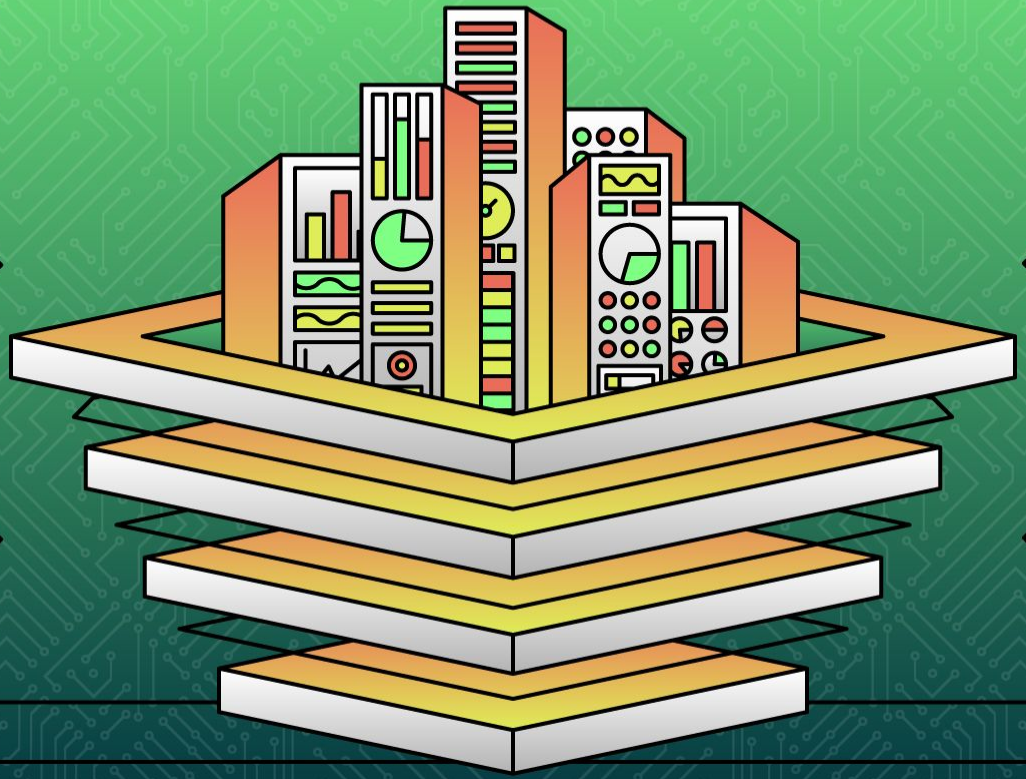
Architecting Success With Scalable System Design



Today's Speakers

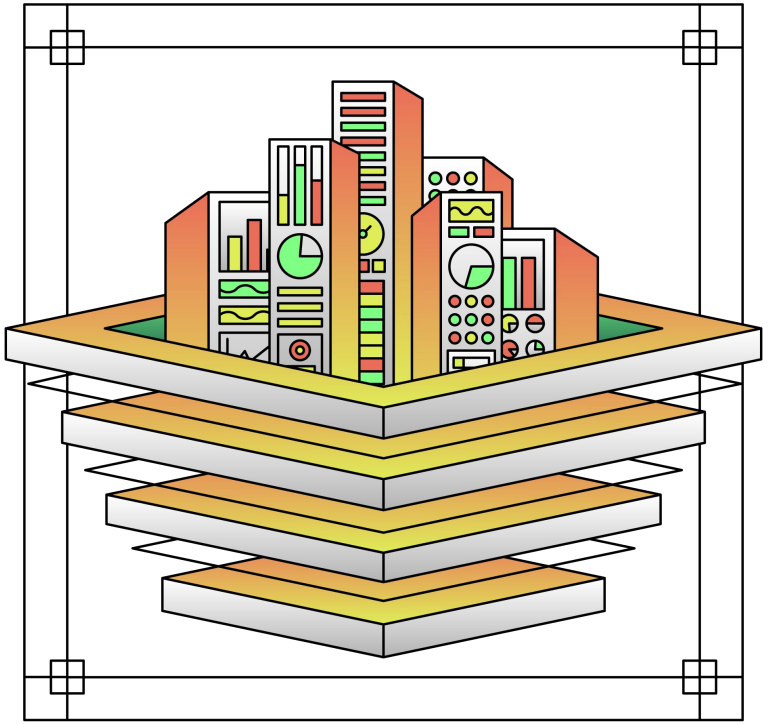
Chase Dorsey
Sales Engineer
Inductive Automation

Brad Fischer
Sales Engineer
Inductive Automation

Tom Goetz
Sales Engineer
Inductive Automation

Agenda

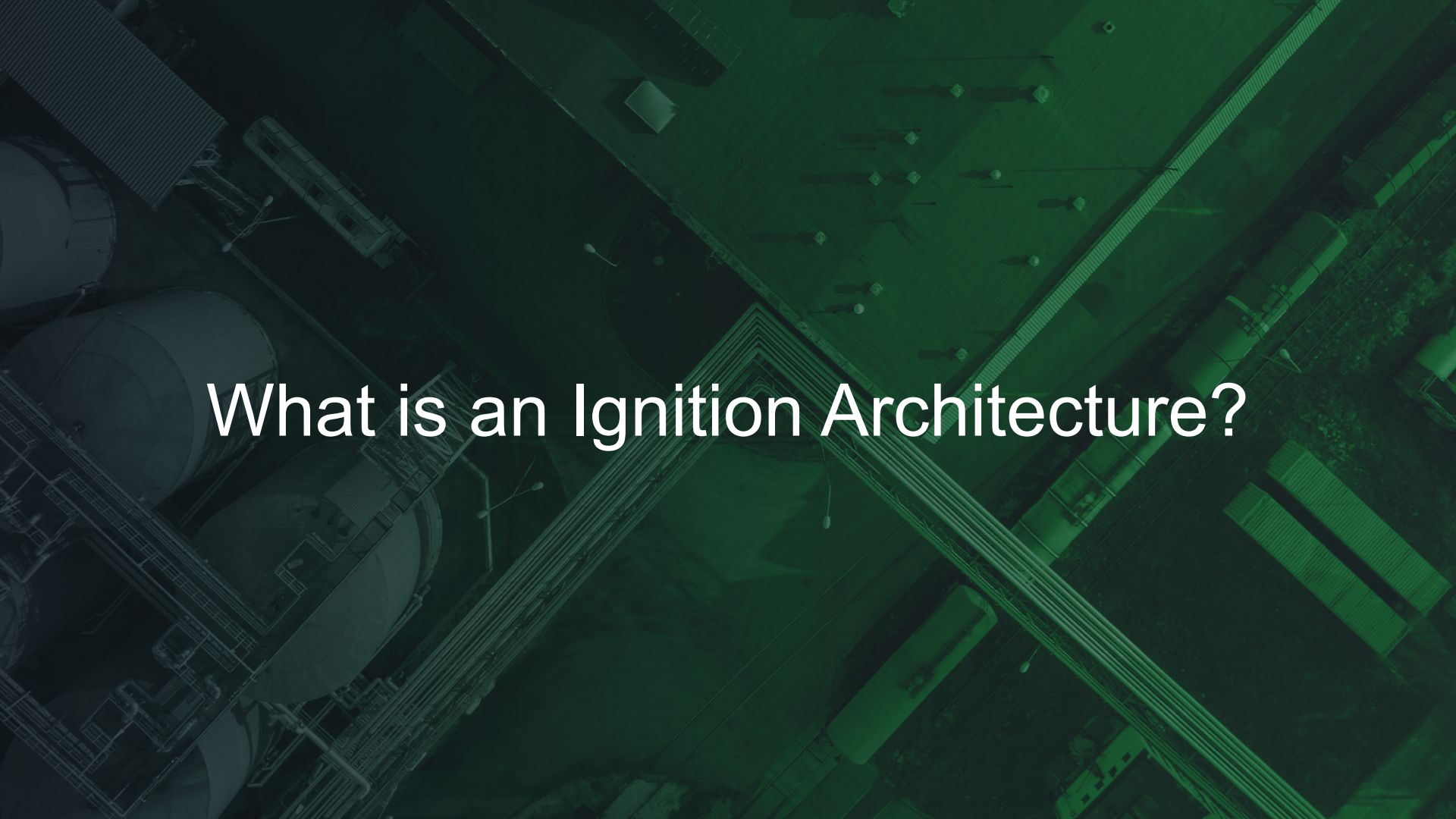
- Introduction to Ignition and IA
- Standard Ignition Architectures
  - Standard
  - Scale out
  - Enterprise
  - Cloud
- Architecture Builder Feature Set
  - Comparing
  - Modifying
  - BOM
- Q&A



