AgileWeb *for AirVision*

Agilaire LLC

Introduction

AgileWeb for AirVision fulfills multiple roles in providing air quality data.

◆ AgileWeb can provide a detailed public information system by which residents can see real-time air quality data on a drill-down map and in site AQI tables.

◆ Website visitors can be provided with pre-configured reports (limiting exposure) or given access to generate reports and graphs using their own search criteria.

◆ AgileWeb can be configured to allow a password protected interface for selected users, providing a full intranet browser-based reporting system with access to most AirVision reports as well as access to select configuration and data editors.

AgileWeb supports several implementation scenarios.

Public

If you prefer only a public display of map/reports, without login, then set the EnableLogin value to False in the Web Settings Editor. This disables the login feature. Deploy to a public web server which has access to the AirVision database.

Private Only

If you prefer only an internal (intranet) site with no public access, deploy to an internal web server which has access to the AirVision database.

Public and Private on same website

If you prefer to have the website serve public users as well as application users who can log in and utilize additional features, deploy to a public web server which has access to AirVision database.

▶ **NOTE:** In this scenario be sure to change your default AirVision 'admin' password from the default password.

Public and Private on separate websites

If you prefer to keep the public/internal sites separate, you will need to deploy two separate copies of the web application. This requires the most maintenance, but it provides the highest level of flexibility for security and hosting details. Deploy twice, using the same guidelines as the Public Only and Private Only scenarios.

Chapter 1

Installation & Configuration

System Requirements

Minimum requirements for installing AgileWeb are:

◆ A web server (Microsoft Windows Server 2008r2 or later / Windows 7 or later).

◆ Microsoft .NET Framework 4.5.2 or later.

◆ Microsoft Internet Information Server 7 (IIS) or later.

  - If IIS is installed AFTER ASP.NET you will need to register it using the aspnet_regiis.exe executable with the –i switch.

◆ The ability to make a SQL connection to the AirVision database (or a mirrored copy of the AirVision database).

◆ Image files for primary map overlay and site-specific photos (See Appendix A for additional map options).

◆ Microsoft requires one user license for each website visitor, so a Processor License (Workstation or better) is recommended for AirVision servers using AgileWeb.

◆ SSL (Secure Sockets Layer) certificate for the AgileWeb server. (See Appendix D for SSL guidance.)

New Installation

Configuring IIS 7

1. On your web server, open **Administrative Tools**.

2. From Administrative Tools select **Internet Information Services (IIS) Manager**. All of your websites should be listed.

3. We recommend creating a separate Application Pool for AirVision. This allows the AirVision application to be controlled independently of the rest of the websites. For example, this lets it have its own user identity (for database access), and it can be recycled independently in order to pick up configuration changes.

