

Configure XL

Software Version 2.20

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

Purpose: Tailor XL to your process and set XL up to collect data by:

- Configuring key settings
- 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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MULTIPLE POWER SOURCES: 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.



SHOCK HAZARD: To avoid risk of shock, always disconnect all sources of power 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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Sales and Support (USA and Canada)

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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 with different network requirements.

| XL Productivity Appliance | XL Enterprise |
|--|---|
| <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> An optional, cloud-based application that provides additional services for the XL Productivity Appliance™. XL Enterprise runs on an Amazon Web Services (AWS) platform. Read more about XL Enterprise on page 24. |

1) Contact IT to Confirm Network Settings

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: |
|---|---|
| <ul style="list-style-type: none"> 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. Your IT representative will provide you with an IP address you can use to access XL. | <p>Ask your IT representative for:</p> <ul style="list-style-type: none"> an IP Address Subnet Mask Default Gateway Preferred DNS Server Alternate DNS Server (optional) |
| <p>For either option, you must confirm that Port 80 is open (this allows communication between XL and your browser).</p> | |

Cloud Network Settings (Required for XL Enterprise)


Read more about [XL Enterprise](#) on page 24.

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)



IT BRIEF
Have further network questions? Send your IT Team the [IT Brief](#) that goes in-depth on all items covered on this page.

REFERENCE

2) Verify Ethernet and 2D Barcode Scanner

Verify that the XL Device has:

- An ethernet connection to your network.
- A 2D barcode scanner installed.
- An 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.

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.

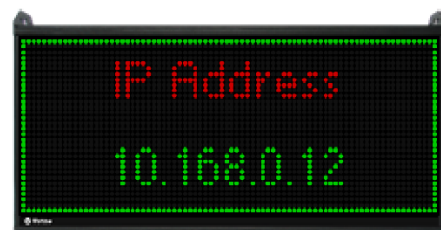


ATTENTION: This product is suitable for connection to a TN-S power distribution system (AC Hot and AC Neutral lines with a separate protective grounding conductor).

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.](#)

Note: XL810 Model is shown above; on an XL HD, this information will be seen on the OLED screen.

| Device Information | | | |
|--------------------|-----------------------|-----------------|-------------|
| Work Center | XL HD | IP Address | 0.0.0.0 |
| Software | 2.20.0.39 | Subnet Mask | 255.255.0.0 |
| MAC | 3C:E4:B0:FE:A3:B7 | Default Gateway | 0.0.0.0 |
| | 1/1/2024, 12:00:00 PM | Preferred DNS | 0.0.0.0 |

4) Set Static IP Address (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 | Recommended |
|---|--|
| <ul style="list-style-type: none"> ▪ IP Address ▪ Subnet Mask ▪ Default Gateway ▪ Preferred DNS Server. | <ul style="list-style-type: none"> ▪ 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.



The XL Display must be connected to your network via ethernet for the Set-IP barcode to work.

NOTE

5) Access XL with a Browser

XL can be accessed on any device (computer or mobile) that has the same network settings as your XL.

Open a browser (we recommend Google Chrome or Microsoft Edge), and type in the IP address.



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

| Asset Name ↑ | Production State | Reason | Part | OEE | In Count | Good Co... | Run Time | Down Ti... | Planned Sto... |
|--------------|------------------|------------------|--------------|-------|----------|------------|----------|------------|----------------|
| Enterprise | Multiple (3) | Multiple (3) | Multiple (3) | 74.5% | 23,016 | 22,221 | 11:22:52 | 1:45:54 | 0:34:05 |
| Plant 1 | Multiple (2) | Multiple (2) | Multiple (2) | 72.2% | 14,385 | 13,905 | 7:20:00 | 1:19:22 | 0:25:42 |
| Line 1 | Running | Running Normally | Part O | 70.1% | 7,260 | 7,005 | 3:41:35 | 0:43:07 | 0:13:20 |
| Line 2 | Down | Adjustment | Part M | 74.4% | 7,125 | 6,900 | 3:38:25 | 0:36:14 | 0:12:22 |
| Plant 2 | Changeover | Disinfection | Part H | 79.0% | 8,631 | 8,316 | 4:02:51 | 0:26:32 | 0:08:23 |
| Line 4 | Changeover | Disinfection | Part H | 79.0% | 8,631 | 8,316 | 4:02:51 | 0:26:32 | 0:08:23 |

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.



