WESCO® | ANIXTER®

MICRO DATA CENTER SOLUTIONS

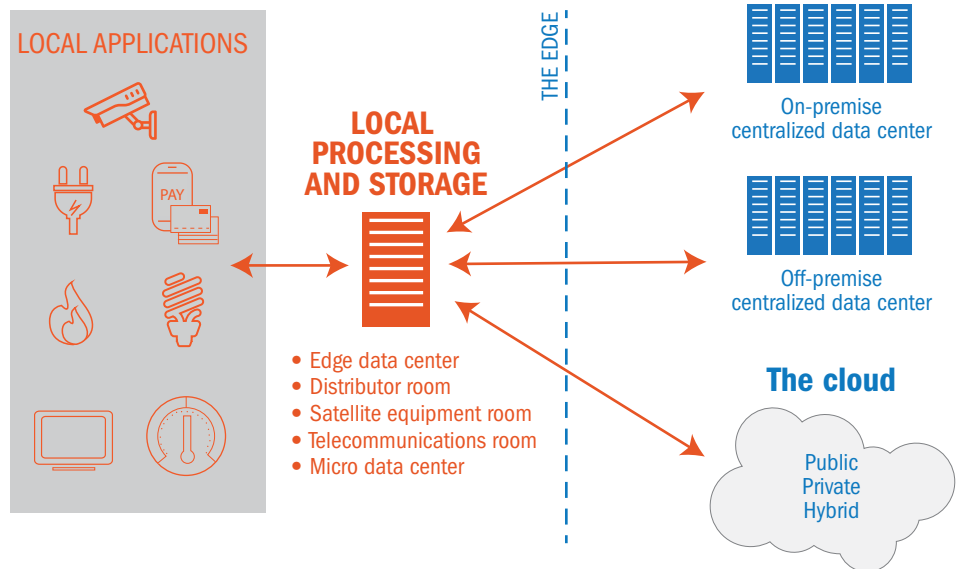Build. Connect. Power. Protect. Services. Worldwide.

MICRO DATA CENTER ENVIRONMENTS

A **micro data center** is modular or containerized and smaller than a computer room — typically one rack or less. All required IT functionalities are contained in the micro data center, designed to handle your specific needs at distributed locations and typically managed from a larger data center.[2]

Micro data centers are often housed in the **telecommunications room (TR)** or telecommunications closet (TC), which is defined as the space that acts as the common access point between backbone and horizontal distribution pathways. TRs contain telecommunications equipment, control equipment, cable terminations and cross-connect wiring.[3]

THE RISE OF EDGE COMPUTING

For many years the trend for data centers has been to consolidate multiple sites into one or a few centralized, larger facilities. Much of that consolidation has shifted from the enterprise-owned and operated data center to the multi-tenant or colocation environment. While it makes sense for many organizations to take this approach, the exponential growth of data and the Internet of Things (IoT) drives a need for local processing and storage IT in environments such as IDF closets, branch locations and remote sites.

LOCAL APPLICATIONS

THE EDGE

LOCAL PROCESSING AND STORAGE

PAY

- Edge data center
- Distributor room
- Satellite equipment room
- Telecommunications room
- Micro data center

On-premise centralized data center

Off-premise centralized data center

The cloud

Public
Private
Hybrid

Edge computing describes a data center topology in which information processing and content collection and delivery are placed closer to the sources of this information. The goals are to reduce latency, reduce unnecessary traffic and establish a hub for interconnection between interested peers and for data thinning of complex media types or computational loads.[4]

[1] G. Press. Internet of Things by the Numbers: Market Estimates and Forecasts. Forbes.
[2] Gartner, Hype Cycle for Data Center Power and Cooling Technologies 2016 – The Micro Data Center.
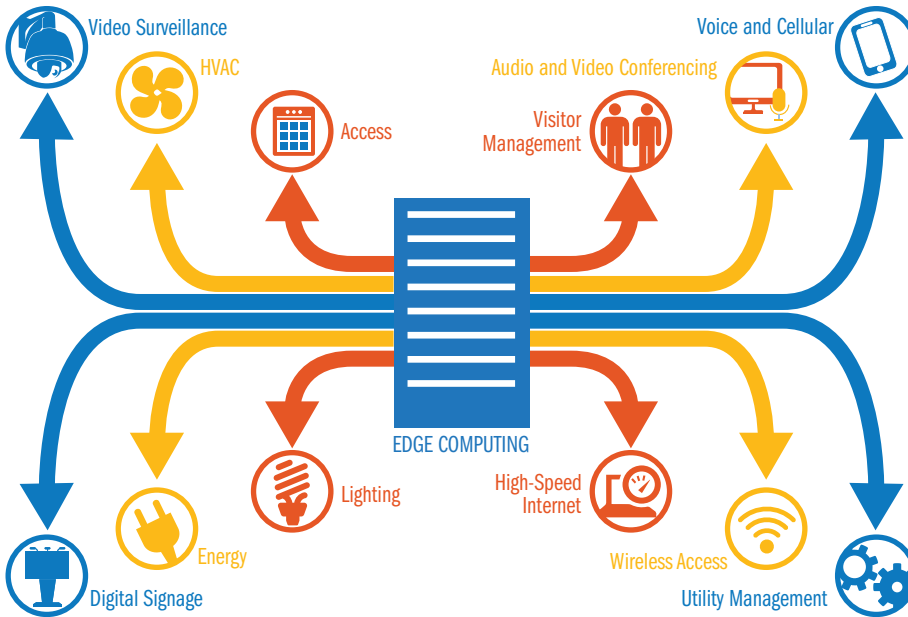[3] ANSI/TIA-569-A.
[4] Gartner, Hype Cycle for Data Center Power and Cooling Technologies 2016 – Edge Computing.

