

Configure XL

Software Version 2.18

Audience: This guide is for the person responsible for configuring XL the very first time and for making ongoing adjustments.

Purpose: Set up XL to collect data by:

- Configuring key settings (network, date and time, reasons, digital inputs, time schedule, parts)
- Printing barcodes for your application
- Configuring XL Enterprise alerts and reports (optional)

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Important User Information

XL products are not designed or intended for control applications and **MUST NOT** be used for control applications under any circumstances. There are fundamental differences in the design methodology of a control product such as a Programmable Logic Controller (PLC) and a non-control product such as an XL device. Outputs (e.g., relays) are provided for annunciation only, and **MUST NOT** be used for control purposes.

This product is designed and intended for use solely in indoor industrial applications and **MUST** be installed by a qualified electrician.

This product is designed and intended for use solely in a secure, private network environment.

It is the responsibility of all persons applying this product to a given installation and/or application to carefully review the installation and/or application to evaluate and ensure the suitability of this product for the intended application.

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SHOCK HAZARD: This product has more than one source of power. Relay outputs may be at mains potential from a secondary power source. Always disconnect power from all power sources before installing or servicing the XL device, and before opening the user access plate. Do not reapply power until the access plate has been reinstalled and securely closed. Failure to follow these precautions could result in personal injury or death due to electric shock.



ATTENTION: This product must be operated at or below Pollution Degree 2 (an environment where only non-conductive pollution occurs except for occasional and temporary conductivity caused by condensation) and Over Voltage Category II (circuits directly connected to local-level distribution).

Contact Information

Corporate Office

Address: Vorne Industries, Inc.
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Fax: +1.630.875.3609

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Sales and Support (USA and Canada)

We are available Monday through Friday from 8:00 AM to 6:00 PM CST (UTC-6:00).

Toll-Free Phone: +1.877.767.5326

Sales Email: sales@vorne.com

Support Email: support@vorne.com

Sales and Support (International)

Vorne has an extensive network of international partners. More information can be found at:
<https://www.vorne.com/about-us/xl-partners.htm>.

Network Settings

The XL platform consists of two parts:

- **XL Productivity Appliance™:** A device that monitors a manufacturing process and is viewable on a Web Page Interface, installed on the Local Area Network (LAN) with a static IP or DHCP IP address.
- **XL Enterprise:** An optional cloud-based application that provides additional services for the XL Productivity Appliance™. XL Enterprise runs on an Amazon Web Services (AWS) platform.

Users of the XL Productivity Appliance™ will need a LAN connection to configure the XL device and to access the built-in dashboards and reports. Once configured, the XL device can run without a LAN connection (this is not recommended as users will be unable to access dashboards and reports).

To take advantage of the features provided by XL Enterprise, the XL Productivity Appliance™ needs access to the Internet (and this may initially be prohibited by your network settings). We have prepared an [IT Brief](#), and we are delighted to answer any questions from your IT team. Feel free to contact us!

Step 1 – Confirm Network Settings

Contact your IT representative to review how they would like to provision LAN settings and Cloud access.

LAN Settings (Required)

Your IT representative will want to either reserve a **DHCP address** or assign a **static IP address**.

Option 1 – Reserve DHCP Address:	Option 2 – Assign a Static IP Address:
Provide your IT representative with the XL MAC address . It is printed on a white sticker on the back panel of the device, printed on a white sticker on the side of the shipping box, and will be displayed on the LED screen if no IP address is available on system start.	Ask your IT representative for an IP Address, Subnet Mask, Default Gateway, Preferred DNS Server, and Alternate DNS Server (the Alternate DNS Server is optional).
Your IT representative will provide you with an IP address you can use to access XL.	Confirm that Port 80 is open (this allows communication between XL and your browser).

Cloud Network Settings (Required for XL Enterprise)

Request that the following ports are opened:

- **Port 53** (DNS - SNTP time updates, firmware updates, and email alerts)
- **Port 123** (NTP - SNTP time updates)
- **Port 443** (HTTPS - firmware updates and email alerts)

Request that the following websites are whitelisted:

- **xl-enterprise.com** (automated firmware updates)
- **xl.vorne.com** (automated email alerts and other XL Enterprise functionality)
- **updates.xl-enterprise.com** (automated firmware updates)
- ***.vornexl.pool.ntp.org** (SNTP - you can alternatively use internal SNTP servers)

Step 2 – Verify Ethernet and 2D Barcode Scanner

Verify that the XL Device has:

- An ethernet connection to your network.
- A 2D barcode scanner installed.
- The rear access plate securely attached.

If the device does not have an ethernet connection or a 2D barcode scanner, refer to the **Install XL** guide for installation instructions.

Step 3 – Apply Power



SHOCK HAZARD: This product must be grounded. Never defeat the ground conductor or operate the product in the absence of a suitably installed ground conductor.



ATTENTION: This product is suitable for connection to a TN-S power distribution system (AC Hot and AC Neutral lines with a separate protective grounding conductor).

1. Grab a pen and paper or phone with recording capability. When the XL device powers up, it will display network address information that you will write down.
2. Apply AC main power to the XL device.
3. The scoreboard will go through a series of power-up steps. After displaying the software version, the scoreboard will either display a MAC address (left image) or an IP address (right image). **Write this address down.** If you miss this information, disconnect and reapply mains power to the XL device.



If a MAC address is displayed, go to next step: [Step 4 – Set Static IP Address](#).



If an IP address is displayed, skip to: [Step 5 – Access XL with a Browser](#).

Step 4 – Set Static IP Address (optional; networks with no DHCP)

In this step, you will use the Vorne website to generate a 2D barcode with the static IP address and other network information from [Step 1 – Confirm Network Settings](#).

SET IP

OVERVIEW

Use this page to generate a barcode that will program your desired network settings to your XL device. This barcode will only work with newer XL models (XL810, XL610, and XL410).

Enter information provided by IT in the fields below, then click the **Generate Barcode** button. Scan the **Apply New Network Settings** barcode to save the settings to your XL device. A barcode is also provided to **Show Current Network Settings** on the scoreboard.

GENERATE BARCODE

Obtain Information Automatically *
no

IP Address *
192.168.1.222

Subnet Mask *
255.255.255.252


Default Gateway
192.168.1.1

Preferred DNS Server


Alternate DNS Server

GENERATE BARCODE

Apply Settings Barcode



Show Settings barcode



1. Open your web browser and navigate to www.vorne.com/set-ip.
2. Set "Obtain Information Automatically" to **No**.
3. Input the following information provided by your IT Department:
 - Required: IP Address, Subnet Mask, Default Gateway, Preferred DNS Server.
 - Recommended: Alternate DNS Server.
4. Click Generate Barcode.
5. Print the page from your browser.
6. Scan the [Apply Settings Barcode](#) to save the network settings to your XL device.
7. Scan the [Show Settings Barcode](#) to confirm the new network settings on the scoreboard.

Step 5 – Access XL with a Browser

In this step you will confirm that you can access the XL Web Page Interface with your web browser. For the best experience with XL, we recommend using Google Chrome, Microsoft Edge, or Mozilla Firefox. Older or unsupported browsers may not provide the functionality needed by XL.

To access XL (on a computer or mobile device with the same network settings as your Vorne board), simply open a browser and type in the IP address (either the IP address copied from the scoreboard in Step 3 or the static IP address assigned in Step 4).



If the address is correct, you will see the **All Production** web page:

Asset Name ↑	Production State	Reason	Part	OEE	In Count	Good Count	Run Time	Down Time	Planned Stop Time
Chicago	Running	Running Normally	Multiple (4)	74.9%	46,002	44,479	22:19:25	3:18:09	1:14:24
Filling	Running	Running Normally	Multiple (2)	74.7%	21,852	21,140	10:58:52	1:36:51	0:36:24
Line 1	Running	Running Normally	Part M	73.0%	10,848	10,449	5:32:39	0:49:54	0:13:34
Line 2	Running	Running Normally	Part A	76.4%	11,004	10,691	5:26:12	0:46:56	0:22:50
Bottling	Running	Running Normally	Multiple (2)	75.1%	24,150	23,339	11:20:33	1:41:18	0:37:59
Line 3	Running	Running Normally	Part J	77.0%	11,814	11,434	5:39:56	0:39:15	0:16:50
Line 4	Running	Running Normally	Part I	73.3%	12,336	11,905	5:40:36	1:02:03	0:21:08

If you ever need to check your Network Settings, scan the following barcode:



[Show Current Network Settings](#)

HOW DO I ACCESS THIS WEBPAGE FROM HOME?

