



Network Thermostat HVAC Energy Management and IAQ Solutions

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IoT Architecture Examples

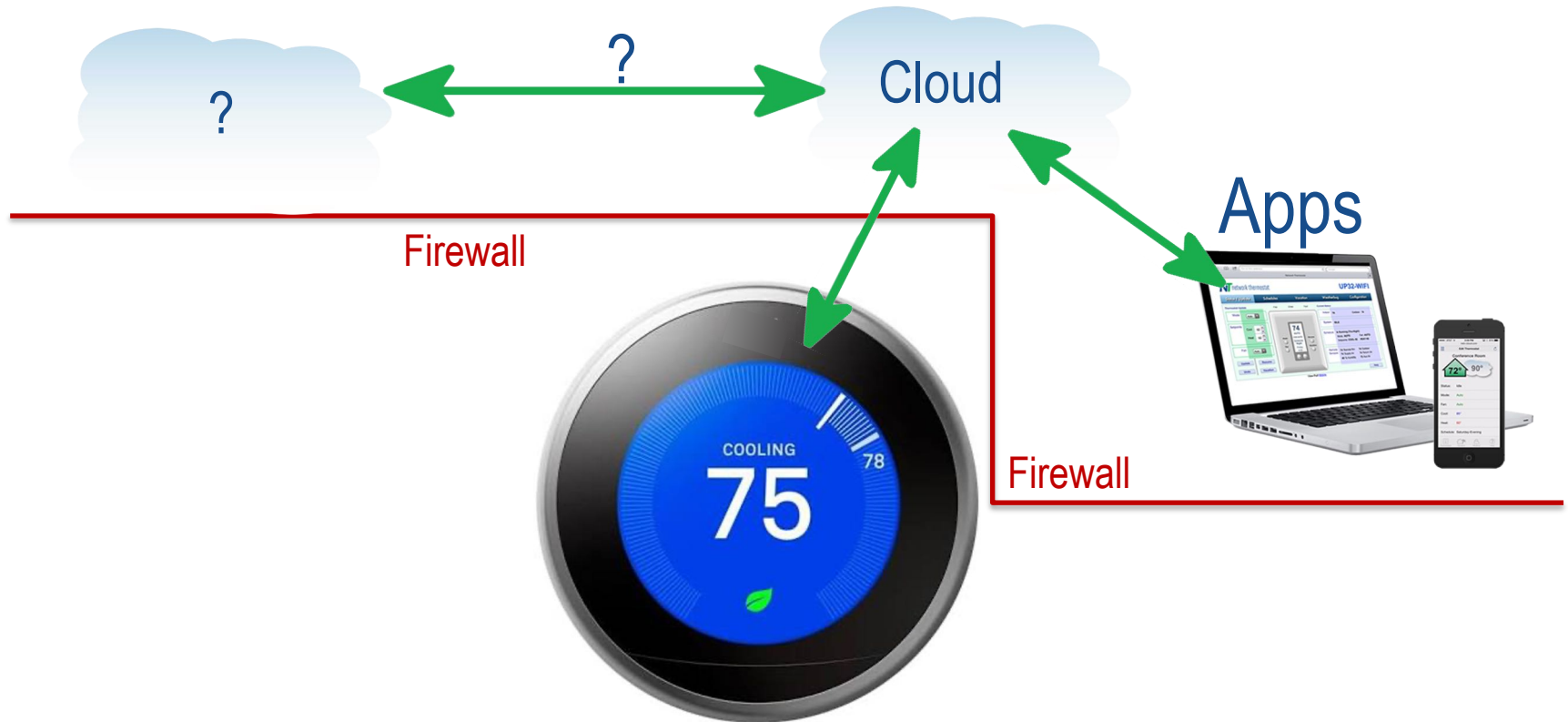
Commercial vs Residential



