PLANT FORMANCE

CASE STUDIES

Ignition in production, across the world.

37 projects delivered by Plantformance engineers: managed Ignition rollouts, MES and traceability, integrations, security and HMI, told as problem, approach and result.

37
Projects in this booklet

110+
Sites managed

34+
Countries reached

800+
Modules deployed

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37 projects, one approach

Each page covers one project: the problem, what it looked like before, how our team solved it and what changed. Some customers asked us not to publish their name, so those projects are described by industry.

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CASE STUDY 01 · MANAGED IGNITION

18 factories keep running locally while a cloud ERP syncs in the background

A multi-site manufacturer · Manufacturing

A multi-site manufacturer moved to a new cloud ERP across 18 factories. Plantformance rolled out on-premises Ignition so operators run fully local, whatever happens to the cloud or the network.

18
factories rolled out in 14 months

100%
of operations run locally

THE PROBLEM

The business chose a new ERP and went through a major transformation across 18+ factories. The ERP came with an Ignition-connected application that ran only in the cloud. That worked on paper, but it gave no guarantee of operations for local staff in plants that run around the clock. Maintenance windows, network problems or a cloud outage could stop the shop floor. The client wanted a firm guarantee: each factory must be able to keep operating locally, no matter what happens in the cloud or on the network.

HOW WE DID IT

Plantformance built a dedicated container that runs all the plumbing the ERP requires, close to the line. We then designed a repeatable rollout method for connecting each site to the cloud. With that method in place, we rolled out Ignition to 18+ sites, each on a Plantformance FactoryBrain server running the purpose-built container. Operators work against the local system. Synchronization with the cloud ERP and updates run in the background, so a cloud or network incident no longer reaches the operator's screen.

BEFORE

The Ignition MES application connected to the ERP ran only in the cloud. It was exposed to maintenance downtime, network issues and cloud availability problems.

AFTER

Operators now work 100% locally while all synchronization and updates happen in the background. The factory cannot even tell whether the cloud ERP is connected.

RESULTS

- 18 factories rolled out in 14 months
- Production orders flow in the background
- Plants keep operating locally through cloud or network incidents

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 02 · MANAGED IGNITION

Ignition live in a large factory 5 days after the order

A European glass producer · Glass

A glass producer wanted Ignition in a large factory running traditional SCADA. Plantformance shipped stock FactoryBrain servers within 24 hours, and Ignition was live for developers 5 days after the order.

5 days
from order to Ignition live on site

-97%
versus usual project duration

24 h
to ship the servers

THE PROBLEM

A business asked to deploy Ignition in a large factory that was running traditional SCADA. In the industry, a project like this usually takes about 6 months. The business wanted Ignition available to its developers fast, with physical servers on site and every IT security requirement met. With excellent teamwork, the goal was to go from order to a live Gateway web page on site in days, not months.

HOW WE DID IT

Plantformance uses standard FactoryBrain 2.0 servers that are kept on the shelf and configured with client specifics only at the last minute. We shipped 2 of them within 24 hours of receiving the order. The servers were received and installed within 48 hours, while the IT security requirements were met in parallel. Ignition was live and ready for developers the same week. From the order to the Gateway web page visible on site took 5 days.

BEFORE

The factory ran traditional SCADA and wanted to roll out Ignition.

AFTER

Ignition is live in the factory, on physical FactoryBrain servers installed locally.

RESULTS

- Ignition in production 5 days after the order, against about 6 months for a typical industry project
- A 97% shorter project duration
- 2 servers shipped within 24 hours of the order
- Servers received and installed within 48 hours with IT security requirements met

Plantformance products and services: FactoryBrain

CASE STUDY 03 · MANAGED IGNITION

One standard Ignition server for every Saint-Gobain factory

Saint-Gobain · Multiple industries

Saint-Gobain wanted Ignition across many sites without each factory building its own. Plantformance added a client standardization layer, a digital rollout method, and identical servers that are easy to maintain and update.

THE PROBLEM

A senior executive at Saint-Gobain saw the potential of Ignition by Inductive Automation and pushed to roll it out across several sites. It soon became clear that a do-it-yourself rollout has real drawbacks. Configurations drift apart from site to site, licensing turns into a recurring issue, and nothing stays consistent. Each new factory adds another one-off setup that someone has to maintain, patch, and support.

HOW WE DID IT

Plantformance added a client standardization layer on top of its standard server. On that base, the team built a rollout methodology that still handles client-specific requests, then digitized the methodology so every deployment follows the same path. The result is one shared foundation for every site. Local projects stay local, while everything underneath is the same server, the same configuration, and the same process. When a site asks to deviate from the central IT security guidelines, Plantformance highlights the request so the client can decide.

BEFORE

Each factory owned its own deployment. There was no saving at scale, and the landscape grew complex, with every site set up differently and problems showing up everywhere: financial, operational, and in maintainability.

AFTER

All servers are strictly identical except for local projects. Maintenance is easy, automatable, and deterministic.

RESULTS

- Total cost of ownership well below market price
- Standardization on every floor, so updates, vulnerability fixes, and new requests deploy quickly
- Local requests to deviate from the central IT security guidelines are flagged to the client
- Maintenance that is easy, automatable, and deterministic

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 04 · MANAGED IGNITION

Isolated development servers with no change in operating costs

A multi-site industrial manufacturer · Manufacturing

A manufacturer wanted to separate Ignition development from production across 90 factories. Plantformance turned the spare FactoryBrain node into an isolated development instance, so any site with a 2-server setup can add one with no change in operating costs.

90

factories previously shared 1 or 2 development servers

THE PROBLEM

The client wanted to start separating Ignition designers from production, which meant giving factories their own development servers. Across dozens of factories, dedicated development hardware would have been very expensive. Software, operations, and maintenance would add even more. The client needed a way to give designers a safe place to work without multiplying servers and running costs at every site.

HOW WE DID IT

A standard FactoryBrain setup runs as a pair of 2 nodes. Node 1 runs production Ignition. Node 2 receives snapshots and backups and acts as a cold spare. Plantformance reviewed the architecture and added a virtualization layer used only for disaster recovery. That layer also made it possible to run a development instance on node 2, fully isolated from node 1. During an emergency, the development instance can be swapped for production almost instantly. The capability is now a standard FactoryBrain feature.

BEFORE

1 or 2 development servers covered 90 factories.

AFTER

On a 2-server setup, a development server is a one-off software option. Teams work in both production and development, and the emergency fallback stays in place.

RESULTS

- Every 2-node site can run its own isolated development instance
- Operating costs did not change, even with the added development server
- Emergency fallback to node 2 is still available
- Now a standard FactoryBrain feature for all clients

Plantformance products and services: FactoryBrain

CASE STUDY 05 · MANAGED IGNITION

Managing 200+ Ignition servers in one click, 99% faster

Plantformance · Cross-industry

Configuring a fleet of 200+ Ignition servers one by one took too long and risked drift. Plantformance built an Ignition module that lets its orchestrator run changes on server groups in one click, cutting execution time by 99%.

99%
less configuration execution time

1 min
to configure 10 servers, down from 10 min each

200+
Ignition servers managed

THE PROBLEM

Plantformance manages a growing fleet of 200+ Ignition servers worldwide. Handling configurations, deployments, and data extraction by hand across that fleet took a lot of time. It also created a risk of configuration drift, where servers that should be identical slowly stop being identical. As the fleet kept growing, server-by-server administration was not going to keep up. Engineers needed one safe way to act on many servers.

HOW WE DID IT

Plantformance built an internal infrastructure automation solution around an Ignition module. The module acts as the remote arm of Plantformance's internal orchestrator. From the orchestrator, engineers run standardized configuration, deployment, and data-extraction tasks across selected groups of servers in one click. Strict security controls apply to every run. Instead of repeating the same steps on each server, one standardized task runs on the whole selected group at once, the same way every time.

BEFORE

Routine administration, configuration changes, and deployments ran server by server, at roughly 10 minutes per server.

AFTER

Engineers select target servers in the orchestrator and run deployments, updates, or diagnostics across the whole fleet at the same time, with strict security controls.