About Inductive Automation

- We make software for problem solvers
- 300+ employees in the US & Australia
- 57% of the Fortune 100 and 44% of the Fortune 500 use Ignition
- Highly diversified customer base across many industries
- Ignition installations in 100+ countries
- 4,000+ integrators worldwide
- Profitable and independent with no outside investors

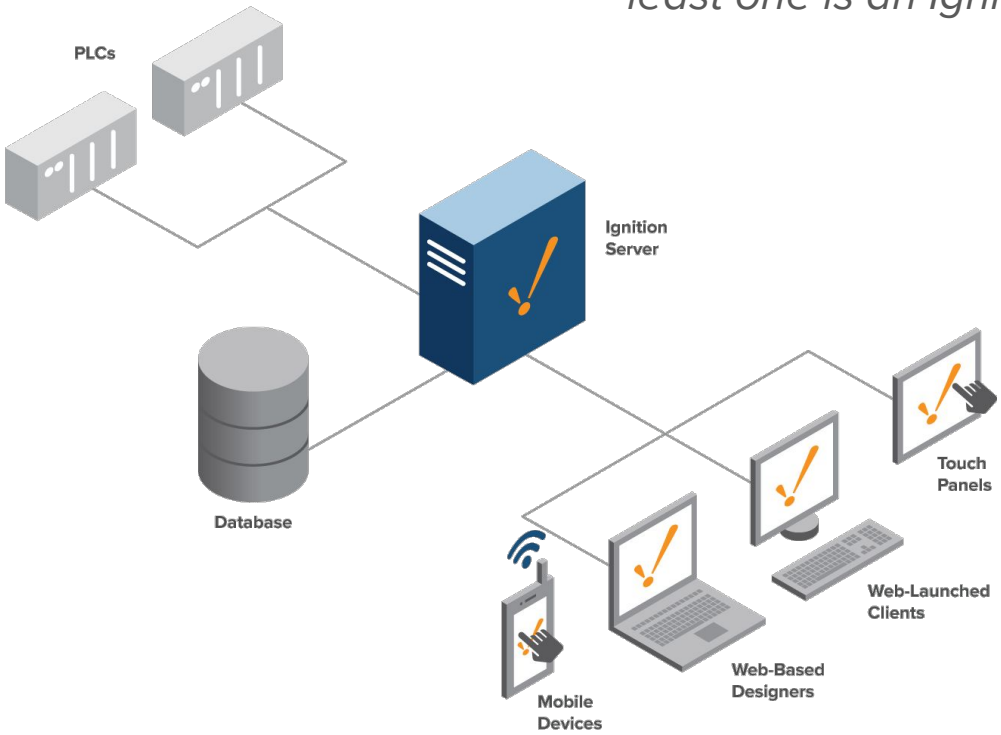
Ignition!
by inductive automation
The Unlimited Platform for SCADA and So Much More
• Connect, Design, Deploy Without Limits:
- One central hub for everything on the plant floor
- Create any kind of industrial application
- Web-deploy clients to desktops, industrial displays & mobile devices
• Unlimited licensing
• Industrial-strength security and stability
• Trusted by thousands of companies worldwide



What is an Ignition Architecture?

An Ignition Architecture is...

Multiple services interacting with one another where at least one is an Ignition Gateway

