



**PxPlus Web Development using
Webster+**


DireXions 2025 – Pathways to Progress

Agenda

- Overview
- Highlights of Webster+
- Setup & Configuration
- Creating Webpages
- Security for Setup
- Webster+ Library
- Many Ways to Style (CSS)
- Troubleshooting Tips
- Resources



Overview

 **PVX PLUS**
TECHNOLOGIES LTD.

« Webster Plus

Setup

Default Landing Page

This would be the default page that the users will come to if no program or panel is specified.


It can be replaced by having a page called `_default.html` in your site search rules (docroot or prefix).

This page would typically show something like:








- Contact Information
- Address
- Web site addresses
- Recent Events or News

You could also add things such as the weather:

TORONTO
WEATHER



23°C
few clouds

Wed	Thu	Fri	Sat	Sun	Mon	Tue
						
26°C 16°C	22°C 14°C	24°C 14°C	19°C 13°C	19°C 13°C	18°C 11°C	22°C 15°C

Or maybe a stock market report

Sym	Price	Net Chg	% Chg
XOM	\$112.15	-2.54 ▼	-2.21% ▼
MA	\$591.30	-0.57 ▼	-0.10% ▼
UNH	\$305.34	-3.46 ▼	-1.12% ▼
PM	\$162.07	-5.33 ▼	-3.18% ▼
BK	\$104.21	-0.49 ▼	-0.47% ▼
AAPL	\$237.37	7.65 ▲	3.33% ▲
CVS	\$73.17	-0.92 ▼	-1.24% ▼
COF	\$219.19	-4.08 ▼	-1.83% ▼
COP	\$94.98	-4.01 ▼	-4.05% ▼
GOOG	\$230.61	18.62 ▲	8.78% ▲
USB	\$48.25	-0.27 ▼	-0.56% ▼

Published from TC2000

Statistics

What is WEBSTER+ ?

- A toolset and framework for developing web-based applications, particularly within the PxPlus development environment
- Designed for "browser-only" applications and uses a standard REST-style interface
- Introduced in PxPlus 2021

Webster+ Utilities

What does WEBSTER+ have to offer?

BUILT-IN
UTILITIES

...
SO YOU
DON'T HAVE
TO BUILD
YOURSELF

Website Management Tools

- Website Setup & Configuration
- User Setup & Security
- Password Control
- Optional Two-Factor Authentication using SMS or Email verifications
- Menu System and Left Sidebar Menu Maintenance

All of these tools reside in the
***lib/_webster** directory

Use the default or custom templates to create layouts with a webpage look and feel,
controlled via CSS and JavaScript

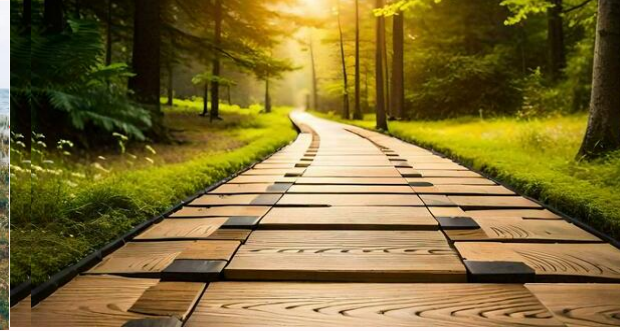
Only accessible by an
Administrator

Webster+ Utilities (cont'd)

What does WEBSTER+ have to offer?

- Provides the ability to create dynamic HTML5-compatible pages using [Webster Short Codes](#)
- Integrates with the [NOMADS Query](#) and [File Maintenance Generator](#) systems
- Provides the ability to run reports created with the Report Writer interface
- Provides both full page loads or partial page updates
- Compatible with any of the following three Web servers: Apache, EZWeb and IIS

5 Steps to Getting Started



Prerequisites

Step 1

Step 2

Installation

Launch Webster+

Step 3

Step 4

Setup & Configuration

Build Your Web Pages

Step 5



Step 1: Prerequisites

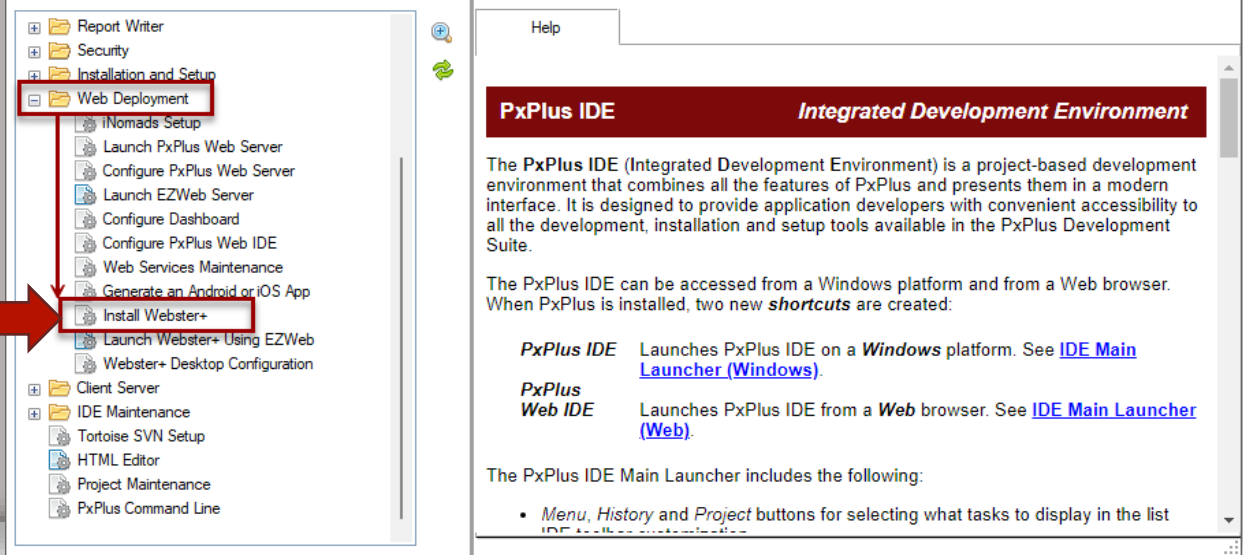
What do I need to get started?