4. In the IIS Manager, right-click **Application Pools** and select **Add Application Pool**.
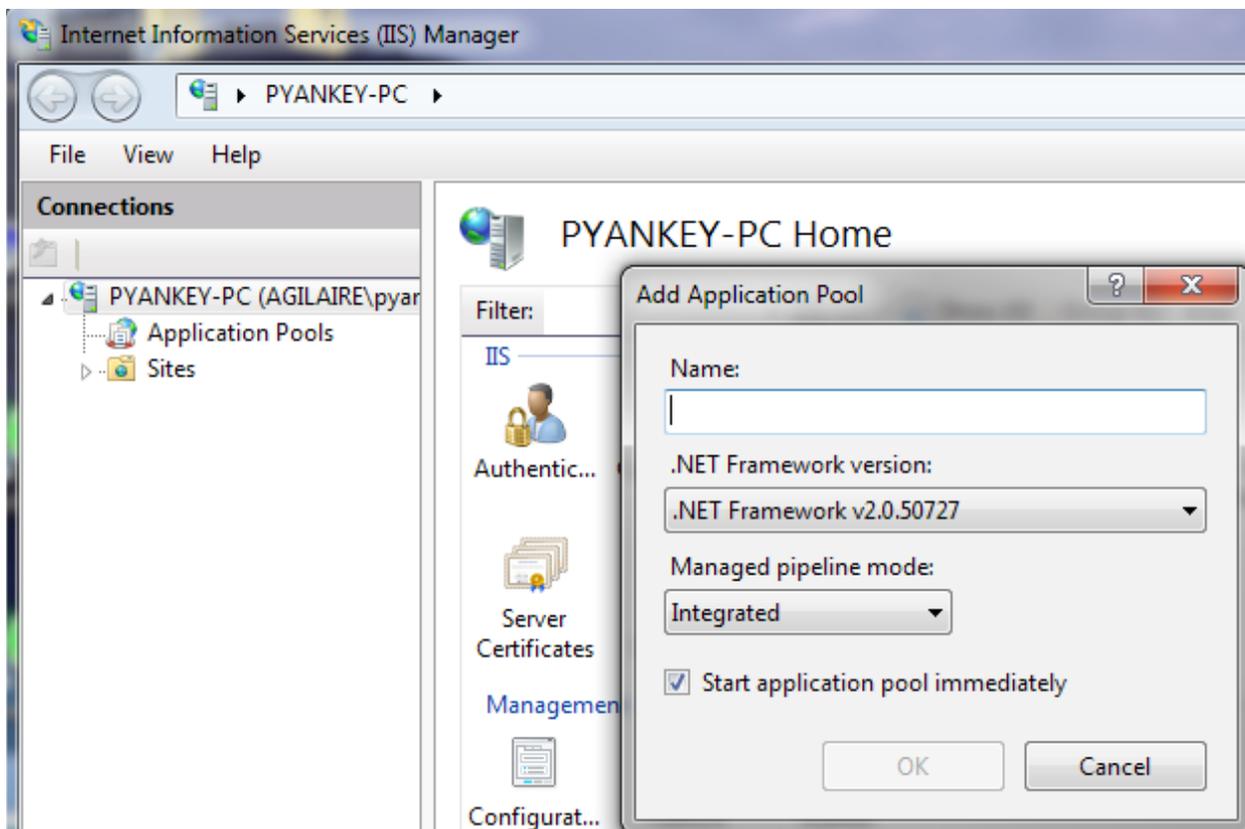
5. In the Add Application Pool screen, enter a Name, e.g. AgileWeb, and change the .NET Framework-Version to .NET Framework v4.0.30319. Click **OK**.

6. Still in the Features View of your virtual directory, double click the Authentication item. If not already set, right click **Anonymous Authentication** and select **Enable**.
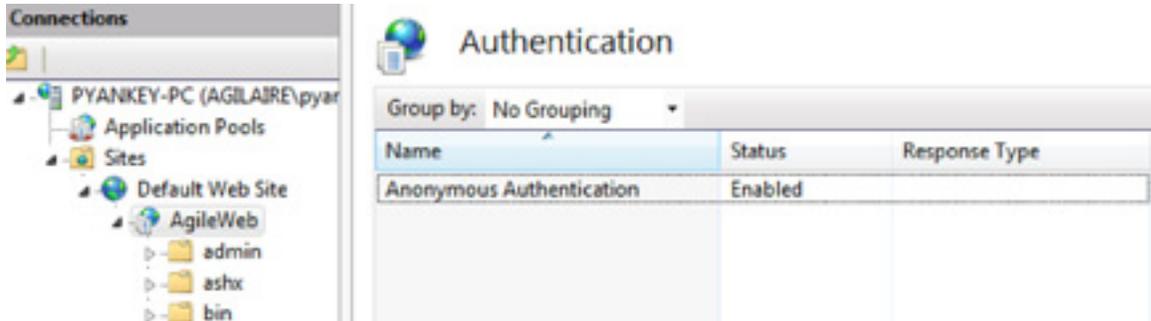
7. In the Features View, open the SSL Settings. Select **Require SSL**. If this option is disabled, you will need to add a certificate to the root website in IIS to enable this option. You need a certificate for SSL so the login name and password can be encrypted. See the Configuration section later in this document for more information about SSL.