WHAT WEB BROWSER SHOULD I USE?

FAQ



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.

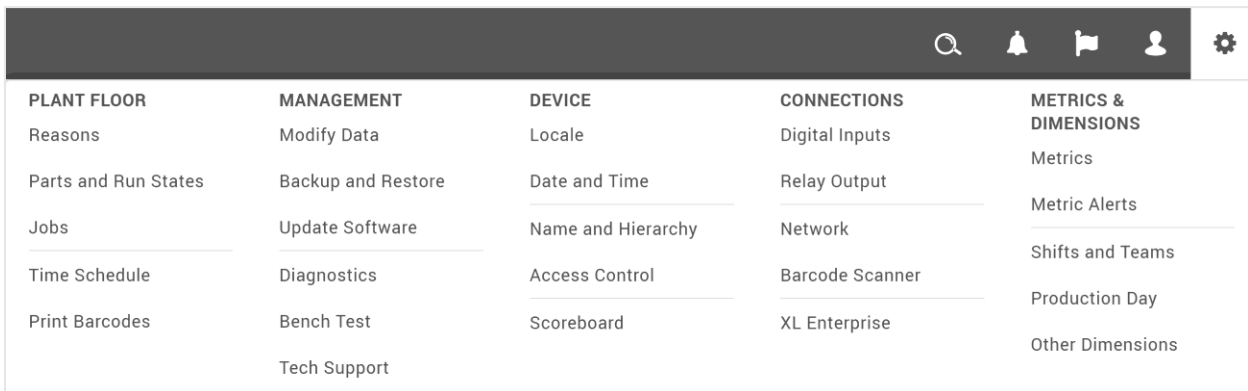
Configure (One-Time Settings)

In this section, we will tailor XL to your process for the first time by configuring the settings.

There are additional configuration options that can fine-tune your deployment after initial launch.

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 | Network | 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 > 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 or supported.

FAQ

1) Set Locale

By default, XL is set to United States (English) for language and data format but does support some country-specific alternatives.

Default Locale


The default locale for this device. The default locale can be overridden in the user's browser via the globe icon on the navigation bar.

United States (English) ▼

Save Cancel

1. Navigate to **Settings > 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

2) Set Date and Time

Time Zone

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

Time Zone

Chicago (UTC-06:00) ▼

DST Information ⓘ

Daylight saving time begins on Sunday, March 13, 2022. The clock is set to go forward 1 hour at 2:00 am.

Save Cancel

1. Navigate to **Settings > 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.

1. Navigate to **Settings > 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:

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

3) Configure Device Name and Hierarchy

Set the name of the XL device to describe the process 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 24)

TIP

Work Center Name

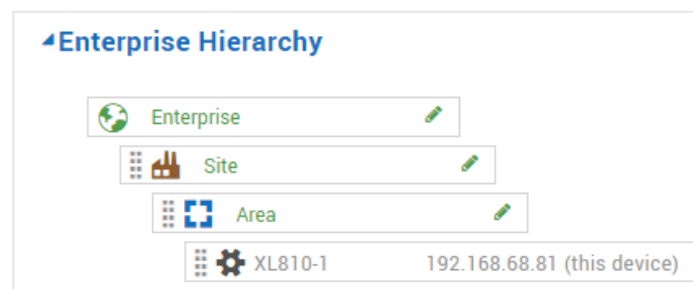
The Work Center Name is displayed in the navigation bar of the web page interface and should describe the process being monitored (e.g., Filling Line 2).



1. Navigate to **Settings > 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.

However, the Hierarchy is important if you have multiple XL devices, in which case you can view real-time and historical data rolled-up for every XL device accessible on your network. We recommend managing the Hierarchy from [XL Enterprise](#) (pg. 24) once you have multiple XL devices.