- PxPlus 2021 or later
- Directory path in which you want to create the Webster+ Library
- Which Port number are you going to use?
 - *HTTP Port 8088 (Default)*
- Which Web server are you going to use?
 - *EZWeb (PxPlus server)*
 - *Apache (manual setup)*
 - *IIS (manual setup)*
- Basic knowledge of HTML, CSS and JavaScript (JS)

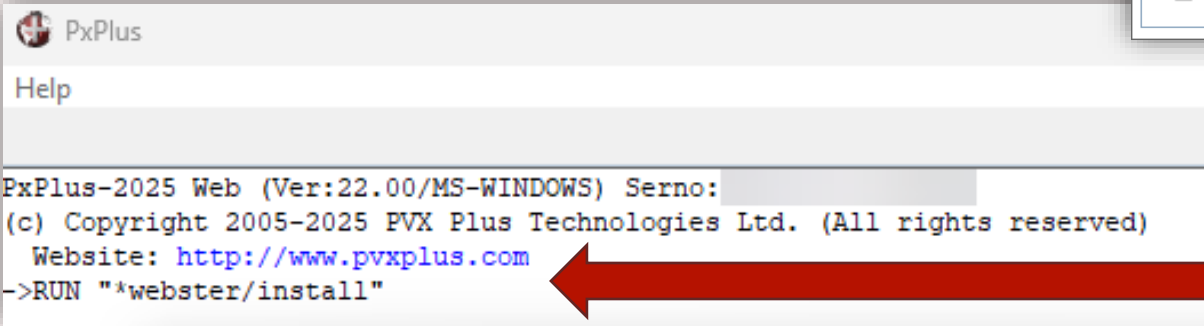
Step 2: Installation (EZWeb or Apache)

Webster+ can be installed using the following 2 methods:

Location	Method
PxPlus IDE Main Launcher	Web Deployment > Install Webster+ For more information, see Installing from the IDE Main Launcher



Location	Method
PxPlus Command Line	RUN "*webster/install" For more information, see Installing from the Command Line



PxPlus IDE – Webster+ Install Assistant

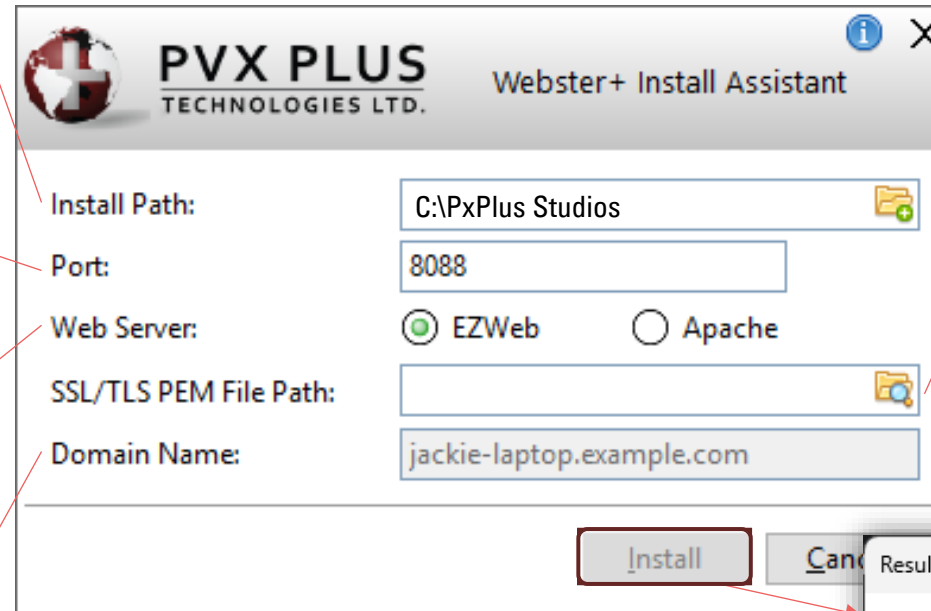
Install Path - Pathname of a new or existing directory in which you want to run your Webster+ website

