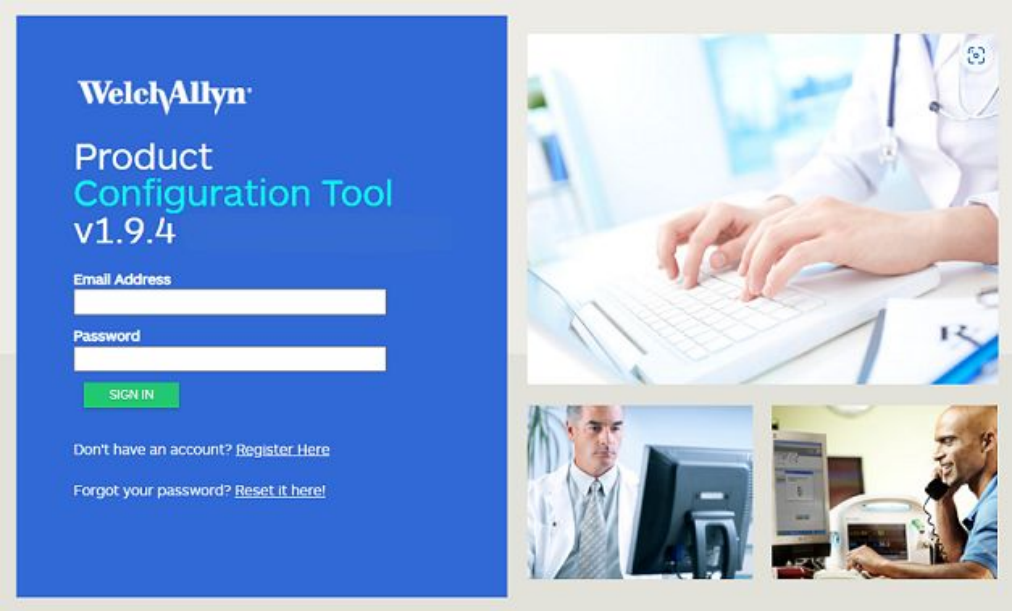
Welch Allyn Configuration Tool



Reference guide

Software version 1.9.4

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About this Reference guide

This *Reference guide* is intended to help users interact with the Configuration Tool by describing its capabilities and operation. Before using the Configuration Tool, read this manual.

Primary intended users

Primary intended users of the Configuration Tool include biomedical personnel, systems integrators, and both Welch Allyn and third-party service personnel. Secondary intended users include medically qualified, trained healthcare professionals.

System requirements

Item	Requirement description
Web browser	• Internet Explorer (version 11 or greater) • Chrome for Windows (latest version) • Firefox Quantum • IOS Safari 11
High-speed Internet connection	Broad-band Internet connection (minimum download speed 1.5 Mbps)

IT Network Security

Computers used to connect to the Configuration Tool should be set up and maintained following IEC 80001 or similar IT Network security practices. These include:

- physical security of the computer and any connected peripherals to prevent theft, tampering, unauthorized use, or unintended disclosure of private data shown on the computer screen
- individual user authentication using strong passwords and, if possible, some form of multi-factor authentication
- idle-session timeouts with either screen locking or automatic logout
- user access rights/permissions limited to those required for the user's assigned role
- timely installation of all computer and operating system vendor's security patches and updates
- anti-virus, anti-malware, and/or intrusion detection/prevention software from a trusted vendor installed and regularly updated
- periodic system backups, with regular testing of system recovery procedures
- secure network connection, either wired or wireless. Wired network connections should be physically secured and/or protected by 802.1X network access control and/or IPsec. Wireless network connections should use WPA2-PSK or WPA2- Enterprise security with strong username/password or X.509 certificate-based authentication.

Item	Requirement description
Customers should only download Configuration files directly from the Configuration Tool (secure website).	

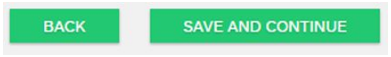
Screen elements

Global navigation

Navigation tabs

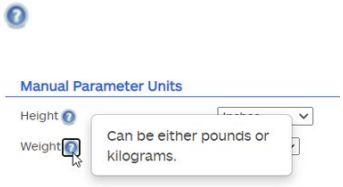
	Click the navigation tab to move to the next section on the screen. (For example, click **Select Units** to move to that section. Tabs in green or yellow are active.)
	Click the navigation tab to move to the next section on the screen. (For example, when clicking **Select Profiles** that tab appears red indicating that the section is not complete and not active yet.)

Navigation buttons

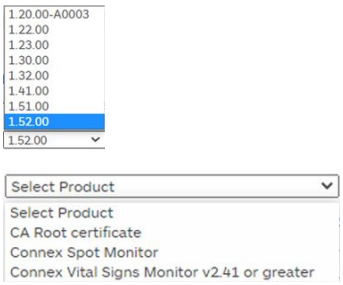
	Click global navigation buttons. (For example, click **BACK** or **SAVE AND CONTINUE**, to move to the previous or next screen.

Controls, buttons, drop down lists, and fields

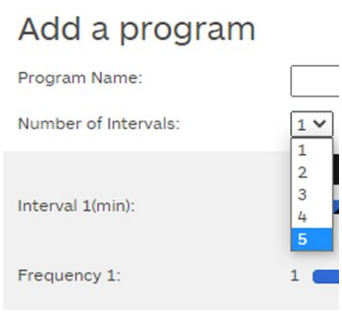
Help button

	Click **?** for on screen context-sensitive help. (Click the button to see additional information presented on the screen.)

Drop down lists

	Select an item from a drop down list. (Choices are pre-populated and the maximum number of choices appear in each list. Scroll through the list and click on the choice to select it. When selected, the choice is indicated with a highlight.)

Controls, buttons, drop down lists, and fields



Select an item from a drop down list. (Choices are pre-populated and the maximum number of choices appear in each list. For the screen example shown for **Add a program**, the maximum Number of Intervals: is "*5*".)

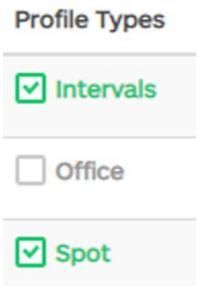
Field entry

Displays the characters you enter. The field name appears above this field. Refer to the on screen help for character limitations for entry fields. (The Configuration Tool provides messages on screen when too few or too many characters are entered in a field, or if incorrect characters are entered. Example messages: "*The name for your interval profile is invalid, it should be 1-10 characters long*." Or, "*A valid Program Name is required. It must be 1-32 characters in length*.")

Radio buttons

Click a Radio button to choose between options presented on the screen. When selected, the choice is indicated with the circle filled in.

Select box



Click a Select box to choose between options presented on the screen. When selected, the choice is indicated with the box filled in.

Lock button

Incomplete configuration. Download locked.

Sliders

Click on a parameter slider to change a parameter value presented on the screen and on a device configuration file (once loaded onto the device). When selected , the parameter value is indicated with the numeric value appearing above the

Controls, buttons, drop down lists, and fields	
	slider. (Example screen: "*75*". Lower values ["*1*"] are on the left of the scale and higher values ["*240*"] are on the right of the scale.)

Logout time

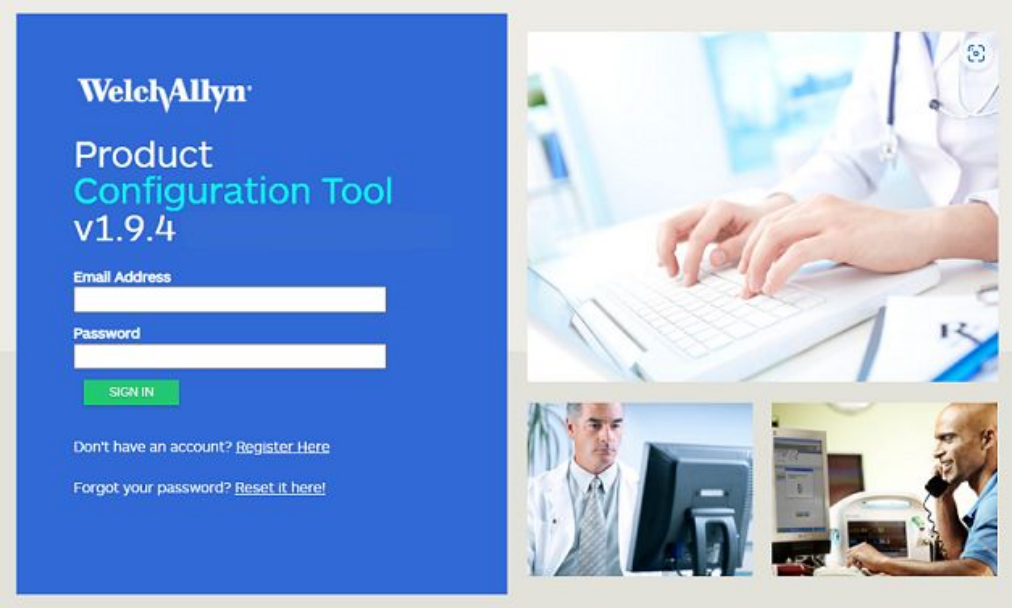
After a period of inactivity of approximately 20 minutes, log back in to the Configuration Tool.

NOTE You may need to edit a configuration file if the last transaction was not saved before log out.

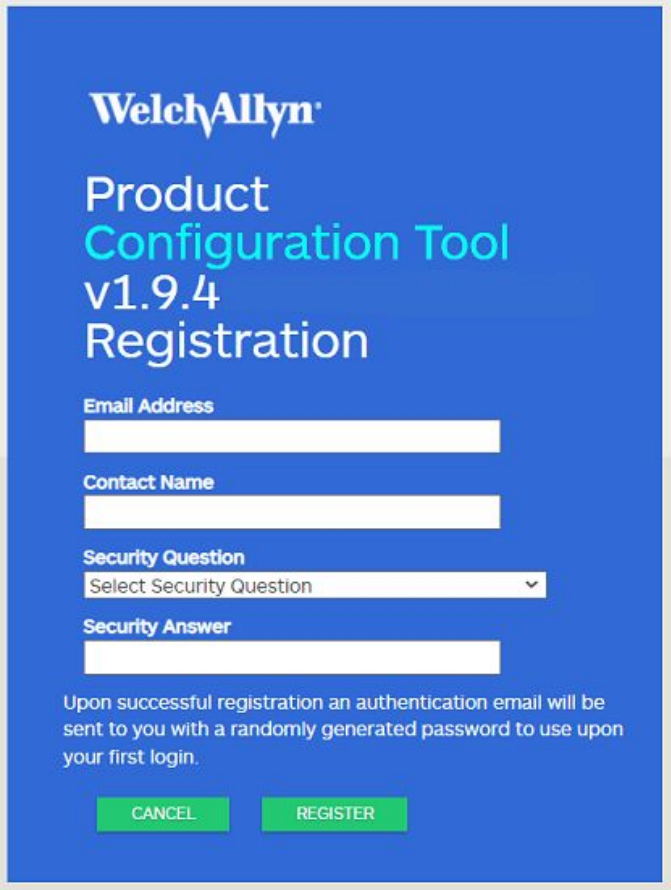
Registering the Configuration Tool

NOTE New users: Click **Register Here**. Existing users: Enter your Email Address and Password in the *Email Address* and *Password* fields of the Configuration Tool and then click **SIGN IN** .

1. Use a web browser to navigate to the Welch Allyn Configuration Tool at: https://config.welchallyn.com/configurator/.



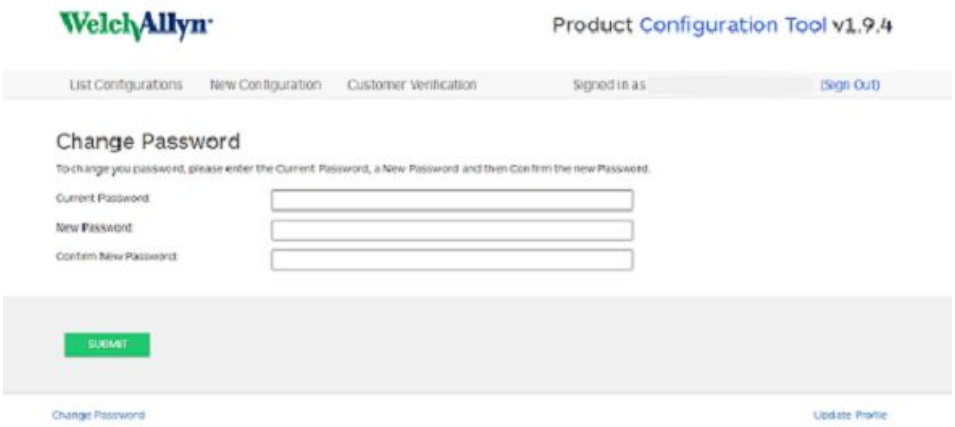
2. **New users**: If you do not have an account set up, click **Register Here** and complete the fields on the *Registration* screen.



Enter your: *Email Address* and *Contact Name*, and then select a *Security Question* from the drop down menu. Type your answer into the *Security Answer* field. When done, click **REGISTER**. The website will return you to the sign-in page once the registration is complete. The email address must be a valid email address. An email will be sent to that email address with instructions and a temporary password for an intial login. After logging in with the temporary password, you must enter a new password that will be used for future logins.

Existing users: Enter your email address and password in the *Email Address* and *Password* fields of the Configuration Tool and then click **SIGN IN**. If you do not know, or have forgotten your password, click **Reset it here!**. From the *Forgot Password* screen, enter your Email Address and then click **CONTINUE**. From the *Forgot Password* screen, answer the security question that you chose during registration. Enter a new password and confirm the password and then click **SUBMIT**.

3. To change your password, click **Change Password**. The *Change Password* screen appears. Enter your: Current Password, New Password, and then Confirm New Password. When done, click **SUBMIT**.

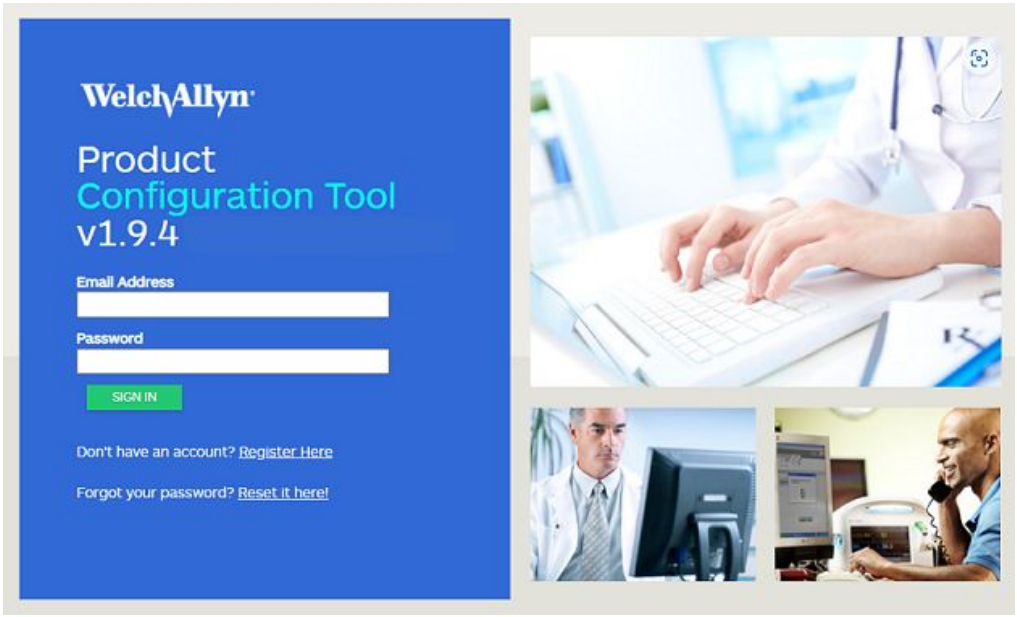


Log in to the Configuration Tool

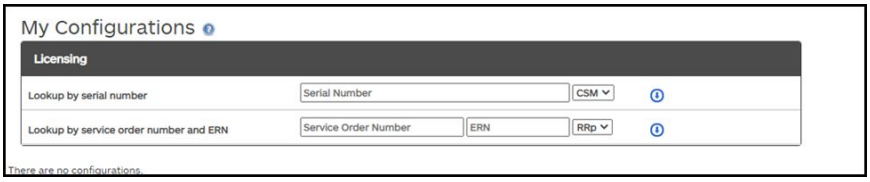
1. Log in to the Configuration Tool at this link:

   https://config.welchallyn.com/configurator/.

   Enter your Email Address and Password and click **SIGN IN**.



   The *My Configurations* screen appears.



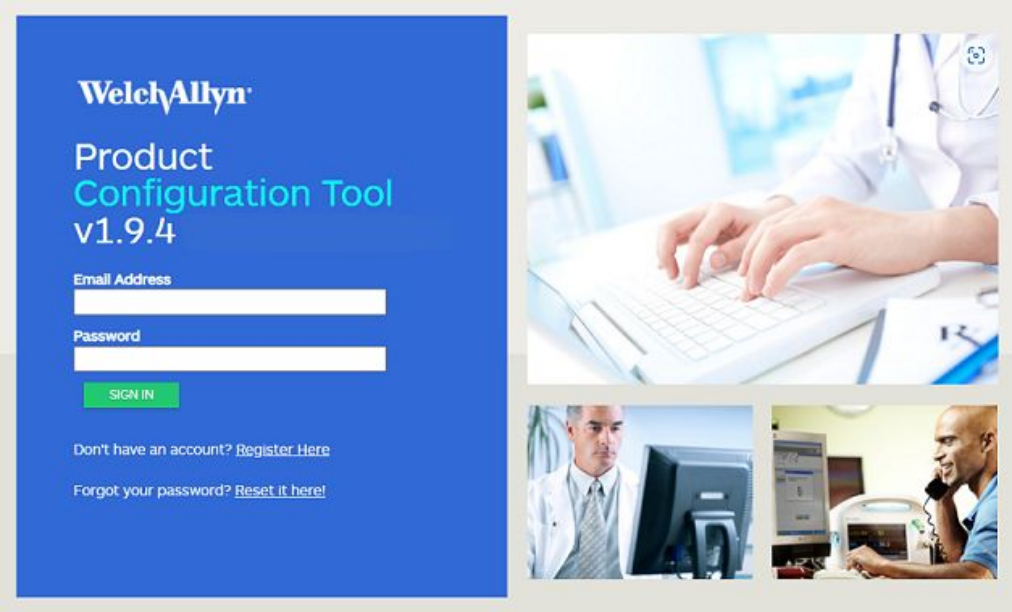
Passwords in the Configuration Tool

NOTE Passwords need to contain:

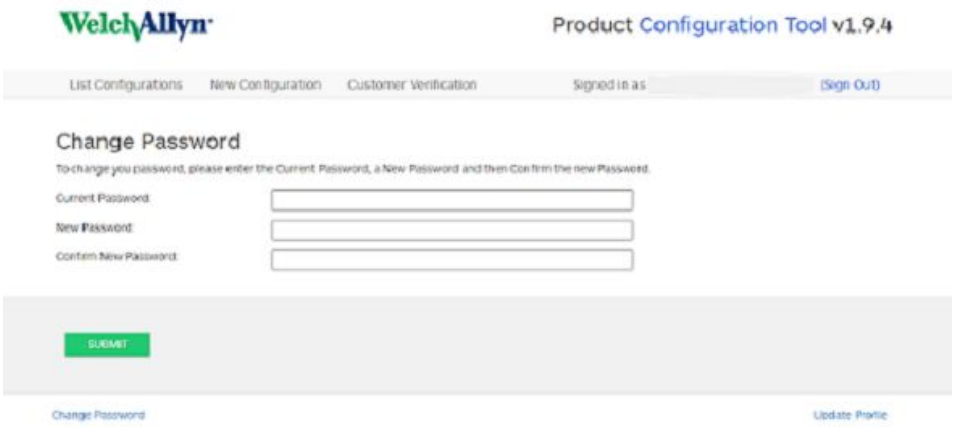
- a minimum of 8 characters
- a maximum of 20 characters
- at least 1 special character (examples include: @!#$%)
- at least 1 numeric character
- at least 1 lower case letter
- at least 1 upper case letter

NOTE New users: Click **Register Here**. Existing users: Enter your Email Address and Password and click **SIGN IN** in the *Email Address* and *Password* fields of the Configuration Tool.

1. Use a web browser to navigate to the Welch Allyn Configuration Tool at: https://config.welchallyn.com/configurator/.



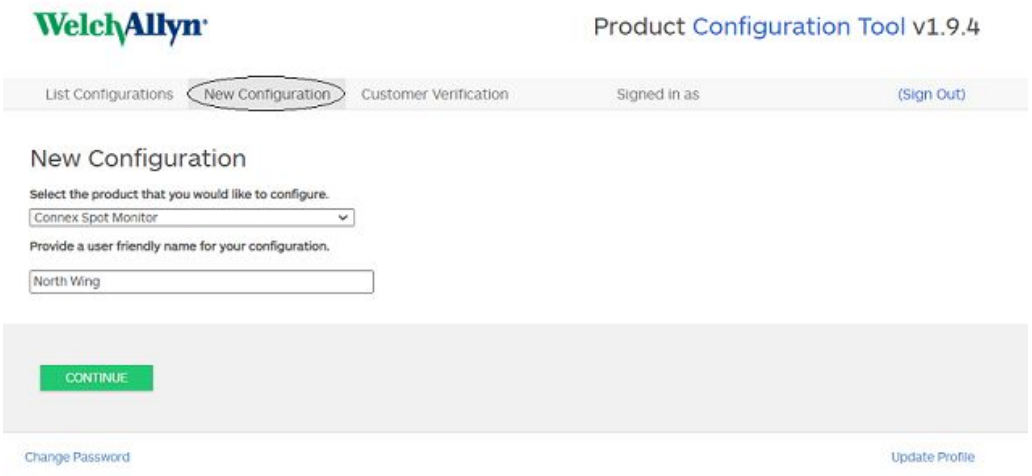
2. (Optional). To change your password, click **Change Password**. The *Change Password* screen appears. Enter your: Current Password, New Password, and then Confirm New Password. When done, click **SUBMIT**.


