

DirectLOGIC OPC Server

KEPDirect for PLCs:
Connect **DirectLOGIC** PLCs
through serial or Ethernet to your
PC via OPC for easy data
acquisition or control at an
affordable price

What is it?

The **KEPDirect** for PLCs Server is a 32-bit application that provides a way to connect your favorite Windows client software to **AUTOMATIONDIRECT DirectLOGIC** PLCs. This means that any industrial HMI/SCADA, data historian, MES or ERP software package that includes an OPC client driver (most do!) can connect directly to **DirectLOGIC** PLC serial or Ethernet ports. The **KEPDirect** for PLCs Server provides an interface to your **DirectLOGIC** PLC using industry-standard OPC (OLE for process control), 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** for PLCs Server.

What's it got?

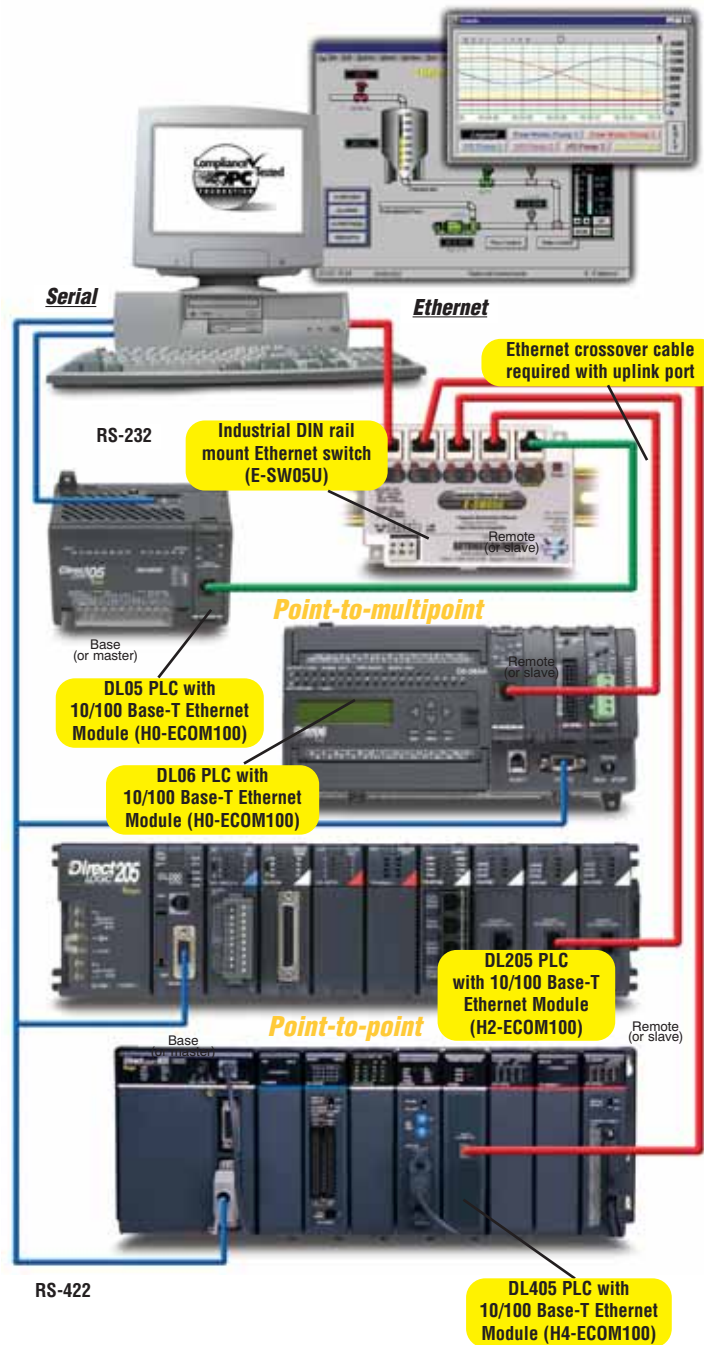
- High-performance, certified OPC-compliant connectivity via Ethernet, with unparalleled compatibility and performance
- DL05, DL105, DL06, DL205, and DL405 support through RS-232, RS-422 serial or 10Base-T and 10Base-FL Ethernet ECOM interfaces
- Sample client application included for easy troubleshooting
- Auto generate tag names by importing **DirectSOFT** project Nicknames and Descriptions

How do I use it?