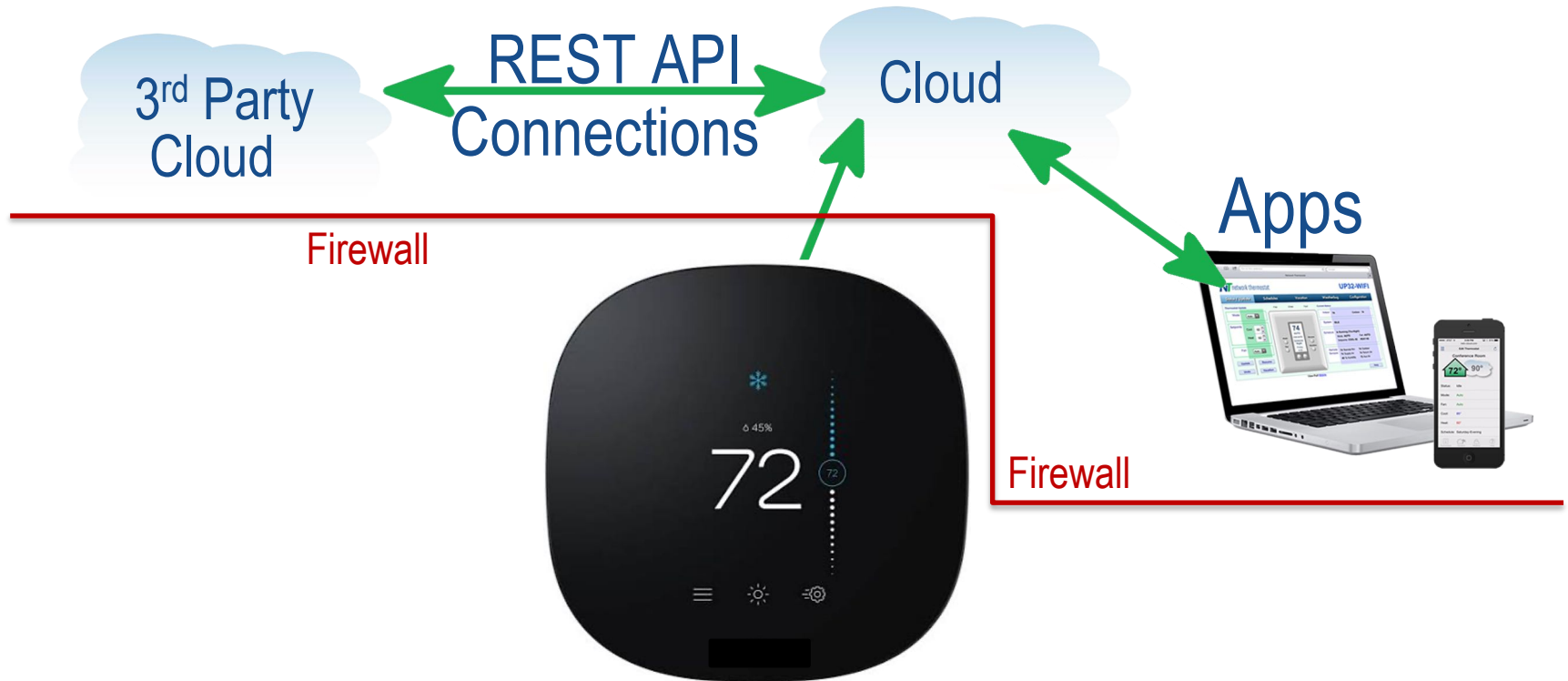
(relative sizes)



Typical Residential IoT Architecture



Typical Residential IoT Architecture



NetX Commercial IoT Architecture



Different From the Ground, Up.

