

Industrial Data Center Use Cases

This chapter examines four potential use cases for the IDC:

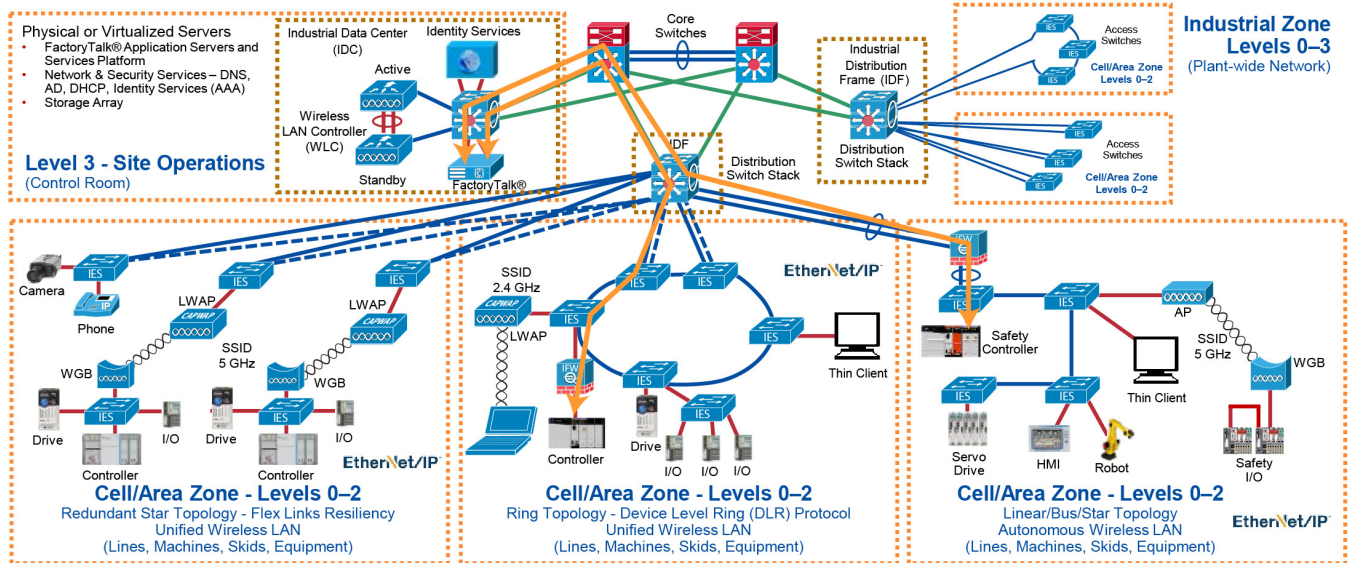
- [CPwE IDC EtherNet/IP Connectivity Use Case](#)
- [CPwE IDC ThinManager Operator Workstations Connectivity Use Case](#)
- [CPwE IDC ThinManager Engineering Workstations Connectivity Use Case](#)
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CPwE IDC EtherNet/IP Connectivity Use Case

Virtualization of Industrial Automation and Control System (IACS) application servers is a common practice. IACS applications that can be virtualized include HMI servers, Historians, and Asset Management.

The IDC is located at Level 3 - Site Operations. This potentially separates the IDC—and the virtualized application servers—from the IACS assets at Levels 0-2 - Cell/Area Zone by multiple network hops.