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

What can I do with it?

- Connect your favorite HMI/SCADA software to low-cost **AUTOMATIONDIRECT** PLC systems over a serial, 10 Mbit or 100 Mbit Ethernet network.
- Design a low-cost data acquisition/monitoring system using affordable **AUTOMATIONDIRECT** PLCs
- Interface custom Visual Basic® or Visual C++® applications to **AUTOMATIONDIRECT** PLC systems and eliminate time consuming driver development



Product line-up:

- PC-KEPPLC-3 supports up to three PLC nodes <--->
- PC-KEPPLC-7 supports up to seven PLC nodes <--->
- PC-KEPPLC-8P supports eight or more PLC nodes <--->
- PC-KEPPLC-UPG upgrade to next larger package <--->

Note: DL305 CPUs not supported by KEPDirect for PLCs Server.

PLC Overview

DL05/06 PLC

DL105 PLC

DL205 PLC

DL305 PLC

DL405 PLC

Field I/O

Software

C-more HMIs

Other HMI

AC Drives

Motors

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

TB's & Wiring

Power

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Ethernet I/O OPC Server Software

KEPDirect EBC I/O Server: connect Ethernet I/O, or a DURAPULSE or GS series AC drive to your PC via OPC for easy data acquisition or control at an affordable price

What is it?

The **KEPDirect EBC I/O Server** is a 32-bit application that provides a way to connect your favorite Windows client software to **AUTOMATIONDIRECT Ethernet I/O**, through our EBCs (Ethernet Base Controllers) **OR** our **DURAPULSE** and **GS AC motor drives** with the use of a **Ethernet interface module (GS-EDRV)** installed. This means that any industrial HMI/SCADA, data historian, MES or ERP software package that includes an OPC client driver (most do!) can connect directly to **DL205, DL405, Terminator Ethernet I/O or DURAPULSE and GS series AC drives** by way of a **GS-EDRV module**. The **KEPDirect EBC I/O Server** provides an interface to your Ethernet EBC I/O using industry-standard OPC (OLE for process control), so you are free to choose almost any software package. Best-in-class Ethernet I/O, along with best-in-class software, is now your choice with the **KEPDirect EBC I/O Server**.

What's it got?

