

A person is standing on a dark, rocky mountain peak in the bottom right corner, looking out over a vast, undulating sea of white and grey clouds. The sun is setting or rising in the distance, creating a warm orange and yellow glow that illuminates the clouds and the sky. The sky transitions from a deep blue at the top to a lighter blue near the horizon.

What's That in the Sky?

An Intro to Ignition in the Cloud



Kent Melville

Director of Sales Engineering

Inductive Automation



Before We Take Off...

Primary Goal: Provide information to users

To support Ignition, a server needs to be:

- Secure
- Performant
- Available



What Is the Cloud?

Answers:

- A collection of servers accessed over the Internet
- The delivery of computing services over the Internet
- Someone else's computer



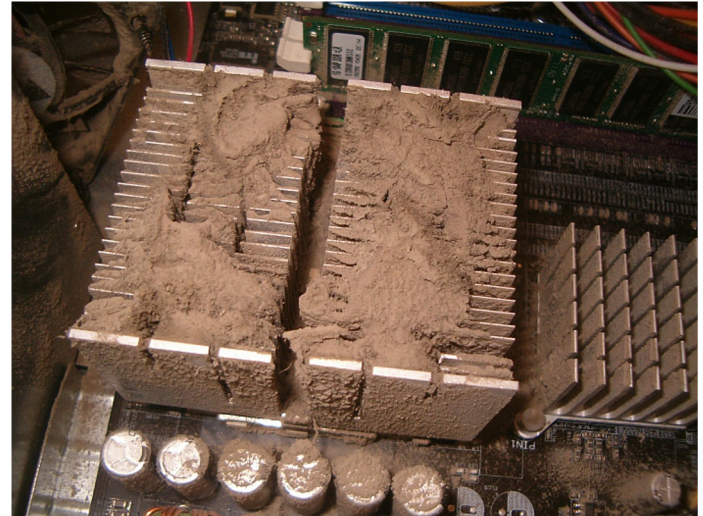
Why Use the Cloud?

- Do Less...
 - Hardware budgeting, procurement, and maintenance
 - Configuration and migration
 - Spending (through economies of scale)



Why Use the Cloud?

- Do Less...
 - Hardware budgeting, procurement, and maintenance
 - Configuration and migration
 - Spending (through economies of scale)
- ...To Do More
 - Innovation and collaboration
 - Data democratization
 - Flexibility and scaling



Ignition Cloud Deployment Methodologies

- Ignition Cloud Edition
 - Pay-as-you-go
 - Fixed module set
 - Not SaaS
 - Available for AWS & Azure
- Standard Ignition Deployed in a Cloud Environment
 - Normal installation, just in the cloud
 - Standard perpetual license
 - Module selection

Security

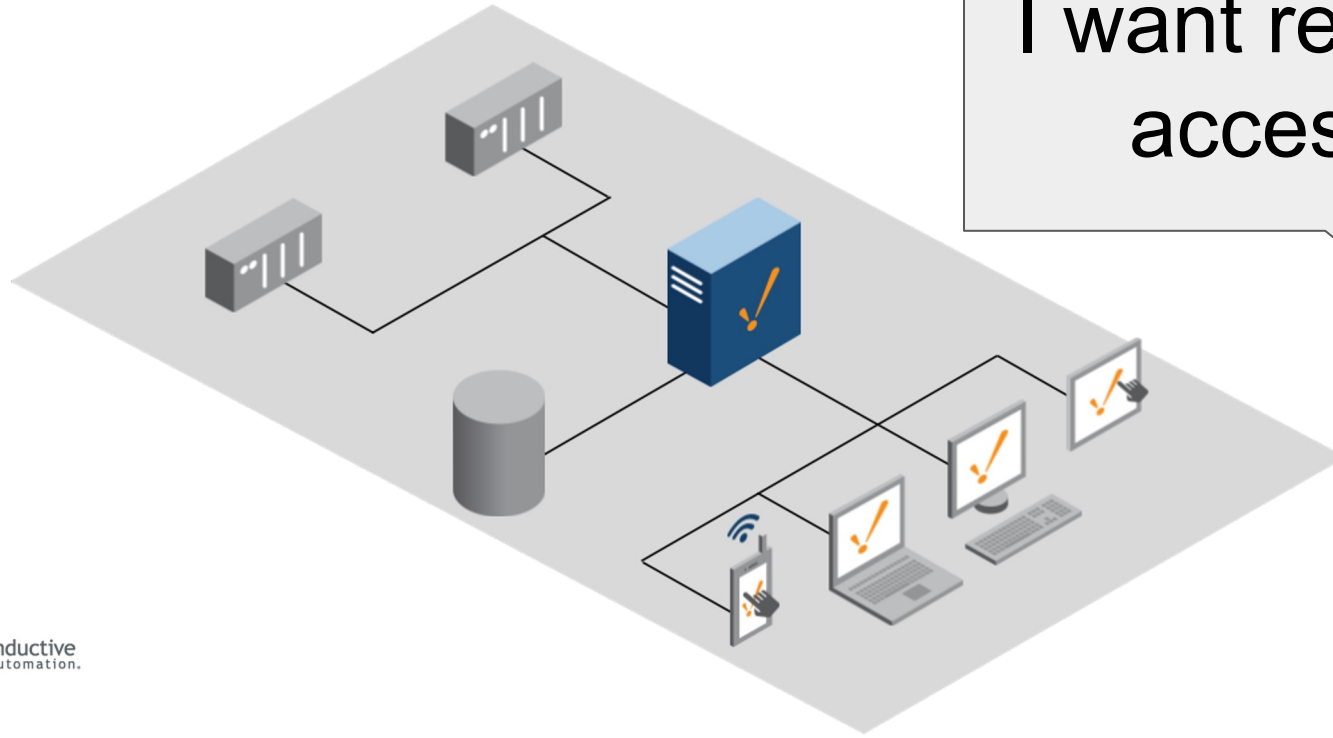
Category:	Examples:	Responsibility (On-Premise):	Cloud:
Authentication	Password hygiene, MFA, zero trust	Shared	Shared
Monitoring	Attack monitoring via staff/tools	Shared	Shared
Networking	Firewalls, VLANs, separate networks	Shared	Shared
Patching	OS/Ignition patches, anti-virus	Shared	Shared
Physical	Locked server cages/rooms, access logs	Host	Shared

A person is standing on a rocky mountain peak in the bottom right corner, looking out over a vast, undulating sea of white clouds. The sun is setting or rising in the distance, creating a warm orange and yellow glow that transitions into a clear blue sky. The overall scene is serene and expansive.