SSL/TLS PEM File Path – (optional) Pathname to the PEM file with the site's certificates

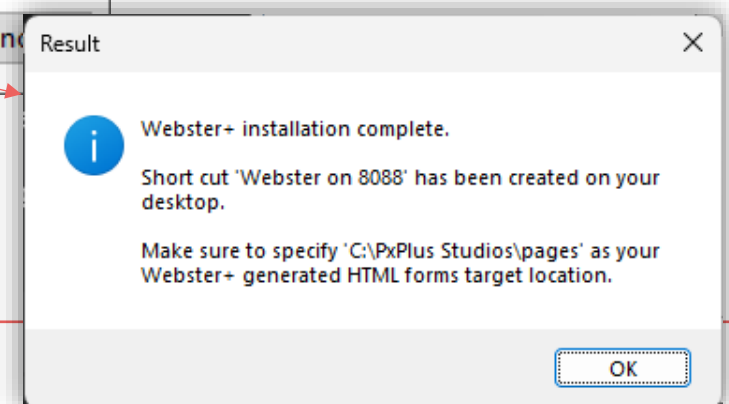
Port – Port number to use

Web Server – EZWeb or Apache

Domain Name – Domain name to use (available when *Apache* is selected)



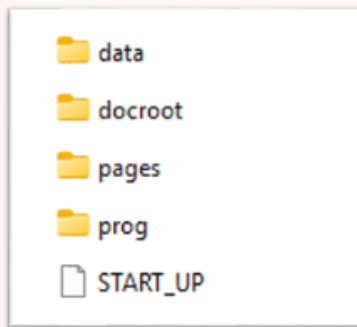
Desktop Icon Launches Server Only







Webster+ Install Directories

The installer will create a basic Webster+ directory structure with four sub-directories.

These directories will contain the files necessary to configure and run your Webster+ environment.



Sub-Directory	Description
 data	Data files, Reports, Images, NOMADS libraries, tmp, webster.conf , _links.html
 docroot	Default web server <i>home root</i> directory start_up.web , webster.pxp style.css , custom.js Important: For security purposes, it is best to have the docroot directory empty except for two programs, webster.pxp and start_up.web .
 pages	HTML pages .htm , .html , .txt
 prog	Webster+ application programs

Base-Line Programs

The **start_up.web** program defines the location of the data files, pages and programs by using the [PREFIX](#) directive.

Base-line **start_up.web**

```
!  
! Standard startup for Webster -- sets the prefix rules  
! Setting the prefix here allows the WIKI system to use the same search rules  
!  
prefix "../data/ ../pages/"  
prefix program "../prog/"
```


Base-Line Programs (cont'd)

The **webster.pxp** program is invoked by all Webster+ requests and is responsible for establishing the Webster+ environment, such as **global variables** and any **other settings** you may choose to add.

Base-line **webster.pxp**

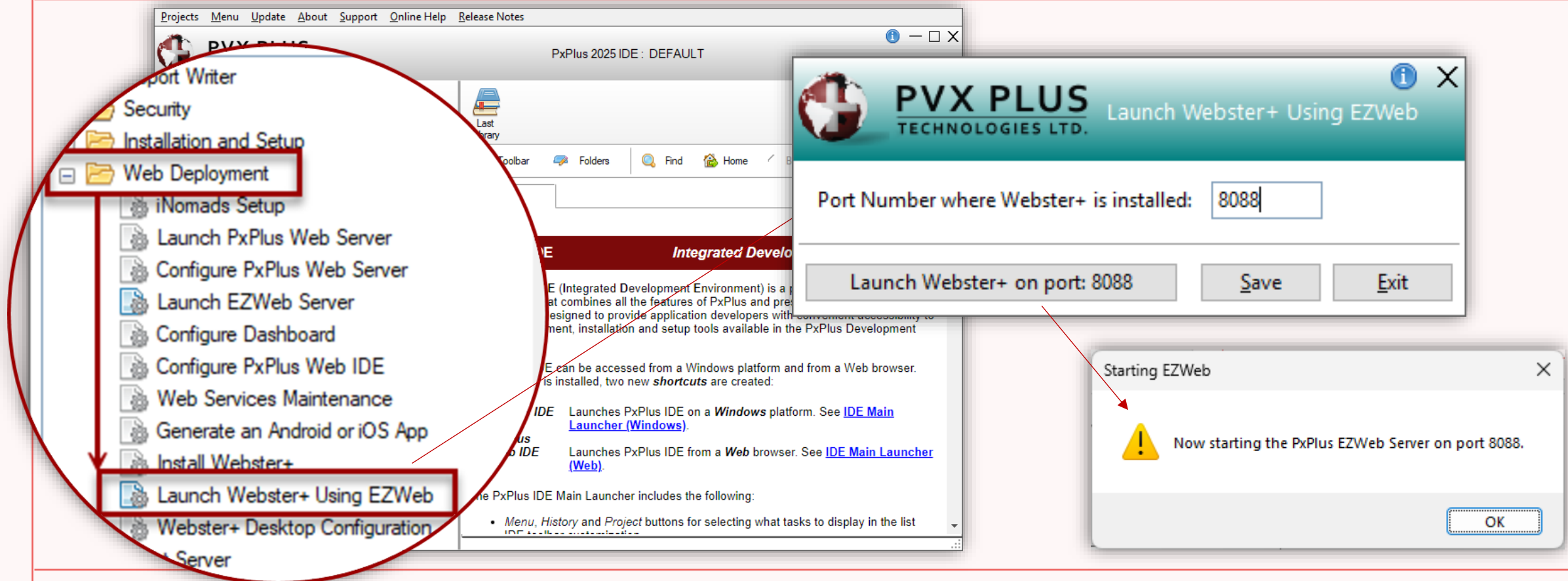
```
!  
! Generic server module for *obj/webster binder  
! Modify this for setting global variables and any webster initialization you want  
! As of PxPlus 2021 (v19), prefixes should be set in start_up.web in order to  
! handle the Wiki interface  
!  
! Then run "*webster/webster"  
!  
run "*webster/webster"
```