FAQ





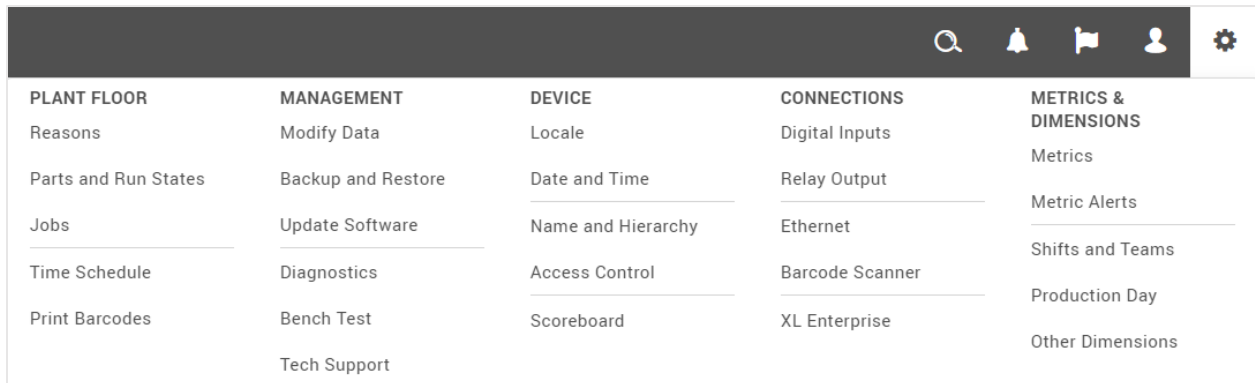
You can access this Web Page Interface through any browser that is on the same network settings as your Vorne board. See your IT Team for more information about maintaining your work network at home.

Configure (One-Time Settings)

In this section, we will configure XL for the first time on your process. Please note that there are additional configuration options that can fine-tune your deployment, and our support team will be delighted to go over these with you.

The settings menu is visible to the **Supervisor** and **Administrator** roles and is restricted at the Supervisor level:

1. Click the  **Log In** icon on the right side of the navigation bar.
2. For **Role**, select **Administrator**.
3. Input the Administrator password. (The default Administrator password is **aragorn**).
4. Click the  **Settings** icon to open the settings menu:



PLANT FLOOR	MANAGEMENT	DEVICE	CONNECTIONS	METRICS & DIMENSIONS
Reasons	Modify Data	Locale	Digital Inputs	Metrics
Parts and Run States	Backup and Restore	Date and Time	Relay Output	Metric Alerts
Jobs	Update Software	Name and Hierarchy	Ethernet	Shifts and Teams
Time Schedule	Diagnostics	Access Control	Barcode Scanner	Production Day
Print Barcodes	Bench Test	Scoreboard	XL Enterprise	Other Dimensions
	Tech Support			



HOW DO I CHANGE THE DEFAULT PASSWORDS?

Default passwords can be changed at any time by navigating to **Settings > Device > Access Control**.

FAQ



HOW DO I CREATE AN INDIVIDUAL USERSHIP?

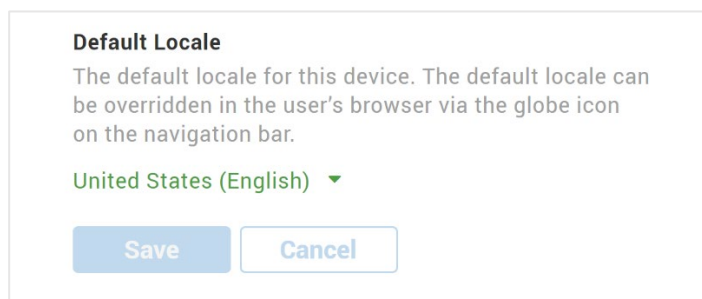
There are only role-based userships for Supervisor and Administrator in the WPI, so individual userships are not required.

FAQ

Step 1 – Set Locale


XL supports some country-specific languages and data formats. The current release includes:

- Data formatting for 32 locales.
- Web Page Interface machine-translations for twelve languages (Chinese, Dutch, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian and Spanish).
- Scoreboard message translations for eight languages (Dutch, English, French, German, Italian, Polish, Portuguese, and Spanish).



1. Navigate to **Settings > Device > Locale**.
2. Select your country (and preferred language, if applicable) from the dropdown menu.
3. Click **Save**.



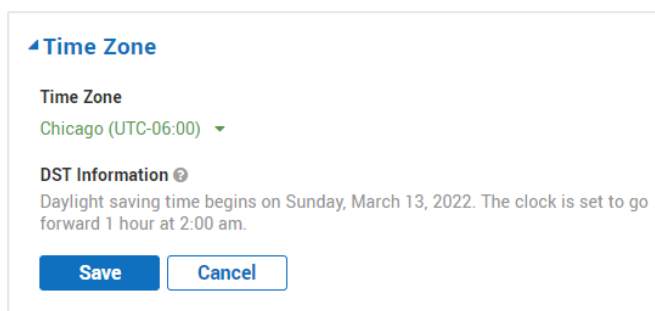
The Locale page sets the default and scoreboard language for all users. However, each user can set their own browser language by clicking on the Flag  icon on the right side of the navigation bar.

NOTE

Step 2 – Set Date and Time

Time Zone

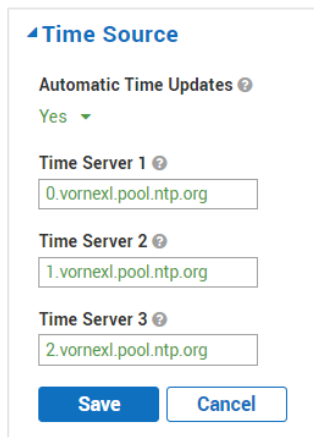
Time Zone determines the appropriate daylight-saving time rules and the UTC time offset.



1. Navigate to **Settings > Device > Date and Time**.
2. Select your time zone from the dropdown menu.
3. Click **Save**.

Time Source

We highly recommend using an SNTP server to keep XL time synchronized to a central time authority. By default, Automatic Time Updates is set to **Yes**, and XL will attempt to synchronize with our cloud-based server (this requires internet access, see [Step 1 – Confirm Network Settings](#)). Alternatively, your IT representative can provide you with the settings for a local network-accessible time server.




The screenshot shows the 'Time Source' configuration form. It has a title 'Time Source' with a back arrow. Below the title, there is a section for 'Automatic Time Updates' with a dropdown menu set to 'Yes'. There are three sections for 'Time Server 1', 'Time Server 2', and 'Time Server 3', each with a text input field containing '0.vornexl.pool.ntp.org', '1.vornexl.pool.ntp.org', and '2.vornexl.pool.ntp.org' respectively. At the bottom, there are two buttons: 'Save' and 'Cancel'.

1. Navigate to **Settings > Device > Date and Time**.
2. Obtain the internal SNTP server IP address from your IT department & input it as Time Server 1.
3. Click **Save**.

Clock

If Automatic Time Updates is set to **No**, you have the option to manually set the XL clock, either to match your computer clock or to a specific date and time. This is a one-time update, which is why we recommend using an SNTP server as described above.

To manually set the time to your computer clock:



The screenshot shows the 'Clock' configuration form. It has a title 'Clock' with a back arrow. Below the title, there is a paragraph: 'The Clock is used to set the XL device clock. However, it is recommended to configure the XL device for automatic time updates above.' There are two radio button options: 'Set the time to the computer clock' (which is selected) and 'Set the time manually: Feb 7, 2022, 3:01:17 pm'. At the bottom, there are two buttons: 'Save' and 'Cancel'.

1. Navigate to **Settings > Device > Date and Time**.
2. In the Clock form, select Set the time to the computer clock.
3. Click **Save**.

Step 3 – Configure Name and Hierarchy

Set the name of the XL device to describe the Work Center that is being monitored and configure the Hierarchy if you have more than one XL device.



Since release 2.13, the Work Center Name and Hierarchy can be controlled from XL Enterprise. You can skip this step if you plan to connect your XL Device to XL Enterprise. (Details on page 25)

TIP

Work Center Name

The Work Center Name is displayed in the navigation bar of the web page interface and should describe the Work Center being monitored (e.g., Filling Line 2).

← Name

Identifies the Work Center being monitored by this XL device.

Name ?



1. Navigate to **Settings > Device > Name and Hierarchy**.
2. In the Name form, type in the name you would like to use to identify the manufacturing process monitored by this XL device.
3. Click **Save**.

Hierarchy

The default hierarchy does not need to be edited.

The Hierarchy is especially important if you have multiple XL devices, in which case it enables you to view real-time and historical rolled-up reporting for every XL device accessible on your network. We recommend managing the Hierarchy from XL Enterprise (pg. 25) once you have multiple XL devices.




1. Navigate to **Settings > Device > Name and Hierarchy**.
2. To modify the name of the Enterprise, Site, or Area, click on the **green text**.
3. To add another Work Center, click **Add Node** and enter the IP address of the XL device.
4. To move a node within the hierarchy, use the drag handle  to move it to the desired new location.
5. To delete a node, click on the  icon that appears when hovering over the node.
6. Click **Save**.

Step 4 – Configure Digital Inputs





















Configure how XL responds to signal inputs from your manufacturing process.

Refer to the [Install XL](#) guide, **Identify Signal Requirements** section for information on where to obtain digital inputs – we recommend inputs be installed prior to configuration.



Hover over the  icon in each column to learn more about settings available for each input.

