

Ignition 7.9 User Manual — Gateway

Generated 2026-10-12 from
<https://www.docs.inductiveautomation.com/docs/7.9/>

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Webpage



INDUCTIVE
UNIVERSITY

Gateway Webpage

[Watch the video](#)

Launching a Gateway

The Gateway Webpage performs a cadre of functions and is the hub for accessing all the functions of the Gateway server. It drives everything in Ignition! The Gateway Webpage is where you setup your licensing and activation, configure your Gateway settings, databases, devices, projects, modules, security, alarming, and much more. When the Gateway server is running, you can connect to a device, connect to a database, launch the Designer, and launch a client. You can also check the status of your system, network, agents, sessions, tasks, reports, alarms, and much, much more.

The Ignition Gateway is a web server, and when it is running, you access it from a web browser. In your web browser, type <http://localhost:8088> to display the Gateway homepage. Any other computer on the same network can access the Gateway by using the IP Address or Host Name of the computer where Ignition is installed: i.e., <http://192.168.1.100:8088> and it will launch Gateway and bring up the Gateway Homepage. To learn more, go to [Gateway Settings](#).

Gateway Homepage

The Gateway homepage has four tabs across the top of the page that lead you to the key sections of the server: **Home**, **Status**, **Configure**, and **Launch Designer**. Here is where you can perform a host of Gateway functions from configuring your system and modules, to launching clients, and many tasks in between. You can even [customize the Gateway Homepage](#) to display the information you want by either showing/hiding and reordering the sections on the Homepage.

Let's get started!

Home

The first time you go to the Gateway Homepage, it shows you several steps to help you get started. Once you're up and running, the Home tab lets you open clients and view some connection status.

Controller

USER MANUALSUPPORT

by inductive automation

adminSign Out

Launch Designer

HOMESTATUSCONFIGURE

Welcome to the Ignition Gateway

hide this panel



Congratulations, Ignition is installed and running!

Whether you need an OPC-UA server, a SQL datalogger, an HMI, or a full-blown SCADA or MES solution, Ignition can handle it. Here are a few common steps to help get you started:

- 1 Login to the **configuration** section.

The default username and password are: **admin / password**
Change the password or configure your own authentication profile in the **Security > Authentication** section
- 2 Connect to a **device**.

Connectivity is what Ignition is all about. Connect to a PLC on your network using the internal OPC-UA server, or a 3rd party OPC server. Don't have a PLC handy? No problem, you can skip this step or use one of the simulator drivers.
- 3 Connect to a **database**.

Database connectivity is at the heart of Ignition's most powerful features, like Transaction Groups and SQLTags Historian. If you have a SQL database, you can greatly increase Ignition's capabilities by adding a connection to it. No database? You can come back to this step later or skip it entirely.
- 4 Launch the **Ignition Designer**.
- 5 Launch a client. Or two. Or twenty.

Web-launched clients can be launched anywhere on your network from the panel below. With Ignition, you don't have licensing restrictions to limit you.

Status

The **Status** tab provides in-depth information about the status of the different parts of the Ignition system. The list of options on the left menu in the Status page changes based on what modules are installed. You can select any of the available options to get more detailed information.

Controller

USER MANUALSUPPORT

adminSign Out

Launch Designer

HOMESTATUSCONFIGURE

Search...

SYSTEMS

OverviewPerformanceAlarm PipelinesGateway ScriptsModulesRedundancyReportsSFCsVoice AlarmingTagsEAM TasksTransaction Groups

CONNECTIONS

EAM AgentsDatabasesDesignersDevicesGateway NetworkStore & ForwardOPC ConnectionsOPC-UA ServerVision Clients

DIAGNOSTICS

ExecutionLogsThreads

License Incomplete0:00:00Reset TrialView Modules

Systems

Overview

Architecture

Gateway | Controller

Version: 7.9.0-rc2 (b2016092312)License: partialUptime: 2 days7% cpu331 mb

No Redundancy

Add a redundant backup gateway to protect your system from downtime caused by failures.

No Gateway Network

Multiply the power of your Ignition Gateways by combining them into an enterprise network. Streamline the administration, monitoring, deployment, and commissioning process into one central location.

Connections

Designer Sessions

1 open

Databases

1 / 1 connected

Gateway Network Connections

0 / 0 connections

OPC Connections

1 / 1 connected

Environment

Process Id24120

Operating SystemWindows 7 | amd64

Java Version1.8.0_91-b15

Local Time8:33:21 AM

Available Disk Space150gb / 298gb

Detected NICs10.20.8.46

Systems

Performance4% CPU | 329mb

RedundancyNot configured

Modules21 installed

Tags973 tags

Reports1 scheduled

Alarm Pipelines0 / 5 active

SFCs0 running

EAM RoleController

EAM Tasks0 running

Configure

The **Configure** tab presents you with a login page. Use 'admin' and 'password' as your Username/Password to login.

Once you are logged in, you are in the Configure page. From this page, you do all the Gateway and platform operations. The list of options on the left menu in the Configure page changes based on what modules are installed. You can select any of the available options to get more detailed information.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS CONFIGURE

Search...

License Incomplete 0:00:00 Reset Trial View Modules

Configuration

From the Configure section you can set up all connections, projects, and settings
Here are some common actions to get you started.

- PLATFORM**
 - Update System Name
 - Configure Redundancy
 - Install or Upgrade a Module
 - Create New Project
 - Activate a License
 - Download Gateway Backup
- NETWORKING**
 - Enable SSL for the Gateway Network
 - Create an SMTP Profile
 - Manage incoming/outgoing Gateway Network connections
- SECURITY**
 - Create a new user
 - Assign a user a new role
 - View the logs of an audit profile
 - Define a Security Zone
 - Set access levels on a Security Policy
- CONNECTIONS**
 - Create a new database connection
 - Connect to a 3rd party OPC server
 - Create a new device connection
- SYSTEMS**
 - Create an alarm journal profile
 - Manage schedules and holidays
 - Create a new alarm notification profile
 - Test an alarm notification pipeline
 - Add users to an on-call roster
- DATA ACQUISITION**
 - Define a new realtime tag provider
 - Manage tag historians
 - Quickly read or write tags in a device

Launch Designer

The **Launch Designer** tab, on the top right side of the page, directly launches the Ignition Designer where all the design work for your projects is done. To learn about what Designer can do, go to the Designer section of this manual.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

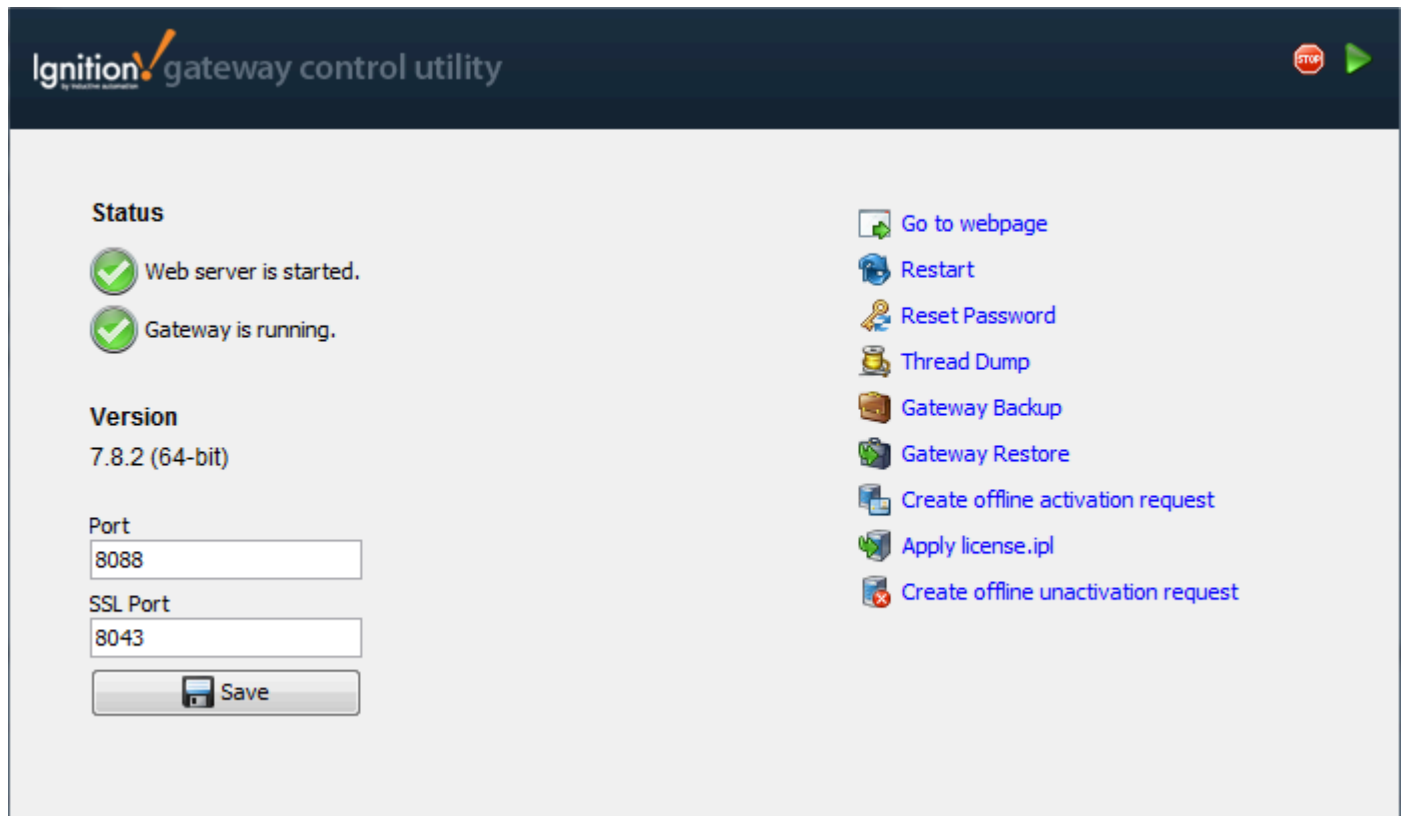
HOME STATUS CONFIGURE

Gateway Control Utility

The Gateway Control Utility (GCU) is a lightweight standalone application that provides information about the Gateway. It performs high-level tasks that aren't available inside the Gateway webpage such as stopping and restarting the Gateway server, and setting ports used between the Gateway and

clients. It shows the status of the Tomcat web server and the Ignition Gateway application. You can reset the Gateway password, and even the launch the web browser to the Gateway homepage.

For more information on the GCU, refer to the section on the [Gateway Control Utility](#).



Gateway Redundancy

Ignition redundancy supports a 2-node system, meaning there are two copies of the Gateway running. One node is the Master Gateway and the other is the Backup Gateway or backup node. All projects, Gateway settings, etc, are shared between nodes. The master node manages the configuration then replicates it to the backup node.

When you have redundant systems in place, you can get detailed status information by going to Gateway webpage and selecting **Status > Redundancy** to view the system's status and events. For more about how Gateway redundancy works, go to the section on [Redundancy](#).

Controller

USER MANUALSUPPORT

adminSign Out

Launch Designer

Ignition
by Inductive automation

HOMESTATUSCONFIGURE

Search...

SYSTEMS

OverviewPerformanceAlarm PipelinesGateway ScriptsModules

Redundancy

ReportsSFCsVoice AlarmingTagsEAM TasksTransaction Groups

CONNECTIONS

EAM AgentsDatabasesDesignersDevicesGateway NetworkStore & ForwardOPC ConnectionsOPC-UA Server

License Incomplete ?0:00:00Reset TrialView Modules

Systems

Redundancy

Configuration

RoleIndependent

Peer ConnectedNo

Redundancy Properties

Activity Level	Active
Synchronization Status	Good
Local Address	10.20.8.46
Peer Address	Not Connected

System Events

Severity	Time	Event
	04Oct2016 15:40:15	Ignition["/main", state=STARTING] ContextState = RUNNING
	04Oct2016 15:38:37	Redundancy state changed: Role=Independent, Activity level=Active, Project state=Good, History level=Full
	04Oct2016 15:38:36	Ignition["/main", state=STOPPED] ContextState = STARTING
	04Oct2016 15:38:18	Ignition["/main", state=RUNNING] ContextState = STOPPING
	04Oct2016 15:35:08	Ignition["/main", state=STARTING] ContextState = RUNNING
	04Oct2016 15:32:33	Redundancy state changed: Role=Independent, Activity level=Active, Project state=Good, History level=Full
	04Oct2016 15:32:32	Ignition["/main", state=STOPPED] ContextState = STARTING

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Overview



INDUCTIVE
UNIVERSITY

Gateway Webpage

[Watch the video](#)

Navigating the Gateway Webpage

The Gateway homepage has three tabs across the top of the page that lead you to the key sections of the server: **Home**, **Status**, and **Configure**. Here is where you can perform a host of Gateway functions from configuring your system and modules, to launching clients, and many tasks in between.

Let's get started!

Home

When you first navigate to the Gateway Webpage, you will be taken to the Home tab. Here, you are greeted with a welcome message that gives some ideas on what to get setup first. Next, there is the Launch Projects section, which will list out all projects which can currently be launched and allow you to launch them. Then we have the Mobile Launch section, which provides a URL and a QR code to easily launch projects from a mobile device. Finally, there is the Native Client Launchers sections, which provide download links for different operating system versions of our Native Client Launcher. If you don't want to display certain information on the Home tab, you can [customize the Gateway Homepage](#) by either showing/hiding and reordering the sections on the Home Tab.

- **Launch Projects** in a client
- **Mobile Launch** a project on a mobile device
- Download the **Native Client Launchers**
- View status of device and database connections

Ignition157

USER MANUALSUPPORT

adminSign Out

Launch Designer

HOMESTATUSCONFIGURE

Welcome to the Ignition Gateway

hide this panel



Congratulations, Ignition is installed and running!

Whether you need an OPC-UA server, a SQL datalogger, an HMI, or a full-blown SCADA or MES solution, Ignition can handle it. Here are a few common steps to help get you started:

- 1 Login to the [configuration section](#).**

The default username and password are: `admin / password`
Change the password or configure your own authentication profile in the [Security > Authentication](#) section
- 2 Connect to a [device](#).**

Connectivity is what Ignition is all about. Connect to a PLC on your network using the internal OPC-UA server, or a 3rd party OPC server. Don't have a PLC handy? No problem, you can skip this step or use one of the simulator drivers.
- 3 Connect to a [database](#).**

Database connectivity is at the heart of Ignition's most powerful features, like Transaction Groups and SQLTags Historian. If you have a SQL database, you can greatly increase Ignition's capabilities by adding a connection to it. No database? You can come back to this step later or skip it entirely.
- 4 Launch the [Ignition Designer](#).**

This is where the magic happens. Create a project and add windows and transaction groups. Besides the usual status and control functionality, take advantage of advanced charting, tables and reporting capabilities.
- 5 Launch a client. Or two. Or twenty.**

Web-launched clients can be launched anywhere on your network from the panel below. With Ignition, you don't have licensing restrictions to limit you.

Status

The **Status** tab presents you with a login page. Use '**admin**' and '**password**' as your Username/Password to login. This tab is protected by default, as there may be some information on this page that the average user should not be seeing, but this can be adjusted so that the Status tab doesn't even require a login.

The Status tab provides in-depth information about the status of the different parts of the Ignition system. The list of options on the left menu in the Status tab changes based on what modules are installed. You can select any of the available options to get more detailed information. Many parts of the Status tab also have the ability to drill down and open up more specific information about what was selected.

- Overview
- Performance
- Alarm Pipelines
- Gateway Scripts
- Modules
- Redundancy
- Reports
- SFCs
- Voice Alarming

- Tags
- EAM Tasks
- Transaction Groups

The screenshot displays the Ignition Systems Overview page. The top navigation bar includes 'HOME', 'STATUS', and 'CONFIGURE' tabs. The left sidebar lists various system components and connection types. The main content area is divided into several sections:

- Architecture:** Shows the Gateway 'Ignition157' with version 7.9.0, license 'licensed', and uptime of 19 hours. It also displays redundancy status as 'Peer Connected' with IP 192.168.141.132, activity 'Cold', and sync 'Unknown'. The gateway is labeled 'MASTER' and 'BACKUP'.
- Environment:** A table listing system details:

Process Id	1288
Operating System	Windows 7 amd64
Java Version	1.8.0_101-b13
Local Time	11:26:56 AM
Available Disk Space	35gb / 50gb
Detected NICs	192.168.141.130
- Gateway Network:** A table showing network statistics:

Active Connections	Remote Gateways	Bytes Sent	Bytes Received
1 / 1	1	571 B /sec	394 B /sec
- Connections:** A section showing the status of various connections:
 - Designer Sessions:** 1 open
 - Databases:** 0 / 1 connected, 1 databases faulted
 - Gateway Network Connections:** (partially visible)
 - OPC Connections:** (partially visible)
- Systems:** A summary table of system metrics:

Performance	12% CPU 280mb
Redundancy	Active, Connected
Modules	20 installed
Tags	99 tags
Reports	1 scheduled
Alarm Pipelines	0 / 1 active
SFCs	0 running
EAM Role	Unknown
EAM Tasks	0 running

Configure

The **Configure** tab will also present you with a login page if you had not logged in yet.

The Configure tab allows you to control all of the platform operations and configurations. The menu on the left is broken into different sections, and may change depending on what modules you have installed. Clicking on a specific section will open up the configuration page for that specific section. It also provides you with a list of common tasks that you may want to do, and will take you to the appropriate page where that is configured.

- System
- Configuration
- Security
- Databases
- Alarming
- Tags

- OPC-UA
- OPC Connections
- Mobile
- Enterprise Administration

Ignition157

[USER MANUAL](#)
[SUPPORT](#)



[HOME](#)
[STATUS](#)
[CONFIGURE](#)

admin
[Sign Out](#)

[Launch Designer](#)

Search...

SYSTEM

Overview
Backup/Restore
Licensing
Modules
Projects
Redundancy
Gateway Settings

NETWORKING

Gateway Network
Email Settings

SECURITY

Auditing
Users, Roles
Service Security
Security Zones

DATABASES

Connections
Drivers
Store and Forward

ALARMING

Legacy Notification
Legacy Storage
General
Journal

Configuration

From the Configure section you can set up all connections, projects, and settings
Here are some common actions to get you started.

PLATFORM

Update System Name
Configure Redundancy
Install or Upgrade a Module
Create New Project
Activate a License
Download Gateway Backup

NETWORKING

Enable SSL for the Gateway Network
Create an SMTP Profile
Manage incoming/outgoing Gateway Network connections

SECURITY

Create a new user
Assign a user a new role
View the logs of an audit profile
Define a Security Zone
Set access levels on a Security Policy

CONNECTIONS

Create a new database connection
Connect to a 3rd party OPC server
Create a new device connection

SYSTEMS

Create an alarm journal profile
Manage schedules and holidays
Create a new alarm notification profile

DATA ACQUISITION

Define a new realtime tag provider
Manage tag historians
Quickly read or write tags in a device

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Home

Launching Projects

The home tab provides you with all of the tools you need to get started launching and designing projects. Projects are listed with a launch button to their right. By default, the project will open up in windowed mode but can be modified to allow other launching options. See [Launching Clients](#) for more information on the different launch modes.

While the top navigation bar is present no matter what tab you are in, the Launch Designer button in the upper right corner does not require that a user login to the gateway. This allows a user to launch the designer right away, only logging in once the designer has fully launched. See the [Designer](#) section for more information on launching and using the designer.

The screenshot shows the Ignition 7.9 Home page. The top navigation bar is dark blue with the Ignition logo on the left and links for USER MANUAL, SUPPORT, and Sign In on the right. Below the navigation bar, there are three main sections: Launch Projects, Mobile Launch, and Native Client Launchers. The Launch Projects section shows a 'Test Project' with a 'Launch' button. The Mobile Launch section shows a QR code and a URL: http://localhost:8088/main/system/mobile. The Native Client Launchers section shows three download links for Windows, Linux, and Mac OSX.

Ignition157

USER MANUAL SUPPORT

Sign In

Launch Designer

HOME STATUS CONFIGURE

Launch Projects ?

Test Project Launch

Mobile Launch ?

To launch a project on a mobile device, scan the barcode or navigate your device's web browser to:

<http://localhost:8088/main/system/mobile>

Native Client Launchers ?

Client Launcher for Windows

Save the .exe file to your local machine and double-click to get started.

Download

Client Launcher for Linux

Save the .tar.gz file to your local machine, extract using 'tar -xvf' and run the executable .sh file.

Download

Client Launcher for Mac OSX

Save the .dmg file to your local machine, double-click to open and drag Client Launcher to your Applications folder.

Download

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Status

Your Gateway at a Glance

The Status tab provides both an 'at a glance' overview of all of the systems in your Gateway, while also giving you the ability to drill down into specific systems and get a more in depth view of what is currently happening in your system.

When first opening the Status tab, you will be taken to the Overview page. This page provides an overview of all Ignition systems, while also acting as a launchpad to all other sections in the Status tab. The pages in the Status tab are built around the idea of quickly drawing attention to problem areas by highlighting them. As you can see, this gateway has a faulted database and a faulted OPC Connection. The pages in the Status tab also allow you to 'drill down' into sections to see more information. Most objects can be clicked on, like the faulted database and OPC connection. Clicking either of these will take you to the appropriate section, allowing you to quickly find out what is wrong with a particular system.

Search...

SYSTEMS

Overview

Performance

Alarm Pipelines

Gateway Scripts

Modules

Redundancy

Reports

SFCs

Voice Alarming

Tags

Transaction Groups

CONNECTIONS

Databases

Designers

Devices

Gateway Network

Store & Forward

OPC Connections

OPC-UA Server

Vision Clients

DIAGNOSTICS

Execution

Logs

Threads

Systems

Overview

Architecture

Gateway | Ignition157

Version: 7.9.0 (b2016092312)

License: licensed

Uptime: 19 hours

5% cpu

331 mb

MASTER

Redundancy

Peer Connected

IP: 192.168.141.132

Activity: Cold

Sync: Unknown

BACKUP

Gateway Network

Active Connections	Remote Gateways	Bytes Sent	Bytes Received
1 / 1	1	571 B/sec	394 B/sec

Connections

Designer Sessions

1 open

Databases

0 / 1 connected

1 databases faulted

Gateway Network Connections

1 / 1 connections

OPC Connections

1 / 2 connected

1 connections faulted

Store & Forward

0 stores quarantined

Devices

2 connected

Environment

Process Id	1288
Operating System	Windows 7 amd64
Java Version	1.8.0_101-b13
Local Time	11:22:57 AM
Available Disk Space	35gb / 50gb
Detected NICs	192.168.141.130

Systems

Performance	5% CPU 329mb
Redundancy	Active, Connected
Modules	20 installed
Tags	99 tags
Reports	1 scheduled
Alarm Pipelines	0 / 1 active
SFCs	0 running
EAM Role	Unknown
EAM Tasks	0 running

Search

The Status tab also displays a search bar at the top left of each page. This search bar allows you to type in a word or phrase, and it will list all appropriate pages in both the Status and Configure tabs to easily find all pages related to a specific system.



device

Search results for 'device'...

[Devices](#) in Status > Connections[OPC-UA Server](#) in Status > Connections[Certificates](#) in Config > OPC-UA Server[Devices](#) in Config > OPC-UA Server**Looking for Ignition documentation?**Visit our [User Manual](#) website.**Have a great idea for us?**Let us know about it on our [Feedback Portal](#).

Configuration

In this section you can set up all connections, projects, and settings
are some common actions to get you started.

DATABASES

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Systems

Status of Gateway Systems

The Systems section of the Status Tab contains information regarding the internal gateway systems. This includes systems such as the currently running Transaction Groups as well as active Alarm Pipelines. These sections are not necessarily concerned with any connections to external systems.

Overview

The Overview page is special, as it is the first page that you will see when navigating to the Status tab. It not only contains information about Ignitions systems, but provides an overview of everything in the Gateway, as well as some basic information about the server Ignition is installed on.

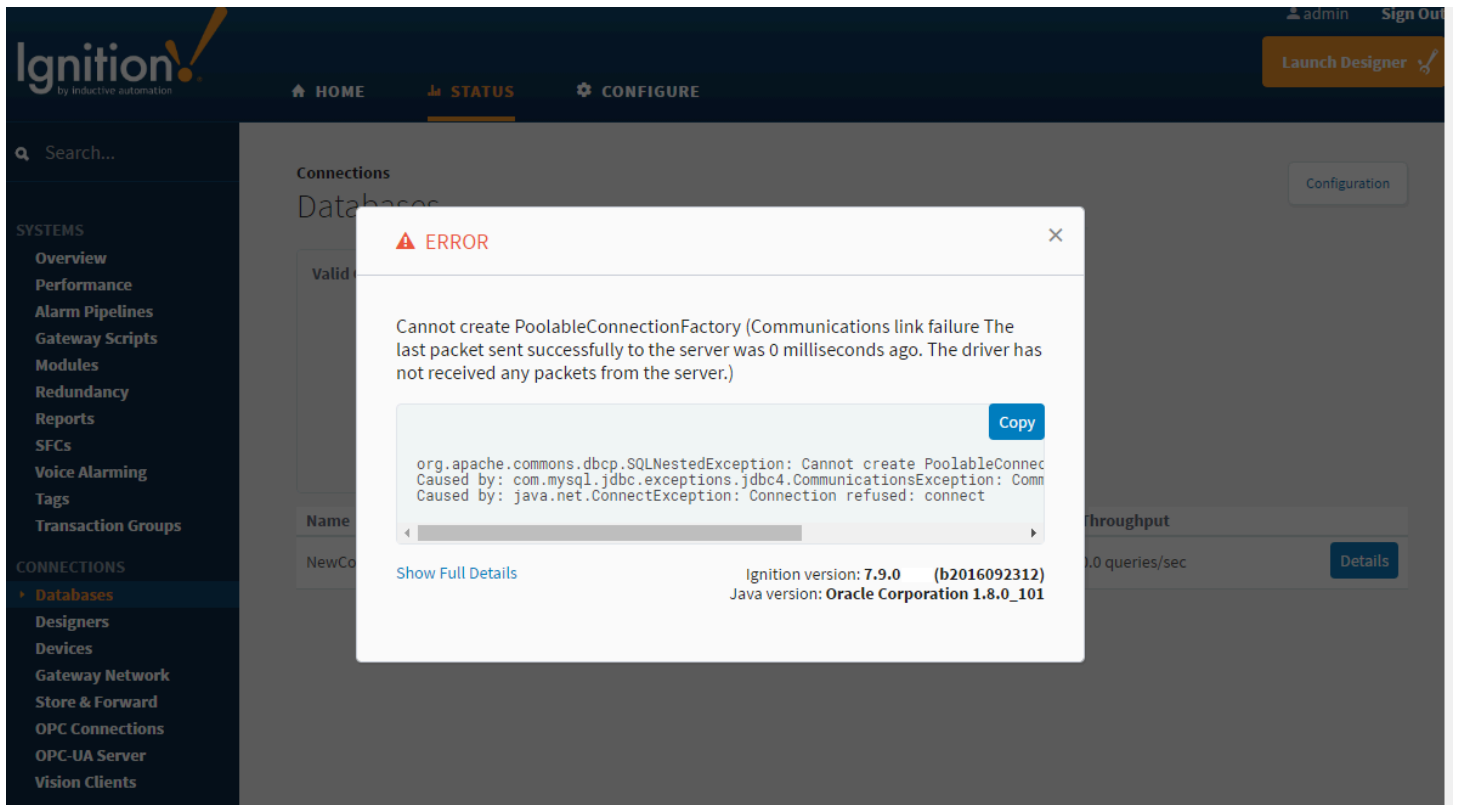
The Architecture segment provides a top down view of your Gateway. You can see information like the version and resource usage, as well as similar information with a redundant Gateway, if one is connected.

You will also get an overview of the Gateway Network including how many active connections there are, and what is the amount of data being transferred between them.

To the right, the Environment segment provides some basic information about your server such as the IP address of detected NICs, and the java version the gateway is currently running on.

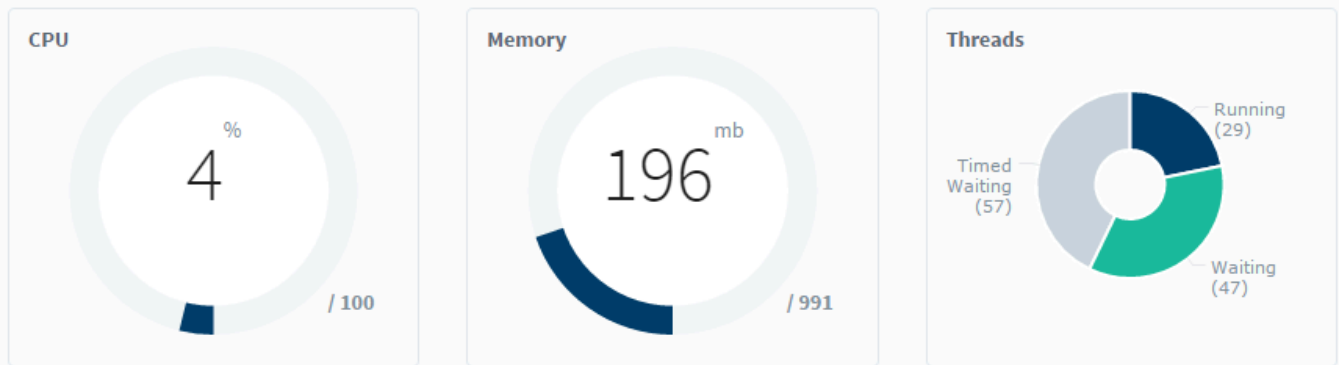
The Systems segment below that provides a brief summary of each of Ignitions systems. Here, you can see how many modules you have installed as well as how many Tags are configured in your Gateway, along with a handful of other information. To find out more information about a particular system, click on it here, and you will be taken to the relevant page with more information.

Finally, the Connections segment shows all of the systems that Ignition is connected to. If any of these having issues, they will be outlined in red, and can be clicked on to be taken to the relevant page in the Status page.

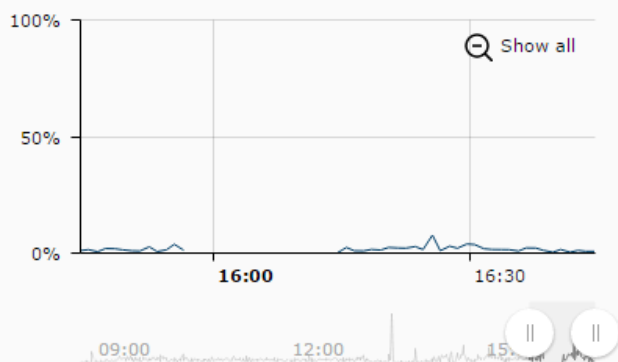


Performance

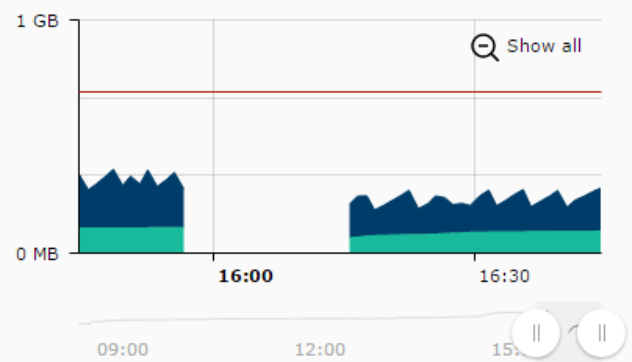
The performance page displays information on the resource usage of the gateway. You can see the current CPU usage, the current memory usage out of the total allocated for the gateway, and trends of the last 24 hours for those systems. You can move the sliders below to change which time range in that 24 hour period you are looking at. The button at the top right of the page will take you to the **Threads** page, where you can find out more information on how CPU threads are performing. Finally, the bottom of the page contains a log of recent events that implied the gateway was running slower than normal. This page allows you to quickly assess your Gateways overall health and if it is being taxed too heavily for the server it is running on.



CPU Trend



Memory Trend



System Response

Current Response Time

0 ms

Recent Slow Response Events

Severity	Time	Event
▲	29Sep2016 08:46:45	Clock drift, degraded performance, or pause-the-world detected. Max allowed deviation=1000ms, actual deviation=147011045ms

Alarm Pipelines

This page shows a list of the currently configured Alarm Pipelines in the Gateway. Each pipeline will show how many alarm items are currently running through it. Clicking on the Details button to the right will open up a new page that will show the alarm items that are currently running through that pipeline, and give the option to cancel them. There will also be a set of tabs at the top of the page. One for the Pipeline Status that is already open, the other for Pipeline Logs. This [log viewer](#) will act as a miniature log viewer that will only show logs that pertain to this particular pipeline.