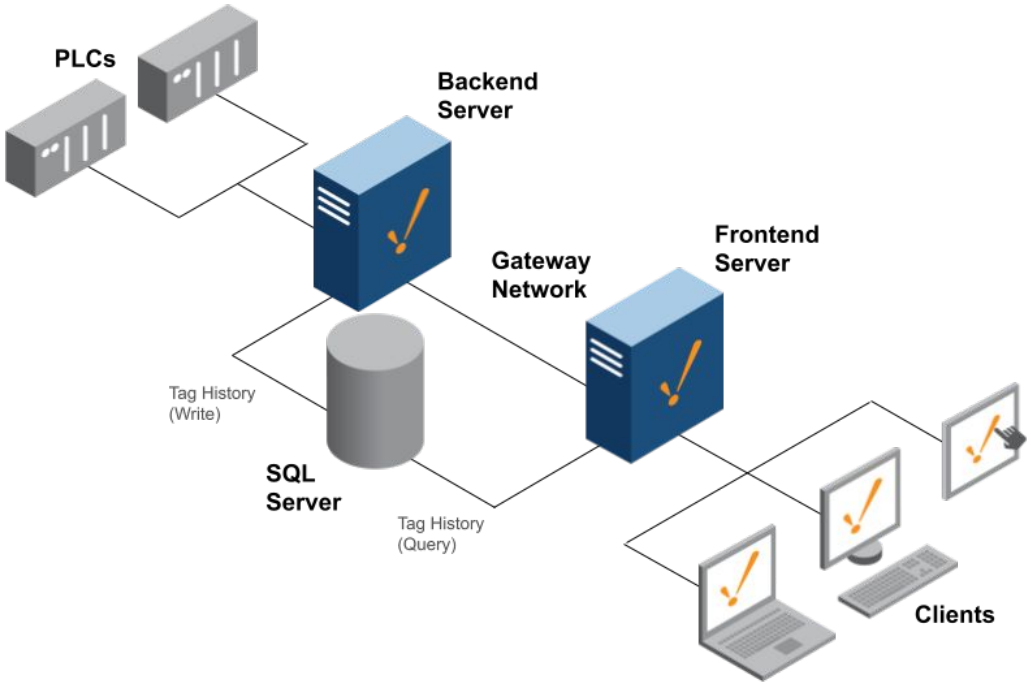


Server Sizing

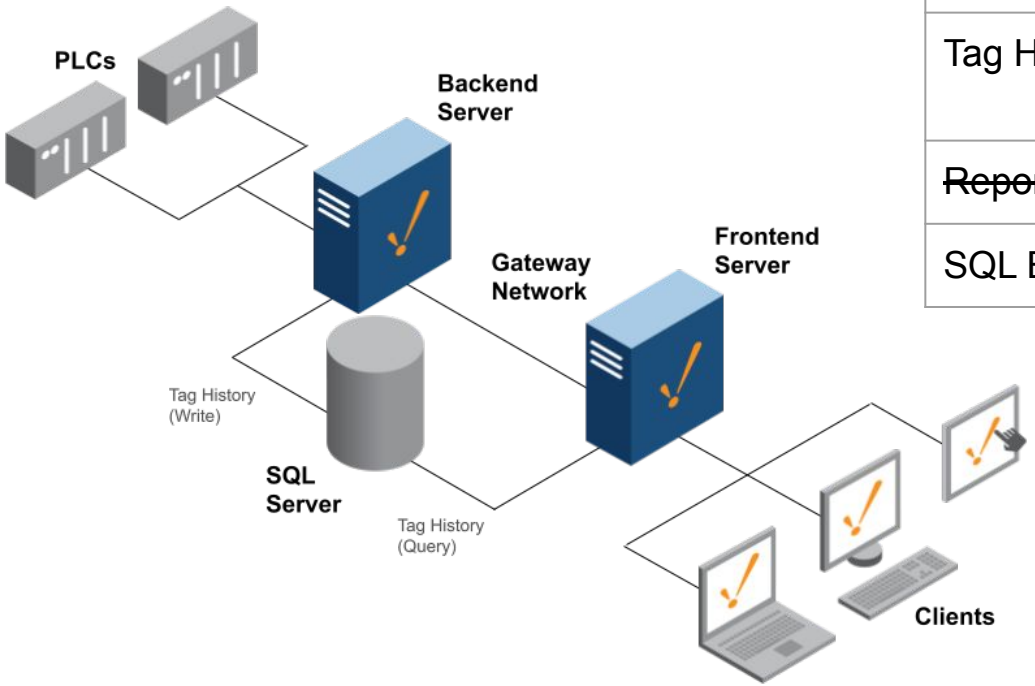
- Server Sizing and Architecture Guide
  - Project Size & Purpose
  - Device Connection count
  - Tag Count
  - Client Count

ARM, 1GB memory, SSD	16 Cores*, 32GB memory, SSD
1-2 devices	1-100 devices
500 tags	150,000 tags (6
2 concurrent clients †	100 concurrent clients †

Why Scale Out?



Why Scale Out?



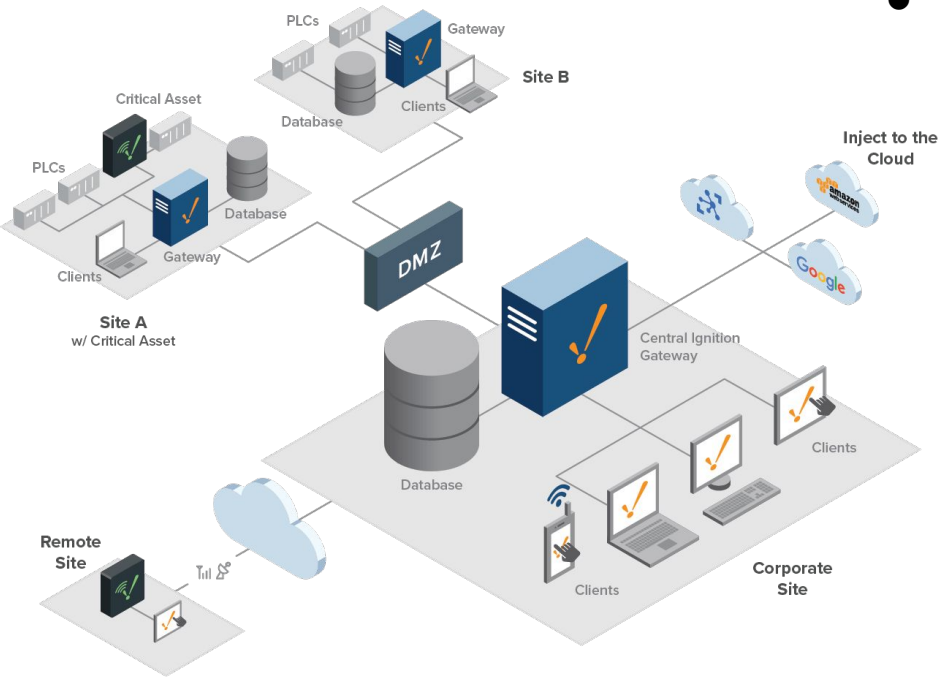
Backend	Frontend
Platform	Platform
~~Perspective~~ ⇨	Perspective
Tag Historian	Tag Historian (Query Mode)
~~Reporting~~ ⇨	Reporting
SQL Bridge	

+$1,100

Security

- Security Hardening Guide
  - Backend-Frontend Connectivity
  - Multi-site Security

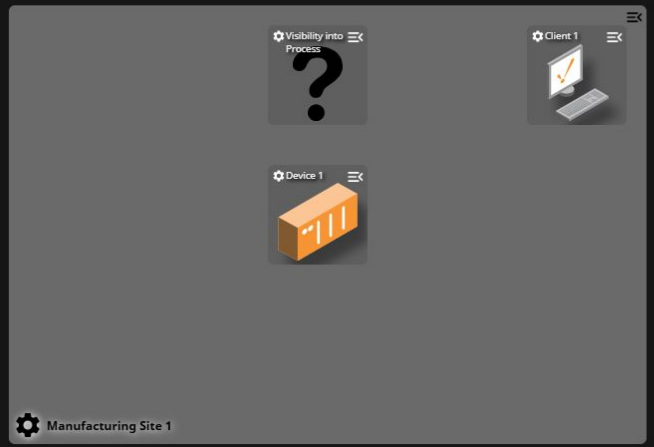
What About Enterprise or Multi-site?