WelchAllyn
Product Configuration Tool v1.9.4
List Configurations
New Configuration
Customer Verification
Signed in as
(Sign Out)
Change Password
To change you password, please enter the Current Password, a New Password and then Confirm the new Password.
Current Password
New Password
Confirm New Password
SUBMIT
Change Password
Update Profile

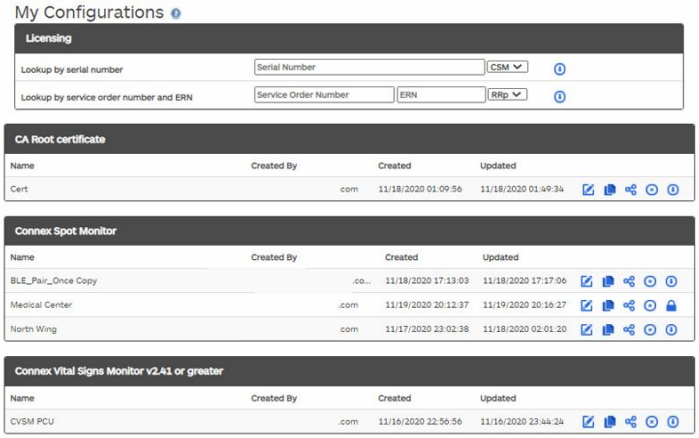
Features of the Configuration Tool

The following features are available in the Configuration Tool:

- New Configuration

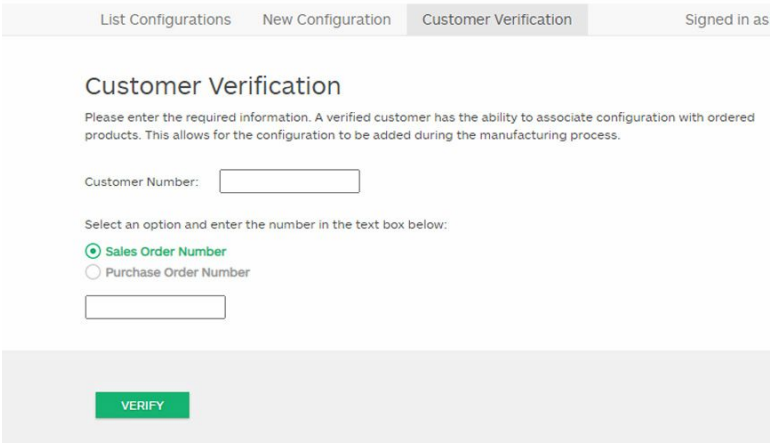


  - Select Product
  - Select Product Use Location
  - Select Custom Scoring
  - Set Custom Parameters and Modifiers
  - Data Management
  - Set Alarms
  - Add Modifiers
  - Select CA Root Certificate
- List Configurations



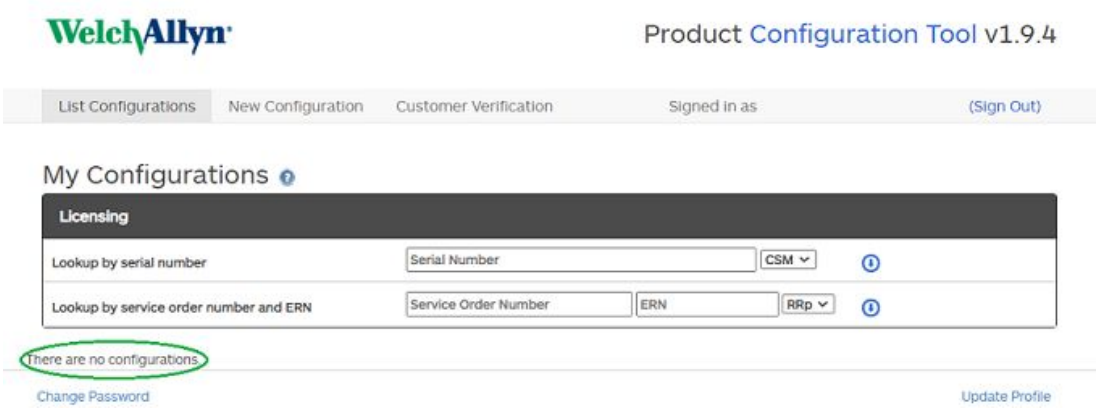
- Licensing
  - Enter sales order number for licensing
  - Look up a service order number for Respiration rate (RRp) or Bluetooth Low Energy (BLE) if those features are purchased and enabled.
    - Download the serial number or service order number.
- Select CA Root Certificate
- Edit a configuration file
- Copy a configuration file
- Share a configuration file
- Delete a configuration file.
- Download a configuration file

- Customer Verification
  - A verified customer has the ability to associate a configuration with ordered products. This allows for the configuration to be added during the manufacturing process.



Overview of List Configurations

From the *My Configurations* screen, the message appears that there are no configurations for new users.



From the *My Configurations Licensing* screen, the Licensing by product serial number appears first. Type in a serial number from the CSM device label.

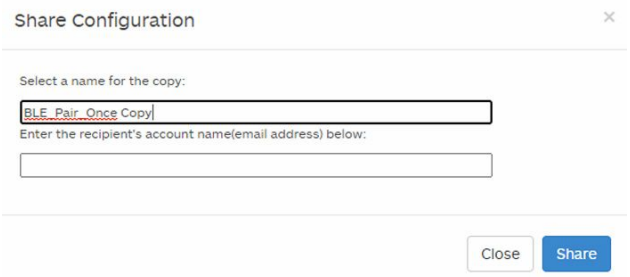
Look up a service order number for Respiration rate (RRp) or Bluetooth Low Energy (BLE) if those features are purchased and enabled. Click to download the serial number or service order number.

To view device configurations from the *My Configurations* screen, click **List Configurations**. The device configurations that have already been completed appear for existing users.

- Click to edit a configuration file.
- Click to copy a configuration file.
- Click to share a configuration file.
- Click to delete a configuration file.
- Click to download a configuration file.

Share a configuration file

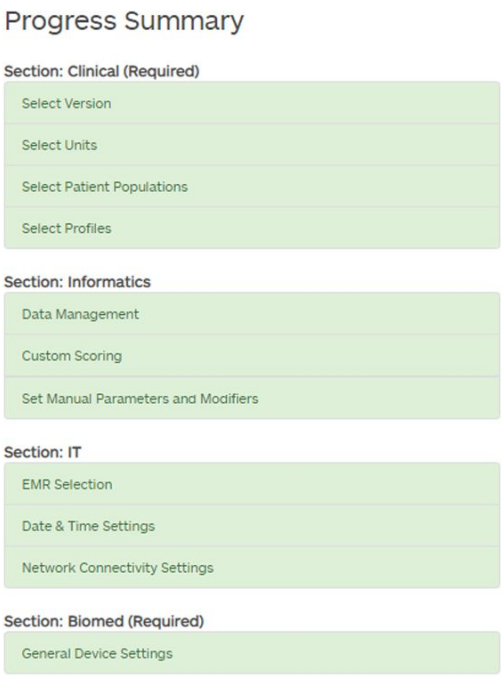
1. To share a configuration file, click next to the configuration that you want to share.



2. Enter the recipient's account name (typically an email address) into the field: *Enter the recipient's account name (email address) below:* and optionally rename the file by typing a name for the configuration into the field: *Select a name for the copy*.
3. Click **Share**.

For the recipient to receive the shared file, they need to have access to the Configuration Tool with their own account. The shared file shows who created the file and the date it was created. Shared files also have the file name with "Copy" at the end of the file name. (See the example: BLE_Pair_Once Copy for a sample of a file received from a sender into your Configuration Tool account.)

In order to use a file that another user shares with you, the copy must be opened in the Configuration Tool and all the sections must appear green to be able to use the file.

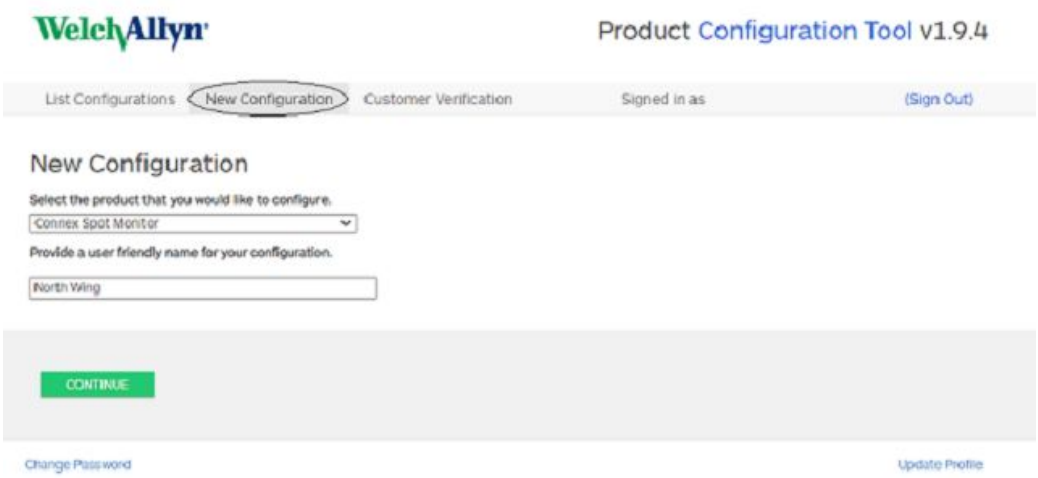


Create a new configuration for Physician's Office or Clinic

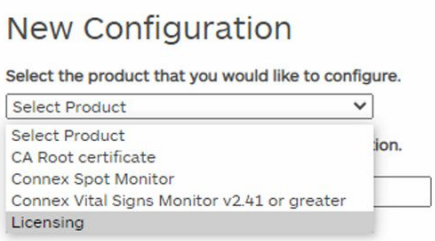
As a new configuration is completed, the configuration:

- determines default profiles
- determines whether the device will be set up for Wi-Fi, Bluetooth, Bluetooth Low Energy (BLE), or other connectivity such as Ethernet or USB
- opens or limits functionality like Early Warning Scores (EWS) protocols or prescriptive workflow settings

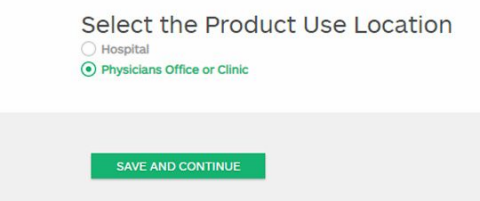
1. From the main screen, click the **New Configuration** tab.



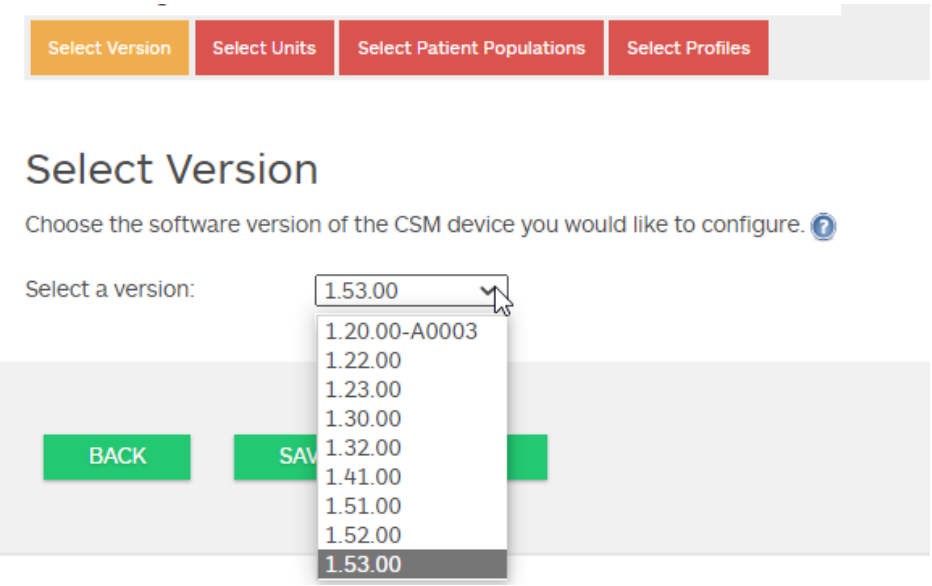
2. Use the drop down menu to select a product. Provide a name for the configuration by typing in field and click **CONTINUE**.



3. Select the **Physicians Office or Clinic** Product Use Location. (Choices include: Hospital or Physicians Office or Clinic.)



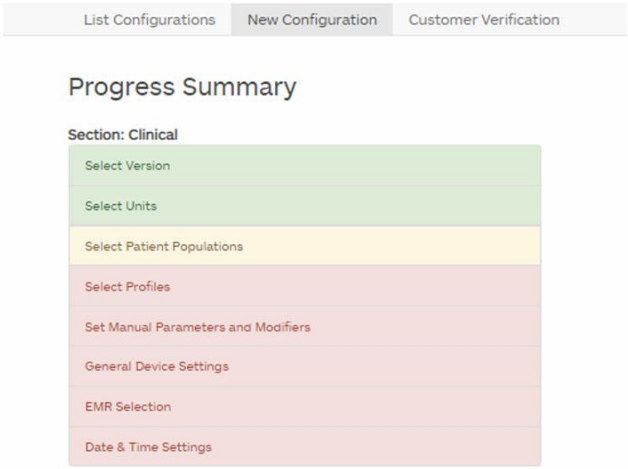
4. Click **SAVE AND CONTINUE**.
5. Click **Select Version**.
6. Use the drop down menu to select a software version.



The default selection is the latest software version available.

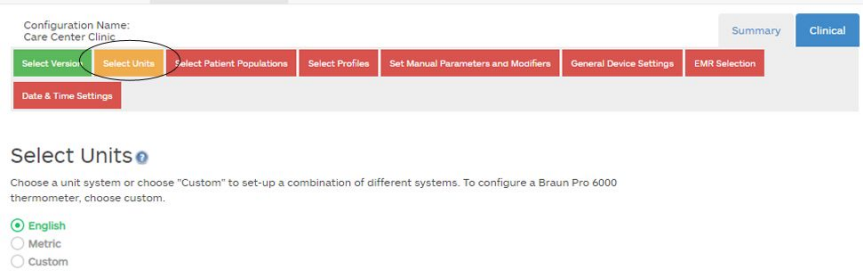
7. Click **SAVE AND CONTINUE**.

NOTE As the configuration tool is updated the Progress Summary view updates to show completed sections in green.



As the configuration tool is updated the screen moves to the **Select Units** tab.

8. Click the radio button next to the unit to select the unit.

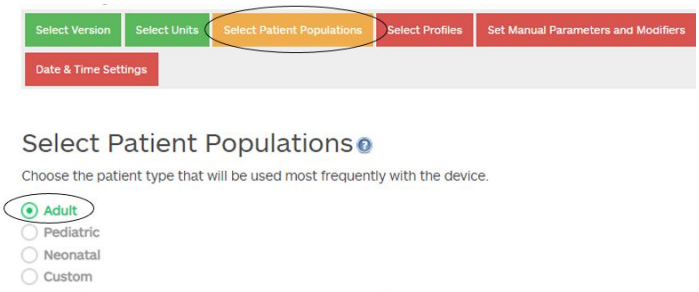


Choose a unit system or select **Custom** to set up a combination of different systems. To configure a Pro 6000 thermometer, select **Custom**. Choices include: **English**, **Metric**, and **Custom**. The default choice is English.

9. Click **SAVE AND CONTINUE**.

   As the configuration tool is updated the screen moves to the **Select Patient Populations** tab.

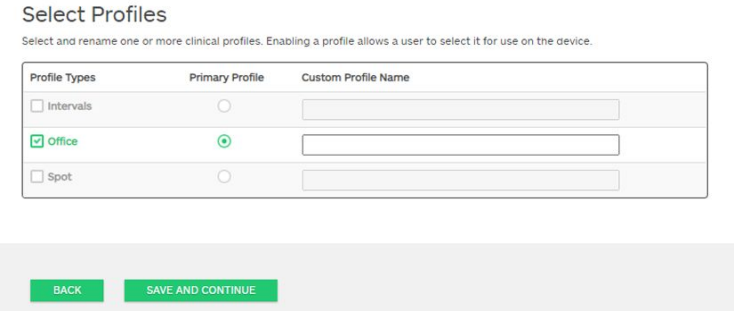
10. Click the radio button next to the Patient type to select the **Patient Population**. Choose the patient type that will be used most frequently with the device. Choices include: **Adult**, **Pediatric**, **Neonatal**, and **Custom**. The default choice is **Adult**.



11. Click **SAVE AND CONTINUE**.

    As the configuration tool is updated the screen moves to the **Select Profiles** tab.

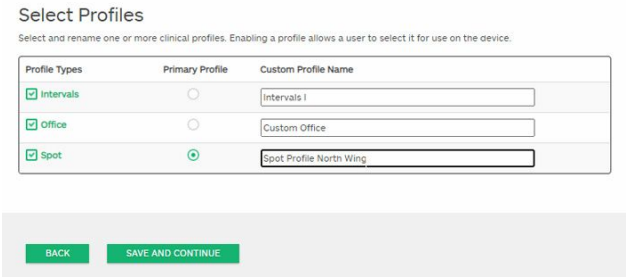
12. Click the checkbox next to the Profile type to select the clinical profile. If the Product Use Location selected was Physicians Office or Clinic, the default selection for Profile type will be set to **Office** for the Primary Profile. (If the Product Use Location selected was Hospital, the default selection for Profile type will be set to **Spot** for the Primary Profile with Intervals enabled. The three choices for Profile types include: **Intervals**, **Office**, and **Spot**.)



- Use **Office** to enable Blood Pressure Averaging and Bluetooth connectivity.
- (Optional) Use **Intervals** to enable alarms and timed NIBP and SpO2, or just one or the other.
- (Optional) Use **SPOT** to enable spot check vitals without alarms.

a. Click the radio button in the Primary Profile column across from the Profile Types to select that profile as the Primary Profile.

b. (Optional). Add a Custom Profile Name to any or all of the profiles by typing into the *Custom Profile Name* field.

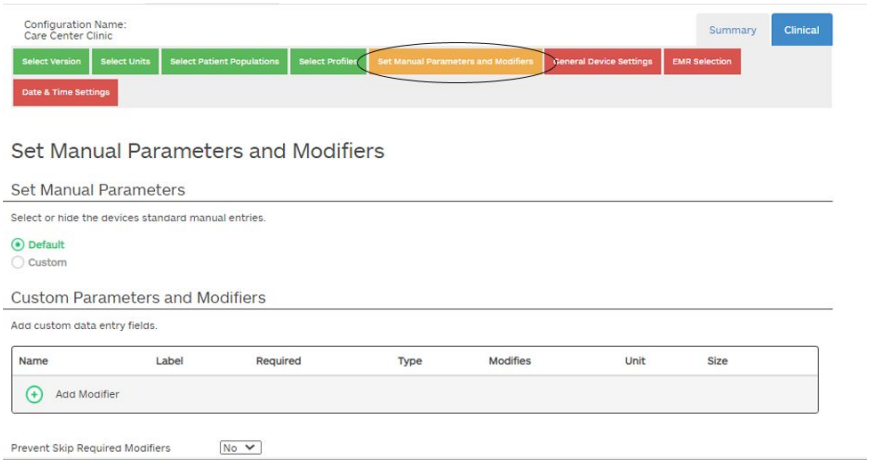


c. See *"Configure the Office Profile"* for additional details about creating blood pressure averaging programs.

13. Click **SAVE AND CONTINUE**.

    As the configuration tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

14. Configure the manual parameters and modifiers settings.

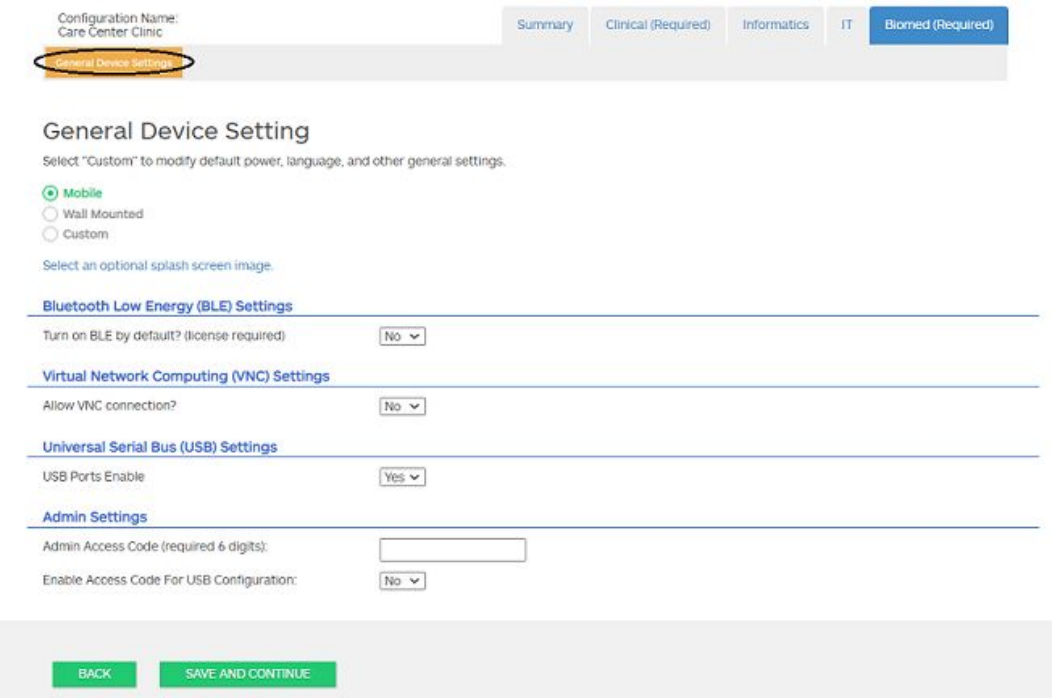


    The default settings are: Select or hide the devices standard manual entries = **Default**, Prevent Skip Required Modifiers = No. See the "*(Optional) Select Custom Parameters and Modifiers*" for additional details on customizing the Manual Parameters.

15. Click **SAVE AND CONTINUE**.

    As the configuration tool is updated the screen moves to the **General Device Settings** tab.

16. Click the radio button next to one of the choices to select that choice: **Mobile**, **Wall Mounted**, or **Custom**.



a. (Optional). Select **Custom** to modify default power, language, and other general settings. The default selection is: **Mobile**. Choices include: **Mobile**, **Wall Mounted**, and **Custom**. See: "*(Optional) Select Custom General Device Settings*" for additional instructions to modify the General Device Settings.

b. (Optional). Click **Select an optional splash screen image** and follow the on screen instructions to upload a custom Splash Screen Image onto the device. To create your facility's custom Splash Screen Image, the image must be in the Windows BMP file format. It must be must be 800 pixels wide by 480 pixels tall and have 24 bits of color using 3 bytes per pixel. The image must not contain color space information. Failure to abide by these restrictions will cause the device to ignore the image.

c. (Optional). Enable Bluetooth Low Energy (BLE), Virtual Network Computing (VNC) Settings, and Universal Serial Bus (USB) Settings. Use the drop down menu to change any the default settings. The default settings for Bluetooth Low Energy (BLE) are: Turn on BLE by default? (license required) = No. The default setting for Virtual Network Computing (VNC) Settings is: Allow VNC connection? = No. The default setting for Universal Serial Bus (USB) is: USB Ports Enable = Yes.

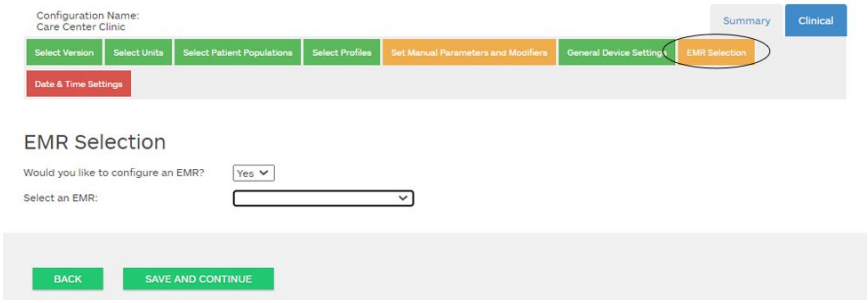
d. (Required). Admin Settings. Select an Admin Access Code that is exactly 6 digits long.

e. (Optional). Admin Settings. The default setting for Enable Access Code for USB Configuration is No.

