Data Center Use Case

Unified BMS monitoring for critical infrastructure with multi-protocol integration.
Industry: Data Center / Facilities

Quick Facts

Attribute	Value
Scale	7,100 tags, 3,000 communication points
Devices	14 critical infrastructure devices
Displays	159 monitoring screens
Protocols	SNMP, ControlLogix, Modbus, OPC-DA
Equipment	5 PLCs, 5 Energy Meters, 4 UPS Systems

The Challenge

Challenge: Implement unified monitoring and control for critical data center infrastructure across multiple protocols and device types, ensuring optimal operating conditions and preventing downtime.

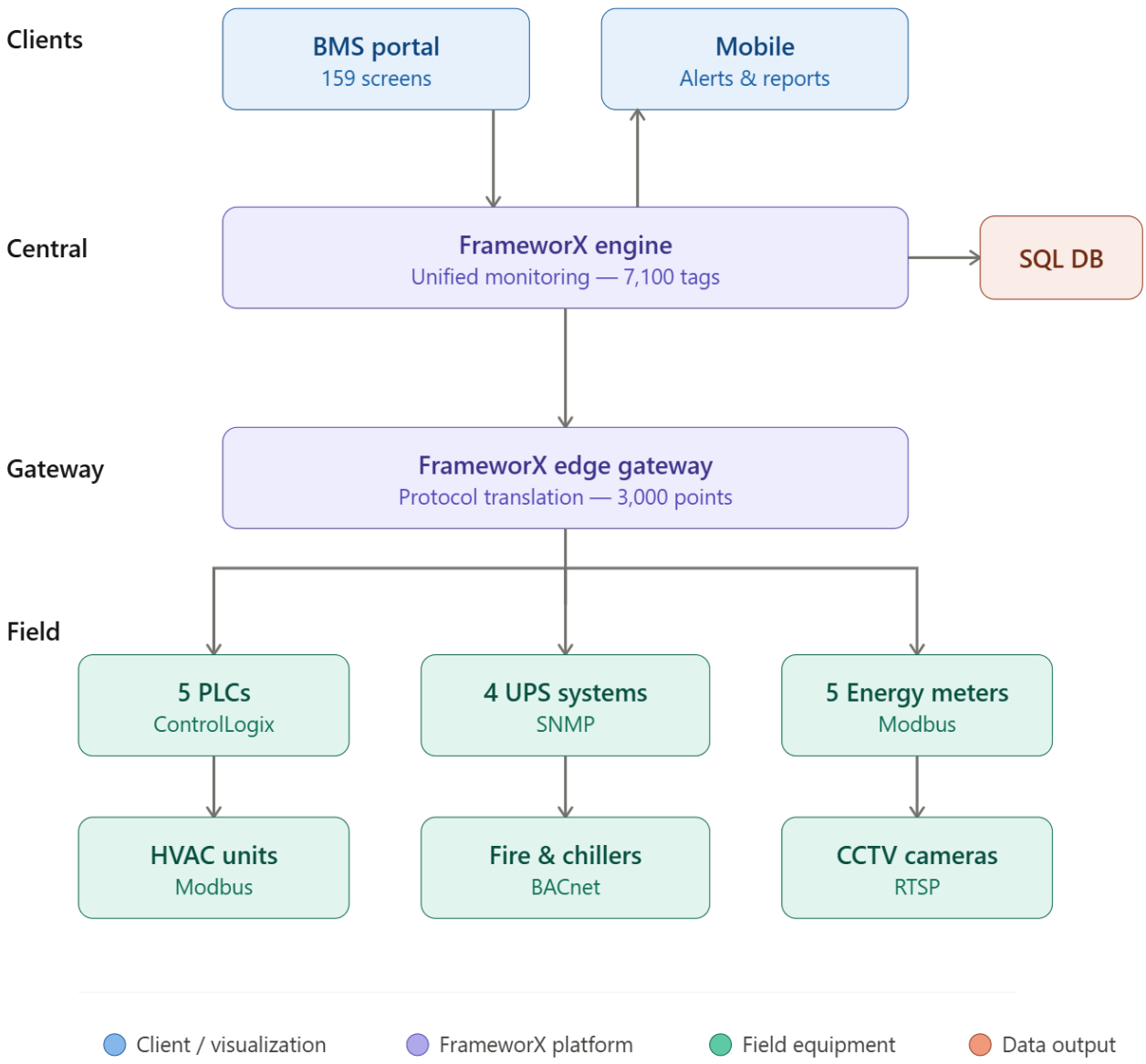
Specific pain points:

- No centralized visibility into power systems, environmental controls, and equipment status
- Multiple protocols (SNMP, Modbus, ControlLogix, OPC-DA) requiring integration
- Difficulty maintaining optimal operating conditions across diverse equipment
- Risk of downtime from unmonitored equipment failures
- No unified alerting for mission-critical systems

Impact: Without centralized monitoring, data center operators cannot proactively identify issues, leading to increased downtime risk and reduced reliability of mission-critical systems.

The Solution

Architecture



Tier	Component	Capabilities
Field	PLCs, UPS, Energy Meters, HVAC, Fire Systems	Multi-protocol devices
Gateway	FrameworX Edge Gateway	Protocol translation and aggregation
Protocols	SNMP, ControlLogix, Modbus, and OPC-DA	Built-in drivers (OPC DA through an OPC DA to OPC UA gateway)
Central	FrameworX Engine	Unified monitoring, SQL database, analytics
Clients	Central BMS Portal, Mobile	Real-time visualization and alerts

Scale

Metric	Value

Communication Points	3,000
Internal Tags	7,100
Monitoring Screens	159
Controlled Devices	14
PLCs	5 units
Energy Meters	5 units
UPS Systems	4 units

Connectivity

Protocol	Application
SNMP	UPS systems, network equipment
ControlLogix	PLCs
Modbus	HVAC units, meters
OPC-DA	Legacy device integration. FrameworX includes no OPC DA client connector, so OPC DA servers connect through an OPC DA to OPC UA gateway.
BACnet	Fire systems, chillers
RTSP	CCTV cameras

Key Enablers

FrameworX capabilities that made this solution possible:

Capability	Application
Multi-Protocol Integration	Seamless communication across SNMP, ControlLogix, Modbus, and OPC-DA
Comprehensive Coverage	3,000 monitoring points providing granular visibility
Scalable Visualization	159 dedicated screens for different monitoring aspects
Critical Infrastructure Monitoring	Real-time tracking of PLCs, energy meters, and UPS systems
Unified Platform	Single system managing diverse equipment and protocols

The Results

- **Centralized Monitoring** — Established unified control for 14 critical data center devices from single platform
- **Real-time Visibility** — Achieved comprehensive monitoring across 3,000 communication points
- **Multi-Protocol Unification** — Integrated disparate systems (SNMP, Modbus, ControlLogix, OPC-DA) in one solution
- **Enhanced Reliability** — Improved operational reliability with comprehensive UPS and power monitoring
- **Scalable Platform** — Delivered monitoring system supporting future infrastructure expansion
- **Faster Response** — Improved response times to potential issues through real-time alerting and 159 visualization screens

This case demonstrates data center infrastructure monitoring with multi-protocol integration and comprehensive visualization for mission-critical facility management.

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