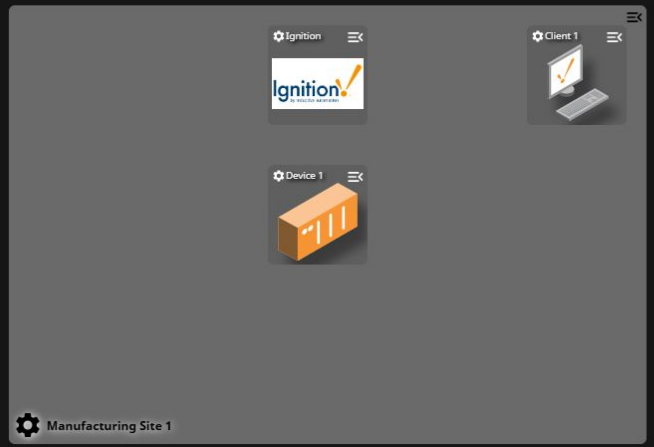


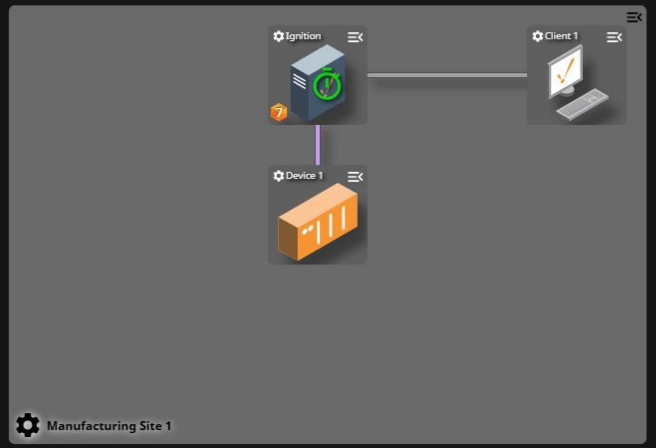
- DMZ
- EAM/Gateway Network
  - Centralized Audit Logs
  - System Health Monitoring
  - Backup and Recovery
  - Remote System Oversight
  - Task Automation and Execution Audits