1. Navigate to **Settings > 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**.

4) Configure Digital Inputs

Configure how XL accepts and 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.

| Input ? | Type ? | Function ? | Cycle Detection ? | Active ? | Debounce ? | Inhibit ? | Input Prescaler ? | Reject Reason ? |
|---------|--------|------------|-------------------|----------|------------|------------|-------------------|-----------------|
| 1 | Count | In Count | Cycle | Low | Low Speed | No Inhibit | 1 | N/A |
| 2 | Count | Good Count | No | Low | Low Speed | No Inhibit | 1 | N/A |

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

| Column | Description |
|-----------------|---|
| Type | <p>Each digital input can be configured as one of the following:</p> <p>Counts & Cycles:</p> <ul style="list-style-type: none"> Count: Input will increment the specified Count (as specified in Function column). Cycle Only input: input will <i>not</i> increment count and will only collect cycle information. Suspend Count and Cycle Inputs: while input signal is active, all count and cycle signals will be ignored. <p>Manual Run Detection: See the Deploy XL: Manual Run Detection guide for more information.</p> <p>Production State</p> <ul style="list-style-type: none"> Changeover: consistent signal (e.g., from a PLC) at this input will result in a production state of Changeover (Reason will be specified in the Function column). No Production: consistent signal (e.g., from a PLC) at this input will result in a production state of No Production (Reason will be specified in the Function column). <p>Input Not Used: select when the input is not in use.</p> |
| Function | <ul style="list-style-type: none"> If Type is Count, select one of four production counters: In Count, Good Count, Reject Count, or End of Line Count. If Type is Production State, select the 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). |
| Active | Determines whether the input is recognized (i.e., is active) when the signal transitions to low or high. When an input recognizes two states, such as "Run + Down", the first listed is the active state. |
| 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**.

5) 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 > 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**.

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.

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.

1) Create Reasons

XL assigns every moment of time to an **impact** value, **production state**, and **reason**; impact directly affects how **metrics** are calculated. This provides a consistent way to view information, perform analytics, and generate reports. Time categorization starts with a reason which can be added by users.

| Term | Definition |
|-------------------------|---|
| Impact | Provides a top-level perspective aligned with how time affects productivity metrics. |
| Production State | Provides a standardized and uniform way for XL to describe what is happening at the manufacturing process from a "best practices" perspective. This standardization enables consistent reporting and seamless integration with third-party tools. |
| Reason | Describes time from your perspective – using terms that are familiar to your company. |

| Impact | Production States | Example Reasons | Metrics |
|----------------|-------------------|---|--|
| Run | Running | Running Normally | Used in OEE and Efficiency calculations |
| | Running Slow | Slow and/or Small Stops | |
| Unplanned Stop | Down | Missing Reason, Breakdown, Jam, No Material | Used in OEE and Efficiency calculations |
| Planned Stop | Changeover | Changeover, Part Change | Used in OEE calculations (NOT in Efficiency; Target Count does not increment during Planned Stops) |
| | Maintenance | Cleaning, 5S, General Maintenance | |
| Not Scheduled | Meal/Break | Break, Lunch | Does not affect OEE |
| | Meeting | Shift Handover | |
| | No Production | Optional Shift Scheduled, Shift Ended Early | |
| | Not Monitored | Powered Off, Upgrading | |

Down Reasons

- In most applications, Run and Down states are detected by your sensors.
- Down Reasons are assigned to Down events to clarify *why* the line is Down; they do not *initiate* a Down event.
- 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).

