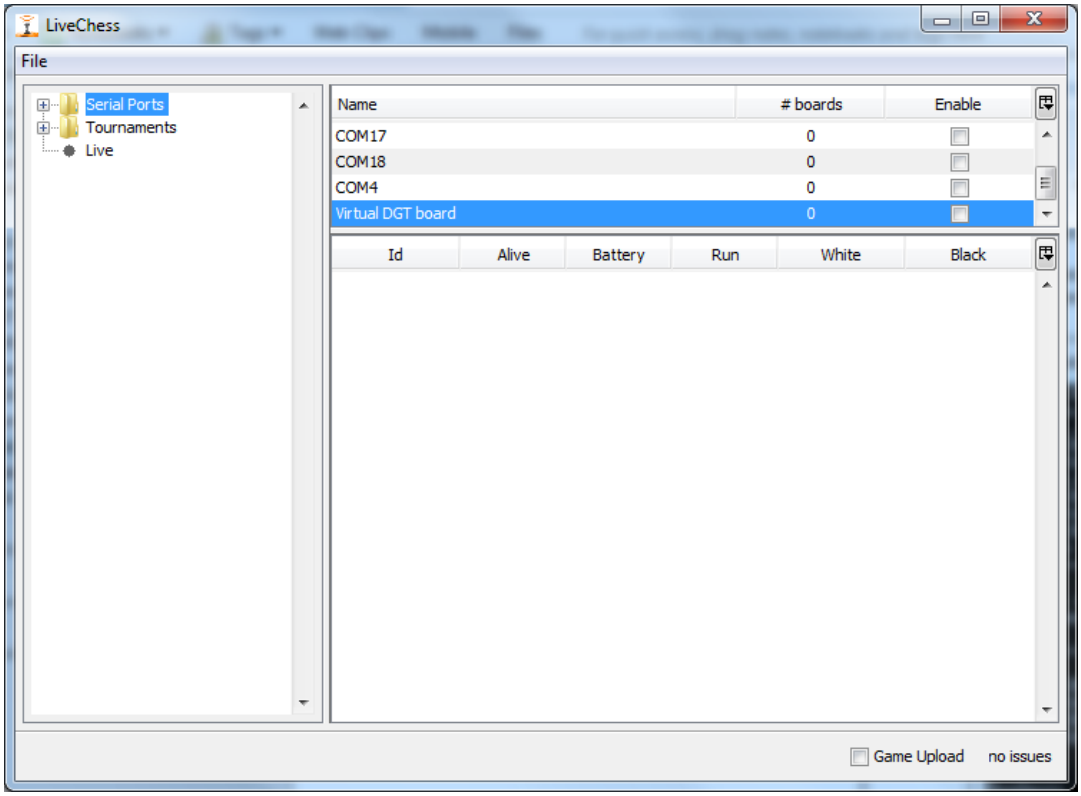


**FIGURE 42 VIRTUAL DGT BOARDS**

If you enable this port, a screen will appear with six virtual chess DGT e-Boards. (Figure 43) With these virtual boards you can simulate real chess DGT e-Boards. It is possible to move a piece by drag and drop it from one field to another. It is also possible to setup a position with the piece buttons and see what happens inside DGT LiveChess. Also error positions can be created to see how DGT LiveChess reacts to that.

If you add the DGT e-Boards to a tournament you can use also the white king to define the sequence inside the tournament. The DGT e-Board numbers will be the numbers one to six. This tool is very useful when you want to train yourself in using DGT LiveChess however you do not have any physical DGT e-Boards connected or available.

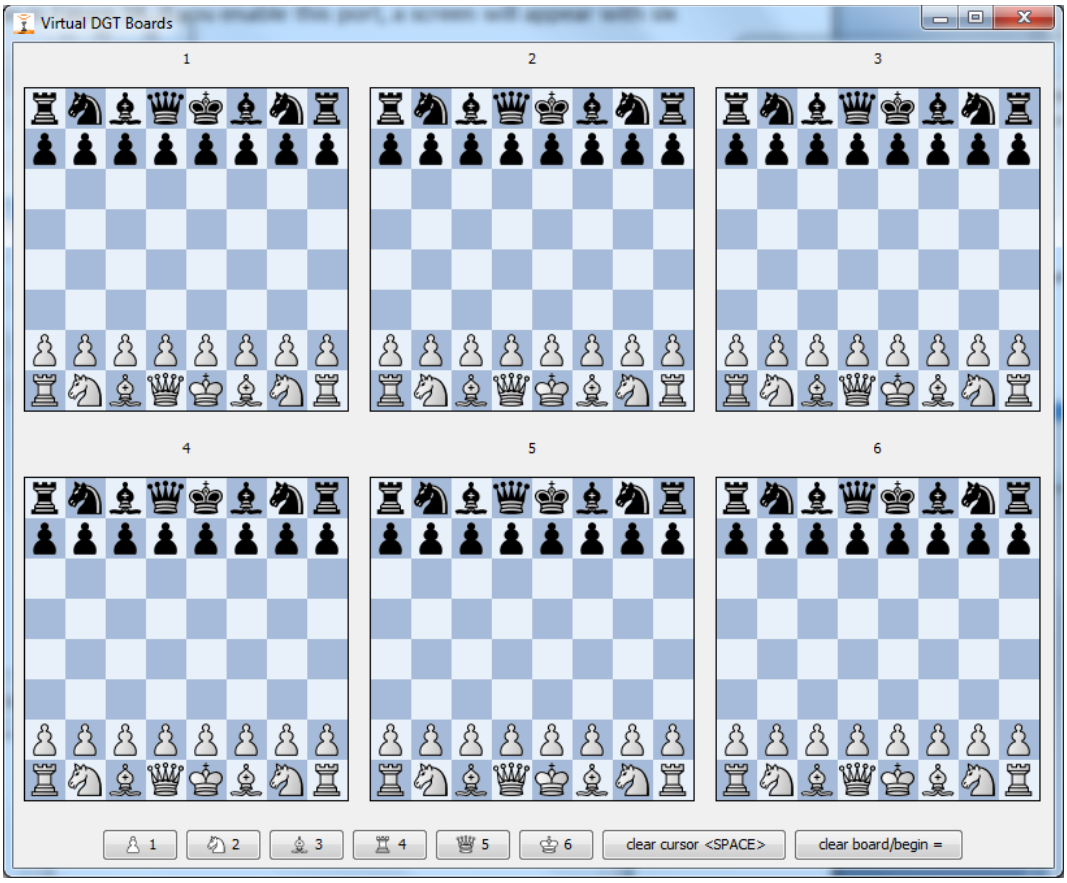


**FIGURE 43 THE VIRTUAL BOARDS**

Buttons:

- **Pawn:** Default white. Click once for black and once more for white again. To place a pawn somewhere on the DGT e-Board.
- **Knight**: Default white. Click once for black and once more for white again. To place a knight somewhere on the DGT e-Board.
- **Bishop**: Default white. Click once for black and once more for white again. To place a bishop somewhere on the DGT e-Board.
- **Rook:** Default white, click once for black and once more for white again. To place a rook somewhere on the DGT e-Board.

- **Queen:** Default white, click once for black and once more for white again. To place a queen somewhere on the DGT e-Board.
- **King:** Default white, click once for black and once more for white again. To place a king somewhere on the DGT e-Board.
- **Space:** Clear the position under the cursor, after clicking on the button, or pressing the space. It holds a memory of one piece! It clears the selected piece and brings back the drag and drop mode for the pieces on the DGT e-Board.
- **"="**: Set the DGT e-Board to the start position or clear the board completely. Alternates the action.

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