Alarm Pipelines

Active

0/1

Name	Active?	Items	
New Pipeline	false	0	Details

Gateway Scripts

The Gateway Scripts page will display a list of all currently configured gateway scripts. These are scripts that are configured in the [Gateway Event Scripts](#) section of the project. The tabs at the top of the page will swap between the different types of Gateway Event Scripts, and they will provide so useful information such as the project that it is running in as well as the last time it ran and if it was successful or not. This makes it easy to quickly check to make sure your scripts are running properly. If any of them have an error, it is easy to click on the error to find out more details about that error to help determine what went wrong with the script. All of the logs for that section are also contained in the log viewer at the bottom of the page, to make it easy to see a list of all of the logged errors for that set of Gateway Event Scripts

Gateway Scripts

Timer

Tag Change

Message Handler

Startup

Shutdown

Project	Name	Rate	Last Execution	Duration	Status
TestProject	RunEveryMinute	60 sec	a few seconds ago		 ERROR

Log Activity



Min level

INFO



Live Values

 ON

Merge to Logs 

Logger	Time	Message
 TimerScriptTask	30Sep2016 08:51:40	Error executing global timer script: TestProject/RunEveryMinute @60,000ms . Repeat errors of this type will be logged as 'debug' messages.

Modules

The Modules page shows a list of the currently installed modules, their current version, and if they are running properly with a license. The top of the page shows a quick count of the running and licensed modules, so you can easily tell if anything is not working. It is then easy to scroll down through the list to see which modules are having issues.

Running Modules

19 / 19

Licensed Modules

19 / 19

License Details

License Key	AAA-AAA
Version	7
developer	true
enablealerts	true
edition	standard

Inductive Automation

Name	Version		License	Status
Alarm Notification	4.9.0	(b2016092319)	Activated Q	✓ RUNNING
Allen-Bradley Driver	4.9.0	(b2016092312)	Activated Q	✓ RUNNING
DNP3 Driver	2.9.0	(b2016092312)	Activated Q	✓ RUNNING
Logix Driver	3.9.0	(b2016092312)	Activated Q	✓ RUNNING
Mobile	4.9.0	(b2016092312)	Activated Q	✓ RUNNING
Modbus Driver	5.9.0	(b2016092319)	Activated Q	✓ RUNNING
OPC-UA	4.9.0	(b2016092319)	Activated Q	✓ RUNNING
OpcCom	4.9.0	(b2016092319)	Activated Q	✓ RUNNING

Redundancy

The Redundancy section displays information regarding the redundant system, if one is configured. It easily shows the Role of the Gateway you are viewing, the status of the connected Gateway, and their IP addresses. The trends on this page give a snapshot of the last few minutes of communication between the two Gateways. The first trend shows the data that is being sent and received between the two gateways, the second shows the state updates that have recently occurred. The bottom of the page contains a log of the last system events, to easily track major events between the Gateways.

Role

Master

Peer Connected

Yes

Redundancy Properties

Activity Level

Active

Synchronization Status

Good

Local Address

10.20.15.1

Peer Address

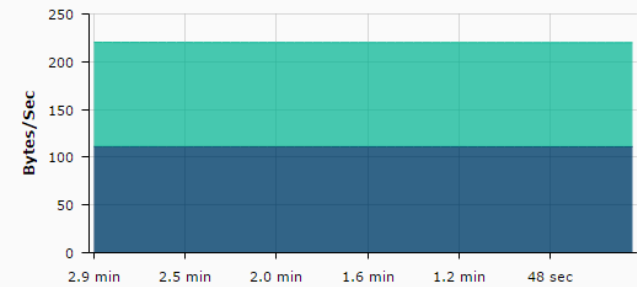
127.0.0.1

Force Re-Sync

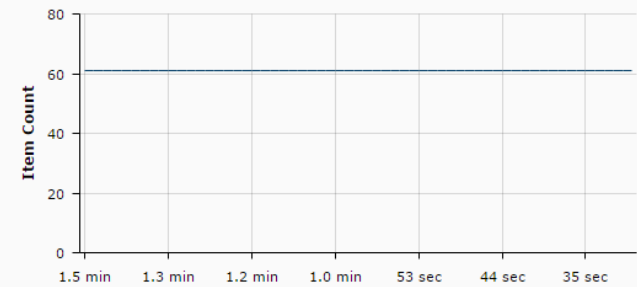
Force Failover

Statistics

Data Throughput



Queued Updates



System Events

Severity	Time	Event
i	29Sep2016 15:41:21	Connection registered from '/10.20.15.2:45114'
i	29Sep2016 15:37:12	Redundancy state changed: Role=Master, Activity level=Active, Project state=Good, History level=Full
i	29Sep2016 15:37:11	Connection registered from '/10.20.15.2:45110'
i	29Sep2016 15:37:03	Ignition["/main", state=STARTING] ContextState = RUNNING
i	29Sep2016 15:35:02	Redundancy state changed: Role=Master, Activity level=Undecided, Project state=Good, History level=Full
i	29Sep2016 15:35:01	Ignition["/main", state=STOPPED] ContextState = STARTING

Reports

The Reports page will show information on any Reports that have at least one scheduled action set up. The top of the page gives a quick count of reports that are executing an action, have executed an action, or are going to execute an action. Below you can also find a list of Reports in those states as well, to quickly see what project they are located in, or what their last execution time was. As with most other pages, there is also a log of all events related to reports at the bottom of the page.

Reports Status

Report Stats

Currently Executing

0

Completed Scheduled Executions

1

Upcoming Scheduled Executions

1

Currently Executing Reports

Project	Report Path	Status	Execution Start	Elapsed Time
No items to display				

Completed Scheduled Executions

Project	Report Path	Status	Execution Start	Elapsed Time
TestProject	Report	Finished	30Sep2016 00:00:00	283 milliseconds

Upcoming Scheduled Executions

Project	Report Path	Scheduled Start	Actions
TestProject	Report	01Oct2016 00:00:00	Save File

Log Activity



Min level INFO ⓘ

Live Values ☒

Merge to Logs ↗

Logger	Time	Message
No log entries found		

SFCs

The SFCs section looks and feels similar to the [Alarm Pipelines](#) section, but deals with Ignition's Sequential Function Charts instead. The initial page contains a list of all of the currently configured SFCs, with a count of the currently running charts at the top of the page. Each Chart has a details button that can be clicked which will bring you to a details section about that particular Chart. It will contain a list of all currently running Chart instances, and will allow you to swap tabs to look at any logged events for that particular chart.

Sequential Function Charts

Chart Stats

Running Charts

0 / 1

Defined Charts

<u>Chart</u> ▲	<u>Run Mode</u>	<u>Running Instances</u>	
New Chart	✓ Callable	0	Details

Voice Alarming

The Voice Alarming page will give details about the currently configured Voice Notification profiles on the Gateway. They will give a status which can be used to quickly see which Notification Profiles are not working, and clicking the details button will allow you to see the current calls with that Voice Notification profile, and the current queue of calls waiting to be completed.

Voice Alarming

[Configuration](#)

Available Voices

Name	Locale
No voice modules installed.	

Profiles

Name	Status	Pending Calls	
Skype	▲ unknown [-1]	0	Details
voiceProfile1	✓ Registered with VOIP Host	0	Details

Tags

The Tags page contains a lot of information about the Gateway's configured Tags and Tag Providers. The first page will show a list of all realtime and historical Tag Providers that make it easy to see if any of them are having issues. Clicking on the errored provider will show an error message that may help fix the problem. Clicking on the details button to the left will open up a page with more information about the Tags in that particular provider.

Connections

Tags

Realtime Configuration
Historical Configuration

Realtime Providers

Name ▲	State	Tag Count	
System	✓ Good	71	Details
default	✓ Good	28	Details

Historical Providers

Name	State	
NewConnection	▲ Errored	Details

The details of the Tag Provider will show a list of all currently configured tags in that Tag Provider, and show some basic information about them. Some tabs at the top will allow you to see the Scanclasses configured and used by that provider, and a log of any events that relate to that particular provider. When clicking the details button for an individual tag, you will be brought to a Tag Diagnostics screen that will provide more detailed information about that particular tag, such as if it has a script written in its tag event scripts and what its last value was, among other information.

Tags

Scanclasses

Provider Logs

28 items

« < 1 of 1 > »

Filter

type to filter

View

50



Name	Path	Value	Type	Quality	
Turbine 1			Folder	✓ Good	Details
Turbine 2			Folder	✓ Good	Details
Turbine 3			Folder	✓ Good	Details
Turbine 4			Folder	✓ Good	Details
Wind Speed	Turbine 1	33	Int4	✓ Good	Details
Yaw Drive HOA	Turbine 1	0	Int4	✓ Good	Details
Air Temperature	Turbine 1	89.778	Float4	✓ Good	Details
Run HOA	Turbine 1	0	Int4	✓ Good	Details

EAM Tasks

The EAM Tasks section will only show up once the EAM module is configured. This page shows information regarding the currently running and scheduled tasks, as well as tasks that were recently executed and whether they were successful or not. From here you can pause a scheduled task, or see the error that caused a previous execution to fail.

Systems

EAM Tasks

Configuration

Executing Agent Tasks

0

Scheduled Agent Tasks

1

Executing Agent Tasks

Task Name	Task Type	Task State	Execution Start	Progress	Message
No items to display.					

Scheduled Agent Tasks

Task Name	Task Type	Repeats	Next Execution Start	Status
Nightly backup	Collect Backup	true	01Oct2016 00:00:00	Scheduled

Pause

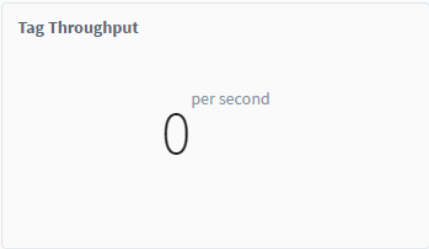
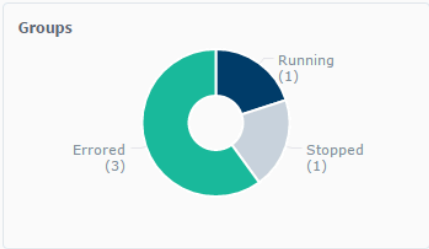
Recently Completed Tasks

Task Name	Task Type	Task Start	Agent	Task Result
Nightly backup	backup	30Sep2016 00:00:03	agent-9012	Success
Nightly backup	backup	30Sep2016 00:00:03	agent-9013	Success
Nightly backup	backup	30Sep2016 00:00:03	agent-9010	Success
Nightly backup	backup	30Sep2016 00:00:03	agent-9011	Success
Nightly backup	backup	29Sep2016 08:57:00	agent-9012	Failed
Nightly backup	backup	29Sep2016 08:57:00	agent-9011	Failed
Nightly backup	backup	29Sep2016 08:57:00	agent-9013	Failed
Nightly backup	backup	29Sep2016 08:56:22	agent-9010	Failed
Nightly backup	backup	28Sep2016 00:00:03	agent-9010	Success
Nightly backup	backup	28Sep2016 00:00:03	agent-9012	Success

Transaction Groups

The Transaction Groups page makes it easy to get a quick count of the currently running groups as well as the currently errored groups. Below the counts is a list of Projects that contain Transaction Groups and some basic information like how many are running and how many database queries is it generating. Clicking the details button to the right for one of the Projects brings up more information about that Project's Groups. There are some counts on the number of Groups in various states, as well as a list of the groups. Any Groups that have problems can be clicked on to see what the error is to get a better idea of why the Group is unable to run.

Project Stats



Running Groups

Group Path	Status
Block_Group	🔄 RUNNING

Non-Running Groups

Group Path	Status
I/Have/A/Path	⊗ STOPPED
Standard_Group	⚠️ FATALLY ERRORED
Historical_Group	⚠️ FATALLY ERRORED
Stored_Procedure_Group	⚠️ ERRORED

Longest Running Groups

Group Path	Duration
There are no groups executing at a high runtime.	

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections

Status of Gateway Connections

The Connections section of the Status tab on the Gateway webpage contains information regarding the status of Gateway connections to external systems. The list of systems displayed under the Connections section is based on what modules are installed. It can include EAM Agents, Databases, Devices, Store and Forward, the Gateway Network including other Gateways within the Gateway Network, and many more. The Connection section allows you to drill down and open up more specific information to easily find problems with anything connected to the Gateway, and even find crucial information about a faulty connection.

On the left side of the Status section of the Gateway webpage, you'll see a list of all your connections. Click on any system to open a detailed page to see all the available options, and to get more detailed information.



Log Activity

Most of the systems in the Connection section have a **Log Activity** area somewhere within the details of the connection. This Log Activity area functions much like the Logs in the Diagnostics section of the Status page in that you see a list of all log messages depending on the logging level you are looking at as well as the filters you have setup. However, what makes the Log Activity areas in each Connections page unique is that they are filtered to only show loggers for that particular system. This

helps you narrow down any potential problems by showing you only the information that pertains to what you are looking at.

Log Activity

Min level

INFO

Live Values

ON

Merge to Logs

Logger

Time

Message

No log entries found

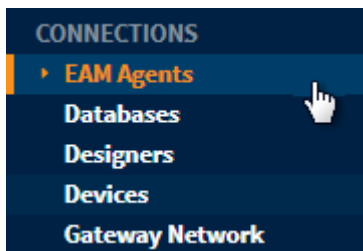
This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - EAM

EAM

The EAM Agents page shows a list of all the currently configured Agent, including information on the connection status. Agent can be organized into groups, allowing you to group agents by location or agent function. If no groups exist, all Agents will be in the Default Group.



EAM Agents Page

The EAM Agents page contains some useful information about all of your Agent connections.

EAM Agent Connections

Attribute	Description
EAM Agents	Number of connected agents out of the number of configured agents.

Default Group and All Groups

Attribute	Description
Gateway	Name of the Agent
Edition	Identifies a Standard vs Edge Gateway. Edge edition shows "edge", and if it's a Standard Gateway, this field is left blank.
Status	Current status of the Agent connection.
Last Comm	Date and time recorded for the last communication with the Agent.
Last Event	Name of the event last recorded with the Agent.
Event Date	Date and time recorded for the last occurring event with the Agent.

Connections

EAM Agents

Configuration

Connected Agents

1 / 2

Default Group

Gateway ▾	Edition	Status	Last Comm	Last Event	Event Date
Ignition-IAUNIVERSITY-WS		✔ Connected	08May2018 14:05:28	log_errhour [ERROR]	08May2018 13:42:19
Agent99		✖ Disconnected	N/A		N/A

Remote

Gateway ▾	Edition	Status	Last Comm	Last Event	Event Date
No items to display.					

Test

Gateway ▾	Edition	Status	Last Comm	Last Event	Event Date
No items to display.					

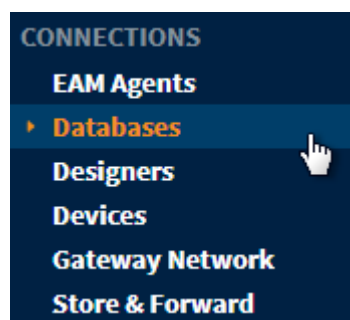
This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Databases

Databases

The Databases page shows a list of configured databases, and if they have a valid connection or not. Clicking on the Details button to the right of a connection will either show the full error if the connection is faulted, or it will bring you to a details screen for that database connection. On the details screen, you can easily see any active queries, long running queries, the number of queries a second that are running, as well as a trend showing the percentage of queries that completed in that time.



Databases Page

The main database page contains some useful information about all of your database connections.

Attributes	Description
Valid Connections	Number of valid connections.
Total Throughput	Number of queries and their status.
Name	Name of the query.
Driver	Name of the driver.
Status	Current status of the database connection.

Connections

Configuration

Databases

Valid Connections

1 / 1

Total Throughput

21.3^{queries/sec}

«

<

1

of 1

>

»

Filter

View 20 ▾

Name ▲	Driver	Status	Connections	Throughput	Actions
MySQL	MySQL ConnectorJ	✓ Valid	0 / 8	21.3 queries/sec	Details

Database Connection Details

The details page for an individual connection provides more in-depth information for that particular database connection.

Database Stats - Stats About the Database Connection

Attribute	Description
Connections	Number of database connections out of configured databases.
Queries/Sec	Number of queries running per second along with a trend showing the percentage of queries that completed in that time.

Active Queries - A List of Currently Active Queries

Attribute	Description
Query	Currently running queries.
Started	When the query was started.
Actions	The ability to cancel a query.

Longest Recent Queries - A List of the Longest Running Queries

Attribute	Description
Query	Display the actual query.
Duration	Amount of time the query ran.
Started	When the query started running.

Connections

Databases / Connection [MySQL]

Configuration

Database Stats

Connections

1

/ 8

Queries / Sec

35

100

80

60

40

20

0

<2.4ms

<14.2ms

<26.0ms

<37.9ms

Active Queries

Query ▾

Started

Action

INSERT INTO machine4_table(`Sine0`,`t\_stamp`) VALUES(?,?) [Batch x1]

a few seconds ago

Cancel

Longest Recent Queries

Query ▾

Duration

Started

SELECT max(`id`) FROM alarm_events2 WHERE `eventtime` <?

420 ms

27 minutes ago

INSERT INTO sqlt_data_1_20180419(`tagid`,`intvalue`,`floatvalue`,`stringvalue`,`datevalue`,`dataintegrity`,`t\_stamp`) VALUES(?,?,?,?,,?) [Batch x48]

74 ms

2 minutes ago

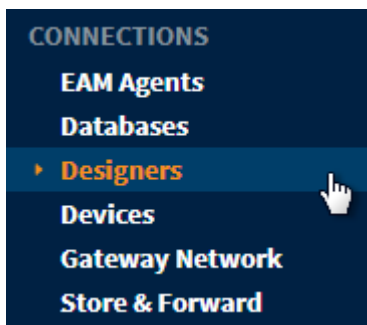
This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Designers

Designers

The Designers page displays information on currently running Designer sessions. All the open Designers are displayed on the page along with some basic information about each session, such as what user is logged into each Designer session and the project they are currently working on. Clicking on the Details button to the right of a Designer session will display more information about that particular Designer. On the Details page, you can see session information, as well as what Designer locks the session currently has set. Locks are when a Designer is working on a particular page or set of pages, the system places a lock on those resources (i.e., window, pipelines, etc.) to prevent other Designers from working on the same resource. There is also a log at the bottom of the page displaying any errors pertaining to that Designer session.



Designers Page

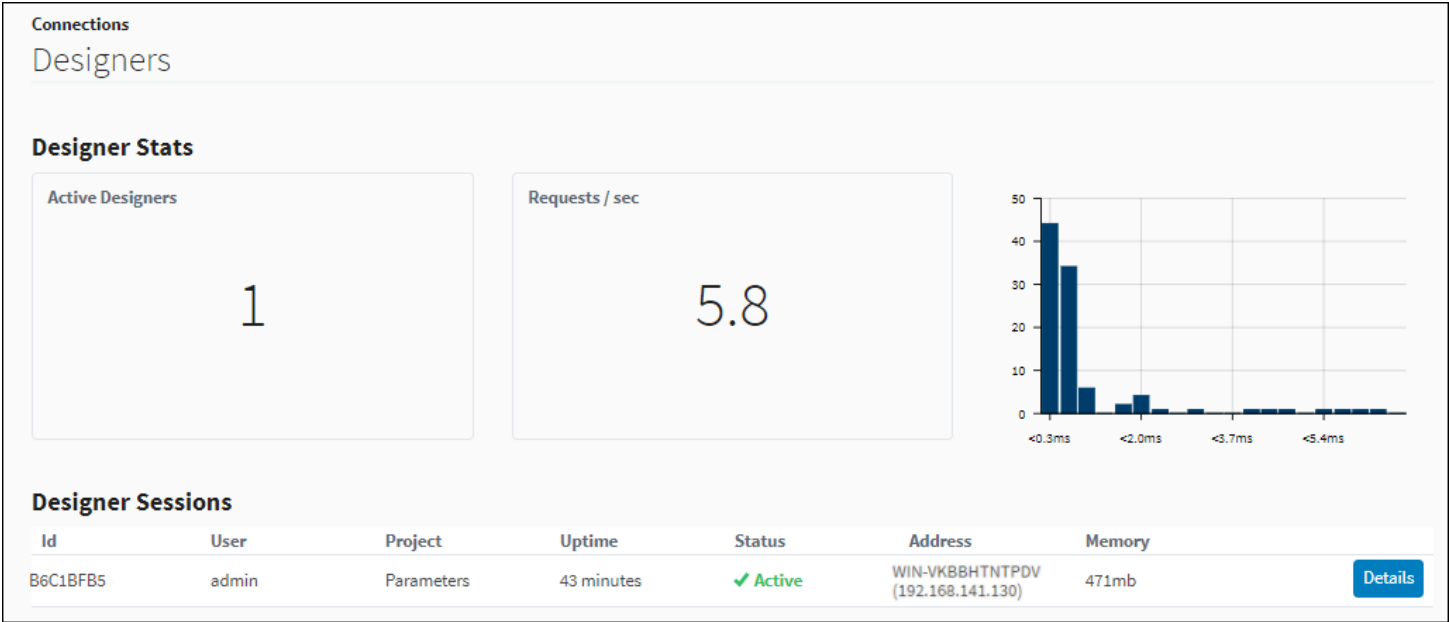
The main Designers page has a list of all currently running Designer sessions, and some basic information about all of them.

Designer Stats

Attribute	Description
Active Designers	Number of active Designer connections.
Requests/Sec	Number of requests running per second along with a trend showing the percentage of requests that completed in that time.

Designer Sessions

Attribute	Description
Filter	Search criteria to filter for specific Designer sessions.
View	The number of Designer sessions to preview.
Id	Designer session id number.
User	Name of the user logged into the Designer.
Project	Name of project the user is currently working on.
Uptime	Amount of time the user is logged into the Designer session.
Status	If the Designer is actively connected or not.
Address	The IP Address and name of the computer running the Designer.
Memory	Current memory usage for the session.



Designer Details

The Designer Details page shows more in-depth information about that particular Designer session, with the most important being the list of Designer Locks. The locks are project resources that the designer session is using. Because that Designer session is using those project resources, no other Designers will be able to access those resources, to prevent two Designers from working on the same thing.

Session Details

Attribute	Description
User	Name of the user logged into the Designer.
Project	Name of project the user is currently working on.
Address	The IP Address and name of the computer running the Designer.
Uptime	Amount of time the user is logged into the Designer session.
Memory	Current memory usage for the session.
Timezone	Local time of the user.

Designer Locks

Attribute	Description
Id	Each locked resource has its own unique Id number.
Type	Resource Type.
Name	Name of the resource.

Connections

Designers / Session [B6C1BFB5]

Session Details

User	admin
Project	Parameters
Address	WIN-VKBBHTNTPDV (127.0.0.1)
Uptime	a day
Memory	579mb / 911mb
Timezone	America/Los_Angeles [GMT-8:00]

Designer Locks

Id	Type	Name
851	window	Compressors
307	window	Schedule Management
182	alarm-pipeline	Basic Email
1419	window	Classic Chart

Log Activity

Min level

INFO

Live Values

Merge to Logs

Logger

Time

Message

No log entries found

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Devices

Devices

The Devices page lists the currently configured OPC-UA devices, and lets you know which are connected and which have a faulty connection. From here, you can drill into a device connection to see how many Tags Ignition is requesting from the device, along with how often it is requesting them. This information can be used to determine if we are overloading the device with too many requests too quickly, or if we can request more from our device.



Devices Page

The main Devices page lists out all OPC-UA devices, as well as how many currently have a valid connection.

NOTE

This will only show the devices connected through an Ignition device connection. For information about devices connected through other OPC Servers, see those programs.

Attribute	Description
Connected Devices	Number of devices connected out of configured devices.
Name	Name of the device.
Driver	Name of the device driver.
Status	Current device status.

Connections

Configuration

Devices

Connected Devices

4 / 5

«

<

1

of 1

>

»

Filter

type to filter

View

20

▼

Name ▲	Driver	Status	Actions
CLX	ControlLogix	Connected: Protocol: EIP - Run Mode	Details
Dairy	DairyDemoSimulator	Connected	Details
Generic	Simulator	Connected	Details

Device Details

Clicking the **Details** button to the right will display a diagnostics page for that device which provides a lot of useful metrics like a Tag count. The log at the bottom of the page will display recent events that pertain to that particular device.

The Device Details page also lists statistics to help determine if the device is overloaded with requests. There are values for each scan class that are configured on Tags from the specified device, as well as aggregate statistics which pull from all scan classes to get an average for the device. The four values are listed in the table below.

Aggregate Statistics

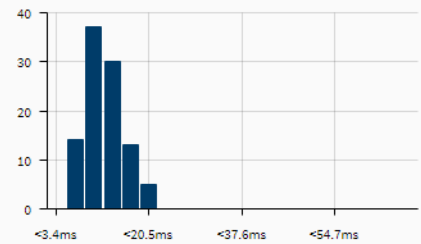
Attribute	Description
Request Count	Tracks the number of requests that are coming in from the device, each request consisting of multiple Tags. How many Tags are in a request can vary between devices, which Tags are being requested, and how often they are requested.
Throughput (Mean)	Average amount of requests that come through per second since the device was last started. If the device connection is edited and saved, this will cause the device connection to reinitialize and this value will be reset.
Throughput (1 min)	Average amount of requests that come through per second for the last minute.
Mean Response Time	Average time it takes for Ignition to get a response from the device. This number should be an average of the graph on the right of the page.

So based on the statistics above, we can determine if we are overloading our device by requesting too many Tags too quickly. We simply need to take the throughput and use that to determine how many total requests come in per scan class execution. If this is at or above the request count, then our device can keep up with the numbers we are requesting. If it is below the request count, then the number of requests we are making to the device aren't coming in as fast as we want them, which can lead to poor device performance or bad values.

For example, take the image below. Scheduled at 2000ms, we have 81 requests. Our average throughput is about 40.8 requests a second. This means that every two seconds, we get 81.6 requests. Since we are making 81 requests every two seconds, this is exactly what we would expect to be getting from this device.

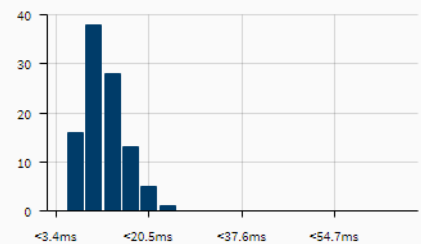
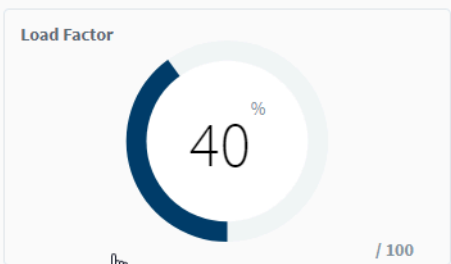
Aggregate Statistics

Details	
Request Count	81
Throughput (Mean)	69.33/sec
Throughput (1 min)	40.67/sec
Mean Response Time	9.82ms



Scheduled at 2000ms

Details	
Request Count	81
Throughput (Mean)	40.85/sec
Throughput (1 min)	40.82/sec
Mean Response Time	9.78ms



Log Activity

Min level

INFO

Live Values ☒

Merge to Logs

Logger	Time	Message
No log entries found		

However, if we altered the scan class on the same device to 500ms, we see a very different picture. The request count is still 81, but because we are requesting values every 500ms, we should see about 162 requests coming through every second. The throughput values only show us getting about 87.5 requests per second, which is about half of what we actually are asking for. This would indicate that our device is overloaded, which can also be seen in the Load Factor. Our Tags would not be updating as quickly as we would like, which could lead to bad Tag values.

Scheduled at 500ms

Details	
Request Count	81
Throughput (Mean)	87.34/sec
Throughput (1 min)	87.58/sec
Mean Response Time	9.95ms

Load Factor

161%

/ 100

Response Time Range	Frequency
<2.9ms	5
2.9-10.5ms	22
10.5-17.4ms	38
17.4-31.9ms	22
31.9-46.4ms	8

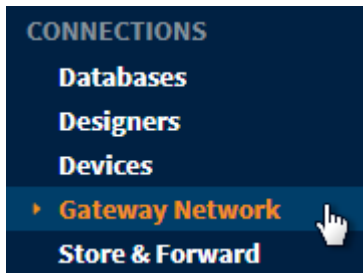
This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Gateway Network

Gateway Network

The Gateway Network page is designed to give a quick overview of the status of all Gateways within the Gateway Network. If the Gateway is faulted, the status message in red can be selected to see the error that pertains to why it is faulted. Any Gateways with a status of 'Connected' can be drilled into by clicking the Details button to the right. On the Details page, metrics for the selected Gateway are displayed, giving an idea of the rate of data transfer between the two Gateways, as well as a list of recent connection events.



Gateway Network Page

The main Gateway Network page displays a list of all current Gateway Network connections both incoming and outgoing, as well a list of all Remote Gateways that the Local Gateway can see both from its Gateway Network connections and through proxy connections. Each list has some basic information along with the ability to see more details on a specific Gateway Network connection or a Remote Gateway.

Gateway Network Connections

Attribute	Description
Remote Gateway	Name of the Remote Gateway connection.
Direction	The direction of the Gateway Network connection. Can either be Incoming or Outgoing.
Redundancy Role	The redundancy role of the Gateway. Can either be Independent, Backup, or Master.
Last Comm	The time of the last communication with the Gateway.
Ping Time	Reaction time of Gateway connection. How fast you get a response after you've sent out a request.
Status	Current state of the Gateway Network connection.
Fault Count	Number of errors.

Remote Gateways

Attribute	Description
Gateway Name	Name of the Remote Gateway.
Outgoing Msg/Sec	The number of outgoing messages per second.
Incoming Msg/Sec	The number of incoming messages per second.
Pending	The number of currently pending messages.
Connected Through	How the Gateway is connected to the Remote Gateway.
Status	Current state of the Remote Gateway connection.

Gateway Network

Connections

« < 1 of 1 > »

Filter

type to filter

View

20

Remote Gateway ▾	Direction	Redundancy Role	Last Comm	Ping Time	Status	Fault Count	Actions
controller	Incoming	Independent	a few seconds ago	N/A	🟢 Running	0	<button>Details</button>
controller	Outgoing	Independent	a few seconds ago	0 ms	🟢 Running	0	<button>Details</button>

« < 1 of 1 > »

Remote Gateways

« < 1 of 1 > »

Filter		type to filter		View	20	
Gateway Name	Outgoing Msg/Sec	Incoming Msg/Sec	Pending	Connected Through	Status	Actions
Controller	0.0	0.0	0	controller	🟢 Connected	<button>Details</button>
Agent99	0.0	0.0	0		🔴 Defined_NeverConnected	<button>Details</button>

Connections Details

Clicking on the Details button to the right of a Gateway Network connection gives more details on that specific connection.

Attribute	Description
Status	Current state of the Gateway Network connection.
Average Outgoing Bytes	Average bytes of data going from the Local Gateway to the Remote Gateway per second.
Average Incoming Bytes	Average bytes of data going from the Remote Gateway to the Local Gateway per second.
Ping Time	Reaction time of Gateway connection. How fast you get a response after you've sent out a request.
Pending Uploads	The number of uploads pending from the Gateway Network connection.
Pending Downloads	The number of downloads pending from the Gateway Network connection.
Local Id	Id of the local Gateway.
Remote Id	Id of the remote Gateway.
Remote Gateway	Name of the Gateway on the Gateway Network.
Network Address	Physical address used to communicate with all devices on the Gateway Network.
Redundant Role	The redundancy role of the Gateway. Can either be Independent, Backup, or Master.
Direction	The direction of the Gateway Network connection. Can either be Incoming or Outgoing.
Session Id	Gateway connection session Id number.
Last Comm	The time of the last communication with the Gateway.
Fault Count	Number of errors.
Connection Events	Displays a list of recent connection events.

