



Belden Horizon™ Console

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Connect to what's possible.

The Belden Horizon™ Console is part of Belden's suite of software for industrial solutions. It is an IT-secure and OT-friendly solution that allows users to establish safe, reliable and secure communications anywhere in the world.

Using Belden Horizon's unique EasyBridge™ technology, automation programming tools (such as Studio 5000®, Unity® Pro, TIA Portal and many more) can talk directly to automation devices without the need to set up IP routing or other complicated communications settings. Belden Horizon's EasyBridge™ technology makes it simple and secure for remote sites to communicate with each other. Its Edge Orchestration feature allows users to deploy and manage edge applications across multiple edge devices at the same time from anywhere.

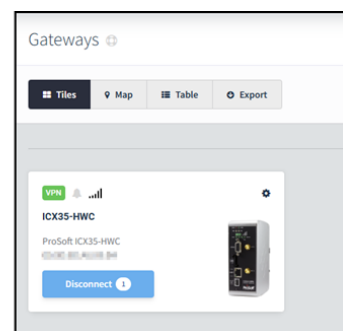
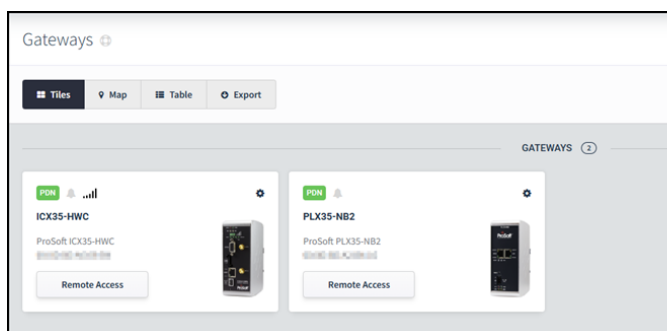
The Belden Horizon Console uses a zero-trust multilayered approach to security. These include single sign-on, Virtual Lockout-Tagout, two-factor authentication, IP allow list, role-based user and device access, user-configurable password policies and encrypted tunnels.

The on-premises option allows the deployment of the Belden Horizon Console within the user's environment for either a private cloud, public cloud or data center with an installed virtualization platform. Supported virtualization platforms include but are not limited to VMware ESXi and Nutanix AHV.

Designed to manage multiple users, gateways and users intuitively and easily.

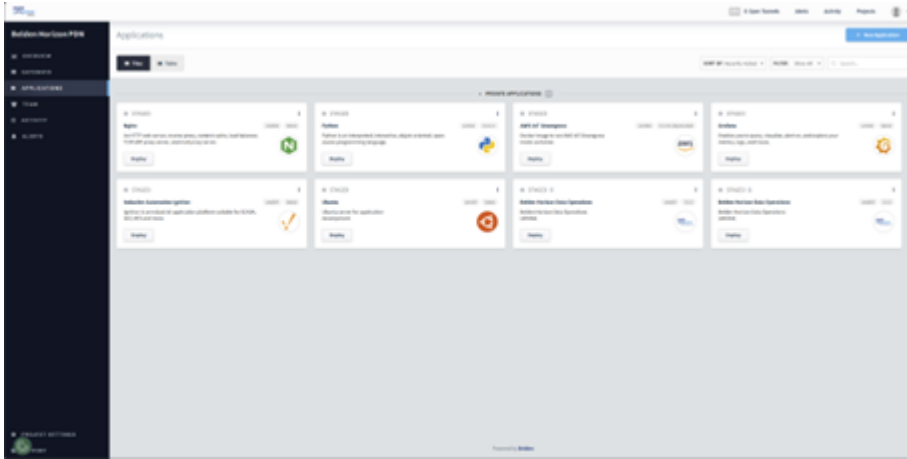
Mobile-ready with a dedicated app available for download on the iOS platform.

Available as SaaS service hosted by Belden and on-premises.



Edge Orchestration

The Belden Horizon Console's Edge Orchestration feature allows users to deploy and manage edge applications across multiple edge devices at the same time from anywhere. The application can be provided by Belden or the user. This feature allows applications to be seamlessly and securely deployed to edge devices such as Belden's OpEdge-4D and OpEdge-8D edge gateway devices.