TIP

Input 	Type 	Function 	Cycle Detection 	Debounce 	Inhibit (s) 	Input Prescaler 	Reject Reason 
1	Count 	In Count 	Cycle 	Low Speed 	0.0 	1 	N/A
2	Count 	Good Count 	No 	Low Speed 	0.0 	1 	N/A

1. Navigate to **Settings > Connections > Digital Inputs**, and for each input, configure according to table below:

Column	Description
Type	Choose what type of input this will be from Count , Suspend Count and Cycle Inputs (for use with a PLC), Enable Changeover (for use with a PLC) or No Type Assigned (not in use or for Cycle Detection).
Function	If Type is Count, select one of four production counters: In Count , Good Count , Reject Count , or End of Line Count . If Type is Enable Changeover, select the changeover reason you want enabled when this input becomes active.
Cycle Detection	Set Cycle Detection to Cycle for <i>one</i> input only. XL will use this signal for calculating OEE Performance by detecting cycles, small stops, and for tracking down time. By default, this is Input 1 (In Count).
Debounce	Debounce is usually Low Speed. An input signal of faster than 50 Hz should be set to High Speed
Inhibit	Inhibit is usually 0.0 seconds. The exception is if you want to ignore subsequent inputs for a period of time after receiving a valid input (e.g., a conveyer with swinging parts).
Input Prescaler	The Input Prescaler is usually 1. The exception is any count input where one input signal does not represent one manufacturing cycle. This most commonly occurs with encoders.
Reject Reason	Only used with one or more Reject Count inputs to specify the Reject Reason for that sensor.

2. At the bottom of the page, select either **Sinking** (used for sensors with NPN outputs) or **Sourcing** (used for sensors with PNP outputs, and devices with 5V DC to 24V DC outputs). This setting affects **all** the digital inputs.
3. Click **Save**.

Step 5 – Create Shifts and Teams

XL uses two people-based dimensions:

- **Shift** (Required): a period of time in a day.
- **Team** (Optional): a quantity of personnel that exists within a Shift (or part of a shift).

Create or Modify Shifts

XL needs to be configured with the names of your Shifts. Shift properties (such as start and end times, scheduled breaks, etc) are configured in the Time Schedule ([pg 20](#)).

Shifts

Shift ID is a dimension that enables analyzing metrics by shift. Be consistent in naming shifts across XL devices so rolled-up reporting is meaningful.

Add Shift ID

Shift ID		
First Shift		
Second Shift		
Third Shift		

Save Cancel

1. Navigate to **Settings > Metrics & Dimensions > Shifts and Teams**.
2. Change the default Shift Names if desired.
3. Click **Add Shift ID**, if desired, and input new Shift name.
4. Click **Save**.

Add Teams (Optional)

Configuring Teams allows you to analyze Labor Productivity. If it is against your company policy to track labor-based metrics, do not configure Teams and select the checkbox to hide the **Analyze > Teams and Labor** page.

Teams

Team is a dimension that enables analyzing metrics by the team operating the equipment. A team might be the name of the one and only operator, the name of the lead operator, or the name of the crew.


Add Team

Team ID	Team Size		
Dave's Team	6.0		
Elizabeth's Team	4.0		
Ezekial's Team	5.0		



Save Cancel

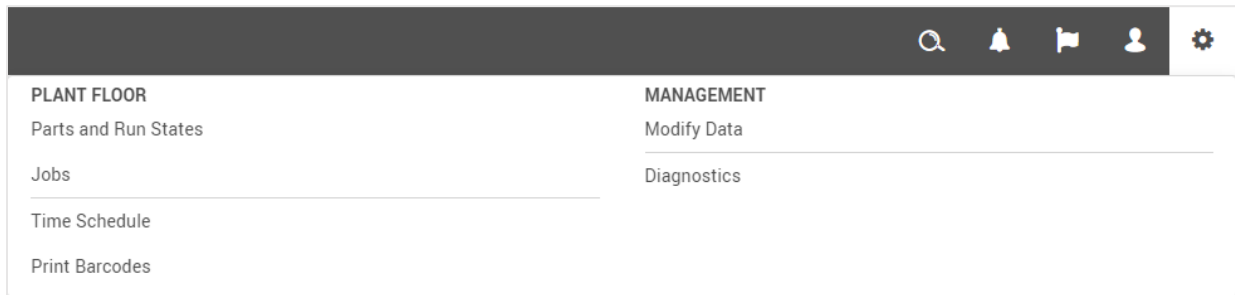
1. Navigate to **Settings > Metrics & Dimensions > Shifts and Teams**.
2. Click Add Team.
3. Input team names (we suggest the name of the crew, the crew supervisor, or an individual operator).
4. Input a Team Size (note that partial numbers are allowed to accommodate split labor models).
5. Click **Save**.

Administer (Ongoing Settings)

In this section, we will configure initial values for items that are likely to need ongoing adjustments and updates by Administrators or Supervisors: Reasons, Parts, Time Schedules, and Barcodes. These types of settings are all available in the Plant Floor column in the **Settings Menu** (available through the  icon).

Note: Access to some settings is restricted at the Supervisor Level.

1. Click the  **Log In** link on the right side of the navigation bar.
2. For Role, select **Administrator** or **Supervisor**.
3. Input the password. (The default Administrator password is **aragorn**; the default Supervisor password is **porthos**)
4. Click the  **Settings** icon to open the settings menu.



Settings Menu while logged in as Supervisor

Create Reasons

Every moment of time is assigned a duration, production state, and reason. This provides you with a consistent way to view information, perform analytics, and generate reports. XL starts with the reason and then assigns the production state and duration.

Impact	Reasons
Running	XL automatically assigns reasons for: Running Normally, Slow and/or Small Stops, Running Poor Quality, or Slow with Poor Quality.
Unplanned Stop	Unplanned Stop reasons are often called Down reasons – e.g. Breakdown, Jam, Adjustment, No Operator. Unplanned Stops with no reasons assigned will be automatically assigned Missing Reason.
Planned Stop	Planned Stop reasons are split into the production states of Changeover (normally associated with a Part change), and Maintenance (normally scanned by an operator or engineer).
Not Scheduled	Not Scheduled reasons are split into the production states of Meal/Break reasons (normally triggered by the time schedule), Meeting (normally scanned), No Production (either triggered by the time schedule, or scanned), and Not Monitored (automatically detected).

For more information about how XL analyzes production time, refer to the [Meet XL](#) guide.

Down Reasons

In most applications, Run and Down states are detected by your sensors. Down Reasons are allocated to Down time events to clarify *why* the line is Down. Your operators can scan a down Reason while the process is stopped (and XL is displaying the "Line Down" message), or after the process has restarted (while XL is displaying "Scan Last Down" on scoreboard).



While XL allows an unlimited number of down reasons, we recommend starting with no more than 25. Having a limited number of reasons makes it much more likely that operators will scan the correct reason. You can add more reasons once the operators demonstrate that they're scanning consistently and accurately.

TIP

Reason Name		
Adjustment	✓	🔒
Autonomous Maintenance	✓	🔒
Breakdown	✓	🔒
Jam	✓	🔒
No Boxes	✓	🔒
No Material	✓	🔒
No Operator	✓	🔒

1. Navigate to **Settings > Plant Floor > Reasons**.
2. Select **Down** from the dropdown menu.
3. Click **Add Reason** button.
4. Input the name of the new down reason.
5. Click **Save**.

Event Reasons

Event Reasons are split into No Production Reasons and Changeover Reasons. These reasons can be scheduled via the Time Schedule or scanned to start. If they are scanned to start, you can select how they end.

End Event Type	Definition
By Barcode	When Production: Start Production barcode is scanned. Used for any event that you want specifically ended by the operator.
By Definitely Running	When the display has a high level of certainty that your process is running. Definitely Running is configured on the Settings > Plant Floor > Parts and Run States page under the Run States tab.
By Target Time	After the specified amount of time elapses. Sometimes used for changeovers to switch into Down if the target time is exceeded
By Target Time or Definitely Running	After the specified amount of time elapses or when the process is detected as definitely running - whichever occurs first.

Changeover Reasons

Changeover reasons are allocated to planned stop events. Changeover events can be initiated by barcode scan or programmed to occur when a new Part is started.

Changeover		Add Reason					
Reason Name	Production State	End Event	Default Target	Counts			
Material Change	Changeover	By Definitely Running	None	Count as Usual			
Part Change	Changeover	By Definitely Running	None	Count as Usual			
Setup	Changeover	By Definitely Running	None	Count as Usual			

1. Navigate to **Settings > Plant Floor > Reasons**.
2. Select **Changeover** from the dropdown menu.
3. Click **Add Reason** button.
4. Input the Reason name.
5. Select how the changeover ends from the End Event dropdown list (more on previous page).
6. *Optionally*, set a Default Target Time for the changeover.
7. Select how XL will count inputs while in the changeover from the Counts dropdown list
8. Click **Save**.

No Production Reasons

No Production reasons are allocated to any time that production is not expected, such as Breaks or Meetings. No Production events can be scheduled in the Time Schedule or initiated by barcode scan.