Let's Get This Plane in the Air

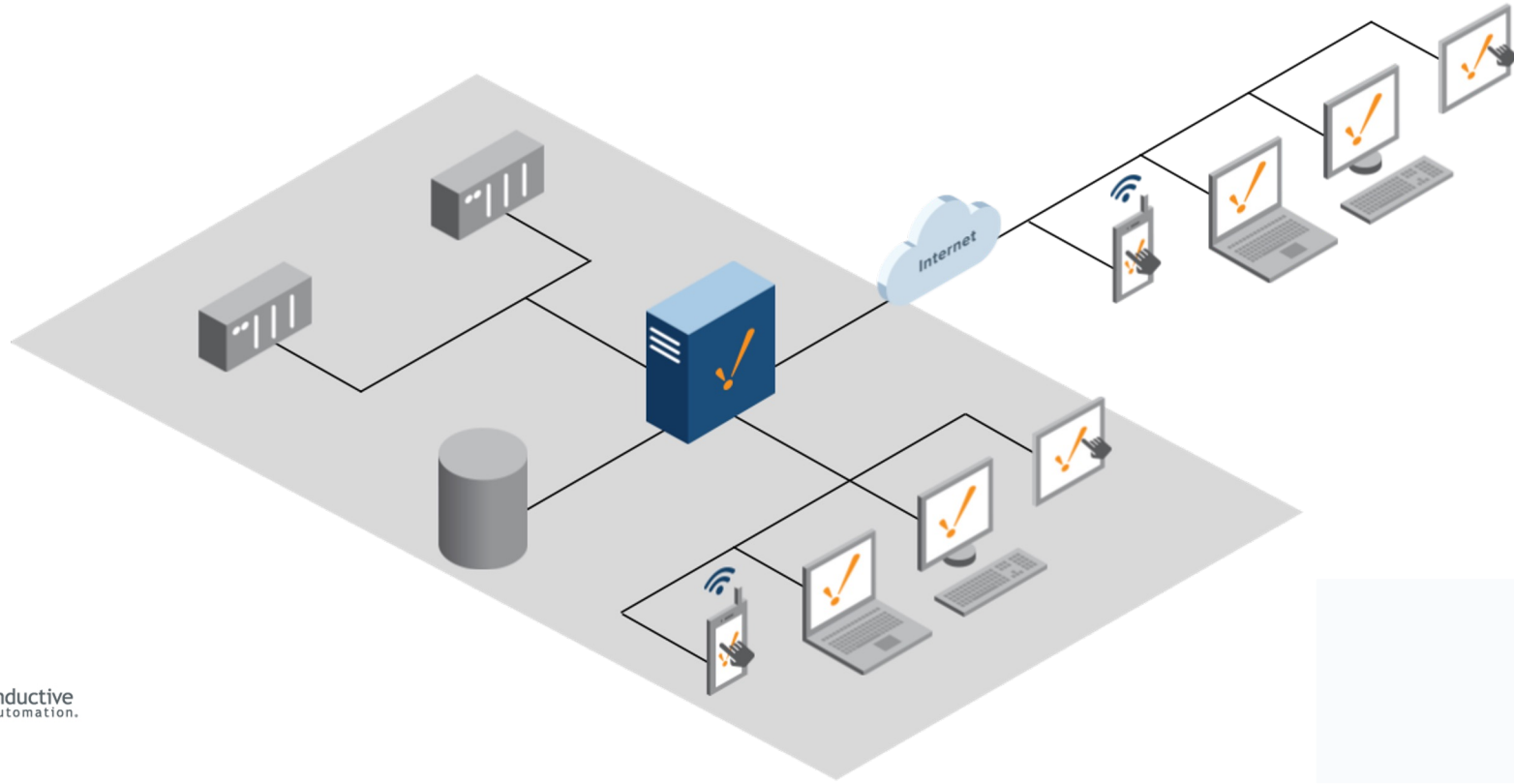
ELEV8

Existing Deployment

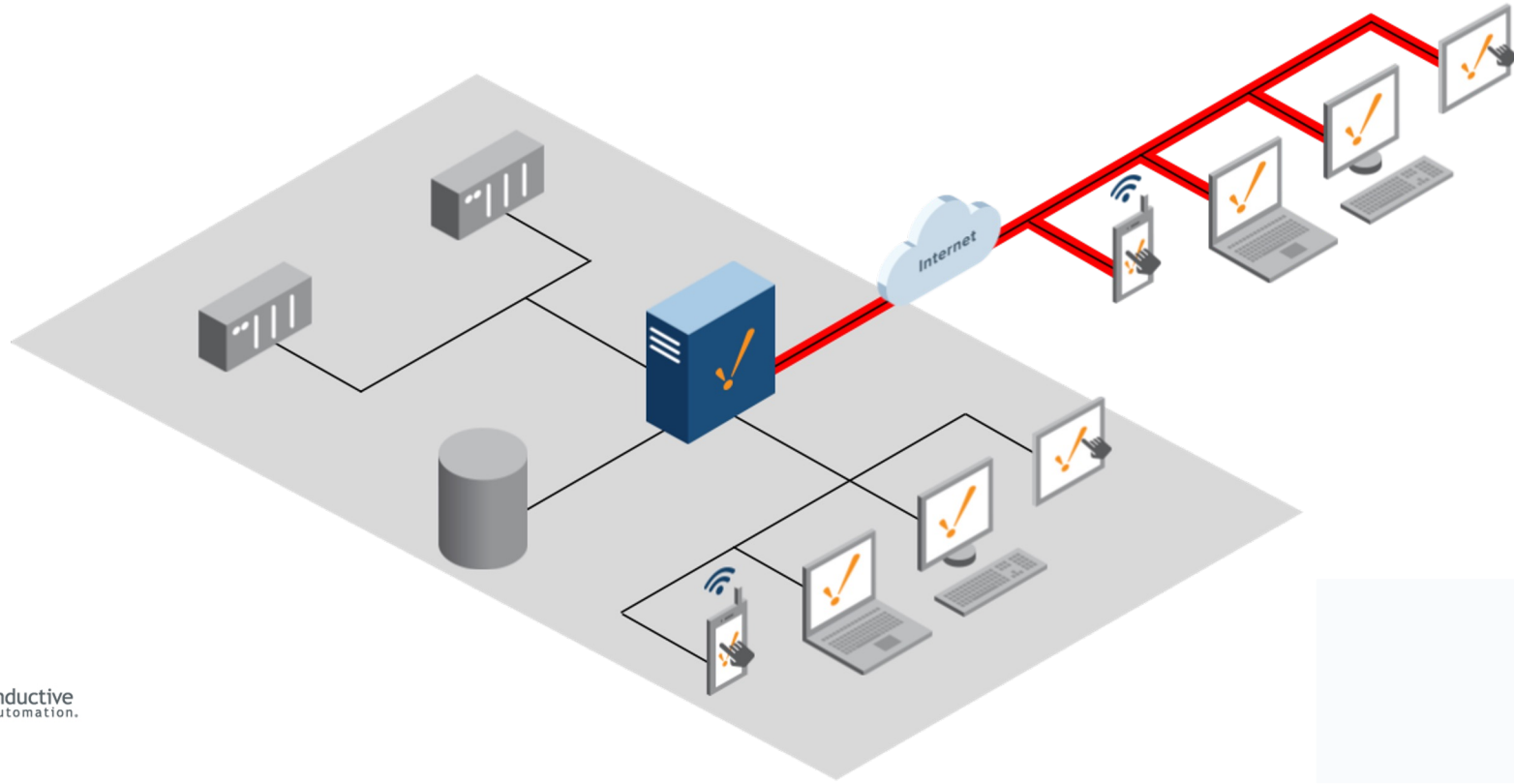


I want remote access!