Both programs are intended to be base-line programs and can be modified by the developers.

Make sure to insert code prior to running the **webster** program.

Step 3: Launch Webster+

Launching Webster+ using the PxPlus IDE invokes the following window:



Step 4: Setup & Configuration

When the browser starts the Webster+ session, the initial login will only have the **Setup** option on the left sidebar Menu

Statistics displays various statistics to do with running the Webster+ server (covered in next slide)

Webster Plus

Default Landing Page

This would be the default page that the users will come to if no program or panel is specified. It can be replaced by having a page called `_default.html` in your site search rules (docroot or prefix).

This page would typically show something like:

- Contact Information
- Address
- Web site addresses
- Recent Events or News

You could also add things such as the weather:

TORONTO WEATHER 27°C broken clouds

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	☀	☁	☀	☀	☁	☁	☁
	27°C	19°C	16°C	12°C	17°C	17°C	16°C
	16°C	16°C	11°C	9°C	11°C	14°C	14°C

Or maybe a stock market report

Sym	Price	Net Chg	% Chg
BRKB	\$500.73	1.98	0.40%
LLY	\$847.56	7.69	0.92%
LMT	\$512.50	8.01	1.59%
LOW	\$241.80	-4.55	-1.85%
V	\$348.66	-1.18	-0.34%
GS	\$794.72	4.74	0.60%
ABT	\$133.86	-0.73	-0.54%
UPS	\$86.66	-0.12	-0.14%
ALL	\$209.03	-1.79	-0.85%
VZ	\$41.56	-2.11	-4.83%
BMV	\$45.12	-0.33	-0.73%
CAT	\$496.47	-1.38	-0.28%

Published from TC2000

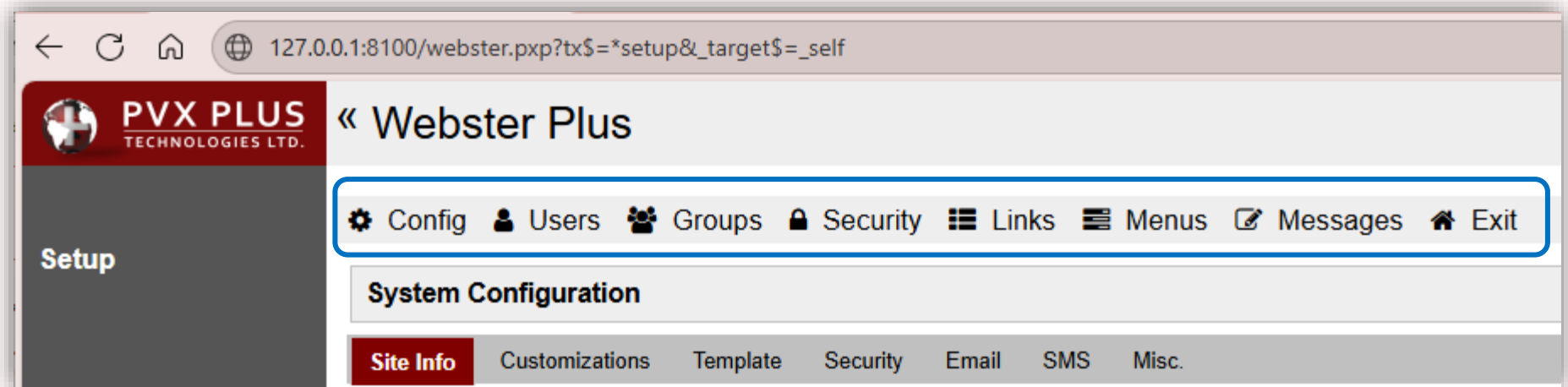
The default landing page can be customized to fit your needs by saving a `_default.html` file in the docroot directory

Clicking **Setup** will display the **System Configuration** page with **Site Info** loaded

Setup

Webster+ Setup has numerous utilities across the top menu bar.