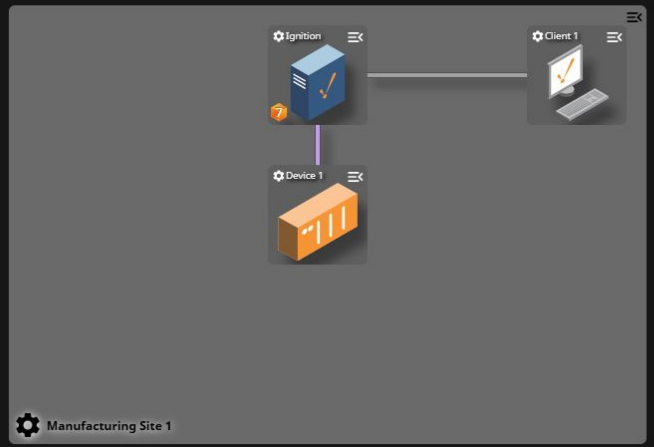
Building out an Architecture

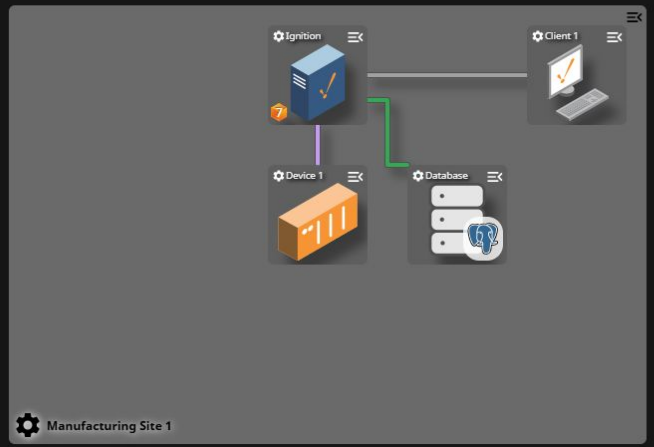
Device 1
Manufacturing Site 1

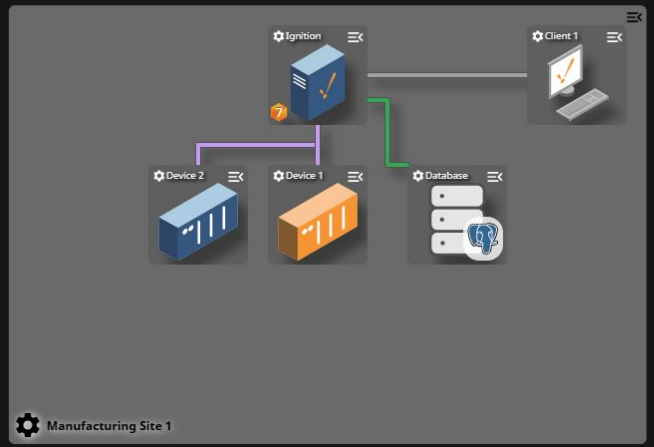

Visibility into Process
Client 1
Device 1
Manufacturing Site 1

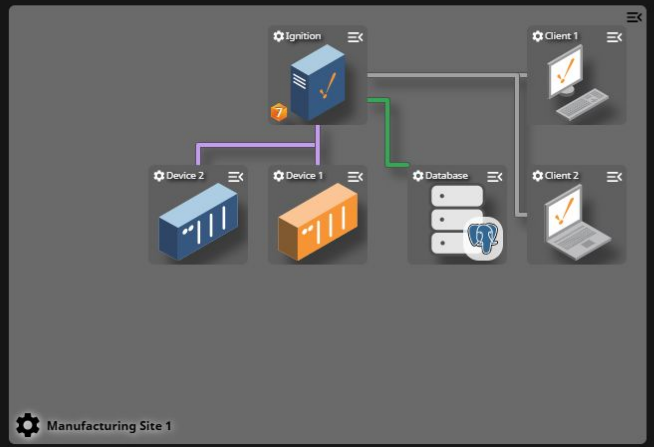

Ignition
Ignition
Client 1
Device 1
Manufacturing Site 1

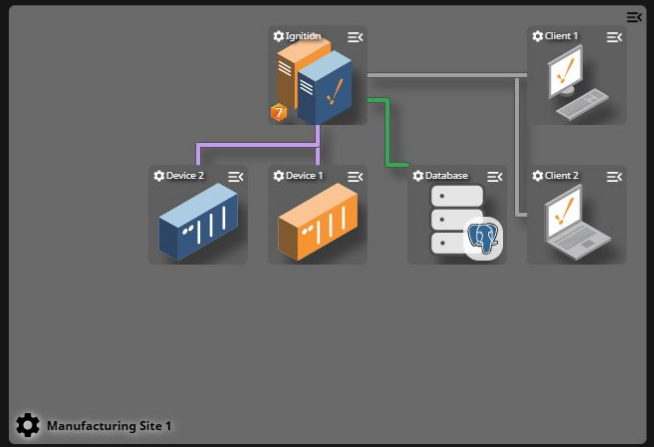

Ignition
Client 1
Device 1
Manufacturing Site 1

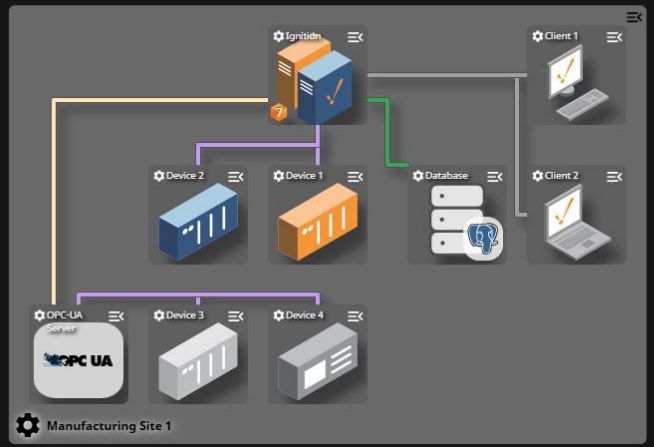

Ignition
Client 1
Device 1
Manufacturing Site 1

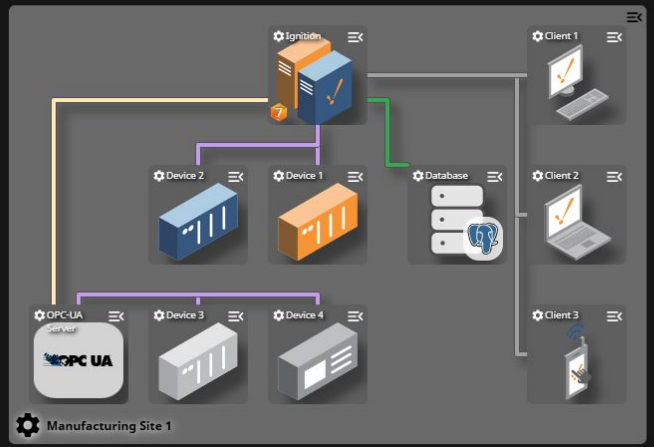

Ignition
Client 1
Device 1
Database
Manufacturing Site 1

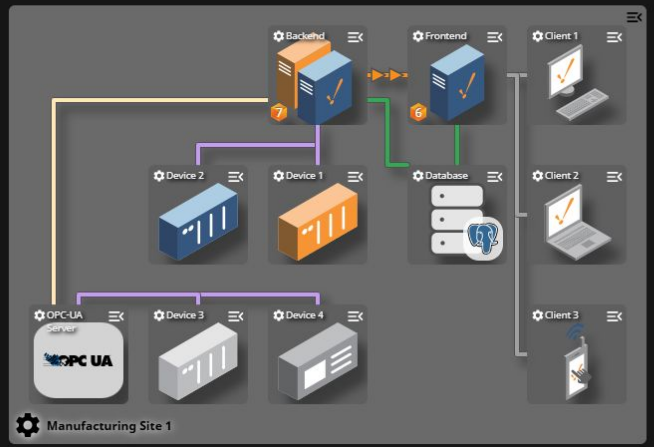

Ignition
Client 1
Device 2
Device 1
Database
Manufacturing Site 1

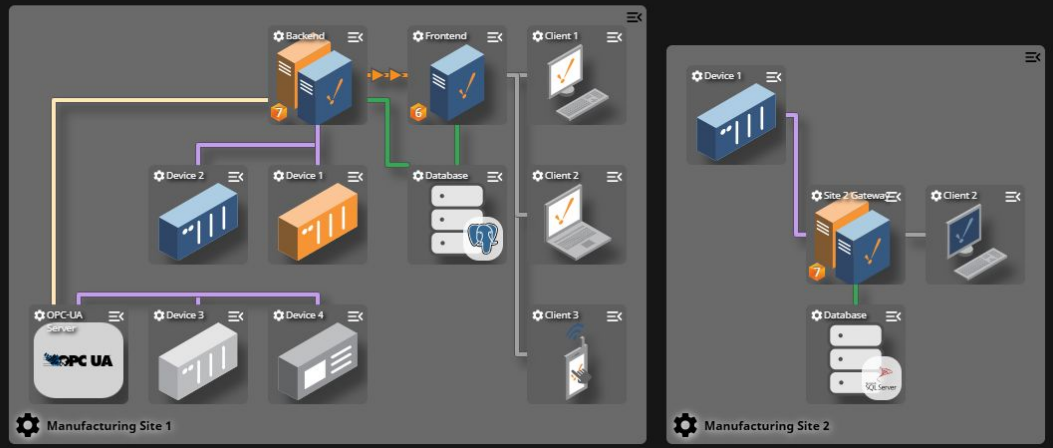

Ignition
Client 1
Device 2
Device 1
Database
Client 2
Manufacturing Site 1

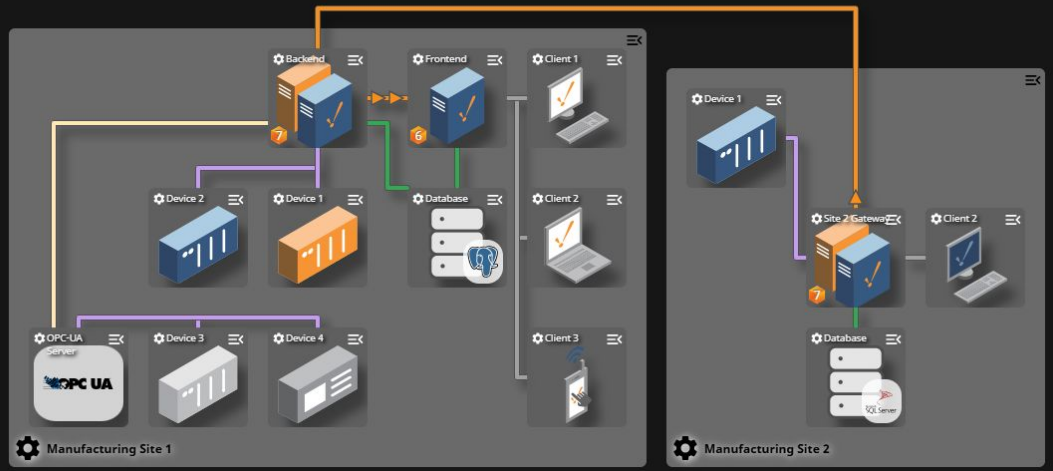

Ignition
Client 1
Device 2
Device 1
Database
Client 2
Manufacturing Site 1

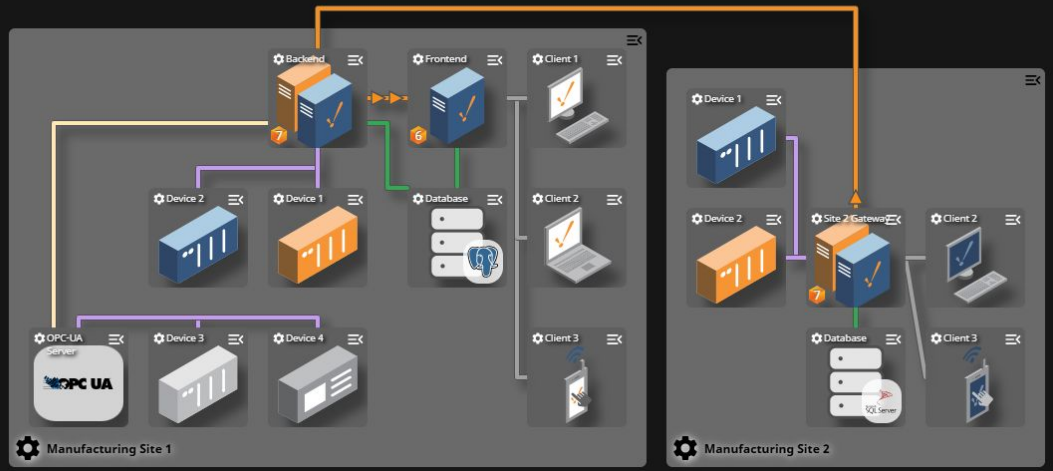

Ignition
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Manufacturing Site 1

