



Smart Technology. Smart Equipment. Smart Solutions.

Smarter Buildings.

IP HORIZONTAL BUILDING PLATFORM ARCHITECTURE

INTRODUCTION TO IP BUILDING PLATFORM ARCHITECTURE

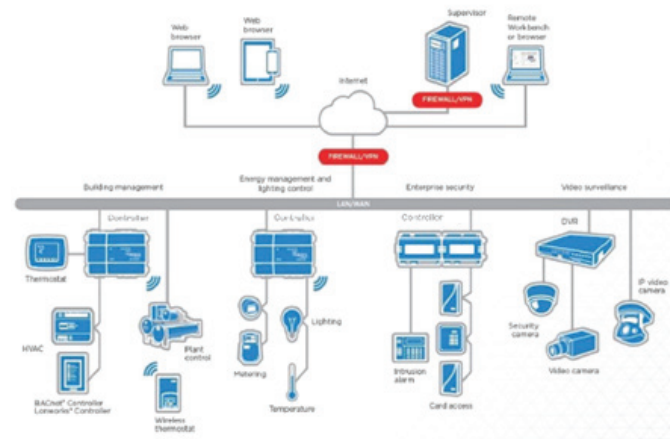
The built environment continues to be transformed by the adoption of modern operating platforms for smart building management. Exciting advancements in connectivity technologies, advancing protocols, and the proliferation of data help provide tangible outcomes to building owners and operators. But it is IP devices, distributed architectures, integration, and interoperability that are the real transformers, and are becoming the backbones for building operating and management platforms.

The number of connected devices in operation in the commercial smart building will grow from 1.7 billion in 2020 to just under 3 billion by 2025, representing a CAGR of 10.8% (Memoori, August 2021).

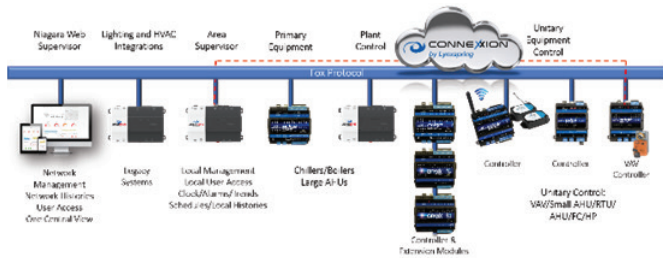
IP-enabled edge devices are becoming a common element and more prevalent within buildings of all types. IP-enabled devices take advantage of embedded connectivity and offer many benefits including making use of existing network infrastructures, require no special knowledge for

installation, offer several connectivity options, (fiber, wireless, VPN etc.) and bring agility, interoperability, speed, and adaptability that are pushing expanded applications. As a result, IP devices are redefining the structure of smart technology and enabling for flattening the topology of traditional building controls architectures to ones which are based on a horizontal approach instead of vertical. (See diagrams below).

VERTICAL ARCHITECTURE



IP HORIZONTAL PLATFORM ARCHITECTURE



This horizontal infrastructure relies on open standards, open protocols, open communications, and non-proprietary solutions, enabling any device to communicate with each other and to the Cloud, and to interact with any application. With IP as the backbone of an enterprise-wide architecture, everything that requires a standalone network today simply becomes part of the IP master. This enables interoperability at the very highest level.

BENEFITS OF IP BASED TOPOLOGY

Implementation of an IP Horizontal Building Platform Architecture provides numerous benefits, which directly address today's IoT applications, data at the device level, a simpler user experience and cybersecurity. In addition, with only one platform to learn and one set of software tools at all levels of the architecture, the result is faster deployment, an easier learning curve, more reliable applications, and a cost-effective solution.

An IP-based architecture does not require the elimination of existing controls throughout a building or campus. A good IP-based system can talk to backward compatible, or previous-generation equipment - whether they use BACnet, Lon, Modbus, MQTT or any other protocol. This preserves the investment in controls hardware, which can be significant depending on the size and complexity of a facility. Furthermore, it doesn't tie one to an individual supplier because IP systems, by their very nature, are open.

HORIZONTAL IP TOPOLOGY ARCHITECTURE OFFERS SEVERAL ADVANTAGES

- Uses commonly accepted IT practices at the connectivity, integration, automation, and enterprise levels. This allows you to install edge devices on the existing IT infrastructure within a building or enterprise- and use standard IT communication services over an intranet, Wide Area Network (WAN), or public internet
- A simplified environment for connecting, collecting, processing, and integrating data from multiple different devices
- One web-based interface allows you to access, monitor, and control the devices from a supported web browser connected to the network
- The user interface and online system configuration software embedded in the devices allows configuration, commissioning, data archiving, monitoring, commanding, and system diagnostics from the device with web browser software.
- The use of one platform for all controllers-primary, field, equipment, plant, unitary, VAV and various applications support connectivity to open network standards
- Expandable I/O point capacity allows you to connect multiple I/O modules to the field controllers, which greatly expands field-level control capabilities
- Devices have the power to independently exchange information with the rest of the network and not depend on it to perform critical functions
- The convergence of the building management system and the IT network, via IP-based control, has cost advantages in terms of installation and maintenance
- Scalability and advanced control capabilities

SUMMARY

In conclusion, an IP horizontal architecture and topology represents a unified element connecting smart devices today and will only become more prevalent within buildings of all types. IP edge enabled devices take advantage of the intelligence embedded in other IP-enabled devices, thereby adding value to all of them.

Lynxspring offers a comprehensive Niagara Framework based IP horizontal architecture solution that delivers the connectivity, integration and interoperability required for today's building systems and equipment. If you would like more information on our IP Horizontal Building Platform Architecture contact Lynxspring at sales@lynxspring.com.



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Embracing open software and hardware platforms, Lynxspring develops, manufactures, distributes, and supports edge-to-enterprise solutions and IoT technology that create smart buildings, smart equipment, and smart applications. The company's technologies and solutions provide the connectivity, control, integration, interoperability, data access and management and analytics enabling users to extract insight, value, and outcomes from operational data. Lynxspring's solutions are deployed in millions of square feet of commercial settings in the United States and internationally.

More information about Lynxspring is available at: <https://www.lynxspring.com/>