RESULTS

- Configuration execution time cut by 99%
- From 10 minutes per server to 1 minute for 10 servers
- Reliable, consistent management of 200+ servers
- Standardized tasks reduce the risk of configuration drift

Plantformance products and services: FactoryBrain

CASE STUDY 06 · MANAGED IGNITION

How a lean team of ~10 engineers runs 200+ Ignition servers worldwide

Plantformance · Cross-industry

Plantformance built a standardized FactoryBrain architecture, proactive monitoring and in-house automation so a compact engineering team can build, provision, develop and support more than 200 production Ignition servers end to end.

200+
production Ignition servers supported worldwide

~10
engineers running the full fleet

THE PROBLEM

Running industrial Ignition servers at scale is more than keeping software up. Someone has to build the hardware, provision it, look after the infrastructure, develop the applications and answer support tickets. In many enterprise setups each of those jobs sits with a different team. That model needs a large headcount, and every handoff between teams slows down how fast a ticket gets an answer. Plantformance wanted to operate and support more than 200 servers worldwide without that overhead and without slow escalations.

HOW WE DID IT

Plantformance combined four things. First, a standardized FactoryBrain architecture, so every server is built and configured the same way. Second, proactive monitoring that surfaces issues before users report them. Third, an orchestrator to manage the fleet from one place. Fourth, custom automation tools written by the team for repetitive work. Together they let one lean, multi-disciplinary team own the full chain: manufacturing, provisioning, application development and support. The same engineers who build and deploy a server also answer its tickets, so there are no handoffs between departments.

BEFORE

In traditional enterprise setups, large dedicated teams of 70+ engineers are often needed to manage just a handful of Ignition servers, which creates high overhead and slow support escalations.

AFTER

Support tickets across 200+ production servers are triaged and resolved quickly by a compact, high-ownership engineering team, without bureaucratic handoffs.

RESULTS

- A team of ~10 engineers in Europe manages 200+ servers worldwide
- High ticket volumes are resolved quickly with a fast time-to-answer (TTA)
- One team covers manufacturing, provisioning, application development and support end to end
- Standardized architecture and automation replace the large headcount typical setups need

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 07 · MANAGED IGNITION

Predictive monitoring that catches Ignition failures before plants feel them

Plantformance · Cross-industry

Plantformance built a predictive FactoryBrain monitoring platform that spots disk exhaustion, expiring certificates, privilege escalation and hardening drift early, across 3,000+ hosted Ignition applications, and fixes them before production is affected.

3,000+

hosted Ignition applications monitored

THE PROBLEM

Industrial Ignition deployments rarely fail all at once. They degrade quietly. Heavy writes slowly fill disks. TLS, OPC-UA, PLC and database certificates reach their expiry dates. Unprivileged users gain rights they should not have. Project hardening settings drift away from their baseline. None of this shows up on a factory floor until something stops, and by then production is already halted. The goal was to catch every one of these signals early, while there is still time to act.

HOW WE DID IT

Over multiple years, Plantformance built a predictive monitoring platform for FactoryBrain that tracks granular OS, network, database and Ignition metrics. Project hardening is audited twice daily. Automated checks look for unauthorized privilege escalation. Certificate expiration is tracked across Ignition, OPC-UA, PLC and database certificates. Disk usage is forecast so exhaustion is predicted before it happens, not discovered after. Together these checks turn silent degradation into early, actionable warnings that engineers can resolve on their own schedule instead of during an outage.

BEFORE

Basic server monitoring tracked only surface metrics such as CPU and RAM. It reacted after an alert or outage had already disrupted plant operations.

AFTER

Plantformance detects anomalies, unauthorized changes and impending resource exhaustion early, and resolves them before factories experience any impact.

RESULTS

- Proactive issue detection across 3,000+ hosted Ignition applications
- Unplanned outages from certificate expirations prevented before clients notice
- Disk exhaustion forecast and resolved ahead of time
- Security and hardening drift caught by twice-daily audits

Plantformance products and services: FactoryBrain

CASE STUDY 08 · MANAGED IGNITION

15-minute acknowledgment for critical plant incidents, 24/7

Plantformance · Cross-industry

Plantformance runs a 24/7 emergency workflow that combines FactoryBrain critical alarms and P1/P2 client tickets with on-call phone and SMS escalation, under a strict 15-minute acknowledgment SLA.

15 min
acknowledgment SLA for P1/P2 issues

24/7/365
on-call engineer coverage

THE PROBLEM

A 24/7 manufacturing plant does not stop at night, on weekends or on holidays, and neither do its problems. When a critical production incident or a gateway alarm hits outside office hours, a delay of several hours can turn a small alarm into an extended stoppage. Plants need someone qualified looking at the issue within minutes, at any hour, whether the alert comes from monitoring or from their own team.

HOW WE DID IT

Plantformance set up a 24/7 emergency response workflow with two entry points. Automated FactoryBrain critical alarms trigger it directly, and clients can raise P1/P2 tickets themselves. Either way, the on-call engineer is escalated to immediately by SMS and phone. A strict 15-minute acknowledgment SLA applies, day and night, including weekends and holidays. The engineer acknowledges the issue and starts investigating straight away, instead of the ticket waiting in a queue for the next business day.

BEFORE

Traditional IT/OT support relied on slow ticket queues and business-hours escalation, which left factories exposed during critical P1/P2 emergencies.

AFTER

Whether triggered by monitoring or by a client ticket in the middle of the night, an on-call Plantformance engineer acknowledges and starts investigating critical P1/P2 issues within 15 minutes, 24/7/365.

RESULTS

- Guaranteed 15-minute acknowledgment SLA for critical P1/P2 issues
- Coverage 24/7/365, including nights, weekends and holidays
- Automated FactoryBrain alarms escalate straight to the on-call engineer
- Minor alarms stopped before they become extended factory stoppages

Plantformance products and services: FactoryBrain

CASE STUDY 09 · MANAGED IGNITION

3,000+ Ignition projects hosted for 8 years with zero data loss

Saint-Gobain · Cross-industry

For Saint-Gobain, Plantformance standardized FactoryBrain edge servers and centralized hosting with continuous telemetry, multi-tier backups and KPI tracking. The result: 3,000+ Ignition projects and multiple petabytes of data hosted over 8 years with zero data loss.

3,000+
Ignition projects hosted

8 yrs
consecutive years of hosting

Zero
data loss

THE PROBLEM

Saint-Gobain needed proven long-term reliability and scale before trusting thousands of mission-critical Ignition applications to a managed service partner. The stakes included multi-petabyte operational databases spread across many factories. At that size, every weak point multiplies. A partner has to show that data stays intact, history is never lost, and operations stay stable, not for a few months but across many years of running factory systems.

HOW WE DID IT

Plantformance engineered standardized FactoryBrain edge servers alongside centralized hosting infrastructure. Every factory application and database is covered by continuous telemetry, so its health is always visible. Automated multi-tier backups protect configurations and data. Strict operational KPI tracking runs across every application and database, giving a measurable record of reliability instead of assumptions. Standardizing the edge servers keeps thousands of deployments consistent and manageable, so the same checks and backups apply everywhere over the long term.

BEFORE

Scaling to thousands of distributed factory projects and databases created a high risk of data corruption, lost history and unverified reliability over multi-year lifecycles.

AFTER

Thousands of Ignition applications and databases run continuously with full data integrity, real-time KPI visibility and verified long-term stability.

RESULTS

- 3,000+ Ignition projects hosted
- Multiple petabytes of industrial data under management
- 8 consecutive years of hosting
- Zero data loss over the full period

Plantformance products and services: FactoryBrain

CASE STUDY 10 · MANAGED IGNITION

Failed server replaced in 3 days during a global hardware shortage

Saint-Gobain Life Sciences · Cross-industry

When an out-of-warranty server node failed at a Saint-Gobain Life Sciences site, Plantformance shipped a pre-stocked FactoryBrain node in 18h and completed the full replacement in 3 days, against 1 to 6 month market lead times.

3 days
failure ticket to on-site installation

18 h
incident to shipment

THE PROBLEM

An out-of-warranty industrial server node failed at a Saint-Gobain Life Sciences site. The timing was bad. A severe global shortage of NVMe/SSD drives and enterprise server hardware was underway, and standard OEM replacement lead times usually ran from 1 to 6 months. Waiting that long would leave the site running without its server for months, with prices inflated by the same shortage.