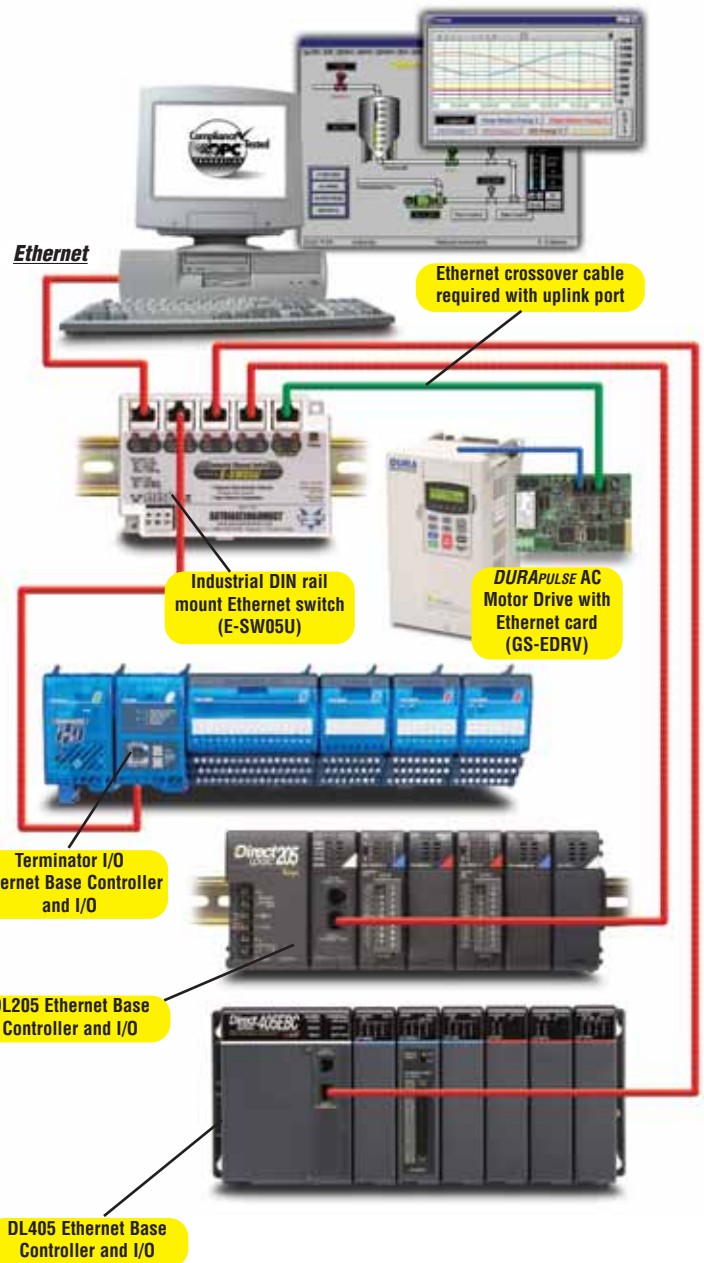
- High performance, certified OPC-compliant connectivity via Ethernet, with unparalleled compatibility and performance
- DL205, DL405, Terminator EBC or GS-EDRV module support through 10Base-T and 10Base-FL Ethernet interfaces
- ASCII in/out from any EBC on-board RS-232 serial port (when supported by the client)
- Sample client application included for easy troubleshooting

How do I use it?

Simply install the **KEPDirect EBC I/O Server** on the same PC (or on the same network) as your client application, then enable the OPC client driver for direct access to any EBC Ethernet I/O on the network.

What can I do with it?

- Connect your favorite HMI/SCADA software to low cost **AUTOMATIONDIRECT EBC I/O systems** over a 10 or 100 Mbit Ethernet network.
- Connect to one of our **DURAPULSE** or **GS series AC drives** via a **GS-EDRV module** and have the ability to control start/stop, speed and many other drive functions.
- Design a low-cost data acquisition/monitoring system using affordable **AUTOMATIONDIRECT DL205, DL405, or Terminator I/O**. Combine any ASCII serial devices to the on-board EBC serial port for interfacing intelligent devices like bar code readers, weigh scales, labelers, and more.
- Interface custom Visual Basic® or Visual C++® applications to **AUTOMATIONDIRECT EBC I/O systems** and eliminate time consuming driver development.