▶ **NOTE:** If using IIS8, the following items need to be set to 'Read/Write' under Feature Delegation:
   • Handler Mappings
   • Modules
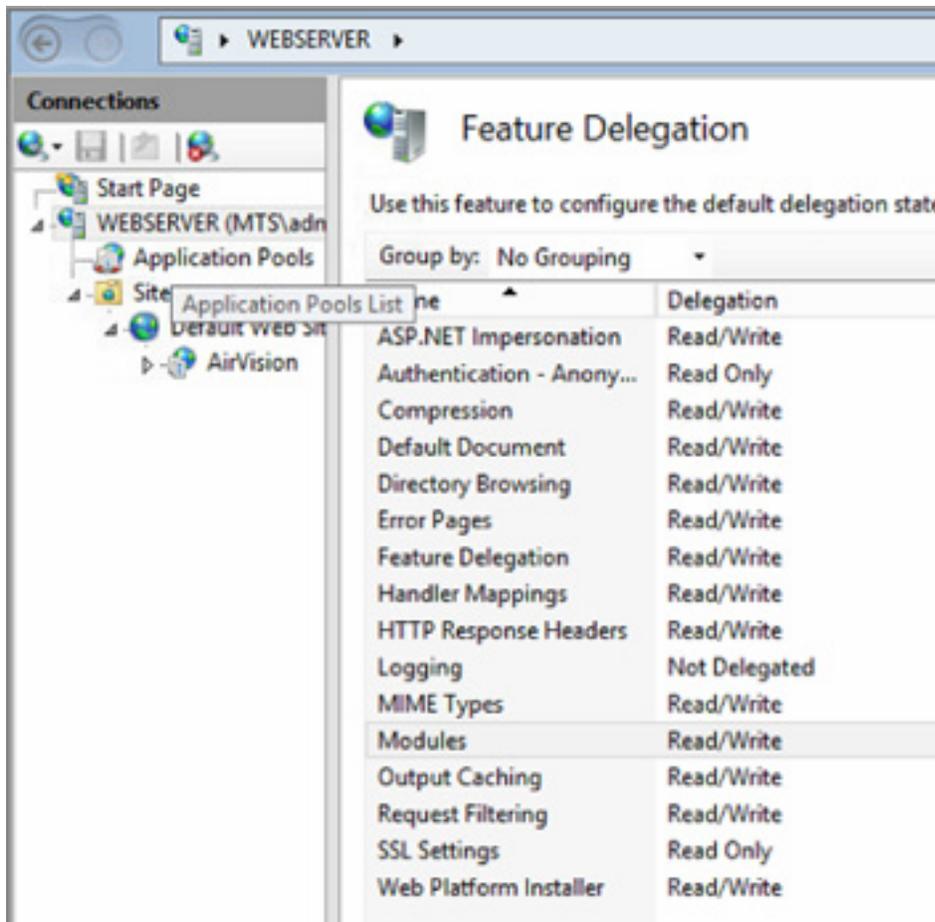
AgileWeb Deployment

Default values are defined below. These may be changed by the IIS administrator if needed.

Item	Default Value
Web Application Name	Default Web Site/AirVision
Physical folder of web application	C:\inetpub\wwwroot\AirVision

- Copy the AgileWeb deployment package folder to a known location on the web server's hard drive.

▶ **NOTE:** This is not the actual web app folder in IIS; this is only used for the deployment process. You can use a temp folder or desktop, etc.

- If this is a first time installation, you must first ensure the desired website exists in IIS and verify the application pool in IIS Manager. The Application Pool of the target website must be set to .NET Framework Version v4.0.

