

SEL Blueframe™

Platform and Applications



Manage and operate job-specific applications with a secure OT application platform

- Access platform applications securely with role-based user permissions.
- Reduce data entry errors while increasing efficiency with common configurations and secure data sharing between applications.
- Support systems of any size and function with this scalable and flexible platform.



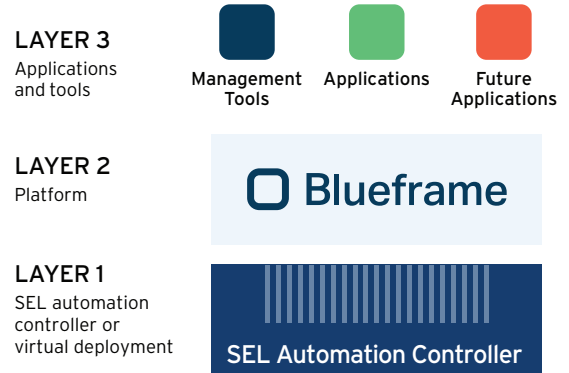


Blueframe

The SEL Blueframe application platform is an embedded container-based operational technology (OT) system for running SEL Blueframe-enabled applications and for managing and exchanging data seamlessly between these applications. With Blueframe, you can maximize the use of your system data and simplify the management of security vulnerability patches using a scalable and customizable solution that accommodates your system schemes today and in the future.

System Architecture

The Blueframe application platform is part of SEL's modular application environment. This system consists of the foundational hardware, which may be an SEL automation controller or a virtual machine deployment; the Blueframe platform and OS that run applications and provide system tools to help you use and manage the environment; and the specialized applications you select to run.



Key Benefits

Secure

We designed the Blueframe platform to provide secure methods for sharing data between applications. The efficient and restricted data exchange allows each application to specialize and provide value-added services to the overall solution.

Scalable

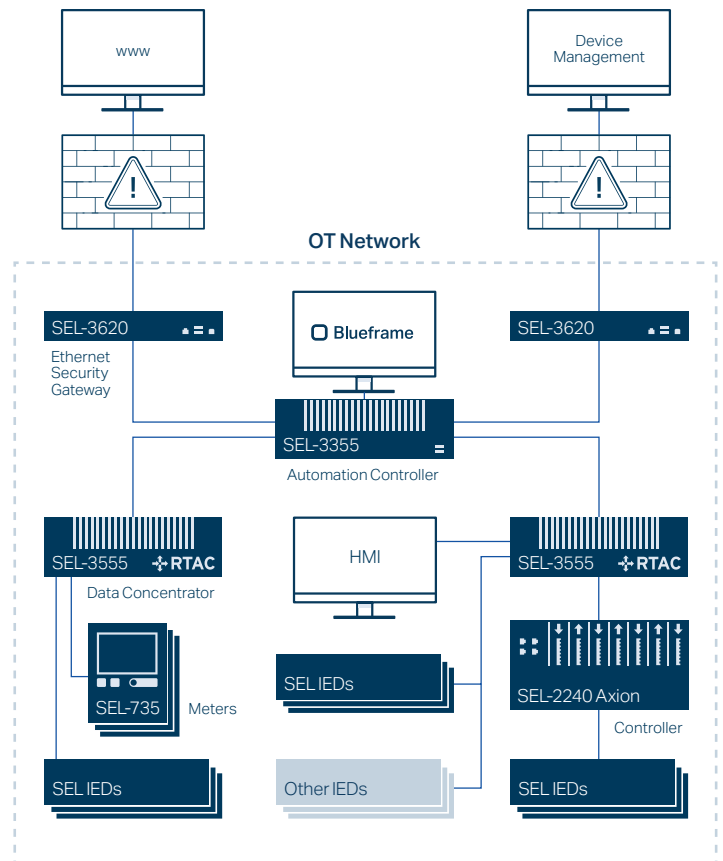
Blueframe supports systems of any size and is an economical solution for both small and large systems. You can change or expand the applications to customize system functionality and accommodate your evolving needs.

Flexible

Choose from SEL automation controllers to get the hardware that best fits your requirements and budget, or deploy Blueframe in a virtual environment with a subscription contract.

Versatile

Blueframe simplifies and centralizes user access permissions, security parameters, and IED data management with a single user-friendly, consolidated interface to perform different tasks based on the applications deployed.



Secure OT networks with SEL embedded Linux container-based application technology.