Gateway Network / controller

Status

Running

Average Outgoing Bytes

294 B /sec

Average Incoming Bytes

252 B /sec

Ping Time

N/A

Waiting for Processing

0

/ 100

Connection Details

Local Id	5da9f91e-21e6-4b00-9531-55b474b7d2ad
Remote Id	5da9f91e-21e6-4b00-9531-55b474b7d2ad
Remote Gateway	controller
Network Address	http://10.20.5.35:8088
Redundant Role	Independent
Direction	Incoming
Session Id	798343521
Last Comm	a few seconds ago
Fault Count	0

Connection Events

Severity	Time	Event
	30Apr2018 12:47:32	[100] controller connection status has been updated from Initialized to Running: Web socket session established for controller[5da9f91e-21e6-4b00-9531-55b474b7d2ad]
	30Apr2018 12:47:32	[100] controller connection status has been updated from Unknown to Initialized

Remote Gateway Details

Clicking on the Details button to the right of a Remote Gateway will give more information about the Remote Gateway and the messages being sent between it and the local Gateway.

Outgoing Queues

Attributes	Description
Name	The name of the queue.
Priority	The priority the queue takes amongst other queues.
Enter Rate	The rate at which messages enter the queue.
Exit Rate	The rate at which messages exist the queue.
Pending	The number of pending messages in that queue.
Total Sent	The number of messages sent out through that queue.

Incoming Service Invocations

Attributes	Description
Name	The name of the incoming invocation.
Description	A description of what the invocation is asking of the Local Gateway.
Invocations/Sec	The number of invocations per second.
Total	The total number of that type of invocation.

Outgoing Queues

Name ▾	Priority	Enter Rate	Exit Rate	Pending	Total Sent	Actions
longWaitQueue	Low	0.0	0.0	0	0	Details
_queue_2_	Normal	0.0	0.0	0	0	Details
proxy	AboveNormal	0.0	0.0	0	0	Details
default	Normal	0.1	0.1	0	6	Details

Incoming Service Invocations

Name ▾	Description	Invocations/Sec	Total
TagProviderService.validateSubscription	No description provided	0.2	2
TagProviderService.modifySubscription	No description provided	0.2	1
TagProviderService.getProviders	No description provided	0.2	1
TagProviderService.getInformation	No description provided	0.2	1
TagProviderService.cancelSubscription	No description provided	0.2	1

Outgoing Queues Details

Clicking on the Details button to the right of an Outgoing Queue will bring up details on the messages being sent from that queue. It lists out each message type, the number of each message types per second that is being sent, as well as the total number of that message being sent.

Sent and Queued Messages

Message Type ▾	Inserts/Sec	Total
RPC result for _services.invoke_	0.2	8

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Store and Forward

Store & Forward

The **Store and Forward** page displays a list of the Store and Forward engines, including their status, and the number of records currently in each Store and Forward system. If the database connection becomes faulted, the database records wait in the Store and Forward system until the database connection is restored.



Store & Forward Page

The main Store and Forward page lists out all Store and Forward engines. Typically, each database connection gets its own Store and Forward engine, so there should be one engine for each database connection. In addition to displaying some basic stats for each engine, you can also find some totals for all Store and Forward systems, to get an idea of how much data is being pushed through the system to databases.

Store and Forward Connections

Attributes	Description
Aggregate Throughput	Aggregate number of records inserted into a database from any Store and Forward engine per second.
Total Quarantine	Number of quarantined items for all Store and Forward engines.
Total Dropped	Number of records dropped from the Store and Forward engines. A record is considered dropped if it can not be added to one of the buffers, (i.e. when a buffer is full and the Store and Forward engine can no longer accept new records).

Store and Forward Engines

Attributes	Description
Name	Name of the Store and Forward engine.
Store Throughput	Number of records to be forwarded on to the database per second.
Forward Throughput	Number of records to be forwarded on to the database per second.
Quarantined	Data that has errored out multiple times during attempts to forward it or data that could not be stored because of some configuration issues.
Activity	Current state of the Store and Forward engine.

Connections

Store and Forward

Configuration

Aggregate Throughput

57.2

per second

Total Quarantined

27,273

Total Dropped

0

Store and Forward Engines

Name	Store Throughput	Forward Throughput	Quarantined	Activity	
MySQL	57.2/sec	53.7/sec	27273	✓ Available	Details

Store & Forward Details

Clicking the Details button brings up a new window that will show even more details about the records in the selected Store and Forward Engine. Here, we can see a count of the number of records in the memory buffer and local cache, as well as the number of quarantined records. The quarantined items at the bottom of the Details page will have some buttons that allow you to **control the data that is in the quarantine**. The quarantined item can be retried, where it will be thrown back through the Store and Forward system to see if it will go through properly, assuming the original reason why it was quarantined has been fixed. It can also be deleted so that it is no longer taking up space in the Store and Forward system, or exported to your local machine where you can save it to try again later. You can then import the file back from the same page when you resolved the issue that caused the data to be quarantined in the first place.

Attribute	Description
Memory Buffer	Number of records entering the Memory Buffer per second. The progress bar shows the percent of the buffer being utilized, along with the current and max number of records.
Local Cache	Number of records entering the Local Cache per second. An "Idle" state means the engine is able to successfully store all records into the database before the Write Size or Write Time values have been reached. The progress bar shows the percent of the buffer being utilized, along with the current and max number of records.
Database Storage	Displays the number of records pushed from either buffer to the database per second.
ID	Identification number of the quarantined item.
Count	Number of occurrences for the quarantined item.
Description	Description of where the quarantine item originated from.
Reason	Explanation why the record was placed into quarantine.
Actions	Provides an opportunity to retry, export, or delete the items from quarantine.

Store Details

Memory Buffer

58/sec

6% (16/250)

Local Cache

N/A

0% (0/25000)

Database Storage

63/sec

▲ 2 dropped

Quarantined Items

Import quarantine file

Retry All

Delete All

« < 1 of 1 > »

Filter type to filter

View 20

ID	Count	Description	Reason	
5	25468	SQLTag History Data	The table 'sqlt_data_12_2016_09' is full	RetryDeleteExport
6	34	SFQuery: QA_MySQL - INSERT INTO qa_test (gw_script, TIME_DATE) VALUES (?,?)	Unknown column 'gw_script' in 'field list'	RetryDeleteExport

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - OPC Connections

OPC Connections

The OPC Connections page displays all currently configured OPC (both UA and DA) connections.



OPC Connections Page

Here on the main OPC Connections page, we can see a list of all current OPC connections, as well as their statuses. If any are faulted, you can click the red faulted status to get an error message popup with a full description of the error.

Attribute	Description
Connected Servers	Displays the list of OPC servers out of configured servers, and their status.
Name	OPC server name.
Type	OPC server type (UA or DA).
Uptime	Total time OPC server is connected.
Status	Current status of OPC server.

OPC Connections

Connected Servers

1 / 2

Name	Type	Uptime	Status
Ignition OPC-UA Server	OPC-UA	14 minutes	✓ CONNECTED
New Connection	OPC-UA		▲ FAULTED

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - SECSGEM Equipment

SECSGEM Equipment

The SECSGEM Equipment page displays a list of all equipment connections, their status, as well as the number of sent requests and received messages. If any piece of equipment becomes faulted, it will show a status of "Not Connected." If you click the Details button, it opens a new page with some Connection Stats. Note: the SECSGEM Module is not standard and will be missing for most installs of Ignition. The SECSGEM Equipment Connection will only be displayed in the Status section of the Gateway webpage is when the module is installed.



SECS/GEM Equipment Page

The main SECS/GEM Equipment page lists out all equipment connections and displays the number of messages sent between them and Ignition.

Attribute	Description
Connections	The total number of active SECS/GEM Equipment connections.
Aggregate Throughput	The messages per second the system is sending and receiving from all devices at that time.
Name	The name of the equipment connection in the list.
Sent Messages	The number of messages sent to the equipment.
Received Messages	The number of messages received from the equipment.
Status	The status of the equipment.

Connections

SECSGEM Equipment

Configuration

Equipment Stats

Connections

1

Aggregate Throughput

0.2

per second

Name	Sent Messages	Received Messages	Status	
Equip_MySim	58	38	✔ Communicating	Details

SECS/GEM Equipment Details

Clicking the Details button to the right of a piece of equipment will take you to a page that shows more detailed information for that particular piece of equipment.

Sent Messages

Attribute	Description
Throughput	The messages per second the system is currently sending.
Average	The average messages sent per second from when the equipment was first enabled.
Total	The total messages sent.

Received Messages

Attribute	Description
Throughput	The messages per second the system is currently receiving.
Average	The average messages received per second from when the equipment was first enabled.
Total	The total messages received.

Connections

SECSGEM Equipment / Connection [Equip_MySim]

Configuration

Connection Stats

Sent

Last to: S2F17

Throughput

0.1 per second

Average

0.0 per second

Total

36

Received

Last from: S2F18

Throughput

0.1 per second

Average

0.0 per second

Total

25

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - OPC-UA Server

OPC-UA Server

The OPC-UA Server page contains a list of all the OPC Tags configured within Ignition. Opening the page shows a list of OPC Server sessions. Hitting the Details button on one of the sessions will bring up a new page with the number of subscriptions that server has with their scan rate, and how many Tags are monitored in that subscription at the specified rate.



OPC-UA Server Page

The main OPC-UA Server page contains basic information for all OPC-UA servers the Ignition system has access to.

Attributes	Description
Id	The id of the OPC-UA Server.
Name	The name of the OPC-UA Server.
User	The user that is used to authenticate the connection to the server.
Remote Address	The remote address of the server (127.0.0.1 is a local connection).
Subscriptions	The total number of subscriptions or scan classes for this server.
Last Activity	The last time the server had activity.

Connections

OPC-UA Server

Configuration

Sessions

<u>Id</u> ▲	<u>Name</u>	<u>User</u>	<u>Remote Address</u>	<u>Subscriptions</u>	<u>Last Activity</u>	<u>Actions</u>
ns=1;i=3	ignition_Ignition OPC-UA Server	opcuauser	/127.0.0.1:65263	5	a few seconds ago	Details

OPC-UA Server Details

Clicking on the Details button to the right of an OPC-UA server brings up more detailed information for that particular server. It will list out all of the subscriptions to that server with the publish rate, as well as the number of items within that subscription.

| Attributes | Description | | Id | The Id of the scan class. | | Publishing Interval | The rate at which the subscription publishes. | | Data Change Notifications | The number of data changes that have happened for that subscription. | | Keep Alive Notifications | The number of keep alive notifications that subscription has done. | | Monitored Items | The number of items that are within that subscription. |

Connections

OPC-UA Server / Session[id=ns=1;i=1]

Configuration

Subscriptions

<u>Id</u> ▲	<u>Publishing Interval</u>	<u>Data Change Notifications</u>	<u>Keep-Alive Notifications</u>	<u>Monitored Items</u>	
1	1000	85942	1	8	Details
2	1000	85854	1	679	Details
4	5000	17202	1	3	Details
5	1000	9731	1	3	Details

OPC-UA Server Subscription Details

Clicking the Details button for one of the subscriptions will bring up the list of subscribed OPC items.

Attributes	Description
Monitored Items	The number of items that are within that subscription.
Data Change Publishes	The number of data changes that have happened for that subscription.
Keep Alive Publishes	The number of keep alive notifications that subscription has done.
Node Id	The OPC item path.
Subscription Publishing Interval (formerly Subscription Rate)	The rate of the subscription that the client requested.
Item Sampling Interval (formerly Revised Rate)	The revised ate the OPC server opted to use, as opposed to the requested rate (the Subscription Publishing Interval).
Node Class	The Node Class of a Node such as Object, Variable, or Method.
Data Type	The data type of the item.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Connections - Vision Clients

Vision Clients

Much like the Designers page, the Vision Clients page shows information regarding currently opened Clients. The Clients are listed and show some basic information such as the address of the Client. From here, the Client session can be terminated by selecting the More button and hitting Terminate, or select the Details option to see more details about the Client session such as the number of Tags that the session is currently subscribed to, as well as a log of an errors that may have happened with that Client.



Vision Clients Page

The main Vision Clients page gives a list of all currently running Clients to give you an idea of how many are open and which users are currently using them.

Client Stats and Details

Attributes	Description
Active Clients	The number of currently active Clients.
Requests/sec	The number of requests per second coming from all Clients.
Id	The Client id.
User	The user logged in on the Client session.
Project	The name of the project open in the Client session.
Uptime	The total uptime of the Client session.
Activity	Denotes whether the Client session is currently connected and active or not.
Address	The IP Address and computer name where the Client is launched.
Memory	The Client's current memory usage.
Actions	The option to terminate the Client session, or see more details about the session.

Connections

Vision Clients

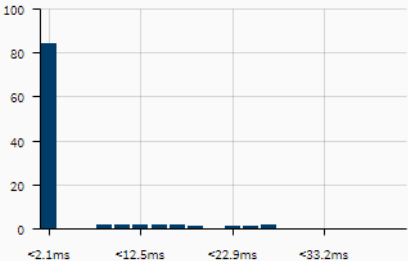
Client Stats

Active Clients

1

Requests / sec

5.9



Client Details

<u>Id</u> ▼	<u>User</u>	<u>Project</u>	<u>Uptime</u>	<u>Activity</u>	<u>Address</u>	<u>Memory</u>	<u>Actions</u>
0A312F4E	admin	Parameters	17 minutes	✓ Active	WIN-VKBBHTNTPDV (127.0.0.1)	62mb	More ▼ Details

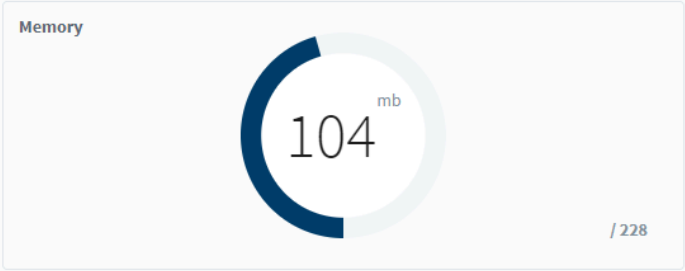
Client Session Details

Clicking on the Details button for a Client session will take you to a page that displays more in depth information for that particular Client session. It also gives a logger at the bottom where errors coming from that particular Client can be seen.

Client Performance and Details

Attributes	Description
Memory	The Client's current memory use.
Subscriptions	The number of Tags the Client is currently subscribed to.
User	The user logged in on the Client session.
Project	The name of the project open in the Client session.
Address	The IP Address and computer name where the Client is launched.
Uptime	The total uptime of the Client session.
Last Comm	The last time the Gateway communicated with the Client.
Client JVM Version	The Java version that the Client is currently running on.

Performance



Details

Session Details	
User	admin
Project	Parameters
Address	WIN-VKBBHTNTPDV (127.0.0.1)
Uptime	17 minutes
Last Comm	327ms
Client JVM Version	1.8.0_171

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Diagnostics

Diagnosing Gateway Issues

The Diagnostics section of the Status tab holds pages that help to diagnose issues with the Gateway. The Gateway logs can be seen here as well as information on any blocked threads within the Gateway if something has gotten stuck. The logging system also ties into the logs in any previous status pages.

Execution

The Execution page reports the status of all tasks that your Gateway runs on a schedule. Here you can find helpful information such as the duration and execution time of an alarm journal update or the average time it takes your Gateway to execute a scanclass.

Diagnostics

Execution

Shared Execution Engine

Owner / Tasks	Throughput	Total Executions	Delay	Avg. Duration	Last Duration
databaseconnectionmanager					
txtimoutdaemon	0.500 exec/sec	46,318	2 sec	0 millis	0 millis
eam					
agentupdate	1.001 exec/sec	16,617	1 sec	0 millis	0 millis
emailackmanager					
orphanedacknowledgementcleanup	idle	1,545	1 min	0 millis	0 millis
gateway					
license-checker	idle	1,448	1 min	4 sec	4 sec
logfile cleanup	idle	13	2 hours	1.1 millis	2 millis
performance monitor	0.200 exec/sec	18,512	5 sec	2.8 millis	3 millis
gatewayareanetworkconnectionmanager					
connection monitor	0.200 exec/sec	18,522	5 sec	0 millis	0 millis
gatewaysystemtags					
basictags	0.999 exec/sec	92,578	1 sec	0 millis	0 millis
goldtest					
requesthealthmonitor	0.100 exec/sec	2,272	10 sec	0 millis	0 millis
internal db autobackup					
internal database "config.idb"	idle	771	2 min	0 millis	0 millis
no owner, fixed delay					
evictiontask (initialdelay=1,delay=1,unit=minutes)	idle	1,544	1 min	0 millis	0 millis
multicastscheduler (initialdelay=0,delay=5000,unit=milliseconds)	0.200 exec/sec	18,526	5 sec	0.4 millis	0 millis
opcmanager					
opcconnectionkeepalive	0.200 exec/sec	18,528	5 sec	0.2 millis	0 millis
projectmanager					
projectcleanuptask	idle	154	10 min	16.1 millis	8 millis

Logs

One of the most important troubleshooting tools of the Gateway Webpage is the **Logs** page. This console shows errors caused by Gateway events including things like Database or Device connections, Authentication profiles, Alarm Journals and Pipelines, and anything else that is Gateway scoped. You can find logs in the **Status** section of the Gateway Webpage under **Diagnostics > Logs**.

The Gateway Logs also provide a wealth of information about the running state of the Gateway. To learn more, refer to the section on [Troubleshooting the Gateway](#).

The Logs page is where the Gateway Console is located that allows you to see a live flow of log events in the system. The logs can be filtered by using a search term or by date. The Settings  button on the right brings up a popup window that can change the logging level of certain loggers. The logs can also be exported using the Download Logs button on the right as well.

Diagnostics

Logs

2651 items

« < 1 of 27 > »

Filter type to filter

View 100

Min. Level ALL

Live Values ☒

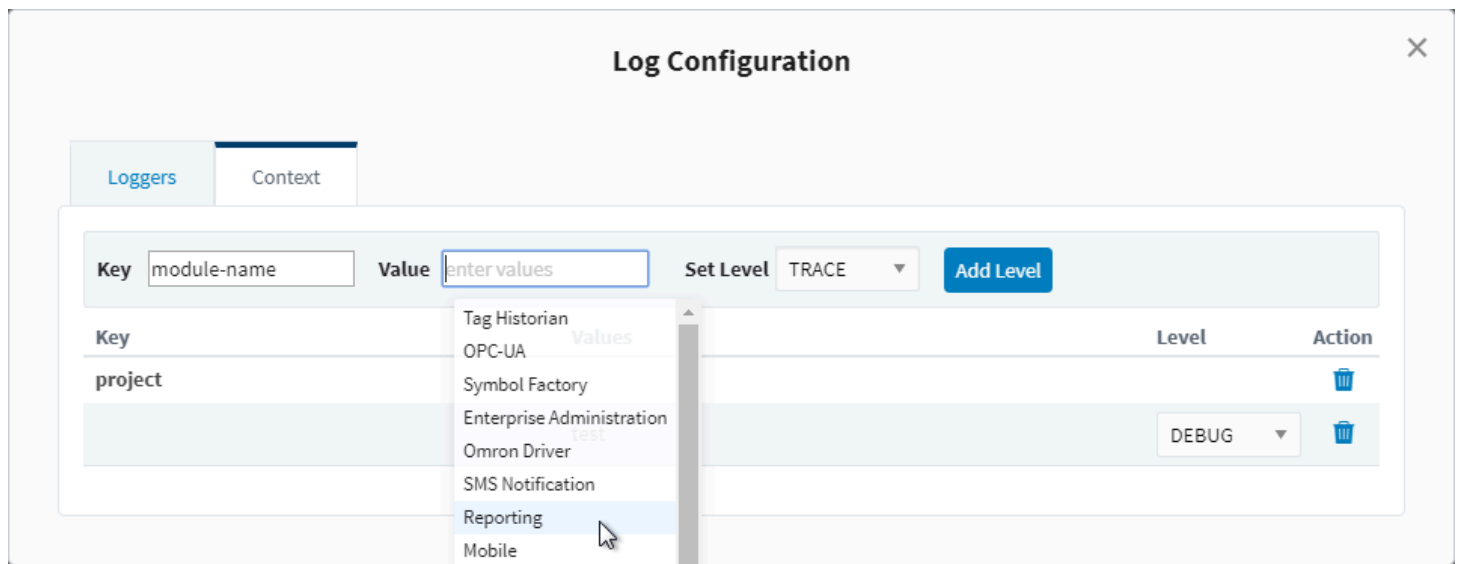


Logger	Time	Message
 InternalDatabase	02Mar2018 16:13:26	Created auto-backup of internal database "config.idb" in 1 seconds
 InternalDatabase	02Mar2018 16:13:25	Creating auto-backup of internal database "config.idb"...
 PropertiesFactory	02Mar2018 15:34:28	Loading properties files from jar:file:/C:/Program%20Files/Inductive%20Automation/Ignition/webserver/webapps/main/WEB-INF/lib/wicket-extensions-6.1.1.jar!/org/apache/wicket/extensions/Initializer.properties with loader org.apache.wicket.resource.IsoPropertiesFilePropertiesLoader@2a724bc7
 PropertiesFactory	02Mar2018 15:34:28	Loading properties files from jar:file:/C:/Program%20Files/Inductive%20Automation/Ignition/webserver/webapps/main/WEB-INF/lib/wicket-core-6.1.1.jar!/org/apache/wicket/Application.properties with loader org.apache.wicket.resource.IsoPropertiesFilePropertiesLoader@2a724bc7

Mapped Diagnostic Context Keys

Mapped Diagnostic Context Keys (MDC Keys) allow you to specify a specific context, such as a particular project, and then set a logging level for it. This will set all loggers that pertain to the specified project to the logging level. This is useful to help diagnose an issue with a specific system within the

Gateway. To use MDC Keys, click the Settings  button on the Logs page and navigate to the Context tab. Here, you can choose specific Key-Value pairs that match a particular system. Selecting the Key text field will bring up a list of possible keys in your system. Once a Key has been selected, selecting the Value text field will bring up a list of possible values that relate to the selected Key.



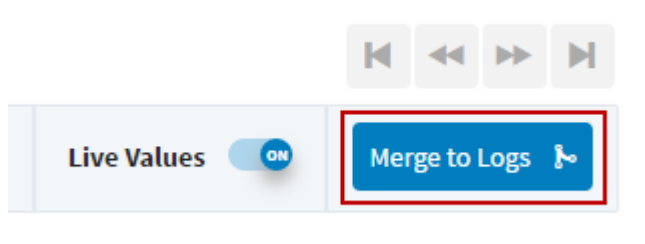
New in 7.9.7

The Logs can also be filtered to show only logs that pertain to an MDC Key. This can be useful when altering the logging level of one or more MDC Keys. To set an MDC Filter on the logs, simply click the

Add Mapped Diagnostic Context Filter button  on the Logs page to open a window where MDC Key Filters can be set. The filter can be specified for all values in a Key by not specifying a Value.

Merging to Logs

Many of the other pages in the Status tab also contain a logger that will just show logs that are relevant for that particular section. These log views all contain a button on the right side called Merge to Logs. This button allows the current filter to be applied to the main logs page, allowing you to still see only the logs for that section but use all of the tools available.



Threads

The Threads page allows you to see what each thread is doing in the Gateway. Their state and CPU usages are displayed to easily find problem threads, as well as a chart of what systems are using the threads and the ability to filter the threads based on a keyword. Each thread can be expanded to give details on what it is currently doing, and that individual thread process can be copied to the clipboard. A thread dump can be downloaded by clicking the download button on the right of the page.

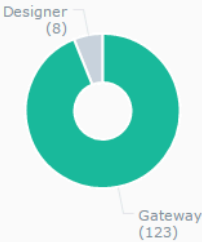
Thread Performance by System

2% Total CPU

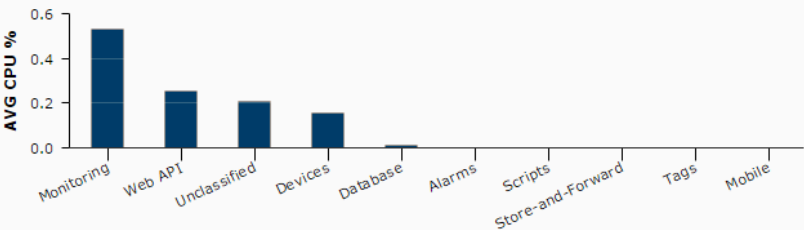
Threads from October 3rd 2016, 11:41:12 am to Now

Reset

Scope



System



Filter type to filter

Live Values ON



Thread Name	CPU (%)	State	System	Action
gateway-performance-metric-history-1, id=50	0.62	TIMED_WAITING	Monitoring	Show
webserver-13319, id=13319	0.16	TIMED_WAITING	Web API	Show

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Configure

Configuring the Gateway

The Configure tab provides access to configuration options for gateway settings. Here we can adjust the settings for alarming, add users and roles, or even setup a gateway backup to be taken automatically at specific times. This is where most of the settings that affect the whole Gateway will be setup.

System

The System section is a sort of catch all section that can do a lot of different things. The first window is the Overview page, which is what will first show up when navigating to the Configure tab. The Overview page only has links to other sections of the Configure tab, but it is useful if you aren't exactly sure where the setting you are looking for is located, because the Overview page lists the most common configuration changes.

Gateway1

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

Ignition
by Inductive Automation

HOME STATUS CONFIGURE

Search...

SYSTEM

- Overview
- Backup/Restore
- Licensing
- Modules
- Projects
- Redundancy
- Gateway Settings

NETWORKING

- Gateway Network
- Email Settings

SECURITY

- Auditing
- Users, Roles
- Service Security
- Security Zones

DATABASES

- Connections
- Drivers
- Store and Forward

ALARMING

- General
- Journal
- Notification
- On-Call Rosters
- Schedules

TAGS

- History
- Realtime

Configuration

From the Configure section you can set up all connections, projects, and settings

Here are some common actions to get you started.

PLATFORM - Update System Name - Configure Redundancy - Install or Upgrade a Module - Create New Project - Activate a License - Download Gateway Backup	NETWORKING - Enable SSL for the Gateway Network - Create an SMTP Profile - Manage incoming/outgoing Gateway Network connections	SECURITY - Create a new user - Assign a user a new role - View the logs of an audit profile - Define a Security Zone - Set access levels on a Security Policy
CONNECTIONS - Create a new database connection - Connect to a 3rd party OPC server - Create a new device connection	SYSTEMS - Create an alarm journal profile - Manage schedules and holidays - Create a new alarm notification profile - Test an alarm notification pipeline - Add users to an on-call roster	DATA ACQUISITION - Define a new realtime tag provider - Manage tag historians - Quickly read or write tags in a device

Backup/Restore

The **Backup/Restore** page is where you can manually take a backup and restore a previous backup. It also can upgrade a legacy backup.

Licensing

The **Licensing** page allows you to control any and all licenses currently activated on the gateway. It will show all the modules that the license is currently good for, and have some options for activating a new or additional license.

Modules

The **Modules** page displays all currently installed modules and if they are active or not.

Projects

The **Projects** page can easily manage all of the projects currently configured in the gateway, with settings that change the Name and Title, or the default database and authentication profile of the project.

Redundancy

The **Redundancy** page is where all of Ignition's redundancy settings are configured. This is where the master and backup nodes are configured as well as the network settings to make sure the two nodes can properly communicate.

Gateway Settings

The **Gateway Settings** page is where all miscellaneous settings are located. Autobackups can be configured here to happen at certain times. SSL encryption can be turned on here as well as changing roles required to access certain parts of the Gateway for increased security.

Networking

The Networking section deals with setup and management of the Gateway Network. Here the Gateway's connection settings can be changed to only allow certain connections, and connections to other Gateways can be setup as well.

Security

The Security section is where **User Sources** are setup with users and roles. It is also where **auditing** is setup to track project changes, as well as the Gateway Network's Security Zones.

Databases

The Databases section is where a **database connection** can be setup. It is also where to configure and import the **JDBC drivers** used in database connections, as well as adjusting the **Store and Forward** system.

Alarming

The Alarming section gives general **alarm configuration** as well as **Alarm Journal** setup. While alarms are configured on individual tags, the Journal won't record alarm events unless an alarm journal has been setup in the gateway. The **Notification Profiles** are configured in the Alarming section to allow for notifications to be sent out when an alarm event has occurred, as well as **On-Call Rosters** which determine who to send the notification to. Finally, Ignition's **User Schedules** is also configured in the alarming section which can be setup to restrict certain users from accessing parts of Ignition when it is not their scheduled time.

Tags

The Tags section is where both **Realtime Tag Providers** as well as **Historical Tag Providers** are configured. It is NOT where individual tags are setup.

OPC-UA Server

The OPC-UA Server is where Ignition's internal **OPC-UA server** is configured. The Devices page is where all **device connections** to our internal OPC-UA server are setup as well.

OPC Connections

The OPC Connections section is where connections from Ignition's internal OPC-UA server to other OPC servers are.

Mobile

The Mobile section provides some options for **configuring mobile clients**. Everything from the max number of mobile clients at one time to the max memory the mobile clients will use can be set here.

Enterprise Administration

The Enterprise Administration section controls the majority of **EAM functions**. Setting the Gateway to be a Controller or Agent as well as creating Agent Tasks and managing the various Agents from the Controller Gateway can all be done in this section.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Settings

The Ignition Gateway is the primary software service that drives everything in Ignition. It is a single application that runs an embedded web server, connects to data, connects to PLCs, executes modules, communicates with clients, and more.

The Gateway is accessed through a web browser. The web browser, running on any machine, must have network access to the host that is running the Gateway.

By default, Ignition installs by using the 8088 port. For example, if the host's IP address is `10.0.28.30`, you access the Gateway via the URL: `http://10.0.28.30:8088`. When Ignition is installed on the computer that you are logged into, you access it from `http://localhost:8088`.

Gateway Configuration

Once you have the Gateway up and running, you start by configuring some or all of the general services in Ignition. You make the configuration changes from the **Configure** section of the Gateway. The different broad categories of what you can configure are as follows:

- **System** (Overview, Backup/Restore, Licensing, Modules, Projects, Redundancy and Gateway Settings)
- **Networking** (Gateway Network and Email Settings)
- **Security** (Auditing ,Users, Roles, Service Security and Security Zones)
- **Databases** (Connections, Drivers, and Store and Forward)
- **Alarming** (General, Journal, Notification, On-Call Rosters, and Schedules)
- **Tags** (History and Realtime)
- **OPC-UA Server** (Certificates, Devices, and Settings)
- **OPC Connections** (Servers and Quick Client)
- **Mobile** (Settings)
- **Enterprise Administration** (Event Thresholds, Controller Settings, Agent Management, License Management, and Agent Tasks)

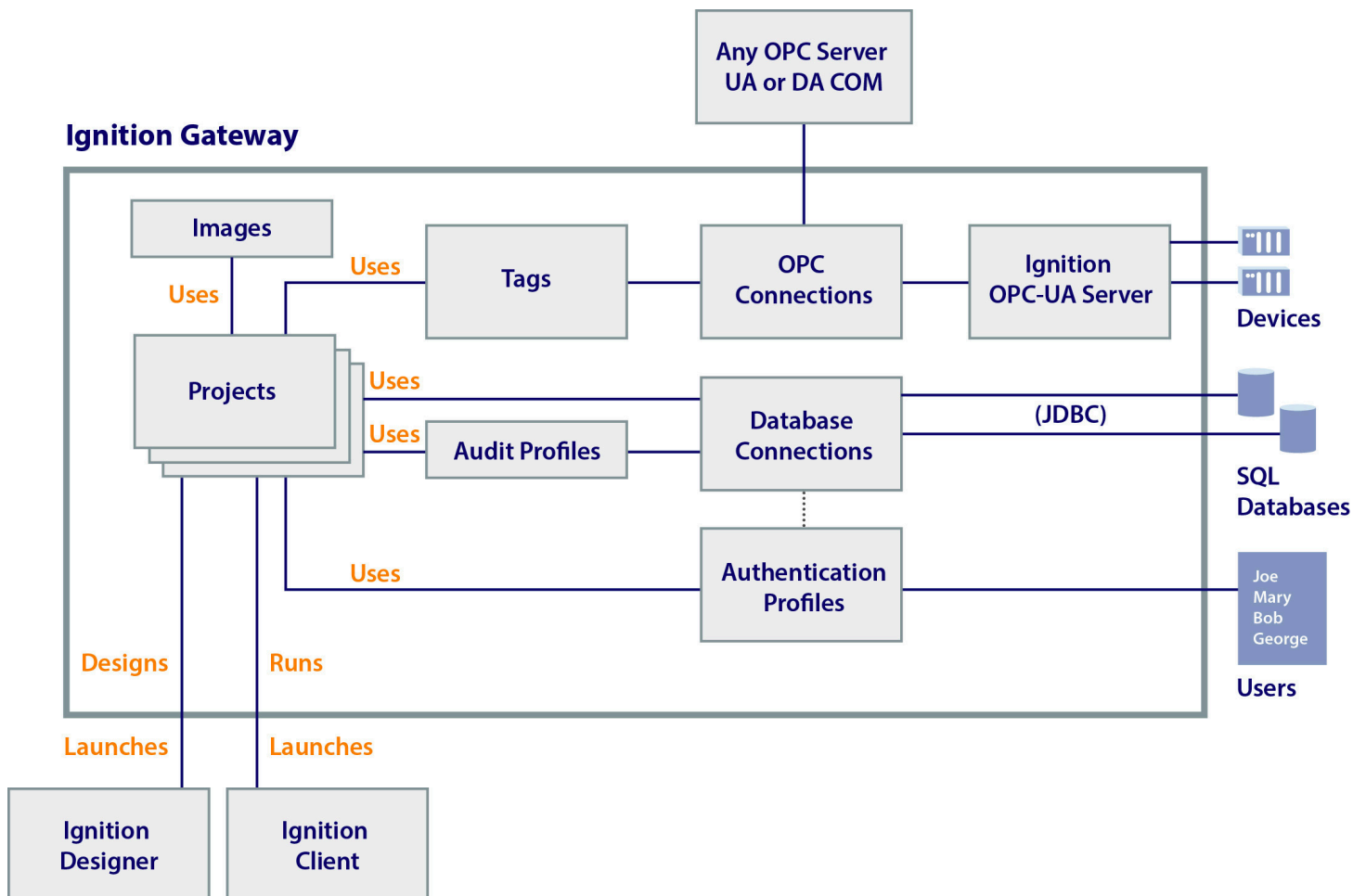
Depending on what modules you have installed, some categories may be missing.