Figure 3-1 CPwE IDC EtherNet/IP Connectivity Use Case



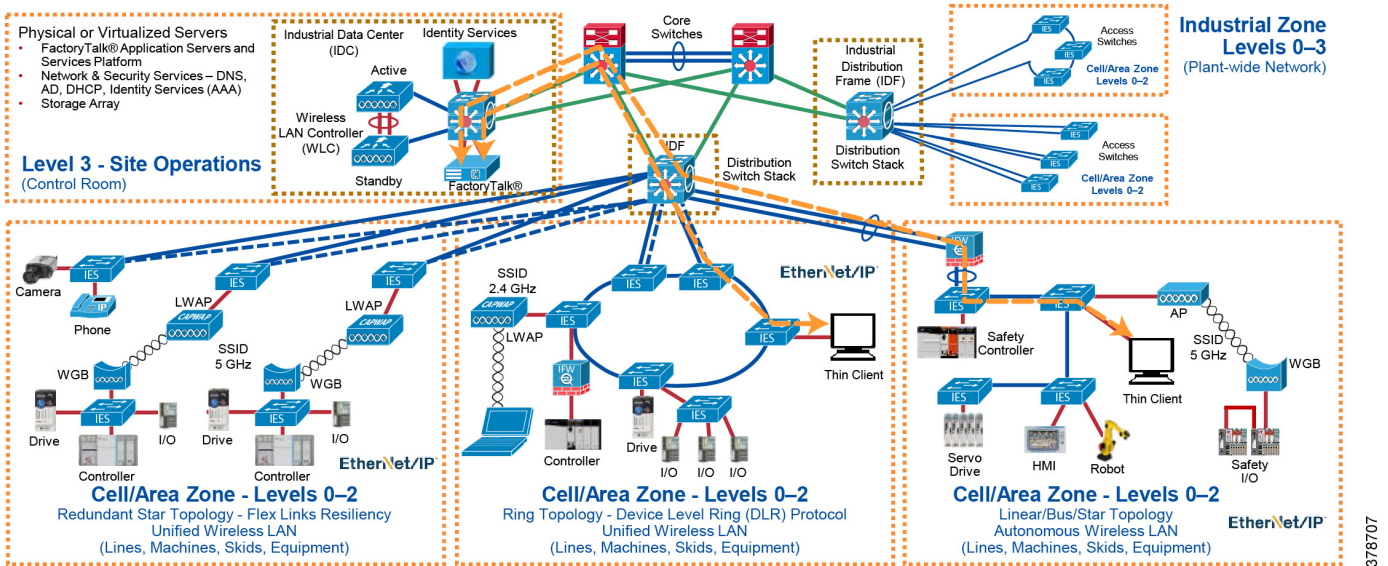
This use case demonstrates EtherNet/IP connectivity from the virtualized application servers (with proper network configuration) from Level 3 Site Operations to the IACS assets located in Levels 0-2 - Cell/Area Zone.

CPwE IDC ThinManager Operator Workstations Connectivity Use Case

Operator workstations (OWS) allow an operator to monitor and control the IACS. They present data acquired by the application servers to allow visibility to the IACS by an operator.

An operator may need to remotely access an OWS in the IDC (Level 3 - Site Operations) from a thin client (e.g., ThinManager) located at Level 2 within the Cell/Area Zone.

Figure 3-2 CPwE IDC ThinManager OWS Connectivity Use Case



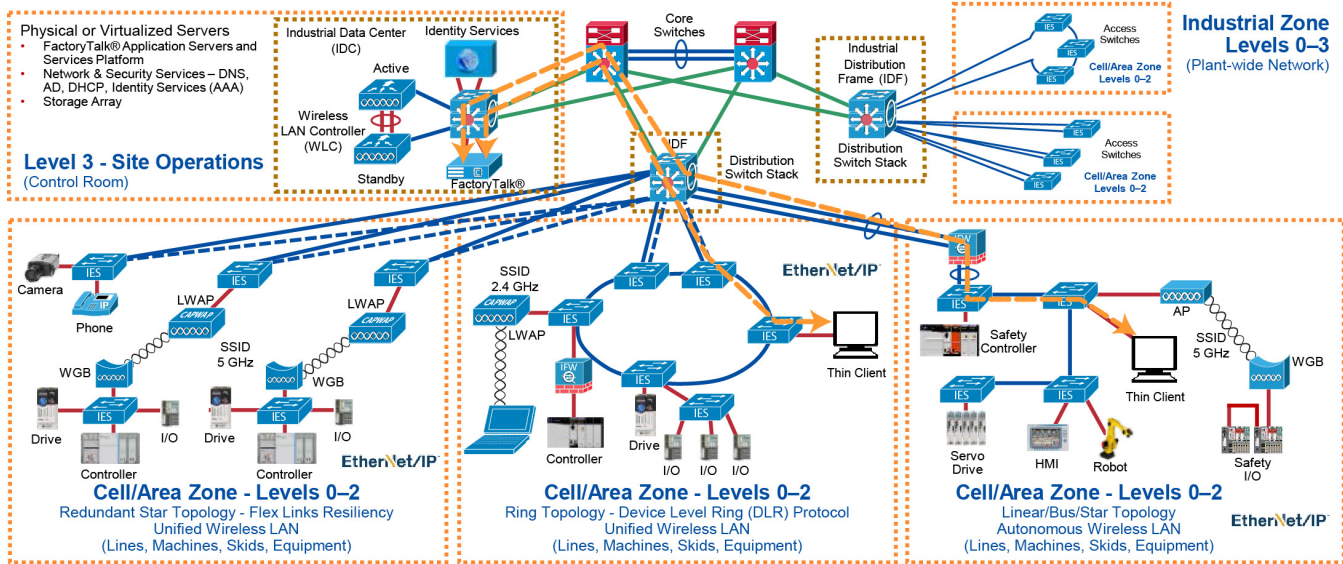
This use case demonstrates that a user/operator can remotely access an OWS in the IDC from a thin client located at Level 2 within the Cell/Area Zone.