Down

Show archived reasons

| Reason Name | | |
|-------------|---|---|
| Breakdown | ✓ | ✕ |
| Jam | ✓ | ✕ |
| No Boxes | ✓ | ✕ |

1. Navigate to **Settings > 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**.



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

Event Reasons

- Event Reasons are split into No Production Reasons and Planned Stop Reasons.
- These reasons can be scheduled via the Time Schedule or scanned to start.
- If No Production or Planned Stop reasons are initiated by barcode scan, you can select how they end:

| End Event Type | Definition |
|---|---|
| By Barcode | <ul style="list-style-type: none"> ▪ Ends when Production: Start Production barcode is scanned. ▪ Used for any event that you want specifically ended by the operator. |
| By Definitely Running | <ul style="list-style-type: none"> ▪ Ends event when the display has a high level of certainty that your process is running. ▪ Definitely Running parameter is configured on the Settings > Plant Floor > Parts and Run States page under the Run States tab. |
| By Target Time | <ul style="list-style-type: none"> ▪ Ends event 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 | <ul style="list-style-type: none"> ▪ Ends event after the specified amount of time elapses or when the process is detected as definitely running - whichever occurs first. |



Target and End Event settings programmed on the Reasons page only apply to events initiated by barcode, not used in the Time Schedule.

NOTE

Planned Stop Reasons

- Planned Stop reasons include both Changeover and Maintenance and can be scanned to start or scheduled to start and end via the Time Schedule.
- Changeover events can be initiated by barcode scan or programmed to occur when a new Part is started.

| Reason Name | Production State | End Event | Default Target | Counts |
|-------------|------------------|-----------------------|----------------|----------------|
| Changeover | Changeover | By Definitely Running | None | Count as Usual |
| Part Change | Changeover | By Definitely Running | None | Count as Usual |

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



We recommend creating new reasons rather than overwriting defaults for the best functionality.

TIP

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 Planned Stop reasons.



No Production reasons impact various metrics but do not affect the OEE calculation. For more information, refer to [page 15](#).

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.

By default, this reason is generic **Reject**. To create *additional* reject reasons:

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

2) 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) |

Available Part Settings:

| Part Setting | Description |
|--|---|
| Part ID | The name of this Part. Limit 24 characters. |
| Alternate Part ID <i>Optional</i> | Used with integration (to ERP or non-XL barcodes) and not stored in historical data. See FAQs for more information (optional) |
| Ideal Cycle Time (ICT) | The theoretical fastest possible time to complete one manufacturing cycle. ICT is used to calculate Performance and OEE metrics. Do not include any losses when calculating ICT. |
| Takt Time | The expected pace of production (including all losses). It drives the Target and Efficiency metrics. It's usually easiest to input manufacturing time and expected pieces and let XL calculate Takt Time. |
| Target Labor per Piece <i>Optional</i> | The expected amount of labor time to manufacture one piece, used to calculate Earned Labor and Labor Efficiency. (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 or cycle. For most applications this will be 1. |
| Start with Changeover <i>Optional</i> | 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 > Parts and Run States**.
2. Click on the **Add Part** button and input your Part settings.
3. Click **Save**.

Note: The [easiest way to calculate Takt Time](#) is to think of your expected rate per minute or rate per hour and use the built-in calculators to help convert this to a time per cycle.

Built-in calculator for determining part settings

Option 2: Import Parts using Microsoft Excel

1. Navigate to **Settings > Parts and Run States**.
2. Click on the **Export** button, so the Part table will download as a Microsoft Excel file.
3. In Microsoft 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.

3) Configure Time Schedule

The Time Schedule is used to assign 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.

Modify the Default Schedule or create your own with the principles below.

Edit or Create Schedule

1. Navigate to **Settings > 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.

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.

| Basic | | Advanced | | Scheduled Events | |
|-----------------|----------|------------------------------------|--------|------------------|--|
| Add Item | | | | | |
| Start Time | End Time | End Early | Reason | | |
| 1:00 am | 1:15 am | Only on "Start Production" Command | Break | | |
| 3:00 am | 3:30 am | Only on "Start Production" Command | Lunch | | |
| 5:00 am | 5:15 am | Only on "Start Production" Command | 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. Enter the event **Start Time** and **End Time** to modify.
6. Optionally, select to "End Early" if "running" or "[definitely running](#)" parameters are reached.
7. Click on **Reason dropdown** ▼ to modify.
8. Click **Save**.