»» Main Features

- Supports the management of edge applications across one or more devices.
- Enables the onboarding, monitoring and updating of containers on edge hardware.

»» Customer Benefits

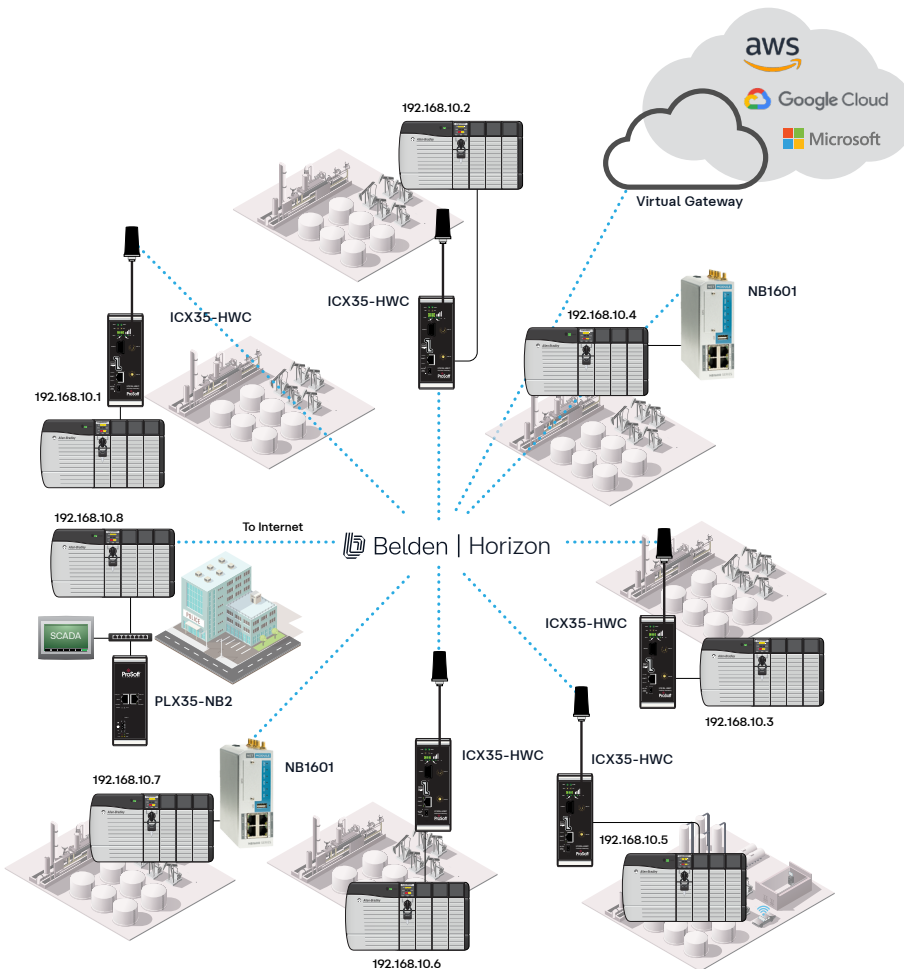
- Empowers users to easily implement, install and integrate with various industrial applications, regardless of the vendor.



Remote Access

The **Belden Horizon Console** allows the creation of two types of remote connections: always-on connection named **PDN** and on-demand connection named **SRA**.

Persistent Data Network (PDN)