The application can be installed either via command line or via the IIS Manager user interface. However, the IIS Manager user interface does not allow specific files to be deleted or saved individually and this results in deletion of custom files during the upgrade.

Option #1: Deploying via command line

By default, the web application is deployed to Default Web Site\AirVision in IIS. If you have another website on the server you prefer to install the application into, you may choose to install AgileWeb within that site. If so, modify the AirVision.Web.Site.SetParameters.xml and define the name of the website as such:

<setParameter name="IIS Web Application Name" value="Default Web Site\AirVision" />

(In this case, AirVision is being added under the Default Web Site, but this can be changed as needed.)

1. Open a command window and change directories to the folder where you copied the deployment package.

2. Type: **AirVision.Web.deploy.cmd /Y**

If you get an error about MSDeploy.exe not being installed, you will need to install the Microsoft Web Deploy 3.0 utility (http://www.iis.net/downloads/microsoft/web-deploy).

▶ **NOTE:** The command line deployment is designed not to delete any files called "custom.config" or any files in the "custom" folder. If you have custom content outside of those files / folders it will be deleted when you upgrade. If upgrading, be sure to make a backup copy of the entire AgileWeb website folder prior to performing the upgrade, in case any settings verification or restoration is needed afterwards.

Option #2: Deploying in the IIS Manager user interface (not recommended for upgrades)

1. Open IIS Manager.

2. Navigate to Default Web Site (or alternate site if desired).

3. Ensure the application pool is using .NET v4.0.

4. Right click the website node in the navigation tree, then select Deploy->Import Application…

    If you do not have the Deploy option, you need to install the Web Deploy utility from Microsoft (http://www.iis.net/downloads/microsoft/web-deploy).

5. Select the zip file from the deployment folder, and click **Next**.

6. Leave all defaults unless you have specific reasons to change them. Click **Next**.

7. Leave the Application Path as default, unless you have a specific reason to change it. Click **Next**.

8. Click **Finish**. The web application is now installed.

By default the web app folder is under C:\inetpub\wwwroot\ AirVision.

Custom.config file and a Custom folder should be created in the web app folder.
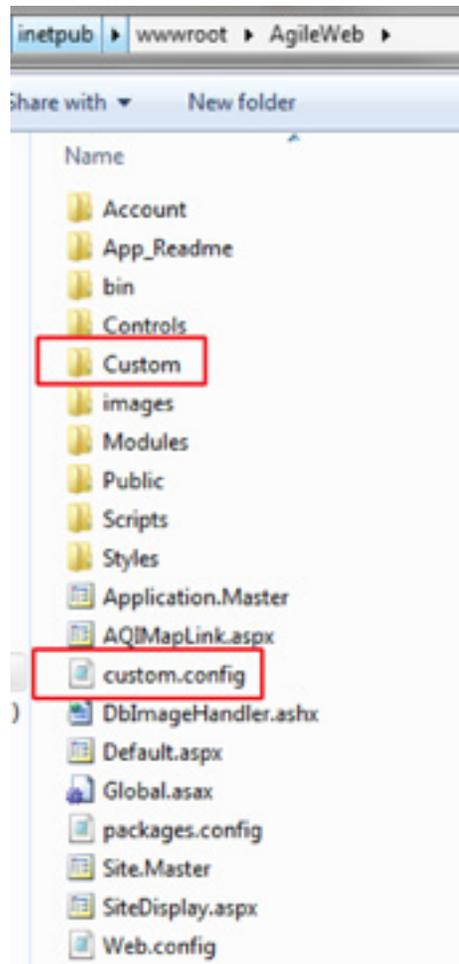
Configuration

Secure Sockets Layer (SSL)

▶ **NOTE:** This is for first-time setup only. If you're installing an update, you can skip the SSL section.

The AgileWeb application requires SSL by default for the login page and any page requiring a login. This is to protect the user credentials and other sensitive information within the application.