Copy to Other Days

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

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

Calendar Tab

The Calendar tab shows the schedule as it appears on the calendar date. 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**, or
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 (e.g. holidays)
- see modifications in the schedule
- undo any modifications.

| Add Not Scheduled Days | | | |
|--|---------------------------|---------------------|---|
| This table shows upcoming exceptions to the schedule. You can delete or modify exceptions from here. Exceptions are created in the Calendar tab. | | | |
| Date | Exception Type | Changes to Schedule | |
| 4/11/2025 (Friday) | Delete Shift: Third Shift | Shift Deleted | ✕ |
| 5/26/2025 (Monday) | Make Day Not Scheduled | Memorial Day | ✕ |

4) Print Barcodes

Barcodes are generated in the WPI and printed for Operators to communicate with the XL display. This includes:

- Assigning Down reasons
- Starting new part runs
- Initiating changeovers

General Barcodes

Located under the **Settings > 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 an event with the specified production state and scanned reason. Used to start stops like meetings, cleaning, breaks. |
| 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 | Used in applications where Operators are manually detecting reject pieces, each Reject Reason barcode will increment the rejects per reason by 1. |
| Shift | Start or end shifts. Most companies use the time schedule to automate shift start and end time. <i>If you're using the time schedule, do not print these barcodes.</i> |
| 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).

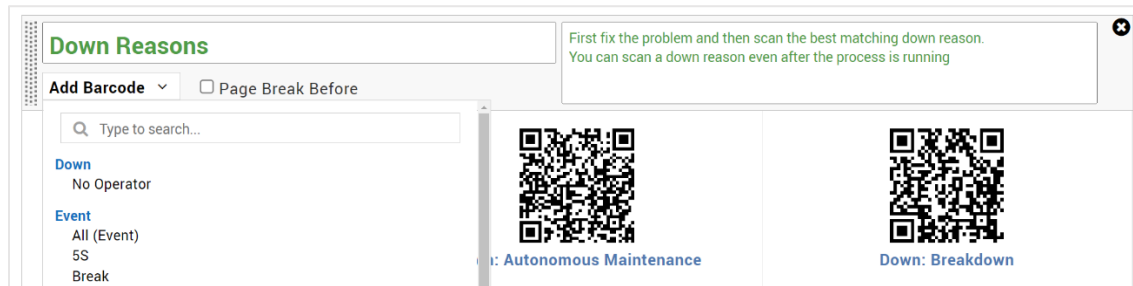
Job barcodes need to be reprinted if the Job ID, Part ID or Goal changes.




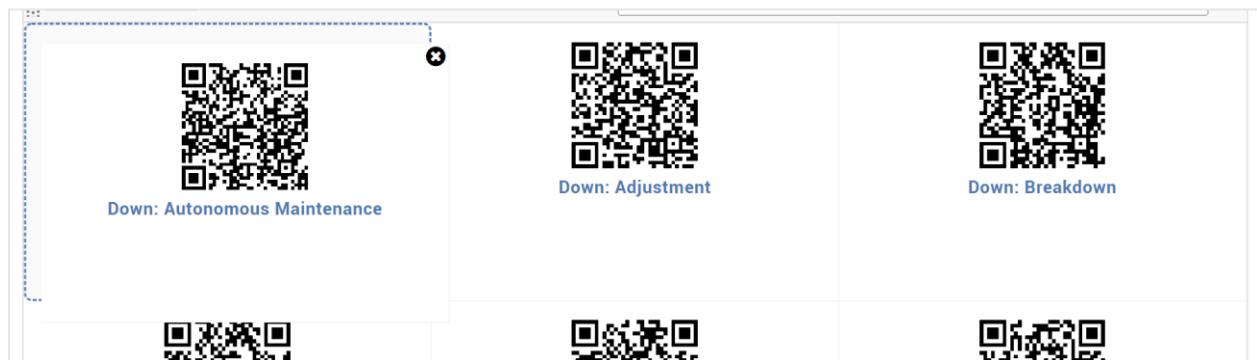
Operators only have access to barcodes that are printed. Do not feel the need to print every barcode, which would likely confuse them.

