

IDC COMSTOCK REAL TIME MARKET DATA SERVER **(A tool for real time market data push to MS Excel Desktop Applications)**

Overview: The PlusFeed CTF Real-time Data Server (CTFRTDServer.exe) is a stand-alone application server that mimics or replaces the DDE Server functionalities for real time data access into MS Excel. The '**CTFRTDServer**' acts as an interface between Interactive Data's PlusFeed server and MS Excel 2002 or greater versions. It allows Excel spreadsheet to receive snapshot and streaming real-time price information for unlimited number of security.

Background: The PlusFeed CTF Real-time Data Server is built using **RTD technology** instead of the popular & older DDE technology. Both the technologies essentially allow windows applications to pass messages back and forth using push/pull mechanisms. But the DDE based solutions have had many limitations that include:

- DDE has a different function format from standard Excel functions.
- DDE can't use cell references in a function; everything must be hard coded.
- DDE gets confused when things are happening in Excel (for example, a calculation is taking place, a dialog box needs to be handled, and so on).
- DDE wasn't designed for getting asynchronous data in Excel in a robust and high-performance way.
- DDE was not able to keep up with rapid updates which resulted in data loss.

RTD uses a hybrid push and pull mechanism. This effectively gives it all of the advantages of both push and pull mechanisms and none of the disadvantages of either mechanism. One can think of this hybrid push and pull mechanism as a polite conversation between the RTD server and Excel. When the RTD server wants to give Excel an update, it notifies Excel by giving it a tap on the shoulder (this is the push). The RTD server can tap Excel on the shoulder whenever and as frequently as it wants. Excel just notes that the RTD server wants to give it an update. When Excel is ready for the update, it grabs the update from the RTD server (this is the pull).

The new RTD architecture is a fully functional, first-class feature built into Excel 2002. The architecture eliminates the need for workarounds or hacks to get data into Excel asynchronously. **The architecture is fast, efficient, reliable, and robust.**

RTD offers the following advantages over DDE:

- Has Excel function-like syntax.
- Puts the real-time data in a cell.
- Uses cell references as part of the formula.
- Updates in real time & extremely efficient.
- Does not drop updates; modal dialog boxes shouldn't have any effect.
- Is able to drive calculation; formulas based on cells that reference real-time data should update accordingly.
- Keeps track of the state and location of real-time data formulas so that the server doesn't have to.

PlusFeed Interface: The '**CTFRTDServer**' is driven by a configuration file to specify the number of connections (programs) to establish and the login credentials for each PlusFeed server. After starting, CTFRTDServer will appear as an icon in the System Tray. Right-mouse-clicking on the icon will popup an Exit menu item which when clicked will shutdown the RTD server. The RTD function to be used in the Excel spreadsheet to receive security price information is as follows:

RTD("rtdserver.cspdata", "[CONN. NAME]", "[TICKER CELL REF]", "[SRC ID CELL REF]", "[CTF TOKEN NAME]")

Where

- "CONN. NAME" is the name of the connection specified in the config file.
- "TICKER CELL REF" is the cell reference containing ticker symbol.
- "SRC ID CELL REF" is the cell reference containing CTF source id representing the exchange where the security is traded.
- "CTF TOKEN NAME" is the CTF token name representing the data field.

For e.g. To receive current price for IBM on NYSE Composite Stock Exchange and continue to receive real-time updates, the following RTD function will have to be entered in a cell:

=RTD("rtdserver.cspdata", "CTFRTD1", A1, B1, "CURRENT.PRICE")

Where

- "CTFRTD1" is the PlusFeed connection specified in the config file.
- A1 is the cell reference that contains the ticker symbol 'IBM'
- B1 is the cell reference that contains the source id '558' for NYSE
- "CURRENT.PRICE" is the CTF token name for current price data field.

After entering the above function in a cell, one should see the current snapshot information filled immediately followed by streaming updates, if any, for all the trades for IBM.

Key Application Scenarios:

- Real time Market Data to be published or presented in the Excel, involving 100s of Securities
- Extensive Data Manipulation in real time for 100s of securities, involving complex derived formulae and computations
- Replace DDE server which is slow and can not handle 100s of real time security price updates in excel directly

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