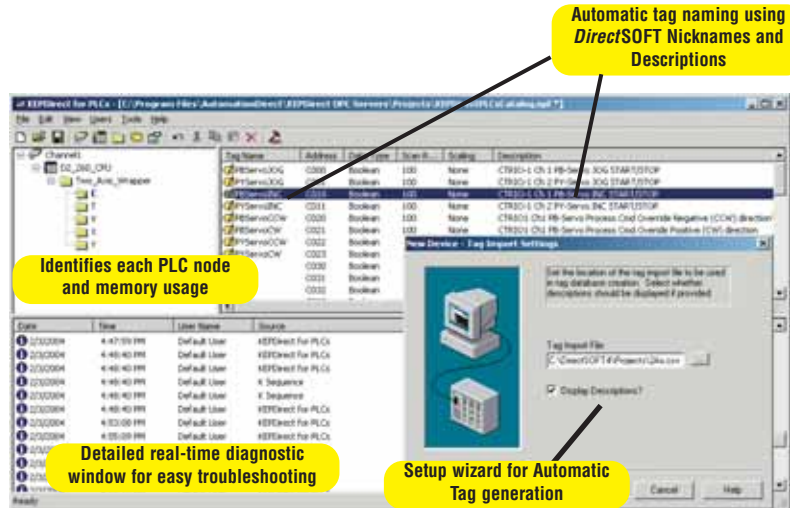
Product line-up

- PC-KEPEBC-3 supports up to three EBC nodes <--->
- PC-KEPEBC-7 supports up to seven EBC nodes <--->
- PC-KEPEBC-8P supports eight or more EBC nodes <--->
- PC-KEPEBC-UPG upgrade to next larger package <--->

It's all included in the *KEPDirect* Servers

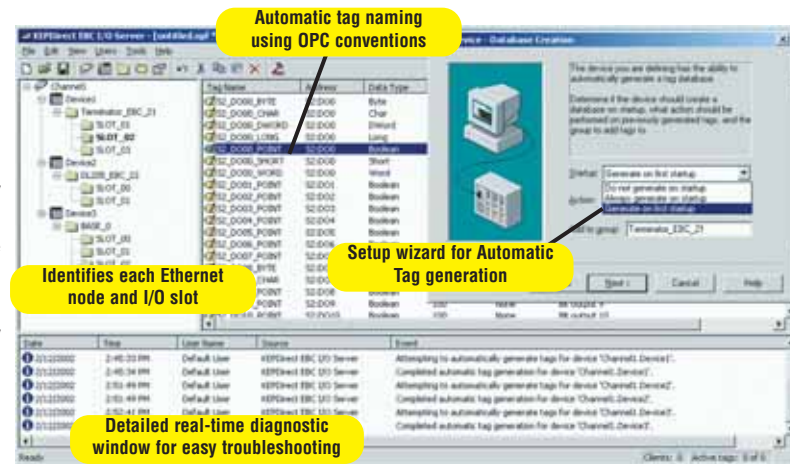
Import *DirectSOFT* project Nicknames and Descriptions for PLCs

The *KEPDirect* for PLCs Server supports automatic tag generation through importing of *DirectSOFT* project element Nicknames and Descriptions. Export your *DirectSOFT* PLC 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. Tags are organized according to *DirectLOGIC* PLC datatypes 'X', 'Y', 'C', 'V', etc. and 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* for PLCs Server graphical interface displays complete OPC Channel, Device and Group structure along with a detailed diagnostics window.



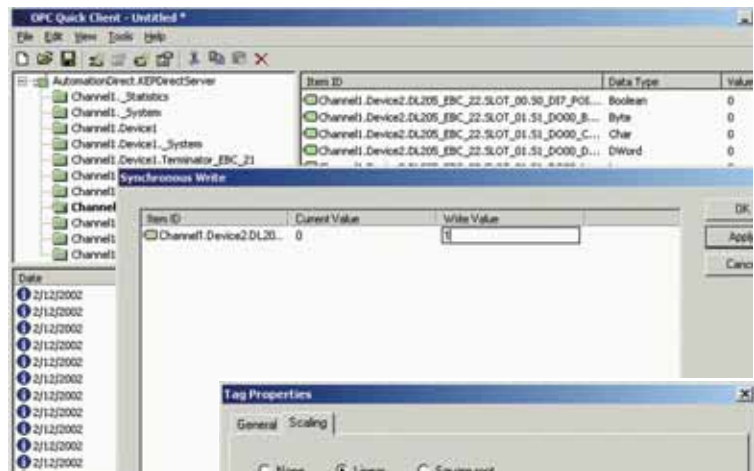
Automatic I/O configuration and tag mapping for Ethernet I/O

The *KEPDirect* EBC I/O Server automatically recognizes the type of I/O for all connected EBC nodes, and can map it 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 connection and toggle I/O

The *KEPDirect* for PLCs and EBC I/O Server includes a Quick-Client software application for checking your network. Testing 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 included

The *KEPDirect* for PLCs and EBC I/O OPC Server products include 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.