HOW WE DID IT

Plantformance keeps critical FactoryBrain replacement nodes pre-stocked on the shelf for exactly this case. The team ran the whole response end to end: opening the ticket, investigating the root cause, issuing the quote, processing the order, provisioning and testing the node, shipping it and installing it on site. Because the hardware was already in stock, nothing waited on the market. The time from incident to shipment was 18h.

BEFORE

Without dedicated local stock, replacing an out-of-warranty server meant waiting 1 to 6 months for procurement and paying inflated market prices, with prolonged operational exposure.

AFTER

The client received a fully provisioned, tested replacement node installed on site, without waiting months for market supply.

RESULTS

- Full replacement lifecycle completed in 3 days, from failure ticket to on-site installation
- Incident to shipment in 18h
- Avoided the 1 to 6 month standard market lead time

Plantformance products and services: FactoryBrain

CASE STUDY 11 · MANAGED IGNITION

Every inquiry, RFQ and meeting request answered within 24 hours

Plantformance · Cross-industry

Plantformance made commercial responsiveness an operational priority: every prospect and client inquiry, RFQ, meeting request and feedback message gets a direct answer from the sales and solutions team within 24 hours.

24 h
maximum response time

100%
adherence to the response commitment

THE PROBLEM

Industrial buyers often wait too long for simple answers. Prospects and existing clients send a technical question, ask for a quotation or request a project consultation, and then wait days for an email reply or two weeks for a meeting slot. Each delay slows the evaluation on their side. For a plant with a live project, a slow answer is more than an annoyance: it holds up scoping, decisions and the feedback loop between both teams.

HOW WE DID IT

Plantformance made rapid commercial responsiveness an operational priority. Every prospect or client inquiry, request for quotation (RFQ), meeting request and feedback message is answered directly by the sales and solutions team within 24 hours. The commitment holds during peak capacity periods too, when other vendors typically queue requests. Answers come from the people who can act on them, so buyers get usable responses, quotes and meeting times instead of an acknowledgment and a wait.

BEFORE

Conventional B2B industrial vendors often put inquiries on hold during peak workloads, which slowed commercial evaluations, project scoping and client feedback loops.

AFTER

Clients and prospective buyers get prompt, actionable answers, quotes and meeting bookings within 24 hours, without being put on hold.

RESULTS

- 100% adherence to the under-24-hour response commitment
- Covers all client and prospect inquiries, RFQs and meeting requests
- Holds during peak capacity periods
- Faster sales cycles and higher customer satisfaction

Plantformance products and services: Professional Services

CASE STUDY 12 · MIGRATION AND CARVE-OUT

Two factories carved out to a new owner with an 8-hour transition

NexinLife · Life-Sciences

When two NexinLife factories were sold to a new group, Plantformance ran the carve-out end to end. Operations kept the same cloud ERP and changed hands with only an 8-hour transition period.

2
factories carved out

8 h
transition period, no other impact on operations

THE PROBLEM

Two factories were sold to a new group, but they had to keep operating with the same cloud ERP solution connected. The move was extremely complex. The previous owner required a highly secured, multi-stage connectivity setup, and the factories had to leave it for an environment that was still unknown. Any mistake would hit production directly. The factories needed a way to change owners, networks and connection paths without disrupting the shop floor.

HOW WE DID IT

Plantformance lent a third server to each factory so the carve-out could be prepared with no impact on factory operations. We managed the entire project end to end. We proposed replacing the client's very complex connectivity with the Plantformance standard for servicing devices: a single outbound IP and a single port connection. Before the real cutover, we ran a full rehearsal of the carve-out operations, so the team knew every step and its timing in advance.

BEFORE

The Ignition instance connected to Plantformance through triple NAT, VPN and multiple ports, and to the ERP provider through two different solutions.

AFTER

The FactoryBrain servers now connect directly to Plantformance infrastructure through a simple, modern connection. They connect to the ERP provider through the provider's standard.

RESULTS

- Both factories were carved out with no impact on operations beyond an 8-hour transition period
- Connectivity simplified to a single outbound IP and a single port
- ERP connection moved to the provider's standard method
- Cutover rehearsed in advance on separate servers

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 13 · MIGRATION AND CARVE-OUT

100+ factories upgraded to Ignition 8.3, down to 12 minutes per factory

A multi-site manufacturing group · Multiple industries

A manufacturing group ran thousands of Ignition applications on 8.1.x across more than 100 factories. Plantformance automated the move to Ignition 8.3, reaching about 12 minutes per factory with a 96% success rate.

100+
factories migrated to Ignition 8.3

12 min
to migrate one factory

96%
migration success rate

THE PROBLEM

More than 100 factories ran Ignition 8.1.x, with thousands of Ignition applications ranging from monitoring to SCADA, including complex multi-site solutions. Then Ignition 8.3 came out. It brought the next-step architecture for the future, but it also made the upgrade harder. Every site had a different mix of applications, modules and interfaces, so a manual, site-by-site upgrade would have been slow and risky.

HOW WE DID IT

Plantformance built a purpose-built monitoring tool that checked every day how ready each Ignition server was for the move to 8.3. We prepared a summary per factory so the client had a precise to-do list for each site, and we sent a standard weekly report. Next, we built an automation tool that handled 99% of the migration. We then migrated sites one by one, starting with the easiest and moving to the most complex. By the end, migrating one factory took about 12 minutes, with a 96% success rate.

BEFORE

A very complex landscape, with Ignition applications, modules, solutions, interfaces and devices that differed from site to site.

AFTER

All factories were migrated to Ignition 8.3, except two special cases that need a local application rewrite.

RESULTS

- The entire fleet of Ignition servers moved to the latest Ignition version
- About 12 minutes to migrate one factory by the end of the program, with a 96% success rate
- 99% of the migration automated
- The client uses the latest from Inductive Automation instead of staying tied to a legacy landscape for years

Plantformance products and services: Professional Services

CASE STUDY 14 · INTEGRATION AND DATA

New interfaces reach 20 factories in 2 weeks instead of years

A multi-site manufacturing group · Multiple industries

A manufacturing group running Ignition under strict security rules needed approval for every new connection at every plant. Plantformance built one reusable data layer, so a new interface now goes from request to 20 factories in 2 weeks.

2 weeks

from interface request to rollout

20

factories per rollout

THE PROBLEM

A large group was in the middle of a major Ignition rollout on Plantformance FactoryBrain servers. Its security environment was locked down: every port and every connection to Ignition needed approval. Connecting any new solution to all factories, such as cloud, ERP or streaming, meant a new approval document for each factory. Some solutions would clearly take years to deploy because of process alone, not technology.

HOW WE DID IT

Plantformance proposed a major project to fully abstract every non-factory interface. The idea was to build one data communication layer, once, and reuse it every time a new global interface is requested. This solved the approval problem. It also added a proxy layer, so Ignition never connects directly to outside services, and a buffering and reprocessing layer for guaranteed data delivery. We built it with Apache NiFi locally and centrally, on a high-availability cluster, with site-to-site connectivity and buffering.

BEFORE

Each new connection request across several factories was a long, painful process. It involved local, central, business and security stakeholders, plus Plantformance and the service supplier.

AFTER

Factories have no direct connection to any external system. Data is wrapped in its own protocol, yet Ignition developers keep it simple, for example one line of code to confirm a production order. Data is buffered locally and centrally in both directions, and monitoring gives a live view of every data flow with alerting.

RESULTS

- A new interface goes from request to rollout across 20 factories in 2 weeks, including development and validation on 1 site
- Massive savings in deployment time
- Complex solutions now roll out fast across all factories
- Data exchanges ride through communication incidents thanks to local and central buffering

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 15 · INTEGRATION AND DATA

Streaming factory data to Azure in one click across 31 factories

A multi-site abrasives manufacturer · Abrasives

An abrasives manufacturer wanted local data from 31 factories in its Azure cloud without new security approvals per site. Plantformance built one central connection and an Ignition module that lets developers stream any tag with a click.

31
factories in scope

5 s
default send interval

10k
tags per aggregated batch

THE PROBLEM

The client wanted local factory data streamed to its Azure cloud for a scope of 31 factories. At the same time, it wanted local developers to stay free to choose what gets sent to the cloud. Nothing was forwarded yet, and adding interfaces was hard because of IT security requirements. A separate connection per plant would have meant a long approval cycle at every site.