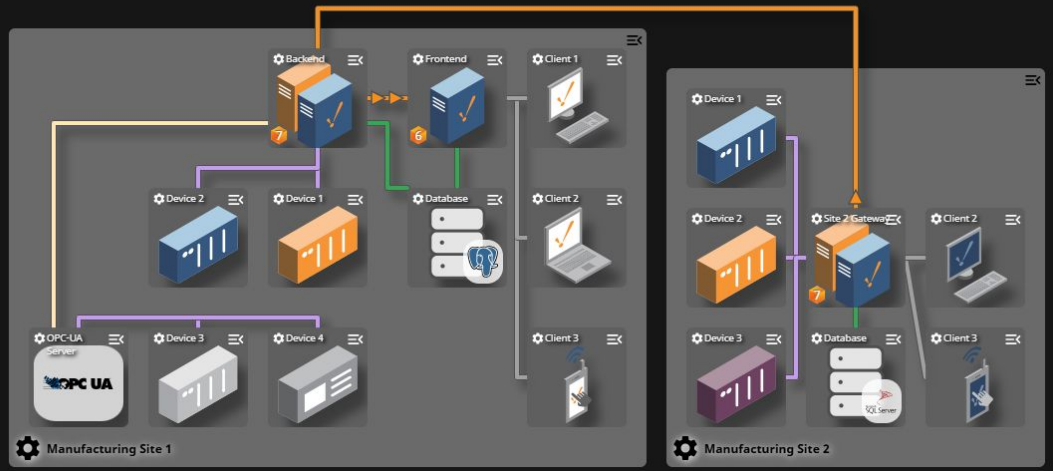

Ignition
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1

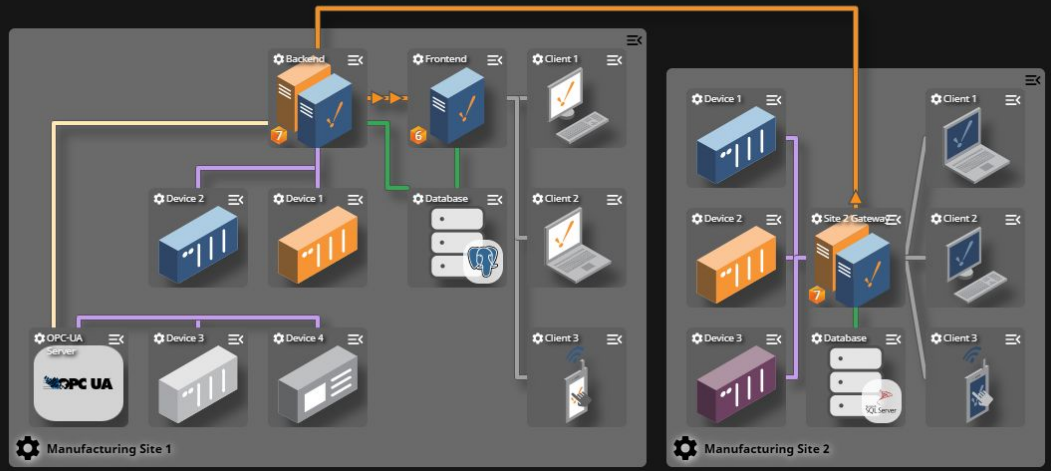

Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1

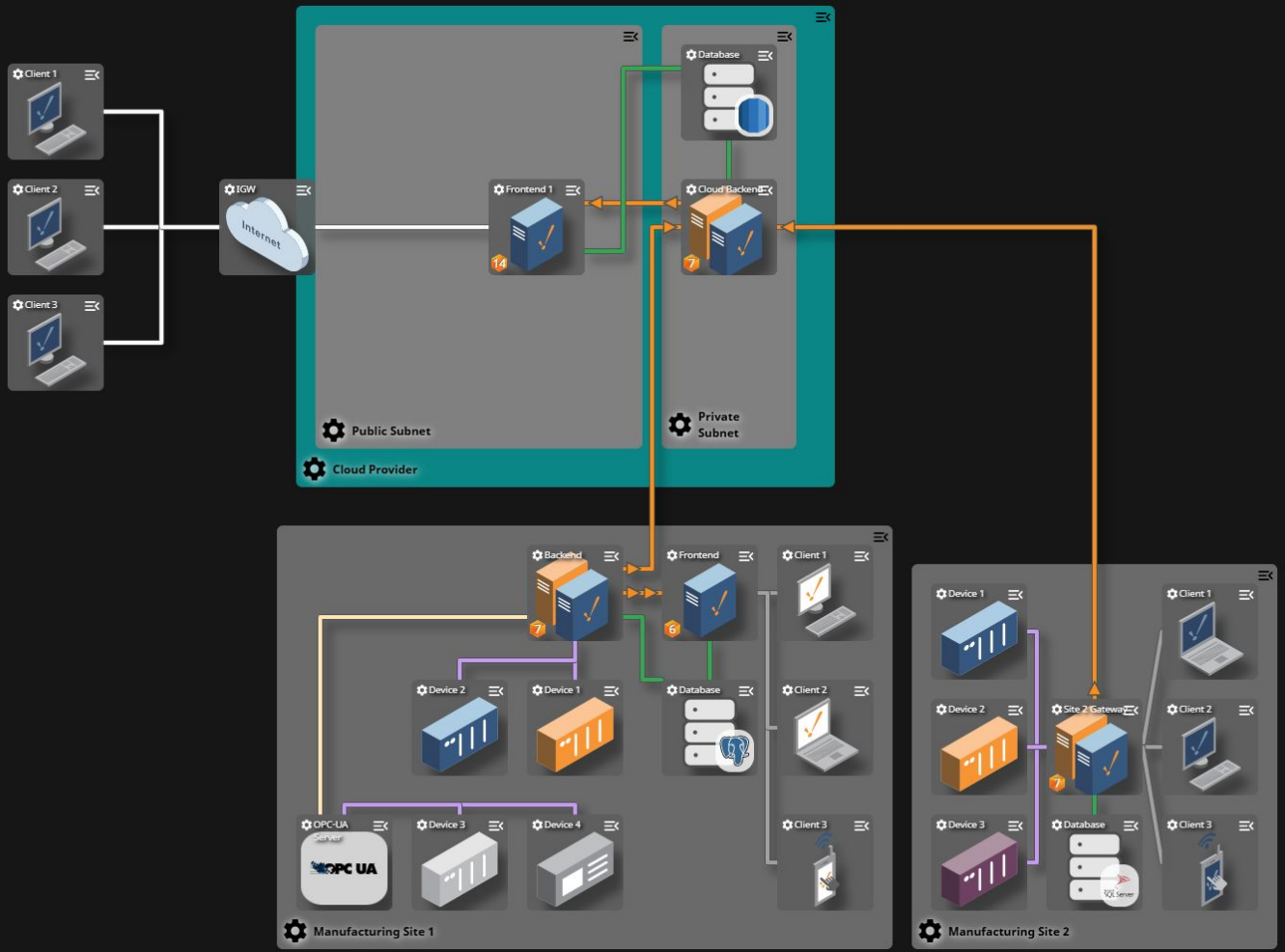

Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Site 2 Gateway
Client 2
Database
SQL Server
Manufacturing Site 2