Gateway's Architecture

The Gateway's architecture contains many parts, each one letting you perform a specific task. The Gateway parts are as follows:

- System Management
- Project and Module Management
- Security and Auditing Settings
- Database Connectivity
- Alarming and Notification Settings
- Tags Provider Settings
- OPC Connectivity
- Mobile Settings
- Enterprise Administration Settings
- Projects - the most important part!

The following figure shows the different parts of the Gateway and how projects work within the Gateway. Note the parts that are outside the Ignition Gateway box, non-Ignition OPC servers, databases, devices, etc are all separate from Ignition but can be connected.



This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Customizing Gateway Homepage

You can customize the Gateway homepage to display only the information you want. You can show/hide and reorder the different sections or panels on the homepage.



INDUCTIVE
UNIVERSITY

**Customizing Gateway
Homepage**

[Watch the video](#)

When you first install Ignition, there are a number of homepage panels that are helpful in beginning a project, but when it comes time to deploying to production, all the homepage panels may no longer be necessary. For example, you may only want your users to see which projects are available for them to launch.

Change panels on the Homepage

1. Go to the **Configure** section of the Gateway.
2. Select **Configuration > Gateway Settings**.
3. Select the **Homepage Config** tab. You can now see a table that shows all the available panels on the Gateway homepage.
4. Click the boxes you want to display under **Start Expanded** or **Enabled**.
5. Click **up** or **down** at the end of the row showing the panel name to move it up or down.
6. Go back to the **Home** section to see and verify your changes.

Search...

License Incomplete ?

0:00:00

Reset Trial

View Modules

SYSTEM

Overview

Backup/Restore

Licensing

Modules

Projects

Redundancy

Gateway Settings

NETWORKING

Gateway Network

Email Settings

SECURITY

Auditing

Users, Roles

Service Security

Security Zones

DATABASES

Gateway Settings

Settings

Homepage Config

Panel	Start Expanded	Enabled	
Welcome to the Ignition Gateway	☒	☒	[down]
Launch Projects	☒	☒	[up] [down]
Mobile Launch	☒	☒	[up] [down]
Native Client Launchers	☒	☒	[up]

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Control Utility

GCU

The **Gateway Control Utility**, (or **GCU**), is a lightweight standalone application that provides information about the Gateway. You can use the GCU to monitor the Ignition Gateway and perform high-level tasks that aren't available inside of the web application. It provides basic administrative controls, such as stopping and restarting the server and setting the ports used between the Gateway and clients.

NOTE

The Gateway Control Utility must run on the same machine as the Ignition Gateway and requires administrative privileges.

Launching the GCU

Windows

Linux

Mac OS X

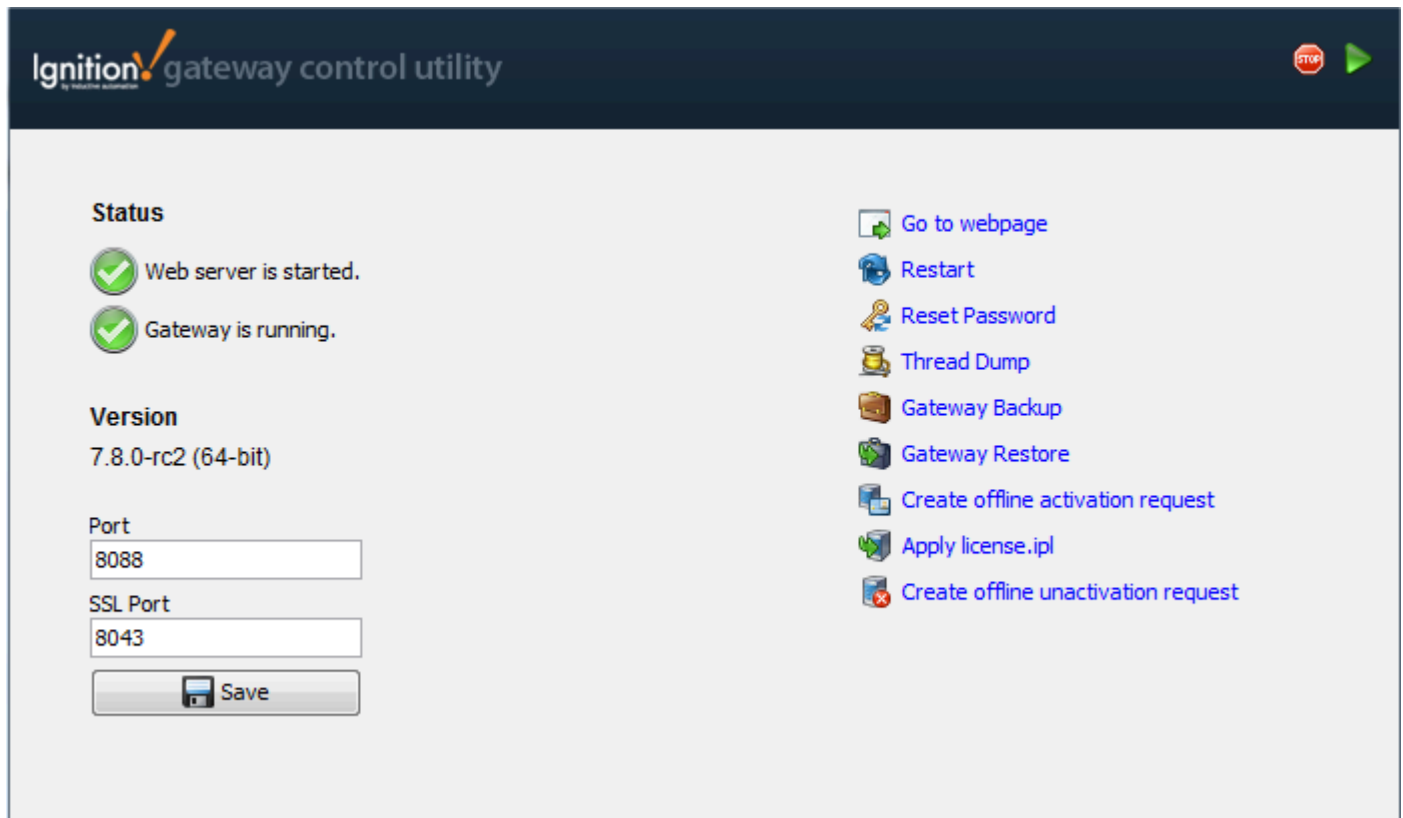
From the **Start** menu, go to **All Programs > Inductive Automation > Ignition > Launch Gateway Control Utility**.

You can also launch GCU from the command-line or from the **Start > Run** dialog by typing:

```
launch -gcu
```

GCU Window

When GCU is launched, a window is displayed.



Status

On the upper-left of the window, **Status** shows the state of the Tomcat web server and the Ignition Gateway web application. It is possible for the web server to be running while Gateway has failed. For example, this can occur when the Gateway has faulted on startup.

Start and Stop

At the top right of the window sits start and stop button. Start looks like a green play button while stop looks like a red stop sign. These buttons will start and stop the gateway, respectively.

CAUTION

These buttons are only available on windows installations.

Version

The version of Ignition that is running on this computer.

Ports

On the lower-left of the window, **Port** shows the primary, non-encrypted port used by clients and web pages to communicate with the server. You can see the ports that you are using and you can change

the ports and click the **Save** button to save the ports to the Gateway. Note that Gateway must be restarted for the changes to take effect.



TIP

When using any of the functions listed below in the Gateway Control Utility, the Gateway must be running for them to work properly.

Go to web page

On the right side of the window, **Go to web page** launches a web browser to the Gateway home page.

Restart

On the right side of the window, **Restart** restarts the Ignition web server. This should only be used while the server is running to stop the gateway then automatically start it back up.

Reset Password

On the right side of the window, **Reset Password** will reset the root password of the system. This default is Username: **admin**, password: **password** and will grant access to the Gateway Webpage. Normally, this is not considered a security risk, because the GCU can only be used from the machine the software is installed on, which should be secure. However, it is important to know about this feature here so that the GCU can be removed if the machine can't be properly secured, for example when the server is also used as a client.

Thread Dump

On the right side of the window, **Thread Dump** downloads a file with the current states of all threads in the server. Inductive Automation uses this file for troubleshooting problems.

Gateway Backup

On the right side of the window, **Gateway Backup** downloads a Gateway backup .gwbk file to the local file system. This creates the exact same file as the **Gateway Backup** in the Gateway Webpage. A Save dialog opens to let you specify where you want to save the file.

Gateway Restore

On the right side of the window, **Gateway Restore** asks for a Gateway backup .gwbk file and restores it. This does the exact same restore as the **Gateway Restore** in the Gateway Webpage. Note: this will completely overwrite your existing Gateway.

Create offline activation request

On the right side of the window, **Create offline activation request** creates a file to use on the offline activation process. This is the same file created in the **manual activation** process.

Apply license.ipl

On the right side of the window, **Apply license.ipl** asks for an .ipl file to use to complete the offline activation process. This is the same file used in the **manual activation** process.

Create offline unactivation request

On the right side of the window, **Create offline unactivation request** creates a file to use on the offline activation process. This is the same file created in the **manual unactivation** process.

Command-line Utility

All the functions in the GCU are also available as a command-line utility.

To run the utility, open a command shell and type:

```
gwcmd <option>
```

Options	Descriptions
<code>a,--activate <CDK-key> Offline activation</code>	Creates an <code>activation_request.txt</code> file that can be used to request a <code>license.ip1</code> file from the Inductive Automation website. You must specify the license key to use for activation. The <code>activation_request.txt</code> file is saved in the current directory.
<code>-b,--backup <new filepath></code>	Downloads a Gateway backup <code>.gwbk</code> file and saves the file to the specified path. The path can be either an absolute path or a relative path. You will be prompted whether it is OK to overwrite the file if another <code>.gwbk</code> file with the same name already exists. You can override with the <code>-y</code> option to force the file to always be overwritten.
<code>-h,--help</code>	Shows the usage for this command.
<code>-i,--info</code>	Retrieves server status and port information from the Gateway if it is running.
<code>-k,--port <new port></code>	Changes the Gateway http port.
<code>-l,--sslport <new port></code>	Changes the Gateway https port.
<code>-p,--passwd</code>	Resets the Gateway login password.
<code>-r,--restart</code>	Restarts the Gateway.
<code>-s,--restore</code>	Restores a gateway backup (<code>.gwbk</code>) file.
<code>-t,--tdump</code>	Performs a thread dump in the Gateway and prints the dump to the command-line.
<code>-u,--unactivate Offline unactivation</code>	Creates an <code>unactivation_message.txt</code> file that you can use to unactivate a license via the Inductive Automation website. The <code>unactivation_message.txt</code> file is saved in the current directory.
<code>-w,--uselicense <license.ip1 path></code>	Applies a <code>license.ip1</code> file that was downloaded from the Inductive Automation website. You must supply the location of the <code>license.ip1</code> file. If it is in the current directory, use <code>license.ip1</code> for the location.

Options	Descriptions
<code>-y, --promptyes</code>	Automatically answers yes to any prompt that may appear in the above commands, such as permission to overwrite an existing file.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Setup

Important Gateway Settings

The Gateway is at the heart of the Ignition software. It runs as a web server and you can access it through a web browser. Once running, you can get various status information about the Gateway, access important functions from the Gateway Control Utility, and customize the Gateway's homepage to fit your needs. Here's a description of all the settings and list of all the their associated properties that you will need to setup based on your Gateway configuration and preferences.

Required Roles

There are several properties that are required to access certain sections of the Gateway.

Property	Description
Gateway Config Role(s)	Allows you to enter roles to control access to the Gateway Configure section.
Status Page Role(s)	Allows you to enter roles to control access to the Gateway Status section.
Home Page Role(s)	Allows you to enter roles to control access to the Gateway Home section.
Designer Role(s)	Allows you to enter roles to control access to the Designer.

Web-Launch Settings

Web-launching technology lets you launch a full-fledged application with zero installation just by clicking a link on a webpage. This is how both the Designer, where you'll configure your projects, and the Ignition Vision Client, where you can view your projects.

Local Client Fallback Settings

Ignition provides a **Local Client Fallback** mechanism that lets you use a Gateway running on the local machine. If the Gateway is lost, the Client can automatically retarget to a project that you specify in the local in the local Gateway.

Scheduled Backups

The **Scheduled Backup Settings** control the Gateway's scheduled backup system. This system is capable of automatically making a Gateway backup and storing it to a folder path, which can be a network path.

When you enable this system, you must specify a destination folder. This can be a local folder, for example `C:\backups` or `/var/backups` , or a network path such as `\\fileserver\backups`.

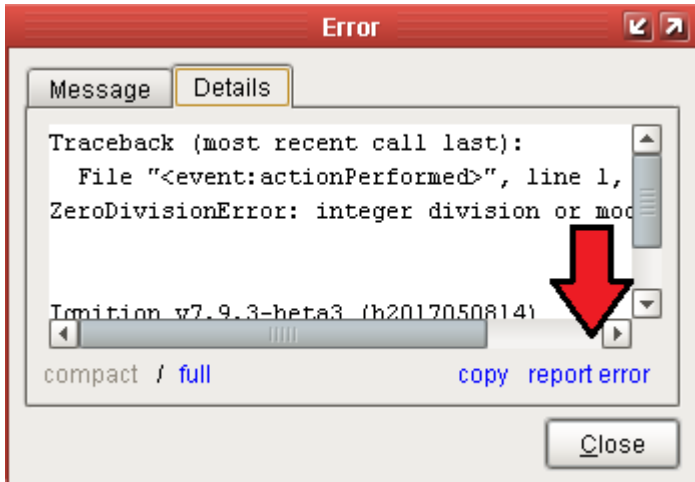
The scheduled backup system works on a schedule that is specified using **UNIX Crontab** syntax. This is a standard format for specifying a basic schedule. The format consists of five space-separated fields, one for minute, hour, day-of-month, month, and day-of-week. The special Gateway Configuration 72 character ***** means **all**. Slashes can be used to indicate that values should be stepped, for example, */5 in the minutes field means "every 5 minutes", or 0:00, 0:05, 0:10, etc.

Example Syntax	Schedule Result
0 1 5 * *	Once a month, on the 5th day at 1am
5 * * * *	Once an hour, on the :05 minute. 0:05, 1:05, 2:05, etc.
30 5 * *	Mon Every Monday at 5:30am
* 6-14 * * *	Every minute, but only between 6am and 2pm
*/5 8-17 * * 1-5	Every 5 minutes between 8am and 5pm but only during the week (1-5). 0=Sunday,1=Monday, etc.
*/15 * * * *	Every 15 minutes, on the quarter-hour. 0:15, 0:30, 0:45; 1:00, 1:15, etc.

If something is wrong with the scheduled backup system, it will store error messages to the Gateway logs.

Error Reporting Settings

When an error occurs in the Client or Designer, the users can click a link on the Details tab to report the error via email.



These settings define how the errors are reported.

Multicast Settings

These properties allow the Gateway to broadcast information about itself via multicast UDP packets. This allows the Gateway to be discoverable by any components that are also listening to the same multicast address.

For example, native client launchers listen on a multicast address to provide a list of available Gateways on the network. Verify that the send ports and receive ports are open on the Gateway machine in order to be able to broadcast multicast message.

Gateway Property Reference

After you [launch the Gateway](#), you can define the high-level settings that apply to the entire Gateway by going to the **Configuration > Gateway Settings** page. From this page, you can use the default values or define a new setting.

Gateway Settings

Property	Description
System Name	Is a unique name for this Ignition installation. It is used to distinguish this server when working with multiple Ignition installations. Note: It is not recommended to change the System Name on a Gateway. Doing so can cause subsystems that reference the name, such as the Designer, to malfunction.
System User Source	Is the user source used to secure access to the Gateway, as well as to the Designer.
Gateway Config Role(s)	Is a comma-separated list of roles, one of which is required to log into the Gateway. These roles must be defined in the System User Source.
Status Page Role(s)	The required roles to access the Gateway's Status section. Leave blank to require no roles for this section.
Home Page Role(s)	The required roles to access the Gateway's Home section. Leave blank to require no roles for this section. Note that this is only used to limit the access to the homepage itself, not the user source for limiting access to the runtimes.
Designer Role(s)	Users must belong to one of these roles in order to have access for logging into the Designer. Roles can be specified by separating them with commas.
Create Project Role(s)	Users must belong to one of these roles in order to create a new Designer project. Roles can be specified by separating them with commas.
Global Resource Protection	The roles required to protect or modify a protected global resource such as an alarm. Anyone that can log into the Designer can protect global resources.
Allow User Admin	Allows the administration of the Gateway's system user source from the Designer. If disabled, anything outside of the Gateway Configure page is prevented from a user source.
Allow Designer SSO	Allows single-sign-on authentication for logging into the Designer if the Gateway is configured for SSO.

Property	Description
Use SSL	Forces the clients to use SSL encrypted communication when talking to the Gateway. It is recommended that you purchase and install a genuine SSL certificate if you use a Genuine SSL Certificate.
Persist Alarms	Whether or not alarm properties such as acknowledgment should persist across restarts.
Gateway Audit Profile	New in 7.9.13 The name of the audit profile that gateway-scoped actions will use.

Web-Launch Settings

Property	Description
Launch Link Script Policy	Controls how the HTML that launches Clients and Designer functions. If set to JavaScript , the links use javascript to attempt to launch directly using the Java browser plugin. If set to Direct , the links are direct links to the <code>*.jnlp</code> files that launch the Client or Designer.
Allowed JREs	A semicolon separated list of allowed JREs for web-launching Clients and Designers. For example, <code>1.7;1.8;9</code> allows Java 7, Java 8, and Java 9. New in 7.9.8 If the JRE is the default list of <code>1.8;1.7;1.6</code> then it will automatically be updated to include Java 9 with <code>9,1.8;1.7;1.6;</code> on startup. If this is not desired, it can be manually adjusted again afterwards to be a customized list with a semicolon at the end, which will prevent it from being overwritten again.
Designer Memory	The maximum amount of memory that the Designer has access to.
Disable Direct3D/Disable DirectDraw	These properties affect launched Clients and Designers on Windows OS only. These flags control whether or not the Java Swing windowing subsystem may use Direct3D and/or DirectDraw. Disabling these features can incur a performance penalty, but might be required for some video cards that have faulty DirectX drivers.

Local Client Fallback

Property	Description
Enable Local Fallback	Enables a client to fall back to a project in a local Gateway if communication is lost to the central Gateway. Note that port 6501 must be open on the local machine.
Seconds Before Failover	The number of seconds to wait before switching to the local Gateway project after communication loss.
Fallback Project	The local project to use during fallback.

Scheduled Backup Settings

Property	Description
Enable Scheduled Backups	Enables the scheduled backup system which automatically makes backups at a scheduled time.
Backup Folder	A path to a folder in which to put the scheduled backups.
Backup Schedule	A UNIX 'crontab' format scheduling string representing when to make the backups.
Retention Count	The number of backups to keep in the backup folder.

Error Reporting

Property	Description
SMTP Server	When not blank, user-reported errors are emailed using this SMTP server.
To Address	The email address(es) that will receive the error notification. Separate multiple email addresses with a semicolon (;)
From Address	The email address that the error notification is from.
SMTP Username	A username for the SMTP server, if required.
Change Password?	Check this box to change the existing password.
Password	A password for the SMTP server, if required.
Password	Re-type password for verification.

Multicast Settings

Property	Description
Enable Multicast	Allows this Gateway to be discoverable on your local network.
Multicast IP Address	Gateway messages are broadcast on this address.
Send Port	This port must be open on this machine to send multicast messages.
Receive Port	This port must be open on any machine that will receive multicast messages.
Message Interval	The interval in milliseconds at which multicast messages will be sent.

Gateway Status Pages

You can monitor the Ignition Gateway from the **Status** section of the Gateway or from the Gateway Control Utility (**GCU**).

The Status section provides detailed information relating to the following:

System	Description
Overview	Provides a top-down view of many of the components of your Gateway. This view is also useful for determining what step might be next when setting up your Ignition Gateway for the first time. You can view the status of your database connections, device connections, OPC connections, the number of open Clients and the number of open Designers.
Performance	Displays the performance status for the Ignition system such as CPU, Memory and Threads.
Alarm Pipelines	Shows the status details about the alarm pipelines. You can see the status of an alarm and where the alarm is in the pipeline.
Gateway Scripts	Shows status details about all the scripts that are running in Gateway. You can see information such as their execution status, whether the scripts are running or not, and so on.
Modules	A list of installed modules, their status, as well information about their version and current license state.
Redundancy	Lists information about the current state of Redundancy in Ignition. This information is only helpful when connected to another redundant Ignition server.
Reports	Displays information about the current and scheduled reports on the Gateway if you are using the Reporting module.
SFCs	Displays information about SFC instances.
Voice Alarming	Shows in-progress and queued Voice Notifications. This section only appears if the Voice Notification Module is installed.
Tags	Lists information and statistics about all configured Tag Providers as well as a view into the Tag subscription model, scan classes, and what tags it is currently subscribed to.
EAM Tasks	Displays information about the current and scheduled tasks for the Gateway Area Network if you are using the EAM module.

System	Description
Transaction Groups	Displays information about the current Transaction Groups.

Starting and Stopping the Gateway

After installation, the Gateway starts automatically. You can manually stop and start the service. Depending on the platform you are using, the following is how you can manually start and stop the Gateway. You can manually start and stop the Ignition Gateway through the [Gateway Control Utility](#), or through your operating system.

Windows

Access the service control utility at **Control Panel > Administrative Tools > Services**. Then use the **Ignition Gateway** service to control the run state of the Gateway.

Linux

You can control the service using the `ignition.sh` script. It can be called with the `start` and `stop` parameters to perform the relevant operations.

Example

```
./ignition.sh start
```

Mac OS X

You can access the service from the install directory using the "ignition.sh" script. On a typical Mac install using the dmg installer, the full command (without a custom location specified) is the following:

```
/usr/local/ignition/ignition.sh start
```

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Email Settings

Gateway-Wide SMTP Server

In Ignition, there are several places that you might want to send an email from. Instead of setting up a new email server connection at each one, you can add SMTP server connections in the Gateway Configure section and reference them in other places. For example, you can use a pre-configured connection in any of these places:

- **Alarm Notification** - While the alarm notification system allows you to set up an Email Notification Profile that is separate from the SMTP Profile, you can instead choose to use the settings configured in the SMTP Profile.
- **Report Schedules** - When Scheduling an Email Action in a report, the Action requires a configured SMTP Profiles before the report can be emailed out.
- **`system.net.sendEmail()`** - Instead of manually entering in values for the SMTP server inside each of your scripts, this function can instead use the settings from an existing SMTP Profile.

Once your SMTP Profile is set up, you only need to reference the name of the connection and Ignition will take care of the rest.

Setting up an SMTP Profile

The Email Settings page allows you to configure an SMTP server connection that can be used by several different resources in the Gateway. This means that instead of setting up an SMTP server connection within each resource (i.e., Alarm Notification Profile, Reports, etc.), you can configure them once here, and have those resources all use the same SMTP server. You can find the Email Settings in the Configure section of the [Gateway Webpage](#) under the Networking heading. Here, you can create a new SMTP Profile, or manage your existing profiles.

ACME_Gateway

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

Ignition! by inductive automation

HOME STATUS CONFIGURE

Search...

SYSTEM

- Overview
- Backup/Restore
- Licensing
- Modules
- Projects
- Redundancy
- Gateway Settings

NETWORKING

- Gateway Network
- Email Settings**

SECURITY

- Auditing
- Users, Roles
- Service Security

SMTP Profiles

Name	Description
Email Server	More edit

→ Create new SMTP Profile...

SMTP Profile Settings

Below is a list of properties available on an SMTP server connection.

Property Name	Property Description
Name	The name of the SMTP profile.
Description	A description of the SMTP profile.
Hostname	Hostname of the SMTP server to send email through.
Port	Port SMTP service is running on.
Use SSL/TLS	If enabled, the connection to the SMTP server will use TLS.
Use STARTTLS	Enable use of the STARTTLS command, allowing the connection to be upgraded to an SSL or TLS connection if supported by the server. This is not necessary for connections that are already SSL/TLS. Ignored when Use SMTP Profile is checked.
Username	The username the Gateway will use when authenticating against the mailserver. This is only required if the SMTP server expects authentication.
Password	The password the Gateway will use when authenticating against the mailserver. This is only required if the SMTP server expects authentication.
SMTP Timeout	Timeout (in milliseconds) to use when connecting to, reading from, and writing to the SMTP server.
Debug Mode Enabled	Enable email session debugging. Information is printed to standard output (wrapper.log).
SSL Protocols	New in 7.9.18 A comma separated list of protocols that will be allowed if connecting via SSL/TLS. Defaults to <code>TLSv1,TLSv1.1,TLSv1.2</code> . Note that the list of supported protocols is dependent on the version of Java the gateway is using. For example, support for TLS version 1 and 1.1 was disabled by default in Java 8 build 291. When negotiating TLS version, the highest version is always used.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Advanced Gateway Settings

In addition to customizing the Gateway's homepage, there are a number of advanced features in the Gateway that you can customize, such as changing ports, changing the Java version, and changing the allocated memory size.

About Java Versions

Ignition runs on Java, and Java is always being updated to have better security or include new features. It's important to pay attention to what version of Java is being run on the computer that Ignition is installed on, especially since you can have multiple copies of Java on a computer at the same time. We recommend that you turn Java's "Automatic Updates" off since Java will sometimes remove older versions that Ignition might still be using. This is not as important on client computers since you are starting and stopping the clients much less frequently than the Gateway.

You can update which version of Java the Ignition service is pointed to from a configuration file. See [Changing Gateway Java Version](#) for more information.

About Memory Usage

The Ignition Gateway uses memory just like any other program, and the amount of memory Ignition is allowed to use can be set in a configuration file. It is important to know how much Ignition initially asks for because if you don't have enough free memory for that initial amount, the Ignition service won't start. Likewise, you can set the maximum memory that Ignition uses so it doesn't starve other programs. Of course we recommend that Ignition is installed on it's own server to it can maximize it's performance, but often Ignition is installed on a computer that is already running several other important programs. Learn more about setting memory at [Changing Gateway Memory Allocation](#).

NOTE

On older 32bit systems (modern computers are all 64 bit these days), you cannot set the memory to be more than about 1.5Gb. If you do, the program will never be allowed to start.

Using Ports

Ignition uses ports on a computer to give you access to the Gateway Webpage. The default port for any webpage is **80**, and all webpages hide 80 from you in the website address. If multiple programs try to use the same port they will fail, and because many computers already use this standardized default port, Ignition defaults to **8088** instead. This means that you will access Ignition's gateway webpage with `http://<ipaddress>:8088`. Once Ignition is installed, you can change the port to whatever you like, including to 80. See [Changing Gateway Ports](#).

Port Reference

An Ignition server uses many ports to manage information between itself and other Ignition servers, OPC servers, devices, and other services such as SMTP and ERP servers. The following table describes the default ports an Ignition server may use for communication. Most are configurable and some of these ports may be on a computer other than the one Ignition is installed on (that is, if MySQL is installed on a different computer, the Ignition server will not be using port 3306). This is not a complete list of TCP ports, and there are a few UDP and broadcast ports in the list. Ignition will potentially use other ports if you are connecting to additional services or devices. Setting ports may be possible for some of the following, but will depend on their respective software.

Port	Operation	Protocol	Configurable	Description
8088	Listening	tcp	Yes	Default port setting to access the Ignition Gateway . Also the non SSL port for the Gateway Network.
8043	Listening	tcp	Yes	Default SSL port setting to access the Ignition Gateway
8060	Listening	tcp	Yes	Default SSL port setting for the Gateway Network .
102	Listening	tcp	No	Siemens Step7
2222	Listening	tcp	No	Allen Bradley Drivers (Ethernet/IP I/O DMA)
4096	Listening	tcp	Yes	Default port for Ignition OPC-UA server
4446	Listening	udp/broadcast	Yes	Default receive port for a multicast messages that makes the gateway discoverable on a local network
5060	Listening	tcp/SIP	No	Send Voice Notification to SIP server
5500	Listening	tcp	Yes	Default port for OPC browse of external Tags
6501	Listening	tcp	No	Server fallback port
8000	Listening	tcp/RTP	No	Transfer/com for SIP server

Port	Operation	Protocol	Configurable	Description
8750	Listening	tcp	No	Port used for Redundancy/Network Configuration
9600	Listening	tcp	No	Omron FINS
17342	Listening	tcp	No	Receive Port for SMS with Alarming
45900	Listening	tcp	No	Callback port for the mobile module
44818	Listening	tcp	No	Allen Bradley Drivers (Ethernet/IP Symbolic/General)
135	Outgoing	tcp	No	Default port for DCOM communication (old OPCDA servers)
389	Outgoing	tcp	Yes	Default port for Active directory if this is being used
465	Outgoing	tcp	No	SMTP protocol used if Alarming is configured
502	Outgoing	tcp	Yes	Default Modbus port
1433	Outgoing	tcp	Yes	Default MSSQL port used for connection
1521	Outgoing	tcp	Yes	Default Oracle port used for connection
3050	Outgoing	tcp	Yes	Default Firebirdsqli port used for connection

Port	Operation	Protocol	Configurable	Description
3306	Outgoing	tcp	Yes	Default MySQL port used for connection
4445	Outgoing	udp/broadcast	Yes	Default send port for a multicast messaged that makes the gateway discoverable on a local network
5432	Outgoing	tcp	Yes	Default Postgresql port used for connection
17341	Outgoing	tcp	No	Send port for SMS with Alarming
50000	Outgoing	tcp	Yes	Default IBM DB2 port used for connection
1883	variable	tcp	No	MQTT Unencrypted. Outgoing port if using an external MQTT broker, Listen port on Ignition if using the Distributor module
8883	variable	tcp	No	MQTT SSL/TLS. Outgoing port if using an external MQTT broker, Listen port on Ignition if using the Distributor module

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Changing Gateway Ports



INDUCTIVE
UNIVERSITY

Changing Gateway Ports

[Watch the video](#)

The Ignition web server runs on the 8088 port by default, but you can easily change it from the Gateway Control Utility (GCU). You may want to change the default port because the 8088 port is already being used by another application, or maybe you just want to use a more user-friendly port, such as 80.

To Change the Port

Here is how you can change the port:

1. Launch **Gateway Control Utility** (GCU).

Note that you can't change the port from the Gateway **Configure** section.

2. In the lower-left side of GCU, type a different number for **Port** and **SSL Port**.

For example, type **80** for **Port** and **443** for **SSL Port**.