>>> Main Features

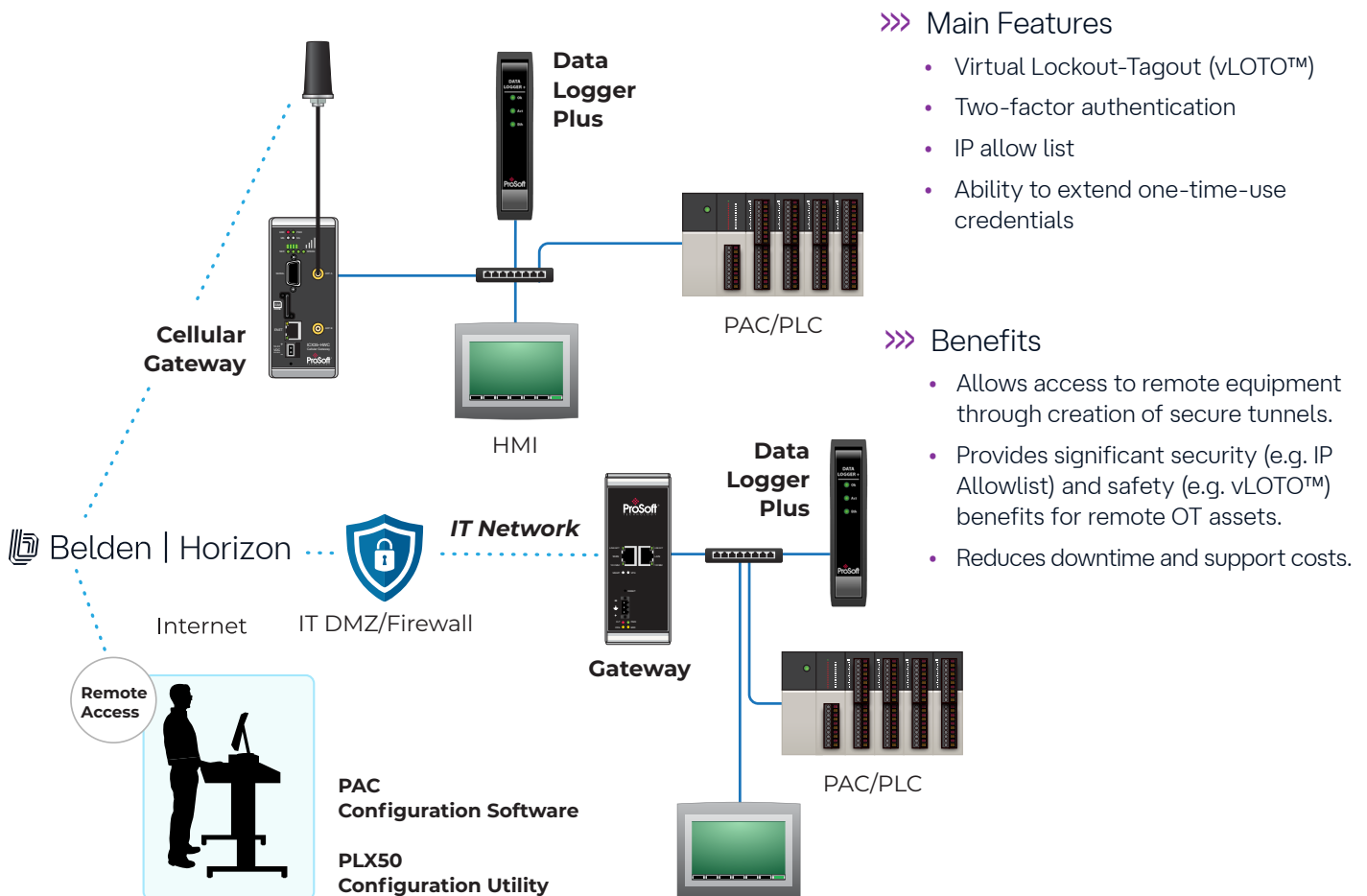
- Managed network with tunnel connections between the connected gateways and tunnel server
- Configurable Layer 2 or Layer 3 connectivity
- Compatible with hardware- and software-based gateways

>>> Benefits

- Enables a simple and secure remote communication network to connect geographically dispersed assets.
- Establishes a communication network that is “always-on.”
- Integrates to customer’s cloud via Virtual Gateway.

This type of remote connection is used to connect geographically dispersed locations for a SCADA-type network, like monitoring a municipal water utility or a gas distribution network. PDN is like being plugged into a local switch.

Secure Remote Access (SRA)



This type of remote connection is for a specific purpose. Examples include checking status, changing PAC software or upgrading firmware. The user will disconnect once the action has been completed.

Security

All communications with the Belden Horizon service use HTTPS for site authentication and data encryption. Gateways are activated in the Belden Horizon Console using a two-step authentication. All gateway connections are initiated by the gateway to prevent a spoofed service from initiating a gateway connection. No user-installed software is required, which eliminates potential “watering hole” attacks and time-consuming software patch maintenance.