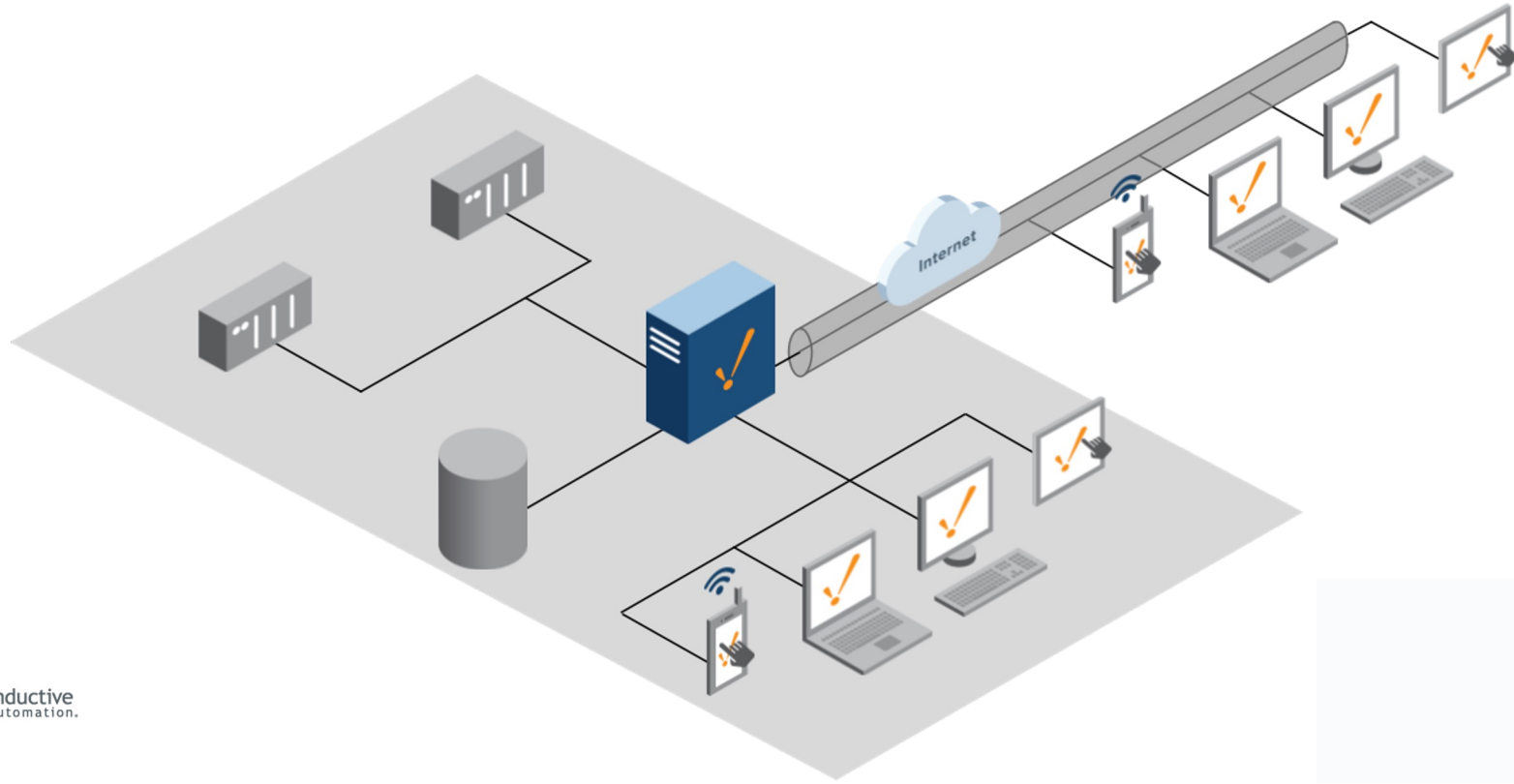
Remote Access: Port Forwarding



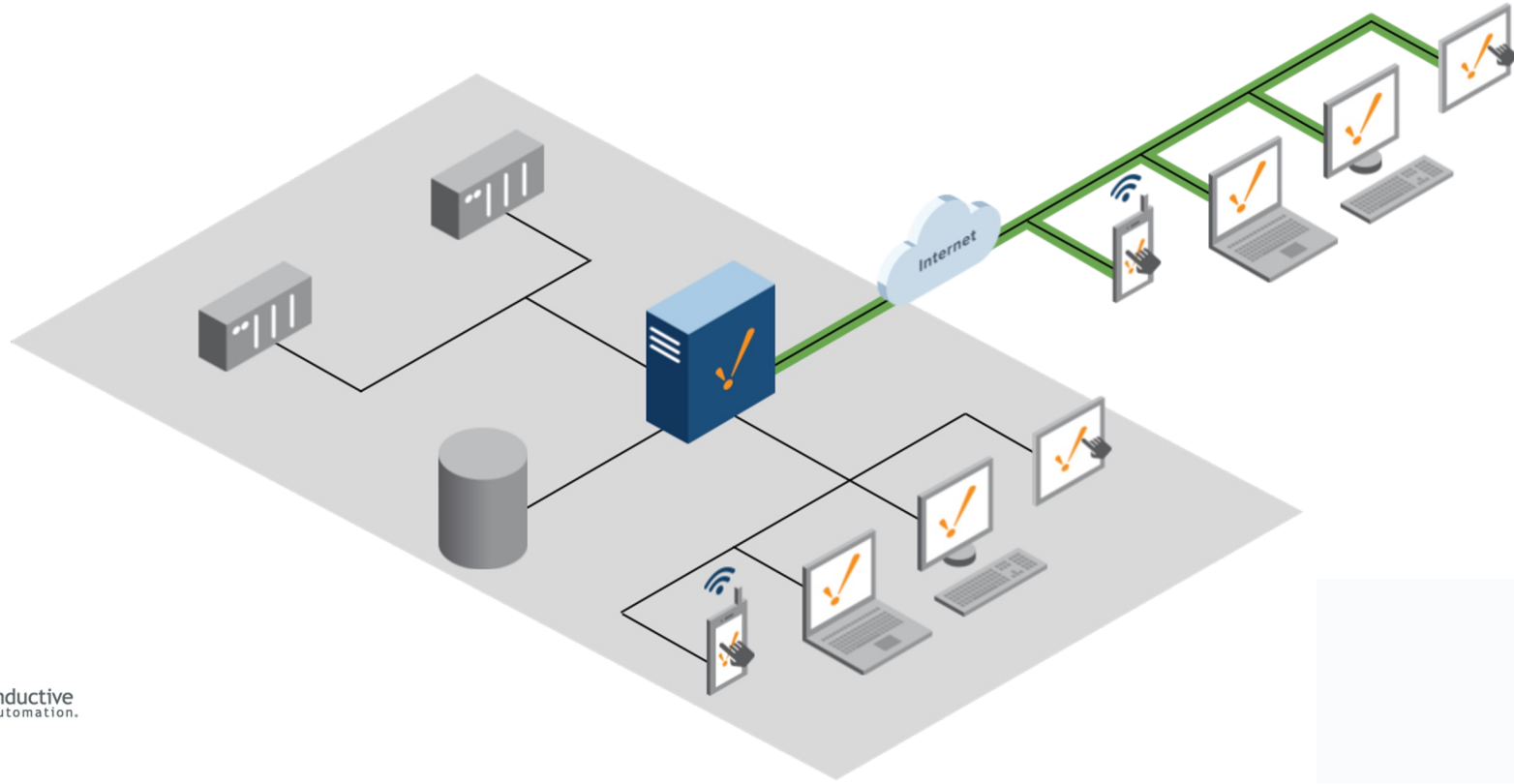
Remote Access: Port Forwarding



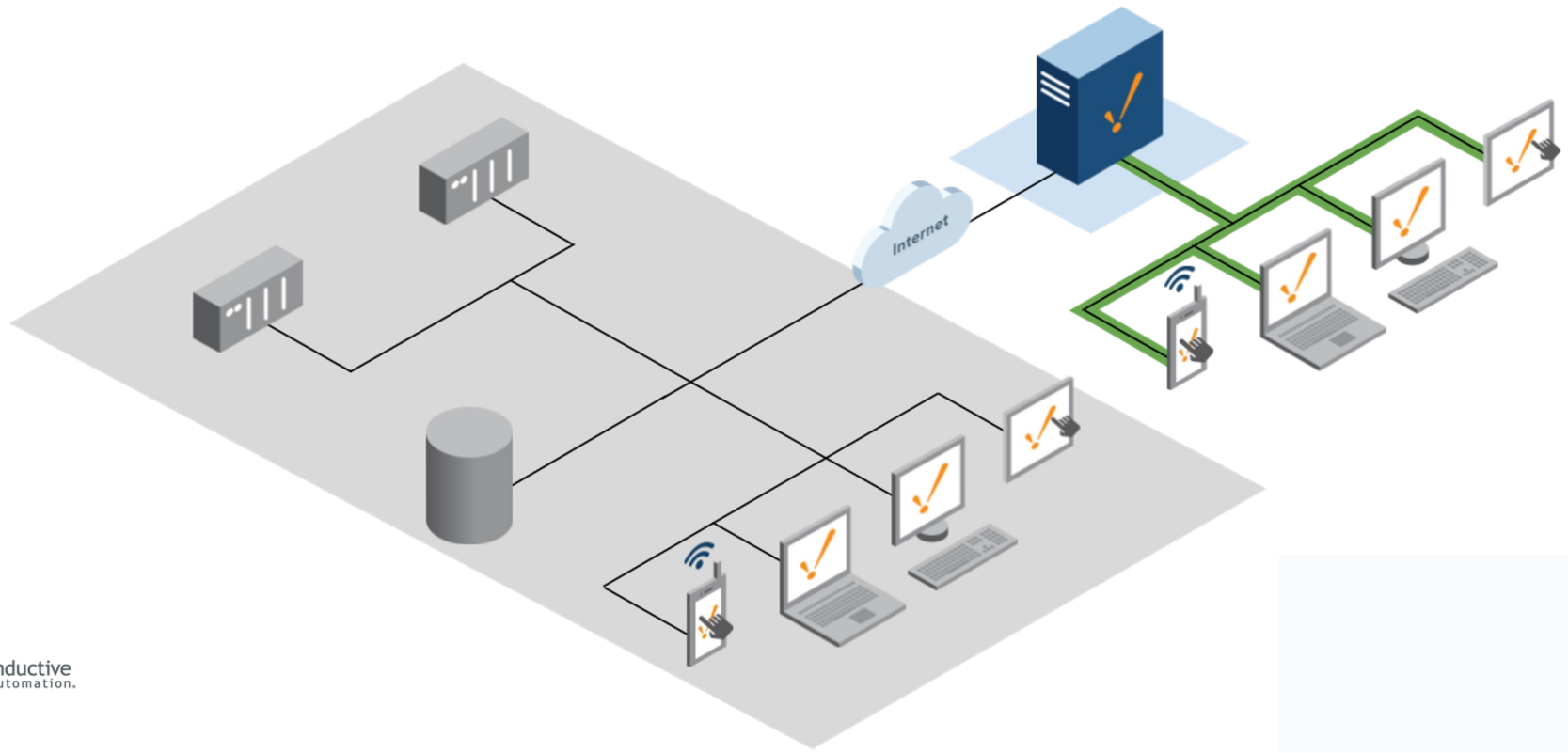
Remote Access: VPN



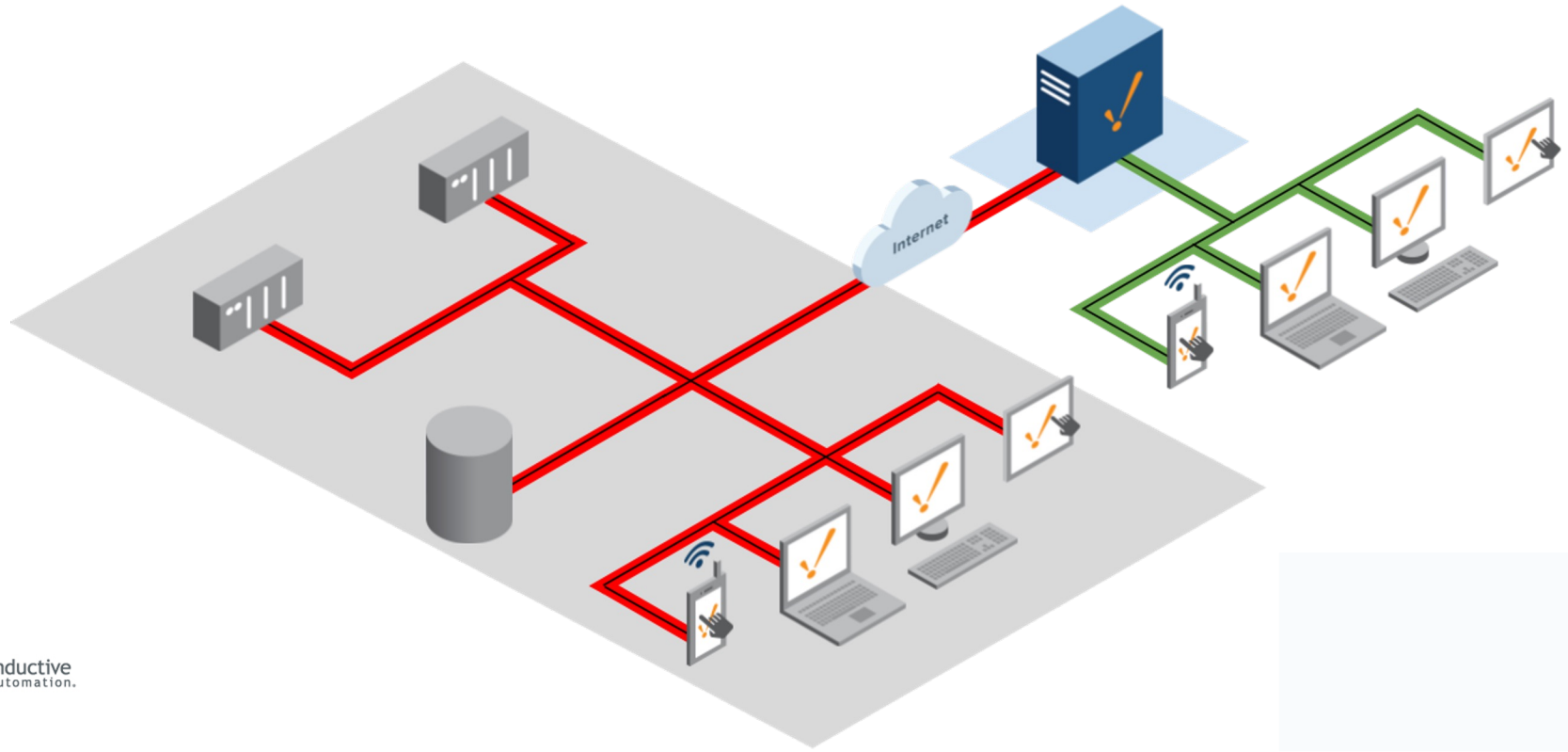
Remote Access: SSL