TIP

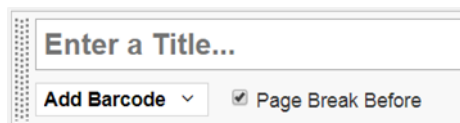
Organize and Print General Barcode Sheets



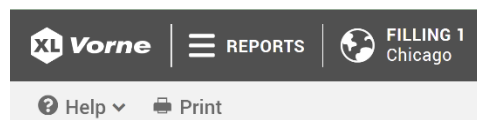
1. Navigate to **Settings > Print Barcodes**.
2. Input a title for the group of barcodes such as “Down Reasons”.
3. Add simple instructions that will be helpful to your operators.
4. Click the **Add Barcode** dropdown and click **All** or select **individual barcodes** for the Down group.
5. Delete unneeded barcodes by clicking the  icon that shows when hovering over the barcode.
6. Arrange barcodes in the group by clicking and dragging them with your mouse.



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



9. Click the **Print** button in the app bar.



10. Click the **Print** button in the upper right corner of the print preview page.



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

Print Numeric Entry Barcodes

Numeric entry barcodes allow users to scan one or more digits to form a number when inputting multiple rejects with an assigned **reject reason** code.

1. Navigate to **Settings > Print Barcodes**.
2. Click on the **Numeric Entry** tab.
3. Click the **Print** button in the app bar.
4. Click the **Print** button in the upper right corner of the preview page.



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

5) 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.

1. Navigate to **Settings > 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.



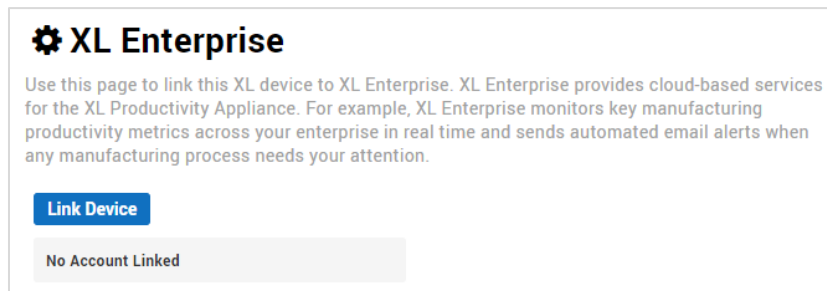
XL Enterprise is a cloud-based application hosted on Amazon Web Services (AWS) using data centers located in the USA. Communication between XL and XL Enterprise uses token authentication and HTTPS communication protocol. XL Enterprise Email Alerts retrieves metrics associated with the current production 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

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:

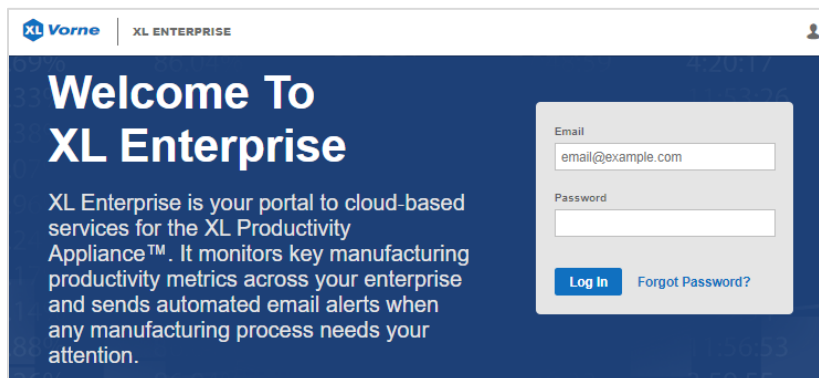
Unable To Connect

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.

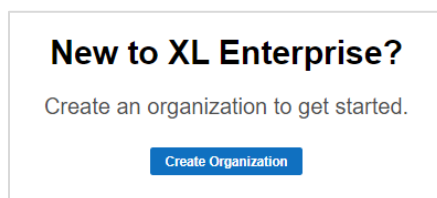
4. If you have a Failed Connection, contact your IT representative to review your [network settings](#)

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.

