KEP*Direct* OPC Server

Connect ***Direct***LOGIC PLCs, Productivity Series CPUs, DURApulse or GS drives or your PC via OPC for easy data acquisition or control at an affordable price

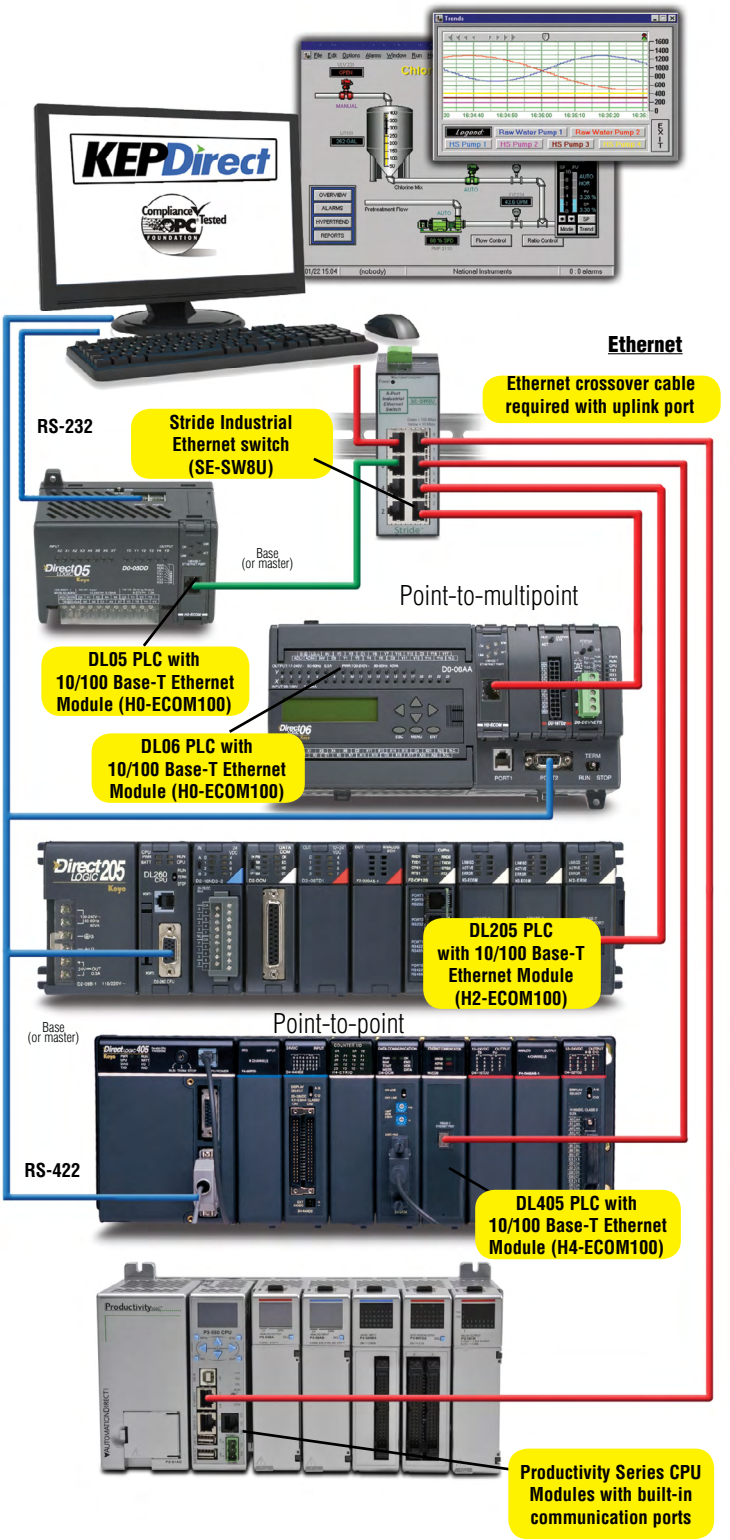
What is it?