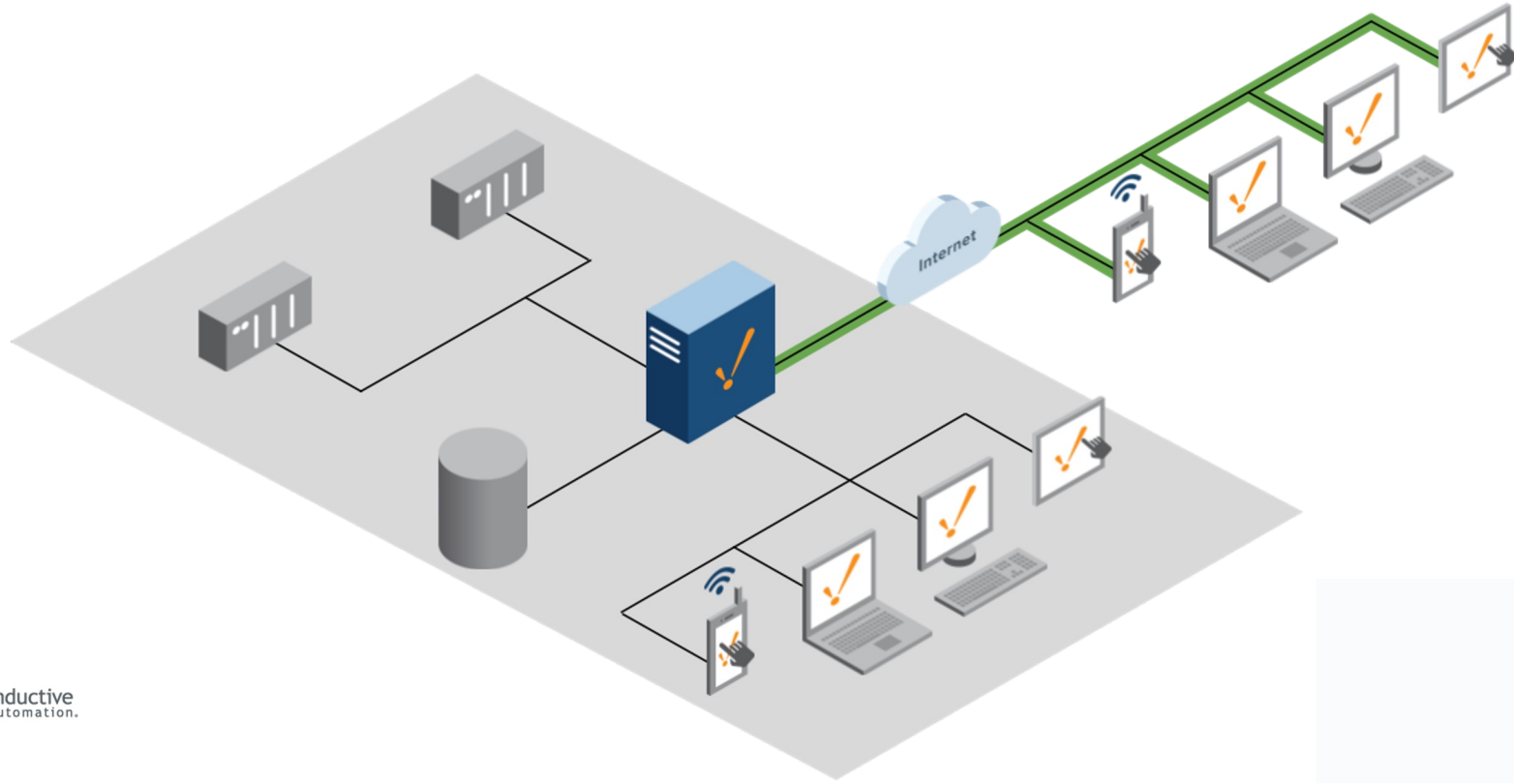
Move to the Cloud



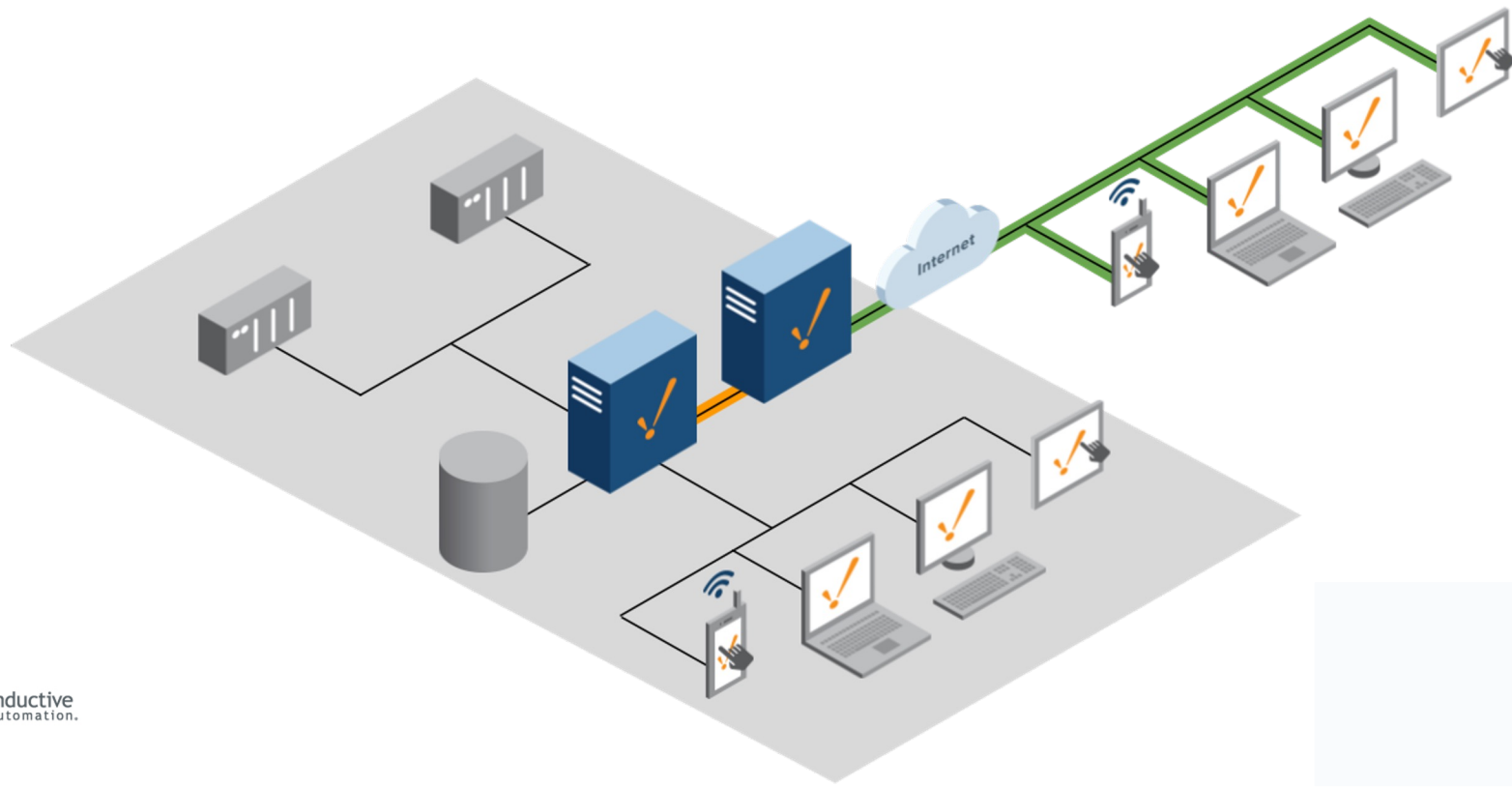
Move to the Cloud



Remote Access: SSL

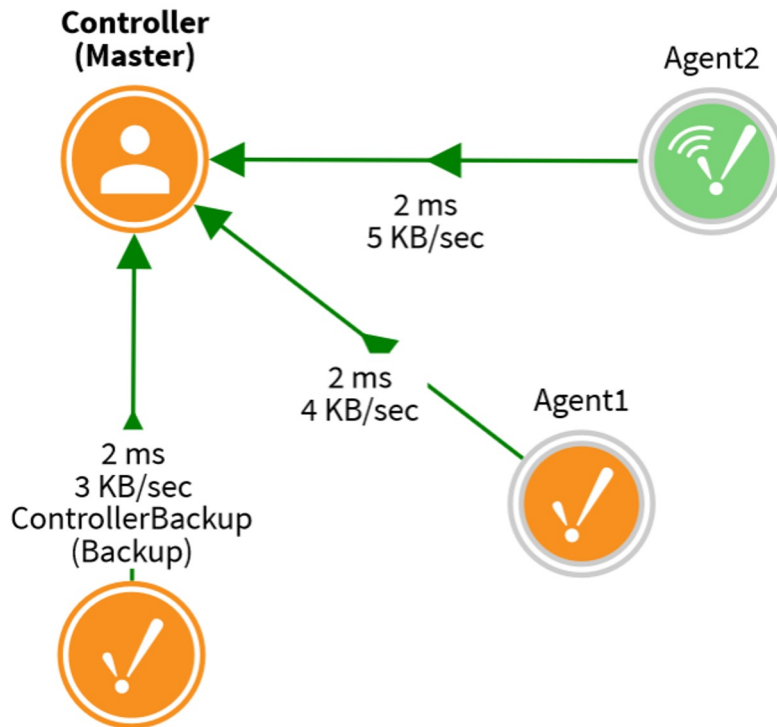


Remote Access: SSL to DMZ

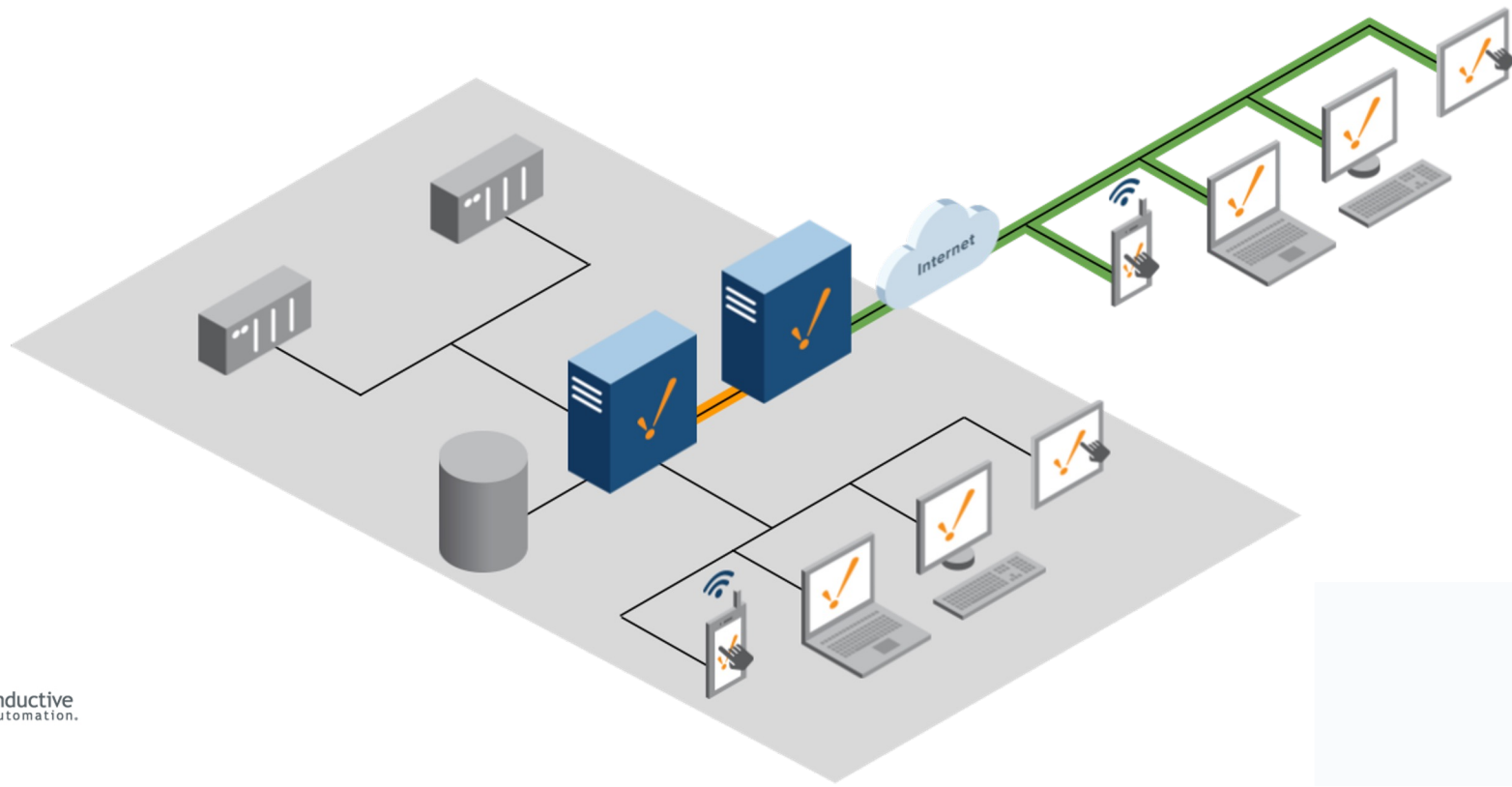


Gateway Network

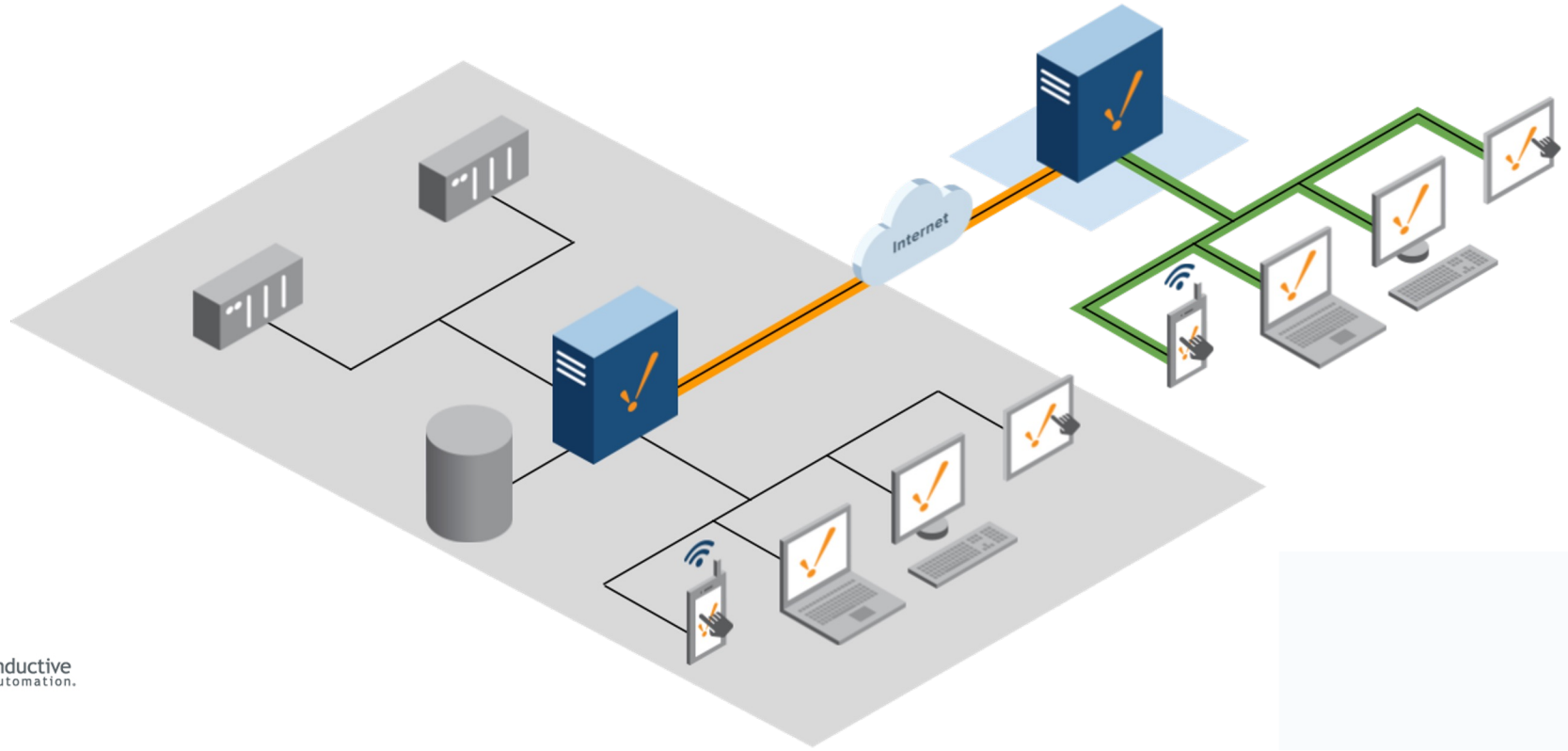
- Dedicated HTTP channel to handle multiple streams of message data
- TLS enforced & Approve-Only
- Remote Services:
 - Tag Providers
 - Real-Time + Historical Access
 - History Provider
 - Alarming & Alarm Notification
 - Audit Log
 - Alarm Journal
 - Enterprise Administration
 - Redundancy