To add No Production reasons, follow the same instructions above for adding Changeover reasons.



No Production reasons impact various metrics but do not affect the OEE calculation. For more information, refer to [Meet XL, page 8](#).

TIP

Reject Reasons

Reject Reasons are used to assign reasons to rejected parts. There are three ways to input a reject:

- **Digital input:** Configured in [Configure / Step 4 – Configure Digital Inputs](#).
- **Barcode scan:** Either with each scan inputting one reject, or by entering multiple rejects by reason. Refer to the [Print Barcodes](#) section.
- **API input:** Our Technical Support team is delighted to answer any questions about the API.

In all cases, there is always an associated reject reason. By default, this reason is **Reject**. It is also easy to configure additional reasons for your application.

To create additional reject reasons:

1. Navigate to **Settings > Plant Floor > Reasons > Reject Reasons**.
2. Click **Add Reason** button.
3. Input the names for your new reject reasons.
4. When you have input all reasons, click **Save**.

Create Parts

The Parts page is where you define settings for each part produced by your manufacturing process.

Part ID	Alternate Part ID	Ideal Cycle Time	Takt Time	Target Labor per Piece	Down	Count Multipliers	Start with Changeover
Bag of Coffee		0h 0m 1.000s	0h 0m 1.000s	0h 0m 1.000s	0h 0m 6s	1, 1, 1, 1, 1, 1, 1, 1	Yes (Part Change; 0h 1m 0s; By Target Time)

Buttons: Add Part, Export, Import and Replace, Save, Cancel

Available Part Settings:

Part Setting	Description
Part ID	The name of this Part. You can alternatively input a barcode number to start this Part using an existing barcode (enable on the Settings > Connections > Barcode Scanner page).
Alternate Part ID	Typically used for matching to your existing barcodes for this part (enable on the Settings > Connections > Barcode Scanner page) or for ERP integration. This field is not natively stored in historical data. (optional)
Ideal Cycle Time	The theoretical fastest possible time to complete one manufacturing cycle. Ideal Cycle Time is used to calculate Performance and OEE metrics.
Takt Time	The expected pace of production (including all losses). It drives the Target Counter including Target Count and Efficiency metrics. It's usually easiest to input manufacturing time and expected pieces and let XL calculate Takt Time.
Target Labor per Piece	The expected amount of labor time to manufacture one piece, used to calculate Earned Labor and Labor Efficiency. It is usually easiest to input Manufacturing Time, number of Operators, and expected pieces and let XL calculate. (optional)
Down	The length of time after a cycle before the manufacturing process is categorized as Down.
Count Multipliers	The number of pieces per input signal. For most applications this will be 1.
Start with Changeover	The Changeover settings that will be activated when the part is started (including changeover reason, target time, and how the changeover is ended).

Option 1: Manually Input Parts

1. Navigate to **Settings > Plant Floor > Parts and Run States**.
2. Click on the **Parts** tab.
3. Click on the **Add Part** button and input your Part settings.
4. Click **Save**.

Option 2: Import Parts using Microsoft Excel

Export the parts table template, make edits, and then import it.

1. Navigate to **Settings > Plant Floor > Parts and Run States**.
2. Click on the **Export** button. (The part data downloads as a Microsoft Excel file.)
3. In Excel, add new parts or edit existing parts.
4. Save the edited file.
5. Click on the **Import and Replace** button and select the edited Microsoft Excel file.
6. Correct any errors to save. (Any data errors will be indicated in the parts table with a red underline.)
7. Click **Save**.

Option 3: Use the XL API

Contact our Support Team to discuss the XL API.

Configure Time Schedule

The Time Schedule enables XL to automatically identify Not Scheduled time (time where production is not expected). Typically, this includes all time outside of shifts and time for breaks within shifts. Define your regularly repeating weekly or biweekly schedule, and optionally create multiple schedules for future use.



The easiest way to set up a schedule is to configure one day (e.g., Monday), [copy it to other days](#), and then make any further changes as needed. Modify the Default Schedule or create your own with the principles below.

TIP

Edit or Create Schedule

Schedule Name	Recurrence
Default Schedule	1 Week
Empty Schedule	1 Week 2 Weeks

1. Navigate to **Settings > Plant Floor > Time Schedule**.
2. Click **Schedule dropdown** ▼ and select Edit List of Schedules.
3. Click **Add Item** to create a new schedule (or choose to edit default schedule).
4. Input or edit Schedule Name.
5. Select **1 Week** or **2 Weeks** from Recurrence column.
6. Click **Save**.

Delete Shifts in Schedule

The default schedule consists of three shifts per day. If you normally operate with three shifts, skip this step.

DAY 2 (Monday)
Starts Sun at 11:00 pm

THIRD SHIFT
11:00 pm to 7:00 am (8h 0m)

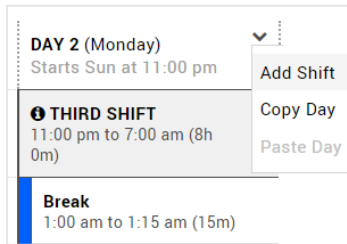
Break
1:00 am to 1:15 am (15m)

Lunch

1. On the first Production Day, click the **Shift dropdown** ▼ and select **Delete Shift**.
2. Repeat for any applicable shifts within the day.
3. Click **Save**.

Add Shifts in Schedule

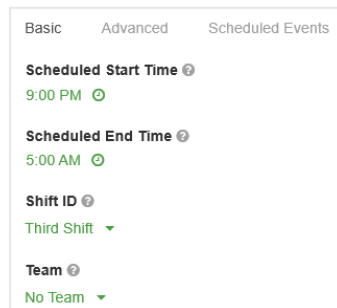
The default schedule consists of three shifts per day. If you normally operate with three shifts, skip this step.



1. Click the **Day dropdown** ▼ and select **Add Shift**.
2. Continue to Modify Shift Settings below.

Modify Shift Settings

Repeat the following for each shift to adjust the start and end times as needed.



1. Click the **Shift dropdown** ▼ and select Modify Shift.
2. Click on the Scheduled Start Time and Scheduled End Time to modify.
3. Click on **Shift ID** to modify if desired.
4. If this shift will always start with the same Team, select the appropriate **Team ID**.
5. Click **Save**.

Modify Scheduled Events in Shift

Repeat the following for *each shift* within a Production Day to match your schedule.

Start Time	End Time	Reason	
1:00 am	1:15 am	Break	✕
3:00 am	3:30 am	Lunch	✕
5:00 am	5:15 am	Break	✕

1. Click the **Shift dropdown** ▼ and select **Modify Shift**.
2. Click on the **Scheduled Events** tab.
3. To add new Events, click **Add Item**.
4. To remove Events, click the ✕ icon.
5. Click on the **Start Time** and **End Time** to modify.
6. Click on **Reason dropdown** ▼ to modify.
7. Click **Save**.

Copy to Other Days

Your first Production Day should now reflect your actual work schedule. You may copy and paste as applicable.

DAY 2 (Monday)
Starts Sun at 11:00 pm

THIRD SHIFT
11:00 pm to 7:00 am (8h 0m)

▼
Add Shift
Copy Day
Paste Day

DAY 3 (Tuesday)
Starts Mon at 11:00 pm

THIRD SHIFT
11:00 pm to 7:00 am (8h 0m)

▼
Add Shift
Copy Day
Paste Day

1. Click the ▼ dropdown in the first Production Day (e.g. Monday) and select **Copy Day**.
2. Click the ▼ dropdown next to each remaining workdays and select **Paste Day**.
3. Click **Save** at the bottom of the page.



Follow the instructions in the **Modify Shift Settings** and **Modify Scheduled Events** sections above for each workday as needed to match your actual work schedule.

TIP

Calendar Tab

The Calendar tab shows the schedule as it appears for each week. You can configure one-time modifications in this tab.

1. Click the ▼ dropdown next to a day to **Make Day Not Scheduled** or to **Add Shift**.
2. Click the ▼ dropdown next to a shift to **Modify Shift** or **Delete Shift**.

Exceptions Tab

The **Exceptions** tab makes it easy to add exceptions and to see modifications in the schedule (and to undo any modifications).

Print Barcodes

Barcodes are used by Operators to give further context about what is happening on the floor or to initiate events on your production line. Barcodes are generated in the WPI and printed for Operators.