The application allows non-SSL connections to public visitors viewing the public pages (AQI Map and related displays). However, when a user attempts to login or navigate to a page which require login, the application redirects to SSL. (Note that if you are testing locally on the web server itself, it does not force SSL).

Option #1: Disabling SSL

For intranet-only deployments, you can disable the SSL requirement in AirVision. However, Agilaire strongly recommends using SSL for public facing websites. To disable the SSL requirement, set the following key:

> **Key**: DisableSecurityEvaluationRequest **Value**: True

Option #2: Configuring SSL

You must ensure the website hosting AgileWeb (by default the "Default Web Site") has HTTPS binding enabled. If you already have an existing website, you should already have a valid certificate. Otherwise you need to create one before proceeding. A trusted certificate can be obtained from Verisign or other commercial providers. (See Appendix D for options.) For (non-production) testing you can create a self-signed certificate. (Note that with a self-signed certificate, most browsers will warn the end user that the certificate is not trusted and they will have to choose whether to continue to the page or not).

Configuring HTTPS/SSL Binding for the Website

1. Open IIS Manager and navigate to the website containing the AirVision application.

2. Right-click the website, and choose **Edit Bindings**.

3. If not already present, create a new binding by clicking "**Add…**".

4. The Type must be "**https**".

5. Leave the IP address and port as defaults, unless you have specific reason to change them.

6. Select your SSL certificate.

7. Click **OK**.

8. Click **Close**.

▶ **NOTE:** If you are using any external images or style sheets, you should link to them as https rather than http, in order to prevent the browser from displaying a mixed-content warning.

Upgrading AgileWeb

▶ **NOTE:** **Be sure you have backed up your custom content (Custom folder, custom.config file) before proceeding, to avoid risk of deletion.**

Obtain the upgrade files from Agilaire then proceed with your preferred deployment method (option 1 or 2 detailed above).

If using the IIS Manager interface to deploy (option 2), you will be prompted about deleting extra files and folders. Be sure to select "**Yes**" in order to delete old DLLs which may cause problems with the updated software. Click **Next**.

When complete, copy your custom content back into the web app folder and restart the associated IIS App Pool.

Public Access

The main page (Default.aspx), site AQI details (SiteDisplay.aspx), and 'Web Favorite' report viewers are configured for anonymous access by default. The contents are a page showing an AQI map and listing the publicly available 'Favorite' reports. The 'Favorite' reports are configured via the AirVision Client by using the Favorites For Web editor. Any favorites in this editor will be presented in the Default.aspx page of the web app.

"Public" Folder

Additionally, there is a Public folder that has a map/report page and site AQI display page. This is provided so you can give an alternate presentation to public users if desired. The content is essentially the same, however these pages use a different master page (i.e. different style/layout applied) which may be preferred in some cases. These pages by default use a borderless master page which makes them easy to embed within an iframe of another existing web page/site. Alternatively, you could customize the Public master page differently, per your requirements. Having this Public folder allows additional options for how you integrate the application into other websites.

Basic Configuration

In your AirVision client, go to Utilities->Feature Licensing Tool. In the License Details pane, check for an "Enable AgileWeb features" entry.

If there is no AgileWeb entry, please screen shot your License Details and send to Agilaire Support with a request for a new key that will add the AgileWeb features.

12

Database Connection

The data access connection must be configured. This is done in the root of the web application, in the file custom.config. The content should look something like this:

<appSettings>

    <add key="Main.ConnectionString" value="Data Source=MyDatabaseServerName;Initial Catalog=avdata;Integrated Security=True;User ID=;Password=" />

</appSettings>

Change the MyDatabaseServerName to the name or IP address of the SQL Server machine. Further, if you have renamed the database catalog, you would need to reflect that here as well.

▶ **NOTE:** If you are using integrated Security, then the web application's application pool identity needs to be set to a user account that has sufficient permissions to the SQL Server instance.