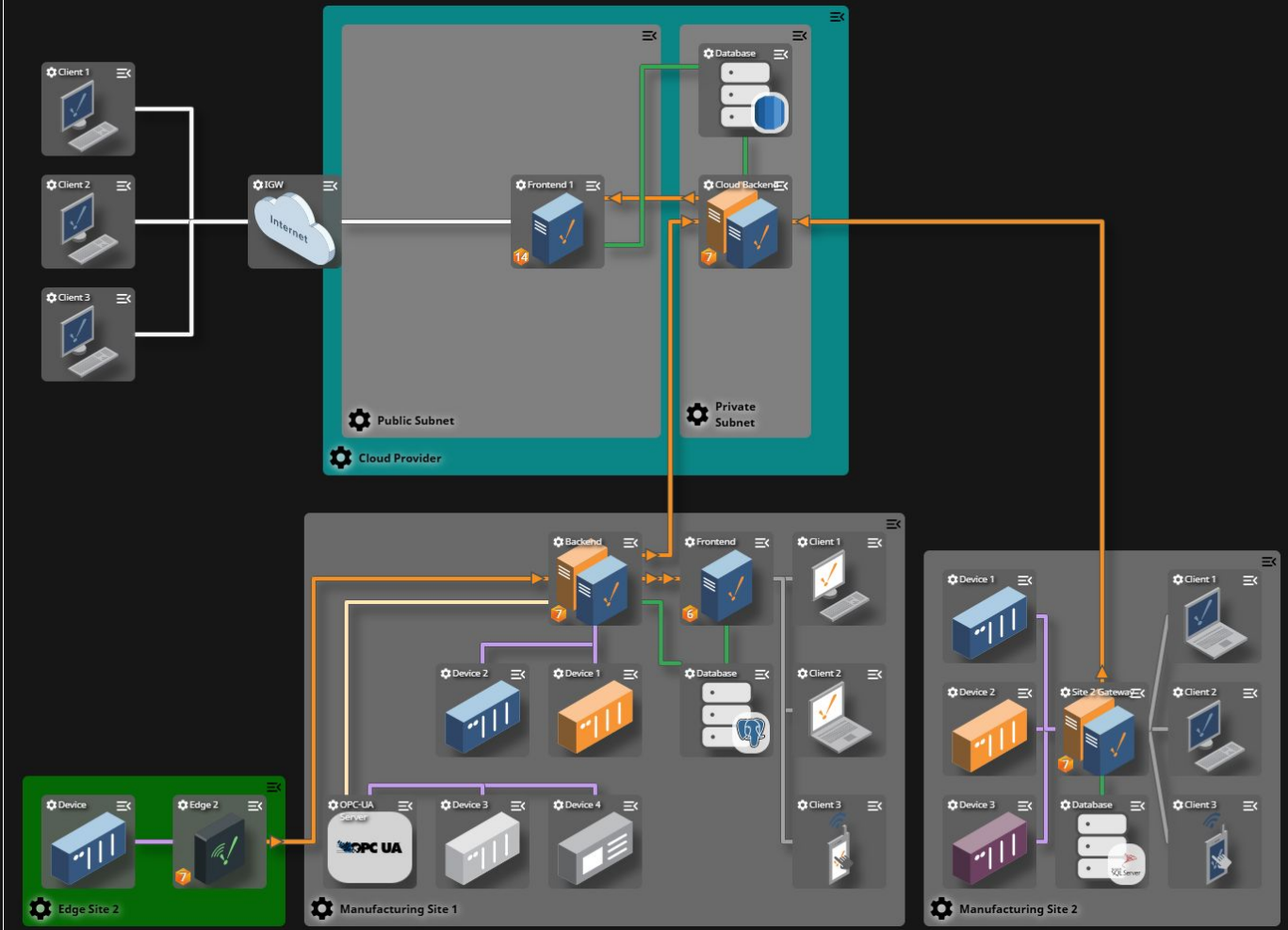

Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Site 2 Gateway
Client 2
Database
SQL Server
Manufacturing Site 2


Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Device 2
Site 2 Gateway
Client 2
Database
SQL Server
Client 3
Manufacturing Site 2


Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Device 2
Site 2 Gateway
Client 2
Device 3
Database
SQL Server
Client 3
Manufacturing Site 2


Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Client 1
Device 2
Site 2 Gateway
Client 2
Device 3
Database
SQL Server
Client 3
Manufacturing Site 2


Client 1
Client 2
Client 3
IGW
Internet
Frontend 1
Database
Cloud Backend
Public Subnet
Private Subnet
Cloud Provider
Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
OPC-UA
Server
OPC UA
Device 3
Device 4
Client 3
Manufacturing Site 1
Device 1
Client 1
Device 2
Site 2 Gateway
Client 2
Device 3
Database
Client 3
Manufacturing Site 2


Client 1
Client 2
Client 3
IGW
Internet
Frontend 1
Database
Cloud Backend
Public Subnet
Private Subnet
Cloud Provider
Backend
Frontend
Client 1
Device 2
Device 1
Database
Client 2
Client 3
OPC-UA
Server
OPC UA
Device 3
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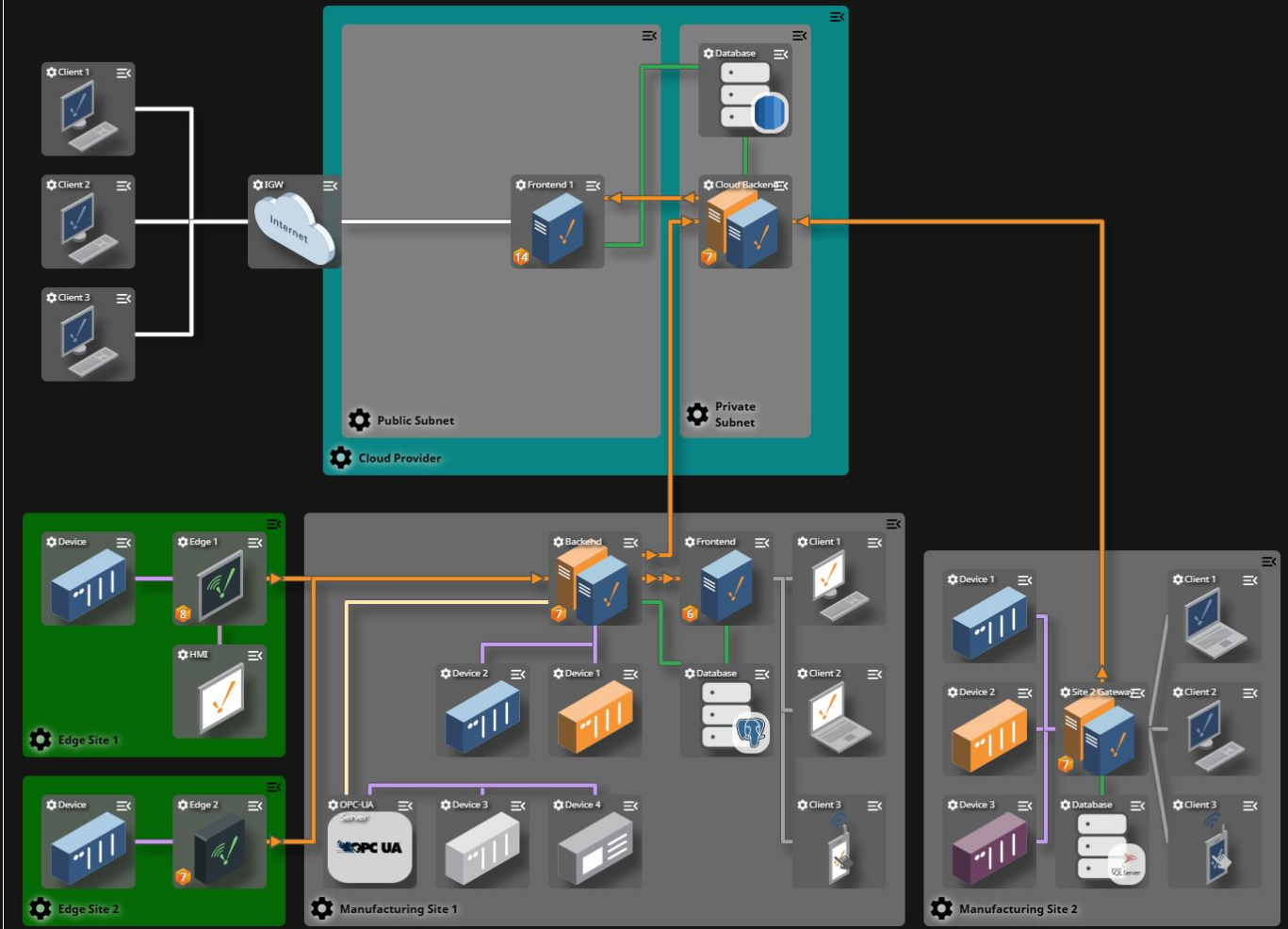
Device 2
Site 2 Gateway
Client 2
Device 3
Database
Client 3
Manufacturing Site 2