17. Click **SAVE AND CONTINUE**.

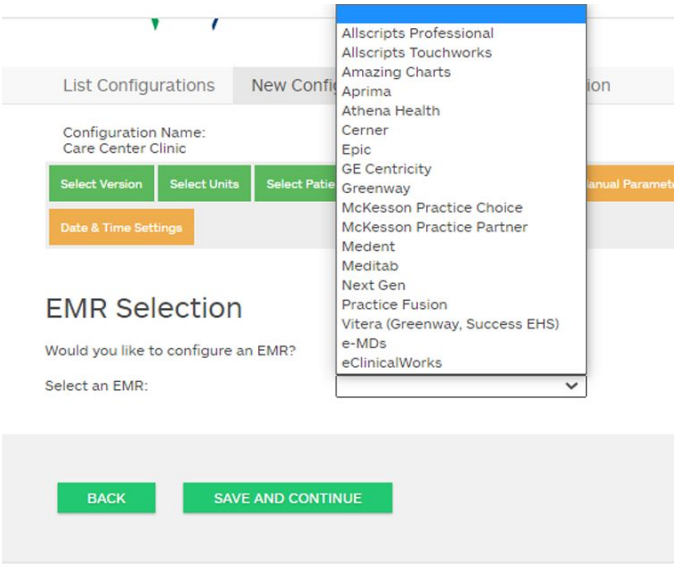
    As the configuration tool is updated the screen moves to the **EMR Selection** tab.

18. If your facility is using an Electronic Medical Records (EMR) system, select the EMR settings. Use the drop down menu to answer Yes or No at the prompt: Would you like to configure an EMR?.



The default settings for the EMR Selection are: Would you like to configure an EMR? = Yes. Select an EMR: Blank. Select the Connection Type: = Blank.

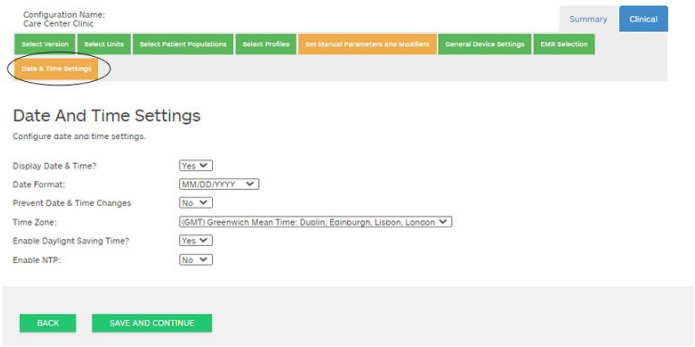
a. If Yes is selected, use the drop down menu to select your EMR. Choices include: Allscripts Professional, Allscripts Touchworks, Amazing Charts, Aprima, Athena Health, Cerner, Epic, GE Centricity, Greenway, McKesson Practice Choice, McKesson Practice Partner, Medent, Meditab, Next Gen, Practice Fusion, Vitera (Greenway, Success EHS), e-MDs, eClinicalWorks.



b. Use the drop down menu to select the Connection Type: Bluetooth or USB.

c. Click **SAVE AND CONTINUE**.

As the configuration tool is updated the screen moves from the **EMR Selection** section to the **Date and Time Settings** section and the view is updated to show completed sections in green.



19. Click **Date And Time Settings** to continue.

a. Use the drop down menu to select Display Date & Time. The default settings for Display Date & Time = Yes.

b. Use the drop down menu to select Date Format. The default settings = MM/DD/YYYY. Choices include: MM/DD/YYYY, YYYY/MM/DD, DD/YYYY/MM, or DD.MM.YYYY.

c. Use the drop down menu to select Prevent Date & Time Changes. The default setting = No.

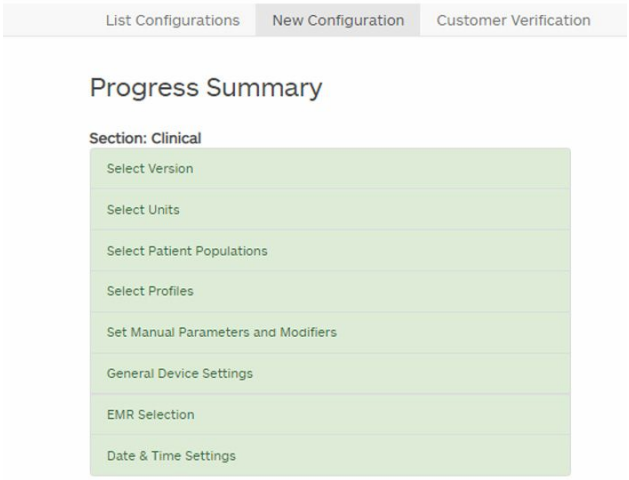
d. Use the drop down menu to select the Time Zone.

e. Use the drop down menu to select Enable Daylight Savings Time?. The default setting = Yes.

f. Use the drop down menu to select Enable NTP?. The default setting = No.

20. Click **SAVE AND CONTINUE**.

As the configuration tool is updated the screen moves to configuration complete. When all the sections appear green, the configuration file can be downloaded or shared.

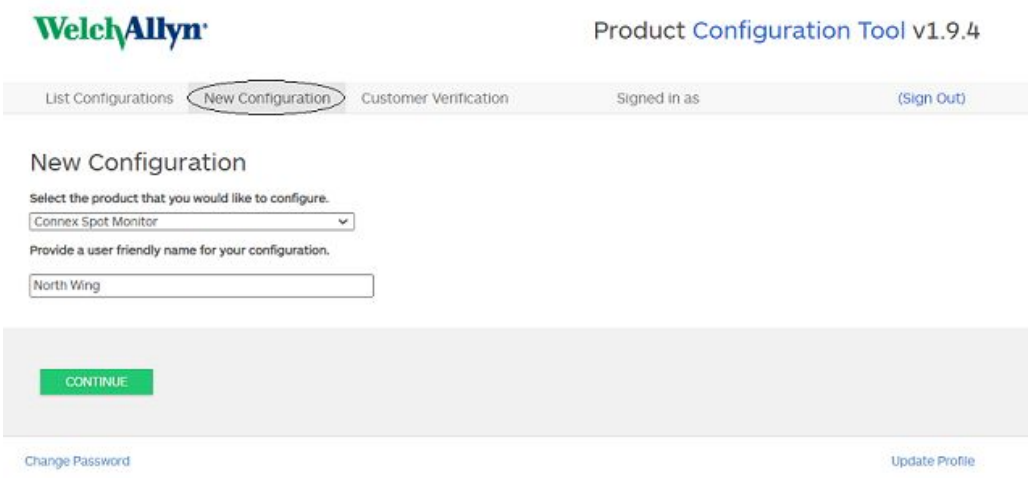


Create a new configuration for a Hospital setting

As a new configuration is completed, the configuration:

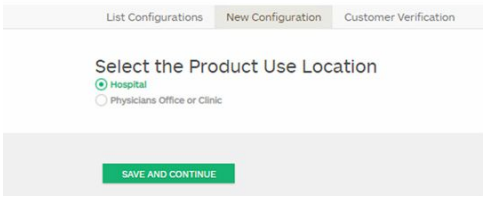
- determines default profiles
- determines whether the device will be set up for Wi-Fi, Bluetooth, Bluetooth Low Energy (BLE), or other connectivity such as Ethernet or USB
- opens or limits functionality like Early Warning Scores (EWS) protocols or prescriptive workflow settings

1. From the main screen, click the **New Configuration** tab.

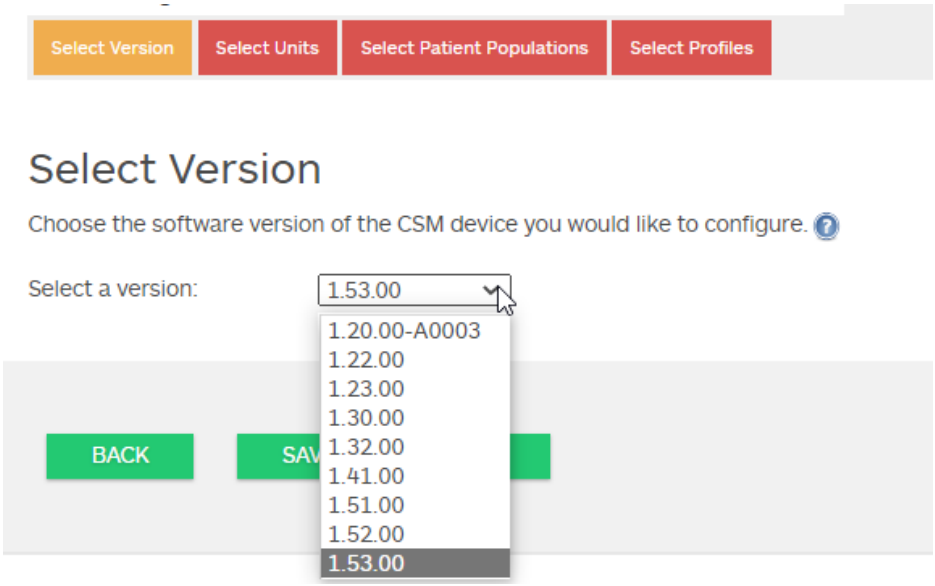


2. Use the drop down menu to select a product. Provide a name for the configuration by typing in the field and click **CONTINUE**.

3. Select the **Hospital** Product Use Location. (Choices include: Hospital or Physicians Office or Clinic.) See: "*Create a new configuration for Physician's Office or Clinic*" for instructions on setting up a device for a Physician's Office or Clinic.



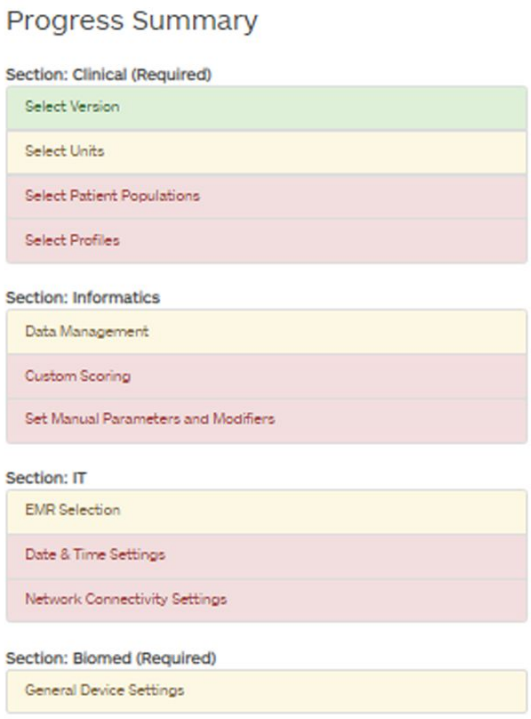
4. Click **SAVE AND CONTINUE**.
5. Click **Select Version**.
6. Use the drop down menu to select a software version.



The default selection is the latest software version available.

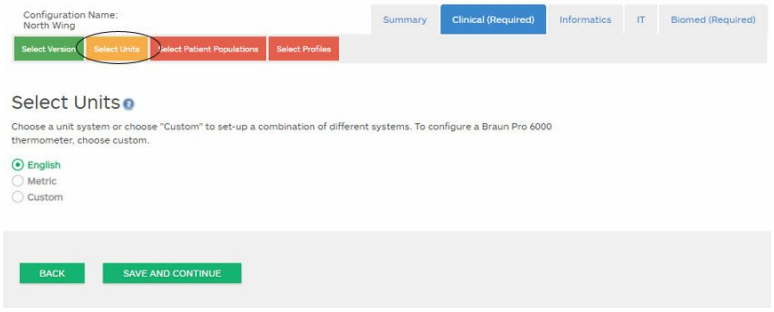
7. Click **SAVE AND CONTINUE**.

NOTE As the configuration tool is updated the Progress Summary view updates to show completed sections in green.



As the configuration tool is updated the screen moves to the **Select Units** tab.

8. Click the radio button next to the unit to select the unit.

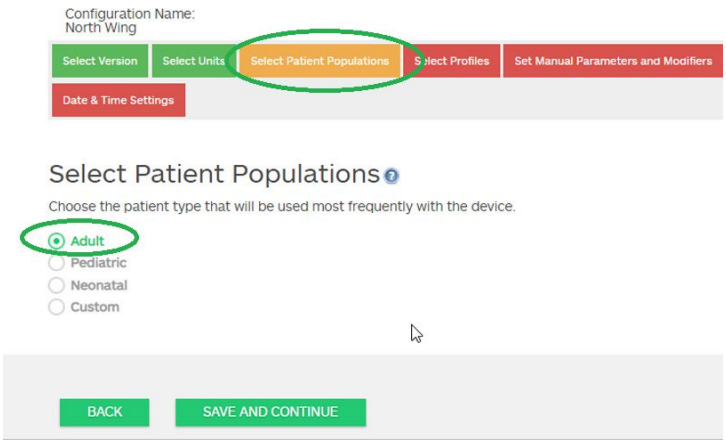


Choose a unit system or select **Custom** to set up a combination of different systems. To configure a Pro 6000 thermometer, select **Custom**. Choices include: **English**, **Metric**, and **Custom**. The default choice is English.

9. Click **SAVE AND CONTINUE**.

   As the configuration tool is updated the screen moves to the **Select Patient Populations** tab.

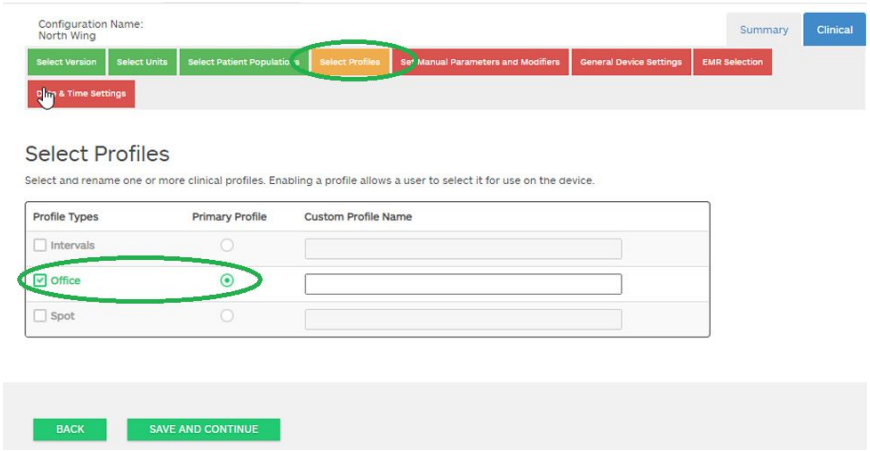
10. Click the radio button next to the Patient type to select the **Patient Population**. Choose the patient type that will be used most frequently with the device. Choices include: **Adult**, **Pediatric**, **Neonatal**, and **Custom**. The default choice is **Adult**.



11. Click **SAVE AND CONTINUE**.

    As the configuration tool is updated the screen moves to the **Select Profiles** tab.

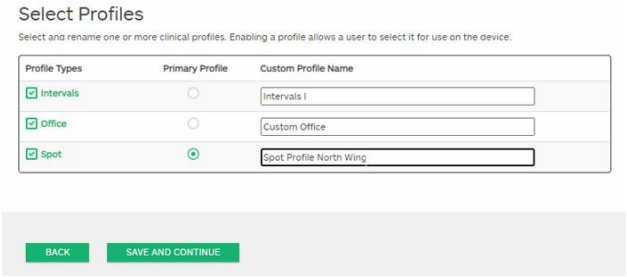
12. Click the checkbox next to the Profile type to select the clinical profile. The three choices for Profile types include: **Intervals**, **Office**, and **Spot**. The default selection for Profile type is set to **Spot** for the Primary Profile with **Intervals** enabled. (The example shown is for the **Office** profile.)



- Use **Intervals** to enable alarms and timed NIBP and SpO2, or just one or the other.
- Use **Office** to enable Blood Pressure Averaging and Bluetooth connectivity.
- Use **SPOT** to enable spot check vitals without alarms.

a. Click the radio button in the Primary Profile column across from the Profile Types to select that profile as the Primary Profile.

b. (Optional). Add a Custom Profile Name to any or all of the profiles by typing into the *Custom Profile Name* field.



c. See *"Configure the Interval Profile"* for additional details about configuring Auto Intervals settings or to create Custom intervals programs.

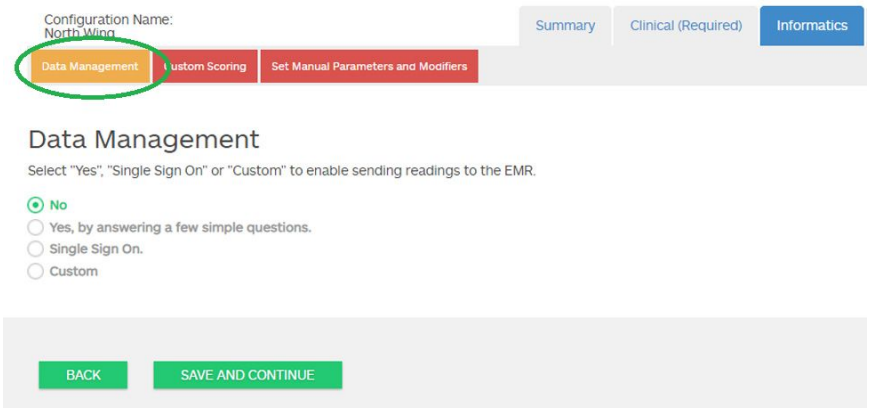
NOTE To accept the default settings for the **Intervals** profile click **SAVE AND CONTINUE**.

d. If the Intervals profile was previously selected, follow the instructions in the *"Configure the Interval Profile"* section to complete that profile.

If the Intervals profile was previously selected, configure the general alarm settings. See *"Set Alarms"* for additional details to configure general alarm settings as well as alarm settings for NIBP, SpO2, Pulse Rate, Respiration Rate, and Temperature.

e. See *"Configure the Office Profile"* for additional details about creating blood pressure averaging programs.

13. Click **SAVE AND CONTINUE.**
14. Click **Data Management** to continue.



a. The default setting is to not send readings to an EMR. To change the default setting, use the radio button to select **Yes, by answering a few simple questions**, **Single Sign On**, or **Custom** to enable sending readings to the EMR. See the *"Data Management* " section for further details.

b. Click **SAVE AND CONTINUE**.

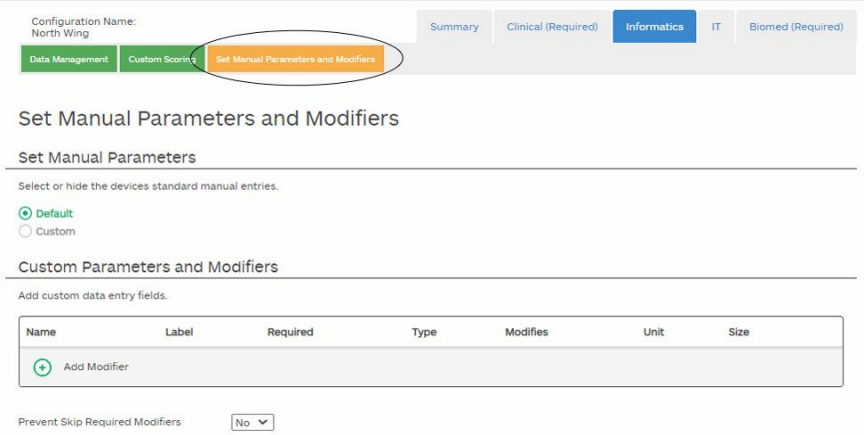
c. (Optional). Select a Custom Scoring Setup. For: Enable custom scoring? Use the drop down menu to select Yes or No. The default choice = No. For further information about enabling Custom Scoring see the section "*(Optional) Select Custom Scoring Setup (Connex Spot Monitor)*".

NOTE An authentication code is required.

d. Click **SAVE AND CONTINUE**.

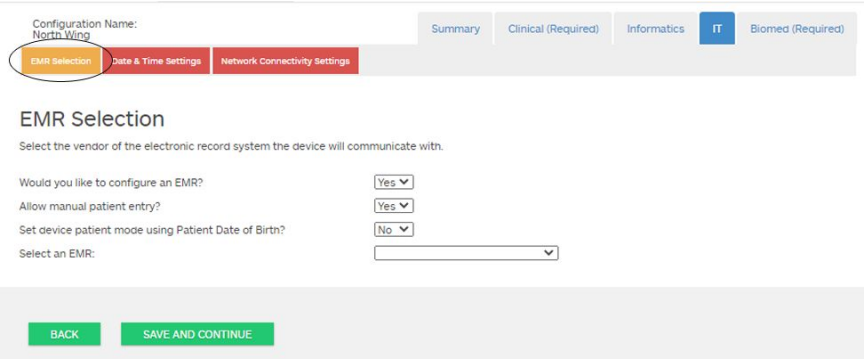
As the configuration tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

15. Configure the Manual Parameters and Modifiers settings.



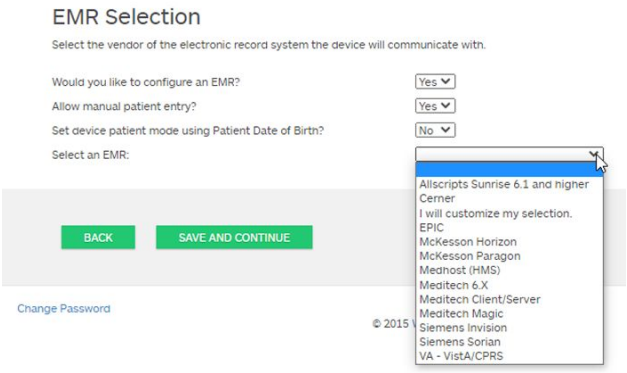
The default settings are: Select or hide the devices standard manual entries = **Default**, Prevent Skip Required Modifiers = No. See the "*(Optional) Select Custom Parameters and Modifiers*" for additional details on customizing the Manual Parameters.

16. Click **SAVE AND CONTINUE**.
17. Click **EMR Selection** to continue.



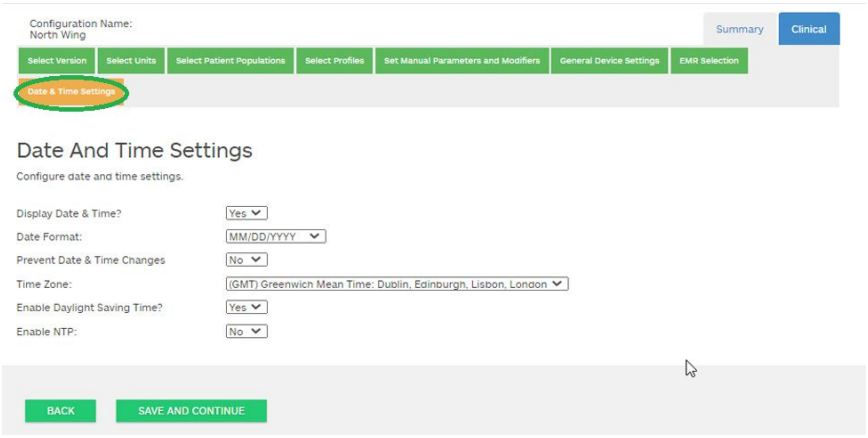
The default settings for the EMR Selection are: Would you like to configure an EMR? = Yes . Allow manual patient entry? = Yes. Set device patient mode using Patient Date of Birth? = No. Select an EMR: = Blank.