The KEPDirect OPC Server provides a way to connect your favorite Windows client software to AUTOMATIONDIRECT DirectLOGIC PLCs, Productivity Series controllers, Ethernet I/O through our EBCs (Ethernet Base Controllers), or DURAPULSE and GS AC motor drives with an Ethernet interface module (GS-EDRV100) installed. This means that any industrial HMI, SCADA, data historian, MES or ERP software package that includes an OPC client interface (most do) can connect directly to DirectLOGIC PLC serial or Ethernet ports; Productivity Series Ethernet; DL205, DL405, Terminator Ethernet I/O; or DURAPULSE and GS series AC drives by way of a GS-EDRV100 module. The KEPDirect OPC Server provides an interface to your controllers, Ethernet I/O or drives using industry-standard OPC technology so you are free to choose almost any software package. Best-in-class PLCs, along with best-in-class software, should be your choice with the KEPDirect OPC Server.

What's it got?

- High-performance, certified OPC-compliant connectivity via Ethernet, with unparalleled compatibility and performance
- DL05, DL105, DL06, DL205, and DL405 support through RS-232, RS-422 serial or DirectLogic ECOM and Productivity Series Ethernet interfaces
- DL205, DL405 and Terminator EBC or GS-EDRV module Ethernet interfaces
- OPC Quick Client application included for testing and easy troubleshooting
- Automatically generate tag names by importing ***Direct***SOFT project Nicknames and Descriptions or Productivity Suite Tag database.

Serial and Ethernet Connections Example



KEP*Direct* OPC Server Software

How do I use it?

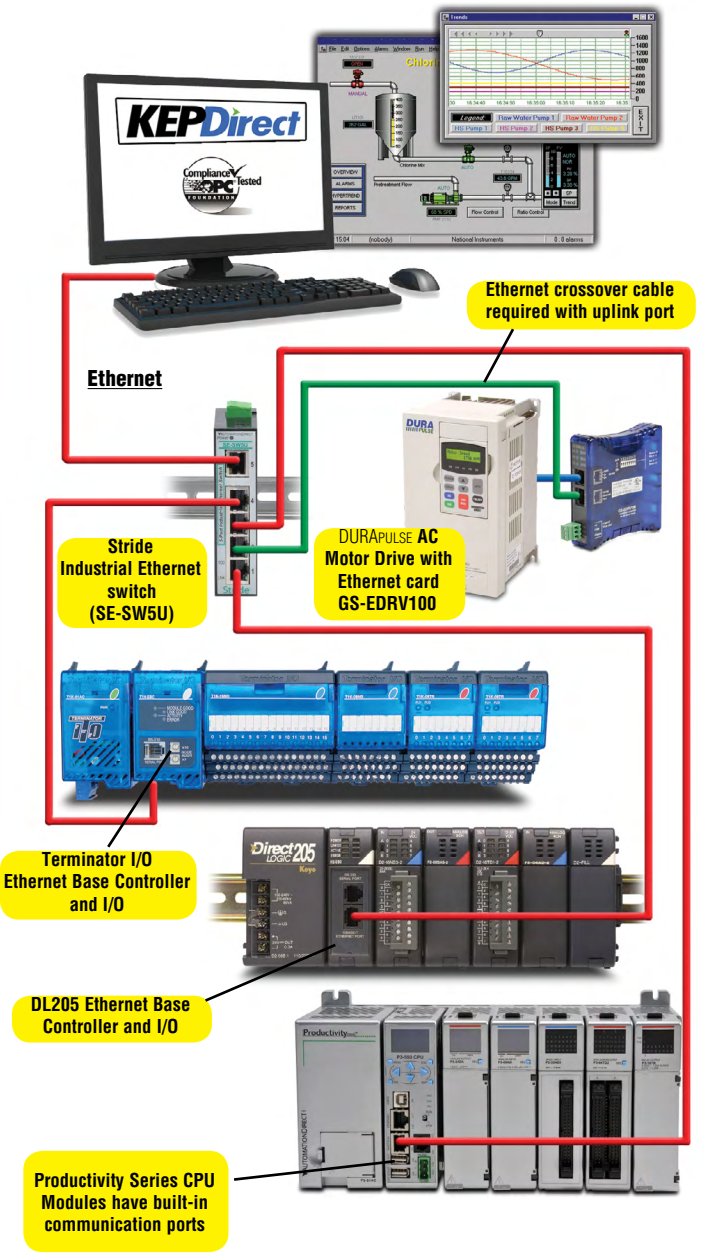
Simply install the KEPDirect OPC Server on the same PC (or on the same network) as your client application, then enable the OPC client driver for direct access to your AutomationDirect device on the network.