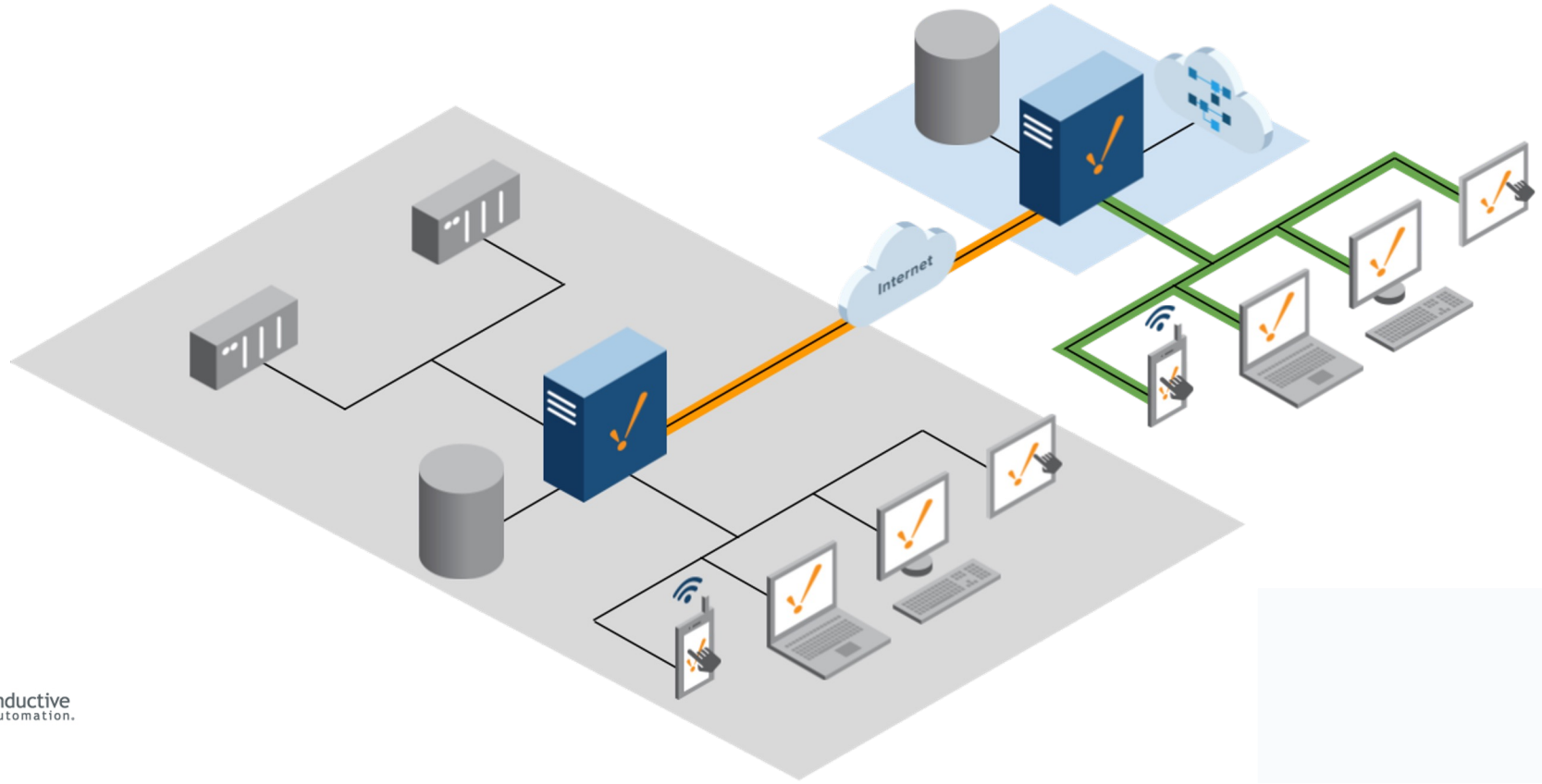
Remote Access: SSL to DMZ



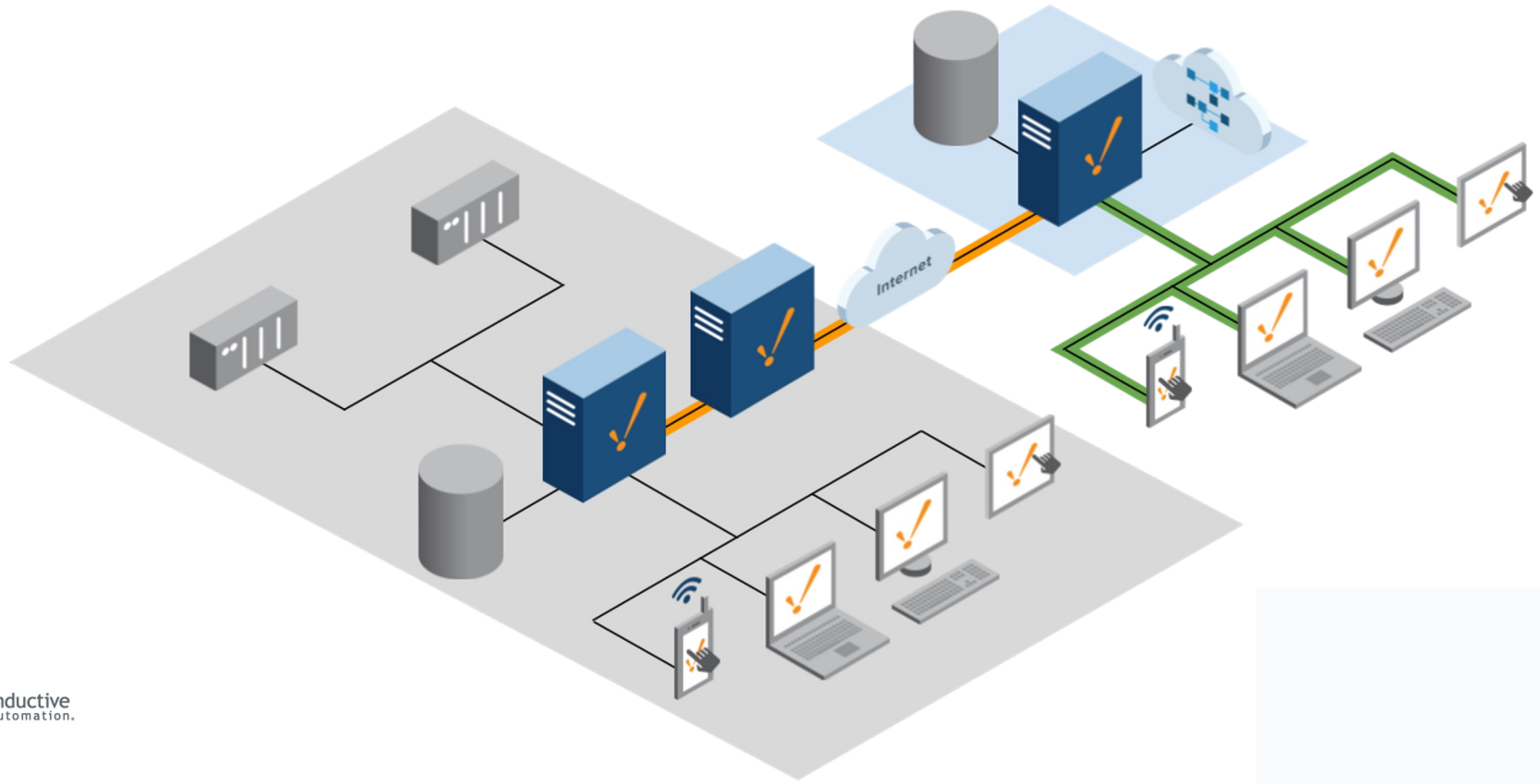
Remote Access: Cloud Deployment



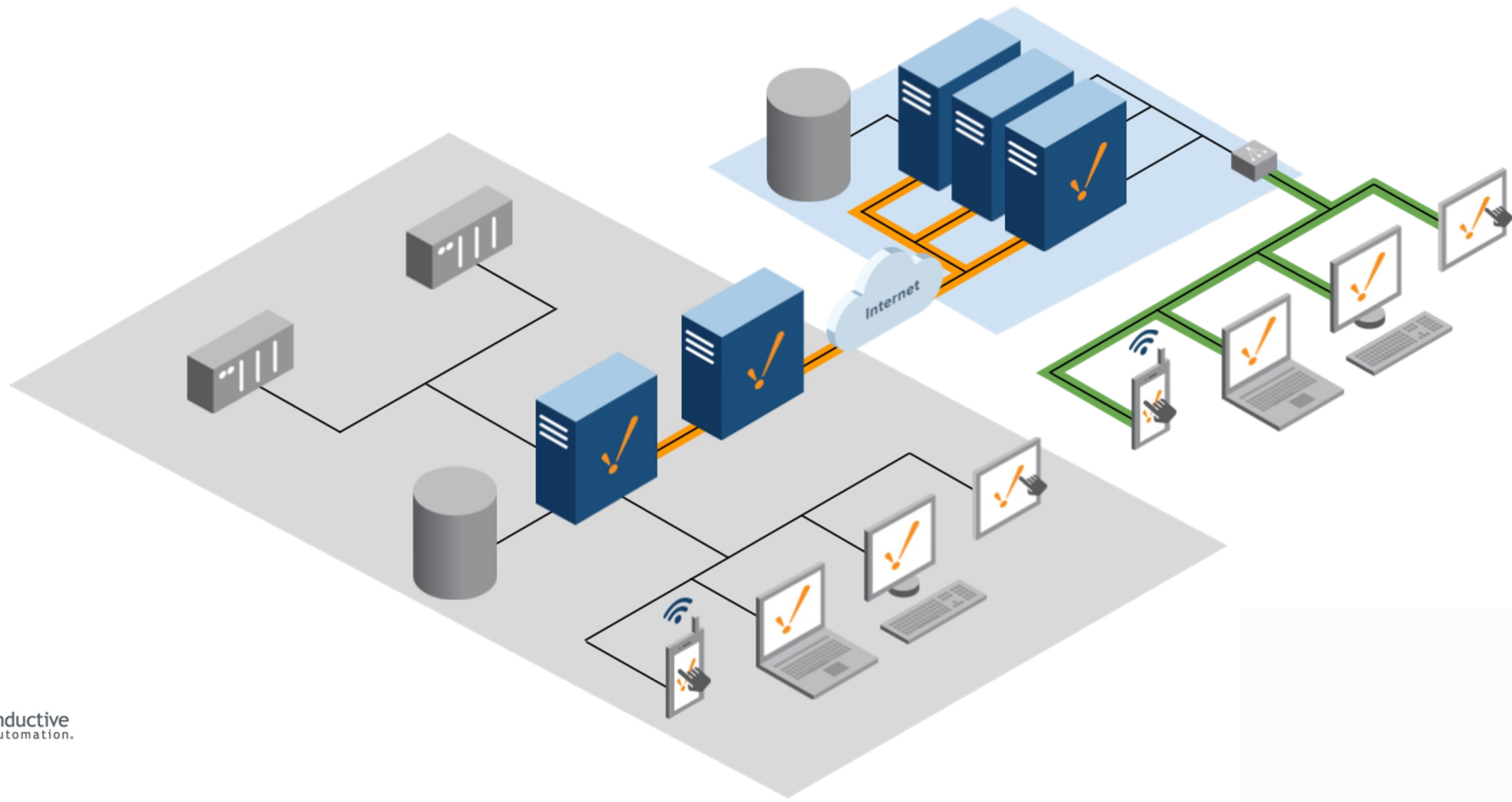
Remote Access: Cloud Services



Cloud Services & DMZ



Scalable Remote Access



Climbing to Cruising Altitude



Ignition Cloud Edition - Core Modules

Visualization



Perspective



Reporting

Connectivity & Enterprise



Enterprise Administration



OPC UA

Data & Logic



SQL Bridge



Tag Historian



Sequential Function Charts

Alarm & Notification