Advanced two-factor authentication (2FA)

With advanced two-factor authentication, users can be confident that only registered users can access the account. When advanced 2FA is enabled, users must enter a username, password and a unique time-based one-time password. The time-based, one-time password is auto-generated via an authenticator app on the user's phone.

User-configurable password policy

With a configurable password policy, users can determine password complexity requirements and mandatory rotation periods in line with existing policies. Configurable policy rules include enforcing minimum password length, password expiration period, requiring alpha-numeric characters and more.

Single sign-on (SSO)

Single sign-on allows users to access multiple applications with one set of credentials. With SSO, IT can manage user access to improve security and productivity. SSO uses SAML 2.0. SSO works by sending the login request to a known federated identity provider (IDP); then, the credentials are checked against the organization's active directory server. If the credentials are correct, then the user will be allowed to access the application.



Virtual Lockout-Tagout (vLOTO™)

With Virtual Lockout-Tagout, authorized plant personnel control when and how their machines are remotely accessed. The Belden Horizon Console user requests access for a specific period, which the authorizer(s) must approve. The authorizer does not need to be a Belden Horizon Console user—they can be an IT manager, plant engineer, shift supervisor or other authorized person. The authorizer(s) can deny or revoke access at any time. Companies can also access a thorough activity log of permissions, acceptances and denials to meet security requirements.

IP allow list

Access specific IP addresses when remotely connected to the gateway.

Managed network bridged or routed

PDN is intended to enable quick and easy SCADA-style applications. A PDN is a collection of gateway endpoints (hardware or software) that participate in one Layer 2 network or in separate networks which establish a Layer 3 routing between the regional tunnel server and the gateways. The Belden Horizon Console manages the tunnel connections between the gateway and the tunnel server.

Using the Belden Horizon Console's unique EasyBridge™ technology, automation programming tools (such as Studio 5000®, Unity® Pro, TIA Portal and many more) can communicate directly to the automation devices.

VPN tunneling

The cloud-to-gateway connections in the PDN network are IPSec over HTTPS. In a PDN network, the Belden Horizon Console provides an AES256 encrypted VPN connection between the sites.

EasyBridge Secure Remote Access provides an AES256 encrypted VPN connection between the user's PC and the network connected to the Belden Horizon Console. VPN uses SSTP (the standard tunneling method) or L2TP client with IPSec encryption to minimize security vulnerabilities of third-party VPN client software.

User accounts and access control

The Belden Horizon Console Organization owner and project administrators can invite team members to join projects in the organization.

Access control for users is managed by the account administrator. Users are assigned rights to administer, connect and configure gateways, or to connect only. An Organization Owner can transfer ownership of remote access devices (for example, a machine builder granting ownership to an end user once the OEM no longer needs control of the equipment).

Project-based user interface

Gateways and users are organized into Projects within the Belden Horizon Console organization. All gateways added to a PDN Project are either connected to form one Layer 2 network (single subnet) or divided into independent subnets using Layer 3 Routing. Automation devices connect to this network through the gateways and communicate with each other. Each organization requires a PDN subscription.

Data ingestion & analytics in cloud

In combination with a Virtual Gateway appliance (a soft gateway) available in the Belden Horizon Console, transferring data into cloud environments is made easy.

This virtual appliance can be deployed to a cloud-based or on-premises server to enable data ingestion and analytical applications.

Ethernet/cellular connections

Outbound connections from gateways use HTTPS only. Client VPN connections use SSTP via TCP port 443 or L2TP via ports 500, 4500 and 1701.