What can I do with it?

- Connect your favorite HMI or SCADA software to low-cost AutomationDirect PLC, PAC, Ethernet I/O or Durapulse or GS Drives systems over a serial or Ethernet network.
- Design a low-cost data acquisition/monitoring system using affordable AutomationDirect control devices.
- Interface custom Visual Basic® or Visual C++® applications to AutomationDirect systems and eliminate time consuming driver development.
- Requires OPC DA Client Tool Kit to use OPC with Visual Basic.

PC-KEPOPC (supports all drivers) $413.00

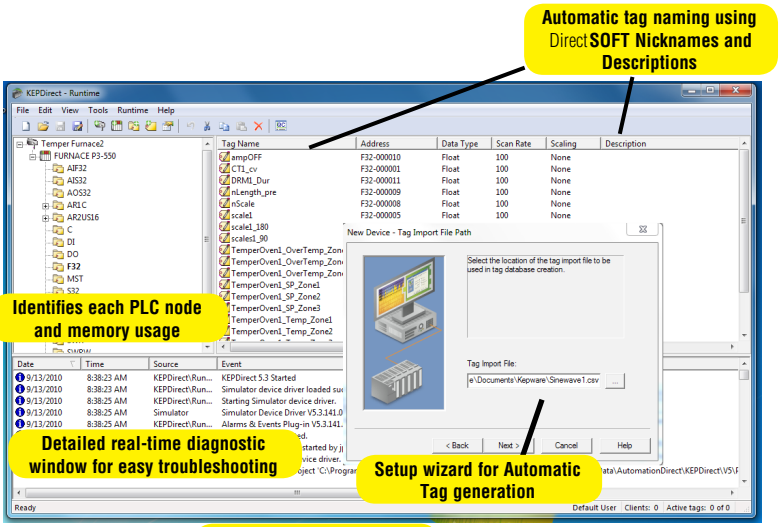
Ethernet Connections Example



It's all included in the KEP*Direct* Server

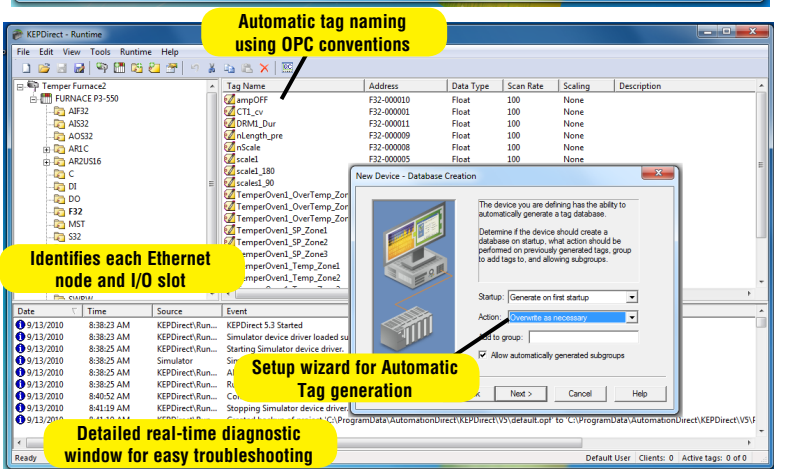
Import *Direct*SOFT Nicknames and Productivity Suite Tagnames

The KEPDirect OPC Server supports automatic tag generation through importing of DirectSOFT project element Nicknames and the Productivity Suite Tag database. For DirectSOFT PLCs, export your project element documentation into the *.CSV format, then use the KEPDirect setup wizard to import this file and generate tag names within your server project. For Productivity Series CPUs, simply import the project *.CSV file located in your default project directory. Tags are organized according to the controller's datatypes – 'X', 'Y', 'C', 'V', etc. – for the DirectLOGIC or – 'AIF32', 'AOS32', 'DI', 'DO', 'F32', 'S32', etc. – for the Productivity3000/2000. These are displayed in a tree structure with your Nicknames and Descriptions applied so any OPC client is able to access them. The easy-to-use KEPDirect OPC Server graphical interface displays complete OPC Channel, Device and Group structure along with detailed diagnostics.