BUSINESS AND TECHNOLOGY DRIVERS

The micro data center is becoming a key part of the IT strategy to optimize your business outcomes. Three of the main drivers supporting the growth of micro data center solutions are: the Internet of Things, the convergence of systems and hardware, and reliance on local applications.

The **Internet of Things** is increasing the number of IP-connected devices that need to be supported locally in rooms that were not traditionally designed to support dense server and network switched environments. Recent proposed changes to the PoE standard, when approved, would require switches that consume more power, placing added strain on the building cooling system. Physical security to these areas also becomes critical to protect against costly outages.

Disparate systems and hardware are **converging** on a single protocol to make it easier to support. The power and connectivity required for these devices are supported locally but should be managed centrally.

Video Surveillance
HVAC
Access
Visitor Management
Audio and Video Conferencing
Voice and Cellular

EDGE COMPUTING

Lighting
High-Speed Internet
Wireless Access
Utility Management
Energy
Digital Signage

Due to the increased reliance on **local applications**, enterprises are beginning to send more applications off premise to be supported in the cloud; however, the systems that remain supported in-house, particularly those in remote locations, are now critical to maintaining constant uptime. The ability to support these systems in a distributed environment with a centralized IT team is key to maintaining performance and reliability.

DATA CENTER EDGE CONSIDERATIONS

COMPLIANCE	CONTINUITY	CONSISTENCY	COST	CONTROL
Regulatory requirements, regional requirements	Independent operation, redundant design	Standard architectures, installation consistency	Packaged solutions, simple installations	Remote management, standardized maintenance

Remote Asset Management

MICRO DATA CENTER CHALLENGES

WHAT WE HEAR

Challenges from the various data center stakeholders are:

100% UPTIME
As more devices converge over a single IT platform, downtime becomes more costly to a business.

TECHNOLOGY REFRESHES
Activities such as asset management, software patches, technology upgrades and moves, adds and changes become more difficult in distributed environments.

LACK OF HARDWARE STANDARDS
Without a repeatable solution that can be deployed locally, regionally and globally as needed, remote management is extremely challanging for facilities and IT managers.

TELECOMUNICATIONS ROOM

MICRO DATA CENTER
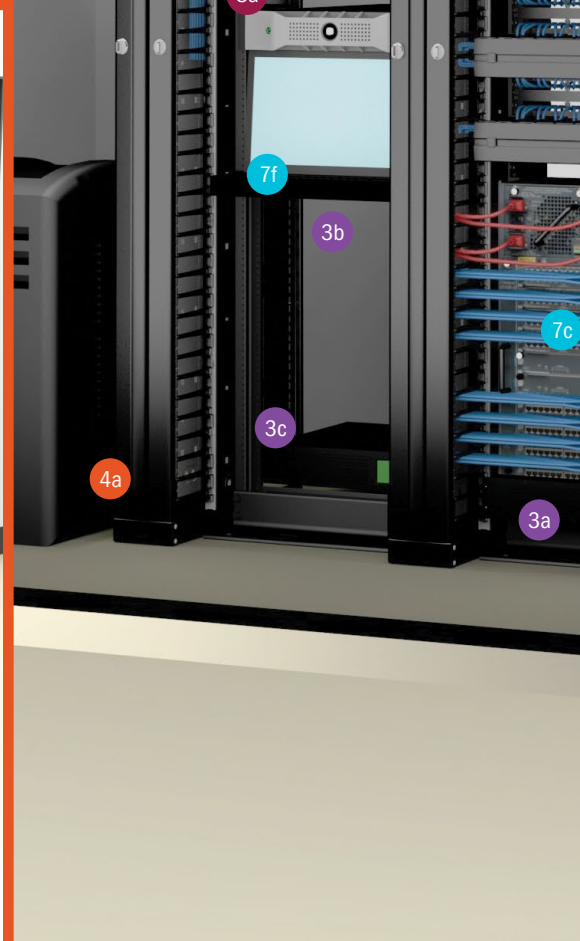
TECHNOLOGY SOLUTIONS

1 CABLE PATHWAYS
   a. Cable tray and ladder rack
   b. Vertical cable management
   c. Horizontal cable management
   d. Fire stop