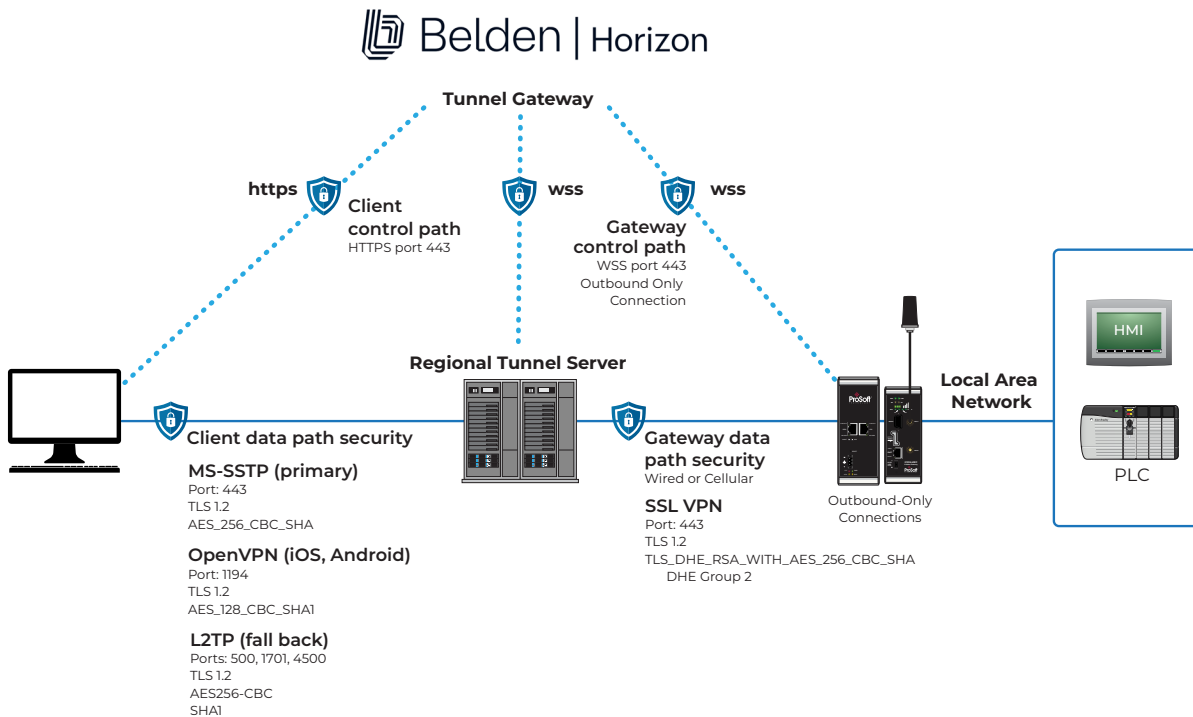


Subscriptions

Ideal for system integrators and machine builders who rely on the Belden Horizon Console to service their customers. Subscriptions are modular so they can be ordered to fit as needed and be very cost-effective. Whether remote access to a remote site is required or a Persistent Data Network, features can be enabled on an “as needed” basis. All options available are apparent on the last page of this document.

Technical overview

The CAIQ (Consensus Assessment Initiative Questionnaire) v3.1 framework governs our security policies, IEC62443 principles govern our design and development policies and ISO27001 principles govern our information security policies. The following diagram is a high-level overview of the Belden Horizon Console’s connectivity architecture with the cipher suites information. The remote user utilizes secure HTTP (HTTPS) to form the connection to the Belden Horizon Console. The gateway uses secure web sockets (WSS) to form the connection to the Belden Horizon Console. The connection is completed after the keys are verified. The platform uses a native protocol on top of WSS. The Belden Horizon Console data plane uses a combination of VPN protocols such as MS-SSTP, SSL-VPN, L2TP and OpenVPN (only for mobile devices).



Gateway Compatibility

	PLX35, ICX35, NB1601, NB800	Virtual Gateway	OpEdge-4D and OpEdge-8D	Edge Service Gateway
Type	Hardware embedded device	Virtual - x86 HW with Ubuntu and Docker Engine	Hardware embedded device	Virtual - x86 HW with Ubuntu and Docker Engine
Compatible with	SRA, PDN	SRA, PDN	SRA, PDN, Edge Orchestration	SRA, PDN, Edge Orchestration
Compatible Subscription First Year	Cloud BHC-CLD-SRA BHC-CLD-PDN BHC-CLD-XFR	On-Premise BHC-ONP-BASE (mandatory) BHC-ONP-SRA BHC-ONP-PDN	Cloud BHC-CLD-EDGE BHC-CLD-XFR BHC-CLD-STR	On-Premise BHC-ONP-BASE (mandatory) BHC-ONP-EDGE
Compatible Subscription Subsequent years	Cloud BHC-CLD-SRA BHC-CLD-PDN BHC-CLD-XFR	On-Premise BHC-ONP-MAINT (mandatory) BHC-ONP-SRA BHC-ONP-PDN	Cloud BHC-CLD-EDGE BHC-CLD-XFR BHC-CLD-STR	On-Premise BHC-ONP-MAINT (mandatory) BHC-ONP-EDGE