NetX Commercial IoT Architecture

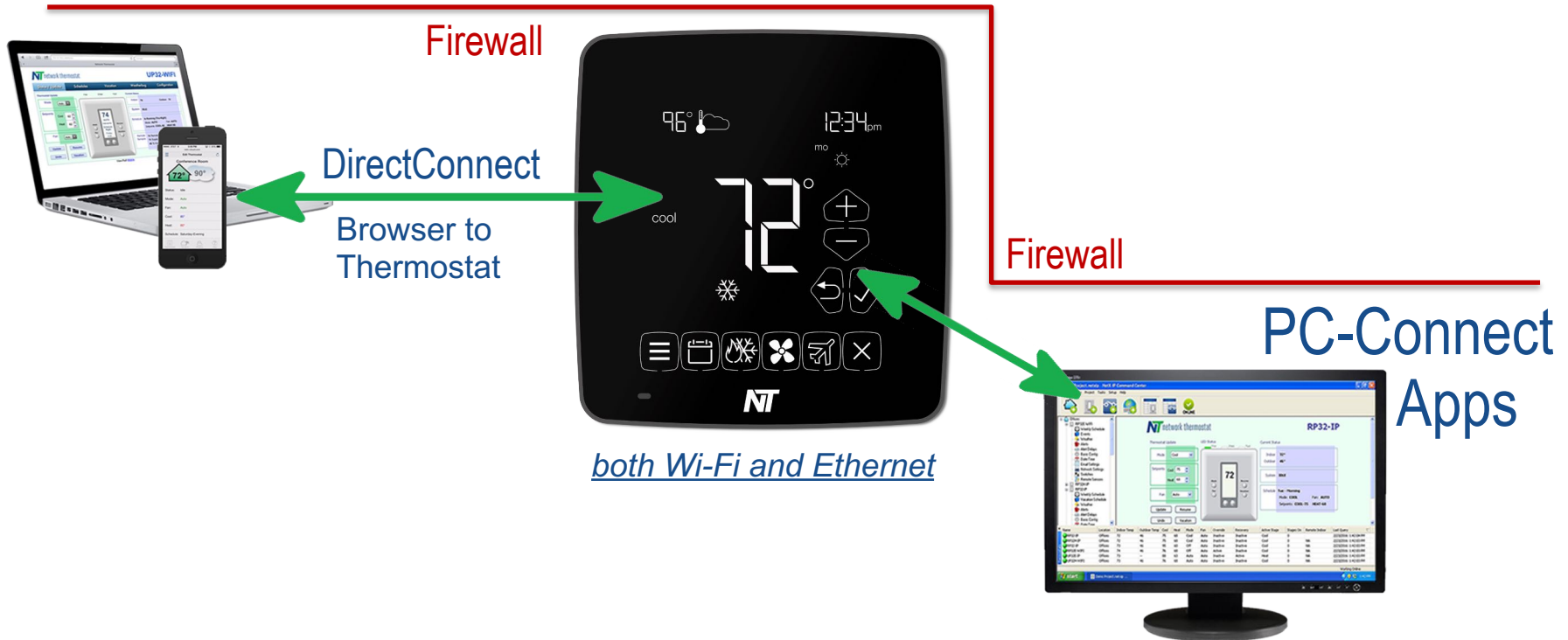
Built-In Web Server (responsive) & API



NetX Commercial IoT Architecture

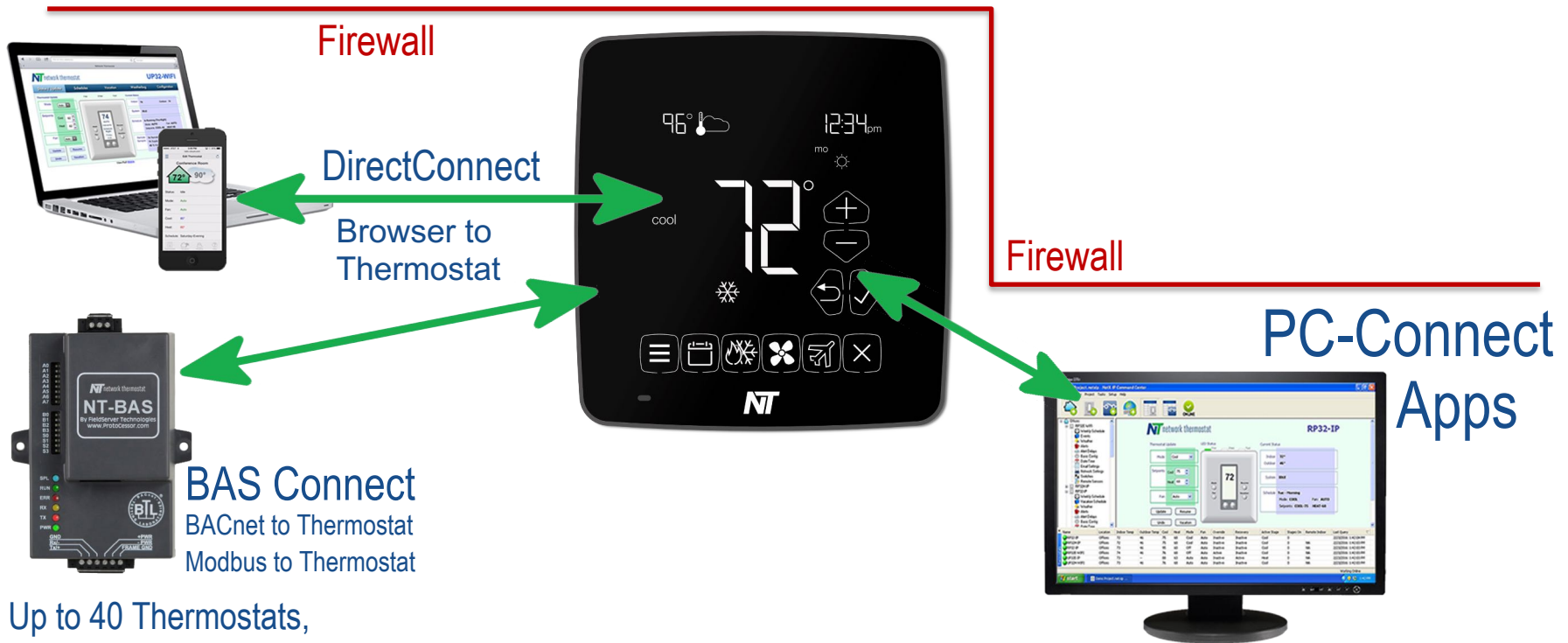
Add PC Application

(uses Native API)



NetX Commercial IoT Architecture

Add BACnet/Modbus/N2/Echelon Gateway for Large BAS (if needed)