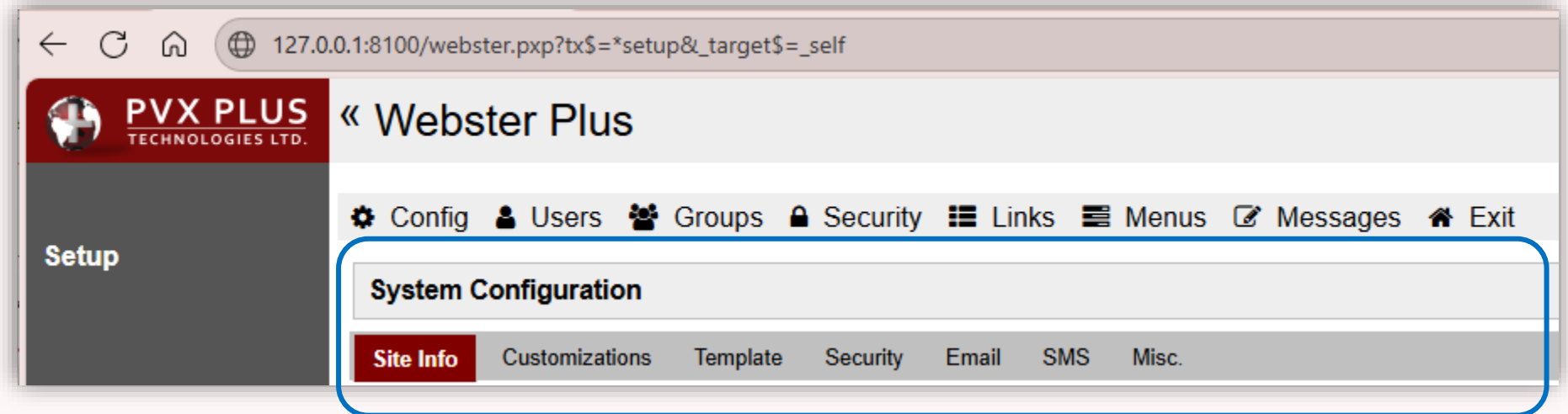
- **Config**
- **Users**
- **Groups**
- **Security**
- **Links**
- **Menus**
- **Messages**
- **Exit**



Setup > Config

The Config Utilities tabs consist of settings that are used to define the format and look 'n feel of a website, as well as various internal settings required by the system

- **Site Info**
- **Customizations**
- **Template**
- Security
- Email
- SMS
- Misc.



Setup > Config > Site Info

- **Site Name** – Title for the website

- **Site Image** – Logo for the website

Syntax: <https://fullpath-to-imagefile.png>

- **Site Homepage** – Creates a link for the logo, which will open in the browser

Syntax:
<https://www.yoursitepage.com>

The screenshot shows a web browser window with the address bar displaying `127.0.0.1:8150/webster.pxp?pg$=*default`. The page header features the PVX PLUS TECHNOLOGIES LTD. logo and the title « Webster Plus. Below the header is a navigation menu with options: Config, Users, Groups, Security, Links, Menus, Messages, and Exit. The main content area is titled 'System Configuration' and includes a sub-menu with 'Site Info' (selected), Customizations, Template, Security, Access Control, Email, SMS, and Misc. The 'Site Info' section contains several input fields: 'Site Name' (Webster Plus), 'Site Image' (https://lib.webster-plus.com/images/pvxplus_logo_160x50.png), 'Site Homepage' (<https://www.yoursitepage.com>), 'Contact Email', 'Privacy Page', 'Accept Cookies', 'Temporary File Directory', and 'Force JS/CSS Reload'. A dashed box with the text 'Click to upload site image file or drag-drop file here' is positioned below the 'Site Image' field. A green callout box with an arrow pointing to the 'Site Image' field contains the text: 'The image file can be one of the following file types: .js, .css, .png, .mp4 or .gif.'

Setup > Config > Site Info (cont'd)

- **Contact Email** – Email provided for website email inquiries. If provided, a link will appear on the bottom left sidebar menu

Syntax: email@company.com

- **Privacy Page** – Privacy Policy page for the business. If provided, a link will appear on the bottom left sidebar menu

Syntax: http://www.privacypage.com

- **Accept Cookies** – System will confirm that user will accept persistent cookies before creating any

The screenshot shows the 'System Configuration' interface for 'Webster Plus'. The 'Site Info' tab is selected, showing fields for Site Name, Site Image, Site Homepage, Contact Email, Privacy Page, Accept Cookies, Temporary File Directory, and Force JS/CSS Reload. The 'Contact Email' field is highlighted with an orange border, and the 'Privacy Page' field is highlighted with a blue border. The 'Accept Cookies' checkbox is highlighted with a yellow border.

Config Users Groups Security Links Menus Messages Exit

System Configuration

Site Info Customizations Template Security Access Control Email SMS Misc.