HOW WE DID IT

Plantformance created a single data connection from a central instance, a NiFi cluster, to Azure Event Hubs. With that in place, we built an Ignition module that adds a "Data streaming" section to the tag browser. Developers select one or many tags, edit the properties and turn streaming on. From then on, every change on those tags is aggregated, compressed and sent to the cloud at a regular interval, every 5 seconds by default. A single batch can carry up to 10k tags.

BEFORE

No data was forwarded to the cloud, in an environment where adding interfaces is difficult because of IT security requirements.

AFTER

Any designer with editing rights can add or remove streamed tags with a click. Data arrives automatically in the enterprise Azure Event Hubs subscription.

RESULTS

- One central cloud connection instead of one per factory
- Local developers choose which tags to stream, with no new interface work
- Data lands automatically in the enterprise Azure subscription
- The stream now feeds multiple data applications, from performance management to AI and ML studies

Plantformance products and services: Professional Services

CASE STUDY 16 · INTEGRATION AND DATA

Edge MySQL tables replicated to Azure with no maintenance

A multi-site manufacturing group · Multiple industries

A manufacturing group needed exact cloud copies of its local Ignition tables without touching edge performance. Plantformance built a change-capture pipeline, so turning on sync for a table now takes a 2-minute change request.

15 min
change-check interval

1:50
typical compression ratio

2 min
to build a sync change request

THE PROBLEM

Ignition data usually lives locally and serves many activities. It is often stored in the local edge MySQL database, the default on FactoryBrain, with excellent availability, speed and consistency. The enterprise needs that same data for master-data sync, performance, aggregated data and analytics. The client asked for a solution with no maintenance that would replicate any local schema or table into its Azure cloud.

HOW WE DID IT

Plantformance built a change-data-capture solution based on MySQL internals, with no local data duplication and no performance impact. Every 15 minutes it checks the tables marked for sync and writes the changes, inserts, updates and deletes, into heavily compressed Parquet files, usually 1:50. The files are buffered locally and centrally with NiFi, then shipped to Azure Blob Storage with a strict naming scheme so data scientists can rebuild tables on the fly. Checks detect missing or corrupted data at every stage and allow a resync.

BEFORE

Some data was already streamed, which gave a rough view of local data in the cloud. Streaming did not meet the reliability goal: a perfectly synchronized copy in the cloud of what exists locally.

AFTER

Turning on sync for a table is a change request that takes 2 minutes to build. Implementation takes Plantformance 5 minutes.

RESULTS

- Local data stays at the edge for speed, reliability and performance for plant teams
- Operations do not depend on the cloud
- Enterprise teams get a synchronized copy of local tables in Azure
- Changes compressed about 1:50 before shipping
- Missing or corrupted data is detected and can be resynced

Plantformance products and services: FactoryBrain, Professional Services

CASE STUDY 17 · INTEGRATION AND DATA

Saint-Gobain Glass covers every factory with zero interface prerequisites

Saint-Gobain Glass · Glass

Saint-Gobain Glass built an edge management app on Ignition that needed heavy links to MicroStrategy, MS Planner and more. Plantformance built a central middleware layer, so every factory is covered by default with nothing to set up.

18
factories covered by default

5
interfaces per factory abstracted centrally

THE PROBLEM

Saint-Gobain Glass wanted a local management application running at the edge on local data, with heavy data exchange with MicroStrategy, MS Planner and other systems. The application was designed by 2Gi, an Ignition integrator, and Saint-Gobain Glass asked Plantformance to handle all the interfaces. It quickly became clear that with 18 factories and 5 interfaces per factory, IT security requirements would stretch implementation into years. The MicroStrategy data needs would also have failed on call volume, data size and backend latency.

HOW WE DID IT

Plantformance built a central middleware processing layer that abstracts every interface the local application needs. For MicroStrategy, we built a dedicated layer: each factory sends a catalog of requests in one query, the central layer runs all the actions until everything is done, and it pushes one compressed data packet back to the site with all the requested data. Interfaces to MS Planner and the other systems are abstracted the same way. Plantformance also provides Ignition scripting APIs that the integrator uses in the application.

BEFORE

A very good Ignition application that would have faced a very long rollout. Its data exchanges would also have hurt the performance of the Ignition gateway.

AFTER

2Gi keeps developing and upgrading the application using the Ignition scripting APIs built by Plantformance. Plantformance manages all data flows and the central middleware, and the solution is extremely reliable.

RESULTS

- A rollout that would have taken months per site is now implicit
- All factories are covered by default, with nothing to do to get the solution working
- Saint-Gobain Glass and 2Gi decide when to roll out each factory
- Zero data interconnection prerequisites per factory

Plantformance products and services: Professional Services

CASE STUDY 18 · MES AND TRACEABILITY

Full MES cuts customer complaint response time by 99%

An abrasives manufacturer · Abrasives

An abrasives manufacturer making expensive, long-lead parts went from paper tracking to a full MES. Complaint answers now take minutes, productivity rose 20%, and customer complaints fell 30%.

99%
less time to answer a customer complaint

+20%
productivity

30%
fewer customer complaints

THE PROBLEM

The factory makes very expensive parts with long manufacturing lead times for demanding customers in automotive and steel. It struggled to manage quality during the process. It also had major trouble answering customer quality complaints. Collecting the dozens of reports needed just to understand what had been made could take up to a full day. With no digital record, the team could not trace a part quickly or catch quality problems early.

HOW WE DID IT

Plantformance built a full MES for the entire production line: mixing, dosing, forming, heating, cooling, furnaces and transport. We added barcodes and labels after the forming step, with readers at every following step. We connected the ERP so operators see ERP data, SCADA control and performance management on one screen. We built an abstracted database that can collect any manufacturing data. On top of it, we built a query browser so quality and management teams can pull up any production data in seconds.

BEFORE

Production was tracked on paper and nothing was digital. The foreman updated the ERP with a 24 to 48 hour lag.

AFTER

All manufacturing is tracked in real time, and the ERP is updated after each production step. Every part carries a fail-safe barcode, and customer complaints can be checked and answered in minutes.

RESULTS

- 99% less time needed to answer a customer complaint
- +20% productivity
- 30% fewer customer complaints, because quality incidents are caught at a very early stage
- Major cost reduction, since parts that would end up rejected no longer move through the full process

Plantformance products and services: Professional Services

CASE STUDY 19 · MES AND TRACEABILITY

Real-time thermal phase tracking for industrial baking ovens

An abrasives manufacturer · Abrasives

An abrasives manufacturer had no real-time view of oven heating, soaking, and cool-down phases tied to work orders. Plantformance built an Ignition Vision application that detects each phase automatically and links it to the work order.

THE PROBLEM

Specialized industrial ovens bake abrasive materials through distinct thermal stages: a heating ramp, soaking at setpoint, and a cool-down ramp. Each stage had to be tracked precisely and linked to its work order. There was no real-time visualization tool to do it. Without one, the plant had little visibility into how each batch actually moved through its thermal cycle, or how one oven compared to the next.

HOW WE DID IT

Plantformance built a custom Ignition Vision monitoring application as a reusable template. Phase-detection logic automatically identifies the transitions between heating ramp, soaking, and cool-down. A clear interface lets users browse ovens and work orders, both active and historical. Because the same template runs on multiple identical machines, the data is consistent across ovens. Operators and engineers see each oven's thermal profile live, next to the work order it belongs to.

BEFORE

Operators and engineers had no single graphical view that could detect thermal cycle phases automatically or let them browse current and past oven work orders.

AFTER

Operators have immediate, clear graphical visibility into every oven's thermal profile and work-order history in real time.

RESULTS

- Delivered quickly, with immediate client satisfaction
- Reliable, real-time thermal phase visibility across the baking ovens
- Automatic detection of heating ramp, soaking, and cool-down
- Consistent data across identical machines let the factory build statistical process control (SPC) analysis

Plantformance products and services: Professional Services

CASE STUDY 20 · MES AND TRACEABILITY

Machine monitoring that has run 7 to 8+ years with zero changes

A glass manufacturer · Glass

Plantformance replaced an aging machine monitoring tool on a critical glass line with an Ignition application that captures data at the right process moment, keeps full traceability and has run for years without modification.