Alarm Notification

Ignition Cloud Edition - Additional Modules

Data & Logic



Web Development

Alarm & Notification



Twilio

Cloud Connector Modules



MongoDB



IIoT Partner Modules



MQTT Engine

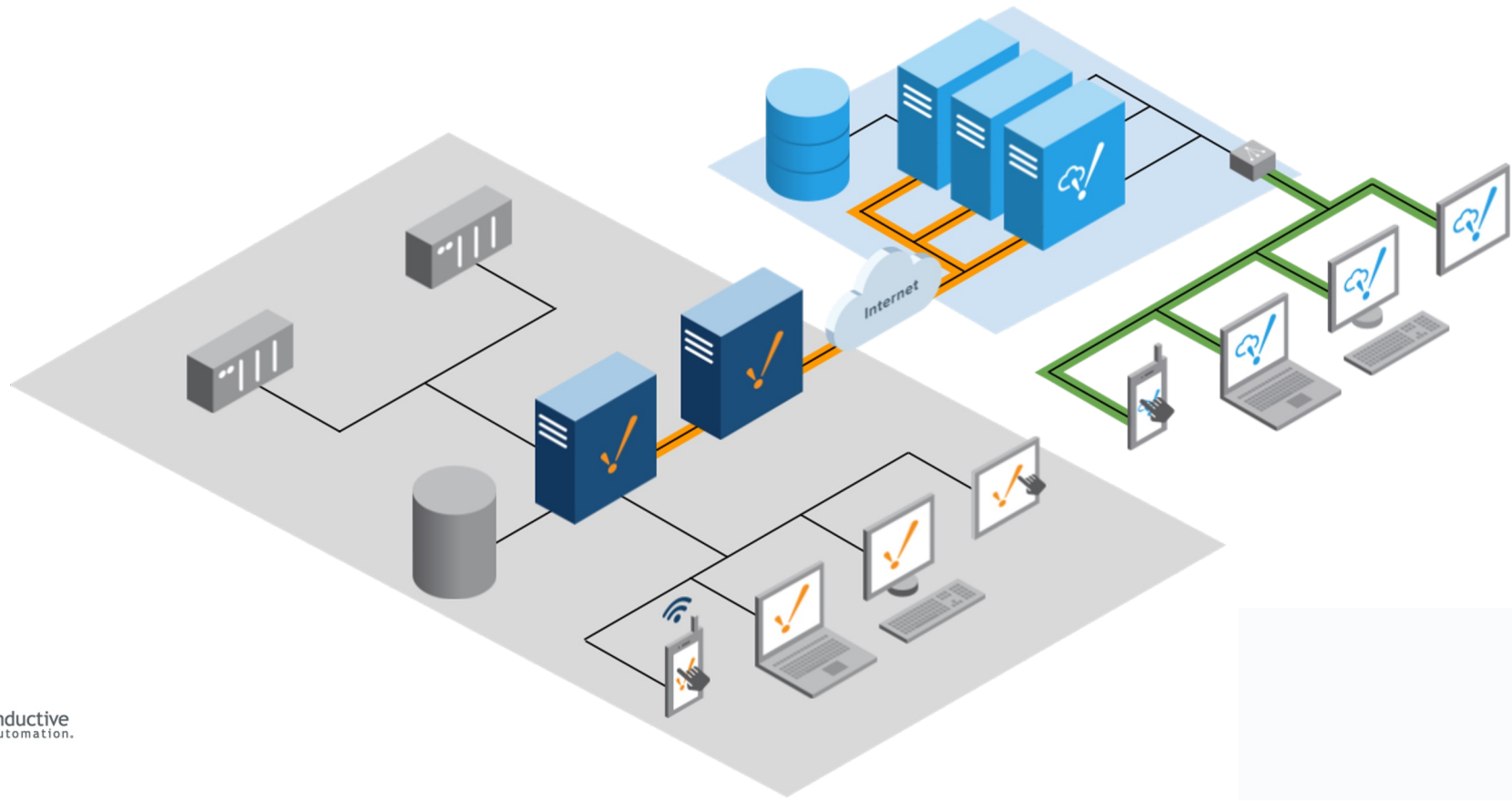


MQTT Distributor



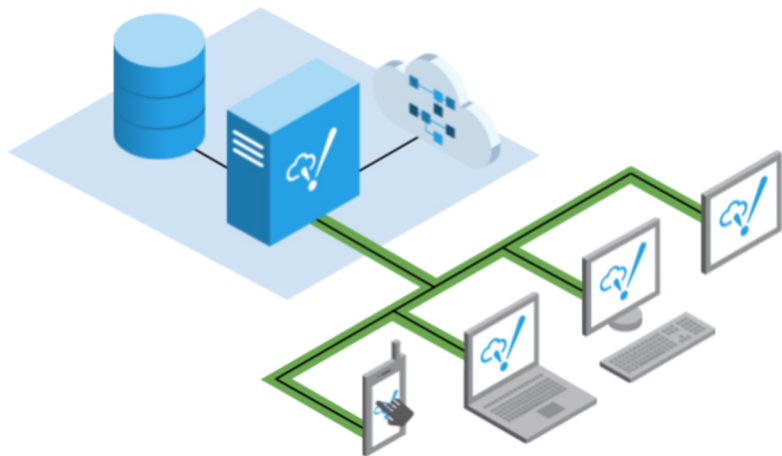
MQTT Transmission

Elastic Remote Access



Proof-of-Concept Use Case

- Simple Environment Configuration
- 2 weeks $\cong$ \$329.16



Ignition Cloud Edition

Inductive Automation [\[link\]](#)

★★★★★ 0 AWS reviews [\[link\]](#)