CPwE IDC ThinManager Engineering Workstations Connectivity Use Case

Engineering workstations (EWS) are used by proper, authorized personnel (e.g., OT engineers) to configure, correct, and troubleshoot the IACS. They will typically have specialized software installed to allow programming and configuration of the IACS and network devices.

An engineer may need to remotely access an EWS in the IDC (Level 3 - Site Operations) from a thin client (e.g., ThinManager) located at Level 2 within the Cell/Area Zone.

Figure 3-3 CPwE IDC ThinManager EWS Connectivity Use Case

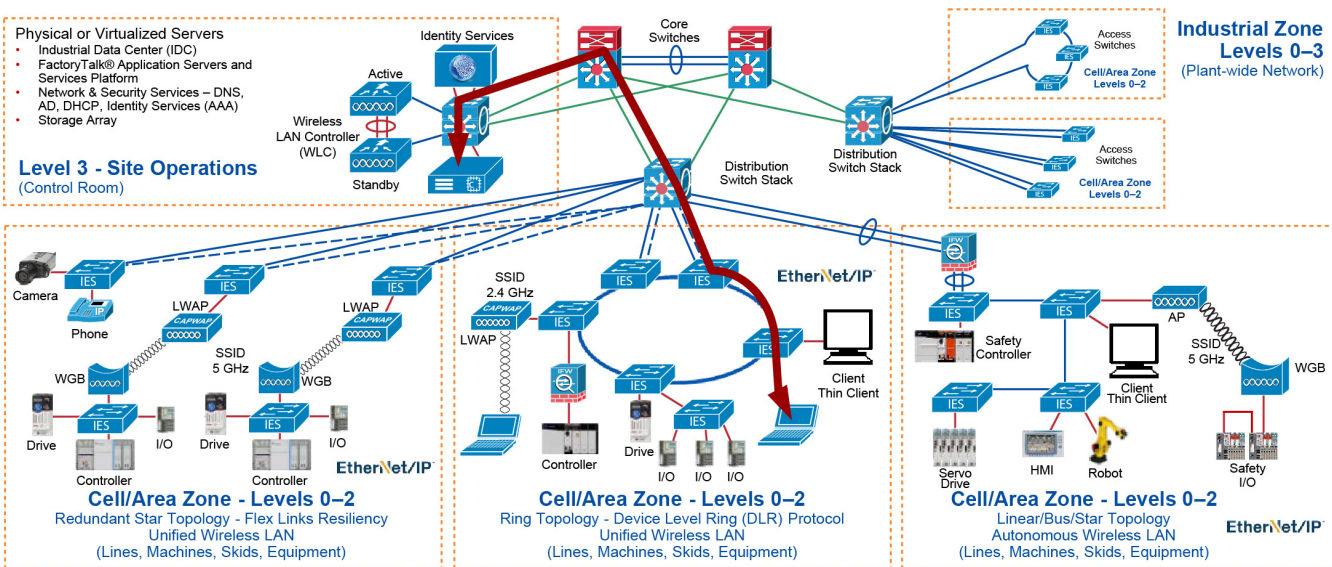


This use case demonstrates that an engineer can remotely access an EWS in the IDC from a thin client located in Level 2 within the Cell/Area Zone.

CPwE IDC Active Directory Connectivity Use Case

A virtualized Active Directory server in the IDC can be used to authenticate users at Level 3 - Site Operations and Level 2 within a Cell/Area Zone without requiring the authentication process to traverse the industrial DMZ (IDMZ).

Figure 3-4 CPwE IDC Active Directory Connectivity Use Case



This use case demonstrates user authentication using the virtualized Active Directory server located in the IDC at Level 3 - Site Operations from a PC/Thin Client/terminal located at Level 2 within the Cell/Area Zone.