Web Display Info Editor

To include a site on the website, click the 'Add Web Info' ribbon button, select the desired site, and check the 'Display' box. If you are using a map image file or a 'static' web map, set the X/Y values to the pixel offsets from the top left corner of the map. Climate zone will associate the site with the climate zone in the drop down list. Site Image Path should be set to a picture, usually in the Custom folder, such as "~/ Custom/Images/Station1.jpg". The Link can be any valid URL which should be displayed for the site.
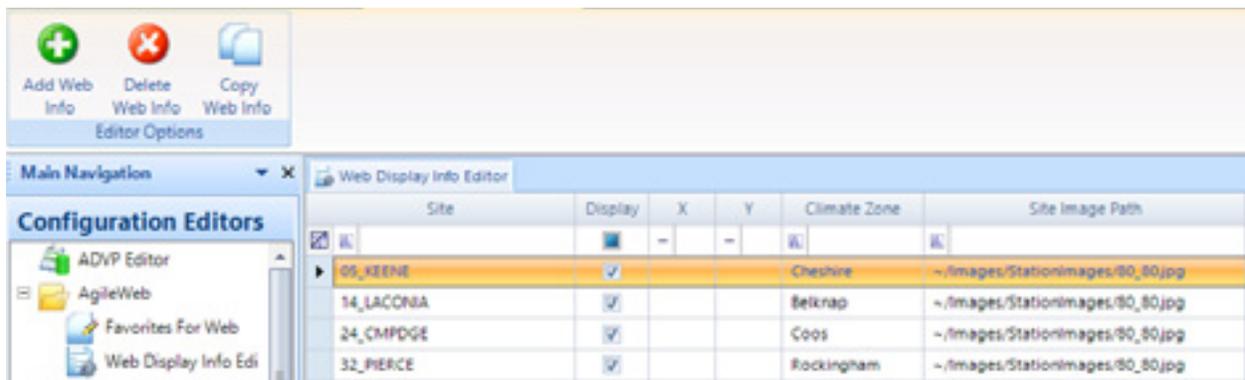
AQI Map Configuration

The map 'image source' must be specified in order for a map to be displayed on the page. You can use a custom image file, a Google static map, or a 'live' map (See Appendix A for details). No matter the method, the map source must be defined.

For a custom image file, place the file in the Custom folder. Then update the MapPath key.

**Key**: MapPath **Value**: ~/Custom/MyCustomMapImage.png

▶ **NOTE:** The Site locations for custom images and static maps are configured in the AirVision client under **Configuration Editors->AgileWeb->Web Display Info Editor (X/Y values)**, which is relative to the top left corner of the image. Site locations for 'live' maps are determined by the Lat and Lon settings defined in Site/Parameter.

Customizations to the User Interface

Customers should not edit the included .aspx, .ascx, css, or other built-in source files, as modifications to these files would be overwritten during the next software update. Customers should alter the appearance through ASP.NET Master Pages and/or Themes. (Advanced configuration options are presented in Appendix C).

Web Settings Editor

All customer changes to the <appSettings> keys should be made using the Web Settings Editor. This keeps custom settings separate from the AgileWeb defaults, so that when an upgrade is done, any custom settings will not have to be reapplied.

Available settings, a description for each setting, a default value (if one is defined), and a Value field for user editing are provided within this editor. This editor will mostly eliminate the need to do changes via the custom.config file on the web server.

Map Time Offset

The MapDataTimeOffset key value may need modified from the default depending on factors like your data polling schedule, Daylight Savings Time, and differences in system times on the AirVision and web servers.

The first number will be the number of hours subtracted from the current time and the second number will be the number of minutes. The MapDataTimeOffset is necessary to allow time for realtime data to be retrieved. A typical setting (1 hour and 5 minute difference) would be: 1, 5.

Typically, 1 hour and some # of minutes is the minimum, since the AirVision data time uses EPA/AQS standards of "start time" tagging of hourly data. That is, data from 13:00 to 13:59 is called "13:00", even though it is not available until 14:00 (or a few minutes after to allow for polling time). Hence, the "1,5" default allows for 5 minutes for polling.