Overview

Product details

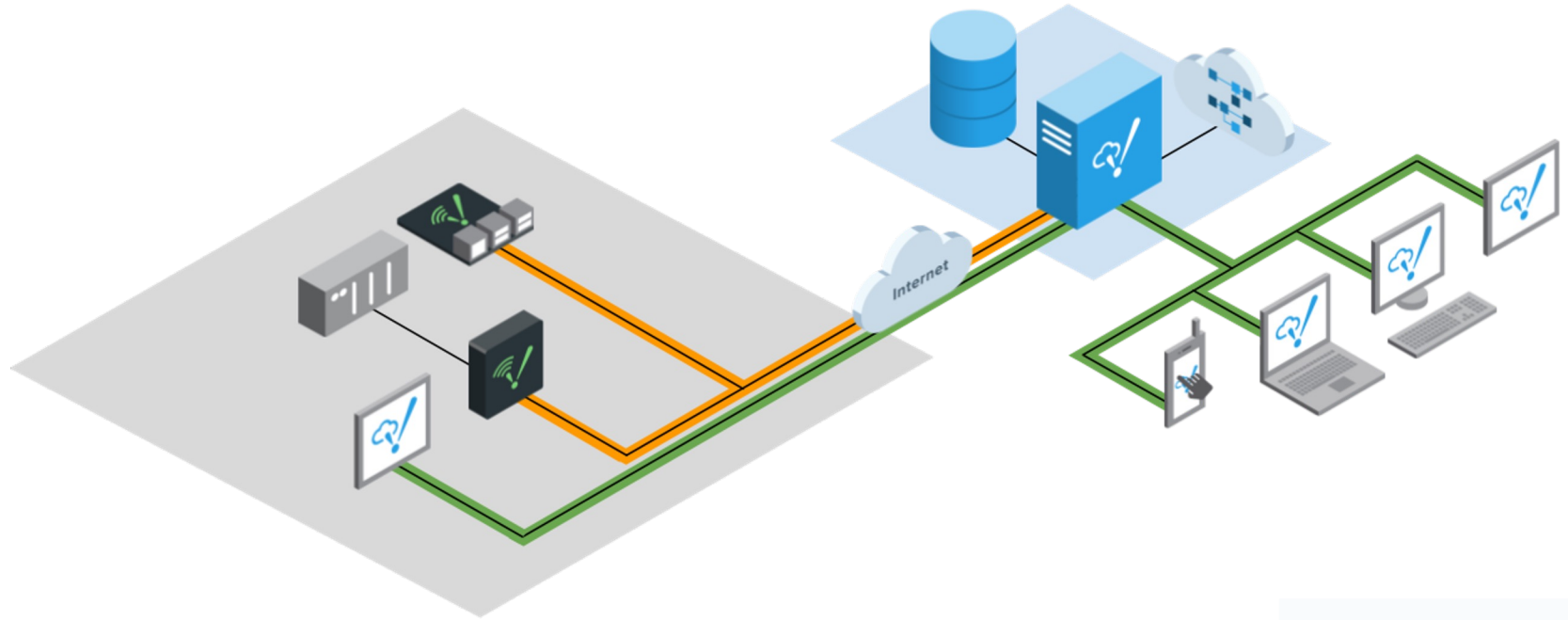
Pricing

Usage

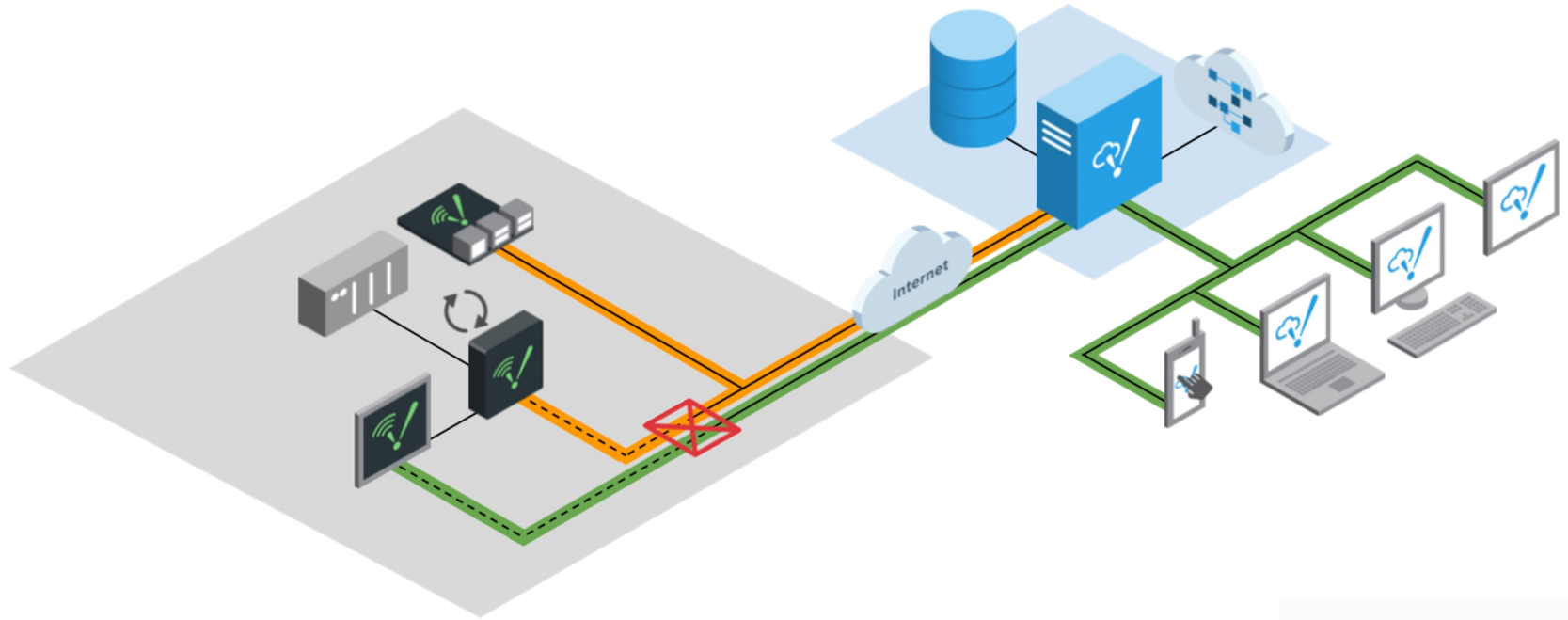
Support

	Instance type	Software/Hour	EC2/Hour	Total/Hour
☒	t3.medium	\$0.91	\$0.05	\$0.96
☐	m6i.large	\$1.40	\$0.112	\$1.512
☐	m6i.xlarge <i>vendor recommended</i>	\$1.93	\$0.224	\$2.154
☐	m6i.2xlarge	\$2.67	\$0.448	\$3.118
☐	m6i.4xlarge	\$3.58	\$0.896	\$4.476

Industrial Device Proof of Concept



Industrial Device Proof of Concept



Cloud Deployment vs. Cloud Edition

When selecting, consider:

- Architecture
- Module requirements
 - Cloud Deployment → Optional
 - Cloud Edition → Standard Set
 - Future Connector Modules
- Budget: OpEx vs. CapEx

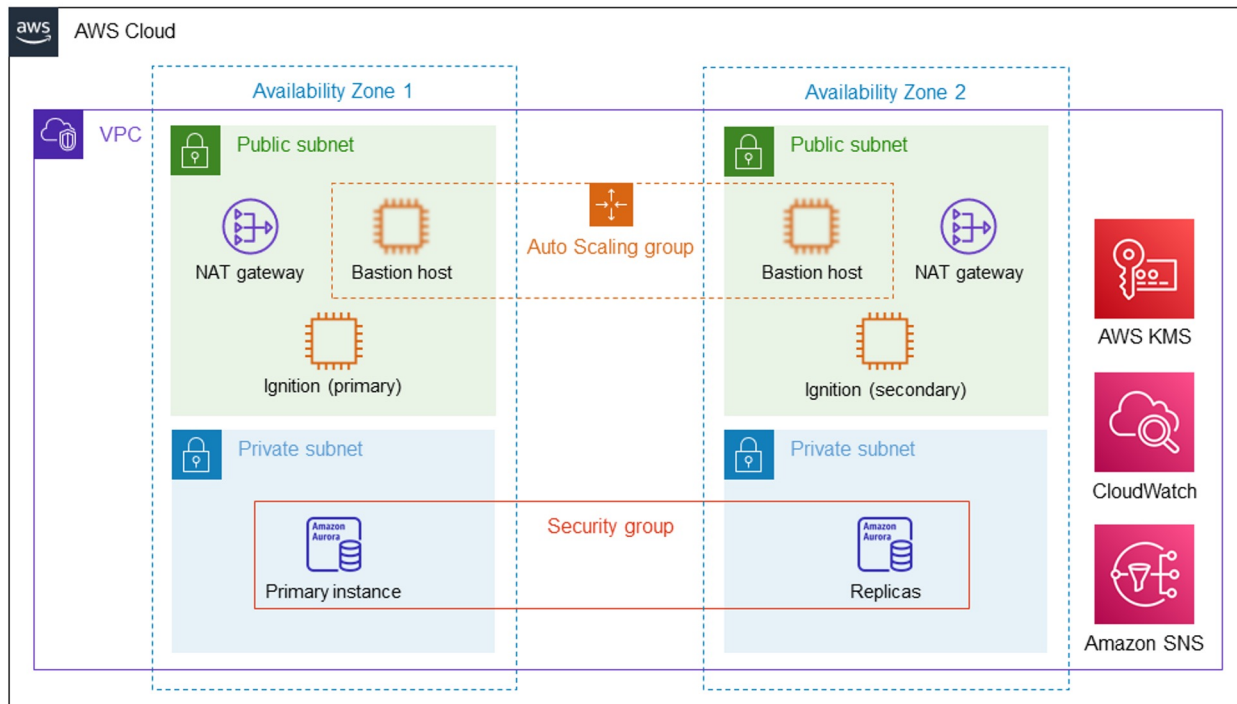
Formation Flying

Cloud Formation Templates

- Standalone and cluster architectures
- Deploy into a new VPC or existing VPC
- These solutions require Ignition licenses
 - Coming Soon: Cloud Edition instances in lieu of BYOL
- No additional cost for using these Partner Solutions

AWS Partner Solution - Standalone

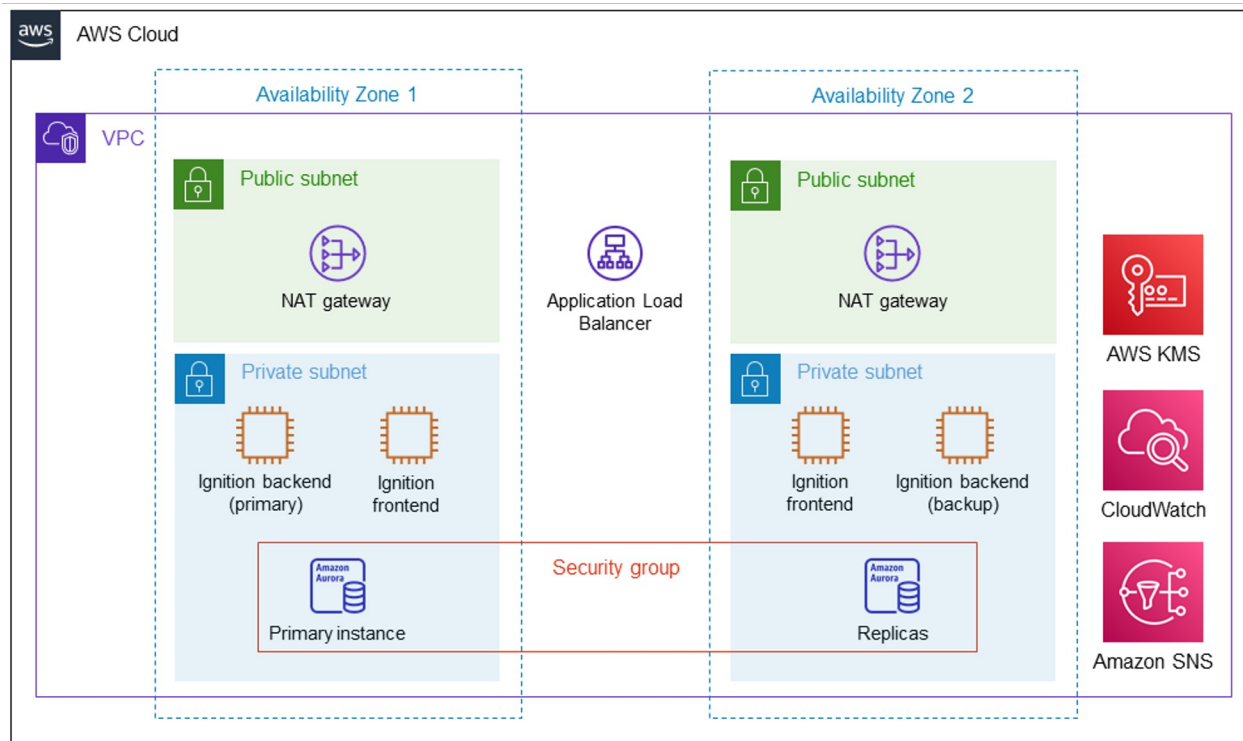
- 2 x Ignition
- Primary Aurora DB
- 2 x Aurora replicas
- VPC
 - Public & Private subnets
 - NAT gateway
 - Bastion Host
- Security Group
- Key Management
- CloudWatch CPU usage alarm
 - Amazon SNS notification



AWS Partner Solution - Cluster

Scale-out architecture

- 2 x Ignition frontend
- Redundant Ignition backend
- Application load balancer
- Access gateways via client VPN



Cruising Altitude

Did We Achieve Our Primary Goal?

Provide information to users

- Secure
- Performant
- Available



PRE-FLIGHT CHECKLIST

AIRLINE INFORMATION: ☐ Check-in online ☐ Purchase baggage, if needed ☐ Airport Transportation: to / from ☐	TO DO: ☐ Luggage: Remove old tags / label ☐ Check carryon luggage requirements ☐ Sign up for flight status text alerts ☐
CARRYON PACKING: ☐ Liquids: Follow TSA's rules ☐ Change of clothes / pajamas ☐ Toothbrush / contact items / toiletries ☐ Headphones with audio jack for plane	TO BUY: ☐ Gum/Lollipops to clear ears on plane ☐ Airplane snacks ☐ ☐
THE NIGHT BEFORE: ☐ Charge electronics ☐ Download movies/TV to devices ☐ Empty water bottles ☐	DON'T FORGET: ☐ Passports / ID ☐ Boarding Pass ☐ ☐

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A person is standing on a rocky peak in the bottom right corner, looking out over a vast sea of white clouds. The sky is a mix of orange, yellow, and blue, suggesting a sunset or sunrise. The word "Questions?" is written in large white letters in the center of the image.

Questions?