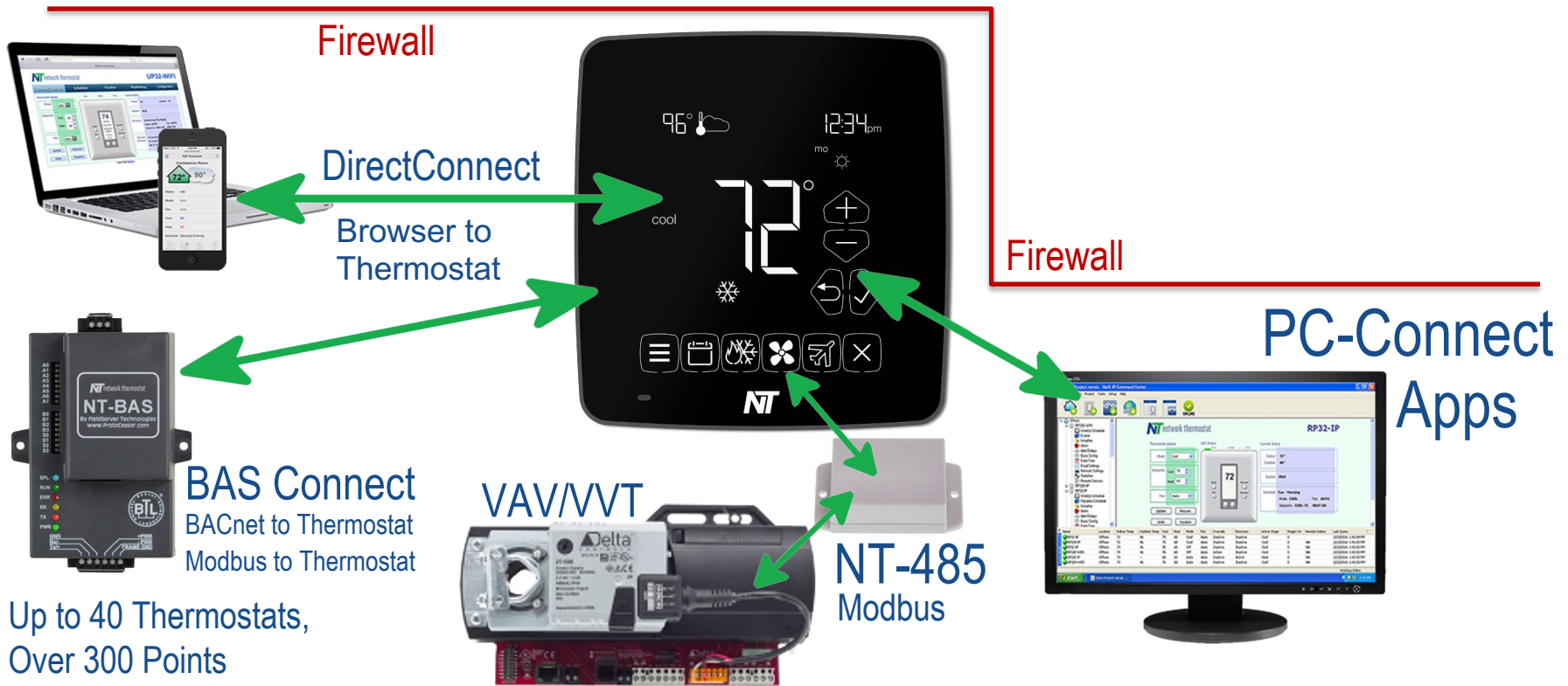


Up to 40 Thermostats,
Over 300 Points