Banner Image and Text

If you want to change the banner image and/or text, place your custom image into the Custom folder, and specify the path to the image in the Web Settings Editor using the BannerImagePath key and a value like ~/Custom/MyCustomBannerImage.png

The main page title and banner text can be specified using the following keys. Modify the value text as desired.

Key: SiteMasterTitle **Value**: Air Quality for Knoxville

Key: SiteMasterBannerText **Value**: Air Quality for Knoxville

Alternatively, if you are going to be customizing the master page (see Appendix C), then you can omit this and simply customize the master page with the desired image and other details.

Themes

If you wish to change appearances such as colors, borders, and fonts without doing full custom master pages, changing Themes is a good alternative. The application supports using user-defined ASP.NET Theme skins, as well as some predefined built-in Themes.

Predefined Themes affect the look of grids, menu items, selection controls, etc., but do not affect the overall structure or the banner/header area. To use one of the pre-defined themes, simply add the desired key value to the DevExpressTheme setting key.

- Default
- Aqua
- BlackGlass
- DevEx
- Glass
- Office2003Blue
- Office2003Olive
- Office2003Silver
- Office2010Black
- Office2010Blue
- Office2010Silver
- iOS

Startup Favorite Page

Each user may have a Favorite configured as their personal start page. This is done in the Favorites For Web editor, by checking the Launch On Application Startup option for that favorite. Note that if more than one favorite is configured with this option, the first one will be used. This behavior can be disabled by setting the key setting DefaultTransferStartupFavorite to a value of False.

## Opening Report Viewer in New Window or Same Window

By default, reports are opened in the same browser tab. This can be changed, such that the report viewer is opened in a new window/tab. This is set using the following configuration option:

Key: OpenReportsInNewWindow **Value**: False

If this is True, the report is opened in a new tab/window, and it uses a minimal master page without the common header area (banner/logo/menu/etc). If this is set to False (default), the report is shown within the same window using the common header area.

AQI Map Layers

The AQI map also displays other "layers" of data, including parameter concentrations and wind speed/direction. These can be controlled via key settings in the Web Settings Editor.
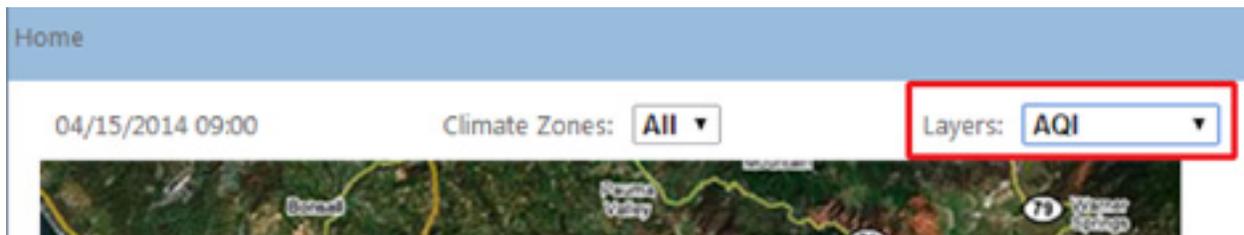
To configure which parameters are shown, specify the parameter template names as follows:

Key: MapLayerParameterTemplateNames **Value**: OZONE,PM25,CO,NOX,SO2,AMBTEMP,BARPRESS, RAINFALL,RELHUM

To configure the wind barb layer, the layer must be enabled, and the wind speed and direction parameter template names must be specified, as follows:

Key: WindbarbLayerEnabled **Value**: True

Key: WindSpeedParameterTemplateName **Value**: SWSP

Key: WindDirectionParameterTemplateName **Value**: SWDR

The values displayed in layers OTHER THAN the 'AQI' layer are based on parameter template associations, NOT programs configured in the AirVision AQI Program Editor.