Site Name: Webster Plus

Site Image: https://lib.webster-plus.com/images/pvxplus_logo_160x50.png

Click to upload site image file or drag-drop file here

Site Homepage:

Contact Email:

Privacy Page: <https://lib.webster-plus.com/privacy.html>

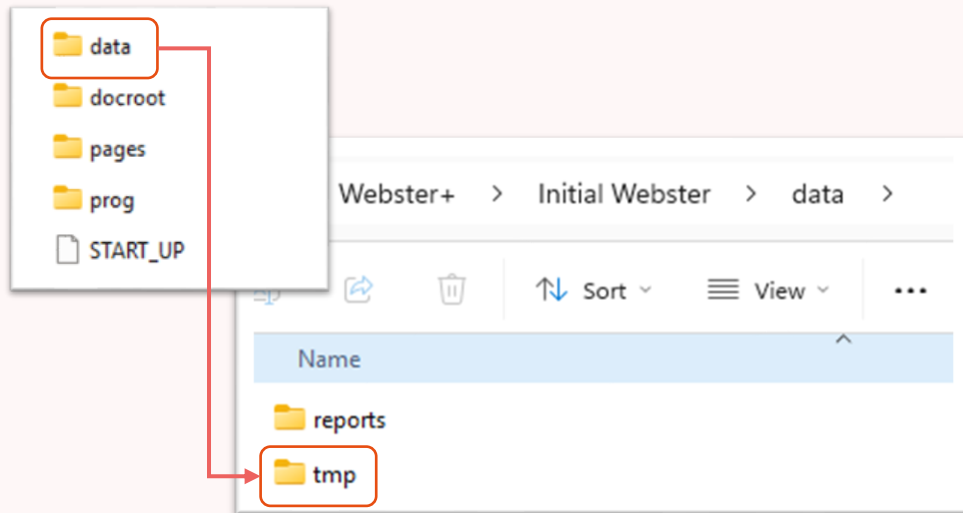
Accept Cookies: ☐ (Confirm with user)

Temporary File Directory: tmp

Force JS/CSS Reload: ☐

Setup > Config > Site Info (cont'd)

- **Temporary File Directory** - Location for the system to store any temporary files it may need

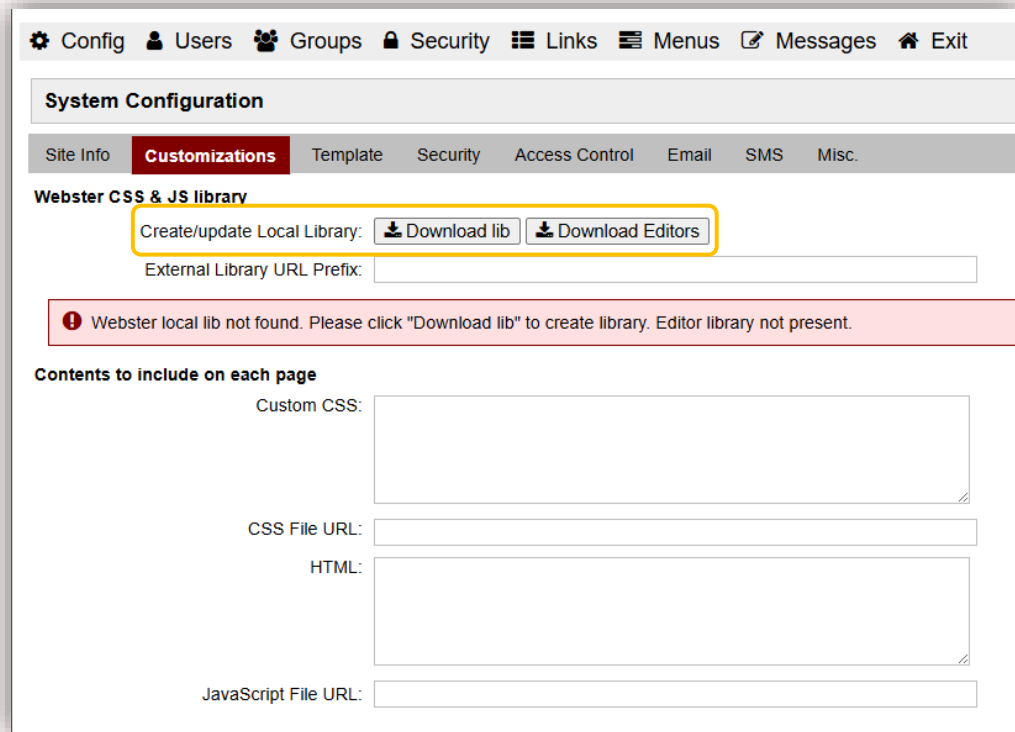
A screenshot of a web application's configuration interface. At the top is a navigation bar with icons and labels for 'Config', 'Users', 'Groups', 'Security', 'Links', 'Menus', 'Messages', and 'Exit'. Below this is a 'System Configuration' section with several tabs: 'Site Info' (active), 'Customizations', 'Template', 'Security', 'Access Control', 'Email', 'SMS', and 'Misc.'. The 'Site Info' tab contains several form fields: 'Site Name' (Webster Plus), 'Site Image' (a URL), a dashed box for uploading a site image, 'Site Homepage', 'Contact Email', 'Privacy Page' (a URL), 'Accept Cookies' (checkbox), 'Temporary File Directory' (set to 'tmp' and highlighted with a red box), and 'Force JS/CSS Reload' (checkbox, highlighted with a yellow box).