Hardware

Blueframe runs on SEL powerful and reliable automation controllers that ensure system availability in the most demanding applications and environments. Select the right hardware for your application by choosing from automation controller models that offer a variety of processing power options, drives, memory modules, expansion

capabilities, and form factors. Blueframe and SEL specialized applications come embedded in your chosen automation controller. Alternatively, Blueframe can be deployed in a virtual environment through a subscription contract. For more information about virtual deployments, contact us at Blueframe_Sales@selinc.com.

| | SEL-3350 | SEL-3355 | SEL-3360S | SEL-3360E |
|------------------------|---|--|---|---|
| Processor | Intel Atom x5-E3940 quad-core | Intel Xeon quad-core (2.0 and 2.8 GHz) | Intel Xeon quad-core (2.0 and 2.8 GHz) | Intel Xeon quad-core (2.0 and 2.8 GHz) |
| Memory | 8 GB DDR3L RAM with error-correcting code (ECC) | Up to 64 GB DDR4 RAM with ECC | Up to 64 GB DDR4 RAM with ECC | Up to 64 GB DDR4 RAM with ECC |
| Storage | Up to 2 SSDs, max. 1.92 TB each, 2.5" SATA III (6.0 GB/s) | Up to 4 SSDs, max. 3.84 TB total | Up to 2 SSDs, max. 1.92 TB each, 2.5" SATA III (3.0 GB/s) | Up to 2 SSDs, max. 1.92 TB each, 2.5" SATA III (3.0 GB/s) |
| Data Redundancy | N/A | RAID 0, 1, 5, and 10 (hot-swappable) | RAID 0 and 1 (hot-swappable) | RAID 0 and 1 (hot-swappable) |
| Chassis | Rack mount, 1U | Rack mount, 3U | Conductive panel-mount or standard wall-mount cooling | Conductive panel-mount or standard wall-mount cooling |

For hardware resource details related to virtual appliances, contact us at Blueframe_Sales@selinc.com.

Features

User-Focused Interface

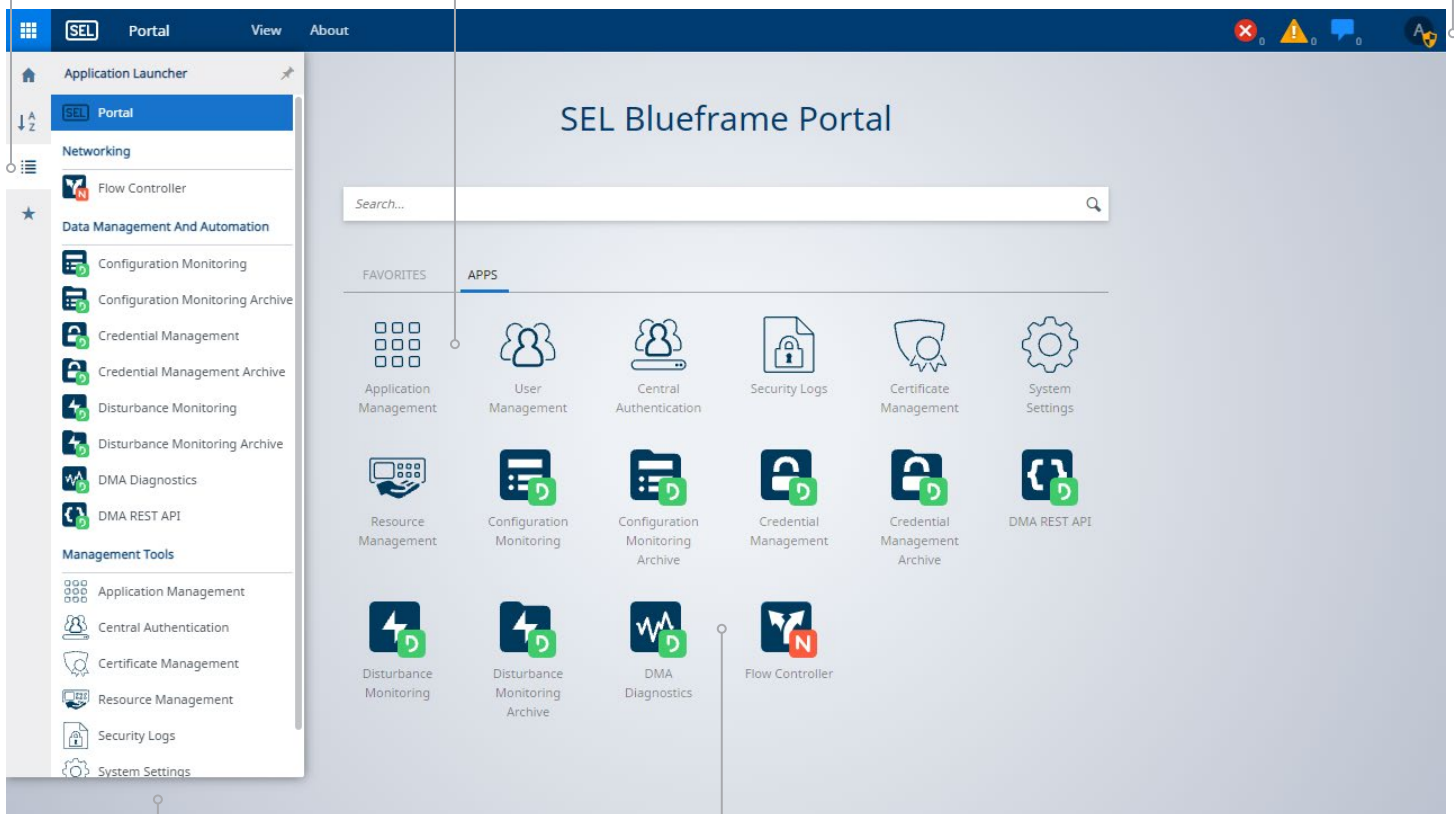
Intuitive interface that facilitates user preferences and enables you to quickly find and manage content.