Client 1
Client 2
Client 3
IGW
Internet
Frontend 1
Database
Cloud Backend
Public Subnet
Private Subnet
Cloud Provider
Device
Edge 1
HMI
Edge Site 1
Edge 2
Edge Site 2
Backend
Frontend
Client 1
Client 2
Client 3
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Device 2
Device 3
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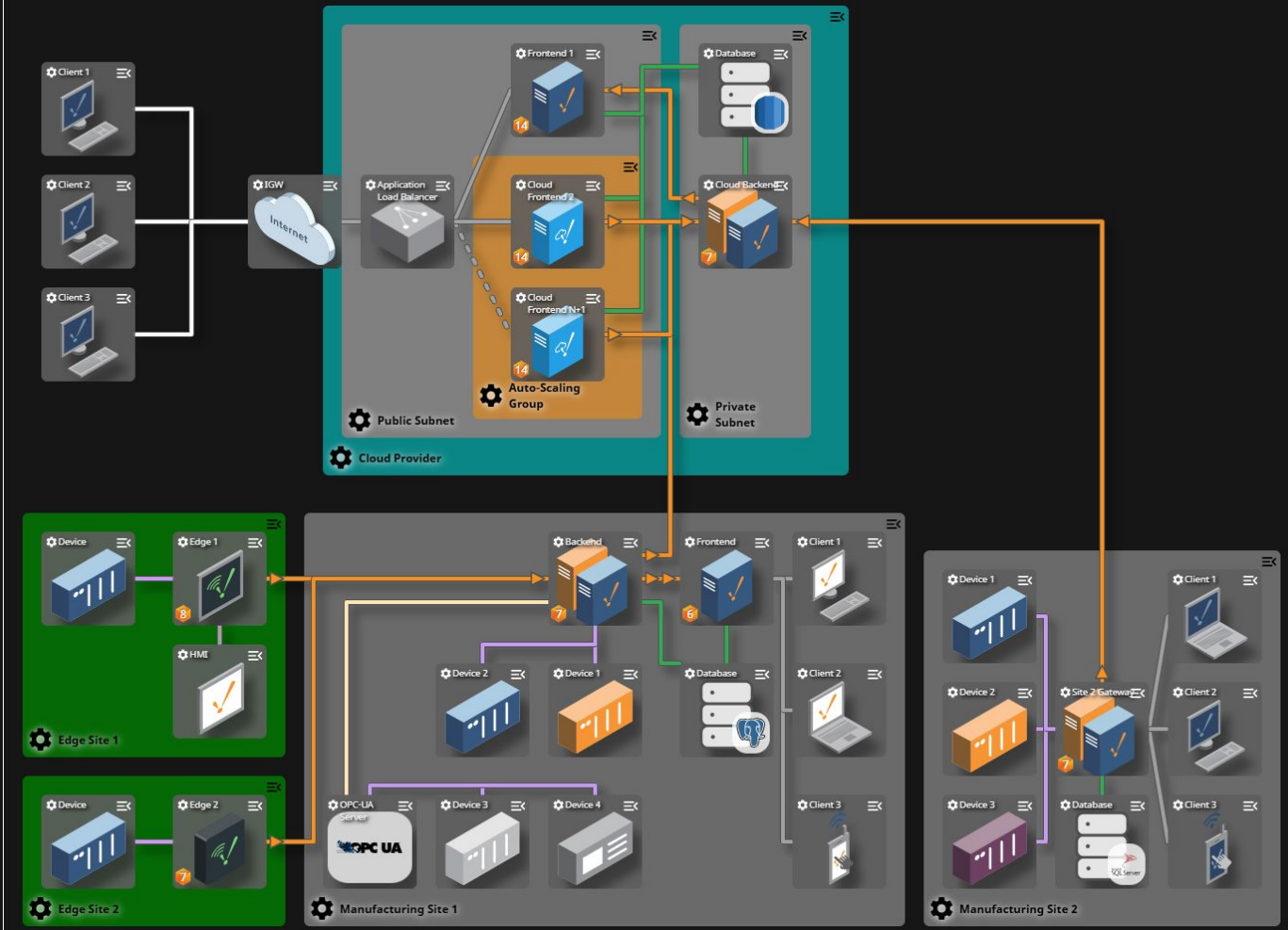
Server
OPC UA
Manufacturing Site 1
Site 2 Gateway
Manufacturing Site 2


Client 1
Client 2
Client 3
IGW
Internet
Application Load Balancer
Frontend 1
Cloud Frontend 2
Cloud Frontend N+1
Auto-Scaling Group
Public Subnet
Database
Cloud Backend
Private Subnet
Cloud Provider
Device
Edge 1
HMI
Edge Site 1
Edge 2
Edge Site 2
Backend
Frontend
Device 2
Device 1
Database
OPC-UA Server
OPC UA
Device 3
Device 4
Client 1
Client 2
Client 3
Manufacturing Site 1
Device 1
Device 2
Device 3
Site 2 Gateway
Database
Client 1
Client 2
Client 3
Manufacturing Site 2

Resource Links

- Free on the Exchange
- Forum Post Linked in the Project To:
  - Architecture Builder Release Notes
  - We are always looking for feedback!

Ready to Try Ignition for Yourself?

Download the full version for free at:
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Ignition User Manual also available at:
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Questions & Comments

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