General Barcodes

Located under the **Settings > Plant Floor > Print Barcodes** page, **General** tab, you can print the following types of barcodes:

Barcode Type	Description
Down	Assigns the down reason to the most recent down event (including the current down event).
Event	Begins a production state with scanned reason. Used to start unscheduled stops (e.g. meetings, cleaning, breaks). Breaks and Meetings can be scheduled in Settings > Plant Floor > Time Schedule , and some Changeovers can be associated with Part changes as configured on the Settings > Plant Floor > Parts and Run States page.
Part	Starts a part run (and associated changeover, if configured). As an alternative to printing these barcodes, some companies use a barcode that already exists on a product or work order document (see Frequently Asked Questions for more information).
Production	The Start New Down Event barcode allows a down event to be split into multiple segments. The Start Production barcode disables every process state and forces XL to automatically detect Running or Down.
Reject	Each Reject Reason barcode will increment the rejects per reason by 1. Used in applications where Operators are manually detecting reject pieces. If your process can detect rejects automatically, these reject reasons can be assigned using digital inputs on the Settings > Connections > Digital Inputs page.
Shift	Start or end shifts. Most companies use the time schedule to automate shift start and end time. If you're using the time schedule, you probably don't want to print these barcodes.
System	Provides additional features such as displaying network settings on the scoreboard and confirming that the 2D barcode scanner is correctly connected.
Team	Start and end Teams (if configured). Teams are used to track headcount.



CAN I USE MY BARCODES ON MULTIPLE LINES?

FAQ

Each Vorne board has its own logic board to be configured, but as long as the configurations are identical, barcodes can be used across multiple machines.



DO I HAVE TO REPRINT BARCODES IF I MAKE CHANGES?

FAQ

You must reprint a specific barcode if you make changes to the **ID/name** of the associated Part, Reason, Reject Reason, Team, or Shift (Part barcodes only need to be reprinted if the Part ID is changed; you can change other settings without reprinting Part barcodes).

Job barcodes need to be reprinted if the Job ID, Part ID or Goal changes.



Operators only have access to barcodes that are printed. Do not feel the need to print every barcode, which would likely confuse them.

TIP

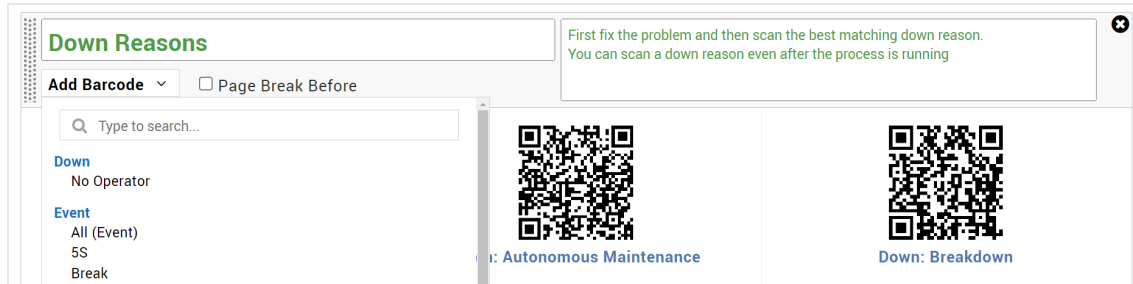
Organize and Print General Barcode Sheets




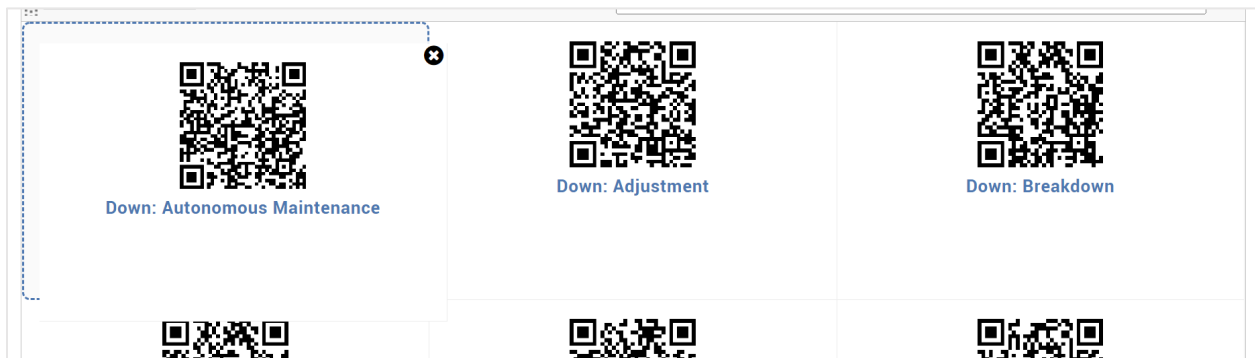
When printing barcodes, we recommend printing one Barcode Type (e.g., Down reasons) per page so operators don't get confused about their functionality.

TIP

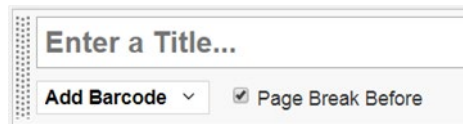
To print **General** barcodes:



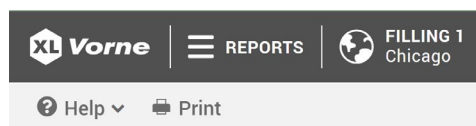
1. Navigate to **Settings > Plant Floor > Print Barcodes**.
2. Click on the **General** tab.
3. Input a title for the group of barcodes such as "Down Reasons".
4. Add simple instructions that will be helpful to your operators (e.g., "First fix the problem and then scan the best matching down reason. You can scan a down reason even after the process is running.")
5. Click the **Add Barcode** dropdown and click **All** or select **individual barcodes** for the Down group.
6. Delete unneeded barcodes by clicking the  icon that shows when hovering over the barcode.
7. Arrange barcodes in the group by dragging them with your mouse.



8. Create additional barcode groups as needed.
9. To force a barcode group to a new sheet, check the **Page Break Before** check box.



10. To open a preview page, click the **Print** button in the command bar (just below the navigation bar).



11. To print the barcode sheets, click the **Print** button in the upper right corner of print preview page.

Print Numeric Entry Barcodes

Numeric entry barcodes allow users to scan one or more digits to form a number. These barcodes are used to input multiple rejects with an assigned reject reason code.

1. Navigate to **Settings > Plant Floor > Print Barcodes**.
2. Click on the **Numeric Entry** tab.
3. To open a preview page, click the **Print** button in the command bar (just below the navigation bar).
4. To print the barcode sheets, click the **Print** button in the upper right corner.



To use Numeric barcodes on the floor, scan one or more digits to form a number. Then, scan the barcode (e.g., a reject reason) two times (first to select, second to confirm). Scan "Cancel" at any time. For example: <2> <5> <Reject: Cap Missing> <Reject: Cap Missing> will create 25 Cap Missing rejects.

TIP

Export a Backup File

Now that XL has been configured, we recommend backing up your configuration.

Back Up Device

Create a backup file from your XL device. You can backup everything (production data and configuration) or just configuration.

Back Up Everything

Back Up Configuration

1. Navigate to **Settings > Management > Backup and Restore**.
2. Click Back Up Configuration.
3. Save the file to your computer.



We recommend regularly backing up your machine to protect historical data in the unlikely event of machine malfunction. To do this, simply click the "Back Up Everything" button.

TIP

XL Enterprise

XL Enterprise is an optional resource that requires additional configuration on a website (xl.vorne.com) outside of the WPI used in the beginning of this manual.

XL Enterprise currently provides the following free services:

- **Organization Hierarchy** (centrally manage the hierarchy for multiple devices).
- **Email Alerts** (real-time email alerts based on metrics, targets, and production states).
- **Shift Reports** (four built-in reports with options to modify).
- **Updates** (software updates delivered to XL devices and ready to install at a time of your choosing).
- **SNTP** (time server synchronization – you can optionally specify internal SNTP addresses).



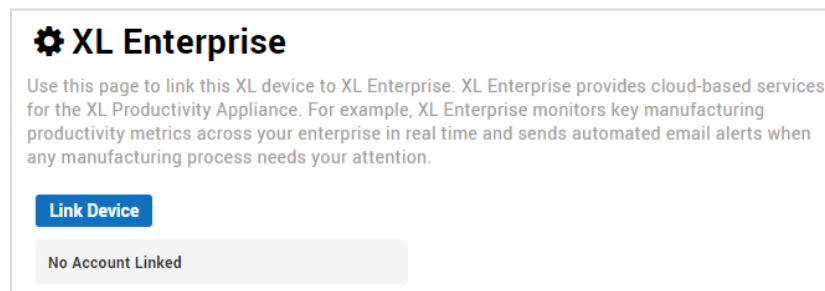
XL Enterprise is a cloud-based application hosted on Amazon Web Services (AWS) using data centers located in the USA. Communication between XL and XL Enterprise uses token authentication and HTTPS communication protocol. XL Enterprise Email Alerts retrieves metrics associated with the current production to create an alert but doesn't store that data – i.e. there is no historical data storage on the XL Enterprise cloud server.

IT NOTE

Step 1 – Confirm Internet Connectivity

The XL Productivity Appliance™ needs an Internet connection to the cloud-based XL Enterprise application. To determine if your XL device can connect to XL Enterprise:

1. Log in as Administrator and navigate to **Settings > Connections > XL Enterprise**.
2. Click **Link Device** and proceed to [Step 2 – Create Organization](#).



3. If your device cannot communicate with XL Enterprise, you will see a Failed Connection notice:

Unable To Connect

Unable to check if device is linked to XL Enterprise. Please verify with IT that the Subnet Mask, Default Gateway, and Preferred DNS Server settings are correct (navigate to Settings > Connections > Ethernet). Please also verify with IT that port 443 (HTTPS) is open and xl.vorne.com is whitelisted.