3. Click **Save**.

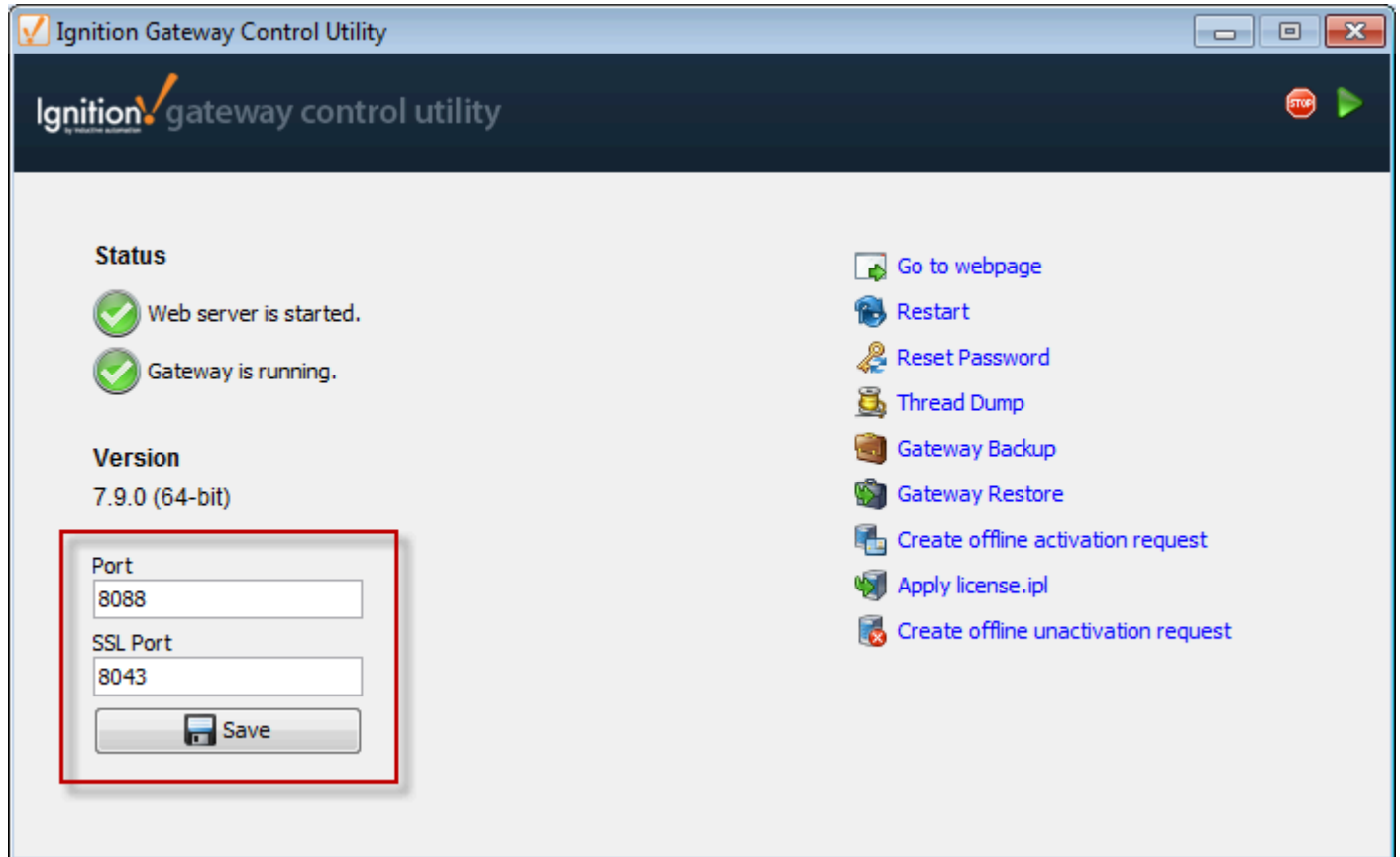
The Ignition Gateway will restart. If the port is already in use, Ignition will not start properly. You can go back to GCU and choose another port for the server.

4. Go to any webpage and if you have set Port to 80, type **Localhost** instead of **Localhost:8088** to bring up Gateway.

! INFO

If using Linux, be aware that ports under 1024 are considered Privileged Ports, and can't be bound to by non-root users. In these cases it's generally recommended to set up iptable rules to redirect packets from the privileged ports to non-privileged ports.

Detailing how to do that is outside the scope of this user manual, but there are plenty of posts and discussions online on the subject.



This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Changing Gateway Java Version



INDUCTIVE
UNIVERSITY

Changing Gateway Java
Version

[Watch the video](#)

You can change the Java version that the Gateway Service is using by editing the Ignition configuration `ignition.conf` file. Go to the **Status** page, and select the **Systems > Overview** section of the Gateway to view the current Java version you are running.

To Change the Java Version

Here is how you can change the current Java version:

1. Go to the install directory and find the `ignition.conf` file. On a computer running Windows OS, this is typically found at **Program Files > Inductive Automation > Ignition > data**.
2. Open the `ignition.conf` file and scroll down to the **wrapper Java Properties** section.
3. Find the line of code that starts with the following: `wrapper.java.command=`
4. Change the path to the new location of your `java.exe` file. If you are not sure where you have java installed, you can search your computer for "java.exe" For example, if you see this:
`wrapper.java.command=C:/Program Files/Java64/bin/java.exe` but your java is in the `jre8` folder, then you can change it to: `wrapper.java.command=C:/Program Files/Java/jre8/bin/java.exe`
5. Save the `ignition.conf` file.
6. Launch the **Gateway Control Utility** (GCU) and click **Restart** to start the Service again.

After Ignition is restarted, you can verify that the Java version is updated by going back to the **Status** page, selecting **Systems > Overview** to see the Java Version you are now running.

DANGER

If upgrading to Java 9, the ignition.conf file needs to be modified to comment out a specific parameter: `CMSPermGenSweepingEnabled` which is located under the **Additional Parameters** section. If the line is not commented out, then the Gateway will be unable to start.

This can be accomplished by placing a `#` character in front of the line, or by removing the line entirely, saving the file, and starting the service.

Note that as of Ignition version 7.9.6+, Java 9 is now officially supported. As a result, the `CMSPermGenSweepingEnabled` parameter will automatically be commented out by upgrading to Ignition 7.9.6 or greater when using Java 9.

Java 9 is the maximum version allowed.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Changing Gateway Memory Allocation



INDUCTIVE
UNIVERSITY

Changing Memory Allocation

[Watch the video](#)

You can change the amount of memory (RAM) dedicated to the Gateway service by editing the Ignition configuration `ignition.conf` file.

Go to the **Status** page, **Systems** > **Status** section of the Gateway to see the current status of the **Memory (used/max)** – how much memory is being used and the maximum amount of memory allocated.

It is always important to know how much memory is available for your system. We recommend at least 4GB (4096MB) on a production server, but a test installation can get away with half that or less. If you have other programs that may take all of the memory (and starve Ignition), then you might want to increase the Initial Heap Size too. Or better yet, move those programs to a different computer.

To Change the Memory Allocation

1. Go to the install directory and find the `ignition.conf` file.

Windows OS: this is typically found at **Program Files** > **Inductive Automation** > **Ignition** > **data**.

Linux based OS: the file can be found at **/etc/ignition**

2. Open the `ignition.conf` file and scroll halfway down to **Maximum Java Heap Size (in MB)**.

```
# Initial Java Heap Size (in MB)
wrapper.java.initmemory=1024

# Maximum Java Heap Size (in MB)
wrapper.java.maxmemory=2048
```

3. Change the max memory value to whatever you would like. Keep in mind that the value is in Megabytes. For example, to set the Gateway to use 4GB of memory, change `wrapper.java.maxmemory=2048` to `wrapper.java.maxmemory=4096`
4. Save the `ignition.conf` file.
5. Launch the **Gateway Control Utility** (GCU) and click **Restart** to start the service again. If there is not enough memory in the system, Ignition will not restart and you need to go back to the `ignition.conf` file and change the max memory to the lower number as before.

When Ignition is restarted, you can verify that the memory allocation is updated by going to the **Status** page, and select **Systems > Performance** to check the numbers shown for **Memory (used/max)**.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Making Backups and Restoring

Making Backups and Restoring your Gateway and Projects are super easy in Ignition. You can choose to backup up everything, or be selective about what you want to backup and restore. Ignition is designed to be architecture agnostic or compatible across all platforms. This is particularly helpful when you want to restore your Gateway on a new machine or platform.

There are two main types of backups available in Ignition; **Gateway backups and Project backups**. Regardless of the type of backup, it's always good practice to create backups regularly when making changes to Ignition.

Gateway Backups

Backup

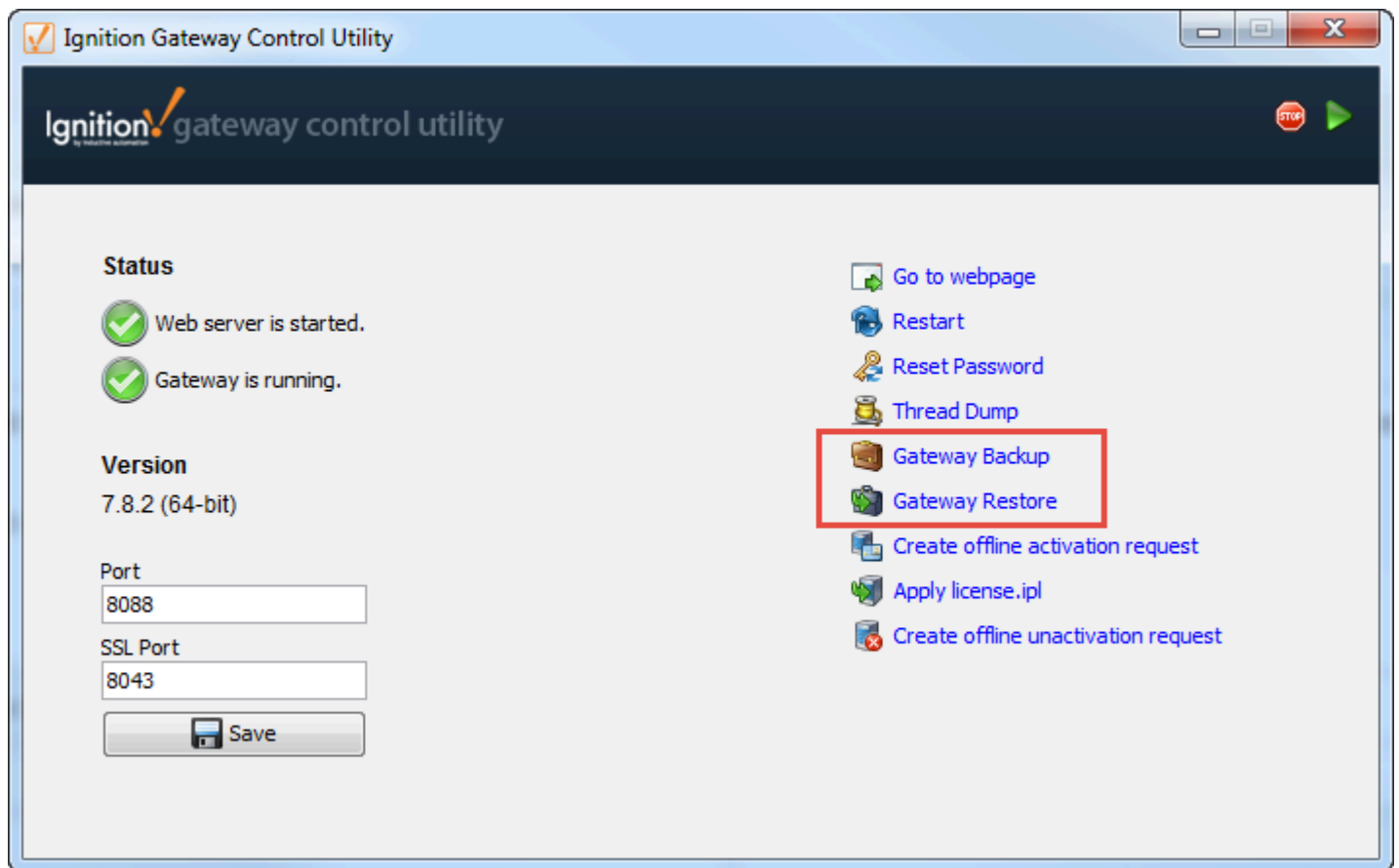
Gateway backups are all inclusive, and typically, take less than a minute to run. Everything gets backed up - all your projects, Gateway settings, tags, database connections, and OPC and device connections. The only data that is not included in a Gateway backup is information stored in other programs (i.e., SQL databases), PLC programs, and other files you may be using. This information needs to be backed up separately.

You have the option of creating a Gateway backup from the Gateway Control Utility (GCU) or the Gateway webpage. Just click the backup button and your file will start downloading. If you prefer to automate your backups, you can set up a daily schedule for **Gateway scheduled backups** from the Gateway Webpage. Either way you choose to perform your Gateway backup, Ignition creates a single backup file with a **".gwbk"** extension.

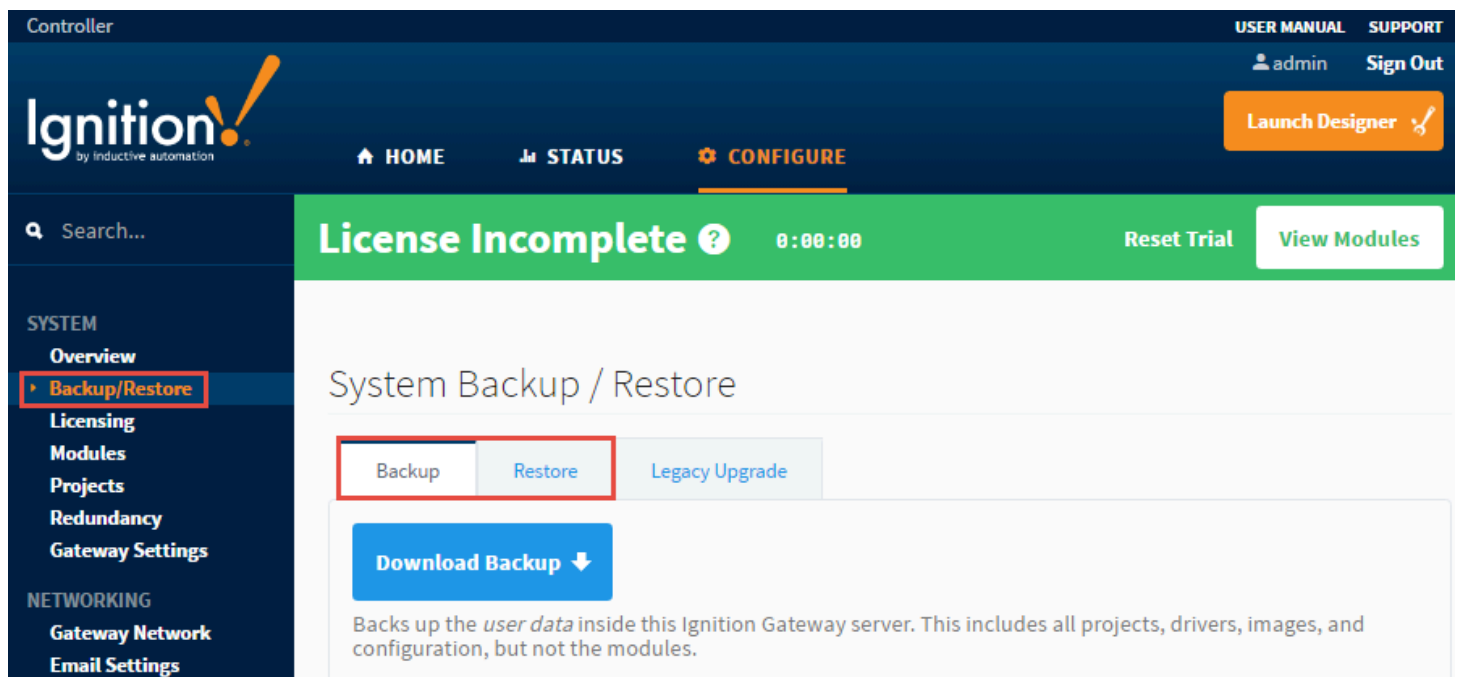
Restore

Restoring a Gateway backup is just as easy as backing it up and can be done with either the Gateway Control Utility or the Gateway webpage. Just click the restore button and select the file you want. Your whole Gateway will be restored in just a minute.

Gateway Control Utility - Gateway Backup and Restore



Gateway Webpage - Gateway Backup and Restore



Project Backups

Backup

A **Project Export** is a little smaller and takes even less time to run than a Gateway backup. Once you have a Project backup you can take it to any other Gateway and merge it in with the other projects.

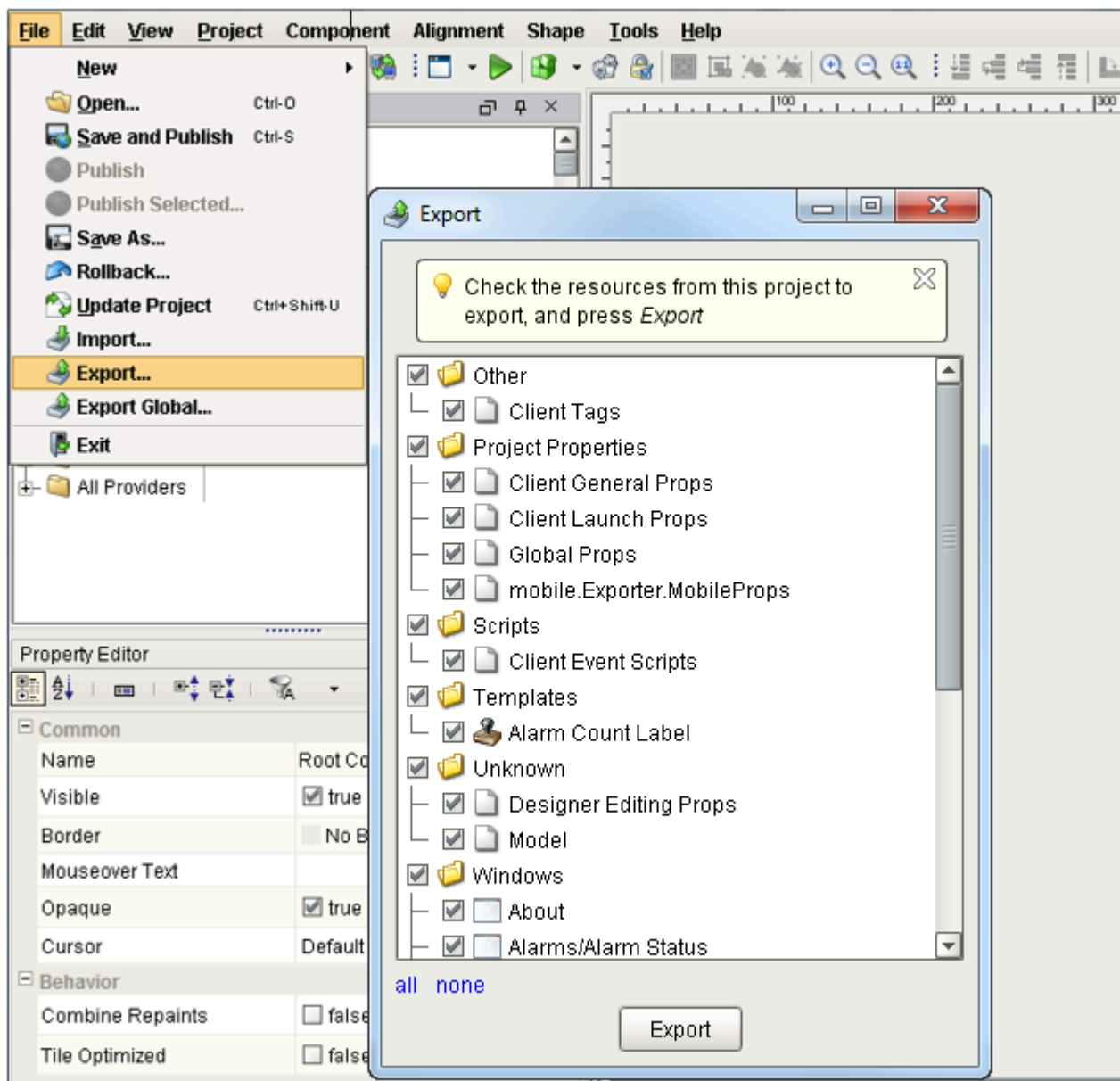
This makes it simple to keep a development server and push your projects after you have completed them. The **Enterprise Administration Module** can even do this for you.

You can perform a Project Export from two locations; the Designer and the Gateway webpage. Either way you choose, Ignition creates one **"*.proj"** file. The nice feature about using the Designer for your Project backups, is you can backup your entire project, or export individual resources of the project. You can even Export all your Global settings like Alarm Pipelines and SFCs from inside the Designer.

Restore

You can import **Project backups** from either the Designer or Gateway webpage. When you import a project backup from the Gateway webpage, it will be added into your existing system as a new project. If you restore from the Designer, you can select the entire project or parts of the project, and merge them into the one you are currently working on.

Designer - Project Backup / Export



Controller

USER MANUAL

SUPPORT

admin

Sign Out

Launch Designer

Ignition

by Inductive automation

HOME

STATUS

CONFIGURE

Search...

License Incomplete

0:00:00

Reset Trial

View Modules

SYSTEM

Overview

Backup/Restore

Licensing

Modules

Projects

Redundancy

Gateway Settings

NETWORKING

Gateway Network

Email Settings

SECURITY

Auditing

Users, Roles

Projects

Name	Description	Authentication	Default Database	Default Tag Provider
NewProject		default	MySQL	delete More edit
NewProject1		default	MySQL	details More edit
NewProject2		default	MySQL	copy More edit
NewProject3		default	MySQL	export More edit

Automated Backups

You never know when a disaster is about to happen, and automated backups can get you out of a bad situation. Ignition will automatically create Gateway backups based on whatever schedule you want, and save them wherever you need, even on another server. Just fill in a few settings and Ignition will do the rest. To setup automated Gateway backups, go to the **Configure** section, and scroll down to **System > Gateway Settings**. In the middle of the screen, there is a section for **Scheduled Backup Settings** for you to configure your backup settings. To learn more, go to [Gateway Automatic Backups](#).

Scheduled Backup Settings	
Enable Scheduled Backups	☒ Enables the scheduled backup system which will automatically make backups at a scheduled time. (default: false)
Backup Folder	\\MainServer\IgnitionBackups A path to a folder in which to put the scheduled backups.
Backup Schedule	15 1 * * * A UNIX crontab style scheduling string representing when to make the backups. (default: 15 1 * * *)
Retention Count	5 The number of backups to keep in the backup folder. (default: 5)

Once you have regular automated backups setup, make sure to secure them too. If you have the IT department regularly save files to an off-site location, it is easy to add these automated Gateway backups to the list.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Automatic Backups



INDUCTIVE
UNIVERSITY

Setting Up Automatic Gateway Backups

[Watch the video](#)

Gateway backups can be created automatically in Ignition. You can set up a schedule to perform automatic Gateway backups in the Gateway Webpage.

The following is an example of setting up a daily Gateway backup schedule.

To Setup the Automatic Backup

1. Go to the Configure section of Gateway.
2. Click on System > Gateway Settings.
3. On the Gateway Settings page, scroll down to the bottom of the page to the Scheduled Backup Settings section.

The properties in this section allow you to enable and set the backup schedule.

4. Select the checkbox for Enable Scheduled Backups.

This enables the automatic backups to execute at a scheduled time.

5. In Backup Folder, type a path to a folder where the backups will be saved. For example, you can type: `\\computer\share\backup`

The path to a folder where the backups are to be saved can be a local folder (`C:\backups`) or a network path (`\\fileserver\backups`).

6. In **Backup Schedule**, type a UNIX crontab scheduling string to specify when you want to make the backups. For example, the code below makes a backup at 15 minutes and 1 hour after midnight, every day, every month, and every day of the week (`1:15am every day`). You can find some additional examples in the [Gateway Setup](#) section.

NOTE

Crontab Format and Ranges

- Minutes - (0 - 59)
- Hour - (0 - 23)
- Day of the Month - (1 - 31)
- Month - (1 - 12)
- Day of the Week - (0 - 6; Sunday to Saturday)

7. In **Retention Count**, specify the number of most recent backups kept in the backup folder. For example, you can specify 5 if you want to only keep the last 5 backups. After 5 backups, the oldest backup will be deleted and the new one will be saved.

8. Click **Save Changes** at the bottom of the page.

Now, the Gateway will automatically make backups for you based on the schedule your settings.

Scheduled Backup Settings	
Enable Scheduled Backups	☒ Enables the scheduled backup system which will automatically make backups at a scheduled time. (default: false)
Backup Folder	\\computer\share\backup A path to a folder in which to put the scheduled backups.
Backup Schedule	15 1 * * * A UNIX crontab style scheduling string representing when to make the backups. (default: 15 1 * * *)
Retention Count	5 The number of backups to keep in the backup folder. (default: 5)

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Backups



INDUCTIVE
UNIVERSITY

**Making Ignition Gateway
Backups**

[Watch the video](#)

It is a good idea to create backups anytime you make changes to Ignition. You can create an Ignition backup in three different ways:

- From the Gateway webpage
- From the Gateway Control Utility (GCU)
- [Schedule Automated Backups](#)

To Create a Backup in the Gateway Webpage

1. Go to the Configure section of the Gateway webpage.
2. Click on System > Backup/Restore.

The System Backup/Restore page is displayed.

3. Click the Download Backup button.

By default, this downloads a .gwbk file to your local file system in your Downloads folder. The Gateway backup includes everything in Gateway, that is, all projects, Ignition Tags, security profiles, global resources, database connections, OPC and Device connections, and all the Gateway settings. The only things that are not included in a Gateway backup are modules and the data stored in other programs (like databases). You can backup information stored in other software separately.

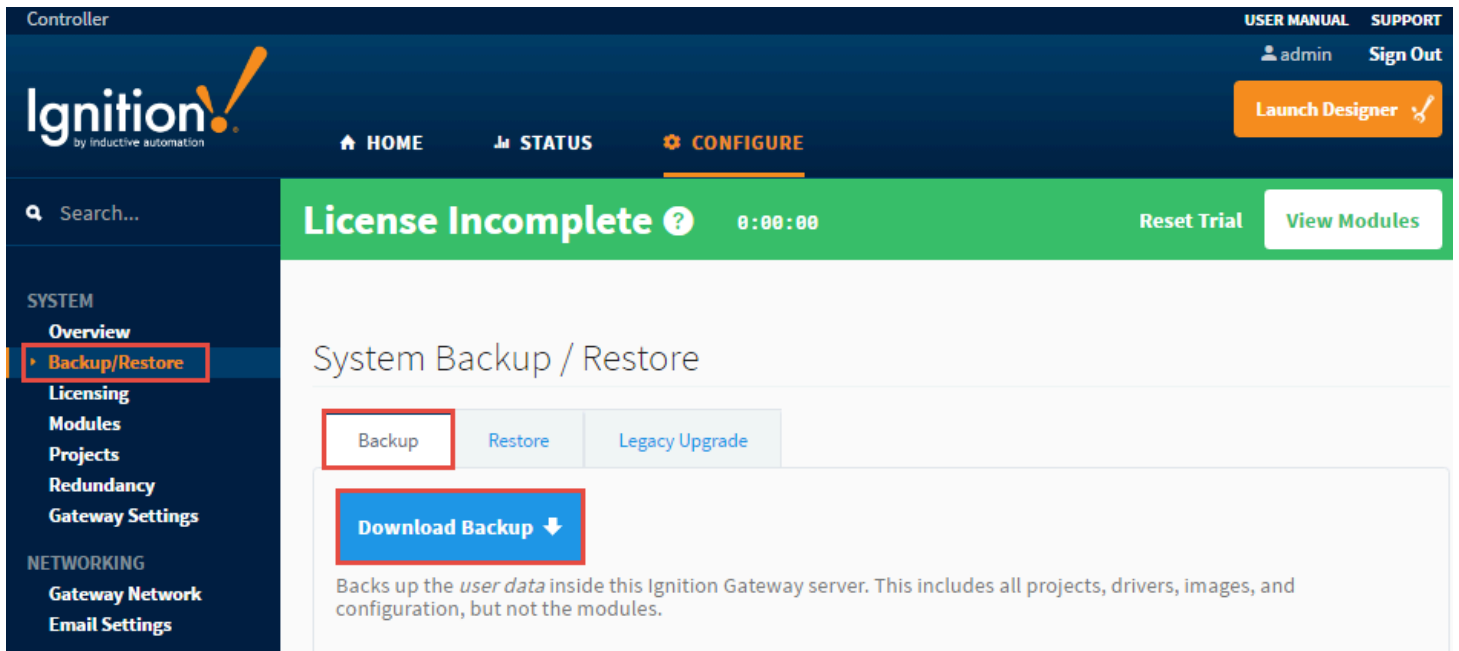
NOTE

On 7.9.11 and higher, your Gateway Backup filename will default to this format:

GatewayName_Ignition-backup-YYYYMMDD-HHMM.gwbk

On versions older than 7.9.11, the format is: **Ignition-backup-YYYYMMDD-HHMM.gwbk** without the Gateway Name.

In both cases, **YYYYMMDD-HHMM** represents the timestamp of when the file was created.



To Create a Backup using the Gateway Control Utility (GCU)

1. Open the Gateway control Utility (GCU).
2. Click on **Gateway Backup** to create the Gateway backup **.gwbk** file. Your Gateway backup will be automatically saved to your default **Downloads** folder (based on your web browser) unless you select another location.

i NOTE

You can **ONLY** access the GCU from the machine that the Gateway is installed on and if you have Administrator access.



Status



Web server is started.



Gateway is running.

Version

7.8.2 (64-bit)

Port

8088

SSL Port

8043



Save



Go to webpage



Restart



Reset Password



Thread Dump



Gateway Backup



Gateway Restore



Create offline activation request



Apply license.ipl



Create offline unactivation request

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Restore



INDUCTIVE
UNIVERSITY

Restoring Ignition Gateway Backups

[Watch the video](#)

After you create the Ignition backup file, you can restore it using the Gateway Webpage.

DANGER

When you perform a Gateway Restore, ALL of the server's current configuration will be permanently lost! We recommend you always make a [backup](#) of the existing server immediately before performing a Gateway Restore.

Gateway Restore Settings

Setting	Description
Restore Disabled	If checked, will restore the Gateway Backup in a disabled state. A disabled state means all projects, project resources, notifications, alarm journals, database connections, OPC connections, devices, scripts and third party modules will be disabled upon restart.
Override Gateway Name	New in 7.9.11 If checked, will allow you to override the Gateway name with the one specified in the New Gateway Name property.
New Gateway Name	The new name that will be applied to the Gateway when the Override Gateway Name property is checked.

To Restore a Gateway Backup File

1. Go to the **Configure** section of the Gateway.
2. Click on *System* > **Backup/Restore**.
3. On the **Backup/Restore** page, click the **Restore** tab at the top of the page.
4. Click on **Choose File**, then navigate to your **.gwbk** file. By default, all your Gateway backup files are saved in your Downloads folder unless you select another folder location.

⚠ CAUTION

If you have downloaded a Gateway Backup and are trying to Restore it, you must have a **.gwbk** file type. Often, Internet Explorer will change the extension from .gwbk to .zip when the backup is downloaded. The correct format for a downloaded backup is "Ignition-backup-YYYYMMDD-HHMM**.**.gwbk****" where YYYYMMDD-HHMM is the timestamp. Or "UniversityChallengeBackup_vX_X_X**.**.gwbk****" if you are restoring a challenge file from the Inductive University.

5. Choose your Ignition backup file (**.gwbk**), and click **Open**.
6. Click on Restore.

The Gateway stops while restoring the backup file. When restoring is complete, the Gateway restarts itself to apply the restored settings. The Gateway webpage is refreshed and your projects are loaded.

The screenshot displays the Ignition Gateway web interface. The top navigation bar includes links for USER MANUAL, SUPPORT, admin, and Sign Out. The main menu on the left lists various system components like Overview, Backup/Restore, Licensing, Modules, Projects, Redundancy, Gateway Settings, NETWORKING, SECURITY, DATABASES, and ALARMING. The central panel is titled 'System Backup / Restore' and features three tabs: Backup, Restore (selected), and Legacy Upgrade. A warning message states: 'Choose a Ignition Gateway backup file (*.gwbk) to restore. This operation forces an automatic restart of the context.' Below this, a yellow alert box says: 'Be aware that ALL of this server's current configuration (except activation status) will be permanently lost. It is recommended to backup this server before restoring.' The 'Restoration Settings' section contains three fields: 'Restore Disabled' with a checkbox and description, 'Override Gateway Name' with a checkbox and description, and 'New Gateway Name' with a text input field. At the bottom, there is a 'Choose File' button and a 'Restore' button.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway vs. Project Backups



INDUCTIVE
UNIVERSITY

Making Project Backups

[Watch the video](#)

There are two main backup types that can be made in Ignition: a **Gateway** backup and a **Project** backup.