2 ENCLOSURES
   a. Open racks
   b. Cabinets

3 POWER QUALITY
   AND DISTRIBUTION
   a. UPS systems
   b. Cabinet PDUs
   c. Surge suppression
   d. Grounding and bonding

4 ENVIRONMENTAL MONITORING
   a. Spot cooling systems
   b. Environmental sensors
   c. Leak detection cabling
   d. Fire detection*

5 VIDEO SURVEILLANCE
   a. Video storage
   b. Digital video recorder
   c. Video management server
   d. Dome camera

6 ACCESS CONTROL
   a. Card reader
   b. Controller*
   c. Cabinet locking system
   d. Door locking hardware

7 NETWORK INFRASTRUCTURE
   a. Copper and fiber cabling
   b. Patch panels and enclosures
   c. Patch cords
   d. Test equipment*
   e. Power over Ethernet switches
   f. KVM switches

8 WIRELESS
   a. Active distributed antenna systems
   b. Access points

9 PRO A/V
   a. Amplifiers
   b. Controllers
   c. Monitors and displays

10 LIGHTING SYSTEMS
   a. Fixtures
   b. Controllers
   c. Sensors

*Not pictured

THE WESCO | ANIXTER DIFFERENCE

At WESCO | Anixter, we help build, connect, power and protect valuable assets and critical infrastructures. From enterprise networks to industrial support and supplies to video surveillance applications and electric power transmission and distribution, we offer full-line solutions—and intelligence—that create reliable, resilient systems that can sustain your business and community. Through our unmatched global distribution network, supply chain management expertise and technical know-how, we drive efficiency and effectiveness to benefit your bottom line.

MICRO DATA CENTER BEST PRACTICES

The five key building blocks of Infrastructure as a Platform (IaaP) for medium to large data centers also are relevant to micro data centers and telecommunications rooms.

The five building blocks addressed by IaaP are:

Risk Management in a micro data center environment starts at the building and adopts a layered physical approach that allows you to deter, detect, deny, delay and defend both locally and remotely.

Network Migration and performance is enabled through versatile physical layer connectivity to achieve an open system platform to support local processing and storage.

Power Optimization using remote power management and monitoring best practices will reduce the risk of outages at the edge of your network.
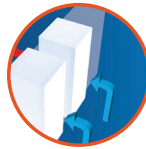
Thermal Efficiency of a micro data center and telecommunication room should be addressed remotely using best practices for airflow management and temperature control.

DCIM Enablement of your remote network environments gives you visibility and control for assets, monitoring, change management and capacity planning.

Consider a micro data center solution as one component of your overall data center strategy, which may include enterprise and multi-tenant data center solutions depending on your needs. Learn more at anixter.com/datacenter.

ENTERPRISE DATA CENTER

MULTI-TENANT DATA CENTER

ON-TIME, ON-BUDGET DEPLOYMENTS

Whether you are building a new data center, considering a multi-tenant data center strategy or planning to install a micro data center to meet the demand for local processing and storage, you need the people, processes and deployment plans to help implement your solutions with minimal disruption while meeting project deadlines. WESCO|Anixter can deliver the right products to your project team, organized specifically to minimize your time, effort, risk and cost.

WESCO|ANIXTER SUPPLY CHAIN MODEL

Reducing costs, saving time, improving productivity and mitigating risks are our goals on every project. With our customizable supply chain solutions, you can eliminate costs, address sustainability requirements, enhance focus on your core competencies and stay competitive in the marketplace.

SOURCING	INVENTORY MANAGEMENT	PRODUCT ENHANCEMENT & PACKAGING	GLOBAL LOGISTICS	E-COMMERCE

SAVE   IMPROVE   INCREASE   MITIGATE

ALLIANCE PARTNERS

From enterprise data centers to security infrastructure to in-building wireless and beyond, WESCO|Anixter recommends and provides solutions that connect the world's most important information. Delivered directly and through partners, these solutions help today's data-intensive organizations operate more efficiently and maximize the business value of their infrastructures. As a provider of leading-edge solutions, WESCO|Anixter recognizes the benefits that a joint technology partnership can bring to its customers. That's why WESCO|Anixter has created the Alliance program with the mission of building long-term partnerships that enable us to deliver comprehensive and proven best-of-breed technology solutions.