4. If you have a Failed Connection, contact your IT representative to review your network settings:



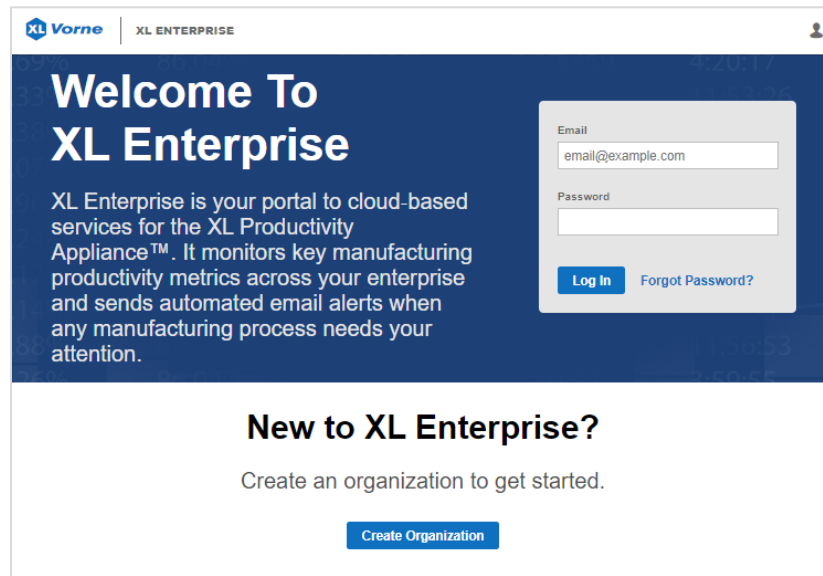
Use the instructions on [Page 5 of this guide](#) to verify:

- XL has the correct LAN settings.
- The necessary Ports are open.
- The required websites are whitelisted.

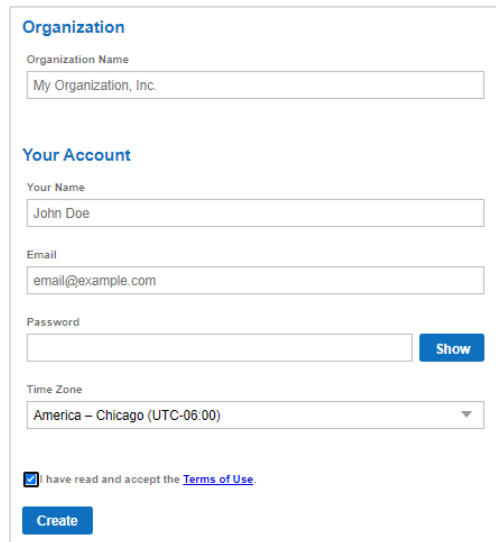
IT NOTE

Step 2 – Create XL Enterprise Organization

In XL Enterprise, an Organization is a cluster of XL devices that all share the same Alert rules.



1. When you click on **Link Device** in the XL Device ([XL Enterprise: Step 1](#)), your browser will open a new tab with the XL Enterprise home page. Alternatively, you can navigate to xl.vorne.com.
2. Click **Create Organization** at bottom of page.



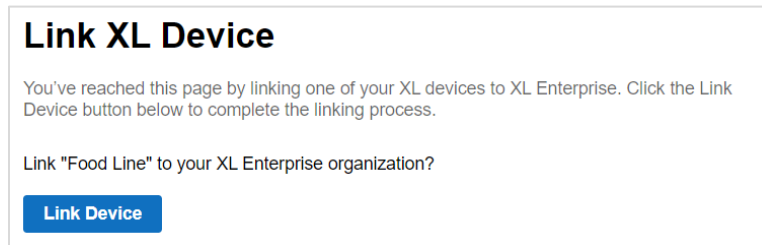
3. Enter your Organization Name, your Name, your Email Address, and Password, and select the correct time zone.
4. Click the **Terms of Use** checkbox to confirm your agreement.
5. Click **Create**.
6. Follow instructions on automatic email to validate your account before logging in to XL Enterprise.



Having just created an XL Enterprise organization, your user profile is designated as an Admin User.

TIP

Step 3 – Link First XL Device



1. Log in to your XL Enterprise Organization at xl.vorne.com.
2. XL Enterprise will immediately show the Link Device screen. Click the **Link Device** button.

Step 4 – Link Additional XL Devices

The process for linking additional devices to XL Enterprise is very similar to linking the first device.

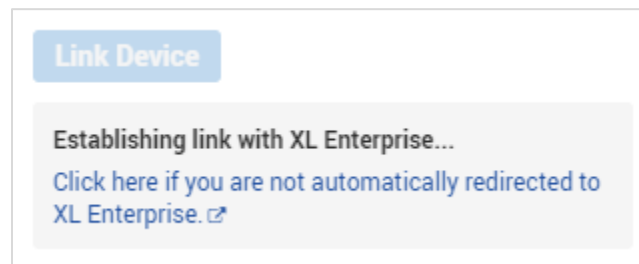


Each XL device can be linked to **only one** XL Enterprise organization.

NOTE

Because communication between the XL Display and XL Enterprise is secured using token authentication, you will need to individually link each XL Display to XL Enterprise.

1. Enter the IP address for the next Work Center and log in as Administrator.
2. Navigate to **Settings > Connections > XL Enterprise**.
3. Click **Link Device**.
4. XL Enterprise should open to the Link XL Device screen; if XL Enterprise does not open in a new browser tab, click the link provided to open XL Enterprise:




5. Click **Link Device** on XL Enterprise page.
6. Repeat steps 1 – 5 for every additional XL device that you want to connect to XL Enterprise.

Step 5 – Configure Asset Hierarchy

Devices linked to XL Enterprise are automatically added to the Asset Hierarchy. If you have XL devices that do not appear in the Asset Hierarchy, return to **Step 4 – Link Additional XL Devices**.

The screenshot displays a configuration window for the Asset Hierarchy. It features a hierarchical tree structure with three levels: 'Enterprise' (top level), 'Factory 1' (second level), and 'Area 1' (third level). Under 'Area 1', there is a device named 'Line 1'. The device details for 'Line 1' are: IP Address: 192.168.68.83, Linked: Fri May 14 2021, Last data received: A few seconds ago, and Hierarchy Visibility: Enterprise. At the bottom of the window, there are three buttons: 'Add Node', 'Save', and 'Cancel'.

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > Devices > Enterprise Hierarchy**.
3. Input your company name in Enterprise field.
4. To create a roll-up for Work Centers by Site or Area, click **Add Node**, and select either **Site** or **Area**. Enter a Site name (e.g. Factory 1) or an Area name (e.g. Area 1).
5. For each XL Device in the hierarchy:
 - Edit the default **Asset Name**.
 - Click the grab handle icon  and drag the XL Device so that it indents under the correct Site and/or Area. In the example above: The Enterprise is configured with 1 XL Device which is part of Area 1, which is part of Factory 1.
 - Click the **Hierarchy Visibility** drop down to select which other XL devices each device can access for reporting roll up.
6. Click **Save**.

Step 6 – Define Alerts

Alerts are defined by the Admin for every linked XL Device in the organization.

Metric

Add Alert

▼
<
▼

%
✕

Production State Time

Add Alert

▼
>

min.
✕

Production State Target

Add Alert

▼

min.

▼
✕

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > Plant Floor > Alert Definitions**.
3. Click **Add Alert** in appropriate category.
4. Choose relevant Metric or Production State.
5. Select an operator (e.g. <, >) if applicable.
6. Enter number value.
7. Click **Save** once you have added all desired Alerts.

Alert Types:

Alert Type	Triggered by:
Metric	Shift Efficiency, OEE, Availability, Performance, or Quality being above or below a configured threshold.
Production State Time	The currently detected production state in the XL device running longer than the configured threshold.
Production State Target	Events that have an associated Target Time. These alerts can either trigger before a target time has been reached (e.g. to alert a member of the Quality team that a changeover will be ready for inspection in 5 minutes), or if an event has exceeded the target time.