18. If your facility is using an Electronic Medical Records (EMR) system, select the EMR settings. Use the drop down menu to answer Yes or No at the prompt: Would you like to configure an EMR?.
    a. If Yes is selected, use the drop down menu to select your EMR. Choices include: Allscripts Sunrise 6.1 and higher, Cerner, I will customize my selection, EPIC, McKesson Horizon, McKesson Paragon, Medhost (HMS), Meditech 6.X, Meditech Client/Server, Meditech Magic, Siemens Invision, Siemen's Sorian, VA - VistA/CPRS. If prompted, select an Integrator from the drop down menu for each EMR.



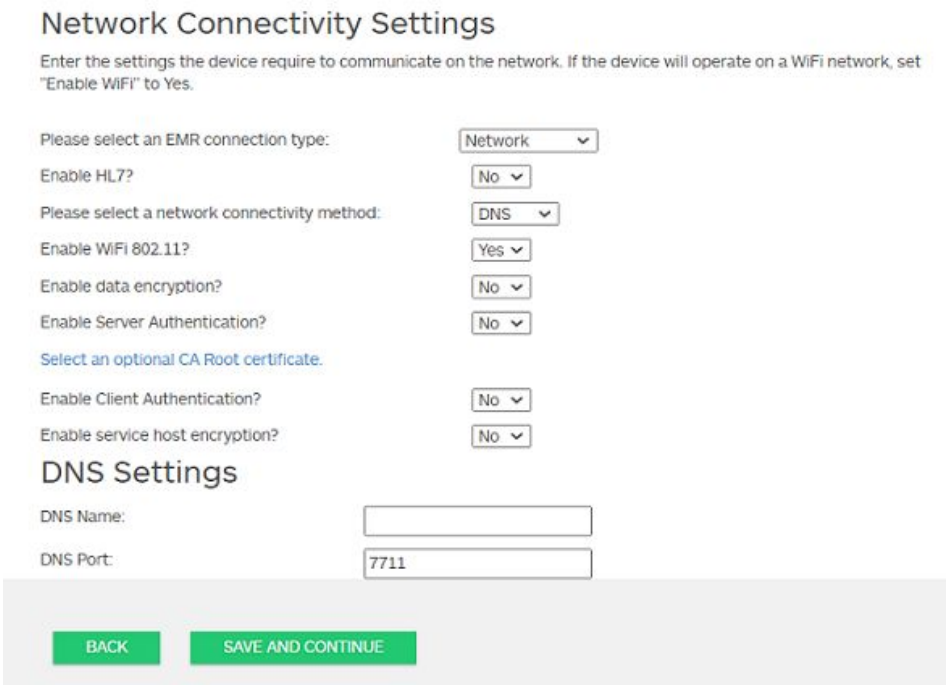
b. Click **SAVE AND CONTINUE**.

As the configuration tool is updated the screen moves from the **EMR Selection** section to the **Date and Time Settings** section and the view is updated to show completed sections in green.



19. Click **Date & Time Settings** to continue.
    a. Use the drop down menu to select Display Date & Time. The default settings for Display Date & Time = Yes.
    b. Use the drop down menu to select Date Format. The default settings = MM/DD/YYYY. Choices include: MM/DD/YYYY, YYYY/MM/DD, DD/YYYY/MM, or DD.MM.YYYY.
    c. Use the drop down menu to select Prevent Date & Time Changes. The default setting = No.
    d. Use the drop down menu to select the Time Zone.
    e. Use the drop down menu to select Enable Daylight Savings Time?. The default setting = Yes.
    f. Use the drop down menu to select Enable NTP?. The default setting = No.
20. Click **SAVE AND CONTINUE**.

    The configuration tool is updated the screen moves to the **Network Connectivity Settings** tab.



Enter the settings the device requires to communicate on the network. If the device will operate on a WiFi network, set Enable WiFi to Yes. Default settings include: Please select an EMR connection type: = Network. Enable HL7? = No. Please select a network connectivity method: = DNS. Enable WiFi 802.11? = Yes. Enable data encryption? = No. Enable Server Authentication? = No. Enable Client Authentication? = No. Enable service host encryption? = No.

(Optional). Click **Select an optional CA root certificate**.

NOTE CA root certificate must be in PEM or DER formats. Failure to abide by these restrictions will cause the certificate to be ignored by the device.

Click **Add Certificate to Library** and upload a previously created PEM or DER format file (ex: cacert.pem). Click **DONE**.

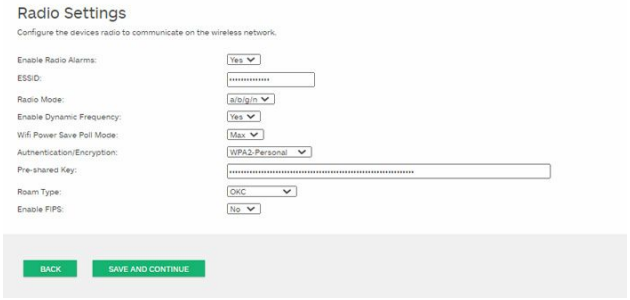
DNS Settings

DNS Name: Click within the *DNS Name:* field and enter a DNS name.

DNS Port: = 7711

21. Click **SAVE AND CONTINUE**.

The configuration tool is updated and the screen moves to the **Radio Settings** tab.



Configure the device's radio to communicate on the wireless network.

Default settings include:

Enable Radio Alarms: = Yes

ESSID: = Blank.

Radio Mode: = a/b/g/n

Enable Dynamic Frequency: = Yes

Wifi Power Save Poll Mode: = Max

Authentication/Encryption: = WPA2-Personal

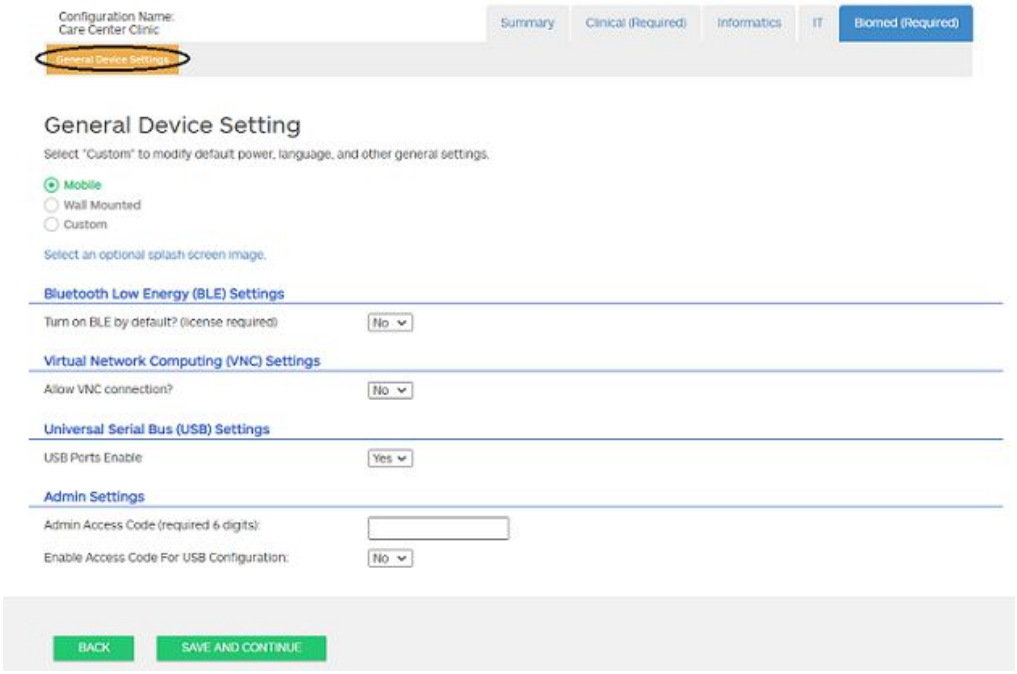
Pre-shared Key: = ••

Roam Type: = OKC

Enable FIPS: = No

Use the drop down menu to change any of the default settings.

22. Click **SAVE AND CONTINUE**.
23. Click **General Device Settings**.



a. (Optional). Select **Custom** to modify default power, language, and other general settings. The default selection = **Mobile**. Choices include: **Mobile**, **Wall Mounted**, and **Custom**. See: "*(Optional) Select Custom General Device Settings*" for additional instructions to modify the General Device Settings.

b. (Optional). Click **Select an optional splash screen image** and follow the on screen instructions to upload a custom Splash Screen Image onto the device. To create your facility's custom Splash Screen Image, the image must be in the Windows BMP format file. It must be must be 800 pixels wide by 480 pixels tall and have 24 bits of color using 3 bytes per pixel. The image must not contain color space information. Failure to abide by these restrictions will cause the image to be ignored by the device.

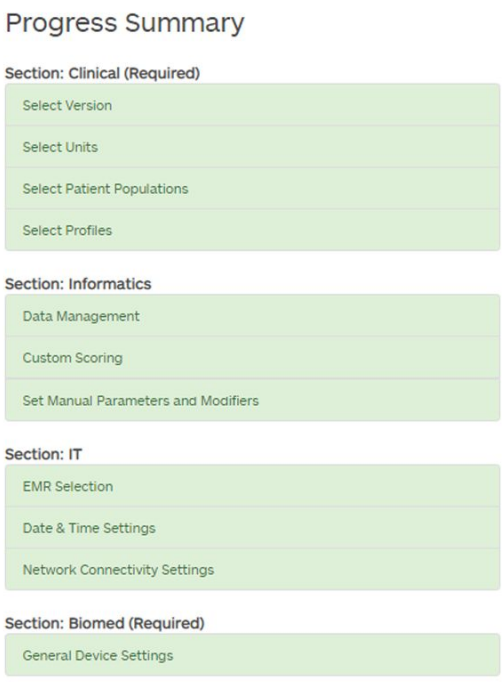
c. (Optional). Use the drop down menu to change any of the default settings.

d. (Required). Admin Settings. Select an Admin Access Code that is exactly 6 digits long.

The default settings for Bluetooth Low Energy (BLE) are: Turn on BLE by default? (license required) = No. The default setting for Virtual Network Computing (VNC) Settings is: Allow VNC connection? = No. The default setting for Universal Serial Bus (USB) is: USB Ports Enable = Yes. The default setting for Enable Access Code for USB Configuration is No.

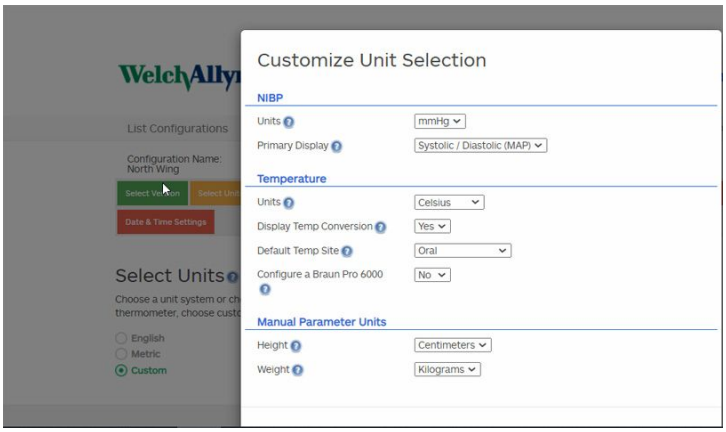
24. Click **SAVE AND CONTINUE**.

As the configuration tool is updated the screen moves to Configuration complete. When all the sections appear green, the configuration file can be downloaded or shared.



(Optional) Select Custom Units

1. Select the device units. Click **Select Units**.
2. Click the radio button next to **Custom** to select the Custom unit.

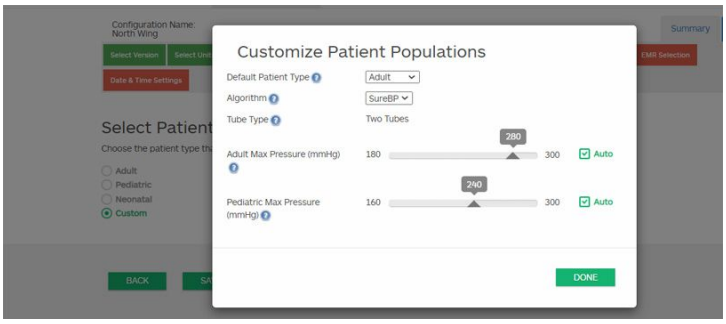


   Choose Custom to set up a combination of different systems or to configure a Pro 6000 thermometer.
3. For Non-Invasive Blood Pressure (NIBP), use the drop down menu to choose mmHg or kPa. For Primary Display use the drop down menu to choose Systolic/Diastolic with Mean Arterial Pressure (MAP), MAP (Systolic/Diastolic), or Systolic/Diastolic.
4. For Temperature, use the drop down menu to choose Celsius or Fahrenheit. For Display Temp Conversion, use the drop down menu to choose Yes of No. For Default Temp Site use the drop down menu to choose Oral, Pediatric Axillary, Adult Axillary, or Last Site. For Configure a Braun Pro 6000 , use the drop down menu to choose Yes of No.
5. For Manual Parameter Units, Height, use the drop down menu to choose Centimeters or Inches. For Manual Parameter Units, Weight, use the drop down menu to choose Kilograms or Pounds.
6. When finished, click **DONE**.
7. Click **SAVE AND CONTINUE**.

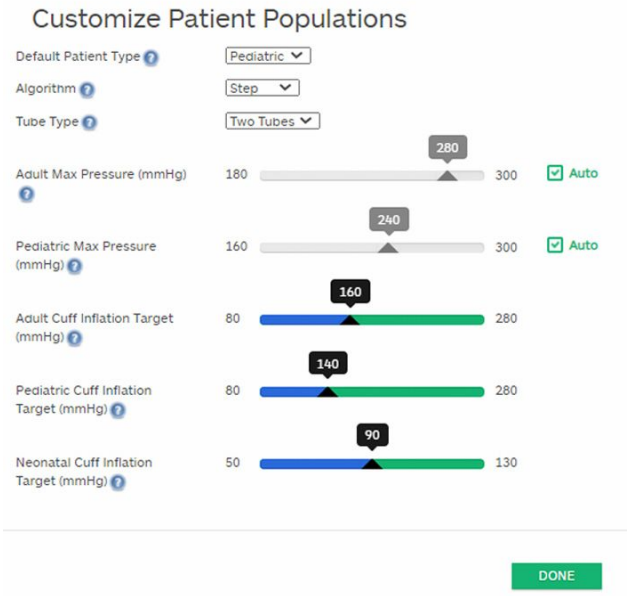
(Optional) Select Custom Patient Populations

1. Select the device default Patient type.
2. Click the radio button next to **Custom** to select the Custom patient type. Choices include: **Adult**, **Pediatric**, **Neonatal**, or **Custom**.

   The default settings are: Default Patient Type = Adult, Algorithm = SureBP, and Tube Type = Two Tubes. The adult maximum cuff pressure is set to 280 mmHg and the pediatric maximum cuff pressure is set to 240 mmHg with the default Auto settings.

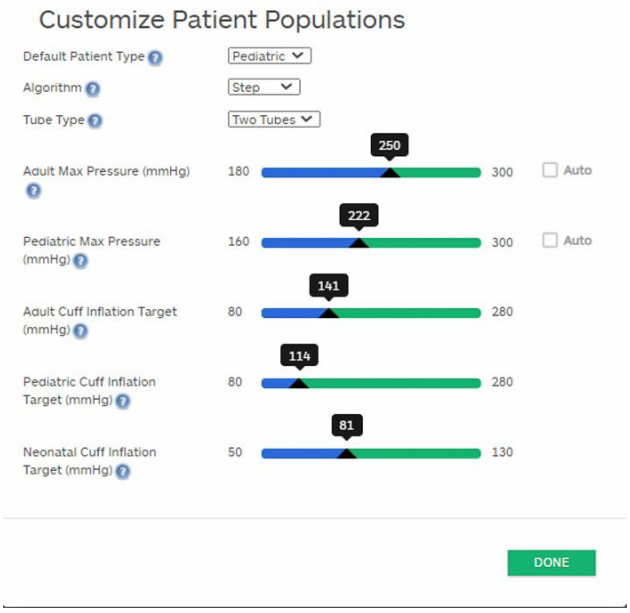


3. (Optional). For Customize Patient Populations, Default Patient Type, use the drop down menu to choose **Pediatric**. The default settings are: Default Patient Type = Pediatric, Algorithm = Step, and Tube Type = Two Tubes. The adult maximum cuff pressure is set to 280 mmHg and the pediatric maximum cuff pressure is set to 240 mmHg with the default Auto settings. The adult cuff inflation target is set to 160 mmHg. The pediatric cuff inflation target is set to 140 mmHg. The neonatal cuff inflation target is set to 90 mmHg.

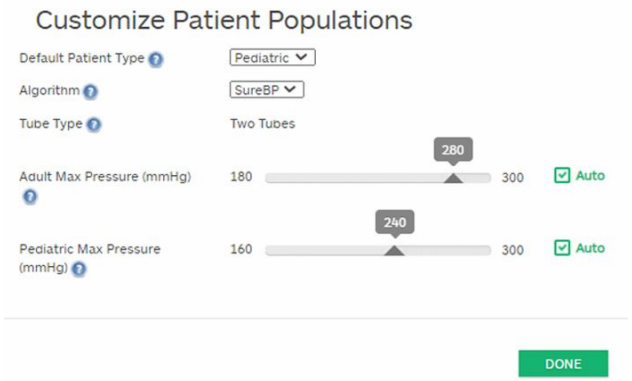


a. To change the default values for the adult maximum cuff pressure or the pediatric maximum cuff pressure, uncheck the Auto settings and use the slider, or use the arrow keys on your computer keyboard, to set the value.

b. To change the default values for the adult, pediatric, or neonatal cuff inflation target use the slider, or use the arrow keys on your computer keyboard, to set the value.

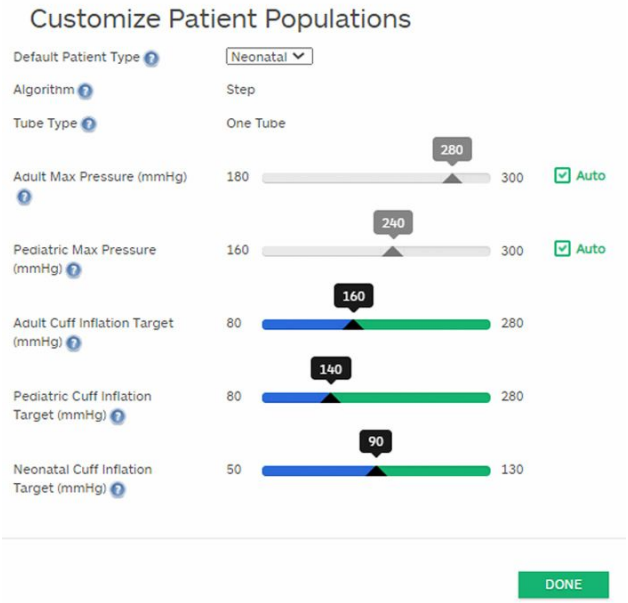


c. For Customize Patient Populations, Pediatric Default Patient Type, the default settings for Algorithm can be changed from Step to SureBP, and the default settings for Tube Type can be changed from Two Tubes to One Tube. For Sure BP, the default Tube Type remains Two Tubes and the maximum cuff pressures remain at 280 mmHg for adult and 240 mmHg for pediatric with the default Auto settings.



- To change the default values for the adult maximum cuff pressure or the pediatric maximum cuff pressure, uncheck the Auto settings and use the slider, or use the arrow keys on your computer keyboard, to set the value.
- To change the default values for Step, Tube Type, use the drop down menu to select One Tube.

4. (Optional). For Customize Patient Populations, Default Patient Type, use the drop down menu to choose **Neonatal**. The default settings are: Default Patient Type = Neonatal, Algorithm = Step, and Tube Type = One Tube. The adult maximum cuff pressure is set to 280 mmHg and the pediatric maximum cuff pressure is set to 240 mmHg with the default Auto settings. The adult cuff inflation target is set to 160 mmHg. The pediatric cuff inflation target is set to 140 mmHg. The neonatal cuff inflation target is set to 90 mmHg.



   a. To change the default values for the adult maximum cuff pressure or the pediatric maximum cuff pressure, uncheck the Auto settings and use the slider, or use the arrow keys on your computer keyboard, to set the value.

   b. To change the default values for the adult, pediatric, or neonatal cuff inflation target use the slider, or use the arrow keys on your computer keyboard, to set the value.

5. When finished, click **DONE**.
6. Click **SAVE AND CONTINUE**.

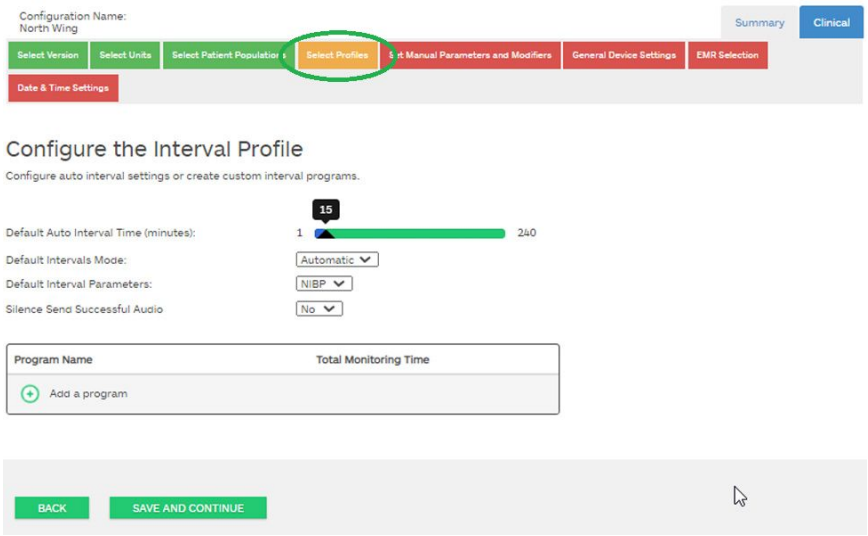
   As the Configuration Tool is updated the screen moves to the **Select Profiles** tab.

Configure the Interval Profile

The Interval Profile allows you to choose which interval profile appears as the default on the device. You can configure auto interval settings or create custom interval programs.

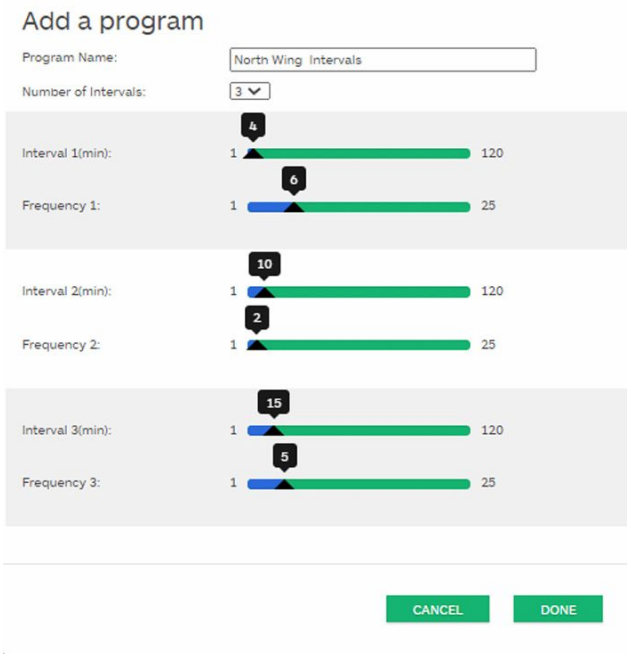
- Create up to 5 unique programs
- Create specific intervals
- Program 6 remains available for customization on the device

1. Configure the Interval Profile.



The default settings are: Default Auto Interval Time (minutes) = 15, Default Intervals Mode = Automatic, Default Interval Parameters = NIBP, and Silence Send Successful Audio = No.