7 to 8+

years in production without changes

Zero

application modifications required

THE PROBLEM

A critical piece of added-value glass production equipment generates hundreds of high-frequency data points for every plate and location. Querying raw history continuously was the obvious approach, but it only gave a 15 minute horizon. That made serious work on SPC, machine adjustment and quality improvement close to impossible. Pushing more raw data through would also degrade database and gateway performance for every other application running at the plant.

HOW WE DID IT

Plantformance engineered a high-efficiency machine monitoring application on Ignition. Instead of logging everything continuously, it captures telemetry selectively, at the exact moment in the process where the data matters. It then packs the hundreds of data points for each location into an optimized data format. This keeps storage and queries light while still giving engineers snapshots of each event and full traceability for every plate. The application shares the gateway with other plant applications, so the design had to stay efficient from day one.

BEFORE

The previous solution was powerful but built on an obsolete Delphi-based architecture, with no easy way to update it and a limited development team behind it.

AFTER

The machine application runs alongside other plant applications on the same gateway with zero performance degradation and instant data availability.

RESULTS

- 7 to 8+ years of continuous, trouble-free production operation
- Zero application modifications required in that time
- Virtually zero application-related support tickets
- No performance impact on other applications sharing the gateway

Plantformance products and services: Professional Services

CASE STUDY 21 · MES AND TRACEABILITY

Windows XP line system replaced by an MES: an estimated +30% performance

An abrasives manufacturer · Abrasives

An abrasives manufacturer replaced an unsupported Windows XP OEM application on high-speed lines with an Ignition MES that unifies ERP orders, machine data and item specs, with an estimated +30% performance and +10% quality gain.

+30%
estimated machine performance

+10%
estimated quality improvement

1 FTE
saved per factory

THE PROBLEM

Critical high-frequency lines, producing 4 pieces every 5 seconds, ran on an obsolete, unsupported Windows XP-based OEM application. That was a serious operational and security risk, and a like-for-like replacement would not be enough. The plant needed a modern MES built from the ground up. It had to bring ERP production orders, real-time machine telemetry and detailed product specifications, down to the exact logo printed on each item, into one operator interface, and add live performance analytics and SPC for quality.

HOW WE DID IT

Plantformance built a unified, end-to-end MES on Ignition Vision. From one screen, operators select production orders pushed automatically from the ERP, check item-level details down to the product logo, and start high-frequency monitoring that tracks every count in real time. During the run they log waste on screen with categorized defect codes and photo capture. Built-in SPC screens watch critical quality KPIs such as product weight. When a run closes, the application reconciles and sends production counters, defect codes and operator hours back to the ERP automatically.

BEFORE

Data was split across disconnected systems, operators had no unified interface, downtime was logged on paper in 15-minute intervals, and there was no integrated performance analytics or SPC.

AFTER

The Windows XP application is retired, the ERP is updated in real time with productivity, waste and consumption data, and OEE and downtime events are tracked centrally with live floor visibility.

RESULTS

- Estimated +30% machine performance from automated downtime tracking and Pareto analysis
- Estimated +10% quality improvement from real-time monitoring and integrated SPC
- 1 full-time equivalent (FTE) saved per factory by automating data transmission to the ERP
- Unsupported Windows XP system fully retired from production tracking

Plantformance products and services: Professional Services

A paperless, SAP-driven mixing workshop with WIP lookups in seconds

Saint-Gobain Abrasives · Abrasives

Plantformance moved a Saint-Gobain Abrasives workshop from paper, isolated PLCs and legacy SCADA to a paperless, SAP-driven Ignition MES, cutting WIP container lookups from hours to seconds. The template is now used across its plants globally.

100%
paperless, SAP-driven workflow

Up to 4
parallel batches queued

THE PROBLEM

The workshop ran on obsolete legacy SCADA software and unmanaged Windows PCs, a real reliability and cybersecurity risk. Production PLCs were isolated from the plant network. Raw materials and leftover mixes were tracked on paper without validation, and recipes were typed in by hand. Every one of those steps carried a high risk of human error, and material waste went unmonitored. The plant needed a system that connected the machines, removed paper and enforced the rules automatically.

HOW WE DID IT

Working in phased upgrades from 2017 to 2020, the team added network cards to bring all PLCs onto Ethernet and replaced the legacy Wonderware/Sofraden software with Ignition HMIs. Bidirectional SAP integration now loads recipes automatically and confirms orders. Multi-station touchscreens use RFID and barcode validation. Virtual silo tracking shows material in real time. A 2D compatibility matrix regulates which mixes can be recycled into which. A high-availability server cluster keeps the system running, and dynamic logic queues up to four parallel batches.

BEFORE

Operations depended on paper production orders and recipe sheets across unsynchronized workstations, WIP containers had to be found by physical search, and material reconciliation lagged by up to 24 hours.

AFTER

The facility runs a 100% paperless, SAP-driven workflow with recipes loaded straight into the PLCs, automated guardrails on material compatibility and dosing, and all unsupported legacy software and operating systems decommissioned.

RESULTS

- Critical operational and cybersecurity risks eliminated
- WIP container lookup times cut from hours to seconds
- Real-time material balance and cost tracking per batch
- Fewer quality errors through mandatory barcode checks and automated validation
- Higher throughput from parallel batching, with the modular MES template now deployed across Saint-Gobain Abrasives plants globally

Plantformance products and services: Professional Services

CASE STUDY 23 · MES AND TRACEABILITY

From hardcoded MES to a data-driven engine covering 14 machine types

An abrasives manufacturer · Abrasives

An abrasives manufacturer rebuilt a sprawling, hardcoded MES into one data-driven engine for 14 machine types, so adding a machine or a site became a configuration task instead of a software project.

96%
test scenarios resolved (320 of 333) in the first month

8 to 40
rollout-ready machines (of 75) in two weeks

14
machine types on one engine

THE PROBLEM

The first-generation MES was launched without formal technical specifications. Two years of reactive development followed, built by trial and error with machine operators. The code was hardcoded per station, for example 14 separate identical machine windows, so maintenance got harder and more expensive with every machine added. Duplicated code meant customers had to re-test every machine and function on each update. ERP data was also inconsistent across plants and countries, with missing Bills of Materials and non-standard units that blocked basic square-meter scrap and cost calculations.

HOW WE DID IT

The rebuild followed a structured multi-phase plan. Phase A set clear technical specifications, validated with stakeholders across multiple factories. Phases B and C built and validated a standardized backbone covering 14 machine types. The core became a single, extendable engine driven purely by configuration data, so rollouts need no custom code. Every station follows the same workflow: order check, setup, production, verification and completion. Unified material balance rules, standard data dictionaries and centralized ERP, configurator and Ignition interfaces sit underneath. A single business owner vets every new feature request, and each one is validated on a test bench before worldwide deployment.

BEFORE

The legacy framework ran on 100+ machines across multiple countries and seven to eight machine types, needed constant re-engineering for unstandardized parameters, and could not take on new functions the business needed.

AFTER

A plug-and-play framework now manages 14 machine types without per-factory code forks, upgrades ship in one release cycle, and adding machines or sites is a data-entry exercise.

RESULTS

- Test validation at the first site rose from 78.4% in early January 2022 to 96% by the end of that month, with 320 of 333 test scenarios resolved
- Rollout-ready machines at that site jumped from 8 to 40 of 75 in two weeks
- Redundant per-machine development costs eliminated, with much lower testing effort and downtime
- Later rolled out to several more factories and handed over to the client's own development team

Plantformance products and services: Professional Services

CASE STUDY 24 · MES AND TRACEABILITY

One laminated glass MES template instead of a custom version per plant

Saint-Gobain Glass · Glass

Plantformance re-engineered Saint-Gobain Glass's laminated glass MES at its own expense, turning diverging plant versions into one global template with modular local layers that new lamination lines can follow.

480 h

re-engineering invested by Plantformance

~70%

common features before the rebuild

THE PROBLEM

Saint-Gobain Glass's MES for laminated glass had drifted apart from plant to plant. Early rollouts went ahead without full alignment on factory edge cases or central governance, so the plants shared only about 70% of their features. Each plant ended up running its own custom version. Every bug fix, enhancement or upgrade had to be re-engineered and re-tested separately for each site. As the number of branches grew, long-term support costs kept climbing and global maintenance became close to impossible.