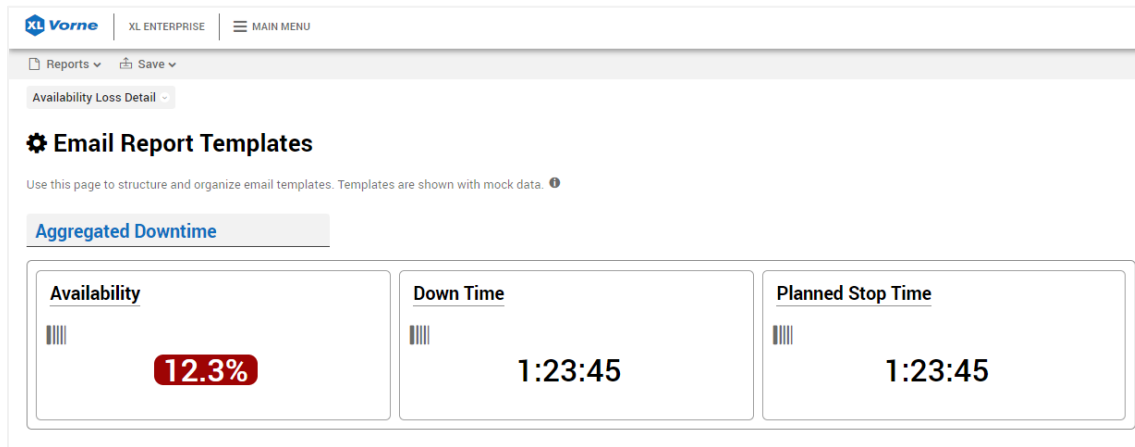
Over Target alerts will only trigger for events that are configured to end By Barcode or By Definitely Running. (see Page 16 for more information)

NOTE

Events that end by Target Time will automatically switch to Run/Down when the target time has elapsed (ending the event that has the associated target time).

Step 7 – Define Reports

There are several built-in reports Users can subscribe to, but Admins can also define custom reports. These reports will always be sent at the end of shift.



1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > Plant Floor > Email Report Templates**.
3. Click Report and then **+ New Report...**
4. Name the report.
5. Click **+ Add Widget** and select KPI, KPI Group, or Table.
6. Use controls to customize widgets.

Widget Controls:

Control	Description
Metrics	Or Columns, typically contain quantitative metrics
Dimensions	Or Rows, typically contain qualitative values; in Tables Widget, additionally used to select one of five built-in Tables.

Section Layout Controls:

Control	Description
Add Section	Inserts a new blank section beneath the currently selected section.
Move Section Up	Moves the currently selected section above the prior section.
Move Section Down	Moves the currently selected section below the next section.
Delete Section	Deletes the entire section.



Color Indicators for metric values can be configured by navigating to **Management Console > Plant Floor > Metric Thresholds** and adjusting the values in the table.

TIP

Step 8 – Add Users

Admins must invite users to the XL Enterprise platform under the created Organization. Once users are invited, they will receive an email to complete their usership and subscribe to alerts.

User Types	Abilities:
Admin	Link and unlink devices; name devices; modify hierarchy; create Alerts; create and edit End of Shift Reports & add Users
Regular Users	Subscribe to configured Alerts and End of Shift Reports for linked XL Devices

Admin Action

Add User

When you add a user they will receive an invitation email with a link to set their password. Admins manage the organization, other users, and alerts.

Name
First Last

Email
email@example.com

For log in and notifications

Role
None

Hierarchy Visibility
None

Save

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > Organization > All Users**.
3. Click the **Add User** button.
4. Enter the **Name** and **Email Address** of your new user.
5. Choose the appropriate **Role** and level of **Hierarchy Visibility** using the drop-down menus.
6. Click **Save**.



Please ensure that you have the permission of each user to enter their contact details into XL Enterprise. Every user will be asked to agree to Terms of Use for XL Enterprise when they confirm their account.

NOTE

User Action

Each User will receive an email asking them to set a password and to validate their account. Users will not receive alerts or reports until they log-in and complete their subscriptions ([Step 9 – Subscribe to Reports and Alerts](#)).

New User Setup

Use this page to create a password for your new XL Enterprise account.

Password
..... Show

I have read and accept the [Terms of Use](#).

Set Password



Since Users must subscribe to their own alerts, reports, etc (Admins may not do this for them), we recommend Admins make a list of suggested Alerts for given users based on their roles within the company.

TIP

Step 9 – Subscribe to Reports and Alerts

Subscribe to Reports

Any user (Admin or Regular) can configure XL Enterprise to automatically email reports.

🔧 Email Report Subscriptions
Use this page to add, configure, and delete email report subscriptions.

🔑 Email Report Subscriptions

Report Template	Work Centers	Reporting Period
Availability Loss Detail	ACME	Select Reporting Period (2)
Select report template...	Select work center...	<input checked="" type="checkbox"/> Every Shift <input type="checkbox"/> 1st Shift of Day <input type="checkbox"/> 2nd Shift of Day <input type="checkbox"/> 3rd Shift of Day <input type="checkbox"/> 4th Shift of Day <input type="checkbox"/> Production Day <input checked="" type="checkbox"/> Production Week <input type="checkbox"/> Month

🔑 Start of Production Week for Email Reports

Monday

Save **Cancel**

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > Subscriptions > Email Report Subscriptions**.
3. Click **Select report template...** to open drop down of available Reports and choose one.
4. Click **Select work center...** and choose desired enterprise node.
5. Click **Select reporting period...** and check box for each desired reporting period.
6. Click **Save**.
7. Optionally, change the **Start of Production Week for Email Reports** using the dropdown.



Choosing a different level of hierarchy will result in aggregated data. To view individual Work Center data, choose individual reports for each Work Center.

NOTE

Subscribe to Alerts

Alerts are sent as emails and optionally as text messages as available. (More information on [page 34](#))

Select Alerts (2)

Metric

Efficiency < 50%

OEE < 50%

Production State Time

Down > 5 min.

Down > 30 min.

Down > 60 min.

Down > 120 min.

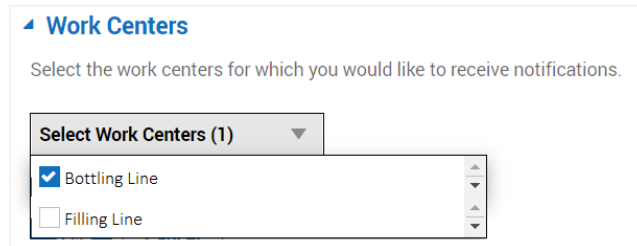
Meal/Break > 20 min.

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > Subscriptions > Alert Subscriptions**.
3. Click **Select Alerts** to open drop down of available Alerts
4. Check the checkbox to enable specific alerts you would like to receive.
5. Click **Save**.

Select Work Centers

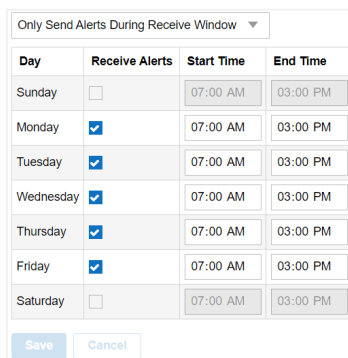
Select the work centers for which you would like to receive Alert notifications.

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > Subscriptions > Alert Subscriptions**.
3. Check the checkbox for the work centers for which you would like to receive Alerts.
4. Click **Save**.



Configure Receive Window

You can configure a receive window to establish when you would like to receive alerts. Typically, this would be set to match your regular working hours.



Day	Receive Alerts	Start Time	End Time
Sunday	<input type="checkbox"/>	07:00 AM	03:00 PM
Monday	<input checked="" type="checkbox"/>	07:00 AM	03:00 PM
Tuesday	<input checked="" type="checkbox"/>	07:00 AM	03:00 PM
Wednesday	<input checked="" type="checkbox"/>	07:00 AM	03:00 PM
Thursday	<input checked="" type="checkbox"/>	07:00 AM	03:00 PM
Friday	<input checked="" type="checkbox"/>	07:00 AM	03:00 PM
Saturday	<input type="checkbox"/>	07:00 AM	03:00 PM

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > Subscriptions > Alert Subscriptions**.
3. Check the checkbox for days you would like to receive Alerts.
4. Choose appropriate Start Time and End Time for each day.
5. Click **Save**.



If you want to turn off alerts for a period of time (e.g. because you're out of office), set the Receive Window to **Never** until you're back in the office.

TIP

Receive SMS Alerts

XL Enterprise can send mobile alerts using the mobile gateway service provided by your carrier. Not all carriers provide this service, some carriers only provide it as a premium service, and carriers may change these addresses without notifying us.

A mobile gateway combines your cellular number with an email address suffix. Here is an example:

- If your carrier is T-Mobile USA, the mobile gateway is #####@tmomail.net
- If your cellular number is **123-456-7890**
- Your mobile gateway address will be: 1234567890@tmomail.net

Mobile Gateways

XL Enterprise can send you alerts as emails or text messages. Email is preferred as it includes the most information. Text messages can be useful if you do not have a mobile-accessible company email address AND your mobile carrier supports email to text message gateways. Please note that message and data rates from your mobile carrier may apply to text messages sent to you by XL Enterprise.

XL uses email gateways provided by mobile carriers to send text messages. Not all carriers provide this service and some carriers only provide it as a premium service with additional charges. SMS gateways are preferred as the messages are often delivered faster. Locate your country and carrier below, and use the email address format to construct an email address for alerts (using your phone number in place of the # symbols).