2. (Optional). To change the Default Auto Interval Time, use the slider, or use the arrow keys on your computer keyboard, to set the value. Values range from 1 minute to 240 minutes.
3. (Optional). To change the Default Intervals Mode, use the drop down menu to select Automatic or STAT.
4. (Optional). To change the Default Interval Parameters, use the drop down menu to select NIBP, SpO2, or Both.
5. (Optional). To change the Silence Send Successful Audio, use the drop down menu to select No or Yes.
6. (Optional). Click to add a program.



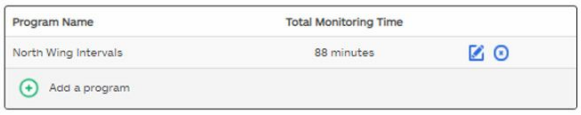
a. Click within the *Program Name* field and enter the name as you want it to appear on the device.

b. Accept the default values or use the slider, or use the arrow keys on your computer keyboard, to set the value for Intervals. Values range from 1 minute to 120 minutes.

c. Accept the default values or use the slider, or use the arrow keys on your computer keyboard, to set the value for Frequency. Values range from 1 to 25.

- Use the drop down menu to set the number of Intervals from 1 to 5.
- Set each Frequency. Values range from 1 to 25.

7. When finished, click **DONE**.
8. As programs are added, the Total monitoring time appears and the edit and delete buttons are available for modifications.



9. Click **SAVE AND CONTINUE**.

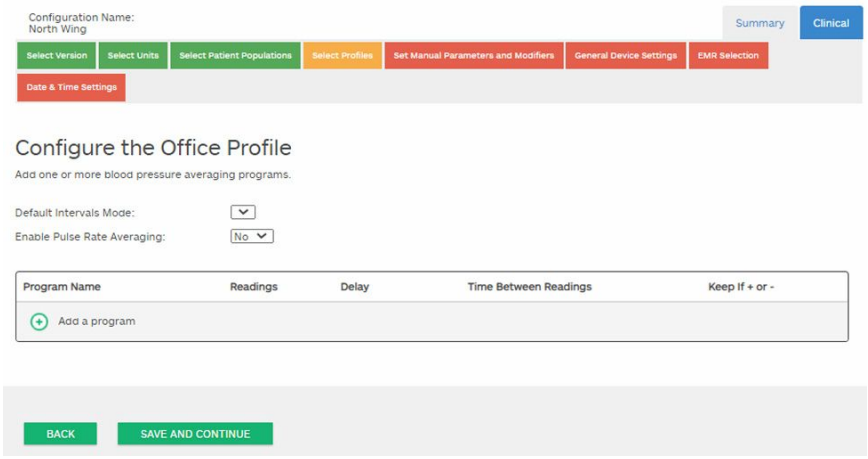
   As the Configuration Tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

Configure the Office Profile

The Office Profile allows you to add one or more blood pressure averaging programs.

- Create up to 6 readings
- Set delays before starting readings
- Set length of time in between readings

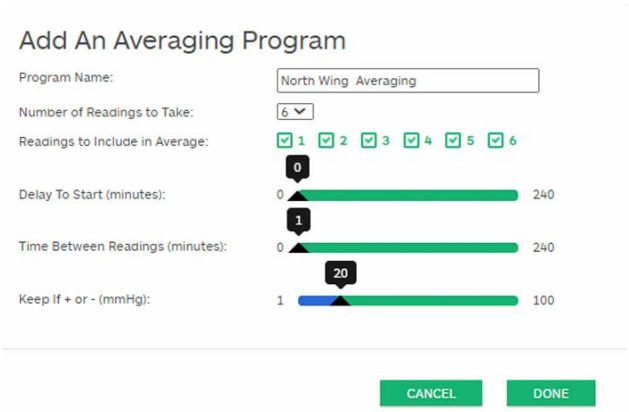
1. Configure the Office Profile.



   The default settings are: Default Intervals Mode = blank and Enable Pulse Rate Averaging = No.

2. (Optional). To change the Enable Pulse Rate Averaging, use the drop down menu to select Yes or No.

3. (Optional). Click to add a program. The default settings are: Number of Readings to take = 1, Readings to Include in Average = 1, Delay To Start (minutes) = 0, Time Between Readings (minutes) =1, and Keep If + or - (mmHg) = 20.



a. Click within the *Program Name* field and enter the name as you want it to appear on the device.

b. Accept the default values or use the slider, or use the arrow keys on your computer keyboard, to set the value for Delay to Start (minutes). Values range from 0 minute to 240 minutes.

c. Accept the default values or use the slider, or use the arrow keys on your computer keyboard, to set the value for Time Between Readings (minutes). Values range from 1 minute to 240 minutes.

d. Accept keep the reading if the reading falls within + or - 20 mmHg of the default value, or use the slider, or use the arrow keys on your computer keyboard, to change the value and keep the readings if the mmHg value is + or - of the newly set value. For example: Keep if + or - 13 (mmHg). Values range from 1 mmHg to 100 mmHg.

4. When finished, click **DONE**.

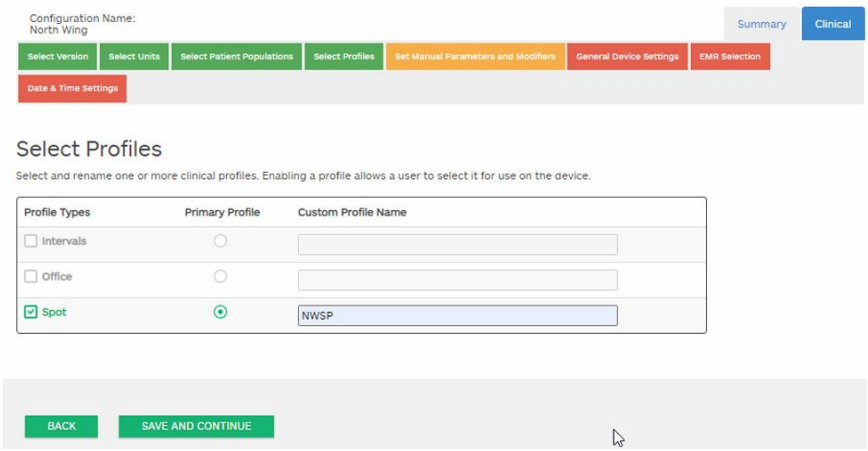
5. As programs are added, the Delay and Time Between Readings appear and the edit and delete buttons are available for modifications.

6. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

Configure the Spot Profile

1. Configure the Spot Profile.



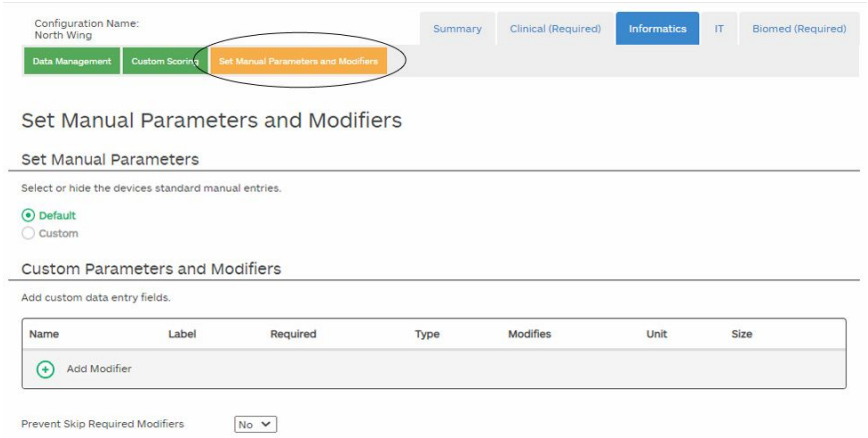
2. (Optional). Click with the Custom Profile Name field and enter the name as you want it to appear on the device.
3. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

Set Manual Parameters

Select or hide the devices standard manual entries.

1. Configure the manual parameters and modifiers settings.



   The default settings are: Select or hide the devices standard manual entries = Default, Prevent Skip Required Modifiers = No.

2. See the "*(Optional) Select Custom Parameters and Modifiers*" for additional details on customizing the Manual Parameters.
3. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **EMR Selection** tab.

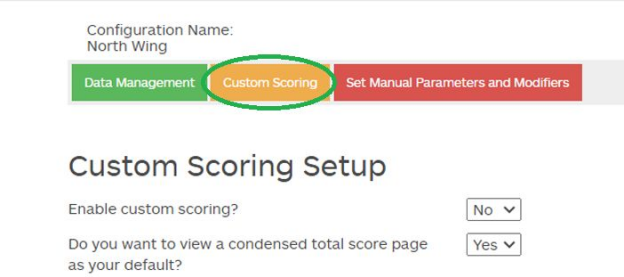
(Optional) Select Custom Scoring Setup (Connex Spot Monitor)

This section describes how to set up Bedside Protocols that can be replicated on a Connex Spot Monitor device. You can pre-select from a list of clinical protocols. All scoring protocols are completely customizable to meet user requirements.

You may add up to 6 Scoring Systems. Select a predefined Scoring System template, enter a unique Name, and click the button labeled ADD THIS SCORING SYSTEM. Your Scoring System will be added to the bottom of the page. You may then Edit or Delete your Scoring System.

Click the **Custom Scoring** tab.

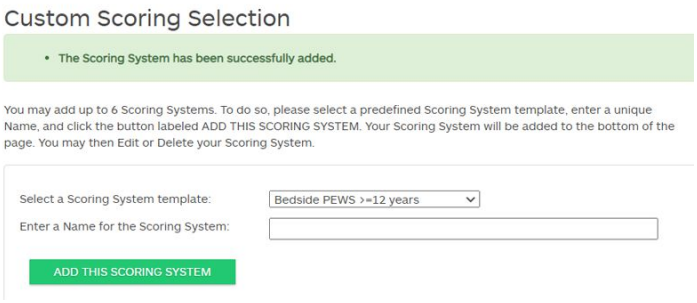
1. (Optional). Use the drop down menu to select Yes to Enable custom scoring. (The default Enable custom scoring = No).



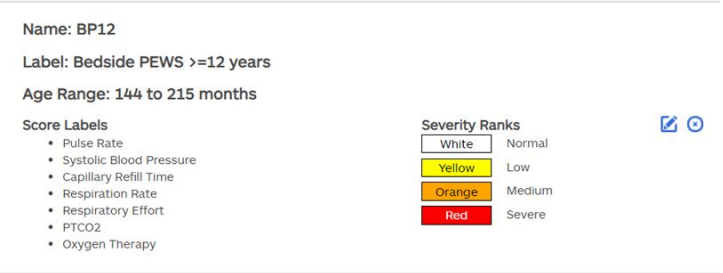
2. (Optional). To change the default selection for Do you want age ranges associated with scoring protocols for pre-selection based on patient age?, use the drop down menu to select Yes or No. (The default choice = No).
3. (Optional). To change the default selection for Do you want to view a condensed total score page as your default?, use the drop down menu to select Yes or No. (The default choice = Yes).
4. Click within the *Please enter the authentication code*: field and enter a valid code in format of [YY]CSM[MM] with the current year and month.
5. Click **SAVE AND CONTINUE**.
6. Select a Scoring System template. Choices include:

   Bedside PEWS <3 months
   Bedside PEWS 3 to <12 months
   Bedside PEWS 1 to 4 years
   Bedside PEWS 5 to <12 years
   Bedside PEWS >=12 years
   Braden
   BTF SAGO
   BTF ED
   BTF SPOC <3 months
   BTF SPOC 3 to 12 months
   BTF SPOC 1 to 4 years
   BTF SPOC 5 to 11 years
   BTF SPOC 12 years
   Falls Risk Assessment Tool
   Glasgow Coma Scale
   Modified Early Obstetric Warning
   Modified Early Warning Score
   MEWS for General Surgical Ward
   Morse Fall Score
   National Early Warning Score
   National Early Warning Score 2
   NEWS2 Scale 1
   NEWS2 Scale 2
   Norton
   Pediatric Early Warning Score
   Rapid Emergency Medicine Score
   Triage Early Warning System
   Walsall
   Blank Scoring System
7. To enter a name for the Scoring System, click within the *Enter a Name for the Scoring System*: field and type a name for the scoring system as you want it to appear on the device.
8. When finished, click **ADD THIS SCORING SYSTEM**.

After a successful addition, the following message appears: *The scoring System has been successfully added.*



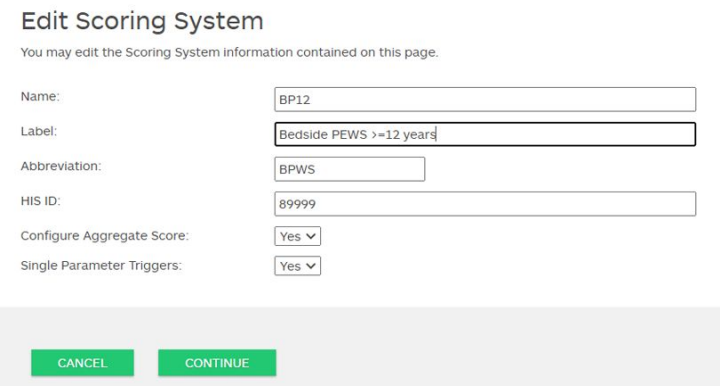
The name for the scoring system also appears at the bottom of the **Custom Scoring Selection** screen.



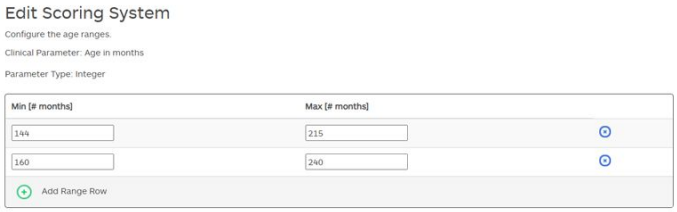
NOTE The Custom Scoring Selection can be used as is or modified to meet facility requirements.

NOTE The Name of the Custom Scoring system defines how the scoring protocol will appear on the device. The HIS ID information for the EMR can be applied here too. Configure the capability for Single Parameter Scoring by itself or as part of an Aggregate Score.

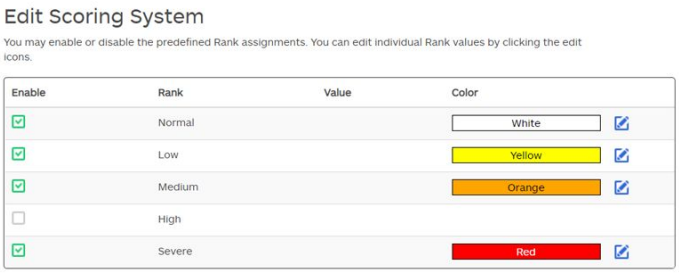
9. (Optional). To edit the Scoring system, click (edit). Click within the fields to enter changes or use the drop down menu to change the Configure Aggregate score or Single Parameter Triggers.



10. (Optional). To delete the Scoring system, click (delete).
11. Click **SAVE AND CONTINUE**.
12. To continue to edit the Scoring System, configure the minimum or maximum age ranges (in months).



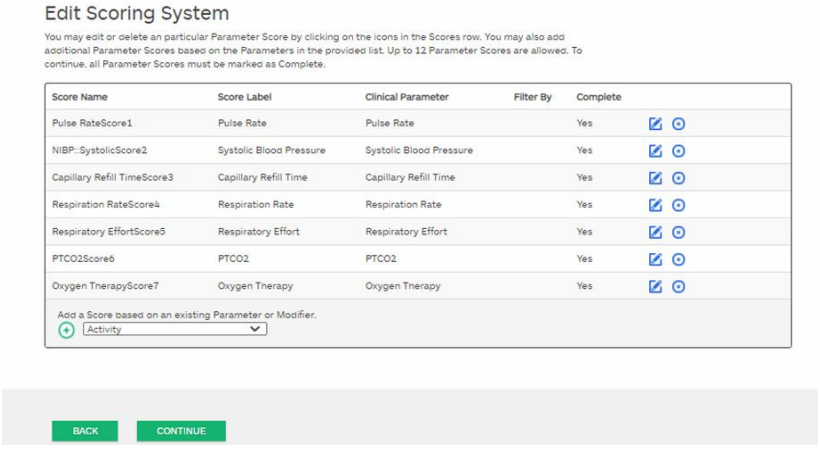
13. (Optional). To add a Range Row , click (add). To delete a row, click (delete).
14. Click **SAVE AND CONTINUE**.
15. (Optional). To continue editing the Scoring system, check or uncheck the Enable settings. Default settings include: Rank Normal = Enable, Rank Low = Enable, Rank Medium = Enable, Rank High = Disable, Rank Severe = Enable.



NOTE Severity rankings color can modified based on protocol.

NOTE Rankings can either be omitted or added based on protocol.

16. Click (edit) to change the rank information.
17. Click **SAVE AND CONTINUE**.
18. (Optional). To continue editing the Scoring system, click (edit) to change the values.



QUICK TIP: If you want to disassociate a parameter from the score, click (delete), if you want to add a new parameter associated with the score either select an existing one from the drop down list, or create a custom parameter in the next tab.

19. Click **CONTINUE**.

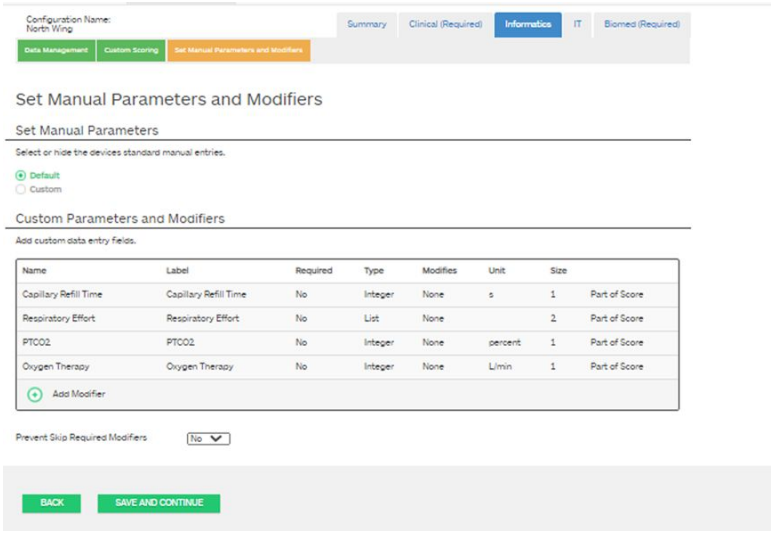
20. Click **SAVE AND CONTINUE**.
21. As the Configuration Tool is updated the screen moves to the **Set Custom Parameters and Modifiers** tab.

(Optional) Select Custom Parameters and Modifiers

Select or hide the device standard manual entries.

Click the **Set Manual Parameters and Modifiers** tab.

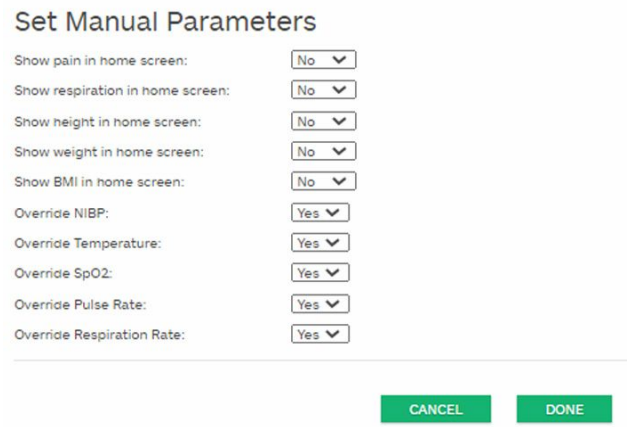
1. Use the radio button to select **Default** or **Custom** Parameters and Modifiers.



The following are part of the default score based on the previous example when selecting the Bedside Protocol of "*Bedside PEWS 3 to <12 months*" in the **Custom Scoring Selection**: Capillary Refill Time, Respiratory Effort, PTCO2, and Oxygen Therapy. Prevent Skip Required Modifiers = No.

NOTE Default scores vary based on the Bedside Protocol chosen in the **Custom Scoring Selection**.

2. (Optional). Select the Custom radio button to change the Manual Parameters.



The default settings are: Show pain in home screen = No, Show respiration in home screen = No, Show height in home screen = No, Show BMI in home screen = No, Override NIBP = Yes,

Override Temperature = Yes, Override SpO2 = Yes, Override Pulse Rate = Yes, Override Respiration Rate = Yes.

3. (Optional). To change Show pain in home screen, use the drop down menu to select No, Yes, or Hide.
4. (Optional). To change Show respiration in home screen, use the drop down menu to select No, Yes, or Hide.
5. (Optional). To change Show height in home screen, use the drop down menu to select No, Yes, or Hide
6. (Optional). To change Show BMI in home screen, use the drop down menu to select No, Yes, or Hide.
7. (Optional). To change Override NIBP, use the drop down menu to select Yes or No.
8. (Optional). To change Override Temperature, use the drop down menu to select Yes or No.
9. (Optional). To change Override SpO2, use the drop down menu to select Yes or No.
10. (Optional). To change Override Pulse Rate, use the drop down menu to select Yes or No.
11. (Optional). To change Override Respiration Rate, use the drop down menu to select Yes or No.
12. Click **DONE**.
13. (Optional). Click to add a Modifier.

a. Click in the *Name* field and type in a name for the modifier.
b. Click in the *Label* field and type in a label for the modifier.
c. Click in the *Abbreviation* field and type in an abbreviation for the modifier.
d. Use the drop down menu to select whether the modifier is required.
e. Use the drop down menu to select whether the modifier modifies: NIBP, SpO2, Temperature, Pulse Rate, Respiration Rate, or None.
f. Use the drop down menu to select the type of modifier: Integer, Decimal, Alphanumeric, or List.

   If List is selected, click in the *Name* field and type in a name, click in the *Label* field and type in a label, click in the *Abbreviation* field and type in an abbreviation, click in the *Item HIS ID* field and type in a HIS ID.

   (Optional). Click to add another List Item.
g. Click in the *Name* field and type in a name for the modifier.
h. Click in the *Minimum Value* field and type in a value. (Values must be within -32768 and 32767 and be an integer. The Minimum Value must be less than the Maximum Value.)

i. Click in the *Maximum Value* field and type in a value. (Values must be within -32768 and 32767.)

j. When finished, click **SAVE**.

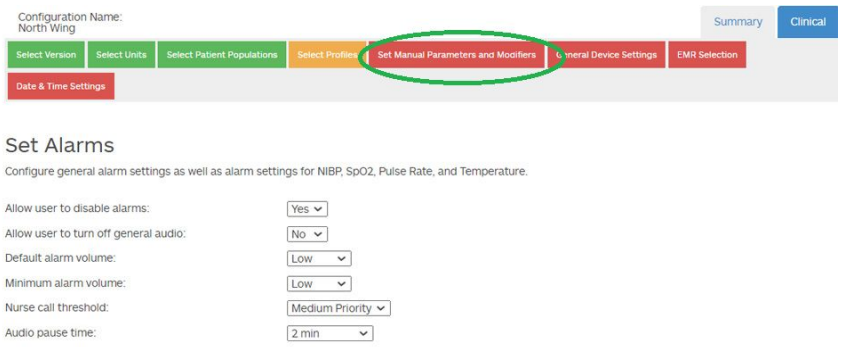
14. Click **SAVE AND CONTINUE**.

