



frequently asked QUESTIONS

Persistent Data Network



What is PDN?

Persistent Data Network (PDN) is an application that sits atop the Belden Horizon™ platform. It is designed as a simple, secure, and managed infrastructure communications network that allows remote automation devices to communicate with each other. PDN creates an L2 network in the cloud and only works with ProSoft Technology gateways – the ICX35-HWC and PLX35-NB2. A Belden Horizon account and subscription is required before setting up a PDN network.

What is Belden Horizon?

Belden Horizon helps you make the most of the Industrial Internet of Things. It is a secure, cloud-native platform that allows you to monitor connected industrial automation devices from anywhere in the world. As more applications for the Industrial Internet of Things develop, we will add more features to the service to help you realize the full value of the IIoT in your operation.

What are the components of PDN?

There are several components to PDN:

1. Gateways (Wired and Wireless)
 - Verizon, AT&T, Orange, Deutsche Telecom, Telstra – none of these matter to PDN.
 - Wired and Wireless WAN links do not matter to PDN.
 - The encrypted data network is built on top of the used WAN links.
 - The tunnels to the EasyBridge™ are created by the gateways.
2. Security
 - All tunnels are encrypted using 256-bit AES encryption.
 - All PDN tunnels are created using a one-time password that is not shown to any user.
 - A unique one-time password is passed to each gateway and tunnel server over the encrypted communication channels managing the gateways and tunnel servers.

3. Belden Horizon
 - Belden Horizon manages the tunnel connections between the gateway and the EasyBridge™.
 - Belden Horizon creates one-time keys and sends them to the tunnel server and gateways so the gateways can create tunnels to the EasyBridge™.
4. EasyBridge™
 - This is the virtual Layer 2 switch for all gateways to create 256-bit AES-encrypted tunnels.
5. Tunnel Servers
 - There are tunnel servers in each region of the world.
 - The region can be changed from within the Project settings.
 - The tunnel servers create the EasyBridge™ when instructed to do so by Belden Horizon.

How many gateways are in a single PDN project?

The maximum number of gateways in a single PDN project is 100.

Can an organization have multiple projects?

Yes. An organization can create up to 50 PDN projects.

What are the PDN SKUs?

Part Number	Description
PSC-PDN-SITE-1Y	1-year subscription for each site
PSC-PDN-SITE-2Y	2-year subscription for each site
PSC-PDN-SITE-3Y	3-year subscription for each site
PSC-PDN-ACT	One-off Activation Fee

How does PDN licensing work?

Licensing is made of two main parts:

- Activation fee (one-off and per organization)
- 1 PDN license per site

For example: If you have 7 Water and 12 Wastewater sites and would like to buy a 1-year subscription, you will need to purchase the following:

- 1 x PSC-PDN-ACT
- 19 x PSC-PDN-SITE-1Y

After 1 year, at renewal, you will only have to pay for 19 x PSC-PDN-SITE-1Y.

You can add sites at any time. When sites are added to an existing system, the expiration date for the complete system will change. An online calculator tool is available to calculate the expiration date.

Is there a data limit?

Yes, it is the number of sites in the system multiplied by three (3) GB.

For example: If you have 37 gateways spread across three different PDN projects, the data limit will be 37 sites (gateways) x 3GB = 111GB per month.

The 3GB VPN data allowance includes 1GB per month of SRA data.

What is included in a PDN subscription?

- Multiple projects per subscription
- Ability to add sites (or gateways) at any time to the PDN subscription
- Virtual Lockout-Tagout (vLOTO)
- Advanced 2FA
- Concurrent tunneling
- SRA to the automation devices connected to the gateway
- Ability to create 2 x SRA projects with unlimited number of gateways per project
- 25 users per project
- Alarm Notification
 - You will be notified via email if the network is down or
 - If the gateway has lost its connection to the PDN network

Does Secure Remote Access (SRA) work with PDN?

Yes, SRA works with PDN.

Do vLOTO and concurrent tunneling work with PDN?

Yes.

Can an organization owner have SRA and PDN projects in the same account?

Yes. You can create up to two SRA projects in the organization. If additional SRA projects are needed, then a Power User Plan (PUP) is required.

Can a gateway be transferred between an SRA project and a PDN project and vice versa?

Yes, gateways can be transferred.

Is a PDN network outage and gateway disconnect logged as part of the activity log?

Yes.

What are the potential setup issues with PDN?

1. Network loop
 - We provide a Layer 2 network. If two gateways are linked together via their LAN ports, either directly or through a switch, there will be a loop. This is common for new users trying out PDN.
2. DLR without ETAP
 - DLR sends multicast packets every 400ns. These will cause the gateway to get bogged down and drop the WAN link (cellular and/or wired).
 - Do not connect an ICX35-HWC or PLX35-NB2 to a DLR without an ETAP.
3. Cellular Data Plan limit
 - Since a PDN network may use large amounts of data, we recommend a minimum of a 4GB per month cellular data plan. Many utility customers subscribe to unlimited cellular data plans.
 - If your data plan does not have enough data, the gateway may be disconnected by the carrier, and PDN will not work.
4. IP addressing is wrong
 - PDN is a layer 2 network. It is critical that the IP addresses are all in the same subnet and do not conflict with the ProSoft Technology gateway LAN IP addresses.

How do I know PDN is working?

Creation of the PDN network is automatic and takes place as soon as the gateway is added to the PDN project. A minimum of two gateways is required for a PDN network. A PDN icon for each of the gateways in the PDN project will turn green. Hovering over the icon reveals the status of the connection.

How do I know if the PDN is not working?

There are several indicators:

- The PDN project tile has an alert.
- The PDN icon for each gateway in the PDN project will turn gray, and hovering over its icon will reveal the status of the PDN connection.
- An entry is created in the activity feed.
- You will receive an email about the EasyBridge connection being down.

If the PDN network is down, please contact ProSoft Technical Support at support@prosoft-technology.com

What is the difference between cellular and EasyBridge data?

- Carrier Cellular Data Plan – A cellular device needs a data plan with a carrier. We offer such plans for our US customers on either AT&T or Verizon networks. These plans can be used for any purpose.
- EasyBridge Data Limits – Within the Belden Horizon PDN service, customers can use the VPN feature (EasyBridge™) to create a network between the remote sites or to connect to a remote location, directly. We limit the usage of this cloud-based VPN to a certain amount of data per gateway per month, since data transfer through the cloud requires data usage. The EasyBridge data limit is independent of the carrier service plan you have.

Differences – The EasyBridge data limit ONLY applies to the usage of the VPN service. The carrier data applies to all data that cellular devices transfers to and from the carrier network. These two values will almost never be the same for a given month.