TECHNICAL EXPERTS RIGHT WHERE YOU NEED THEM

In addition to our technical salesforce, we have a Technology Support Services organization that includes presales and advanced technology specialists to help you select the right solutions for your needs.

CORPORATE SNAPSHOT

NORTH AMERICA

ENTERED REGION
1972

YEAR FOUNDED
1957

EMEA

ENTERED REGION
1991

APAC

ENTERED REGION
1990
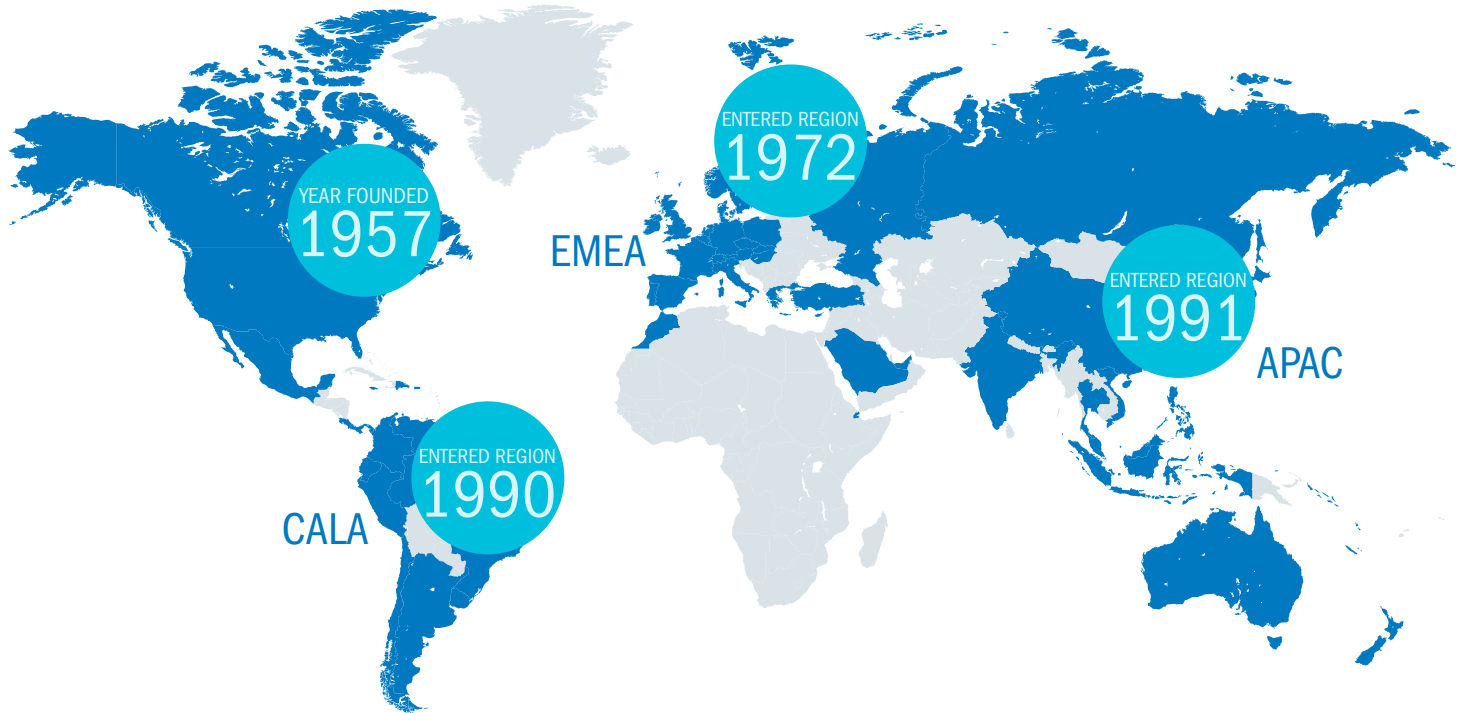
CALA

GLOBAL REACH.
LOCAL ADVANTAGE.

With WESCO | Anixter, you get a true local partner around the world. No other distributor of our kind can claim an in-country presence in approximately 50 countries and in over 300 cities.

We do business in more than 35 currencies and 30 languages, which means we are uniquely positioned to help facilitate your project in the local environment, reduce risks and keep costs down.

50+
COUNTRIES

MORE THAN
300
CITIES

18,000+
PROFESSIONALS
WORLDWIDE

FORTUNE
500
COMPANIES

$16
BILLION
IN SALES*

NEARLY
100 YEARS
OF EXCELLENCE
AND EXPERIENCE

* Pro Forma 2020 Net Sales