    As the Configuration Tool is updated the screen moves to the **EMR Selection** tab.

Set Alarms

Configure general alarm settings as well as alarm settings for NIBP, SpO2, Pulse Rate, Respiration Rate, and Temperature.

1. Configure the general alarm settings.



   The default settings are: Allow user to disable alarms = Yes, Allow user to turn off general audio = No, Default alarm volume = Low, Minimum alarm volume = Low, Nurse call threshold = Medium Priority, and Audio pause time = 2 min.

2. (Optional). To change Allow user to disable alarms, use the drop down menu to select Yes or No.
3. (Optional). To change Allow user to turn off general audio, use the drop down menu to select No or Yes.
4. (Optional). To change the Default alarm volume, use the drop down menu to select Low, Medium, or High.
5. (Optional). To change the Minimum alarm volume, use the drop down menu to select Low, Medium, or High.
6. (Optional). To change the Nurse call threshold, use the drop down menu to select Medium Priority, Low Priority, or High Priority.
7. (Optional). To change the Audio pause time, use the drop down menu to select 2 min (minutes), Disable, 2 min 30 sec (seconds), 3 min, 5 min, 10 min, or 15 min.

   Refer to the individual parameters for instructions on changing alarm limits.

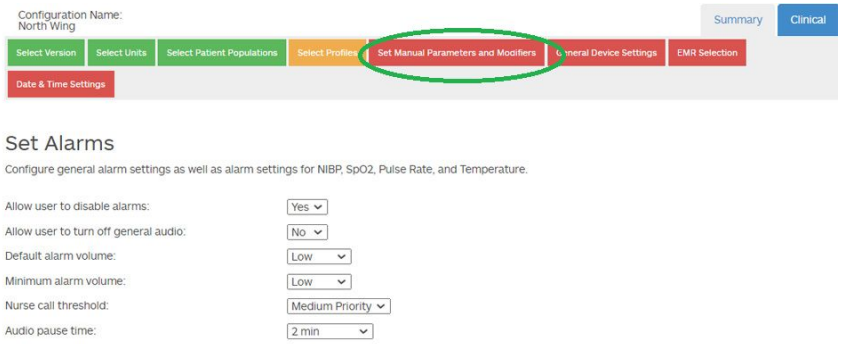
8. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Set Manual Parameters and Modifiers** tab.

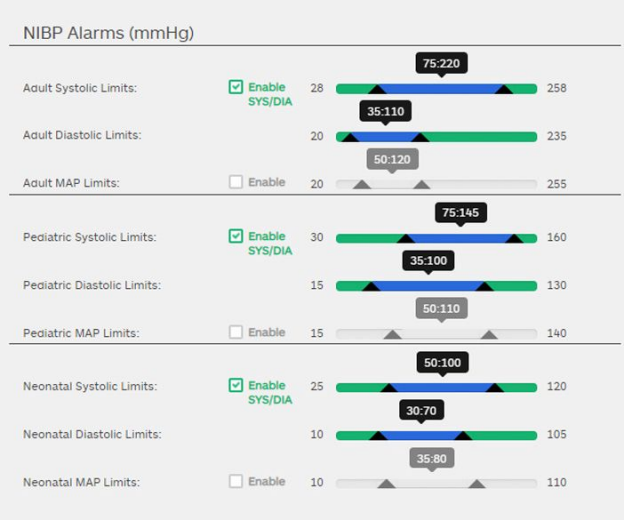
NIBP Alarms (mmHg)

Configure general alarm settings as well as alarm settings for NIBP.

1. Configure the general alarm settings.



2. (Optional). To change NIBP alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper values. See the next steps for specific values for each alarm.



   - The default settings are Enable SYS/DIA, Adult Systolic Limits 75:220, Adult Diastolic Limits 35:110, and Adult MAP Limits 50:120 is disabled.
   - The default settings are Enable SYS/DIA, Pediatric Systolic Limits 75:145, Pediatric Diastolic Limits 35:100, and Pediatric MAP Limits 50:110 is disabled.
   - The default settings are Enable SYS/DIA, Neonatal Systolic Limits 50:100, Neonatal Diastolic Limits 30:70, and Neonatal MAP Limits 35:80 is disabled.

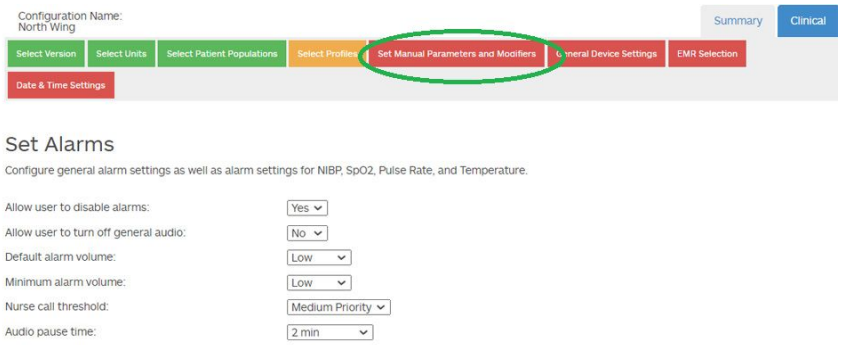
3. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the values for Adult Systolic Limits. Values range from 28 to 258.
4. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the values for Adult Diastolic Limits. Values range from 20 to 235.
5. (Optional). To change NIBP alarms, check the Enable box and then use the sliders, or computer arrow keys, to set the value for Adult MAP Limits. Values range from 20 to 255.
6. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the value for Pediatric Systolic Limits. Values range from 30 to 160.

7. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the value for Pediatric Diastolic Limits. Values range from 15 to 130.
8. (Optional). To change NIBP alarms, check the Enable box and then use the sliders, or computer arrow keys, to set the value for Pediatric MAP Limits. Values range from 15 to 140.
9. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the values for Neonatal Systolic Limits. Values range from 25 to 120.
10. (Optional). To change NIBP alarms, use the sliders, or computer arrow keys, to set the values for Neonatal Diastolic Limits. Values range from 10 to 105.
11. (Optional). To change NIBP alarms, check the Enable box and then use the sliders , or computer arrow keys, to set the values for Neonatal MAP Limits. Values range from 10 to 110.
12. Click **SAVE AND CONTINUE**.

SpO2 Alarms (Percent)

Configure general alarm settings as well as alarm settings for SpO2.

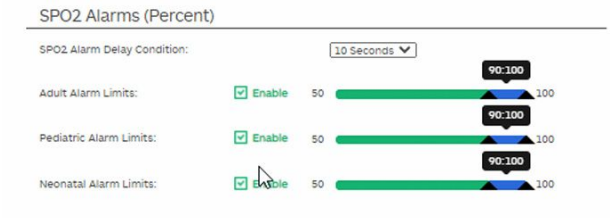
1. Configure the general alarm settings.



2. Use the drop down menu to select the SpO2 Alarm Delay Condition. Choices include: 10 seconds (default), Off, or SatSec.

   For SatSec settings, choices include: 25 (default) , 0, 10, 50, or 100.

3. (Optional). To change SpO2 Alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper limit values. See the next steps for specific values for each alarm.

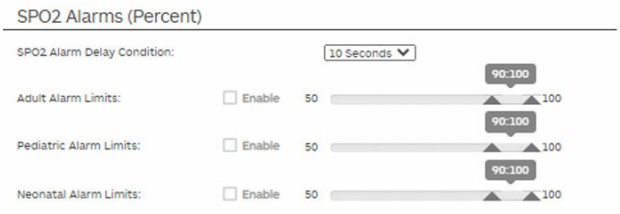


   The default settings are Enable Adult Alarm Limits 90:100, Pediatric Alarm Limits 90:100, and Neonatal Alarm Limits 90:100.

4. (Optional). To change SpO2 alarms, use the sliders, or computer arrow keys, to set the values for Adult Alarm Limits. Values range from 50 to 100.
5. (Optional). To change SpO2 alarms, use the sliders, or computer arrow keys, to set the values for Pediatric Alarm Limits. Values range from 50 to 100.

6. (Optional). To change SpO2 alarms, use the sliders, or computer arrow keys, to set the values for Neonatal Alarm Limits. Values range from 50 to 100.
7. (Optional). To disable SpO2 alarms, click within the checkbox next to each limit to disable the alarm limit.

NOTE When an alarm limit is disabled in the Configuration Tool, the limits are grayed out and *Enable* turns from green to gray.

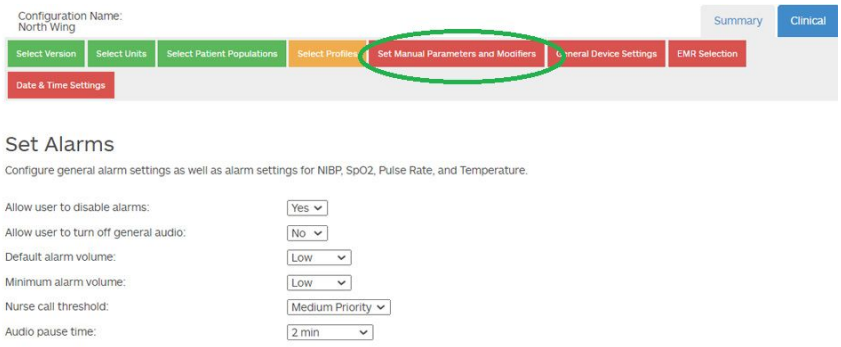


8. Click **SAVE AND CONTINUE**.

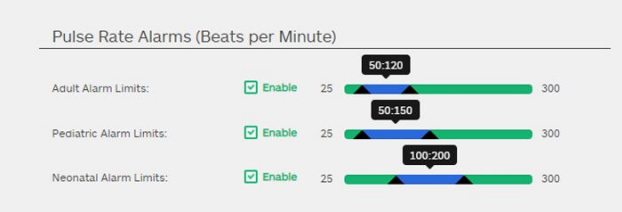
Pulse Rate Alarms (Beats per Minute)

Configure general alarm settings as well as alarm settings for Pulse Rate.

1. Configure the general alarm settings.



2. (Optional). To change Pulse Rate Alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper limit values. See the next steps for specific values for each alarm.



The default settings are Enable Adult Alarm Limits 50:120, Pediatric Alarm Limits 50:150, and Neonatal Alarm Limits 100:200.

3. (Optional). To change Pulse Rate Alarm Limits, use the sliders, or computer arrow keys, to set the values for Adult Alarm Limits. Values range from 25 to 300.
4. (Optional). To change Pulse Rate Alarm Limits, use the sliders, or computer arrow keys, to set the values for Pediatric Alarm Limits. Values range from 25 to 300.

5. (Optional). To change Pulse Rate Alarm Limits, use the sliders, or computer arrow keys, to set the values for Neonatal Alarm Limits. Values range from 25 to 300.
6. (Optional). To disable Pulse Rate Alarm Limits, click within the checkbox next to each limit to disable the alarm limit.

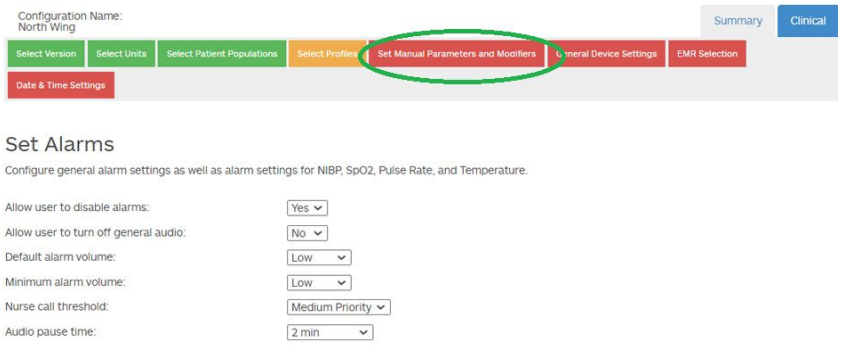
   NOTE When an alarm limit is disabled in the Configuration Tool, the limits are grayed out and *Enable* turns from green to gray.

7. Click **SAVE AND CONTINUE**.

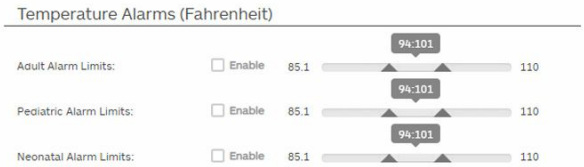
Temperature Alarms (Fahrenheit)

Configure general alarm settings as well as alarm settings for Temperature.

1. Configure the general alarm settings.



2. (Optional). To change Temperature Alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper limit values. See the next steps for specific values for each alarm and how to enable the alarm limits.



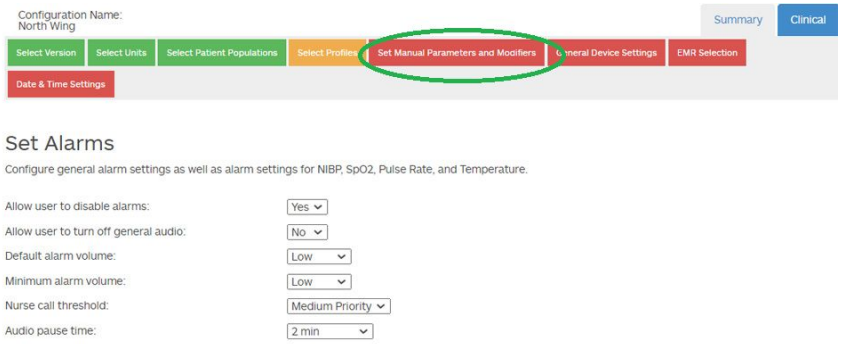
   The default settings are Disable Adult Alarm Limits 94:101, Pediatric Alarm Limits 94:101, and Neonatal Alarm Limits 86.6:101.

3. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Adult Alarm Limits. Values range from 85.1 to 110.
4. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Pediatric Alarm Limits. Values range from 85.1 to 110.
5. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Neonatal Alarm Limits. Values range from 85.1 to 110.
6. Click **SAVE AND CONTINUE**.

Temperature Alarms (Celsius)

Configure general alarm settings as well as alarm settings for Temperature.

1. Configure the general alarm settings.



2. (Optional). To change Temperature Alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper limit values. If the Units selected are set to Metric, the Temperature Alarms appear in Celsius. See the next steps for specific values for each alarm and how to enable the alarm limits.

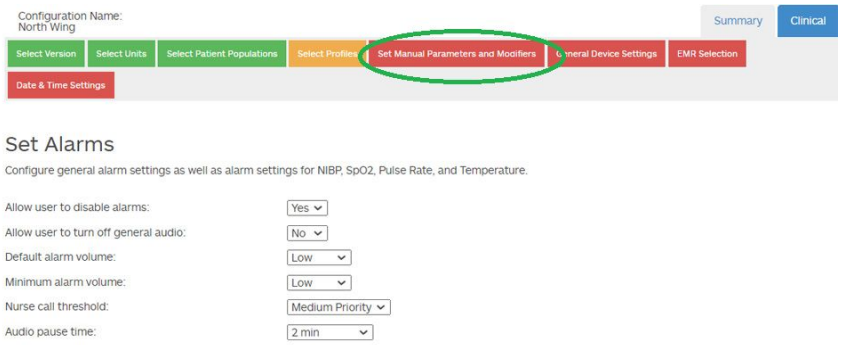
   The default settings are Disable Adult Alarm Limits 29.5 : 43.3, Pediatric Alarm Limits 29.5 : 43.3, and Neonatal Alarm Limits 29.5 : 43.3.

3. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Adult Alarm Limits. Values range from 29.5 to 43.3.
4. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Pediatric Alarm Limits. Values range from 43.3 to 43.3.
5. (Optional). To change Temperature Alarm Limits, click within the checkbox next to each limit to enable the alarm limit and then use the sliders, or computer arrow keys, to set the values for Neonatal Alarm Limits. Values range from 43.3 to 43.3.
6. Click **SAVE AND CONTINUE**.

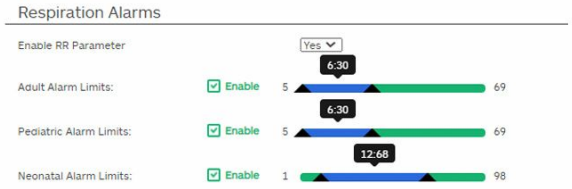
Respiration Alarms

Configure general alarm settings as well as alarm settings for Respiration Rate.

1. Configure the general alarm settings.



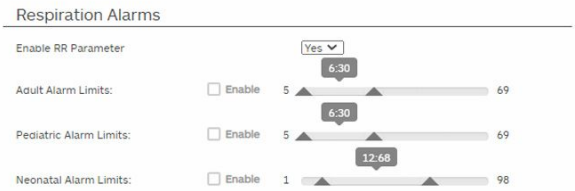
2. (Optional). To change Respiration Alarms, use the sliders, or use the arrow keys on your computer keyboard, to set the lower and upper limit values. See the next steps for specific values for each alarm and how to enable the alarm limits.



The default settings are Enable RR Parameter, Adult Alarm Limits 6:30, Pediatric Alarm Limits 6:30, and Neonatal Alarm Limits 12:68.

3. (Optional). To change Respiration Alarm Limits, use the sliders to set the values for Adult Alarm Limits. Values range from 5 to 69.
4. (Optional). To change Respiration Alarm Limits, use the sliders to set the values for Pediatric Alarm Limits. Values range from 5 to 69.
5. (Optional). To change Respiration Alarm Limits, use the sliders to set the values for Neonatal Alarm Limits. Values range from 12 to 98.
6. (Optional). To disable Respiration Alarms, use the drop down menu to set the Enable RR Parameter to No.

Alternatively, click within the checkbox next to each limit to disable the alarm limit.



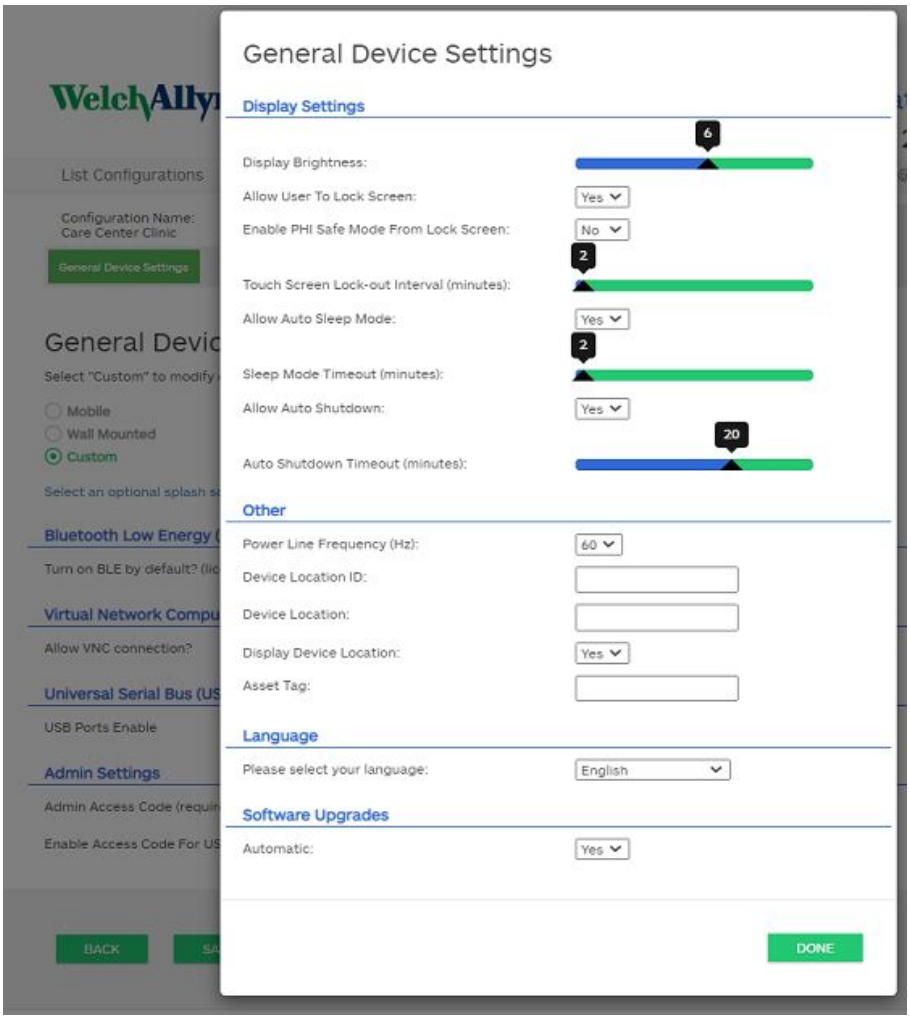
NOTE When an alarm limit is disabled in the Configuration Tool, the limits are grayed out and *Enable* turns from green to gray.

7. Click **SAVE AND CONTINUE**.

(Optional) Select Custom General Device Settings

Select **Custom** to modify the general settings.

1. Click the radio button next to **Custom**. (Choices include: **Mobile**, **Wall Mounted**, or **Custom**).



For Custom General Device Settings, the default settings are: Display Brightness = 6, Allow User To Lock Screen = Yes, Enable PHI Safe Mode From Lock Screen = No, Touch Screen Lock-out Interval (minutes) = 2, Allow Auto Sleep Mode = Yes, Sleep Mode Timeout (minutes) = 2, Allow Auto Shutdown = Yes, Auto Shutdown Timeout (minutes) = 20. Power Line Frequency (Hz) =

60, Device Location ID = blank, Device Location = blank, Asset Tag = blank. Language = English. Software Upgrades Automatic = Yes.

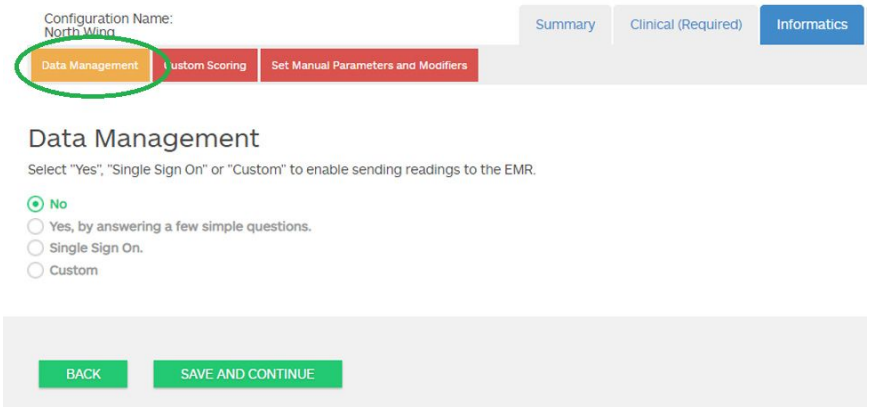
2. (Optional). To change the default values for Display Brightness use the slider to set the value. Values range from 1 to 10.
3. (Optional). To change the default values for Allow User to Lock Screen, use the drop down menu to select Yes or No.
4. (Optional). To change the default values for Enable PHI Safe Mode From Lock Screen, use the drop down menu to select Yes or No.
5. (Optional). To change the default values for Touch Screen Lock-out Interval (minutes) use the slider to set the value. Values range from 1 to 30.
6. (Optional). To change the default values for Allow Auto Sleep Mode, use the drop down menu to select Yes or No.
7. (Optional). To change the default values for Sleep Mode Timeout (minutes), use the slider to set the value. Values range from 1 to 30.
8. (Optional). To change the default values for Allow Auto Shutdown, use the drop down menu to select Yes or No.
9. (Optional). To change the default values for Auto Shutdown Timeout (minutes), use the slider to set the value. Values range from 1 to 30.
10. (Optional). To change the default values for Power Line Frequency (Hz), use the drop down menu to select 60 or 50.
11. (Optional). To add a Device Location ID to the device, click within the *Device Location ID* field and type in an ID.
12. (Optional). To add a Device Location to the device, click within the *Device Location* field and type in a user-friendly location name.
13. (Optional). To display the Device Location on the device, use the drop down menu to select Yes or No.
14. (Optional). To add an Asset Tag to the device, click within the *Asset Tag* field and type in an Asset tag identifier.
15. (Optional). To change the default language on the device, use the drop down menu to select the desired language. Choices include English, French, German, Swedish, Dutch, Danish, Finnish, Greek, Italian, Norwegian, Spanish, Portuguese, Polish, Simplified Chinese, Thai, or Traditional Chinese.
16. (Optional). To set the device to perform a software update when a new software version is available, use the drop down menu to select Yes or No.
17. When finished, click **DONE**.
18. Click **SAVE AND CONTINUE**.

