

Phoenix Contact and CyVault™ OT/ICS/CPS Cyber Defense Platform

Industrial Switching Platform with Integrated OT/ICS/CPS Cyber Defense Platform



Executive Summary

Phoenix Contact and CyVault™ have established a strategic technology partnership to help OT/ICS owners and operators address cyber threats by integrating the CyVault™ | DOME | Byson X technology into Phoenix Contact's leading edge Raptor Series L2/L3 multi service platform and into Phoenix Contact's PLCnext controllers. This solution creates a single appliance for OT/ICS applications to enable communications and manage risks and threats in real-time, backed by industry leading OT/ICS CyberSOC as a Service (CyVault™ | DOME).

The Challenge

With the convergence of IT and OT networks, the increase of cyber threats is a growing concern. Operators of Mission Critical Networks (OT/ICS environments) such as Power/Energy, Utilities, Nuclear, Manufacturing, and Oil and Gas, must deploy security measures to defend against threats and threat actors. Security controls against these new and existing cyber threats need to be tightly integrated within the network and communications architecture of these connected systems. OT/ICS environments are characterized by harsh environmental conditions and are remote and inaccessible in some instances.

Joint Solution

The EP Series Raptor switch's modular system of field replaceable modules, redundant hot-swappable power supplies, and ability to run third party software applications makes it a very flexible and forward-looking platform. Combined with CyVault™ | DOME | Byson X, the Raptor enables industrial applications to have "best in class" OT/ICS cyber defenses. This includes OT/ICS visibility of all monitored threats and threat actors, and assets, with hybrid specialized OT/ICS playbooks suited to your environments for real-time automated incident response actions.

Solution Components	<ul style="list-style-type: none">• Phoenix Contact Raptor Switches• Phoenix Contact PLCnext Controllers	<ul style="list-style-type: none">• CyVault™ DOME• CyVault™ DOME Byson X
Solution Benefits	<ul style="list-style-type: none">• Simplified deployment of the CyVault™ DOME Byson X in ICS/OT environment with low-footprint and multiple adaptable models.• Reduce the need for dedicated hardware for OT/ICS Cyber Defense by leveraging Cy Vault™ DOME Byson X deployments with Phoenix Contact Raptor switches.• Passive and Safe Active network monitoring without impacting operations/process.• A client Portal for Centralized Cyber Defense Control Management providing you with a clear cyber situational awareness of your OT/ICS environments.	



Solution Components

Phoenix Contact Raptor Switch is an intelligent cybersecure hardware platform with 64 Gb/s full line speed with up to 4 x 10Gb/s + 24 1Gb/s ports running a feature rich embedded OS. The Raptor embedded OS is an all-encompassing operating system that supports L2/L3 switching and routing on a single platform.

Phoenix Contact PLCnext Controllers are designed for programming with high-level languages, as well as classic IEC 61131-3 languages. They can also support further hardware functions, such as an additional Ethernet port or safety and AI functions.

CyVault™ | DOME is a leading OT/ICS CyberSOC as a Service, automatically protects, prevents, defends, responds, and constantly adapts OT/ICS defenses to your environment. The platform also provides complete visibility on your cyber situational awareness, and more.

CyVault™ | DOME | Byron X is a cyber defense node that serves as an extension to CyVault™ | DOME by monitoring, responding, and integrating with the on-premises OT/ICS security controls.

Solution Integration

Via the CyVault™ | DOME portal, the client of the service provider can set configuration parameters to enable integrations to the target environment through the CyVault™ | DOME | Byron X cyber defense nodes. The integrations provides granularity in terms of what modules would be activated to monitor for events, logs, alarms, and network traffic. After the initial configuration and deployment, the monitoring starts right away, via a secure mesh, to elect OT/ICS incidents through proprietary defensive algorithms and respond to them, automatically, depending on the industrial process control. The portal provides cyber situational awareness with all the necessary information on risks, incidents, threat advisories, and more.

