



UCS TECHNICAL FIELD GUIDE

Niagara Platform Architecture Guide

ABB · Siemens · Honeywell · Johnson Controls

— Field-earned, not brochure-deep —

JULY 2026

Prepared for building owners, consulting engineers, facility teams and IT/OT stakeholders

NIAGARA SUPERVISION · OWNER ADVOCACY · SUPPORTABLE FIELD CONTROL

The UCS point of view

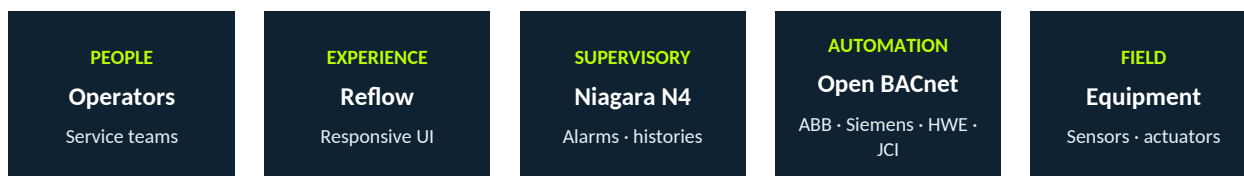
FIELD-EARNED, NOT BROCHURE-DEEP.

Our team has installed, programmed and serviced these systems in the field—including lines we do not represent—so we know the real strengths and trade-offs first-hand. That experience lets UCS act as an advocate for the owner, not a salesperson for a badge.

What stays consistent

- Niagara is the supervisory and integration standard above the controller line.
- NiagaraMods Reflow is the standard UCS operator interface, licensed appropriately for each deployment.
- BACnet helps systems communicate; it does not make controller logic, licenses, databases or service tools interchangeable.
- Native platform engineering tools remain part of a supportable design; one front end does not erase them.
- Controller choice follows the installed base, sequences, IT standards, service resources and owner goals.

Portfolio-level architecture



Conceptual only. Final topologies depend on product generation, software version, licensing, owner cybersecurity standards and existing site conditions.

How to use this guide

USE CASE	FIT	FIELD NOTE
Early design	Compare trade-offs	Use the risers to align owner, engineer, controls and IT expectations.
Migration	Inventory first	Do not budget reuse until databases, wiring, firmware, tools and sequences are verified.
Selection	Choose the service model	Confirm who can edit native logic, restore backups and support the site after turnover.

01 • ABB Cylon

UCS lead control platform: open BACnet field control beneath Niagara and NiagaraMods Reflow.

Conceptual Niagara-centered riser

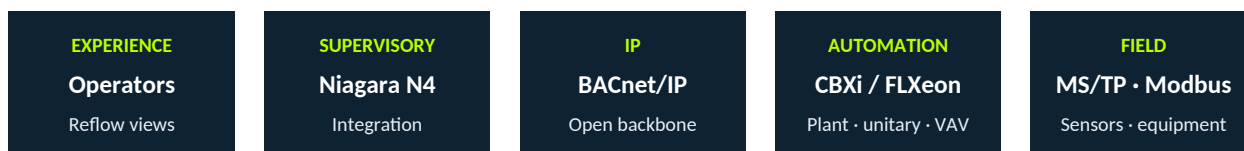


ABB logic remains native to CXproHD; Niagara is the owner-facing supervisory and integration layer.

Field perspective

WHERE IT IS STRONG	DESIGN CONSIDERATIONS
- Open BACnet/IP, MS/TP and Modbus paths. - Flexible plant, unitary and VAV controller range. - Native IP terminal options improve service access. - Strong value beneath a Niagara owner standard.	- CXproHD skill and source-file control remain essential. - Mixed Cylon generations require discovery. - Native front-end features may need intentional Niagara rebuilds. - Routing, addressing and controller capacity must be engineered.

Where it fits

USE CASE	FIT	FIELD NOTE
New construction	Best fit	Open-system owners who value flexible field control.
Modernization	Strong fit	Preserve useful devices while upgrading supervisory and automation layers.
Mixed generations	Discovery first	Inventory databases, logic, wiring and controller models before pricing.

Owner-advocate question

Does the design preserve owner choice at the supervisory layer while keeping controller logic supportable by qualified technicians?

02 • Siemens Design

New UCS line: Designo PXC automation integrated into the same Niagara/Reflow operator standard.

NEWLY ADDED LINE

UCS-specific Siemens case studies and deep engineering resources will grow as current work is completed. The architecture below is deliberately conservative and does not overstate project history.

Conceptual Niagara-centered riser

EXPERIENCE Operators Reflow views	SUPERVISORY Niagara N4 Integration	SECURE IP BACnet/IP • SC Owner standard	AUTOMATION PXC4 / 5 / 7 Native logic	FIELD TX-I/O • DXR Rooms • equipment
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ABT Site remains the native engineering environment. BACnet/SC depends on exact versions and certificate-management standards.