- **Force JS/CSS Reload** - This option can be set during development to effectively disable the browser caching of JavaScript or CSS files used by the site. This helps to ensure that any changes on the server are applied immediately

Setup > Config > Customizations

Webster+ environment uses a number of CSS style sheets and JavaScript files

Webster CSS & JS library > Create/update Local Library



The screenshot shows the 'Webster CSS & JS library' configuration page. At the top is a navigation bar with links: Config, Users, Groups, Security, Links, Menus, Messages, and Exit. Below this is a 'System Configuration' section with tabs: Site Info, Customizations (selected), Template, Security, Access Control, Email, SMS, and Misc. The 'Webster CSS & JS library' section contains a 'Create/update Local Library' area with two buttons: 'Download lib' and 'Download Editors'. Below these buttons is an 'External Library URL Prefix' text field. A red error message states: 'Webster local lib not found. Please click "Download lib" to create library. Editor library not present.' The 'Contents to include on each page' section includes text areas for 'Custom CSS:', 'CSS File URL:', 'HTML:', and 'JavaScript File URL:'.

Download Lib

The default files can be downloaded from PxPlus Server library, so not to rely on the PxPlus servers being available or to maintain or edit them. If download more than once, it will override all the files in the lib/ directory.

Download Editors

Downloads the ED+ program editor and HTML editor. This allows authorized users to edit programs and HTML files through the Webster+ Inspector.

Setup > Config > Customizations (cont'd)

Webster CSS & JS library > **External Library URL Prefix**

- Optional Field
- Contains the URL of all referenced HTML, CSS or JavaScript files used by the application
- By default, the Webster+ application's CSS or JavaScript files are located on a PxPlus Server

Syntax: https://www.yourwebsite.com/

The screenshot shows the 'System Configuration' window with the 'Customizations' tab selected. Under the 'Webster CSS & JS library' section, there are buttons for 'Download lib' and 'Download Editors'. The 'External Library URL Prefix' field is highlighted with a yellow border. Below this, a red error message states: 'Webster local lib not found. Please click "Download lib" to create library. Editor library not present.' The 'Contents to include on each page' section has a 'Custom CSS' text area. A green callout box is overlaid on the text area, containing the text: 'If a URL is entered, the application will look for a stylesheet in the URL directory rather than use the default PxPlus Server library or the downloaded library files in the *docroot/lib* sub-directory.' At the bottom, there is a 'JavaScript File URL' field.

Config Users Groups Security Links Menus Messages Exit

System Configuration

Site Info **Customizations** Template Security Access Control Email SMS Misc.

Webster CSS & JS library

Create/update Local Library: Download lib Download Editors

External Library URL Prefix:

Webster local lib not found. Please click "Download lib" to create library. Editor library not present.

Contents to include on each page

Custom CSS:

If a URL is entered, the application will look for a stylesheet in the URL directory rather than use the default PxPlus Server library or the downloaded library files in the *docroot/lib* sub-directory.

JavaScript File URL:

Setup > Config > Customizations (cont'd)

Specify custom code or files that will be added to all of your generated pages during **run time**.

Custom CSS

Appends to the
<style>...</style>
tags

HTML

Inserted into the page before
the </body> end-body tag

CSS File URL & JavaScript File URL

Inserted as links in the
<head>...</head> section

The screenshot shows the 'System Configuration' interface with the 'Customizations' tab selected. The 'Webster CSS & JS library' section includes buttons for 'Download lib' and 'Download Editors', and a text field for 'External Library URL Prefix'. A red error message states: 'Webster local lib not found. Please click "Download lib" to create library. Editor library not present.' The 'Contents to include on each page' section contains three text areas: 'Custom CSS' with the code 'h1 { Color:lightblue; }', 'CSS File URL' with the value 'https://yourwebsite.com/lib/custom-style.css', and 'HTML' with the code '<footer> content for footer goes here </footer>'. Below these is a 'JavaScript File URL' field with the value 'https://yourwebsite.com/lib/custom.js'.

Config Users Groups Security Links Menus Messages Exit

System Configuration

Site Info **Customizations** Template Security Access Control Email SMS Misc.

Webster CSS & JS library

Create/update Local Library: [Download lib](#) [Download Editors](#)

External Library URL Prefix:

❗ Webster local lib not found. Please click "Download lib" to create library. Editor library not present.

Contents to include on each page

Custom CSS:

CSS File URL:

HTML:

JavaScript File URL:

Setup > Config > Template









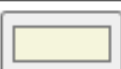
- **Default Template File** - Use default template or specify a custom Template file
- **Head Height** - Define the dimensions of the header height
- **Left Edge Width** - Define the dimensions of the left sidebar menu
- **Default Start Page** - Define the default start/landing page

The screenshot displays the 'Webster Plus' system configuration interface. At the top, there is a navigation bar with icons and labels for 'Config', 'Users', 'Groups', 'Security', 'Links', 'Menus', 'Messages', and 'Exit'. Below this is a 'System Configuration' section with a sub-menu bar containing 'Site Info', 'Customizations', 'Template' (which is highlighted), 'Security', 'Email', 'SMS', and 'Misc.'. The 'Template' settings are shown with four input fields, each highlighted with a colored border: 'Default Template File' (orange border) with the value '*template.html', 'Header Height' (yellow border) with the value '50 (pixels)', 'Left Edge Width' (blue border) with the value '180 (pixels)', and 'Default Start page' (green border) with the value '*default'.

