

Intro to Ignition

For Existing Users of FactoryPMI and FactorySQL

In January 2010, Inductive Automation released Ignition by Inductive Automation, the successor to the popular FactoryPMI and FactorySQL line of industrial automation software products. This introduction will help existing users of FactoryPMI and/or FactorySQL understand the changes and decide when and how to transition to Ignition.

What is Ignition?

Ignition is a web-based industrial application server. It can be used to create industrial HMI, SCADA, and MES systems just like FactoryPMI and FactorySQL could. In fact, any system you could create with our classic software, you can create with Ignition. Its modular architecture lets it morph into many different configurations.

What happened to FactoryPMI and FactorySQL?

Don't worry, we didn't abandon our existing software! In fact, Ignition is an evolution of FactoryPMI and FactorySQL. Both of our classic products live on in Ignition, albeit with different names. FactoryPMI is now the Ignition Vision Module. FactorySQL is the Ignition SQL Bridge Module. The Reporting Plugin is now the Ignition Reporting Module. The modules are backwards-compatible, and existing users are eligible for upgrade pricing for the Ignition modules.

Why the change?

There were two primary factors that drove the development of Ignition: the maturation of OPC-UA, and the desire to create a more unified, user-friendly experience.

OPC-UA Arrives

We've all been hearing about it for years, but OPC-UA is finally here, and it does not disappoint. OPC-UA is cross platform, reliable, high performance, and doesn't rely on DCOM. Ignition includes the Ignition OPC-UA Module: an OPC-UA server with a pluggable driver system.

Unified Experience

Feedback from users showed that one of the difficulties with FactoryPMI and FactorySQL was that they were two separate applications. This meant duplication of effort when setting up a system, made troubleshooting more difficult, and increased the learning curve of our software. Ignition has all of the same paradigms as FactoryPMI and FactorySQL, so your training and experience is still relevant, but now all configuration is done in a single place.

How does it work?

Ignition can most closely be related to the FactoryPMI Gateway. It is a web server, into which modules can be installed. Configuration, status monitoring, and project launching are all done from the web interface. There is a web-launched Ignition Designer, much like the FactoryPMI Designer. The Ignition Designer is used to configure both windows and transaction groups inside one cohesive design environment.

What are “Modules”?

Modules are the pieces of software that get added to the Ignition platform that make it actually do useful work. “Modular Architecture” sounds complicated, but it really isn’t. When the Vision Module is installed, Ignition will act like FactoryPMI. When the SQL Bridge Module is installed, Ignition will act like FactorySQL. When both are installed, it will perform the duties and functions of both. It’s that simple!

Modules can be purchased separately, so the licensing works in a similar way to our classic software. They are also hot-pluggable, which means that if you need to upgrade your SQL Bridge Module to get a new feature, you can do it while the system is running to avoid unnecessary downtime.

Why the new name? Why version 7?

We have observed over the years that most of our customers already condense our products down into a single name, typically “PMI”. With FactoryPMI and FactorySQL unified into a single system, having a single product brand makes our system easier to understand. Rather than name the entire system “PMI” and contribute to our industry’s acronym overload, we chose a name that conveyed excitement and possibilities.

You may have noticed that Ignition is version 7, even though it is “new”. Of course, only the name is new; much of the underlying technology comes from FactoryPMI and FactorySQL. Because we have been in business for seven years, and because their individual versions added up to seven, we chose it as the version number for the Ignition platform.

How do I upgrade to Ignition?

Install it and run the upgrade tool! Ignition is nearly 100% backwards compatible with existing FactoryPMI and FactorySQL. There is an available OPC-DA connector module so that you can continue to use a legacy OPC server with Ignition. Ignition will happily use your existing SQLTags database. There are a few caveats, such as custom .NET plugins for FactorySQL not being compatible with Ignition, however porting them shouldn’t be a problem. See the Ignition Upgrade Whitepaper for details.

Do I have to upgrade to Ignition?

No, you don’t. We will continue to support FactoryPMI and FactorySQL. However, all new development will go into Ignition. You should strongly consider upgrading. You can run Ignition side-by-side on the same computer with FactoryPMI and FactorySQL to evaluate it if you wish.

Will I have to learn everything again?

No, all of the concepts that you learned for FactoryPMI and FactorySQL are still valid. There are a few terminology changes, for example, FactorySQL's "Groups" are now called "Transaction Groups". The concept of a "Project" has been expanded. Projects can now contain various resources, such as Windows, Transaction Groups, and Scripts. The workflow has changed, of course, but it is much simpler now. There is one place to go to configure projects, one place for viewing system logs, one place for backup and restore, etc.

New Features in Ignition

OPC-UA Module

The biggest addition in Ignition is the OPC-UA module. This module is a high-performance OPC-UA server that we have written from scratch in Java. It has a pluggable driver API, and ships with a number of drivers for common devices, such as Allen Bradley PLCs, MODBUS-TCP, and more. This module also allows Ignition to connect to any OPC-UA servers on remote machines using the OPC-UA TCP binary transmission protocol.

SQLTags Realtime

SQLTags continues to play a large role in Ignition. There are now two kinds of SQLTags providers. The Database Provider acts like classic SQLTags: tags are stored in an external SQL database. The new Internal Provider stores the tag configuration internally and holds live values in memory. This removes the external database from the critical path for basic status and control functions, which increases reliability and performance. The Database Provider is still useful, however, in highly distributed environments where multiple Ignition Gateways share a centralized tag database.

SQLTags Historian

SQLTags Historian is a new feature that is available when the SQL Bridge Module is installed. This makes the storing of history as easy as checking a checkbox on your SQLTags, acting much like a process historian. The data is stored in an efficient format in any SQL database, and no SQL queries are needed to query the data.

Store and Forward

FactorySQL's data-cache system received a major upgrade and is now the Store and Forward system in Ignition. All historical logging goes through this system, which is highly configurable and can achieve many goals. It's primary purpose is as a fail-safe caching mechanism to ensure that no data records are lost if the connection to the database goes down. Its secondary use is as a high-speed logging buffer to increase throughput by decoupling the logging processes from the database and to use highly efficient batch data transfer.

Lots More

There are a whole host of small improvements in Ignition besides the big new features. Many new features like improved web-launch, hot upgradeable modules, new components like tree view and calendars, Gateway-side scripting, time-delayed alerts and more are all included in Ignition. Some existing features are now simpler, such as clustering, simply because you only have to set them up once.

Sounds great, how do I get started?

Just like our classic software, you can just download the installer and get started today! The install is fast and easy; you'll be up and running in minutes. With Ignition, you no longer have to configure connections to a database or an external OPC server in order to get started.