HOW WE DID IT

When expansion to a third site in Italy exposed the maintenance bottleneck, Plantformance re-engineered the architecture at its own expense: 480 internal development hours, 3 engineers over 4 weeks. Using the project inheritance features of Ignition 8.1+ and lessons from earlier rollouts, the team designed a unified core template in the new factory. Standard MES functions, plate tracking and database schemas live in a global base layer. Factory-specific needs sit in modular local extensions. Existing sites were then scheduled for realignment through structured gap analyses, UDT and tag reconfiguration, and screen updates.

BEFORE

Ordered as a 90% standardized global solution, the MES was piloted in a Spanish reference plant and launched in parallel in a French facility, with local quirks built into the core code, leaving two independent software silos.

AFTER

The MES runs as one central product template across multiple European facilities, with core features governed globally and local variances such as conveyor setups or PLC signal maps kept in their own layers.

RESULTS

- Software version drift eliminated, with a foundation for global governance
- Updates and features built once and deployed to all connected plants
- Much lower long-term lifecycle and support costs
- A repeatable rollout method with gap analysis frameworks, documentation templates and validation plans for new lamination lines

Plantformance products and services: Professional Services

CASE STUDY 25 · SECURITY AND INFRASTRUCTURE

Closing Ignition Vision security gaps across 3000+ Saint-Gobain apps

Saint-Gobain · Multiple industries

A penetration test exposed risks in the client-side authorization model of the legacy Vision module. Plantformance reviewed 3000+ applications, mitigated the attack chain, and added real-time monitoring, so Saint-Gobain could keep Vision running safely.

3000+

factory applications reviewed

THE PROBLEM

A penetration test at Saint-Gobain revealed risks built into the client-side authorization model of the legacy Inductive Automation Vision module. The client asked for the risks to be closed or mitigated. Removing Vision was not an option, because thousands of production applications depend on it. Changing Vision's architecture was not an option either, since nobody can. The fix had to work around the module without breaking anything on the factory floor.

HOW WE DID IT

Plantformance ran a thorough review of the 3000+ applications running on the factory floor. Using targeted changes, the team implemented mitigations that remove the possibility of chaining the vulnerabilities together. Plantformance also built a real-time monitoring system that keeps watching for any deviation going forward. That monitoring is now part of FactoryBrain services for all Plantformance clients, not just Saint-Gobain. The work closed the risk the pentest found while every existing Vision application kept running as before.

BEFORE

By chaining several vulnerabilities together with privileged access and special client devices, it was possible to get a basic authenticated Ignition session through Vision.

AFTER

The risk is mitigated and Vision can stay in operation for years to come.

RESULTS

- 3000+ factory-floor applications reviewed
- Vulnerability chaining risk mitigated
- Real-time monitoring detects future deviations, now standard in FactoryBrain services
- Vision stays in use, protecting the return on every application already built

Plantformance products and services: FactoryBrain, Professional Services

Real-time SIEM security feed on 180+ servers, with no added cost

A multi-site manufacturing group · Multiple industries

A manufacturing group asked Plantformance to install a centrally managed endpoint security agent on its Ignition servers. Plantformance proposed hardened Linux controls plus real-time event forwarding instead, rolled out to 180+ servers at no extra cost.

180+

servers rolled out the next day

THE PROBLEM

The client asked Plantformance to install a commercial endpoint detection and response (EDR) agent on its servers. Plantformance explained the trade-offs. Because of the layered security model, adding the agent as-is would mean rebuilding the product from scratch at a very high cost. It would also break a core Plantformance rule: no centrally controlled remote agent running on the servers, to avoid supply-chain attacks. Worst of all, a remotely operated agent could have serious effects on operations, and Plantformance could no longer stand behind its SLA.

HOW WE DID IT

Plantformance proposed in-depth Linux security features instead. The team added fapolicyd on top of the SELinux protection already in place, combined it with an additional control that stays undisclosed, and set up real-time forwarding of security events to the client's SIEM. The setup was implemented in weeks for testing. Once validated, it was rolled out to 180+ servers the next day. No remote agent runs on the servers, so the layered security model stays intact and Plantformance keeps full responsibility for the SLA. The hardening now benefits every Plantformance client.

BEFORE

The client was imposing a specific technical solution on its supplier, with major impact on operations, costs, and responsibilities.

AFTER

The client's SIEM receives a real-time feed of all security events.

RESULTS

- Real-time feed of all security events in the client's SIEM
- Rolled out to 180+ servers the day after testing
- No increase in cost
- Client IT security team satisfied, and Plantformance keeps full SLA responsibility
- Stronger security for all Plantformance clients

Plantformance products and services: Professional Services

CASE STUDY 27 · SECURITY AND INFRASTRUCTURE

FactoryBrain Gen 2: 240+ servers deployed with a 99.5% smooth commissioning rate

Plantformance · Multiple industries

Plantformance re-engineered FactoryBrain from scratch with client input, shipping 16 field-driven improvements and scaling the second generation to 240+ servers worldwide with zero manufacturing issues.

240+
Gen 2 servers deployed worldwide

99.5%
smooth global commissioning rate

5 min
deployment per preconfigured unit

THE PROBLEM

FactoryBrain 1.0 was reliable for baseline Ignition tasks, but it had limits. A single CPU and a constrained memory ceiling left little headroom for heavier concurrent workloads. First-generation fabrication methods also left room for tighter mechanical tolerances, cleaner internal integration and better overall finish. In the field there were practical gaps too: little extendability, awkward physical access to internal drives, no clear status feedback for local users, and an obsolete IPMI version that complicated on-site troubleshooting and remote out-of-band management.

HOW WE DID IT

Instead of patching the first design, Plantformance re-engineered the whole server from scratch. The team worked directly with clients to audit field pain points and found 17 potential improvements, then implemented 16 of them. Changes include a stronger primary CPU and more RAM, a second specialized processor, more extendability, redesigned drive access, clear local user feedback and a modern IPMI stack. Every component was vetted down to the silicon level to use the chipset's native high-speed networking, Intel QuickAssist Technology (QAT) and other hardware-accelerated features without adding board complexity.

BEFORE

Deployments were held back by FactoryBrain 1.0's limited CPU and RAM, minimal extendability, hard-to-reach drives, no local status feedback and an obsolete IPMI version.

AFTER

Gen 2 ships with swappable drives, modern remote management and an integrated touchscreen for on-site and remote collaboration, preconfigured for a 5-minute deployment with an emergency reconfiguration bypass procedure.

RESULTS

- Scaled to 240+ servers deployed worldwide with zero manufacturing issues
- 99.5% smooth global commissioning rate with zero production downtime
- 16 of 17 client-identified improvements implemented
- Preconfigured units deploy in 5 minutes
- Lower total cost of ownership (TCO), per Plantformance's assessment

Plantformance products and services: FactoryBrain

CASE STUDY 28 · SECURITY AND INFRASTRUCTURE

Zero-trust OT security with zero critical pen test findings

Plantformance · Cross-industry

Plantformance designs every customer-facing deployment security-first, with zero-trust networking, CISA Linux hardening, container isolation and multi-layer intrusion detection. Multiple independent penetration tests found zero critical issues.

THE PROBLEM

Factories need their OT environments connected to central management and cloud services. That connection is also an opening. Without security designed in from the start, it exposes plants to lateral-movement attacks, OS-level exploits and compliance gaps. Adding security after deployment rarely closes all of them. Flat networks, unhardened operating systems and shared processes stay in place, and one compromised component can become a path to everything else on the site.

HOW WE DID IT

Plantformance engineered every customer-facing deployment around a security-first, zero-trust architecture covering both the network and OS layers. Operating systems are hardened following CISA Linux hardening guidance. Processes run in strictly isolated containers, so services do not share an attack surface. Multi-layer OS intrusion detection and prevention watches for threats continuously. Security is part of the build from day one, not a layer added once the system is live. The same design applies at every managed client site.

BEFORE

Standard deployments often put fast delivery ahead of security by design. That left flat networks, unhardened operating systems and shared processes open to cross-process compromise.