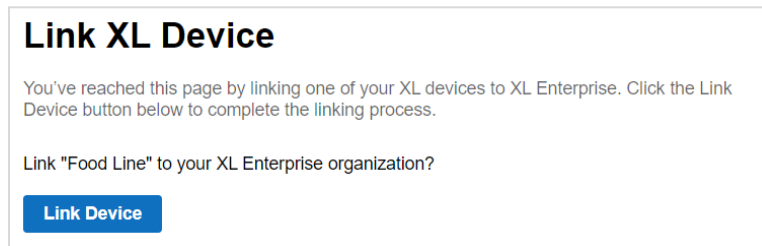
3. Enter your Organization Name, your Name, your Email Address, and Password, and select the correct time zone.
4. Click **Create**.
5. Follow instructions on automatic email to validate your account before logging in to XL Enterprise.



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

TIP

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.

4) Link Additional XL Devices

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

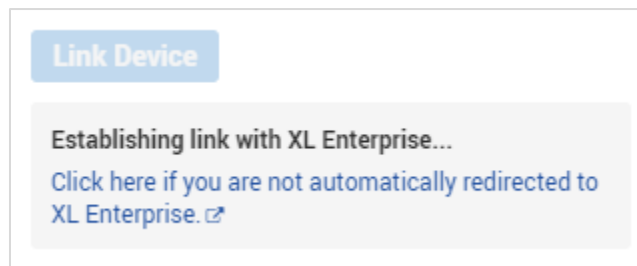


Each XL device can be linked to **only one** XL Enterprise organization.

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 > 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.

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 include: 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 > 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.
 - Click **Save**.

6) Define Alerts

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


Metric

[Add Alert](#)

OEE < 50 % 


Production State Time

[Add Alert](#)

Changeover > 15 min. 

Production State Target

[Add Alert](#)

Changeover 15 min. Over Target 

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > 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).

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.

The screenshot shows the 'Email Report Templates' configuration page in the Vorne XL Enterprise system. The page is titled 'Availability Loss Detail' and includes a 'Save' button. Below the title, there's a section for 'Aggregated Downtime' with three widgets: 'Availability' showing 12.3%, 'Down Time' showing 1:23:45, and 'Planned Stop Time' showing 1:23:45.

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Management Console > 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 > Metric Thresholds** and adjusting the values in the table.

TIP

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

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**.

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](#)).



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

9) Subscribe to Reports and Alerts

Subscribe to Reports

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

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > 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. (Read on for more)

1. Log in to your XL Enterprise organization at xl.vorne.com.
2. Navigate to **Main Menu > 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 > 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 > Alert Subscriptions**.
3. Check the checkbox for days you would like to receive Alerts.
4. Choose the 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 |
| SMSPUJP | #####@smspup.com | No |
| Telstra | #####@online.telstra.com.au | No |
| UTBox | #####@sms.utbox.net | No |

While logged into XL Enterprise:

6. Navigate to **Management Console > Account**.
7. In the Text-Only Email section, click on the link for [Mobile carrier gateway](#).
8. Look up your cellular provider.
9. 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.
10. Press the **Back** button on your browser.
11. Click **Add Text-Only Email**.
12. Paste the copied number into the Text-Only Email field.
13. Replace the # symbols with your cellular number.
14. 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 > 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 > 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.
7. Click **Save**.

Rotate Fields ?
Yes (Display 8 Values) ▾

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 > 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 ▾ |



For best results, metric alert values should be assigned consistently across all XL Displays.

TIP

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

Yes, on the **Settings > 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.

Manage Down Time

Add Barcode ▾

Enter simple instructions that describe how to use this barcode group



Production: Start New Down Event












Production: Start Production

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

Yes. On the **Settings > 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.

Add Job
Export
Import and Replace

| Job ID  | Part ID  | Goal Count  | |
|--|--|--|---|
| 001 |  Black Olive 325g ▾ | 5000  |  |
| 002 |  Black Olive 650g ▾ | 7000  |  |

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.

⚙️ Barcode Scanner

Use this page to configure the port used for connecting a barcode scanner. You can configure how XL responds to unrecognized barcodes (see the tooltip below for more information).

Ports

| 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

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

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