Gateway Backup

The **Gateway** backup (.gwbk file) includes everything you find in the Ignition Gateway webpage. This means all of the projects, global resources, Ignition Tags, database connections, OPC and Device connections, authentication profiles, plus all the settings of the gateway. The only things that are not included in a Gateway backup is information stored in other programs, (i.e., the data in a database, PLC programs, etc.), your license, and any files you might have manually added to the install directory.

CAUTION

Restoring a Gateway Backup [Restoring a Gateway backup](#) is the easiest way to restore your system, but it will **overwrite** all of the existing settings including your projects. There is no merge option for a Gateway backup.

Project Backup

A **Project** backup (.proj file) is much smaller than a Gateway backup and only includes data from projects.

To be safe, when you backup your project, it's recommended to also backup your Tags, images, database connections, and anything else you might be using separately since these items are not included in the project backup.

Making a Backup from the Gateway Webpage

When making a Project backup from the Gateway, it includes all its resources such as windows, transaction groups, templates, reports, and project scripts. Notably missing from the project backup are any Global scoped resources, even if they are presented in the Designer such as Ignition Tags, SFCs, alarm pipelines, global script functions, and raster images (i.e., png, jpg, and jpeg files).

When you [upload/restore a project backup](#) in the Gateway Webpage, it will be merged into your existing Gateway. If there is a naming collision, you have the option of renaming the project or overwriting the project. Project backups can also be restored/imported in the Designer. This will even allow you to select which parts of the project backup you want to include and will merge them into the currently open project.

Making a Backup from the Designer

When making a Project backup from the Designer, you get to choose which project resources are added to the backup file. This does not include any Global resources. When restoring a Project backup in the Designer, you get to choose which project resources are restored into the currently open project from the backup file.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Inductive University Challenge File Instructions

When taking the challenges within Inductive University, some of them require the use of a Challenge File called **UniversityChallengeBackup_vX_X_X.gwbk**. This Challenge File is actually a Gateway Backup, and will need to be restored onto an [installation of Ignition](#) that is the same major version of challenge that is being attempted.

Downloading the Challenge File

When a challenge requires the challenge file, you'll find a link to download the challenge file. For example: <https://inductiveuniversity.com/challenge/understanding-tags>

 **TOPIC**
Understanding Tags

Topic Challenge Version: 7.9

 **Download required.**
This challenge requires [Ignition 7.9](#) and the [Ignition Challenge File](#) to be installed first.
[Read more about restoring challenge files >](#)

 **Answer challenge questions accurately**
There is no limit on attempts, but retries will be randomized.

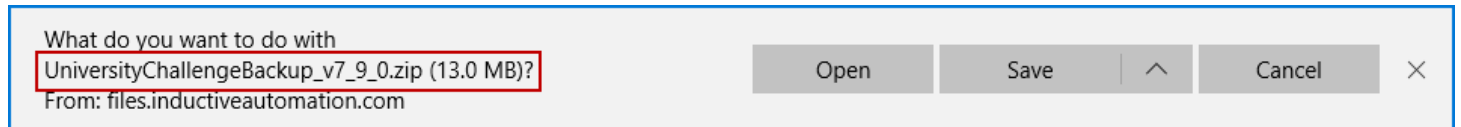
 **Start Challenge**

Clicking on **Ignition Challenge File** will download the challenge file.

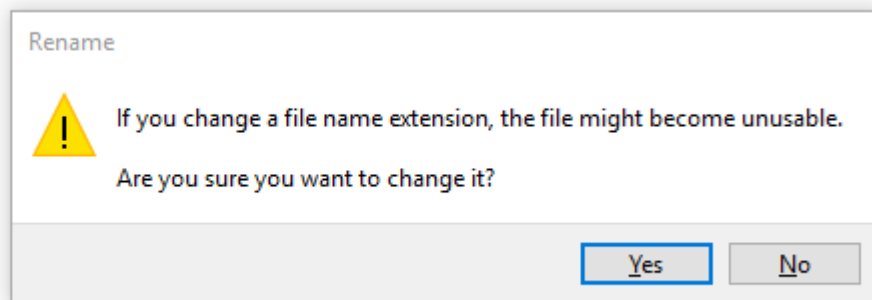
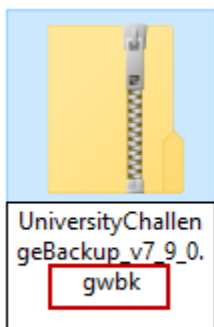
The challenge file only needs to be installed once. All challenges that require the challenge file make use of the same file.

I Downloaded a ZIP File

Sometimes, you may download the Challenge File and it will download as a zip file with the name **UniversityChallengeBackup_vX_X_X.zip**. This is **NOT** a zip file that needs to be unzipped. Microsoft Edge and Internet Explorer don't recognize the ".gwbk" extension, but can detect that the file is compressed, so they change the file extension to ".zip" in an attempt to help you. If possible, we recommend using an alternate browser to download these files such as Google Chrome or Mozilla Firefox.



If using a different browser is not an option, then the file simply needs to have the extension changed back to gwbk after downloading. To do this, go to change the filename, but instead erase the extension zip and enter in gwbk. It will then confirm that you want to change it. Once it has been changed, it can be restored to an Ignition Gateway like any other Gateway Backup.



Restoring the Challenge File

Once the Challenge File has been downloaded and the proper version of Ignition has been installed, it is then possible to restore the backup to an Ignition Gateway. This works just like restoring any other Gateway Backup. See the [Restoring a Gateway Backup](#) page to find more information.

DANGER

Remember, restoring a Gateway backup will overwrite anything on the Gateway. If you have projects that you wish to save before restoring the challenge backup, you should first create a [backup](#) of your current Gateway.

Using the Challenge Gateway

Once the backup is restored, you are now ready to take the challenge. If you launch a client, note that you will NOT see any open windows. This is intentional.

The project was not built to be run as a client, so there is no need to launch a client. Certain questions within the challenge will direct you to find certain information in the Designer or Gateway.

Credentials to access the Designer and Gateway are:

- username: `admin`
- password: `password`

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Project Backups



INDUCTIVE
UNIVERSITY

Making Project Backups

[Watch the video](#)

Project Backup/Export

Projects can be exported individually. Project exports only include project-specific elements, like windows, transaction groups, templates, reports, client Tags, and project scripts. They **do not** include Gateway resources, like database connections, Tag Providers, alarm pipelines, and global script items.

Resources in a Project Export

The resources listed below are included in a Project Export. Note that this Project Export is not the same as a Global Export, which is detailed later on this page.

- [Windows](#)
- [Project Templates](#)
- [Client Tags](#)
- [Transaction Groups](#)
- [Project Properties](#)
- [Client Event Scripts](#)
- [Gateway Event Scripts](#)
- [Named Queries](#)
- [Reports](#)

Resources in a Global Project Export

An export of the Global Project will only contain resources that are listed under the **Global** section of the project browser. The resulting file may be treated like a standard Project Export in regards to importing. The following resources are included in a Global Project Export:

- **Global Templates**
- **Alarm Pipelines**
- **Shared Scripts**
- **Sequential Function Charts**

There are two primary ways you can export / backup a project:

- **Gateway Webpage** - exports the entire project as a .proj backup file.
- **In Designer using File > Export in the Menubar** - lets you export an entire project or select only the resources you want to export from your project.

To back up a project in the Gateway Webpage

Making a project backup from the Gateway webpage creates a project backup of the entire project.

1. Go to the **Configure** section of the Gateway webpage.
2. Select **System > Projects**.
The **Projects** page is displayed and you can see your existing projects.
3. To the right of project name, click the **More** button and select **export**. This exports your project as a `.proj` backup file. By default, the `.proj` backup file is saved in your web browser's default Downloads folder. This export of the project can be **uploaded** to any other instance of Ignition that is running the same version or later.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

Ignition
by Inductive automation

HOME STATUS CONFIGURE

Search...

License Incomplete 0:00:00 Reset Trial View Modules

SYSTEM

- Overview
- Backup/Restore
- Licensing
- Modules
- Projects**
- Redundancy
- Gateway Settings

NETWORKING

- Gateway Network
- Email Settings

SECURITY

- Auditing
- Users, Roles

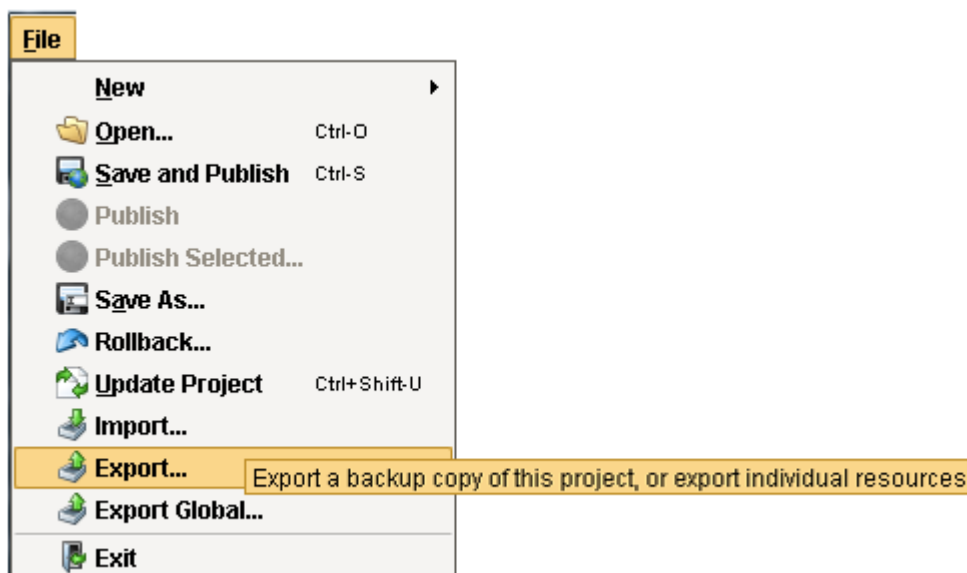
Projects

Name	Description	Authentication	Default Database	Default Tag Provider
NewProject		default	MySQL	delete More edit
NewProject1		default	MySQL	details More edit
NewProject2		default	MySQL	copy More edit
NewProject3		default	MySQL	export default More edit

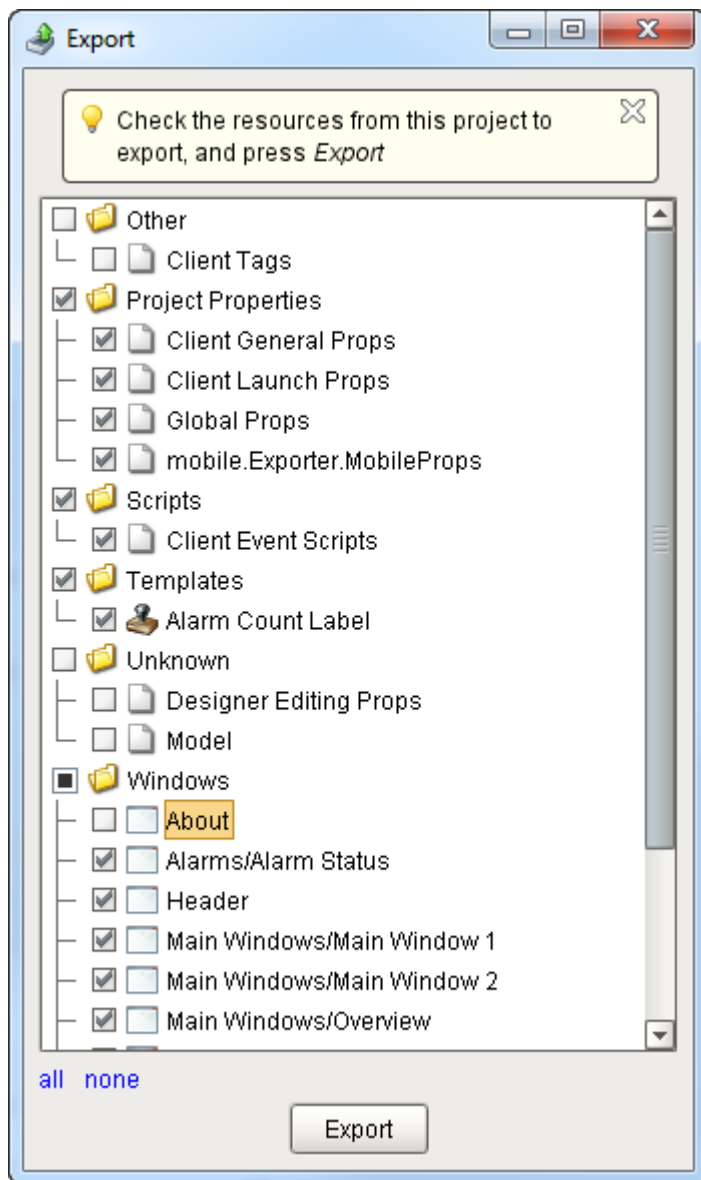
To Make a Backup in the Designer

Making a project backup in the Designer lets you select an entire project or only the resources you want to backup. This example exports only selected resources.

1. In Designer, select **File > Export**.

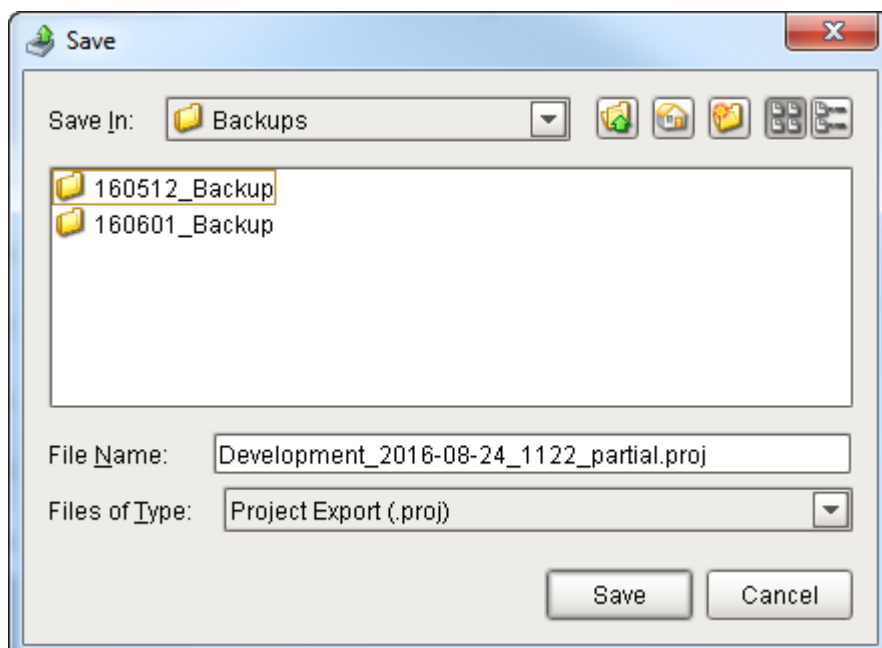


2. An Export window will open. Check the resources from your project that you want to export, and click **Export**.



3. If you are exporting selected resources, Ignition will enter '**partial**' in the filename.

4. Click **Save**.



This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Project Restore



INDUCTIVE
UNIVERSITY

Making Project Backups

[Watch the video](#)

Project Restore/Import

There are two primary ways you can restore / import a project:

- **Gateway Webpage** - imports the entire project.
- **In Designer using File > Import in the Menubar** - lets you import an entire project or select only the resources you want to import into your project.

To restore a project backup file in the Gateway Webpage

1. Go to the **Configure** section of the Gateway webpage.
2. Select **System > Projects**.
The **Projects** page is displayed and you can see your existing projects.
3. Find the blue arrows at the bottom of the list of projects, and click on **Upload project from a .proj backup file....**

The **Upload Project** page is displayed.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS CONFIGURE

Search...

License Incomplete ? 0:00:00 Reset Trial View Modules

SYSTEM

- Overview
- Backup/Restore
- Licensing
- Modules
- Projects**
- Redundancy
- Gateway Settings

NETWORKING

- Gateway Network
- Email Settings

SECURITY

- Auditing

Projects

Name	Description	Authentication	Default Database	Default Tag Provider	
Test1		default	MySQL	default	More edit
Training		default	MySQL	default	More edit

→ Create new Project...

→ Upload project from a *.proj backup file...

4. Click on **Choose File**, select your `.proj` file from your browser, and click **Open**.

5. On **Upload Project** page, click on **Upload**.

If there is already a project with the same name, the **Project Name Conflict** page is displayed giving you the option to **Rename** the project or **Overwrite** it.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS CONFIGURE

Search...

License Incomplete ? 0:00:00 Reset Trial View Modules

Project Name Conflict

⚠ There is already a project named "Training". Please resolve.

☒ **Rename**

Training2016

☐ Overwrite if exists

Choose a new name for the uploaded project.

☐ **Overwrite**

Keep the original name and overwrite the existing project with the uploaded project.

Apply

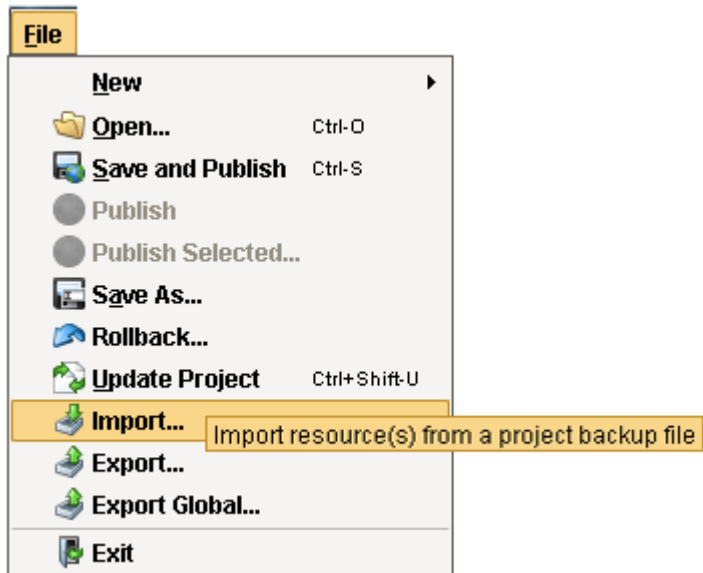
6. Click **Apply**.

The Projects page is displayed again and you will see your new project is added to the list along with the other the projects.

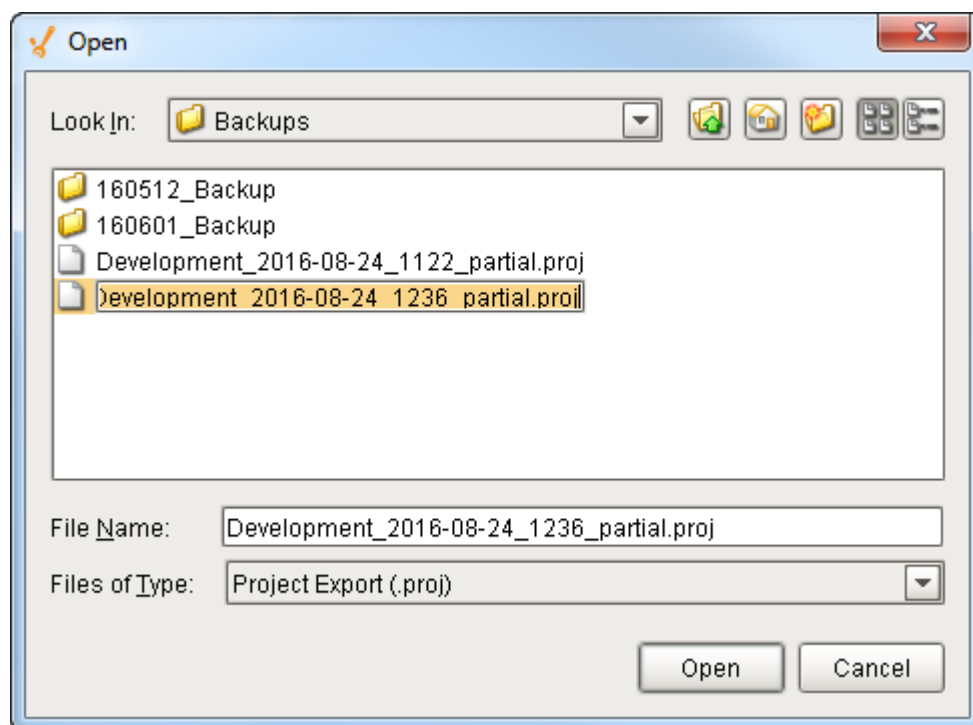
To restore a project backup in the Designer

In the Designer, you can restore an entire project or selected resources from a project backup. This example shows all the resources that were exported that you can restore from the project backup.

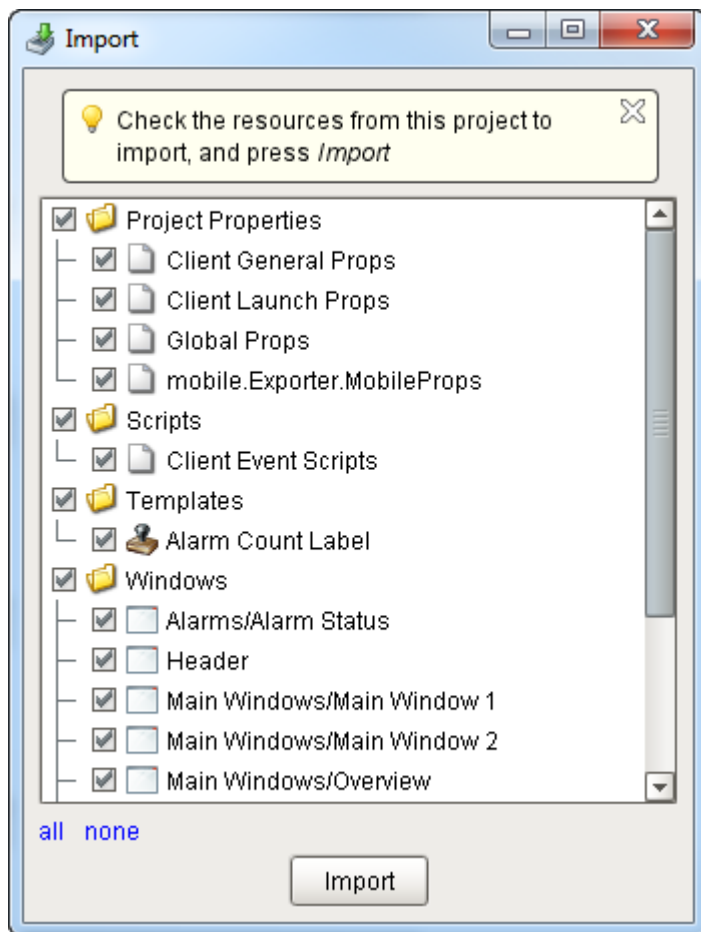
1. In Designer, select **File > Import**.



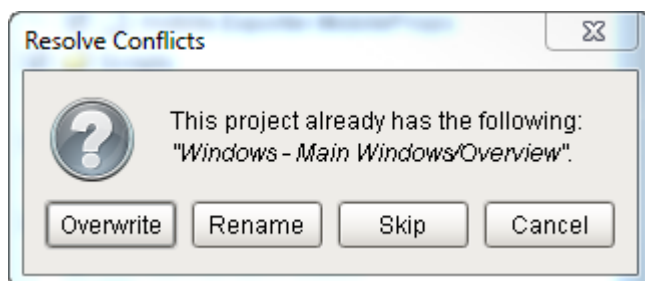
2. Select the project backup file (.proj) from the default folder, and click **Open**.



3. Select the resources from the project that you want to import. Press **Import**.

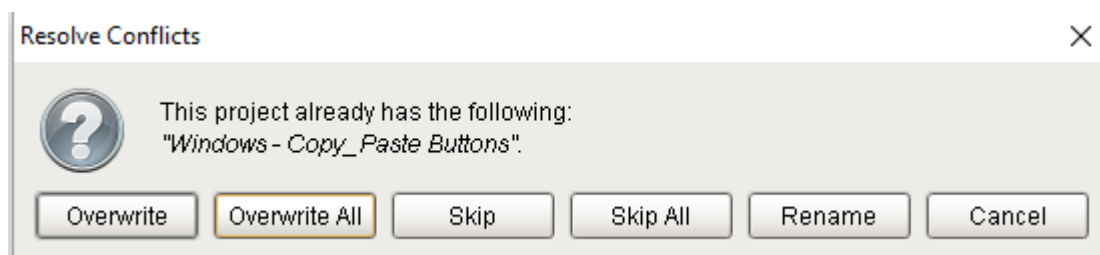


4. If there are any conflicts when importing your project resources, a dialogue box will appear and ask you to either **Overwrite**, **Rename**, or **Skip** the affected items. Once all conflicts have been resolved, save your project.



New in 7.9.8

As of 7.9.8, you can now **Overwrite All** or **Skip All**.



This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Gateway Network



INDUCTIVE
UNIVERSITY

Gateway Network Overview

[Watch the video](#)

Overview

The Gateway Network allows you to connect multiple Gateways together over a wide area network, and opens up many distributed features between gateways. The Gateway Network provides the following features:

- Websockets provide fast, firewall-friendly 2-way communication over a single configured connection.
- A dedicated http data channel that can handle multiple streams of message data.
- The ability to set up a node to act as a proxy for another node.
- Security settings that restrict incoming connections based on a white list or on manual approval of the connection. Incoming connections can also be disabled entirely.
- SSL mode available. When enabled, connections must send SSL certificates to prove their identity. A connection will not be accepted until its SSL certificate is approved.

General Settings

Main

The Gateway Network General Settings set the basic rules for the system. By default, these settings are lenient to allow for easy setup but can be set for security.

Enabled: uncheck this checkbox to disable using the Gateway Network on this Ignition.

Web Sockets Enabled: If true, the system will attempt to use websockets in order to increase performance.

Require SSL: If true, only connections that use SSL to encrypt traffic will be allowed. Default is true as of 7.9.4.

Require Two Way Auth: Controls whether both sides must explicitly trust each other before successful handshake. If you check this setting, you will need to provide the remote machine's certificate. To do this, manually export a certificate from the remote machine's Metro KeyStore, located in `<installdir>/webserver/metro-keystore`. Default KeyStore password is **metro**, and the alias is **metro-key**. Then place the certificate on the local machine, in `data/certificates/gateway_network`.

Overload Control

If there is too much traffic on the Gateway Network, then it can tell Agents to stop sending messages for a specified amount of time.

Receive Queue Max: Number of received messages that can be held until they are processed by the local system. When this capacity is exceeded, the local system will start sending WAIT messages to remote machines.

Overload Wait Seconds: The number of seconds that a remote machine is instructed to wait before resuming message delivery. This setting is used when an overload is detected on the local machine.

Security

By default, the security level for incoming connections is set to “Unrestricted”, meaning that every remote machine that attempts to connect to the local machine will be accepted without question. You have several options to control security from the Gateway Network settings. Note that these settings are independent of SSL mode, which is detailed below. To change security settings, navigate to Configure -> Networking -> Gateway Network and select the General Settings tab.

Allow Incoming Connections: uncheck this checkbox to disable all remote machines from being able to establish an incoming connection. To establish any connections with remote machines, you will need to create outgoing connections from this machine.

Connection Policy:

- **Unrestricted:** default mode, allows all incoming connection unless the Allow Incoming Connections checkbox is unchecked

- **ApprovedOnly:** incoming connections are created, but cannot be used to send or receive data until you approve the connection under Gateway Network -> Incoming Connections tab. To approve an incoming connection, click the Approve link on the right side of the connection. You can also deny a previously approved connection by clicking the deny link. Note that the approve and deny links will appear next to a connection only if you have enabled the ApproveOnly setting.
- **SpecifiedList:** an incoming connection will only be allowed if its server name is on this list. Separate server names with a comma.

Specified List: Connections with an ID in this list are automatically allowed if the security mode is set to SpecifiedList. Separate Gateway names with a comma.

Outgoing vs. Incoming Connections



INDUCTIVE
UNIVERSITY

**Setting Up a Gateway
Network Connection**

[Watch the video](#)

When using the Gateway Network, you will be working with two type of connections. To establish communications, you create an outgoing connection on the local machine. The outgoing connection always begins the connection process to a remote machine. After the outgoing connection is created, the local machine will attempt to use the connection to establish communications with the remote machine. On the remote machine, an incoming connection will automatically be created when the new connection attempt is detected. For connections where security settings require manual approval, you will need to approve the incoming connection before it can be used. If no security controls have been set, the incoming connection will automatically accept the connection from the local machine and begin sharing data.

Connections and Servers

Every machine on the Gateway Network is known as a Server. When you establish a connection to a remote machine, the remote Server sends data about itself and also sends data about any other Servers known to that machine. For example, assume your local machine is Gateway1. The remote machine is known as Gateway2. Gateway2 also knows about another remote machine named Gateway3. As soon as your local Gateway1 establishes a connection with Gateway2, Gateway2 also sends information about the existence of Gateway3. Modules such as the EAM are aware of this relationship and allow communication between Gateway1 and Gateway3, even though there is no direct connection from the local machine to Gateway3.

! INFO

Which Server Should I Configure the Outgoing Connection On?

In regard to connecting multiple Gateways over the Gateway Network, there is little difference between an **Outgoing** and **Incoming** connection: these terms simply note which server the connection was configured on, and are mostly ignored by the rest of Ignition. Thus, assuming Gateway **A** and Gateway **B**, configuring an outgoing connection from **A** to **B** is equivalent to configuring an outgoing connection from **B** to **A**.

Basic Setup

To establish a basic comm link between two Gateways, log into the Gateway where you want to establish the outgoing connection. Navigate to **Configure > Networking > Gateway Network** and click on the **Outgoing Connections** tab. Click the **Create new** link.

On the New Outgoing Connection page, you will need to enter the network address and port of the remote machine. Click the **Create New Connection** button at the bottom of the page.

On the Outgoing Connections tab, your new connection will be shown. After a few moments, the Gateway Name field will be updated with the name of the remote server and the status will be set to **Running**.

To view the incoming connection, log into the other Gateway and navigate to **Configure > Networking > Gateway Network** and click on the Incoming Connections tab. Your new connection will be shown with **Connected** status.

Deleting Connections

Outgoing and incoming connections can be deleted for cases when the connection no longer exists on the other side. To delete a connection, navigate to **Configure > Networking > Gateway Network** and click on either the **Outgoing Connections** tab or the **Incoming Connection** tab. Then click the **delete** link next to the connection. Note that for incoming connections, if a remote machine is still connected to the local machine with an outgoing connection, a new incoming connection will be created after deletion. For these cases, you must log into the remote Gateway and delete the outgoing connection. Then you can delete the local incoming connection.

Certificates

SSL and Certificates

When a remote machine establishes an incoming connection, its Gateway server name is transmitted and appears in the Server Name field under **Gateway Network > Incoming Connections**. However, there no identity authentication is performed when the connection is created. The local system accepts the remote system id without question. To perform identity authentication on a connection, you must use Secure Socket Layer (SSL) and certificates. By default, SSL enabled.

- To enable SSL on the Gateway Network, you must enable SSL in two places. On the machine that will receive incoming connections (which we will call Gateway1), you must navigate to **Configure > Networking > Gateway Network**, click on the **General Settings** tab, and check the **Require SSL** checkbox. This mode requires all incoming connections to use SSL mode. Any existing incoming connections will become faulted as they are not using SSL. Click the **Save Changes** button.

The screenshot shows the Ignition Gateway1 web interface. The top navigation bar includes 'HOME', 'STATUS', and 'CONFIGURE'. The left sidebar lists 'SYSTEM' and 'NETWORKING' categories. Under 'NETWORKING', 'Gateway Network' is selected. The main content area displays 'Gateway Network Settings' with tabs for 'General Settings', 'Outgoing Connections', 'Incoming Connections', and 'Diagnostics'. The 'General Settings' tab is active, showing a 'Main' section with three settings: 'Enabled' (checked), 'Web Sockets Enabled' (checked), and 'Require SSL' (checked). The 'Require SSL' setting is highlighted with a red box. The description for 'Require SSL' states: 'If true, only connections that use SSL to encrypt traffic will be allowed. (default: true)'.