[[International](#)] [[Australia](#)] [[Canada](#)] [[Germany](#)] [[Mexico](#)] [[New Zealand](#)] [[South Korea](#)] [[United Kingdom](#)] [[United States](#)]

▸ **International**

Carrier	Gateway Address Format	Activation Required by Carrier
Esendex	#####@echoemail.net	No
Globalstar	#####@msg.globalstarusa.com	No
Google Fi	#####@msg.fi.google.com	No
Iridium	#####@msg.iridium.com	No

▸ **Australia**

Carrier	Gateway Address Format	Activation Required by Carrier
Optus Mobile	#####@optusmobile.com.au	No
SMS Broadcast	#####@send.smsbroadcast.com.au	No
SMS Central	#####@sms.smscentral.com.au	No
SMS PUP	#####@smspup.com	No
Telstra	#####@online.telstra.com.au	No
UTBox	#####@sms.utbox.net	No

While logged into XL Enterprise:

1. Navigate to **Management Console > User > Account**.
2. In the Text-Only Email section, click on the link for [Mobile carrier gateway](#).
3. Look up your cellular provider.
4. Copy the complete text in the Gateway Address Format field. Note: If the Activation Required by Carrier field is marked Yes, you may need to contact your carrier before this service will work.
5. Press the **Back** button on your browser.
6. Click **Add Text-Only Email**.
7. Paste the copied number into the Text-Only Email field.
8. Replace the # symbols with your cellular number.
9. Click **Add Email**.

Add Text-Only Email

Enter the email address to use for text messages. This email address will include your mobile phone number and a domain specific to your mobile carrier. See [Mobile Gateways](#) for more information.

Text-Only Email

You will have to click on the link in the verification text message in order to receive Text-Only email.

Frequently Asked Questions (FAQ)

Some common questions are answered in this FAQ. For assistance implementing any of these items, please contact Vorne technical support (call +1.630.875.3600 or email support@vorne.com).

How many people can access the system?


XL has no specific limit to the number of simultaneous users that can access the web page interface. It can easily support dozens of simultaneous users. However, only one person can be logged in as an Administrator or Supervisor at any given point of time.

How does XL use Definitely Running?

XL uses a condition called Definitely Running to indicate when we have a high level of certainty that your process is running. XL uses this Definitely Running condition to end various planned and unplanned stop events (e.g. Part Changes, Shift Starts, scanned Events).


Run Detection

These settings are used by XL to automatically detect when the process is running and how well it is running. Down thresholds are configured by part on the Parts tab.

Running 

After cycle input(s)

When average speed is at least of the fastest possible speed across cycle inputs

Definitely Running 

After cycle input(s)

When average speed is at least of the fastest possible speed across cycle inputs

Definitely Running is configured on the **Settings > Plant Floor > Parts and Run States** page under the **Run States** tab.

The default settings are:

- **Running:** After 1 Cycle Input.
- **Definitely Running:** When average speed is at least 50% of the fastest possible speed across 10 cycle inputs.

Can I change scoreboard messages?

Yes. You can change the metrics that are shown while running.

Fields

The scoreboard can be configured with one or two groups of fields. Each group displays four fields of your choice. When multiple groups are configured, they automatically rotate on the scoreboard.

Rotate Fields ?
No (Recommended) ▾

First Group

Field ?	Interval ?	Label ?
Current Cycle Time ▾		Curr Cyc Time ✎
Run Time ▾	Shift ▾	Run Tm ✎
Down Time ▾	Shift ▾	Down Time ✎
Good Count ▾	Shift ▾	Actual ✎

Save Cancel

1. Log in as Administrator.
2. Navigate to **Settings > Device > Scoreboard**.
3. The **Field** column is where you select the metric you want to display.
4. The **Interval** column is where you select the time interval for which to show the metric (Shift, Part, or Hour).
5. The **Label** column is where you control the text to be shown on the scoreboard. XL automatically generates label text, however, in some instances the automatically generated label may need to be shortened.
6. To display an additional screen of metrics, change **Rotate Fields** to **Yes** to display additional metrics. This is only an option on the XL810-1.

Rotate Fields ?
Yes (Display 8 Values) ▾

7. Click **Save**.

Can I change the color thresholds for scoreboard metrics?

Yes, for normalized (i.e., percentage-based) metrics. XL uses a feature called Metric Alerts to control when metrics change color on the scoreboard and the web page interface. Metric Alerts are configured at **Settings > Metrics & Dimensions > Metric Alerts**.

⚙️ Metric Alerts

Use this page to configure the thresholds XL uses to alert you about metrics that need attention. XL automatically highlights metrics that need attention on web pages and on the scoreboard (if displayed). XL also provides pop-up notification in the web browser if configured for notifications on this page.

Value ?	Directionality ?	Critical ?	Warning ?	Caution ?	Good ?	Notification Threshold ?	Notify for Each ?
Availability	Higher Better	Below 50.0%	50.0% ✎ to 79.9%	80.0% ✎ to 89.9%	90.0% ✎ and above	Critical ▾	Shift ▾
Availability Loss	Lower Better	Above 50.0%	50.0% ✎ to 20.1%	20.0% ✎ to 10.1%	10.0% ✎ and below	No Notification ▾	Hour ▾
Cycle Loss	Lower Better	Above 50.0%	50.0% ✎ to 15.1%	15.0% ✎ to 5.1%	5.0% ✎ and below	No Notification ▾	Hour ▾
Down Loss	Lower Better	Above 50.0%	50.0% ✎ to 20.1%	20.0% ✎ to 10.1%	10.0% ✎ and below	No Notification ▾	Hour ▾
Efficiency	Higher Better	Below 75.0%	75.0% ✎ to 89.9%	90.0% ✎ to 99.9%	100.0% ✎ and above	Critical ▾	Shift ▾

Can I start down events using the 2D barcode scanner?

Yes, on the **Settings > Plant Floor > Print Barcodes** page.

The **Production: Start New Down Event** barcode immediately starts a new down event. When an operator scans this barcode, XL will immediately start a new down event. The operator can then scan a reason code to explain why the process is down. If XL is already in a down event, then the current down event will stop and a new down event will be started. XL will remain in down until it detects production or is instructed to start a different not running event (such as a changeover or not scheduled event).

The **Production: Start Production** barcode places XL into Auto Run/Down mode and will display Detecting State until either an input is received, or the Down Threshold is reached.

The **Production: Start New Down Event** and **Production: Start Production** features are also available through the API.

⚙️ Print Barcodes

GENERAL | NUMERIC ENTRY

Use this page to create and organize printable barcode pages. It's usually best to organize related barcodes in groups, each with a title and instructions for the operator.

The screenshot shows a web interface for managing barcodes. At the top, there is a title 'Manage Down Time' and a text input field for instructions. Below this is a dropdown menu labeled 'Add Barcode'. The main area contains two columns, each with a QR code and a label: 'Production: Start New Down Event' and 'Production: Start Production'.

Can I track a Job or Batch ID in addition to the Part Name?

Yes. On the **Settings > Plant Floor > Jobs** page you can configure a list of Jobs, where each Job has a unique ID and an associated Part from the Parts table, and a Job Goal. Typically, Job ID's are used by ERP systems to associate data in XL to a unique production run in the ERP system.

Jobs can either be manually entered into the table, imported as an Excel spreadsheet, or entered in real-time using the XL API.

Job ID	Part ID	Goal Count	
001	Black Olive 325g	5000	⚙️
002	Black Olive 650g	7000	⚙️

Buttons: Add Job, Export, Import and Replace, Save, Cancel

Can I use existing barcodes to start Part and Job Runs?

Yes. If you already have barcodes on your Work Order documentation or on your consumer packaging, you can use those existing barcodes to start a Part Run, start a Job, or tag the currently active Part Run with a new Job ID.

Serial Port	Baud Rate	Data Bits	Stop Bits	Parity
Port 1	9600 Baud	8 Data Bits	1 Stop Bit	No Parity
Port 2	9600 Baud	8 Data Bits	1 Stop Bit	No Parity

Unrecognized Barcode

Ignore

Match to Part ID and Start Part Run

Match to Job ID and Start Job

Tag as Job ID for Current Part Run

Scan a Barcode to Start a Part Run

To start a Part Run with an existing barcode:

1. Navigate to the **Settings > Plant Floor > Parts and Run States** page.
2. In the **Alternate Part ID** field, add your unique barcode ID for each Part.
3. Navigate to **Settings > Connections > Barcode Scanner** page.
4. Select the Unrecognized Barcode as **Match to Part ID and Start Part Run**.
5. Click **Save**.
6. Scan your barcode to immediately start that part.

Scan a Barcode to Start a Job

To start a Job with an existing barcode:

1. Navigate to the **Settings > Plant Floor > Jobs** page.
2. In the **Job ID** field, add your unique barcode ID for each Job.
3. Navigate to **Settings > Connections > Barcode Scanner** page.
4. Select the Unrecognized Barcode as **Match to Job ID and Start Job**.
5. Click **Save**.
6. Scan your barcode to immediately start that Job and associated Part.

Scan a Barcode to Tag the Current Part Run with a Job ID

To apply a Job ID to the current part run:

1. Navigate to **Settings > Connections > Barcode Scanner** page.
2. Select the Unrecognized Barcode as **Tag as Job ID for Current Part Run**.
3. Click **Save**.

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