Establish a Secure Foundation for Digital Transformation in Industrial Operations

What if your OT and IT environments were fully converged into one secure, streamlined ecosystem? Cisco and Schneider Electric can help you improve business performance and flexibility, delivering substantial improvements in productivity, efficiency, ease of use, and sustainability.

Overview

Industrial organizations face multiple challenges when embarking on a digital transformation journey. They want to establish a robust yet secure infrastructure, one that will support the transformation yet also lower ongoing operational costs. They want to leverage new technologies, such as IoT, analytics, and AI-driven applications to improve performance and flexibility. They need to bring their OT and IT networks together, using IT skills to protect OT operations and maintain regulatory compliance.

The Cisco and Schneider Electric OT/IT Industrial Automation Reference Architecture enables a converged and secure OT/IT production ecosystem. With this fully validated network architecture, industrial organizations can:

- Experience superior uptime and resilience
- Establish one streamlined, secure network
- Realize end-to-end network and cybersecurity management
- Bring IT management tools into the OT domain

Enjoy the benefits of OT/IT convergence, helping to improve performance and security with a clear and simple roadmap.

Benefits

- Improve operational performance, maximizing production uptime and reducing energy consumption with applied analytics, accurate process modeling, and real-time decision support.

- Enable industrial digital transformation by creating a converged, network-centric architecture, backed by the cultural changes necessary to support the new processes and technologies.

- Ensure production integrity and safety by embedding cybersecurity within the OT environment.

- Allow IT and OT to work together to reduce the cyber-attack surface, respond quickly to threats, and comply with regulations.

Trends and challenges

Drivers for industrial digital transformation

In today's fast-paced, digital world, industrial organizations must improve across multiple areas to remain competitive:

- Being agile to change
- Greater return on capital investments
- Plant uptime
- Energy and resource efficiencies
- Sustainability best practices
- Cybersecurity

The ability to quickly leverage emerging technologies into top-line growth will help organizations succeed. For example, with access to more operational data, they can establish metrics to help optimize KPIs for the production environment. Profitability, uptime, energy efficiency, and more can be managed more effectively by leveraging industrial IoT (IIoT) technologies.

Industrial IoT

IIoT helps capture business performance data in real time, providing information that staff can use to optimize production outputs, recommend actions, and improve operating results. Capturing the data that feeds analytics solutions requires substantial growth in the number of field devices connected to the network. Managing those devices effectively and securely drives a need for OT and IT environments to work more closely together. Effective OT and IT convergence is required as organizations implement their industrial digital transformations. OT network infrastructure should meet IT standards, with consistent, reliable, and secure communications between the two environments.

Business performance targets

Achieving the results that will set your organization apart requires a new way of thinking. Technology is helping industrial organizations reach new performance levels across the following areas:

- Efficiency and profitability: Reduce cost, increase productivity, and maximize profit

- Reliability and performance: Maximize return on asset and minimize risk through reliable and future-proof investments

- Sustainability and transformation: Actively manage energy sourcing, minimize your environmental footprint, improve your brand image, and expand business opportunities using digital technologies

- Safety and security: Simplify compliance to regulations and protect people, data, and assets

Encompassing the above, a robust cybersecurity strategy must exist to support the changes being implemented.

How it works

Cisco and Schneider Electric OT/IT Industrial Automation Reference Architecture

This solution combines the world's leading networking, security, and industrial automation technologies into a fully tested and documented architecture. It enables a unified communications environment where OT and IT assets can interact in a seamless and highly secured manner to leverage cloud and/or on-premises applications, making a new generation of OT/IT solutions possible.

- Analytics applications, fed with field data, help improve operational performance.
- A converged, network-centric architecture enables industrial digital transformation.
- Transformation extends to the organization's culture, so workers can use the new processes and technologies.
- IT cybersecurity best practices extend to industrial operations and the OT domain.

Cisco and Schneider Electric bring together their market-leading products and services to implement this solution, which is depicted in Figure 1. As a networking and cybersecurity leader, Cisco provides the connectivity, cybersecurity, and infrastructure management components. As an industrial automation leader, Schneider Electric provides the control engineering and process optimization value to industrial operations. This includes site operations, control solutions, and analytics business applications.