User Roles

Roles are defined with access permissions so that a user only has access to exactly what they need.

Management Tools

Use the tools to configure security, users, communications, and system settings once to be used by the different applications across the platform. You can also manage resources, logs, and security certifications.



Secure User Interface

Blueframe runs on a secure Linux OS that employs containerized applications. All applications must be signed and verified to run in the platform.

Specialized Applications

Blueframe container-based applications are designed to be modular to perform specific functions. They seamlessly and securely share common information throughout the platform using automation and smart data subscriptions to save you configuration time and effort.

Blueframe Applications

Data Management and Automation (DMA) Application Suite

The DMA application suite includes the Disturbance Monitoring, Configuration Monitoring, and Credential Management applications. These applications are designed to automatically collect and manage device-specific information to simplify day-to-day management of your system of devices and to support compliance. These applications accelerate the collection of oscillography, Sequence of Events (SOE), and device settings and property information. The applications also streamline device audit tasks through custom summary reports to identify device changes.

DMA applications:

- Simplify IED data collection with full automation and simple configuration.
- Secure data collection through system-managed passwords and centralized, role-based access to data.
- Improve data longevity with short-term archiving and APIs to facilitate long-term local archiving.
- Improve data utilization by normalizing data into an industry-standard format and presenting data in a single interface to use in different tasks.

Software-Defined Network Flow Controller Application

The Flow Controller application is the central interface for the commissioning, configuration, and monitoring of all SEL-2740S and SEL-2742S Software-Defined Network Switches. SEL's OT software-defined networking (SDN) solution provides advanced situational awareness, allowing you to know exactly what devices are on your network and what conversations each device is having. The only changes allowed on the network are made through Flow Controller.

Flow Controller configures primary and backup paths for each communications flow on SEL-2740S and SEL-2742S switches by using attributes of a specific protocol session and forwarding paths instead of requiring MAC addresses and VLANs. This eliminates the additional network-required tags or labels and simplifies operations. With the removal of the Rapid Spanning Tree Protocol (RSTP), the network bandwidth is free for operational data and free from RSTP topology design restrictions.



DMA Applications



Disturbance Monitoring

Define data collection plans for end-point devices with the Disturbance Monitoring application. This application enables automated collection of event oscillography and SOE data for supported resources in a common location. This facilitates streamlined initiation of fault restoration.



Disturbance Monitoring Archive

Visualize collected data to view past events with the Disturbance Monitoring Archive application. You can preselect the devices you want to view event information for and easily download reports for detailed analysis in event analysis tools. Use Synchrowave Event Express (included) to visualize oscillography directly from the archive viewer.



Configuration Monitoring

Automate checks of active device settings, firmware versions, and device IDs with the Configuration Monitoring application. You can securely move collected settings to a settings management repository for comparison.



Configuration Monitoring Archive

View Configuration Monitoring application collected settings versions, firmware, and device ID variances with the Configuration Monitoring Archive application. This application enables you to identify devices that may be out of compliance and may require corrective actions.



Credential Management

Schedule automated password rotation for resources managed by an SEL security gateway. Credential Management supports the need to ensure device access security with more control over when passwords are rotated with random and complex passwords.



Credential Management Archive

View Credential Management reports to verify that scheduled resource passwords have been changed to support audit compliance efforts. Additionally, access resource credentials securely to aid emergency restoration efforts.



Flow Controller

Manage and configure SEL-2740S and SEL-2742S switches and the allowed conversations on the network. The Flow Controller application provides detailed telemetry monitoring benefits after network configuration.

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