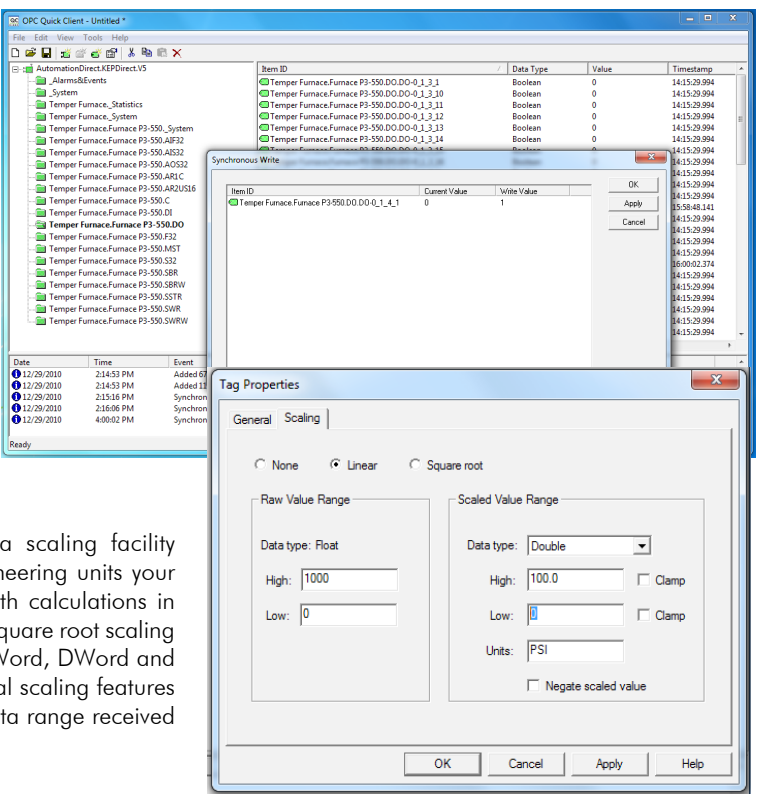
I/O configuration and tag mapping for Ethernet I/O

The KEPDirect OPC Server recognizes the types of I/O for all connected EBC nodes, and can map them to tags. No wasting time determining your I/O addressing scheme or tag names. Follow the Setup Wizard and your tags are displayed in a tree structure, ready for any OPC client to access them. The simple graphical interface displays complete OPC Channel, Device and Group structure along with a detailed diagnostics window.



Quick Client tests network connections and toggles I/O

The KEPDirect OPC Server includes a Quick Client software application for checking your network. Test your connection by clicking on the icon from the server interface and viewing your I/O status in real time. You can also toggle discrete I/O and read/write values to analog modules. The Quick Client can save you time and money debugging your I/O system, even before you begin developing your client application.



Built-in powerful data scaling

The KEPDirect OPC Server includes a complete data scaling facility allowing you to configure each data point for the engineering units your application requires. No need to perform extensive math calculations in your client software to manipulate your data. Linear and square root scaling are supported across several data types including Byte, Word, DWord and Float, with user defined decimal point location. Additional scaling features include high and low limits, and clamping to limit the data range received to/from your client application.