AFTER

Even if a single container process is targeted, strict isolation stops the compromise from spreading to the host OS or other factory services, with continuous multi-layer threat detection behind it.

RESULTS

- Passed multiple independent penetration tests with zero critical findings
- Zero-trust OT/IT security applied across all managed client sites
- Container isolation contains a compromised process before it reaches the host OS
- Continuous multi-layer intrusion detection and prevention

Plantformance products and services: FactoryBrain

CASE STUDY 29 · SECURITY AND INFRASTRUCTURE

Isolated Client Modules: dedicated hardware and zero-trust remote access

Plantformance · Cross-industry

Plantformance designed the Isolated Client Module (ICM) architecture so large multi-site clients get physically separate hardware and a closed zero-trust jumpbox, with no direct laptop connections into factory OT networks.

100%

hardware-level isolation between clients

THE PROBLEM

Large multi-site enterprises need remote management and specialized integrations for their factories. They also need two things that usually conflict with that. They do not want to share cloud virtual machines with other tenants. And they cannot allow engineers to connect laptops directly into sensitive factory OT networks. Any architecture had to deliver remote engineering and custom client services while removing both risks completely.

HOW WE DID IT

Plantformance designed the Isolated Client Module (ICM) architecture. Each large client gets dedicated infrastructure that is physically separated at the hardware level from every other client. All remote engineering access goes through a closed zero-trust jumpbox, with no exceptions. The jumpbox can be hosted in the Plantformance data center or on-premises inside the client's own network. Because each ICM belongs to one client, it can also host custom services built only for that client.

BEFORE

Shared cloud virtualization carried a risk of cross-tenant exposure. Direct engineer-to-plant connections created unacceptable attack surfaces and limited custom client-specific services.

AFTER

Each enterprise client runs in a fully isolated hardware and network environment, with zero direct laptop-to-factory connections and full flexibility to host client-specific services.

RESULTS

- Cross-client compromise risk removed through 100% hardware-level isolation
- Strict zero-trust jumpbox access enforced across global enterprise factories
- No direct laptop-to-factory connections
- Room to host custom client-specific services

Plantformance products and services: Professional Services

Multi-tier backups with air-gapped tape stored in a bank vault

Plantformance · Cross-industry

Plantformance built a multi-stage backup architecture for Ignition gateways: fast restores from high-speed storage, archive retention for up to a year, and monthly air-gapped tape kept in a bank vault.

THE PROBLEM

An Ignition gateway holds the configuration and project history a plant depends on. If that data lives only locally, or on a single backup tier, one event can wipe it out. Hardware failure, a site disaster or ransomware can each mean catastrophic production loss. Facilities need backups that restore quickly for everyday incidents and still survive the worst case, when the local site and the network are both compromised.

HOW WE DID IT

Plantformance implemented a multi-stage, bank-grade backup architecture. Backups run automatically to the Plantformance data center. Each week they rotate onto high-speed storage, so recent states can be restored almost instantly. Older backups move to slower archive storage and are kept for up to a year. Every month, an air-gapped physical tape backup is written and stored in a bank vault, completely offline. Each tier covers a different failure, from a bad change yesterday to a full cyber or site disaster.

BEFORE

Single-tier local backups were slow to restore, lacked long-term retention, and stayed exposed to network-wide cyberattacks and site-level incidents.

AFTER

Recent configurations restore quickly from high-speed storage, historical states stay retrievable for up to a year, and an immutable offline tape copy guarantees recovery even in worst-case cyber or disaster scenarios.

RESULTS

- Rapid restores of recent Ignition configurations from high-speed storage
- Historical states retrievable for up to a year
- Monthly air-gapped tape backups held in a bank vault
- Resilience designed to financial-institution standards

Plantformance products and services: FactoryBrain

CASE STUDY 31 · SECURITY AND INFRASTRUCTURE

Daily vulnerability intelligence and disciplined patching for edge servers

Saint-Gobain · Cross-industry

For Saint-Gobain, Plantformance runs daily automated vulnerability scanning, a monthly patching cadence and emergency zero-day patching aligned with plant schedules, plus daily advisories on third-party network gear.

THE PROBLEM

AI is speeding up the discovery of OS and third-party software vulnerabilities, and new ones now appear daily. For an industrial network, slow or uncoordinated patching means constant exposure. Edge servers need critical kernel fixes quickly, but patches also have to fit around production schedules. And the risk does not stop at the servers themselves: the surrounding network devices in the client's environment can be just as exposed.

HOW WE DID IT

Plantformance built daily automated vulnerability intelligence pipelines. They feed a structured monthly patching cadence, with immediate emergency patching for zero-day issues, all aligned with plant schedules. On top of that, Plantformance sends proactive daily threat advisories to clients about risks in third-party infrastructure on their networks, for example Palo Alto devices. That way, the client's security team hears about relevant vulnerabilities in its own equipment early, not after an incident.

BEFORE

Infrequent, ad hoc patching left edge servers exposed to critical kernel exploits, and standard OT teams rarely tracked vulnerabilities in the client's surrounding network gear.

AFTER

Client servers get disciplined monthly updates and immediate critical kernel patches without disrupting production, and client security teams get early warning on external vulnerabilities in their own network devices.

RESULTS

- Daily automated vulnerability scanning
- Rapid emergency patch turnaround for zero-day and critical kernel issues
- Structured monthly patching aligned with plant schedules
- Proactive third-party threat intelligence shared directly with enterprise clients

Plantformance products and services: FactoryBrain

CASE STUDY 32 · HMI

Operator clients live the same day as servers, with TCO down 80%

An abrasives manufacturer · Abrasives

Ignition projects were stalling because operator PCs arrived months after the servers. Plantformance built FactoryClient, a purpose-built Ignition client with a 2 min setup assistant, cutting total cost of ownership by 80%.

-80%
total cost of ownership

3-6 months
previous wait for operator clients

2 min
configuration assistant at boot

THE PROBLEM

Ignition projects were running late. The applications could not be used on site early enough because operators had no hardware, even though everything else was ready to run. Servers came from Plantformance, but the operator PCs followed a separate corporate IT process with its own supplier and support chain. The project was only as fast as its slowest piece, and that piece sat outside the project team.

HOW WE DID IT

The client asked Plantformance to propose a thick client and take responsibility for everything except usage: hardware, software, configuration, and updates. Plantformance created FactoryClient, a purpose-built Ignition client. At first boot, a 2 min configuration assistant lets technicians get Ignition live in minutes. Clients can now be ordered together with the servers, from one supplier. Plantformance owns the hardware, software, configuration, and updates, so there is no second support chain to wait on.

BEFORE

Plantformance supplied all the edge servers, while thick clients followed the company IT standard and its IT-centric support. Clients were usually ready 3-6 months after the servers went live.

AFTER

The client ordered thick clients together with servers, received everything at once, and had no other stakeholder to manage. Factories went live almost instantly.

RESULTS

- Projects deployed one after another without waiting on client hardware
- In the best cases, dozens of clients went live the same day as the edge servers
- Total cost of ownership reduced by 80%
- One supplier responsible for hardware, software, configuration, and updates

Plantformance products and services: FactoryClient

CASE STUDY 33 · HMI

One terminal, 2 cables: rebuilding the operator station with FactoryTouch

An abrasives manufacturer · Abrasives

Operator stations with touchscreens, scanners, and badge readers took too many parts and suppliers to deploy. Plantformance built FactoryTouch, an all-in-one terminal with 2 cables and a 5 min setup.

-82%
cables per operator station (11 to 2)

-80%
devices per operator position

5 min
station setup

THE PROBLEM

Many setups need a touchscreen, a barcode reader, and an authentication reader, all connected to a thick client. Rolling out a large number of these operator positions became hard for the client. Each position meant managing 10+ cables, several suppliers, and many separate parts. Then every station had to be configured and maintained. The more stations the client added, the more time went into purchasing and troubleshooting instead of production.

HOW WE DID IT

Plantformance developed FactoryTouch, an all-in-one terminal. It cuts each station from 11 cables to 2 (network and power) and from up to 5 devices to 1. Plantformance also rebuilt a full atomic operating system designed for maximum reliability and security. An Ignition module handles easy management of the terminals across the fleet. The terminal is built to do one job: run Ignition applications. Setup takes 5 min per station, and there is no Windows layer to patch or support.