    As the Configuration Tool is updated the screen moves to the **EMR Selection** tab.

Data Management

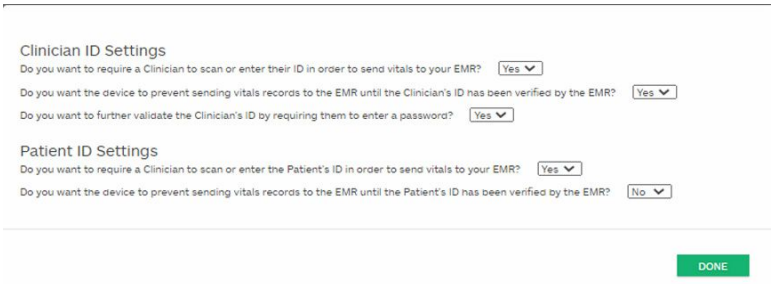
This section is where clinical workflow settings are established. Allows you to define additional modifications to clinician and patient authentication and how the authenticated data will be displayed on the device.

1. Click **Data Management** to continue.



The default setting is set to not send readings to an EMR. To change the default setting, use the radio button to select **Yes, by answering a few simple questions**, **Single Sign On**, or **Custom** to enable sending readings to the EMR.

2. (Optional). Use the radio button to select **Yes, by answering a few simple questions**.



a. Set up the Clinician ID Settings and the Patient ID Settings. Use the drop down menus to select Yes or No to answer the following questions:

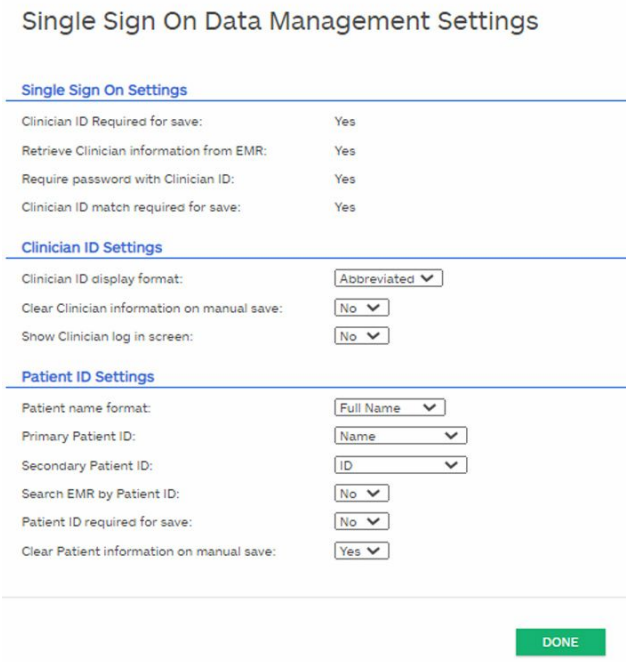
   Do you want to require a Clinician to scan or enter their ID in order to send vitals to your EMR? Default = Yes, Do you want the device to prevent sending vitals records to the EMR until the Clinician's ID has been verified by the EMR? = Yes, Do you want to further validate the Clinician's ID by requiring them to enter a password? = Yes, Do you want to require a Clinician to scan or enter the Patient's ID in order to send vitals to your EMR? = Yes, Do you

want the device to prevent sending vitals records to the EMR until the Patient's ID has been verified by the EMR? = No.

NOTE changes made in data management CAN BE overridden by certain EMR selections in later screens.

b. Click **DONE**.

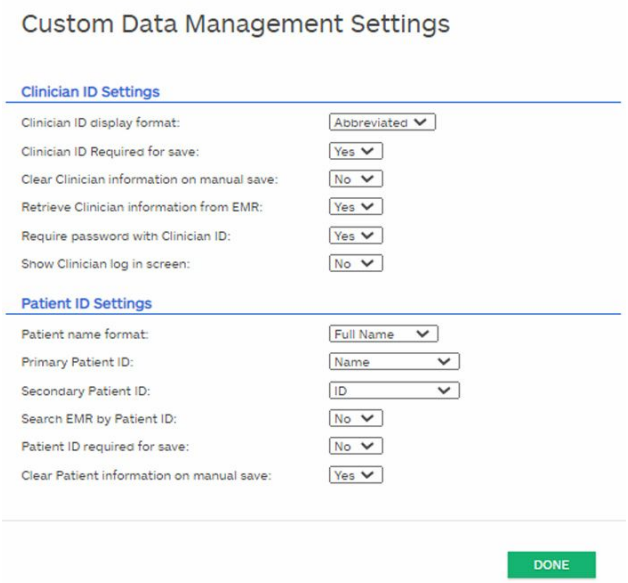
c. (Optional). Use the radio button to select **Single Sign On**.



Single Sign On Settings/Clinician ID Required for save = Yes. Retrieve Clinician information from EMR = Yes. Require password with Clinician ID = Yes. Clinician ID match required for save = Yes. **Clinician ID Settings**/Clinician ID display format: = Abbreviated. Clear Clinician information on manual save = No. Show Clinician log in screen = No. **Patient ID Settings**/Patient name format = Full Name. Primary Patient ID = Name. Secondary Patient ID = ID. Search EMR by Patient ID = No. Patient ID required for save = No. Clear Patient information on manual save = Yes.

d. Use the drop down menu to change the default values.

e. (Optional). Use the radio button to select **Custom.**



3. Click **SAVE AND CONTINUE**.

Licensed features

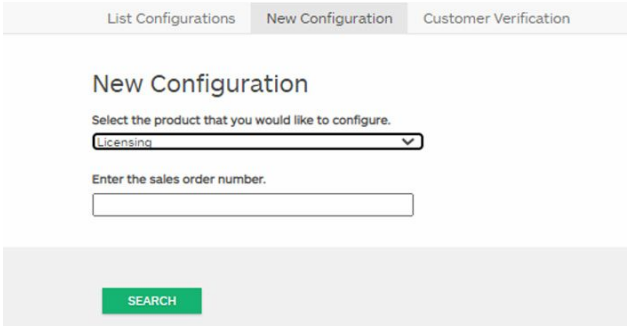
Create a new configuration for the Bluetooth Low Energy (BLE) features

To configure the CSM device, use the Configuration Tool to create a new configuration file and add the Bluetooth Low Energy (BLE) option.

NOTE You are required to enter the sales order number and all of the device serial numbers that you want to activate.

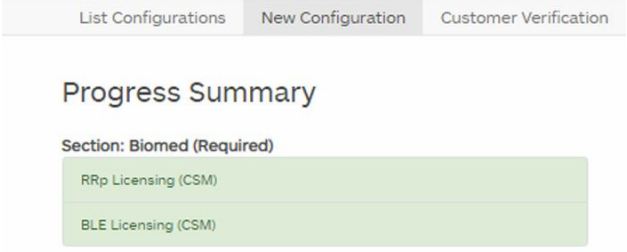
NOTE The CSM device requires software version 1.52, or later, and a Bluetooth radio.

1. From the main screen, click the **New Configuration** tab.
2. Use the drop down menu to select the **Licensing** product.

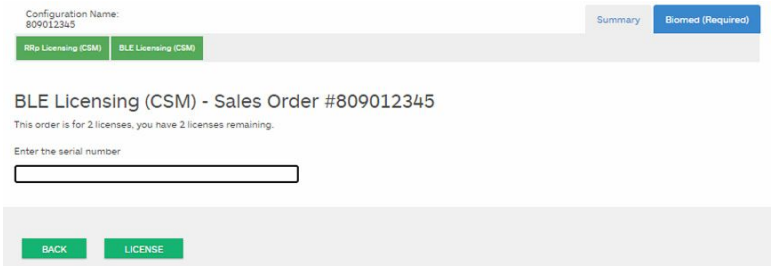


3. Click within the *Enter the sales order number* field, enter the sales order number that you received, and click **SEARCH**.

NOTE As the Configuration Tool is updated the Progress Summary view updates to show completed sections in green and the screen moves to the **Biomed (Required)** tab.

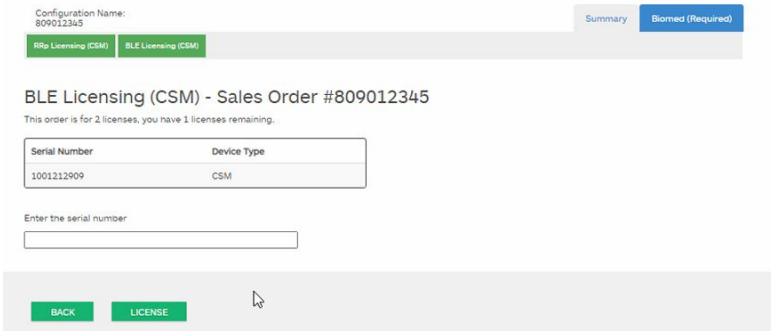


4. Click **BLE Licensing (CSM)**.
5. Click within the *Enter serial number* field and enter the serial number from the CSM device and then click **LICENSE**.

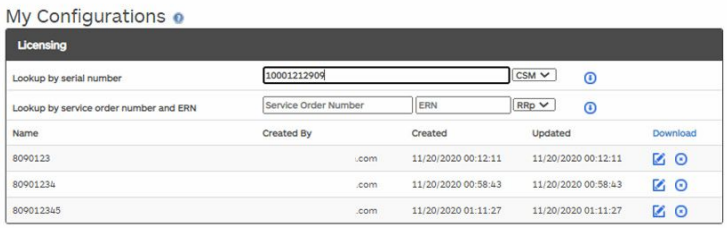


The screen indicates the number of licenses available.

6. To install a second license, click within the *Enter serial number* field again and enter the second serial number from the CSM device and then click **LICENSE**.



7. To view or use licenses, click the **List Configurations** tab. The Licensing appears at the top of *My configurations*.



8. Click **Download** or enter the device serial number into the *Lookup by serial number* field to download the configuration file. (When the file is downloaded to a computer it will contain a file name like: "licenses_(youraccountnamefirst)_(youraccountnamelast)_(youremailaddress)_com - signed.waconfig". Ex: "*licenses_keith_abbit_carecenter_com-signed.waconfig*".)
9. To complete the installation on a device, follow the instructions in the section: "*Install a configuration file*".

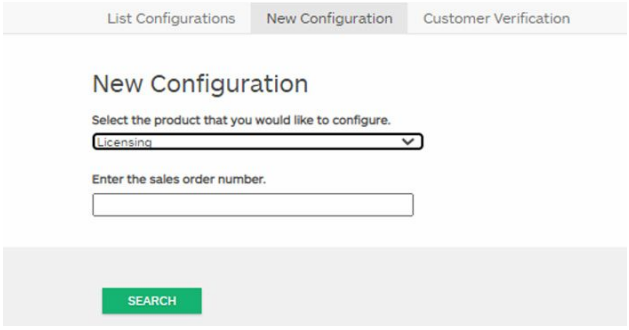
Create a new configuration for RRp Licensing features

To configure the CSM device, use the Configuration Tool to create a new configuration file and add the RRp Licensing option.

NOTE You are required to enter the sales order number and all of the device serial numbers that you want to activate.

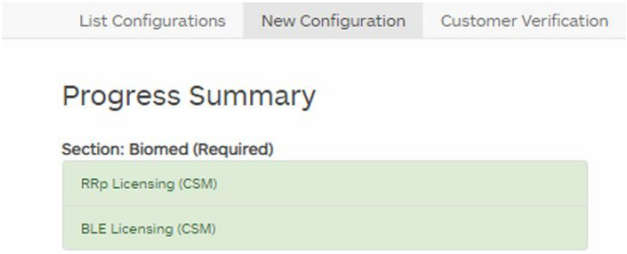
NOTE The CSM device requires software version 1.51, or later, and the device requires the Masimo SpO2 sensor hardware to be installed for the RRp parameter. Use the Welch Allyn Service Tool version 1.9, or later, to confirm that the device contains a Masimo SpO2 sensor firmware version of 7.14.6.2, or later.

1. From the main screen, click the **New Configuration** tab.
2. Use the drop down menu to select the **Licensing** product.



3. Click within the *Enter the sales order number* field and enter the sales order number that you received.

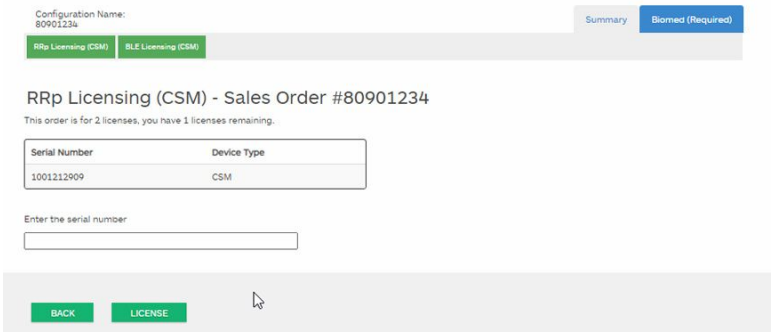
NOTE As the Configuration Tool is updated the Progress Summary view updates to show completed sections in green and the screen moves to the **Biomed (Required)** tab.



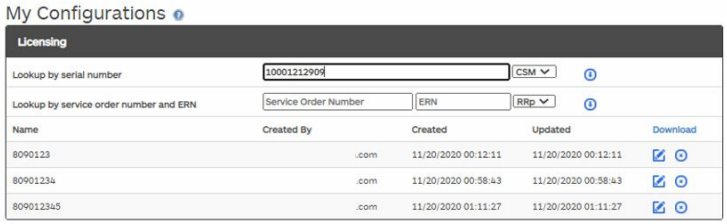
4. Click **RRp Licensing (CSM)**.
5. Click within the *Enter serial number* field and enter the serial number from the CSM device and then click **LICENSE**.

The screen indicates the number of licenses available.

6. To install a second license, click within the *Enter serial number* field again and enter the second serial number from the CSM device and then click **LICENSE**.



7. To view or use licenses, click the **List Configurations** tab. The Licensing appears at the top of *My configurations*.



8. Click **Download** or enter the device serial number into the *Lookup by serial number* field to download the configuration file. (When the file is downloaded to a computer it contains a file name like: "licenses_(youraccountnamefirst)_(youraccountnamelast)_(youremailaddress)_com-signed.waconfig". Ex: "licenses_keith_abbit_carecenter_com-signed.waconfig".
9. To complete the installation on a device, follow the instructions in the section: "*Install a configuration file*".

Configure a CA Root certificate

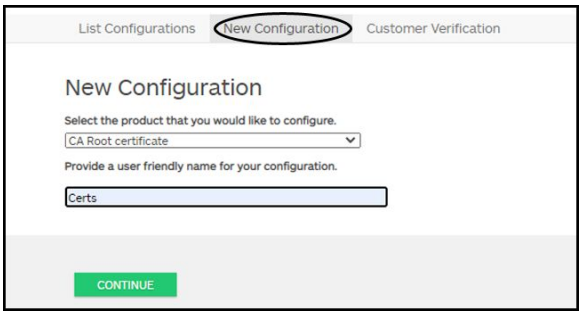
Select the product that you would like to configure.

You can now load self-signed security certificates onto the Connex Spot Monitor (CSM) to ensure secure communication with an authenticated server on the network.

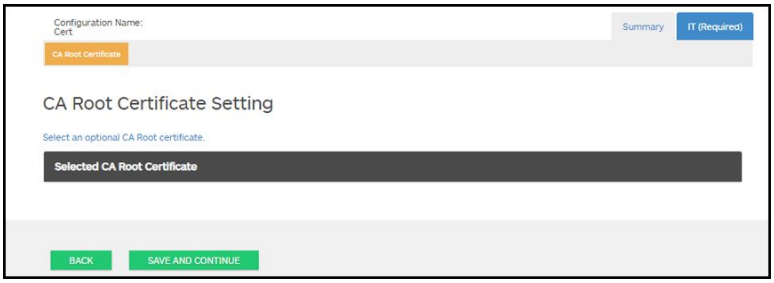
CSM is also pre-loaded with the following certificates:
Go_Daddy_Class_2_Certification_Authority.pem
Symantec_Class_3_Public_Primary_Certification_Authority_-_G6.pem
VeriSign_Class_3_Public_Primary_Certification_Authority_-_G4.pem
VeriSign_Class_3_Public_Primary_Certification_Authority_-_G5.pem
Veri_Sign_Class_3_Public_Primary_Certification_Authority_-_G3.pem
COMODO_ECC_Certificate_Authority.pem
COMODO_Certificate_Authority.pem
Symantec_Class_3_Public_Primary_Certification_Authority_-_G4.pem
Go_Daddy_Root_CertificateAuthority_-_G2.pem
COMODO_RSA_Certificate_Authority.pem
VeriSign_Universal_Root_Certification_Authority.pem

To add a certificate from your computer:

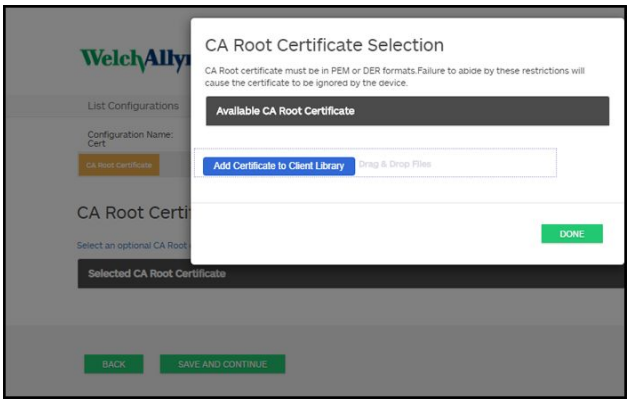
1. From the main screen, click the **New Configuration** tab.
2. Use the drop down menu to select **CA Root certificate**.
3. Provide a name for the configuration by typing in the field to enter a user friendly name and then click **CONTINUE**.



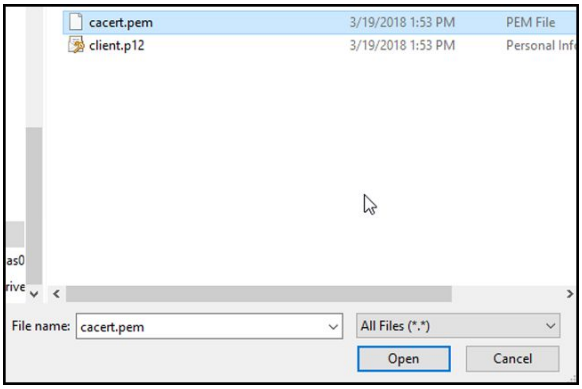
4. Select the Product Use Location. (Choices include: Hospital or Physicians Office or Clinic.)
5. Click **SAVE AND CONTINUE**.
6. Click **CA Root Certificate**.



7. Click **Select an optional CA Root Certificate**.

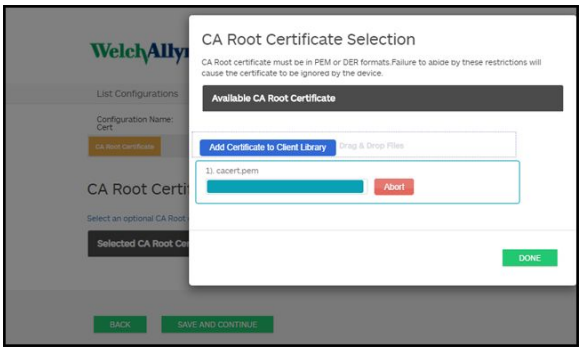


8. Click **Add Certificate to Client Library**.
9. Navigate to the .pem file, or .der file, location using your computer's Windows File Explorer window. (The sample screen shows a .pem file type.)



Select the file and click **Open**.

10. Select **DONE**.



11. Click **SAVE AND CONTINUE**.

Device configuration and setup

Configuration overview

A configuration file can be created that specifies preferences for Connex Spot Monitor options. When powered on, the monitor recognizes all available options and features and applies the associated configuration file preferences.

If no customized configuration file has been loaded onto the device, the device applies factory defaults to all available options.

NOTE The device does not support configuration filenames that include parentheses. If these are present in the filename, the device will not recognize the file. This is a common issue if you've downloaded the same file multiple times from your web browser. For example, the web browser may automatically rename "MyFile.config" to "MyFile.config(2)" if you download it a second time. If this happens, rename the file by deleting the parentheses; then it will appear in the list on the CSM.

The remainder of this section instructs you how to do the following:

- Edit a configuration file
- Copy a configuration file
- Download a configuration file to install on another device
- Create a new configuration file
- Install a configuration file

Edit a configuration file

To edit a saved configuration file, complete the following steps:

1. Access the Configuration Tool at http://config.welchallyn.com.
2. Log in with a username and password.
3. Click **List Configurations** on the navigation bar.
4. Locate the configuration file to be edited in the list, and click the on the right side of the table to launch the editor.
5. Under Progress Summary, locate the section you want to edit (Clinical, Informatics, IT, or Biomed) and click the specific step you want to edit.
6. Review the selections in each step and modify them as desired.

7. Click **SAVE AND CONTINUE** to accept the changes or **BACK** to return to the previous screen without saving.

   Clicking **SAVE AND CONTINUE** automatically moves you to the next step in that section of the Progress Summary. When you reach the last step in a section, cllicking **SAVE AND CONTINUE** returns you to the Progress Summary.
8. Repeat steps 5 through 7 until you complete all desired edits.
9. Click **List Configurations** on the navigation bar to see a new date stamp in the Updated column for your configuration file.

Copy a configuration file

To copy a saved configuration file, complete the following steps:

1. Access the Configuration Tool at http://config.welchallyn.com.
2. Log in with a username and password.
3. Click **List Configurations** on the navigation bar.
4. Locate the configuration file to be copied in the list, and click the on the right side of the table.
5. Either accept or enter a new name for the copied file in the Copy Configuration dialog, then click **Copy**.
6. Observe your new configuration file on the List Configurations tab.

Download a configuration file to install on another device

To download a saved configuration file, complete the following steps:

From the Configuration Tool

1. Access the Configuration Tool at http://config.welchallyn.com.
2. Log in with a username and password.
3. Click **List Configurations** on the navigation bar.
4. Locate the configuration file to be downloaded in the list, and click the on the right side of the table.