Field perspective

WHERE IT IS STRONG • Scalable PXC controller family. • BACnet/SC supports secure-network designs. • TX-I/O and phased modernization may preserve viable assets. • Natural fit for an existing Siemens estate.	DESIGN CONSIDERATIONS • Native engineering requires ABT tools and training. • Designo-native workflows do not all map directly to Niagara. • Legacy APOGEE/TALON reuse must be verified. • UCS project-specific resources are still expanding.
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Where it fits

USE CASE	FIT	FIELD NOTE
Existing Siemens	Best fit	Modernize in phases around verified reusable infrastructure.
Secure IP	Strong fit	Projects prepared to govern BACnet/SC certificates and networks.
Legacy migration	Discovery first	Validate databases, wiring, I/O and controller compatibility.

Owner-advocate question

Which existing Siemens assets still create value, and which reuse assumptions only defer cost or risk?

03 • Honeywell Optimizer

Niagara-aligned plant, equipment and VAV control with deliberate IP, T1L and MS/TP choices.

Conceptual Niagara-centered riser

EXPERIENCE

Operators

Reflow views

SUPERVISORY

Niagara N4

Supervisor

INTEGRATION

BACnet • FOX

Open links

AUTOMATION

Optimizer

Essential • Advanced

FIELD

IP • T1L • MS/TP

VAV • equipment

Confirm current controller availability and exact Niagara/Workbench compatibility during design and again at submittal.

Field perspective

WHERE IT IS STRONG - Niagara-based supervisory options. - Broad BACnet, Modbus and integration support. - IP, T1L and MS/TP VAV strategies. - Practical migration paths for mixed installed bases.	DESIGN CONSIDERATIONS - Many generations, tools and licensing models. - Mixed field networks need an explicit service plan. - WEBs, Spyder and CIPer sites require version discovery. - Lifecycle status should be confirmed, not inferred.
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Where it fits

USE CASE	FIT	FIELD NOTE
Niagara owners	Best fit	Honeywell hardware beneath one Niagara/Reflow experience.
VAV upgrades	Strong fit	IP or T1L may reduce traditional trunk constraints.
Legacy estates	Discovery first	Separate controller generations, tools and database access.
Owner-advocate question Does the selected network type make commissioning and long-term service simpler, or merely move complexity somewhere less visible?		

04 • Johnson Controls

Facility Explorer and F4 support, with clear separation from Metasys and practical legacy N2 paths.

Conceptual Niagara-centered riser

EXPERIENCE Operators Reflow views	SUPERVISORY Niagara N4 Open integration	SECURE IP BACnet/SC • IP Backbone	AUTOMATION CGE • CVE CGM • CVM	FIELD MS/TP • N2 XPM • devices
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Facility Explorer and Metasys are related ecosystems, not interchangeable products. Tool, firmware and license details drive the final path.

Field perspective

WHERE IT IS STRONG - Facility Explorer is Niagara-based. - BACnet/SC, IP and MS/TP controller options. - Selected N2 paths can support phased migration. - Broad airside equipment-controller range.	DESIGN CONSIDERATIONS - CCT and native source management remain necessary. - FX and Metasys expectations must be separated. - N2 reuse needs device-level verification and an end-state. - IT segmentation and certificates must be engineered.
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Where it fits

USE CASE	FIT	FIELD NOTE
FX estates	Best fit	Retain Niagara investment while improving owner experience.
N2 transition	Strong fit	Preserve selected devices temporarily during phased work.
FX / Metasys mix	Discovery first	Document databases, tools, licenses and feature expectations.
Owner-advocate question Is the migration plan reducing dependence on legacy tools and trunks each phase, or just wrapping them with a new front end?		

Cross-platform selection matrix

This matrix is a starting point for discovery—not a product scorecard.

DECISION LENS	ABB	SIEMENS	HONEYWELL	JCI
UCS positioning	Lead platform	Newly added line	Niagara-aligned	Legacy/FX depth
Native tool	CXproHD	ABT Site	Workbench / product tools	CCT / product tools
Common strengths	Open BACnet; flexible I/O	PXC scale; BACnet/SC	Niagara alignment; VAV options	FX Niagara; broad controllers
Discovery focus	Generations and source files	Legacy reuse and versions	Generations and network types	FX vs Metasys; N2 end-state
Owner question	Open and serviceable?	What is truly reusable?	Which network simplifies service?	Does each phase reduce legacy risk?

Design and procurement cautions

- Confirm exact model and lifecycle status when the submittal is prepared.
- Define database, license, certificate, backup and source-code ownership in the contract.
- Document IT/OT routing, VLANs, firewall rules, BACnet broadcasts and remote-access responsibilities.
- Test sequences, alarms, histories, trend retention and operator workflows—not just point visibility.
- Treat every reuse claim as a field-verification item until proven.

Primary public references

PLATFORM	MANUFACTURER REFERENCE
ABB CB Line / FLXeon / CXproHD	electrification.us.abb.com/products/building-automation-controls
Siemens Desigo PXC / modernization	siemens.com/en-us/products/desigo/pxc and /campaigns/desigo-modernization-pathway
Honeywell Optimizer	buildings.honeywell.com — Optimizer Supervisor, Essential, Advanced and VAV pages
Johnson Controls Facility Explorer	johnsoncontrols.com/building-automation-and-controls/facility-explorer and docs.johnsoncontrols.com

Disclaimer: This document is a conceptual planning aid, not a stamped controls design, cybersecurity plan or product-availability guarantee. Final architecture must be engineered for the specific project and approved by the owner and responsible design professionals.