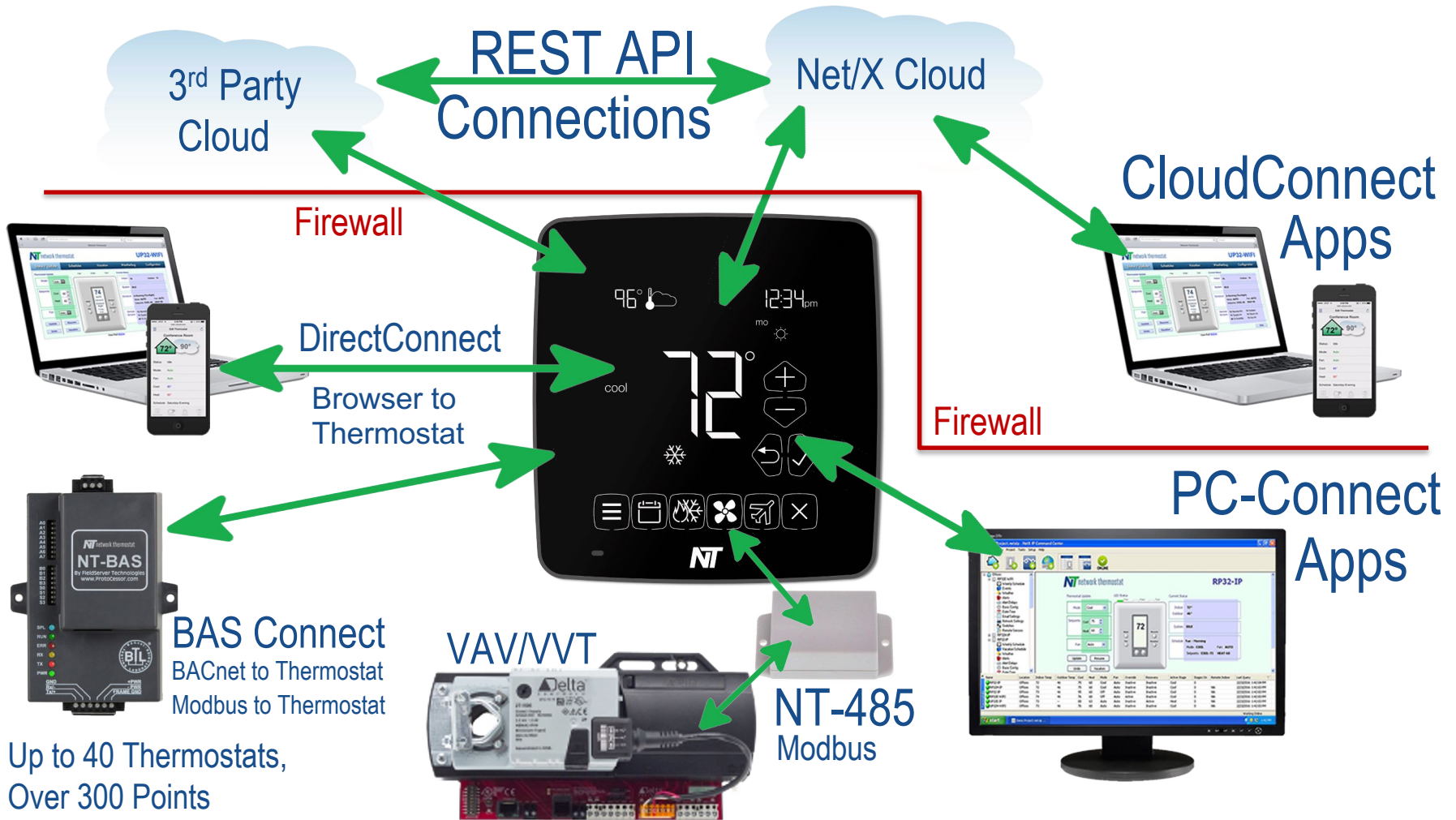
Add Cloud Dashboard and Apps **NT** network thermostat