Main	
Enabled	☒ (default: true)
Web Sockets Enabled	☒ If true, the system will attempt to use websockets in order to increase performance. (default: true)
Require SSL	☒ If true, only connections that use SSL to encrypt traffic will be allowed. (default: true)

- Next, log into a Gateway where you wish to establish an outgoing connection. We will call this Gateway2. Navigate to **Configure > Networking > Gateway Network** and click on the **Outgoing Connections** tab and click the **Create new** link. As you are entering the settings for the new connection, check the **Use SSL** checkbox. Also, change the Port to the SSL port used by the other machine. By default this is set to 8060 (which is defined /data/gateway.xml). Save the new connection.

⚠ CAUTION

Note that this port is different from the default SSL port an Ignition Gateway would use when communicating to a client (default port 8043).

Gateway2

by inductive automation

HOMESTATUSCONFIGURE

Search...

SYSTEM

OverviewBackup/RestoreLicensingModulesProjectsRedundancyGateway Settings

NETWORKING

Gateway NetworkEmail Settings

SECURITY

AuditingUsers, RolesService SecuritySecurity Zones

New Outgoing Gateway Connection

Main

Host	 The address of the remote server, not including the port.
Port	8060 The port of the remote server. (default: 8,060)
Enabled	☒ (default: true)
Use SSL	☒ Use SSL to connect to the remote machine. (default: true)

- At this point, Gateway2 has transmitted its certificate to Gateway1, but Gateway1 has never seen this certificate, and so the incoming connection is not yet allowed. Note that the Gateway2's connection will NOT show up under the Incoming Connections tab until AFTER the certificate has been approved. But if you click on the **Certificates** tab, Gateway2's certificate should be present.

Gateway1

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS CONFIGURE

Search...

SYSTEM

- Overview
- Backup/Restore
- Licensing
- Modules
- Projects
- Redundancy
- Gateway Settings

NETWORKING

- Gateway Network
- Email Settings

SECURITY

- Auditing
- Users, Roles
- Service Security
- Security Zones

DATABASES

Gateway Network Settings

General Settings Outgoing Connections Incoming Connections Certificates

Local Certificate

Common Name	Serial	Issuer
WIN-VKBBHTNTPDV:8060	5703228238031062393	Self

Remote Certificates

Common Name	Serial	Issuer	Status
WIN-VKBBHTNTPDV:8060	5703228238031062393	Self	Not Approved

approve delete

The certificate Common Name field holds the network address of the machine that transmitted the certificate. The Serial field holds a numeric string that is automatically generated when the certificate is created, and is unique to every certificate. Click the **approve** link to approve the certificate. After certificate approval, the incoming connection will be accepted, and will eventually appear on the Incoming Connections tab. It may take up to 30 seconds for the connection to appear, as reconnect attempts are made every 30 seconds by default (controllable by the Missed Pings outgoing connection setting).

After a certificate has been approved, and the incoming connection is established, you can view the certificate information for a specific incoming connection under the Certificate field in the Incoming Connections tab. The certificate common name and serial number are displayed here, and reflect the actual certificate that was sent by the remote machine.

You can deny a certificate under the Certificates tab by clicking the deny link to the right of the certificate. The connection that has been using that certificate will no longer be allowed to connect. You can delete certificates that are no longer in use. Keep in mind that if you delete a certificate, and a remote machine is still using that certificate, it will reappear on the Certificates page. In this case, you must navigate to the remote Gateway and delete its outgoing connection. Then you can permanently delete the certificate from the Certificates page.

Gateway Network Technical Information

Web Sockets

The web socket protocol rides on top of the TCP protocol, and allows 2-way communications between machines. Either side can send a message to the other side at any time. If web sockets cannot be

used on your network, or your network setup does not require a high-speed low-latency connection, the Gateway Network connections can use a pure HTTP long polling system for communications. This mode uses standard HTTP GET and POST messages for communication, and is appropriate for situations when an always-on connection is not practical. An example would be a Gateway that communicates once every 15 minutes over a cell connection. Message retrieval is not as efficient as web sockets, as regular polling of the remote machine is required to learn of new messages. To enable HTTP long polling, you must either disable web sockets under either Gateway Network General Settings (to disable for all connections) or disable web sockets on an outgoing connection.

Gateway Network Features

The Gateway Network opens up certain services for use that make managing multiple gateways and having them effectively communicate with each other a snap. It also has special security that can restrict certain services from happening in certain zones of the Gateway Network.

Enterprise Administration

The **Enterprise Administration Module** (EAM) uses the Gateway Network for message and file transfer, and can monitor network connections for availability. The EAM reports whenever a comm link is lost via alarm events and system tags.

Distributed Services

Remote Providers

Remote **Realtime** and **Historical** Tag Providers make remotely controlling and storing tag data even easier.

Remote Alarming

Remote Alarming makes notifying all gateways in the network possible, to quickly and effortlessly track down issues.

Security Zones and Service Security

Security Zones can be setup to lock down or prevent access to certain parts of gateways within the gateway network.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Versioning

Versioning in Ignition

When we talk about versioning in Ignition, there are two main things that come to mind: **Project Versions** and **Software Versions**.

- **Project Versions:** Here we are referring to the current and previous states of your project in Ignition. You might have a test server with a development project in addition to the currently running production server. As you make changes and improve your project, these might get out of sync or you may want to roll back to a previous good state after a failed test of new changes.
- **Software Versions:** Here we are talking about the versions of installed software. What version of Ignition you are using, what version(s) of Java are installed, your database version, etc. This is important to keep track of because backups from one version may or may not work on other versions depending on the type of software or company that makes it.

While they may seem similar, it is important to keep these distinctions in mind while you are developing. Both have considerations that can effect the success of your project.

Project Version Considerations

With Ignition there are ways to keep track of your projects and give you the ability to easily test new changes or go back to a previous stable revision when you need to. Two main ways to control your project versions are:

- **Making and Restoring Backups:** We always recommend that you create backups regularly, and you can easily restore them to go back to a previous known stable version of your project.
- **Versioning Software:** Ignition stores its files in a simple to use format on the hard drive. This allows you to use whatever versioning software that you like to create a system to track changes and roll back as needed.

Software Version Considerations

Ignition Version

It is important to have a good idea about what software versions you are using, but we make it simple. Ignition only allows one version at a time to be installed on a computer. This means that you never have to worry about which version you are using at the moment. Ignition versions are made up of three numbers: the Platform, major, and minor version numbers. For example, 7.8.2 is platform 7 (Ignition), major version 8 (new features), minor version 2 (stability improvements).

If you want to know what version of Ignition you are using, there are several places you can find it. The two simplest places to find your Ignition version are in the **Gateway Webpage** and in the **Designer**. Both of these also list the version of Java that the Ignition service (Gateway) is using. This may not be the only version of Java installed.

- The **Gateway Webpage**: in the Status section under **Systems > Overview**.

The screenshot shows the Ignition Gateway Webpage interface. The top navigation bar includes links for USER MANUAL, SUPPORT, admin, and Sign Out. The main content area is titled 'License Incomplete' with a timer at 0:00:00. The left sidebar shows the 'SYSTEMS' section with 'Overview' selected. The main content area displays 'Systems Overview' with three sections: 'Architecture' (Gateway Controller, Version: 7.9.0-rc2 (b2016092312), License: partial, Uptime: 3 days), 'Environment' (Process Id: 24120, Operating System: Windows 7 | amd64, Java Version: 1.8.0_91-b15, Local Time: 12:02:45 PM, Available Disk Space: 149gb / 298gb, Detected NICs: 10.20.8.46), and 'Connections' (Designer Sessions: 1 open, Databases: 1 / 1 connected). A 'Systems' section at the bottom right lists various system metrics like Performance, Redundancy, Modules, Tags, Reports, Alarm Pipelines, SFCs, and EAM Role.

- There is also a Modules page under **Status > Modules** that will tell you the versions of each module.

Controller

USER MANUALSUPPORT

adminSign Out

Launch Designer

Ignition
by Inductive automation

HOMESTATUSCONFIGURE

Search...

License Incomplete0:00:00Reset TrialView Modules

SYSTEMS

OverviewPerformanceAlarm PipelinesGateway ScriptsModulesRedundancyReportsSFCsVoice AlarmingTagsEAM TasksTransaction Groups

CONNECTIONS

EAM AgentsDatabasesDesignersDevicesGateway NetworkStore & ForwardOPC Connections

Systems

Modules

Running Modules

21 / 21

Licensed Modules

20 / 21

License Details

License KeyAAA-AAA

Version7

developertrue

editionstandard

Inductive Automation

Name	Version	License	Status
Alarm Notification	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Allen-Bradley Driver	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
DNP3 Driver	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Enterprise Administration	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Logix Driver	3.9.0-rc2 (b2016092312)	Activated	✓ RUNNING

Licensing Configuration

In the **Designer**: In the Menubar under **Help > About Ignition Designer**. This page will tell you the version of the platform (Ignition) as well as each module.

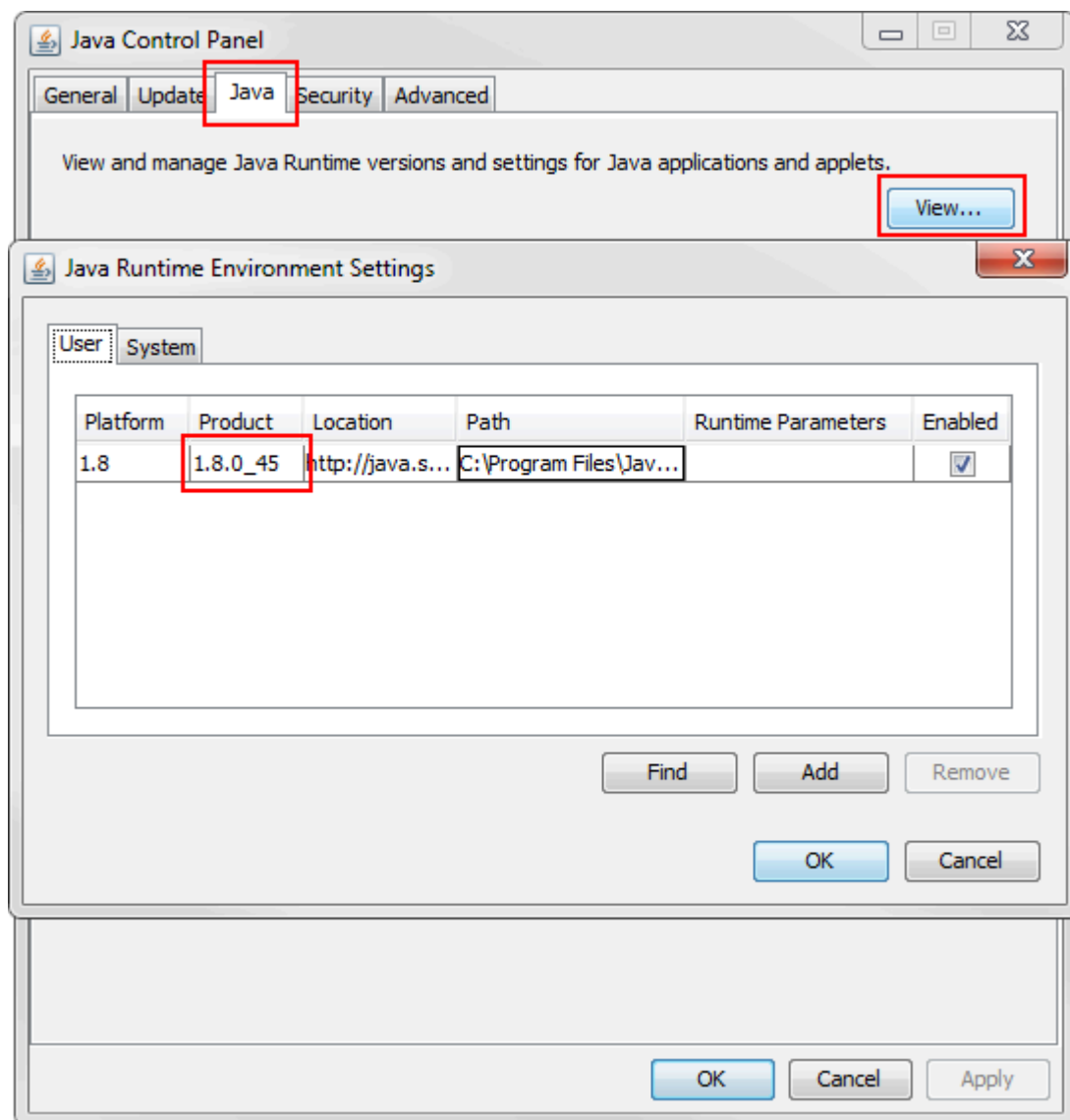


Ignition backups will work on any version that is the same or newer. For example, a backup taken from 7.8.0 can be restored in 7.9.1, but the opposite is not true. If you are developing on a test server, make sure that they have the same version of Ignition so your backups can be transferred seamlessly.

Java Version

You can have multiple Java installations (all different versions) on one computer. Java uses version number similar to Ignitions. For example, Java might be version 1.8.0_45 but we often refer to Java as "Version 8 Update X." In this example, the 1 means Java, and it is version 8.0 update 45. The best

way to check what Java versions are installed depends on your Computer's operating system, but in Windows you can open up the control panel and click the Java option. If you have multiple versions of Java installed, check the Ignition version (above) to see which Java version is being used. If Ignition is using the wrong one, you can easily Change your Java Version. Depending on your OS and Java version, your Control Panel might look slightly different than this:



Database Version

It is not uncommon to connect Ignition to multiple types and versions of Databases, but it is very rare to have multiple versions of a database installed on the same computer. Usually you will see multiple servers handling the load of multiple databases. Fortunately the Ignition drivers for connecting to a database don't work for specific versions, they will work for all database versions. Just pick out the right type (MSSQL, MySQL, Oracle, etc.) and the driver will do the rest. Check out the [Database Connections](#) section for more information on getting connected.

Using Separate Production and Development Servers



INDUCTIVE
UNIVERSITY

**Production and Development
Server**

[Watch the video](#)

Once you complete your project and have it in production, it is a good idea to have a separate Ignition development server for making future changes. That way, the changes will not affect the plant floor and can be completely tested before rolling out to the production environment. It is also recommended to have a development server to perform any Ignition upgrades so any problems can be addressed before moving to a production environment.

Considerations

There are a few things to consider when having a production and development server. First, the development server should **have its own PLCs and SQL databases**. You do not want the development server to point to the live PLCs because it would be possible to accidentally write values to PLCs that may start or stop equipment. Likewise, you do not want the development server to point to the production database or else you may risk duplicating data.

Second, the **development server does not need a license** because you can run the server in its two hour trial mode. Of course, you can get a second license for longer testing periods if you need to.

Third, you should never move a Gateway backup from the development server to the production server. If done right, the development server is pointing to the development PLCs and databases. If you move the Gateway backup, these connections will be saved inside the backup and restored on the production server. Which is bad because the production server should be pointing to the live PLCs and databases. Instead you should **backup individual projects and tags separately to move them to the production server**. Ignition projects use database connections and tags but are connected only by name. This means the production and development servers can have the same PLC and database names, but behind the scenes they will point to different places.

When you restore a project to the production server, remember the projects contain the windows and the templates and not the Tags and other global resources. You will have to transport the Tags and other changed items in addition to the projects. See [Gateway vs. Project Backups](#) for more information on what is included in each type of backup.

Enterprise Administration Module

The EAM allows you to control multiple Gateways from one central location, but can also be used for version control. It has the ability to push resources from one Gateway to another, and this can be applied to a production/development system. You can create tasks that will push your changes at the click of a button. See the [Enterprise Administration](#) section for more information on [sending projects](#).

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Ignition Redundancy



INDUCTIVE
UNIVERSITY

How Redundancy Works

[Watch the video](#)



Knowledge
Base

Updating or Patching a Redundant Ignition Pair

Learn about updating redundant servers
and how to make the process a
success.

[Link to Knowledge Base Article](#)

Ignition redundancy supports 2-node systems, this means there are two copies of the Ignition Gateway. One node (the Master Gateway) is considered the **master node** and the other (the Backup Gateway) is the **backup node**. Both nodes share the same **state** or configuration. In other words, all projects, Gateway settings, and so on are shared between the nodes. The master node manages the configuration then replicates it to the backup node.

When you have the redundant system in place, you can get detailed status information by going to the **Status** tab of the Gateway webpage as shown here and looking at the system's map:

[Home](#)
[Status](#)
[Config](#)

SYSTEMS

[Overview](#)
[Performance](#)
[Alarm Pipelines](#)
[Gateway Scripts](#)
[Modules](#)
[Redundancy](#)
[Reports](#)
[SFCs](#)
[Voice Alarming](#)
[Tags](#)
[EAM Tasks](#)
[Transaction Groups](#)

CONNECTIONS

[EAM Agents](#)
[Databases](#)
[Designers](#)
[Devices](#)
[Gateway Network](#)
[Store & Forward](#)
[OPC Connections](#)
[Perspective Sessions](#)
[Vision Clients](#)

DIAGNOSTICS

[Execution](#)
[Logs](#)
[Metrics Dashboard](#)
[Running Scripts](#)
[Threads](#)

Status > Systems > Overview

Architecture

Gateway

Version: (Dev Version)

License: licensed

Uptime: 2 days

1% cpu

792 mb

BACKUP

Redundancy

✓ Peer Connected

Activity Level: Active

Sync: Good

MASTER

Gateway Network

Active Connections	Remote Gateways	Bytes Sent	Bytes Received
1 / 1	1	371 B /sec	375 B /sec

Connections

Databases

1 / 3 connected

▲ 2 databases faulted

Designer Sessions

0 open

Devices

2 enabled

EAM Agents

0 / 0 agents

Gateway Network Connections

1 / 1 connections

OPC Connections

1 / 1 connected

Perspective Sessions

0 open

Store & Forward

0 stores quarantined

Vision Clients

0 open

Environment

Process Id	3936
Operating System	Windows 10 amd64
Java Version	11.0.15+10-LTS
Local Time	7:07:55 AM
Available Disk Space	278gb / 476gb
Detected NICs	

Systems

Alarm Pipelines	0 / 1 active
EAM Role	Controller
EAM Tasks	0 running
Modules	25 installed
Performance	1% CPU 793mb
Redundancy	Cold, Connected
Reports	0 scheduled
SFCs	0 running
Tags	447 tags

Diagnostics

Generate Diagnostic Bundle

Node Communication

The master and backup nodes communicate over TCP/IP. Therefore, they must be able to see each other over the network, through any firewalls that might be in place. By default, all communication goes from the backup to the master node on **port 8750**. Therefore, that port must allow TCP listening on the master machine. You can change the port from the Gateway webpage in the **Redundancy** settings page.

Configuration Synchronization

The master node maintains the official version of the system configuration. You must make all changes to the system on the master Gateway, the backup Gateway does not allow you to edit properties. Similarly, Designer only connects to the master node.

When changes are made on the master, they are queued up to be sent to the backup node. When the backup connects, it retrieves these updates, or downloads a full system backup if it is too far out of date.

If the master node has modules that aren't present on the backup, they are sent across. Both types of backup transfers, **data only** and **full**, will trigger the Gateway to perform a soft reboot.

Runtime State Synchronization

Information that is only relevant to the running state, such as current alarm states, is shared between nodes on a differential basis so that the backup can take over with the same state that the master had.

On first connection or if the backup node falls too far out of sync, a full state transfer is performed. This information is light-weight and does not trigger a Gateway restart.

Status Monitoring

Once connected, the nodes begin monitoring each other for liveliness and configuration changes. While the master is up, the backup runs according to the **stand by activity level** in the settings.

When the master cannot be contacted by the backup for the specified amount of time, it is determined to be down and the backup assumes responsibility. When the master becomes available again, responsibility is dictated by the recovery mode and the master either takes over immediately or waits for user interaction.

System Activity

When a node is active, it runs fully, connecting to any configured OPC servers, and communicating with devices. When it is not active, its activity level is dictated by the settings, either **warm** or **cold**.

In **warm** standby, the system runs as if it were active, with the exception of logging data or writing to devices, allowing for faster fail-over. In **cold** standby, the system connects to all OPC servers but does not subscribe to tag values. The Ignition OPC UA server does not communicate with any device but third party OPC UA servers may still have device connections. This allows the system to standby without putting additional load on the devices and network. Fail-over takes slightly longer, as tags must be subscribed and initialized.

Historical Logging

Historical data presents a unique challenge when working with redundancy because it is never possible for the backup node to know whether the master is truly down or simply unreachable. If the master was running but unreachable due to a network failure, the backup node becomes active and begins to log history at the same time as the master, who is still active.

In some cases this is OK because the immediate availability of the data is more important than the fact that duplicate entries are logged. But in other cases, it's desirable to avoid duplicates, even at the cost of not having the data available until information about the master state is available.

Ignition redundancy provides for both of these cases, with the **backup history level**, which can be either **Partial** or **Full**.

- In **Full** mode, the backup node logs data directly to the database.
- In **Partial** mode, however, all historical data is cached until a connection is reestablished with the master. At that time, the backup and master communicate about the uptime of the master, and only the data that was collected while the master was truly down is forwarded to the database.

Client Fail-over

All Vision clients connect to the active node. When this system fails and is no longer available, they automatically re-target to the other node. The reconnection and session establishment procedures are handled automatically, but the user is notified that they have been transferred to a different node so that they can notify the system administrator that the system may need attention.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Setting Up Redundancy



INDUCTIVE
UNIVERSITY

Setting Up Redundancy

[Watch the video](#)

Enabling Redundancy

Before You Set Up Redundancy

In redundancy, both nodes will share the exact same configuration state. When a Backup node connects to a Master node, the Backup will attempt to synchronize itself with the Master. Therefore, before you set up for redundancy the following should be considered:

1. **Start with a fresh install for the Backup node.** Because the current configuration of the Backup node will be overwritten, make sure that it does not contain anything valuable. It is a good idea to export any projects that are unique to the Backup before enabling redundancy.
2. **All system configurations relative to the Master node must also resolve on the Backup node.** For example, OPC-UA connections and database connections must use addresses that resolve from both nodes, or any OPC-COM servers must be installed and configured identically on both nodes. This means using "localhost" in any of the database connections won't work. You should use the IP Address of the computer instead.
3. **Configure firewalls between the redundancy nodes.** Redundant systems need TCP connectivity between each other on a variety of ports. Turning off software firewalls or adding special exception rules for each others' addresses is required. Specifically, the Master node must be able to receive data on TCP/IP **port 8750** (you can change this in the Settings), and the Backup node must be able to send outgoing data on that port.

While the OS platform (i.e. Windows, OS X, Linux) for the Master and Backup can differ, it is recommended to have similar OS platforms. If the OS platforms do differ, the Windows machine should be the master system or else the Force Failover option will not work.

However, different versions of the same operating system such as Windows 10 and Windows 8 or OSX 10 and OSX 11 have full functionality.

To Set Up Redundancy

Once the above points are done, setting up redundancy is fairly simple:

On the Master Gateway

1. Go to the **Configure** section of the Master Gateway webpage.
2. Select **Systems > Redundancy**.
The **Redundancy and Network Configuration** page is displayed showing different sections and settings.
3. Change the following Settings:
 - **Redundancy Settings**, set **Mode** to **Master**
 - **Backup Mode Settings**, type in the **Master Node Address** (for example, 10.20.8.12)
4. Click **Save Changes**. **Confirm change to Redundancy Settings** page is displayed.
5. Click **Confirm** to apply your settings.
6. Go to the **Configure** tab and select **Systems > Redundancy** to ensure the redundancy mode and state is properly set.

On the Backup Gateway

1. Do the exact same steps 1-6 above on the **Backup Gateway** webpage, except in step 3 set the **Redundancy Settings Mode** to **Backup**.
2. Verify the correct port setting in **Network Settings**.
3. To verify the redundancy setup, that is, to ensure the Master and the Backup Gateways are connected, go the **Status** tab of the Gateway webpage and click on **Systems > Redundancy**. The Redundancy page will show the connected nodes and their current states.

After saving, the system connects to the Master and downloads a system Backup, and restarts.

Once the restart is complete, the Backup node is synchronized and in communication with the Master.

Redundancy Settings

All redundancy settings are configured in the Ignition configuration Gateway under the **Configure** tab, **Systems > Redundancy**. Most settings are used by both the Master and Backup nodes, with their individual settings broken out into separate categories.

It is important to know that while the full system configuration is shared between nodes, redundancy settings are not shared between nodes. Therefore, it is perfectly acceptable to have different values for the same settings on the two nodes. For example, it is possible to have a different Standby Activity Level on both nodes, and, of course, the network settings will often be different.

CAUTION

The Master node shares all configuration with the Backup node, and this means that changes cannot be made to your project from the Backup. In fact, the Designer can never be opened from a Backup node, even if the Master is currently offline.

Redundancy Settings

Setting	Description
Mode	Independent - Redundancy is not enabled and this Ignition system runs as an independent node. Master - This is the Master node, who listens for a connection from the Backup node, and is in charge of managing system synchronization. Backup - This is the Backup node, who will connect to the Master and receive system updates.
Standby Activity Level	How the node operates when it is not the Active node. Cold - Performs minimal activities, does not connect to devices, and so on. The purpose is to minimize the load on the network and on devices. Warm - Connect to devices, subscribe to tags and set up all executing objects. The purpose is to minimize fail-over time.
Fail-over Timeout	The time, in milliseconds, before the opposite node is determined to be unavailable and this node takes over.
Startup Connection Allowance	The time, in milliseconds, to wait on initial startup for a connection to be established before making a decision on the node's activity level. This is used to prevent unnecessary switch over caused by a node starting as active, only to connect and find that the other node is active, resulting in one of the nodes being de-activated. It is important to note that this setting can interfere with the Master Recovery Mode - if the Master is active, it will always request the Backup to de-activate. If this setting is low, or 0, the Master will always become active before connecting to the Backup, and thus "manual recovery" will not be possible.

Network Settings

Setting	Description
Port	For the Master, the port to listen on. For the Backup, the port to connect to on the Master.
Auto-detect Network Interface	If true, the system will automatically select which network interface to use on the machine. If false, the system will bind itself to the interface of the specified address.
Network Bind Interface	The address to bind to if Auto-detect is false.
Auto-detect HTTP Address	When clients are launched, they are provided with a list of addresses that they may connect to. If this option is true, the list will be generated automatically. If false, they will be provided with the list specified.
HTTP Addresses	The list of addresses to give to the clients if auto-detect is turned off. These are the addresses that the clients will attempt to connect to, so the HTTP and HTTPS ports must match the configuration of the system in the Gateway Control Utility. Each node should only list addresses that are for that node (this property on the master should only list possible addresses for the master node and the backup should only list possible addresses for the backup node).

Master Node Settings

Setting	Description
Recovery Mode	How the Master acts when it connects to a Backup node that is currently active. Automatic - The Master automatically takes back responsibility, and becomes active. The Backup node goes to standby. Manual - The Backup node is allowed to stay active. The Master will become active if the Backup node fails, or if the user requests a switchover from the Gateway configuration page.
Runtime Update Buffer Size	How many "runtime status updates" can be queued up in memory before the system stops tracking them and forces a full refresh. These updates represent information that the other node should have in order to have the same running state as the Master when it's forced to take over. This is most often the values of static tags and the current alarm state. Given that the update buffer is only used once the nodes are connected, the default value is usually fine, and only needs to be increased on systems that may have many alarms that change together, or many static tag writes.
Enable Connection Whitelist	If true, connections will only be accepted if they originate from an address in the whitelist in the next field below.
Connection Whitelist	A list of ip addresses, one per line, to accept connections from. Would normally only have one entry for the backup node, unless the backup machine connects through various network interfaces.
Config Update Queue Size	New in 7.9.17 The maximum size (in megabytes) of config updates allowed before a full transfer is performed.

Backup Node Settings

Setting	Description
Master Node Address	The address where the Master is located.
Ping Rate	The time, in milliseconds, between messages from the Backup to the Master.
Reconnect Period	How often in millisecond, to re-attempt connection when the Backup node is not connected to the Master.
History Mode	How history is treated by the Backup system. If Full , history will be stored normally, as it would be on the Master system. If Partial , history will be cached until the Master is available again and the Backup node is able to determine the exact time that the Master was down.

Troubleshooting

Redundancy Connectivity

When the two redundant nodes are connected, you will be able to see their state details in the **Status** section of the Gateway webpage. There are also various other places where the redundancy state is shown as **connected**.

If the two nodes cannot connect, check the following:

- Verify that the Master address is correct in the Backup. Try to ping the Master machine from the Backup machine, and verify that you're using the correct address for the network card that the Master is connected through.
- If using system names (or domain names), verify that the name is resolving to the correct address by performing a ping.
- Verify that the firewall on the Master is set to allow TCP traffic to the designated port.
- Verify that the Backup is not connecting and then immediately disconnected for some reason.
- Viewing the error log in the gateway console section should show this. If errors are occurring at regular intervals, look at the message for an indication of what is happening. An example of a potential problem is when the failover time is set too low for the given network, which results in

many socket read timeout exceptions, which in turn leads to many disconnect or reconnect attempts.

- If errors are occurring, but the cause isn't clear, contact Inductive Automation Support.

Advanced Troubleshooting

A variety of loggers can be found under the Gateway console section by going to "Levels" and searching for "Redundancy". By setting these loggers to a finer level, more information will be logged to the console. This is generally only useful under the guidance of Inductive Automation support personnel, though more advanced users may find the additional logged information helpful.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Licensing and Activation



INDUCTIVE
UNIVERSITY

About Licensing

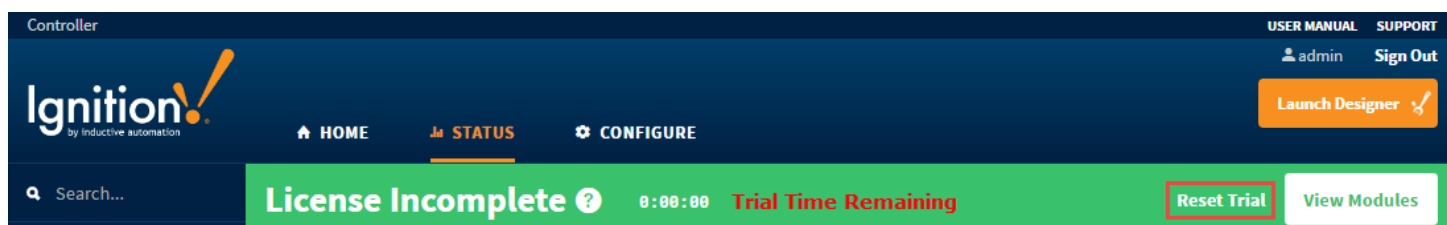
[Watch the video](#)

How Licensing Works

Ignition's licensing is very unique and extremely easy to use because Ignition is licensed by the server, not the client. You only need one license for your server, and any clients are automatically included. In addition to that, an Ignition licensed is unlimited and sold based on which modules you want. Unlimited Clients, Tags, projects and anything else you can think of. Buy only the modules you need, and don't worry about running into limits. If you want to test other modules, you don't need to do anything extra because of our built-in Trial mode. All unlicensed modules will automatically be in a resettable 2 hour trial mode.

Trial Period

Our goal, at Inductive Automation, is to provide an easy way to access and learn Ignition. We want everyone to have the opportunity to try Ignition and start working with it with no restrictions. You can download Ignition from our webpage, install it, and start using it for 2 hours at a time. At the end of the 2 hour time period, all modules will stop running, but don't panic, you can reset the timer to run for another 2 hours. You can reset the timer as many times as you want, so go for it! The Gateway Webpage and the Designer are not affected by this trial, so you can develop for as long as you want without interruption. If you do have a license, any unlicensed modules will run in this Trial mode, but licensed modules will never timeout. To learn more, go to [About the Trial Period](#).



How to Activate

License Key

When a license is purchased you receive a License Key, a six-digit code that identifies your purchase. You use this License Key to activate the software online through the Ignition Gateway. If you later want to add any additional modules, your account is updated and you can re-use your existing License Key to activate the new features. You can also unactivate your license, and reuse it to activate Ignition on a different machine as many times as you want. Once your copy of Ignition is successfully activated, it never needs an internet connection again.

Methods of Activation

You can activate your license in two ways:

- **Over the Internet** - from the System > Licensing section on the Gateway webpage, your request to activate your Gateway is **activated over the internet**.
- **Manually** - if you don't have an internet connection, you can follow the offline activation process in the **Activating Manually** section.