KEP*Direct* OPC Server

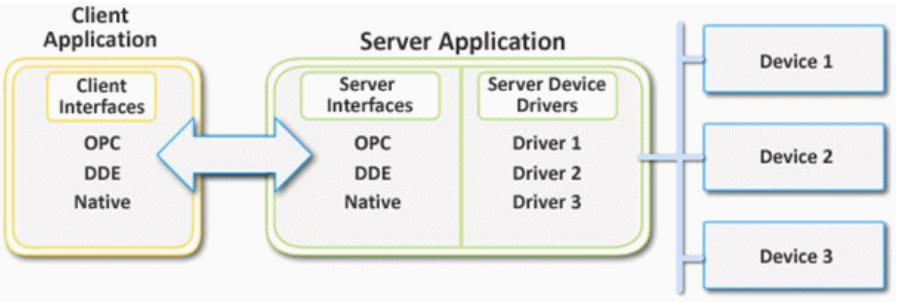
OPC overview

OPC is an industry standard created by a number of worldwide leading hardware and software suppliers in cooperation with Microsoft. The OPC Data Access specification, as maintained by the OPC Foundation, is a non-proprietary technical specification that defines a set of standard interfaces based upon Microsoft's OLE/COM technology. An OPC server (driver) allows items such as distributed control systems, programmable logic controllers, I/O systems and smart field devices to communicate with a wide range of HMI/SCADA (client) software packages residing on a PC. Traditionally, each software or application developer was required to write a custom interface, or server/driver, to exchange information with hardware field devices. OPC eliminates this requirement, allowing manufacturing customers true plug and play connectivity and the freedom to choose products based on their automation requirements.

DDE support

While KEPDirect OPC Server is first and foremost an OPC server, it is recognized that a number of legacy applications still depend upon DDE for their underlying client server technology. Early in the development of Windows, Microsoft provided a generic client server technology called DDE (Dynamic Data Exchange). DDE provided a basic architecture that would allow many Windows applications from a wide range of vendors to share data. But there was one problem – DDE was not designed for the industrial market, lacking much of the speed and robustness desired in an industrial setting. However, this did not stop DDE from becoming a dominant client/server architecture, largely due to its availability in most Windows applications.

OPC client/server relationship



Where OPC fits in

Although OPC is primarily used for accessing data from a network server, OPC interfaces can be used in many places within an application. At the lowest level, they can get raw data from the physical devices into a SCADA or DCS. The architecture and design makes it possible for an OPC server to allow a client application to access data from many OPC servers. The data can be provided by many different OPC vendors running on different nodes via a single object.

AutomationDirect and Kepware partner to create KEP*Direct* OPC Server

For those of you familiar with OPC servers, you might recognize the name "KEP" in the KEPDirect OPC Server name. Kepware Inc., the industry leading provider in OPC server products, has partnered with AUTOMATIONDIRECT to allow us to offer our own tailor-made version of the world famous KEPServerEX. The KEPDirect OPC Server offers all the same powerful and easy-to-use features of the KEPServerEX, but only for connectivity to our products. The result is a top quality OPC server technology connecting to best-value PLCs or Ethernet I/O for a combination that can't be beat.

Application connectivity

KEPDirect OPC Server supports the following client/server technologies:

- OPC Data Access Version 1.0a
- OPC Data Access Version 2.0
- OPC Data Access Version 3.0
- OPC Unified Architecture v1.0
- OPC Alarm and Events v1.01
- FASTDDE for Wonderware
- SuiteLink for Wonderware
- PDB for GE's iFix
- DDE Format CF_Text
- DDE Format XL_Table
- DDE Format AdvancedDDE

OPC Data Access 1.0a was the original specification the OPC Foundation developed back in 1996. Many of the OPC clients in use today support this original specification. Version 3.0 is the latest version of the OPC DA interface and makes better use of the underlying Microsoft COM technologies. The DDE formats are the standard DDE formats as defined by Microsoft. To provide the broadest range of connectivity, KEPDirect OPC Server simultaneously supports all of the client server technologies listed above.

Online Technical assistance!
Our Web site, www.automationdirect.com, is loaded with helpful technical resources including application notes pertinent to the KEPDirect OPC Server.

KEP*Direct* OPC Server

System requirements

KEPDirect Servers have been designed to place as little stress on your PC system as possible while providing the level of performance you expect. The following system requirements are recommended:

Minimum system requirements:

- 2.0 GHz Processor
- 1 GB installed RAM
- 180 MB available disk space
- Ethernet Card (required for Ethernet drivers or serial drivers that utilize Ethernet encapsulation)
- Super VGA (800 x 600) or higher resolution video adapter and monitor
- Keyboard and Microsoft mouse or compatible pointing device

Supported operating systems:

- Windows 7 Pro and Ultimate*
- Windows 8
- Windows XP* SP2 (strongly recommended for industrial settings)
- Windows Server 2003* SP2 (strongly recommended for industrial settings)
- Vista Business/Ultimate*
- Windows Server 2008* (strongly recommended for industrial settings)

*Includes support for 64 bit operating systems.