NetX Commercial IoT Architecture

Add VAV / VVT Controls (if needed)

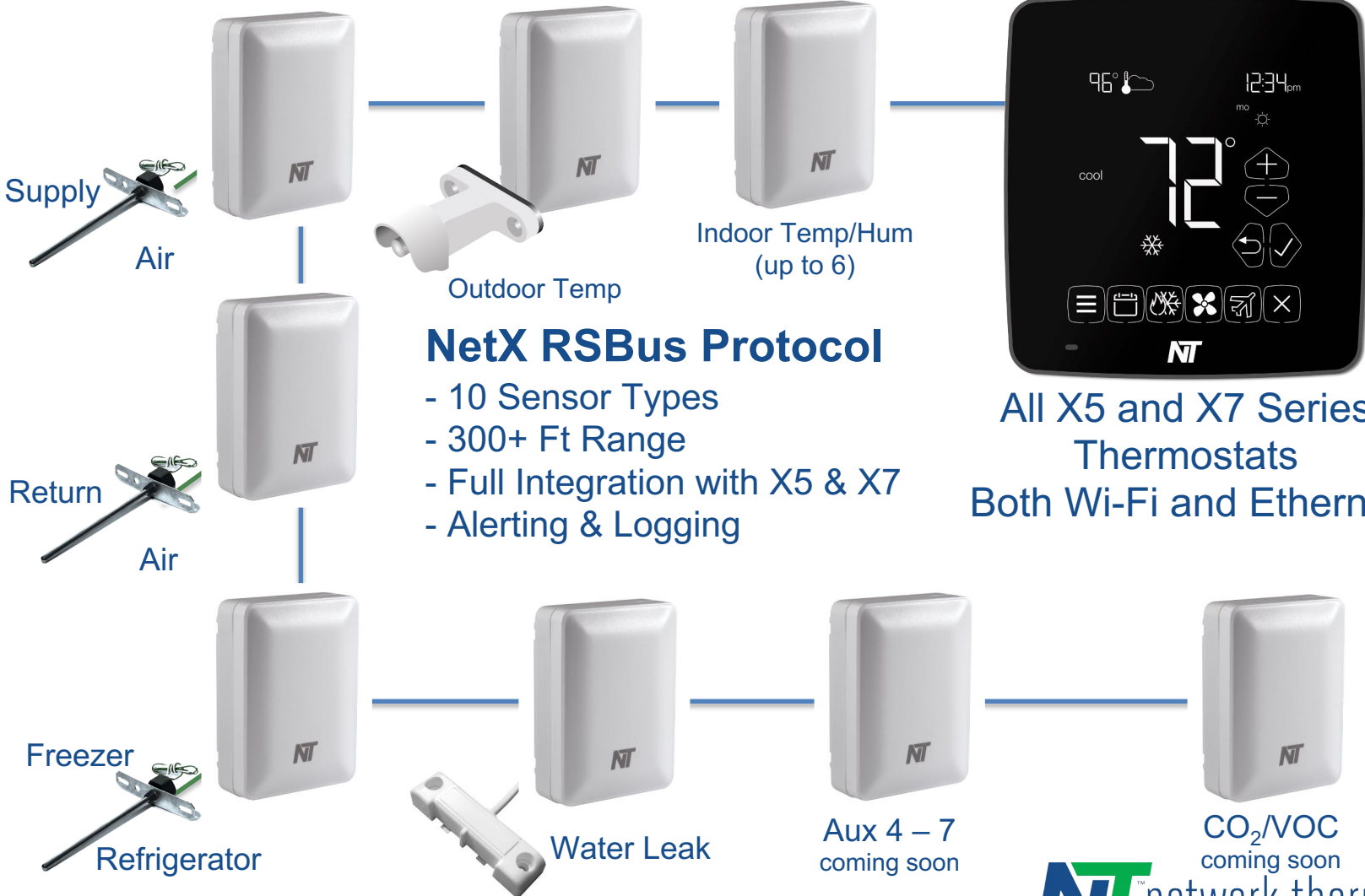


NetX Commercial IoT Architecture



Add Cloud Dashboard and Apps **NT** network thermostat

NetX Commercial Wired Sensors



NetX RSBUS Protocol

- 10 Sensor Types
- 300+ Ft Range
- Full Integration with X5 & X7
- Alerting & Logging