Figure 1. Cisco and Schneider Electric enable OT/IT convergence for industrial organizations
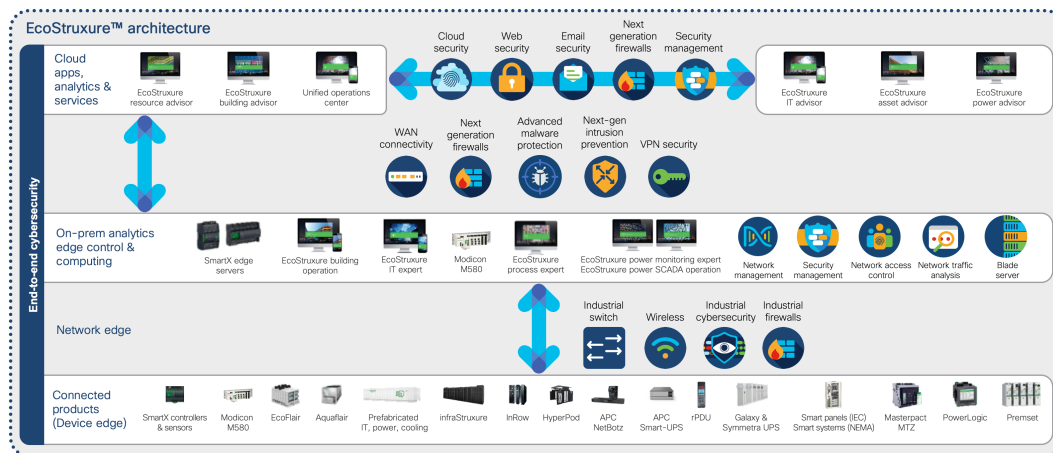
Solution components

- Cisco® Industrial Ethernet and Cisco Catalyst™ 9300 and 9500 switches
- Cisco Industrial Security Appliances (ISA3000) and Cisco Firepower® 2100 firewall
- Industrial visibility and cybersecurity with Cisco Cyber Vision
- Network and security management tools
- Schneider EcoStruxure™ Control Expert
- Schneider Modicon M580 process and safety
- Schneider Modicon X80 I/O modules
- AVEVA system platform
- Schneider Digital Advisors platform

Features

- Extensive portfolio of rugged and commercial products
- Support for deterministic, real-time industrial automation control communications and protocols
- Scalable from small to large deployments–hundreds to thousands of devices
- Resilient network operations with support for redundancy and fast recovery of faults
- Converged network to support communication from sensor to cloud
- Easy to deploy and use
- Advanced threat detection and behavioral analytics for comprehensive cybersecurity capabilities

Use cases

Industry	Use case description
Any discrete or hybrid industrial environment, for example: • Food and Beverage • Mining, Metals and Minerals • Water and Wastewater	• Improve efficiency while establishing sustainability • Solution: Dramatically increase connectivity via fixed and mobile infrastructure to gather information on machines, workers, and processes. Feed that data into analytics applications. • Business outcomes: Accelerate decision-making capabilities, increase return on assets, and limit CO_2 emissions. • Accelerate industrial digital transformation while mastering cybersecurity risk • Solution: Move from a legacy automation solution to a fully secure, network-centric architecture. • Business outcomes: Multiply sensors in the field that are directly connected to the network, feeding analytics applications. Securely connect to the cloud, leveraging existing IT and cybersecurity skills.

Financing to help you achieve your objectives

Cisco Capital® can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce CapEx. Accelerate your growth. Optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital is available in more than 100 countries. Learn more.

The Cisco and Schneider Electric advantage

Cisco and Schneider Electric have partnered for more than 15 years to harness OT/IT convergence for operational efficiency. Through integration of our industry-leading products, we provide customers the fastest, lowest-risk path to return on investment when undertaking projects in the digitization era, including cybersecurity, IoT at the edge, and digital transformation.

• Cisco brings more than 35 years of IT networking, communications, and security knowledge. Cisco understands the IT culture and talks the IT language.

• Schneider Electric brings more than 50 years of OT experience and operational knowledge. SE understands the OT culture and talks the OT language.

Begin your journey to improved industrial operations

Are you ready to securely leverage industrial digital transformation and IIoT, backed by two industry leaders? You can experience substantial step-change improvements in business performance, flexibility, and sustainability throughout your operations. Move forward with confidence. Learn more about how Cisco and Schneider Electric help customers optimize performance with less risk.