Setup > Config > Template Colors

Defines the color of the background and, for some sections, the color of the text to appear in that area

Template Colors

	Background	Text
Top Left Corner:		
Left Edge:		
Top Edge:		
Page Contents:		
Locked Input:		
Query Even Line:		

Reset the colors defined back to the system default colors

Reset to Default colors

Step 5: Build Your Web Pages

How do I create webpages for my website?

- [File Maintenance Generator](#)
- Use any HTML editor of your choice (Visual Studio Code, Notepad++, etc.)
- **PxPlus HTML Editor** supports inserting [short codes](#) and previewing Webster+ pages
- Convert NOMADS panels using the **Create Base Webster+ Page(s) Utility**

Security for Setup

If Security is not Enabled:

- The Security Group for the left-sidebar links will not take effect
- The Users, Groups & Security menu tabs will not be accessible

If Security is Enabled:

- All of the links and menus will be accessible
- The Administrative User will need to be set up

Clients
Products
Sales Reps
Suppliers
Warehouse/Inventory

Config Users Groups Security Links Menus Messages Exit

System Configuration - Template Copy

Site Info Customizations Template **Security** Access Control Email SMS Misc.

Security Enabled: ☒

Use Nomads Security file: ☐

Self-registration Group: Guest (No self-registration)

Password Regular Expression: (?=.*d)(?=.*[a-z])(?=.*[A-Z])(?=.*[!@#\$%^&*])

Password Tip: Must be at least 8 characters, at least one uppercase letter, a lowercase letter, a number, and a special character.

Workstation Duration: 180 days between two-step re-verification

Group if not signed on:

! Security System not enabled

You cannot edit the users as the Security system has not been enabled. Please use the System Setup to enable the security system.

Administrative User

Userid: Admin

Password:

Email:

Save

Troubleshooting Tips

Webster+ Setup > Config > Misc.

Enable MSGBOX directive: ☒

Enables the use of the **MSGBOX** directive for debugging

Save error dumps: ☐

Error dumps will be saved in the **data/dump** directory and be viewable via the **Statistics** page

Error dump email notification:

Send a notification email when an error dump happened

System Configuration

Site Info Customizations Template Security Email SMS **Misc.**

Chart legend location:

Grid lines on Queries and Smart lists:

Use alternating colors in queries: ☐

Wiki Subsystem Enabled: ☐

Wiki link text:

Dynamic Wiki Creation: ☐

Google Maps APIKEY:

Enable MSGBOX directive: ☐

File Maint to use Message box: ☒

iNomads URL/port:

Save error dumps: ☐

Error dump email notification:

New user email notification:

Troubleshooting Tips (cont'd)

Right-click on the webpage

Opens a menu > click ***View Page Source or Inspect***



F12 Function Key

Shortcut key for ***View Page Source***

Styling for Webster+



Review of the many ways to style for Webster+

Standard CSS & JS

External Style Sheets

Internal/Embedded Styling

Inline Styling

Webster+ Setup

Customizations

Template

ATTRIBUTE **class=xxx**

Most [short codes](#) can have a **class=xxx** option for specifying a CSS class

➤ Single class

```
<div class="fm_ttl">/div>
```

➤ Multiple classes

- Separated by spaces
- If spaces are used, the values must be within double quotes

• Spaces

```
<div class="button exit">/div>
```

PRE-DEFINED CLASSES

- **fill_XXXX** – where *XXXX* is the background color
example: class='fill_NavajoWhite'
- **font_nnn** – where *nnn* is the font size as a percentage
example: class='font_150'
- **font_XXXX** – where *XXXX* is the font
example: class='font_Times+New+Roman'
Use + for a space within the font name
- **text_XXXX** – where *XXXX* is the text color
example: class='text_olive'

Classes do not need
to be defined in the
.css file

The Webster bind program will
automatically create the CSS
required and include it in the
page during run-time.



Resources

Where can I find information about PxPlus WEBSTER+?

[PxPlus User Forum](#) - various sub-boards for interacting with the PxPlus community

[PVX Plus Knowledge Center](#) – a resource center for additional PxPlus learning on various topics

[2024 \(v21\) - Webster+](#)

[2024 \(v21\) - PxPlus on the Web File Maintenance Generator Demo](#)



Resources (cont'd)

[PxPlus Video Library](#) – 4-part You-Tube video series for Web Development Setup & Configuration for Webster+

Webster⁺
▶
Installation

Webster⁺
▶
Setup & Configuration

Webster⁺
▶
Generating Pages



Resources (cont'd)

[Webster+ Demo Application](#) - a unique Webster+ demo instance for you to play



Thank you

Got an idea for a new feature?
Found a bug?
Let us know!
Contact us at info@pvxplus.com



Jackie Kennedy @ Pvx Plus Technologies Ltd.

Pathways to Progress