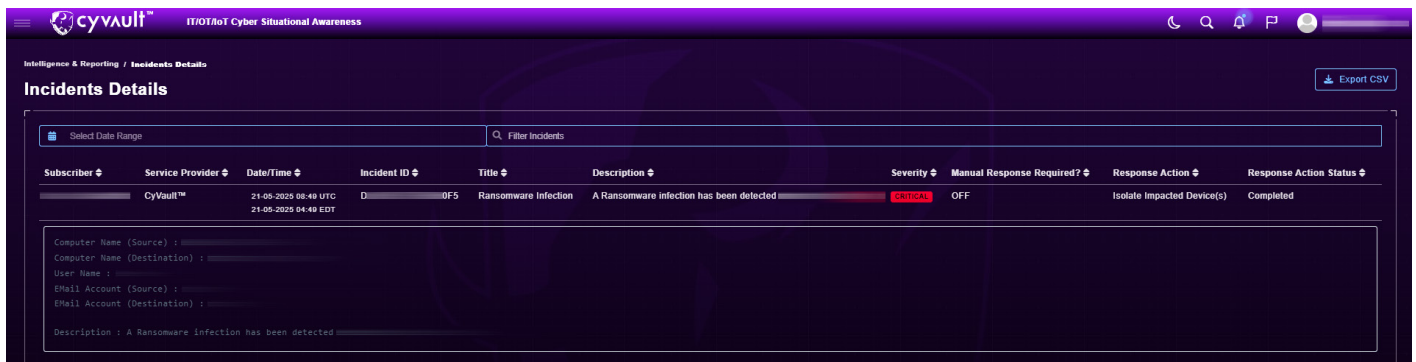


Figure 1: CyVault™ | DOME | Byron X embedded in Phoenix Contact Industrial Appliances

Depending on the industrial process control being protected, the elected OT/ICS incidents can be responded to either manually or automatically or in a hybrid mode.

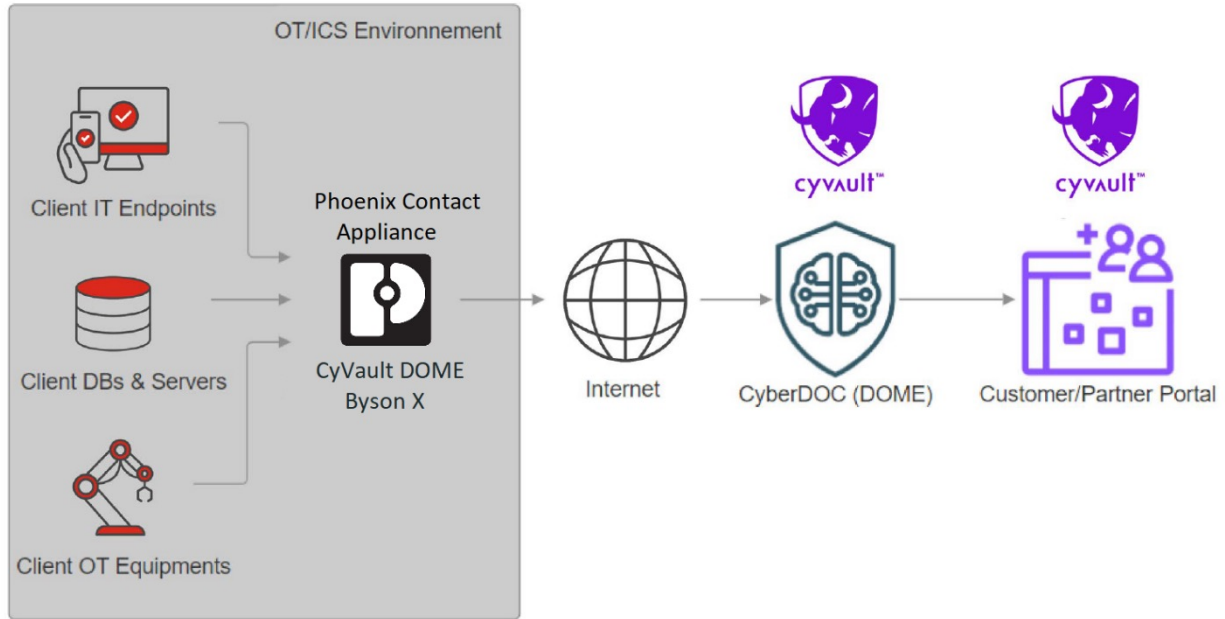


Figure 2: CyVault™ | DOME integration with Phoenix Contact Appliances

Use Cases




Clients who have on-premises security controls that are not exposed publicly will require a CyVault™ | DOME | Byron X cyber defense node deployed in a Phoenix Contact appliance (be it a Raptor Switch or a PLCnext controller) to have complete visibility and defensive measures of their OT/ICS infrastructures.