Subscription information

Items are subscription-based for a period of 12 months (unless stated differently) and must be renewed before expiry.

Feature/service	Description	BHC cloud-based service https://belden.io	BHC on-premise infrastructure
SRA subscription (Secure Remote Access) per 1 gateway	<ul style="list-style-type: none"> On-demand secure access to remote assets on OT networks through ICX35-HWC, PLX35-NB2, NB1601, NB800, Virtual GW. 	BHC-CLD-SRA	BHC-CLD-SRA
PDN subscription (Persistent Data Network) per 1 site/gateway	<ul style="list-style-type: none"> Create a secure, always-on connection (Layer 2 or Layer 3) between two sites using a hardware- or software-based gateway. Includes SRA functionality 	BHC-CLD-PDN	BHC-CLD-PDN
Edge Orchestration subscription	<ul style="list-style-type: none"> Remotely deploy and manage edge applications on edge compute devices like OpEdge or Service Edge Gateway. Include SRA and PDN functionality 	BHC-CLD-EDGE	BHC-CLD-EDGE
Features with subscription (advanced features)	<ul style="list-style-type: none"> Number of projects: 25 Concurrent client connections: <ul style="list-style-type: none"> Per project: 6 Per gateway: 6 vLOTO™ Customer-defined password policy Single user, multiple orgs Single sign-on IP allow list Role-based user/device access Access based on protocol, port number and MAC ID 	(Included with paid subscription of SRA, PDN or Edge Orchestration)	(Included with paid subscription of SRA, PDN or Edge Orchestration)
Cloud data storage	Cloud data storage cumulatively utilized by features like Edge Orchestration	BHC-CLD-STR	(N/A)
Cloud data transfer	Cloud data transfer cumulatively utilized by features like SRA, PDN, Edge Orchestration. Data pool per Organization	BHC-CLD-XFR	(N/A)
On-premise only			
Installation services	<ul style="list-style-type: none"> Initial installation services for deploying BHC On-Prem in customer's environment. Includes one year of maintenance 	(N/A)	BHC-ONP-BASE
Maintenance	Annual maintenance (including minor enhancements and bug fixes)	(N/A)	BHC-ONP-MAINT

CLD for BHC Cloud Service or ONP for On-Premise deployment

Explore the essentials for free

Dive into Belden Horizon with the Free Trial, offering a no-cost opportunity to experience the core features. This option is for Secure Remote Access and includes access to a limited set of essential functionalities and allows up to 50GB of data usage on <https://belden.io>.

Ideal for becoming familiar with our service; upgrade at any time to unlock advanced features and expand data limits.

Free Trial SRA (Secure Remote Access) includes:

- Number of gateways: 2
- Number of projects: 2
- Number of users: 25
- Cloud data transfer: 50GB
- Concurrent client connections:
 - Per project: 2
 - Per gateway: 1



Note: Upon reaching the 50GB data limit, the service will be discontinued until either of the following is purchased to resume operations.

- A subscription is activated for BHC-CLD-SRA, BHC-CLD-PDN or BHC-CLD-EDGE, which also unlocks additional features (features with subscription)
- Additional data is added to extend the free trial (BHC-CLD-XFR)

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About Belden

Belden Inc. delivers complete connection solutions that unlock untold possibilities for our customers, their customers and the world. We advance ideas and technologies that enable a safer, smarter and more prosperous future. Throughout our 120+ year history we have evolved as a company, but our purpose remains – making connections. By connecting people, information and ideas, we make it possible. We are headquartered in St. Louis, USA and have manufacturing capabilities in North America, Europe, Asia and Africa.

For more information, visit us at:
belden.com

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