Major OPC clients supported

- Rockwell Software's RSView32®
- GE's Cimplicity®
- Iconics' Genesis32®
- Cutler Hammer's PanelMate PC Pro
- Think & Do Live!
- Think & Do v8.0
- Wonderware's InTouch® and OPCLink®
- Intellution's Fix Dynamics® and OPC PowerTool®
- Siemen's WinCC®
- Kepware's OPC QuickClient
- National Instrument's LabVIEW
- National Instrument's Lookout
- Lookout *Direct*

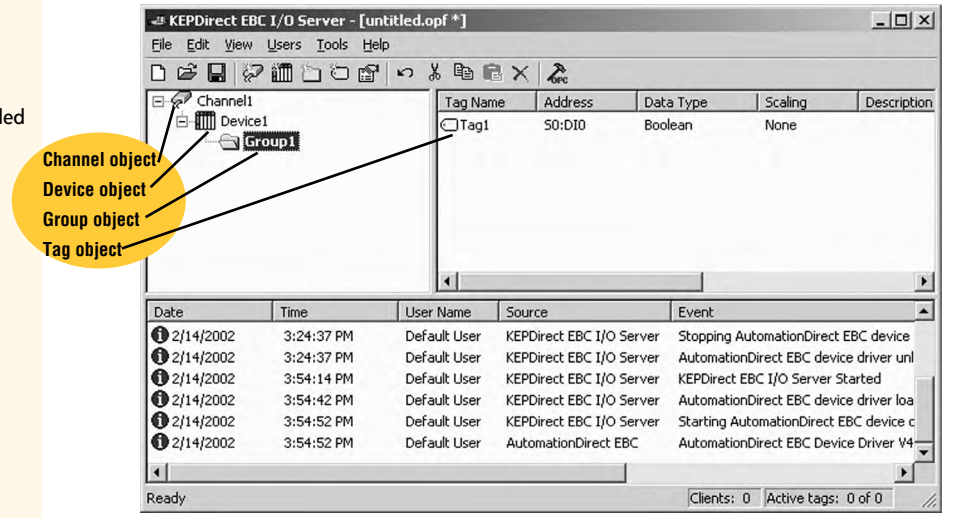
KEP*Direct* OPC Server objects

Channel object

Each protocol or driver used in a KEPDirect OPC Server project is referred to as a channel. A channel is a specific communications driver. A KEPDirect OPC Server project can consist of many channels, each with unique communications drivers or each with the same communications driver. Each channel name must be unique in a KEPDirect OPC Server application. The channel name entered will be part of the OPC browser information.

Device object

Unlike the channel name, device names can be the same from one channel to the next. The device name is a user-defined logical name for the device. The device name and channel name will be part of the OPC browser information as well as a DDE item name. Within an OPC client the combination of channel name and device name would appear as "ChannelName.DeviceName".



Group object

KEPDirect OPC Server allows tag groups to be added to your project. Tag groups allow you to tailor the layout of OPC data in logical groupings that fit the needs of your application. Using tag groups allows multiple sets of identical tags to be added under the same device. This can be very convenient when a single device handles a number of similar machine segments. From an OPC client standpoint, the use of tag grouping allows you to segregate your OPC data into smaller tag lists, which can make finding a specific tag easier when browsing the server.

Tag object

KEPDirect Server allows both dynamic tags, (tags entered directly at the OPC client that specify device data) and user-defined tags. User-defined tags have the benefit of allowing the tag to be browsed from an OPC client that supports tag browsing. User-defined tags also support tag scaling. Unlike many of the dialogs you will find in KEPDirect OPC Server, the tag properties dialog has a number of features that are driven by icons. The tag name is part of the OPC browse data. Tag names must be unique within a given device branch or tag group branch. If your application is best suited by using blocks of tags with the same names, use tag groups to segregate the tags.