All X5 and X7 Series
Thermostats
Both Wi-Fi and Ethernet

NetX Commercial Wireless Sensors



Outdoor Temp/Hum



Indoor Temp/Hum
(up to 6)



X7U Thermostats
both Wi-Fi and Ethernet

DECT/ULE Wireless

- Up to 52 Sensors (6 types)
- Multi-Year Battery
- Meet ULE Standards
- 150-200' Range
- Full Integration with X7U
- Alerting & Logging on X7U
- Can Be Used With NetX Wired Sensors

Aux 1-7
Any
Temperature
Use



Water Sensor
(up to 10)



Door/Window Sensor
(up to 16)



Occupancy Sensor
(up to 10)

Why NetX™ Commercial IoT Thermostats?

- 26 Years of HVAC Controls Experience
 - ALL in Smart Thermostats (True Pioneers)
 - National Frost & Sullivan Awards
 - Countless Hundreds of Churches use NetX
- Worship Facilities Expo
 - 11 Consecutive Years of Awards
 - Best HVAC Products
 - Best Energy Management Products
 - Best New Products

Why NetX™ Commercial IoT Thermostats?

- Proactive Facility Management
 - Temperature & Humidity Control
 - 4-Event / 7-Day Schedules
 - 80 Calendar Event Schedules
 - Real Time, Temporary Adjustments
 - Data Logging Directly on Thermostat
 - Change of State History Stored in Cloud
 - Native & REST API for 3rd Party Integration
 - Calendaring Software
 - BAS Systems
 - Church Facility Software

Why NetX™ Commercial IoT Thermostats?

- Proactive Facility Management
 - Full Dashboard for Snapshot Overview
 - Selective Mass Copy Functions
 - Multi-Building / Satellite Church Locations
 - Multi-User Management
 - User Role Management
 - Complete History Stored in Cloud
 - System Continues Operation with Network Down

Why NetX™ Commercial IoT Thermostats?

- Energy Management
 - Typically 25% or more in Energy Savings
 - Up to 40% Reduction in HVAC Demand Charges
 - AI-Based Adaptive Recovery Algorithms
 - Intelligent Restart Algorithms
 - Power Up
 - Compressor Calls
 - Cross-Thermostat Duplicate Schedule Times

Why NetX™ Commercial IoT Thermostats?

- Active & Proactive Service Alerts (19 Total)
 - Filter Changes
 - Inefficient HVAC Equipment Runs
 - High / Low Temperatures
 - CO₂ / VOC Issues (coming soon!)
 - Walk-In Freezers/Refrigerators Problems
 - Water Leak Detection
 - UVC Lamp Changes

Why NetX™ Commercial IoT Thermostats?

- Simple / Fast Installation
 - Wi-Fi and Ethernet Options
 - NetX Thermostat Pre-Programming Options
 - Use Your Own Team or NetX Can Coordinate
 - Wireless Sensors

Why NetX™ Commercial IoT Thermostats?

CapEx AND OpEx Financing Solutions

- Capital Expenditure
 - Use When Cash is Available Upfront
 - Allows Faster Total Payback
- Operational Expenditure (NetX EMaaS)
 - Removes Need for Upfront Equipment Funds
 - Allows Near Immediate Positive Cash Flow

UVC for COVID

- Pros:
 - Many Peer Reviewed Studies
 - Recommended by ASHRAE, FDA, CDC, NIH, WHO
 - Has Been Used for Decades in the Medical World
 - Easily Deployed (Many Applications are ‘Drill-n-Fill’)
 - Low Maintenance (Easy Lamp Replacement)
 - Works for Air Cleaning
 - Bench, translational and practical data available
 - Works for Surface Cleaning in Unoccupied Rooms
 - Provides Surface Disinfection in HVAC Equipment
 - No Ozone (O₃) Production (requires 254nm light)
 - Best Long Term ROI

UVC for COVID

- Pros:

- Odor Control when Combined with TiO₂ Filtration

- TiO₂ well supported by peer reviewed literature

- Inactivates COVID and all COVID Variants

- Kills Black Mold

- Inactivates Cold and Flu Viruses

- Kills Legionnaire's Disease

- Kills Coli and Staphylococcus

- Kills Salmonella

- 99.9% to 99.9999% Effectiveness

- Studies Indicate Better Employee/Student Attendance
(not sick as often)

- Controlled studies available from commercial settings

All Content Can Be Found Here!



networkthermostat.com/cfx2021

Demo Time