BEFORE

Deploying new operator stations meant delays, endless purchase orders across multiple suppliers and parts, and configuration headaches.

AFTER

1 operator station equals 1 terminal with 2 cables and a 5 min setup.

RESULTS

- 82% fewer cables per operator station (11 down to 2)
- 80% fewer devices per operator position
- No more Microsoft Windows on operator stations
- No maintenance required
- Secure by design: the terminal can only run Ignition applications

Plantformance products and services: FactoryTouch

CASE STUDY 34 · HMI

One Ignition Vision template for consistent UI and two-way SAP across plants

Saint-Gobain Abrasives · Multiple industries

Plantformance built Skeleton, a standard Ignition Vision master template for Saint-Gobain Abrasives, so every new plant application ships with the same compliant interface and a ready-made two-way SAP ERP integration.

100%

UI consistency across sites

THE PROBLEM

Saint-Gobain Abrasives needed several Ignition Vision applications for its plants. Building each one separately created two risks. The user interfaces could drift apart, with buttons, colors and components looking and behaving differently from site to site. And every project needed its own custom integration with the SAP ERP system, which was repetitive work and easy to get wrong. The more applications were added, the more those inconsistencies and integration errors would multiply.

HOW WE DID IT

Plantformance created Skeleton, a standardized Ignition Vision master template. It implements the client's strict visual and UX rules: buttons, colors and component standards are defined once and reused everywhere. Alongside the UI layer, the template includes a reusable, standardized bidirectional integration layer for SAP ERP. Each new application starts from Skeleton instead of a blank project. Developers focus on the functions a site actually needs, while the look and feel and the production data exchange with SAP are already in place.

BEFORE

Every new Vision application required recreating UI components from scratch and building custom data-exchange logic to talk to the client's SAP ERP systems.

AFTER

New applications derived from the Skeleton template share an identical, compliant UI and exchange production data with SAP through a two-way interface out of the box.

RESULTS

- Much faster development when building multiple applications
- 100% UI consistency enforced across sites
- Standardized two-way SAP data exchange across abrasives manufacturing plants
- No more rebuilding UI components and ERP integration logic for each project

Plantformance products and services: Professional Services

CASE STUDY 35 · HMI

Purpose-built Linux HMI terminals cut plant-floor OpEx to near zero

An abrasives manufacturer · Abrasives

An abrasives manufacturer replaced office Windows PCs on the shop floor with Plantformance FactoryClient and FactoryTouch terminals. Fully managed updates now run with at most one minute of downtime, and devices last 7.5 to 9+ years.

One minute

maximum downtime per fleet-wide update

7.5–9+ yrs

device service life

THE PROBLEM

Running shop-floor operator HMIs on standard office PCs with Windows creates a steady drain. IT maintenance never stops, the security risk stays high, and the hardware has to be replaced every 3 to 5 years. Patching adds its own risk, since a bad update can take an operator station down in the middle of production. The manufacturer needed operator terminals built for the plant floor, not adapted from the office.

HOW WE DID IT

Plantformance designed and developed a new line of purpose-built hardware. FactoryClient is a compact Linux-based terminal dedicated only to Ignition. FactoryTouch is an all-in-one unit with an integrated touchscreen and peripherals. Multiple factories rolled the terminals out across their floors. OS updates and Ignition patching are fully managed, and peripheral integration is turnkey, which pushes recurring OpEx toward zero. Updates run with instant rollback, so a problem can be reversed without stopping production.

BEFORE

With no viable alternative, multiple facilities ran business-grade Windows PCs on the plant floor, pushing corporate IT to support OT it was never equipped for. Manual Windows updates, Ignition client patches and peripheral setup drove up IT OpEx, shortened hardware life and frustrated operators.

AFTER

The multi-factory rollout removed manual plant-floor maintenance entirely. Automated OS and Ignition updates finish quickly with instant rollback, need no local IT intervention, and keep recurring operating costs near zero.

RESULTS

- Large upfront CapEx savings from standardizing on purpose-built terminals
- Recurring OpEx reduced to near zero
- Fleet-wide updates with a maximum of one minute of downtime
- Devices run 7.5 to 9+ years; 7.5-year-old units still receive updates and 9-year-old units retire only for modern compute needs

Plantformance products and services: FactoryClient, FactoryTouch

CASE STUDY 36 · IGNITION MODULES

Stopping Ignition privilege escalation instantly with Security Auditor

Plantformance · Cross-industry

Users with developer rights could make themselves Ignition gateway administrators. Plantformance replaced periodic script checks with the Security Auditor module, which detects escalation on the fly and responds automatically.

THE PROBLEM

On a standard Ignition gateway, it was not very hard for a user with developer rights to escalate privileges and make themselves an administrator. On gateways that Plantformance operates for its clients, that is a real risk. An unapproved administrator can change security settings, users, and projects without anyone noticing. Plantformance needed a way to catch every escalation as it happened, not by chance.

HOW WE DID IT

Plantformance first rolled out a periodic scripted check worldwide. It flagged any administrator not listed as an approved administrator in Plantformance's central master-data repository. That check was later replaced by an Ignition module, Security Auditor. Among other capabilities, it detects escalation instantly and on the fly, then responds automatically: disabling the account, deleting it, or removing administrator rights. Security Auditor is now available for sale. An emergency ticket goes out to the client at the same moment.

BEFORE

Every so often, a Plantformance employee would happen to find that a client employee had made themselves an administrator. The account was then disabled and reported to the client.

AFTER

Detection and response are instant, and an emergency ticket notifies the client.

RESULTS

- It is now impossible to escalate user privilege to admin in Plantformance operated gateways.
- Instant detection replaces chance discovery
- Automated response: disable account, delete account, or remove administrator rights
- Emergency ticket raised automatically for the client
- Security Auditor is available as a commercial module

Plantformance products and services: Security Auditor, FactoryBrain

CASE STUDY 37 · IGNITION MODULES

From fragile scripts to 16 Ignition modules: the Plantformance product line

Plantformance · Cross-industry

Scripting to extend Ignition stopped scaling. Plantformance moved to building its own modules, launched 5 commercial Ignition modules with 6 more in the pipeline, and had developed 16 modules internally by the end of 2026.

16
Ignition modules developed internally

5
commercial Ignition modules

6
more modules in the pipeline

THE PROBLEM

Standard Inductive Automation Ignition deployments had real gaps in functionality, diagnostics, security, and peripheral integration. Closing them meant heavy custom scripting or costly third-party tools. For a team running many gateways for many clients, neither option scales. Scripts multiply, each one needs care, and the limits of Jython keep coming back. Every new client and every new feature made the problem bigger.

HOW WE DID IT

Plantformance started building its own Ignition modules, first to manage servers and then to deliver functionality. It added module development on behalf of clients. Then it launched a dedicated product line of 5 commercial Ignition modules: Gateway Analyzer, Security Auditor, Devices Mirroring, Ultra Charts, and Host Agent, with 6 more in the pipeline. By the end of 2026, Plantformance had developed 16 Ignition modules internally. Modules replaced the scripts on managed gateways.

BEFORE

Plantformance used scripting to add features to Ignition. As the fleet grew, those scripts became hard to maintain, secure, and manage.

AFTER

A modern development pipeline, an ITIL service desk, and 24/7 support are in place, and scripting has practically disappeared from Plantformance-managed gateways.

RESULTS

- No more piles of scripts or Jython limitations to work around
- Countless hours of troubleshooting saved by replacing scripts with modules
- 5 commercial Ignition modules on the market, 6 more in the pipeline
- 16 Ignition modules developed internally
- Scripting has practically disappeared from Plantformance-managed gateways

Plantformance products and services: Gateway Analyzer, Security Auditor, Devices Mirroring, Ultra Charts, Host Agent, Professional Services

PLANT FORMANCE

NEXT STEP

Planning a project like these?

Talk to an Ignition engineer about your sites, timeline and architecture. We will tell you honestly what it takes.

Contact Plantformance

Plantformance is an Inductive Automation Alliance Partner that helps enterprises deploy, secure, and scale Ignition across sites through plug-and-play modules, turnkey zero-maintenance HMI hardware, and 24/7 managed infrastructure.

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