The screenshot shows the Ignition Gateway Configuration web interface. The top navigation bar includes 'Controller', 'USER MANUAL', 'SUPPORT', 'admin', 'Sign Out', and a 'Launch Designer' button. The main navigation menu on the left lists categories: SYSTEM (Overview, Backup/Restore, Licensing, Modules, Projects, Redundancy, Gateway Settings), NETWORKING (Gateway Network, Email Settings), SECURITY (Auditing, Users, Roles, Service Security, Security Zones), DATABASES (Connections, Drivers, Store and Forward), ALARMING (Legacy Notification, Legacy Storage, General, Journal, Notification, On-Call Rosters, Schedules), and TAGS. The main content area is titled 'License Incomplete' with a timer at 0:00:00 and buttons for 'Reset Trial' and 'View Modules'. The 'Licensing' section shows 'Active Licenses' with a single entry 'AAA-AAA' and icons for refresh and delete. The 'License Management' section contains two panels: 'Activate Additional License' with an 'Activate Online' button and a green 'Online' status, and 'No Internet Connection?' with an 'Activate Offline' button.

Adding Multiple Licenses to a Single Gateway

In order to better support our community of third-party module authors, we now allow for multiple licenses to be installed on a single Gateway. A third-party module author can issue a license for their module directly to a customer, whereby, they can immediately do an install of the module. To learn more, check out the [Third-Party Module Showcase](#) to find and purchase modules that extend Ignition's functionality.

It is important to note that there may only be one license on it with a platform version per gateway. The platform will look similar to the picture below. If you try and activate a second license with a platform onto a gateway that already has a license with a platform, the new license will overwrite the previous license.

License Details

Licensed Item	Details
Ignition Platform v 7.x.x	developer: true edition: standard



Module Status

It's important to know which version of a module you have installed and which version of the module you are licensed for. You could have a license for another version of a module so it's not going to work correctly until you have the correct version of the license. It's always a good idea for you to verify the versions on your installed modules by going to the **Modules** page in the Gateway Webpage or by clicking **View Modules** in the green banner.

Here you can see all the modules that are currently running with their version numbers and license status. The licenses are either in **Trial**, **Activated**, or **Free** mode. On this page, you can add or remove modules from your Ignition. If you are licensed for a module you are running, it will run in **Activated** mode. If you are not licensed for a module you are running, it will run in **Trial** mode until the Trial time is expired.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS CONFIGURE

Search...

License Incomplete ? 1:44:30 View Modules

SYSTEMS

- Overview
- Performance
- Alarm Pipelines
- Gateway Scripts
- Modules**
- Redundancy
- Reports
- SFCs
- Tags
- EAM Tasks
- Transaction Groups

CONNECTIONS

- EAM Agents
- Databases
- Designers
- Devices
- Gateway Network
- Store & Forward
- OPC Connections
- OPC-UA Server
- Vision Clients

DIAGNOSTICS

- Execution
- Logs
- Threads

Systems Modules

Licensing Configuration

Running Modules: 22 / 22

Licensed Modules: 21 / 22

License Details

License Key	AAA-AAA
Version	7
developer	true
enablealerts	true
edition	standard

Inductive Automation

Name	Version	License	Status
Alarm Notification	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Allen-Bradley Driver	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
DNP3 Driver	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Enterprise Administration	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Logix Driver	3.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Mobile	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Modbus Driver	5.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OPC-UA	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OpcCom	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Production Simulator	1.8.1 (b5960)	Trial	✓ RUNNING
Reporting	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING

Updating a License

If you want to add more modules to your existing license, just call **Inductive Automation Support** and we can add whatever you need. Once we upgrade your license with the new modules, your license needs to be updated. You **update a license** using the same license from the **Configure > Licensing** section on the Gateway webpage.

Two Methods of Updating a License

You can update your license in two ways:

- **With an Internet Connection** - from the System > Licensing section on the Gateway webpage, **update your Gateway license over the internet**.
- **Without an Internet Connection** - if you don't have an internet connection, you can follow the offline update process in the **Without an Internet Connection** section.

Emergency Activation

In cases where you may have a hardware or OS failure and you cannot unactivate a license, Ignition provides an **Emergency Activation** mode. In this mode, you can temporarily activate your license for 7 days giving you enough time to contact **Inductive Automation Support**.

How to Activate in Emergency Mode

Activating your license in emergency mode is exactly the same as activating with your normal license, you don't have to do anything different because Ignition handles it all for you. See **License Activation** page for details on how to activate. The Gateway will know to run in emergency activation mode and it will display a timer stating how many days, hours, and minutes you have remaining in the Emergency Activation Mode banner. Any time before it expires, you can contact **Inductive Automation Support** to get your license fixed.

Transferring a License

You can transfer your license from one machine to another by unactivating the currently licensed machine and activating another one. The process is very similar to the licensing activation procedure, but only in reverse. Once again, there are two methods of transferring a license, over the internet or without the internet. Unactivation occurs immediately over the internet, and makes this license available for activation on another machine. To learn more, refer to the section on **Transferring a License**.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

About the Trial Period



INDUCTIVE
UNIVERSITY

About the Trial Period

[Watch the video](#)

Trial Timer

Without applying a license, Ignition's modules run on a Trial timer. Modules that run on the Trial timer offer the same functionality as licensed modules, except that they stop functioning when the Trial ends. This allows for a hands-on learning experience before purchasing a license.

When unlicensed, the Ignition Gateway will run for two hours at a time. At the end of the 2-hour period, all unlicensed modules are stopped and the system will stop most of its functions. All the different parts of the Gateway, including all the modules, share the same clock and will timeout simultaneously. For example, all transaction groups will stop logging and clients will show a demo expired screen.

Some components, like the Report Viewer component, will contain a watermark even when the trial timer has been reset. A licensed version of the appropriate modules will remove the watermarks.

Resetting the Trial

You can re-start the Trial period by logging into the Gateway and enabling another 2 hours of execution. The Trial period may be restarted any number of times.

You can check the amount of time remaining on the Trial period from the **Licensing** page of the **Configure** section on the Gateway webpage. If you find the Trial period has ended, click on **Reset Trial** at the top of the page to start a new 2-hour time.

Depending on the module, you may need to take some additional actions. For example, the Vision Clients requires you to log out and back in again in order to continue the Trial.

Trial Timer When Licensed

After a license has been applied, you will still see the Trial timer display the time remaining. To check which modules are running in Trial Mode, click **View Modules** on the green bar at the top of the page.

Name	Version	License	Status
Alarm Notification	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Allen-Bradley Driver	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
DNP3 Driver	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Enterprise Administration	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Logix Driver	3.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Mobile	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Modbus Driver	5.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OPC-UA	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OpcCom	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Production Simulator	1.8.1 (b5960)	Trial	✓ RUNNING
Reporting	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
SFC	3.9.0-rc2 (b2016092319)	Activated	✓ RUNNING

This means that some of the modules are in Trial, while others are activated by the license. **Only the modules that are unlicensed will time out** when the Trial period ends. All other modules will continue working normally. Because the Trial can run on a licensed Gateway, you can freely try new modules by simply uploading them to the Gateway. This is a great way to check out a module before purchasing.

If you see the Trial timer when you think you shouldn't, go check the **Modules page** in the Configure section. In most cases, an unlicensed module was included in the initial installation, or you have a module that is a newer version than your license allows.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

License Activation

Applying a License

Activating a License can easily be done from the Gateway. The examples on this page detail a couple of methods, but note that a license may also be applied through the [Gateway Control Utility](#).

If a Gateway Network exists, then the Controller can [activate Agents as a task](#).

When activating from the Gateway, there are two methods: Online and Offline activation.

- **Online Activation:** Your Ignition Gateway will attempt to contact Inductive Automation's licensing server, and apply the license. This method requires that the Ignition server has Internet access.
- **Offline Activation:** On Gateways without Internet access, licensing files will be generated locally. These files can be moved to a computer with Internet access, and uploaded to our licensing server.

Online Activation



INDUCTIVE
UNIVERSITY

Activating Over Internet

[Watch the video](#)

Activating a license over the Internet is a breeze. The example below will walk through the activation process.

! INFO

Before you proceed, make sure you have received a [License Key](#) from Inductive Automation.

Online Activation Example

1. Go to the Gateway webpage and select the **Configure** section.
2. From the menu on the left, select **System > Licensing**. The Licensing page will appear. If you already have a license key, click the **Activate Online** button. If you want to use the Trial Version of Ignition, click Get a License.

The screenshot shows the Ignition Gateway Controller web interface. The top navigation bar includes 'HOME', 'STATUS', and 'CONFIGURE' (highlighted). The left sidebar menu shows 'SYSTEM' > 'Licensing' selected. The main content area is titled 'Licensing' and features two panels: 'Active Licenses' and 'License Management'. The 'Active Licenses' panel displays 'No License Installed' with a 'Get a License' button. The 'License Management' panel shows 'Activate a License' with an 'Activate Online' button. A green banner at the top indicates 'Trial Version' with a timer and an 'Activate Ignition' button.

3. The (Licensing / Activate Online) page will be displayed. Enter your **License Key** and click **Activate**.

The screenshot shows the 'Licensing / Activate Online' page in the Ignition Gateway Controller web interface. The top navigation bar and left sidebar are consistent with the previous screenshot. The main content area is titled 'Licensing / Activate Online' and features a section 'Activate Your Ignition License'. This section includes instructions for activating a license key and a form with a text input field labeled 'Enter license key' containing 'AAA-AAA', an 'Activate' button, and a status indicator showing 'Online' with the note 'Internet access required'.

The **Licensing** page will refresh and your **Current License** will be successfully activated.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS **CONFIGURE**

Search...

License Incomplete ? 0:00:00 Reset Trial View Modules

SYSTEM

- Overview
- Backup/Restore
- Licensing**
- Modules
- Projects
- Redundancy
- Gateway Settings

NETWORKING

Licensing

License AAA-AAA successfully activated

Active Licenses

+ AAA-AAA

License Management

4. To view the your system modules, click **View Modules**. The list of all your modules will be displayed along with their version number, license, and status. Note: Don't be alarmed by the **License Incomplete** message on the green banner. Click on the question mark . It opens an informational message box stating the current license does not include all of the modules that are installed. Some of the modules are in Trial Mode.

Controller

USER MANUAL SUPPORT

admin Sign Out

Launch Designer

HOME STATUS **CONFIGURE**

Search...

License Incomplete ? 1:44:05 View Modules

SYSTEMS

- Overview
- Performance
- Alarm Pipelines
- Gateway Scripts
- Modules**
- Redundancy
- Reports
- SFCs
- Tags
- EAM Tasks
- Transaction Groups

CONNECTIONS

- EAM Agents
- Databases
- Designers
- Devices
- Gateway Network
- Store & Forward
- OPC Connections
- OPC-UA Server
- Vision Clients

DIAGNOSTICS

- Execution
- Logs
- Threads

OTHER

- Voice Alarming

Systems Modules

Licensing Configuration

Running Modules

22 / 22

Licensed Modules

21 / 22

License Details

License Key	AAA-AAA
Version	7
developer	true
enablealerts	true
edition	standard

Inductive Automation

Name	Version	License	Status
Alarm Notification	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Allen-Bradley Driver	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
DNP3 Driver	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Enterprise Administration	2.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Logix Driver	3.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Mobile	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Modbus Driver	5.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OPC-UA	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
OpcCom	4.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
Production Simulator	1.8.1 (b5960)	Trial	✓ RUNNING
Reporting	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
SFC	3.9.0-rc2 (b2016092319)	Activated	✓ RUNNING
SMS Notification	3.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
SQL Bridge	7.9.0-rc2 (b2016092312)	Activated	✓ RUNNING
Siemens Drivers	4.9.0-rc2 (b2016092312)	Activated	✓ RUNNING

Offline Activation



INDUCTIVE
UNIVERSITY

Activating Manually

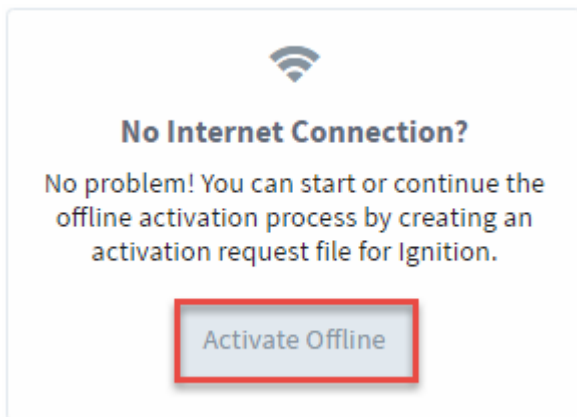
[Watch the video](#)

Manual Activation, also referred to as an "Offline Activation", must be used in situations where a license needs to be applied, but the Gateway does not have Internet access.

Offline Activation Example

When you do not have an internet connection, you can do the following steps to activate your license manually:

1. Go to the Gateway webpage and login to the **Configure** section.
2. From the menu on the left, select **System > Licensing**. The Licensing Activation page will appear.
3. Click the **Activate Offline** button.



4. The **Licensing / Activate Offline** page will be displayed describing how you can activate manually. Enter your **license** and press **Download Activation Request**. An activation request file, called `activation_message.txt` is generated and downloaded.

5. Take the `activation_message.txt` file to a machine with Internet access and either go to the **Support** area on our website to activate. The file may be uploaded on the following page:

Support Portal - Activation/Unactivation Form

Should any troubles occur with the upload process, please contact our support department. Once the `activation_message.txt` has been uploaded, a license file called `license.ipl` is generated.

6. Choose the `license.ipl` file and click **Activate** to finish the process. The Licensing page will refresh showing your license was successfully activated. Click **View Modules** to see a list of all your activated modules.

Information Collected at Activation

When activating an Ignition installation, there are several pieces of information that are communicated to the activation servers and then stored internally at Inductive Automation. Some of this information is used to generate a unique license for the server on which Ignition is being installed. This means your `license.ipl` file must be loaded on the same computer that you created the `activation_message.txt` file from.

The following are some of the types of information that is collected at the time of activation:

- License
- System ID

- Java Version
 - OS Architecture
 - Processor and Memory
-

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Updating a License



INDUCTIVE
UNIVERSITY

Reloading a License

[Watch the video](#)

Making Changes to a License

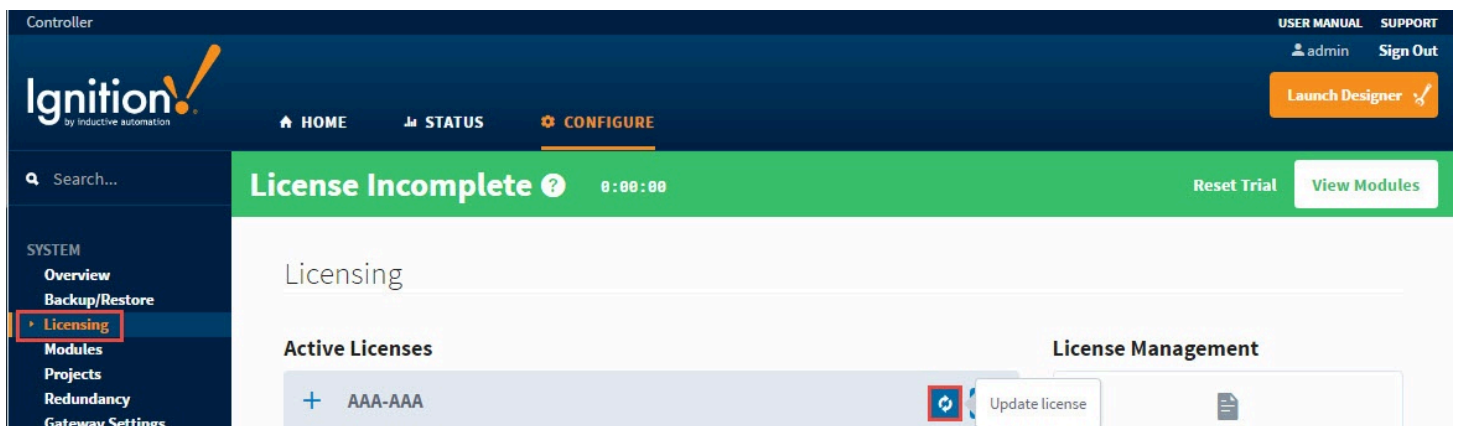
Your license needs to be reloaded once it has been upgraded by Inductive Automation to include new modules, removed modules, or update allowable module versions. There is no need to unactivate the license before updating it.

When updating a license from the Gateway, there are two methods of activation: with an Internet connection and without an internet connection.

With an Internet Connection

With an internet connection, do the following steps to update and reload your license:

1. Go to **Configure** section in the Gateway webpage.
2. Click on **System > Licensing**. The **Current License** is displayed. Click the **Update License** icon.



3. The Licensing page will appear and you'll notice a status message stating that the your license is updating. This connects your machine to the Ignition licensing server. The licensing server verifies your license to be valid then updates your license. You will see new modules, if you purchased any, and new versions for the modules you already have. Once the update is complete, you'll notice a status message that your 'License is successfully re-activated,' and will display a list of all your licensed modules. You can also click on **View Modules** to see which module is in Activated, Trial or Free mode.

The screenshot shows the Ignition Gateway web interface. The top navigation bar includes 'HOME', 'STATUS', and 'CONFIGURE'. A green banner at the top indicates 'License Incomplete' with a timer at 0:00:00. A notification box states 'License AAA-AAA successfully re-activated'. The left sidebar lists various system settings, with 'Licensing' highlighted. The main content area is titled 'Licensing' and contains two sections: 'Active Licenses' and 'License Management'. The 'Active Licenses' section displays a table of active licenses, including 'Ignition Platform', 'Alarm Notification', and 'Allen-Bradley Driver'. The 'License Management' section features an 'Activate Additional License' button and a green 'Online' status indicator.

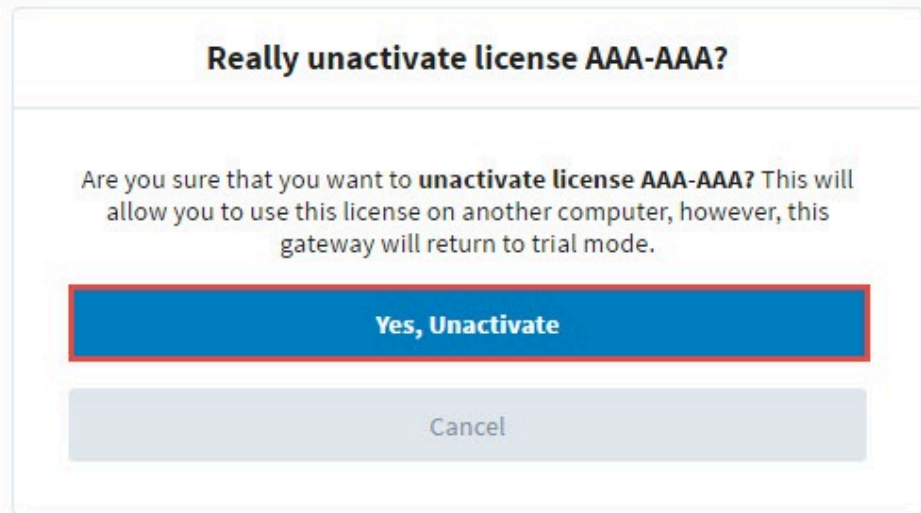
Licensed Item	Details
Ignition Platform v 7.x.x	developer: true edition: standard
Alarm Notification v 4.x.x	edition: standard
Allen-Bradley Driver v 4.x.x	edition: standard

Without an Internet Connection

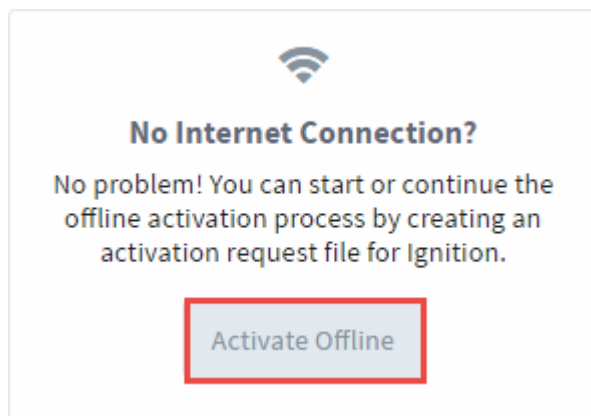
If you do not have an internet connection and want to reload or update your license, you must unactivate, and then manually activate Ignition.

1. Go to **Configure** section in the Gateway webpage.
2. Click on **System > Licensing**. The Current License is displayed.
3. Click the **Unactivate License icon**  to the right of your license.
4. The **Licensing / Confirm Unactivate** window will appear. Click **Yes, Unactivate**. Ignition will attempt to unactivate automatically, but if it cannot, a new page will open with instructions for manual Unactivation. Follow the steps there. This will include downloading an unactivation file and taking it to another computer that has an internet connection. Have a thumb drive handy to transfer files if you can't send them directly to another computer.

Licensing / Confirm Unactivate



5. The Licensing page will appear. Click **Activate Offline**



6. The **Licensing / Activate Offline** window will open. Follow these three steps for activating your license offline.

Activate Ignition Offline

If you do not have an internet connection on this gateway, or if you are behind a firewall, proxy or anti-virus software which is preventing online activation, Ignition will not be able to contact the activation server and an offline activation may be necessary.

Follow the steps below to manually activate Ignition on your machine:

1

Download Offline Activation Request

Enter your license key below, then download and save the activation request file somewhere convenient.

(a USB thumbdrive, for example)

Download Activation Request 

2

Upload To Our Website & Download Your License File

Transfer your activation request file to a computer with an internet connection, then upload it at:

<https://links.inductiveautomation.com/activation>

3

Return Here & Upload License File

Our website will provide you with the necessary license.ipl file for your Ignition activation here.

Choose .ipl file to upload

Choose File No file chosen

Activate

Please note that you need to have access to a machine with internet access as part of this process, but this does not have to be the machine on which you are trying to activate Ignition.

With any new activation, all updates to the license will be automatically applied. For more help activating Ignition manually, see the Offline Activation section.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Emergency Activation



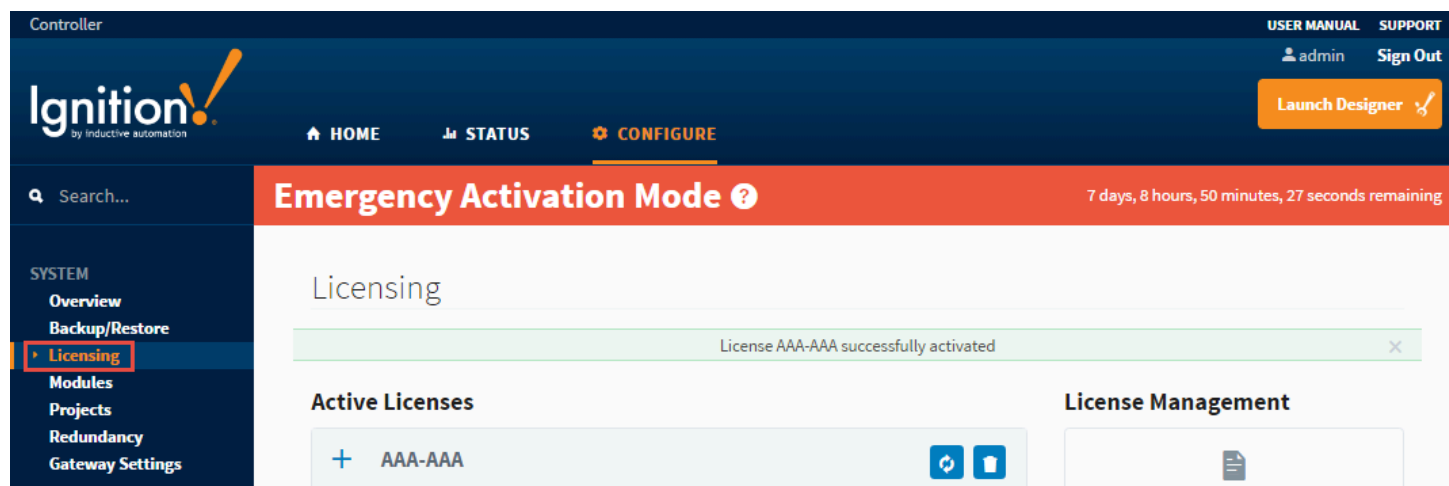
INDUCTIVE
UNIVERSITY

Emergency Activation

[Watch the video](#)

What is Emergency Activation

After activating your License Key in Ignition, you may see a banner that says Ignition is in **Emergency Activation Mode**.



What Does This Mean?

This means the License Key that you used has already been activated. Either it was used previously on another computer, or something went wrong during activation and it registered twice. Fortunately, you have plenty of time to fix this problem. Emergency Activation Mode means **you are fully licensed for 7 days**, so even at night or over the weekend, you can still run without interruption until it is fixed.

How Do I Fix It?

In order to fix your License Key, you must [contact Inductive Automation](#). You can reach us by email or by phone and we will walk you through fixing your license. It is usually a very quick procedure that

involves you re-activating after we have fixed your License Key from our end.

Why Does This Exist?

In short, computers sometimes fail and you need to get running again, fast.

When you initially activate your copy of Ignition, it will run as long as your computer does. As we all know, sometimes there are hardware failures or your computer just stops working. There are many things you can do to minimize this, but once it happens you need to be able to get Ignition up and running again quickly. This Emergency Activation Mode allows you to do this without having to involve Inductive Automation until after your facility is back on track.

Quick Disaster Recovery Plan

What You Need Before an Emergency Happens

For full steps to get Ignition running for the first time, see our [Quick Start Guide](#). If you already have Ignition installed and running in your facility, it's easy to get back to running quickly. Just make sure you have the following stored on a computer or shared drive **that is not your Ignition Gateway**:

- A [Gateway Backup](#). If you haven't already, you should set up [Automatic Backups](#).
- Your Ignition License Key. Make sure you store the 6 digit code somewhere that you can easily retrieve it if your computer fails.
- The [Ignition software Installer](#). In an emergency, it's best to have the installer for the version you are currently using. You can always download an archived version from our website, but having one on hand is preferred. Pro tip: Edit the installer filename to include your License Key so it's easily available.

Emergency Restore Steps

1. Find another computer or create a new Virtual Machine. You need to get something up and running to put Ignition on first. We recommend having something on standby that is the same as the original computer. Further considerations:
 - Set your new computer to the same IP Address of the original Ignition Gateway. This way your clients won't need to do anything special to start running again.
 - Make sure your firewall is set correctly. At minimum, you must have the Ignition port open (8088 by default). In an emergency situation, you may want to just disable the firewall temporarily.

2. **Install Ignition** on the new computer. If you don't have Java installed already, Ignition will install it for you.
3. **Load a Gateway Backup**. Everything in Ignition is in the Gateway Backup, once it's loaded, you are running again!
4. **Activate your License**. Your existing License Key will only work normally the first time it is used. After that, if you try to use it again, it will instead go into an **Emergency 7-Day Trial**. This gives you plenty of time to get back up and running before you have to deal with the License Key, even if your failure is on the weekend or outside Inductive Automation's business hours.
5. **Contact Inductive Automation**. You can reach us by email or by phone (**1-800-266-7798**) and we will walk you through fixing your license.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Transferring a License



INDUCTIVE
UNIVERSITY

Transferring a License

[Watch the video](#)

Moving a License

Transferring a license involves moving it from one Gateway to another. The Transfer process is simple: unactivate the currently licensed Gateway, and activate the other Gateway.

Transferring Licenses

Lets say you have two different copies of Ignition. The **first** copy is licensed, and has an IP address of **10.20.1.1**. The **second** copy is unlicensed and has an IP address of **10.20.1.2**.

The example below will demonstrate how to transfer the license from the **10.20.1.1** Gateway to the **10.20.1.2** Gateway. This guide assumes both Gateways have internet access. In situations where either or both Gateways are secluded from the Internet, offline unactivation and activation may be used instead.

On the Licensed Gateway (10.20.1.1)

1. Navigate to the Gateway. Open a web browser and type in the address of the licensed Gateway:

`http://10.20.1.1:8088`

2. Go to the **Configure** section of the Gateway webpage.

3. Select **System > Licensing**.

4. On the **Licensing** page, look for your current license key, and write it down. You will need to enter this key to activate the new Ignition.

5. Click on the **Unactivate License icon** .

6. A page will appear, asking you to confirm the unactivate request. Click **Yes, Unactivate** to remove the activation from this copy of Ignition. This may take a minute depending on your internet connection. Once finished, the Licensing page will reappear, but the license will have been removed.

On the Other Gateway (10.20.1.2)

1. Navigate to the second Gateway: `http:10.20.1.2:8088`
2. Select **System > Licensing**. On the **Licensing** page you can see that under **Current License** there is **No license installed**.
3. Under **Activate a License**, click on **Activate Online**. A new page will appear asking you to enter your license key.
4. Click on **Activate**. This may take a minute depending on the speed of your internet connection.
5. Once finished, the Licensing page will appear, and the license will be active. Click on the plus icon  to the left of your license or the **View Modules** tab to verify your activated modules.

You have now transferred the license from one Gateway to another.

This is documentation for **Ignition 7.9**, which is no longer actively maintained.

For documentation on the latest stable release, see the [latest version](#) (8.3).

Unactivating a License



INDUCTIVE
UNIVERSITY

Unactivating a License

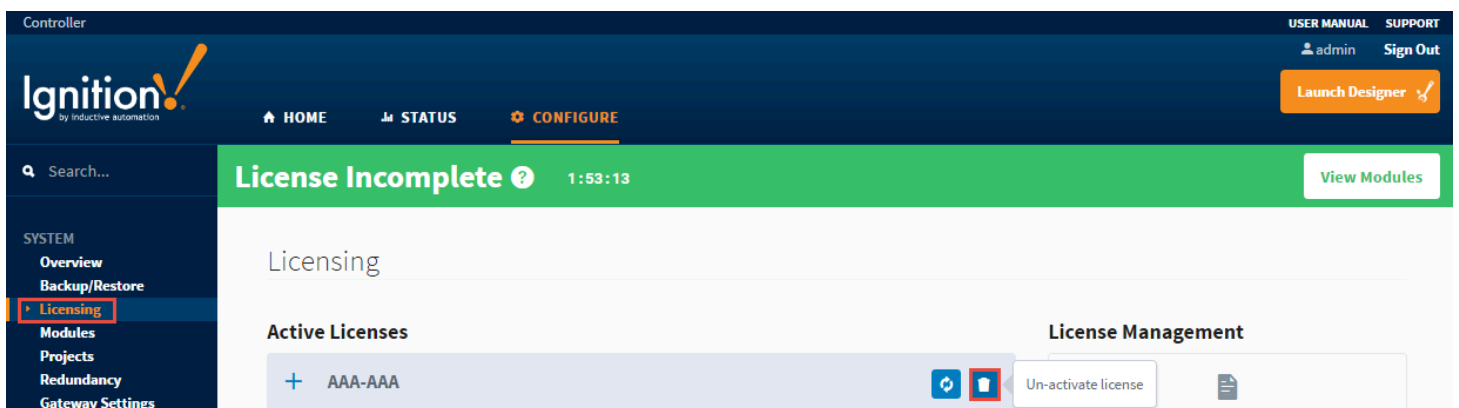
[Watch the video](#)

How Un-activation Works

For a given license, only one Ignition Gateway instance is allowed to be activated at a given time. If you want to activate Ignition on a different server, you must first unactivate the previous server.

To unactivate the Gateway, do the following steps:

1. From the Configure section of Gateway, go to System > Licensing. The Licensing page is displayed and you can see the currently installed license.
2. Click on Unactivate License icon.



3. A Licensing / Confirm Unactive page will appear asking you to confirm the unactivation. Click the Yes, Unactivate. It may take a minute or so for the request to finish.

Really unactivate license AAA-AAA?

Are you sure that you want to **unactivate license AAA-AAA?**
This will allow you to use this license on another computer,
however, this gateway will return to trial mode.

Yes, Unactivate

Cancel

4. If the Ignition server has internet access, the unactivation request will be sent to Inductive Automation's licensing servers, and the license will again be available for activation on another Gateway. This concludes the unactivation process.

If the Ignition server does not have internet access, an unactivation request file (unactivation_message.txt) is generated. Your web browser will prompt you to save the file, or may automatically save the file to your Downloads directory. At this point, the Gateway will no longer have a license applied, but you must upload the unactivation request file to our licensing server for a grant to be added back to your license. Failing to upload the file may result in an Emergency Activation the next time the license is applied. The file may be uploaded at the following page: [Support Portal - Activation/Unactivation Form](#)