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KEPDirect PLC and EBC I/O Server

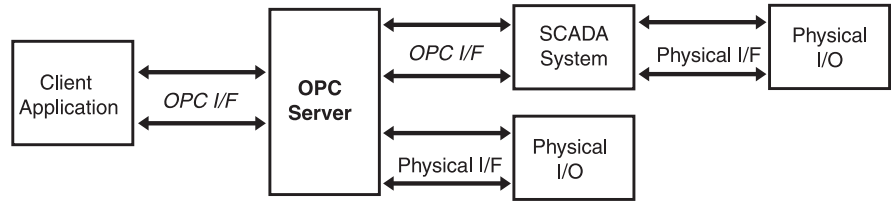
OPC overview

OPC, or OLE (Object Linking and Embedding) for Process Control, 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 Servers are 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 KEPDirect Servers

For those of you familiar with OPC servers, you might recognize the name "KEP" in the KEPDirect Server names. 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 Servers offer all the same powerful and easy-to-use features of the KEPServerEX, but only for connectivity to our DirectLOGIC PLC or Ethernet I/O EBC 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 Servers support the following client/server technologies:

- OPC Data Access Version 1.0a
- OPC Data Access Version 2.0
- FASTDDE for Wonderware
- SuiteLink for Wonderware
- 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 2.0 is the latest version of the OPC 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 Servers simultaneously support 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 products.

KEPDirect PLC and EBC I/O Server

System requirements

KEPDirect for PLCs and EBC I/O Server products 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 requirements:

- Pentium CPU, 200 Mhz clock speed
- Windows 98
- 32 MB free RAM and 10 MB free hard disk space
- Network interface card (for EBC server)

Recommended requirements:

- Pentium CPU, 400 Mhz clock speed
- Windows NT 4.0 SP5 or later/ 2000/XP(Home or Pro)/ Vista (all 32-bit versions)
- 64 MB free RAM and 10 MB free hard disk space

Note: Windows NT / 2000 and later provides a five to ten-fold increase in OPC Client/Server performance compared to Windows 95/98.

Major OPC clients supported

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

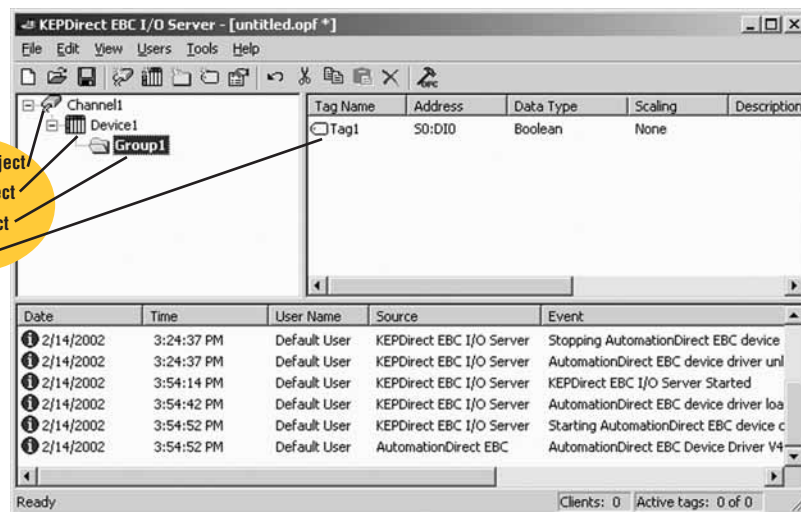
KEPDirect OPC Server objects

Channel object

Each protocol or driver used in a KEPDirect Server project is referred to as a channel. A channel is a specific communications driver. A KEPDirect 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 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 Servers allow 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 Servers allow 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 Servers, 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.

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