The EP Raptor switches enable reliable and safe operation in extreme ambient conditions. The managed switch portfolio meets the stringent requirements of IEC 61850-3 and IEEE 1613 standards and is ideal for critical infrastructure and power supply applications. The EP Raptor switches combine security, reliability, and flexibility in one device with built-in, security functionalities on a hardened modular platform.

The PLCnext controllers come with the appropriate IP20 and IP65/IP67 degrees of protection. The controllers are the first PLCs to be certified by TÜV Süd to IEC 62443-4-1 ML 3 Full Process Profile in combination with IEC 62443-4-2. This confirms that the Secure Development Life Cycle was fully applied in developing PLCnext Control. Product certification in accordance with IEC 62443-4-1/-4-2 confirms that a product has been developed safely and provides information about which technical safety requirements have been implemented.

Compatible Models



Chassis	Description	Designation	Item No.
	FL SWITCH EP7400 Series Chassis. IEC 61850-3 / IEEE 1613, Layer 2/3 Switch, -40°C to +85°C Operating Range. Supports up to 28 ports total.	FL SWITCH EP7428R-L3F1	1144353
	FL SWITCH EP7400 Series Chassis. IEC 61850-3 / IEEE 1613, Layer 2/3 Switch, -40°C to +85°C Operating Range, Supports up to 24-ports PoE, 28 ports total.	FL SWITCH EP7428R-L3F1P	1539668
Chassis	Description	Designation	Item No.
	FL SWITCH EP7500 Series Chassis Security enabled. IEC 61850-3 / IEEE 1613, Layer 2/3 Switch, -40°C to +85°C Operating Range. Supports up to 28 ports total.	FL SWITCH EP7528R-L3F1	1539667
MCP Computing Module	Description	Designation	Item No.
	MCP Computing Module , Ubuntu, 256GB storage	FL SWITCH EP7400-MCP-L-256GB	1539661
	MCP Computing Module , Ubuntu, 512GB storage	FL SWITCH EP7400-MCP-L-512GB	1539663
	MCP Computing Module , Ubuntu, 1TB storage	FL SWITCH EP7400-MCP-L-1TB	1539665
	MCP Computing Module , Ubuntu, 2TB storage	FL SWITCH EP7400-MCP-L-2TB	1539666



Product	Supported Device	MCP Compatible Switches
CyVault™ DOME	FL SWITCH EP7400-MCP-L-2TB FL SWITCH EP7400-MCP-L-1TB FL SWITCH EP7400-MCP-L-512B FL SWITCH EP7400-MCP-L-256B	FL SWITCH EP7428R-L3F1P FL SWITCH EP7428R-L3F1 FL SWITCH EP7428R-L3F1-C1
	AXC F 2152 AXC F 3152 AXC F 1152 BPC 9102S RFC 4072R RFC 4072S	Not Applicable

About CyVault™

CyVault™ is a global cyber defense leader offering the only and most advanced essential managed cyber defense for companies and organizations of any size and industry throughout North America, Europe, and Africa, with a unique specialization and expertise for industrial and critical infrastructure (OT/ICS/CPS). Advised Fortune 10 companies, with accomplishments that include providing turnkey cyber defense solutions to government agencies including DHS/FBI, offering offensive initiatives for cyber military units, and a subject matter expert in cyber defense with industry leading OT/ICS organizations such as ISA (International Society of Automation), INL (Idaho National Labs), and Phoenix Contact to name a few. Its Innovation and R&D Labs, CyVault™ | ICS Labs, focuses on safeguarding against existing and emerging threats and threat actors to safeguard the critical elements of our daily lives.



Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented products and solutions for the electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network reaching across more than 100 countries with over 22,000 employees, we maintain close relationships with our customers, something we believe is essential for our common success.

Our wide range of innovative products makes it easy for our customers to implement the latest technology in a variety of applications and industries. This especially applies to the target markets of energy, infrastructure, industry, and mobility.

You can find your local partner at

phoenixcontact.com