   The configuration file downloads to the tray on your PC.
5. Using the dropdown menu on the right side of the downloaded file, select **Show in folder**.

   Windows Explorer opens the Downloads folder with the most recent download selected.
6. Copy the downloaded configuration file to a USB flash drive.
7. See "Install a configuration file" for instructions to load this configuration on another device.

Install a configuration file

To install a configuration file, you must first download the configuration file to a USB flash drive. If you have not done so already, complete the steps in "Download a configuration file to install on another device," then complete the following steps:

1. Insert the flash drive into the device which needs to have the configuration loaded onto it.

A pop-up dialog appears listing the configuration file(s) on your flash drive.

2. Select the desired configuration file and touch **Load**.
3. Repeat this process on as many devices as you wish.

Custom scoring (Early Warning Scores) on the Connex Spot Monitor

Custom scoring is defined through the Configuration tool. The order in which the custom score parameters are entered in the Configuration tool is the order in which they will appear in the custom scoring on the device.

Custom scoring enables you to configure specific parameters, based on your institution's practice standards, that calculate scores for patient monitoring. These scores generate messages regarding the patient status, based on the parameters chosen. These messages are provided only as reminders.

See the "*Install a configuration file*" for additional details. This sections shows examples of Custom scoring/Early Warning Scores (EWS) after the configuration file is installed on the Connex Spot Monitor.

Each Single Parameter Trigger can have its own associated message.

In the following example of a CSM Screen, shown is a Single Parameter Score that is triggered, but an Aggregate Score is not triggered.

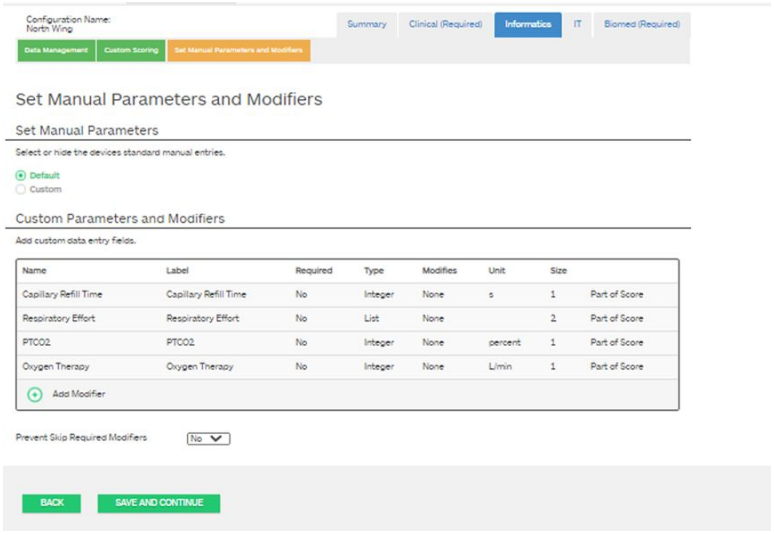
Single Parameter messages shown in the message screen are similar to Aggregate Scoring today.

A list of up to 8 options will appear as buttons on the interface:

Options 9-19 appear as a drop-down menu on the device:

Labels created in the Configuration Tool for the Modifiers determine how the modifier will appear on the device:

Abbreviations created in the Configuration Tool for the Modifiers determine how the modifier will appear on the device on home screen ribbon:

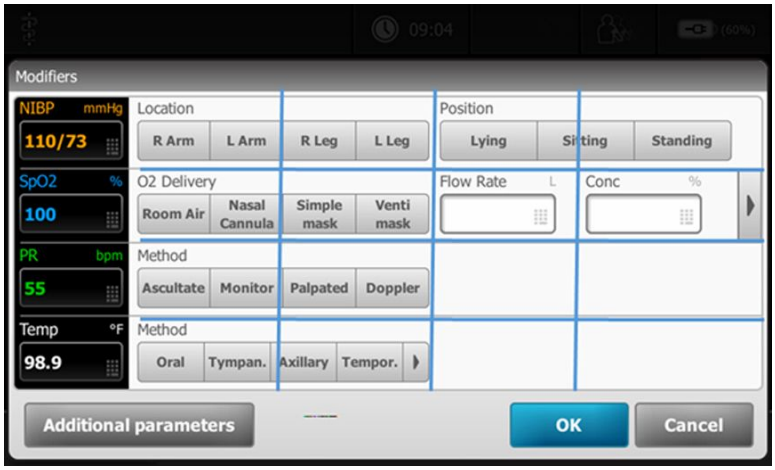


If you wish to edit a parameter that is part of a score you must first delete the parameter from all scores in the EWS scoring system.

In the newest version of the configuration tool, Parameters and Modifiers that are not part of the score can be manually re-ordered by using the button on the list.

Planning a Workflow Layout

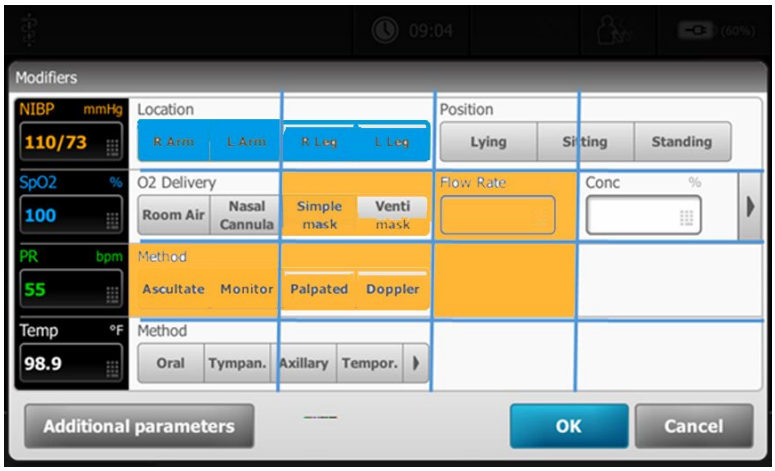
The CSM screen is divided into 16 customizable cells.



Lists occupy 2 cells.

Integers, decimals and alpha-numerics occupy 1 cell.

Custom cells can cross cells and occupy up to 2 cells, but they must start as left as possible.

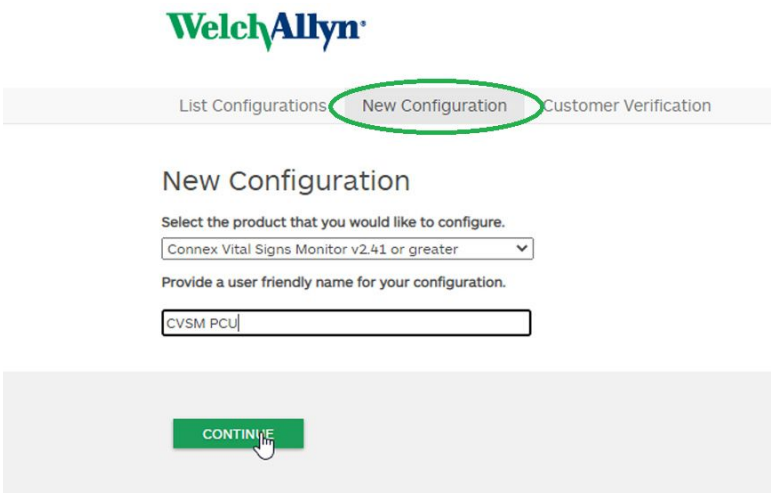


In the example shown, the blue-colored cells are acceptable, however the salmon-colored cells are unacceptable.

Create a new Connex Vital Signs Monitor configuration

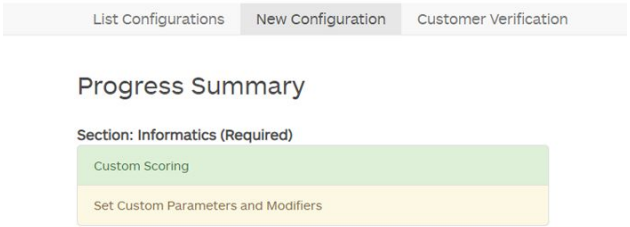
This section applies to a Connex Vital Signs Monitor with software version 2.41 or greater.

1. From the main screen, click the **New Configuration** tab.

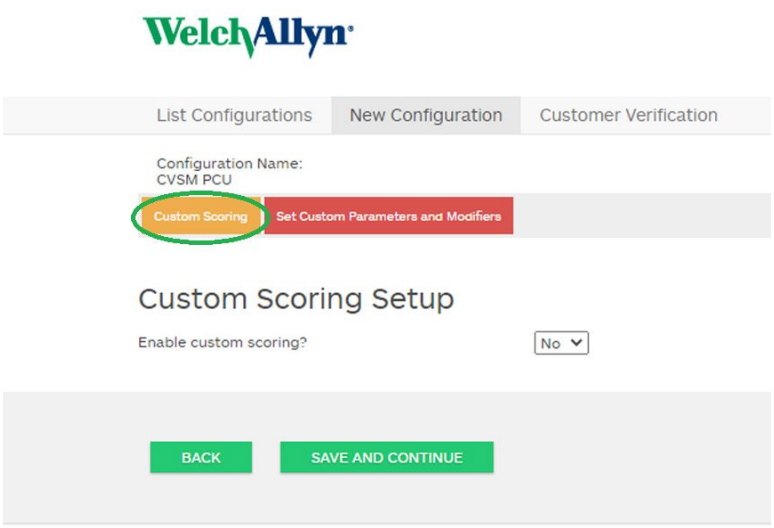


2. Use the drop down menu to select Connex Vital Signs Monitor v2.41 or greater. Provide a name for the configuration by typing in field and click **CONTINUE**.
3. Select the Product Use Location: Hospital.
4. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Custom Scoring** tab. As the Configuration Tool is updated the Progress Summary view updates to show completed sections in green.

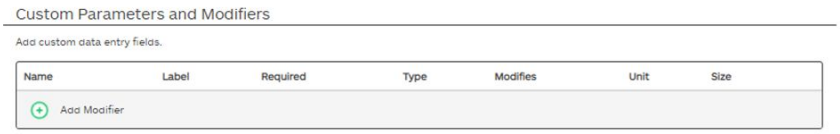


5. (Optional). Use the drop down menu to select Enable custom scoring. Choices include: No or Yes. No is the default setting.



6. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Set Custom Manual Parameters and Modifiers** tab. Configure the manual parameters and modifiers settings.



7. (Optional). Click to add a Modifier.

   a. Click in the *Name* field and type in a name for the modifier.
   b. Click in the *Label* field and type in a label for the modifier.
   c. Click in the *Abbreviation* field and type in an abbreviation for the modifier.
   d. Use the drop down menu to select whether the modifier is required.
   e. Use the drop down menu to select whether the modifier modifies: NIBP, SpO2, Temperature, Pulse Rate, Respiration Rate, or None.
   f. Use the drop down menu to select the type of modifier: Integer, Decimal, Alphanumeric, or List.

      If List is selected, click in the *Name* field and type in a name, click in the *Label* field and type in a label, click in the *Abbreviation* field and type in an abbreviation, click in the *Item HIS ID* field and type in a HIS ID.

(Optional). Click to add another List Item.

g. Click in the *Name* field and type in a name for the modifier.

h. Click in the *Minimum Value* field and type in a value. (Values must be within -32768 and 32767 and be an integer. The Minimum Value must be less than the Maximum Value.)

i. Click in the *Maximum Value* field and type in a value. (Values must be within -32768 and 32767.)

j. When done, click **SAVE**.

8. Click **SAVE AND CONTINUE**.

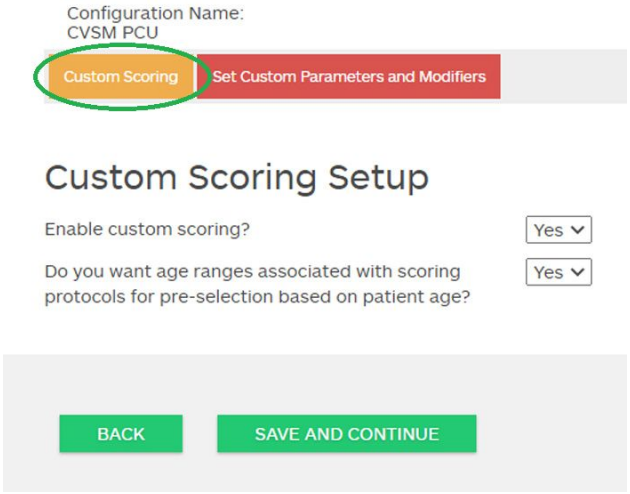
(Optional) Select Custom Scoring Setup (Connex Vital Signs Monitor)

This section describes how to set up Bedside Protocols that can be replicated on a Connex Vital Signs Monitor device. You can pre-select from list of clinical protocols. All scoring protocols are completely customizable to meet user requirements.

You may add up to 6 Scoring Systems. Select a predefined Scoring System template, enter a unique Name, and click the button labeled ADD THIS SCORING SYSTEM. Your Scoring System will be added to the bottom of the page. You may then Edit or Delete your Scoring System.

Click the **Custom Scoring** tab.

1. (Optional). Use the drop down menu to select Yes to Enable custom scoring. (The default Enable custom scoring = No).

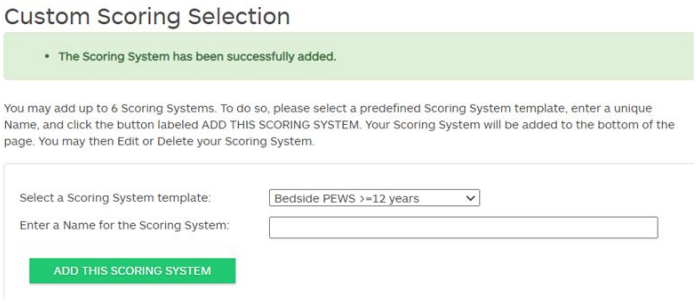


2. (Optional). To change the default selection for Do you want age ranges associated with scoring protocols for pre-selection based on patient age?, use the drop down menu to select Yes or No. (The default choice = No).
3. (Optional). To change the default selection for Do you want to view a condensed total score page as your default?, use the drop down menu to select Yes or No. (The default choice = Yes).
4. Click within the *Please enter the authentication code*: field and enter a valid code in format of [YY]CSM[MM] with the current year and month.
5. Click **SAVE AND CONTINUE**.
6. Select a Scoring System template. Choices include:

Bedside PEWS <3 months
Bedside PEWS 3 to <12 months
Bedside PEWS 1 to 4 years
Bedside PEWS 5 to <12 years
Bedside PEWS >=12 years
Braden
BTF SAGO
BTF ED
BTF SPOC <3 months
BTF SPOC 3 to 12 months
BTF SPOC 1 to 4 years
BTF SPOC 5 to 11 years
BTF SPOC 12 years
Falls Risk Assessment Tool
Glasgow Coma Scale
Modified Early Obstetric Warning
Modified Early Warning Score
MEWS for General Surgical Ward
Morse Fall Score
National Early Warning Score
National Early Warning Score 2
NEWS2 Scale 1
Norton
Pediatric Early Warning Score
Rapid Emergency Medicine Score
Triage Early Warning System
Walsall
Blank Scoring System

7. To enter a name for the Scoring System, click within the *Enter a Name for the Scoring System*: field and type a name for the scoring system as you want it to appear on the device.
8. When finished, click **ADD THIS SCORING SYSTEM**.

   After a successful addition, the following message appears: *The scoring System has been successfully added*.

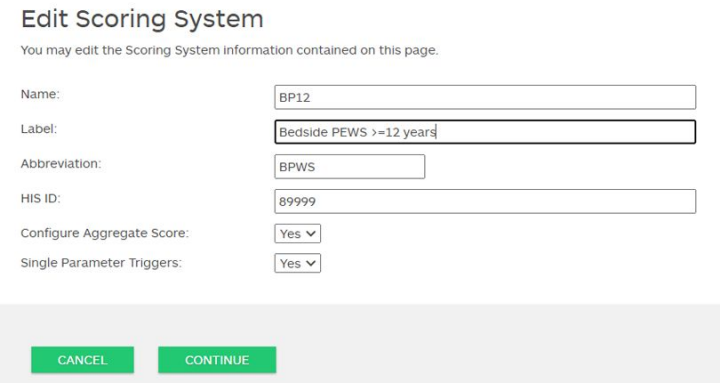


The name for the scoring system also appears at the bottom of the **Custom Scoring Selection** screen.

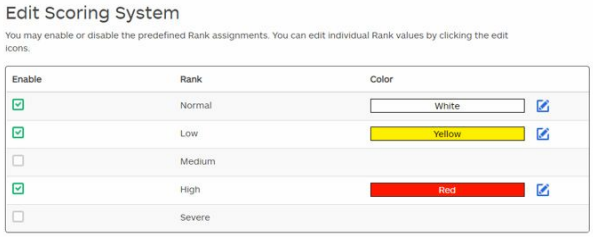
NOTE The Custom Scoring Selection can be used as is or modified to meet facility requirements.

NOTE The Name of the Custom Scoring system defines how the scoring protocol will appear on the device. The HIS ID information for the EMR can be applied here too. Configure the capability for Single Parameter Scoring by itself or as part of an Aggregate Score.

9. (Optional). To edit the Scoring system, click (edit). Click within the fields to enter changes or use the drop down menu to change the Configure Aggregate score or Single Parameter Triggers.



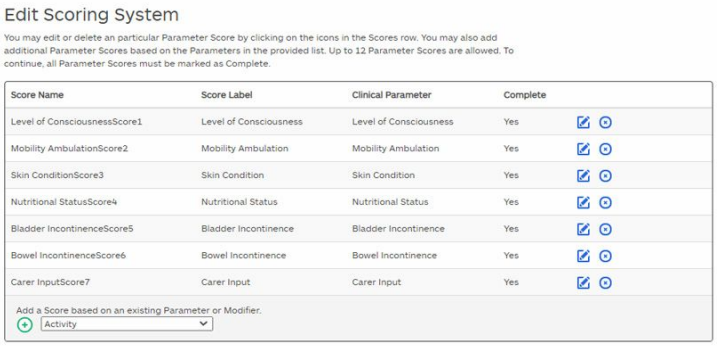
10. (Optional). To delete the Scoring system, click (delete).
11. Click **SAVE AND CONTINUE**.
12. (Optional). To add a Range Row , click (add). To delete a row, click (delete).
13. Click **CONTINUE**.
14. (Optional). To continue editing the Scoring system, check or uncheck the Enable settings. Default settings include: Rank Normal = Enable, Rank Low = Enable, Rank Medium = Enable, Rank High = Disable, Rank Severe = Enable.



NOTE Severity rankings color can modified based on protocol.

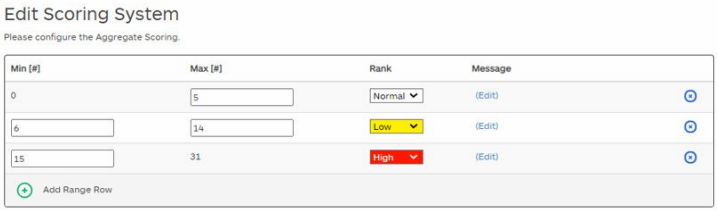
NOTE Rankings can either be omitted or added based on protocol.

15. Click (edit) to change the rank information and then click **DONE**.
16. Click **CONTINUE**.
17. (Optional). To continue editing the Scoring system, click (edit) to change the values.



QUICK TIP: If you want to disassociate a parameter from the score, click (delete), if you want to add a new parameter associated to the score either select an existing one from the drop down list, or create a custom parameter in the next tab.

18. Click **CONTINUE**.
19. Configure the Aggregate Scoring.



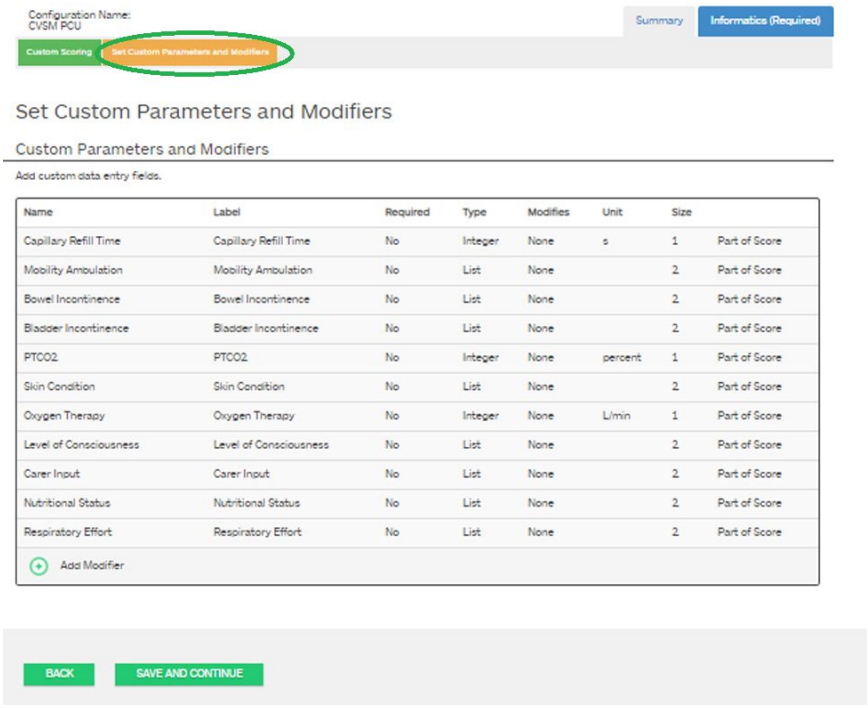
20. Click **CONTINUE**.
21. Click **SAVE AND CONTINUE**.
22. As the Configuration Tool is updated the screen moves to the **Set Custom Parameters and Modifiers** tab.

(Optional) Select Custom Parameters and Modifiers

Select or hide the device standard manual entries.

Click the **Set Manual Parameters and Modifiers** tab.

1. Use the radio button to select **Default** or **Custom** Parameters and Modifiers.



2. The default settings are: Capillary Refill Time = No, Mobility Ambulation = No, Bowel Incontinence = No, Bladder Incontinence = No, PTCO2 = No, Skin Condition = No, Oxygen Therapy = No, Level of Consciousness = No, Carer Input = No, Nutritional Status = No, Respiratory Effort = No.

3. (Optional). Click to add a Modifier.

a. Click in the *Name* field and type in a name for the modifier.

b. Click in the *Label* field and type in a label for the modifier.

c. Click in the *Abbreviation* field and type in an abbreviation for the modifier.

d. Use the drop down menu to select whether the modifier is required.

e. Use the drop down menu to select whether the modifier modifies: NIBP, SpO2, Temperature, Pulse Rate, Respiration Rate, or None.

f. Use the drop down menu to select the type of modifier: Integer, Decimal, Alphanumeric, or List.

   If List is selected, click in the *Name* field and type in a name, click in the *Label* field and type in a label, click in the *Abbreviation* field and type in an abbreviation, click in the *Item HIS ID* field and type in a HIS ID.

(Optional). Click to add another List Item.

g. Click in the *Name* field and type in a name for the modifier.

h. Click in the *Minimum Value* field and type in a value. (Values must be within -32768 and 32767 and be an integer. The Minimum Value must be less than the Maximum Value.)

i. Click in the *Maximum Value* field and type in a value. (Values must be within -32768 and 32767.)

j. When finished, click **SAVE**.

4. Click **SAVE AND CONTINUE**.

   As the Configuration Tool is updated the screen moves to the **Progress Summary** tab for completion.