Security

Login Access

The rest of the site (including access to the menu) requires an AirVision login. By default any AirVision user account can log in. Each menu item is controlled via the standard AirVision Group Permissions configuration, as it is in the standard Windows client, so the user will be granted access accordingly. There is an app setting to prevent logins for the entire site. By default access is enabled. If you prefer not to allow any logins (public access only), then set the following key:

Key: EnableLogin **Value**: False

Frames and Click-Jacking Prevention

By default, the application can be hosted within a frame of another page. To disable this, or to set a restriction on which sites may host it within a frame, set the X-FRAME-OPTIONS configuration value.

The default value (blank) does not impose any restrictions – the site may be hosted within other sites' frames. Other values that may be specified are as follows:

DENY – Do not allow the site to run in a frame.

SAMEORIGIN – Allow it to run in a frame on the same domain.

ALLOW-FROM origin – Allow it to run in a frame from a site on the domain origin (not supported in all browsers).

▶ **NOTE:** This security measure is implemented by the browser (IE8+, Safari 4+, Firefox 3.6.9+, and Chrome 4.1.249.1042+).

Additionally, the application can be configured to detect if it is being framed and force itself to be broken out of the frame. This is done using JavaScript, as per best practice guidelines. To enable this feature, use this setting:

Key: InjectFramePreventionScript **Value**: True

Disabling Browser Cache

By default no restriction is placed on browser caching. To disable browser caching, use this setting:

Key: DisableBrowserCache **Value**: True

Using the Public Website

A central map of the monitored state/region within the AgileWeb site provides the public with a real-time view of air quality conditions in the district. Each site on the map is represented by a box displaying the most recent hour's AQI value. The background color of the box is based on the EPA AQI standard (e.g., green=good, yellow=moderate, etc.). A mouse rollover of the site box reveals the responsible pollutant and concentration. If values are unavailable for a particular site, the box for that site will be gray with the AQI value displayed as "???" and the mouse rollover will say "Data not available."

Configuring Displayed Parameters for the AQI Map Layer

For a parameter and value to be displayed on the AQI layer, both the AQI program and parameter must be properly configured.

In AirVision, under Configuration Editors->Report Configurations->AQI Program Editor, the desired programs must be configured and enabled.

Under Configuration Editors->Site Parameter, the desired parameter must have the 'Enabled' box checked, the 'Filter From Web Site' box should be clear, and the 'EPA Units' and 'EPA Parameter' fields must match what is configured in the AQI Program Editor.

- In Site/Parameter, if multiple parameters for a site are enabled, not filtered from the website, and have the same EPA Units and EPA Parameter codes set, they will all be shown on the website.

- In AQI Program Editor, if multiple programs are enabled and have the same 'AQS Parameter Type' and 'AQS Unit Type', they will all be shown on the website.

- If the AQI Report - Current in AirVision shows an index of 'N/A' or a value of '<' and a blank index for the same hour that would be shown on the website, that parameter and value will not show up on the website's AQI map.

Report List Configuration (Web Favorites)

The main page will also list any "Web Favorite" reports which can be viewed by anonymous users (not logged in). This allows the AirVision administrator to control what (if any) data/reports are publicly visible. To configure these, use the AirVision client's Favorites for Web configuration editor. The editor works just like the Favorites Editor and includes a test function to preview the report output. Be sure to test reports to ensure they will not cause errors on the website. This lets you select reports to be displayed and specify the query criteria so you have complete control over what data is displayed.

In the Favorites For Web editor, if you set the Favorite Scope to PUBLIC, then anyone (logged-in or anonymous) can view the report. If you set it to ALL USERS, then all logged-in users can view it. Or set it to USER to let only the specific user see it.

The Favorite Name is displayed on the web page as the "Link" text, and the Favorite Description is shown in the "Description" text.

If no favorites are configured for the current user, the report list is hidden entirely.
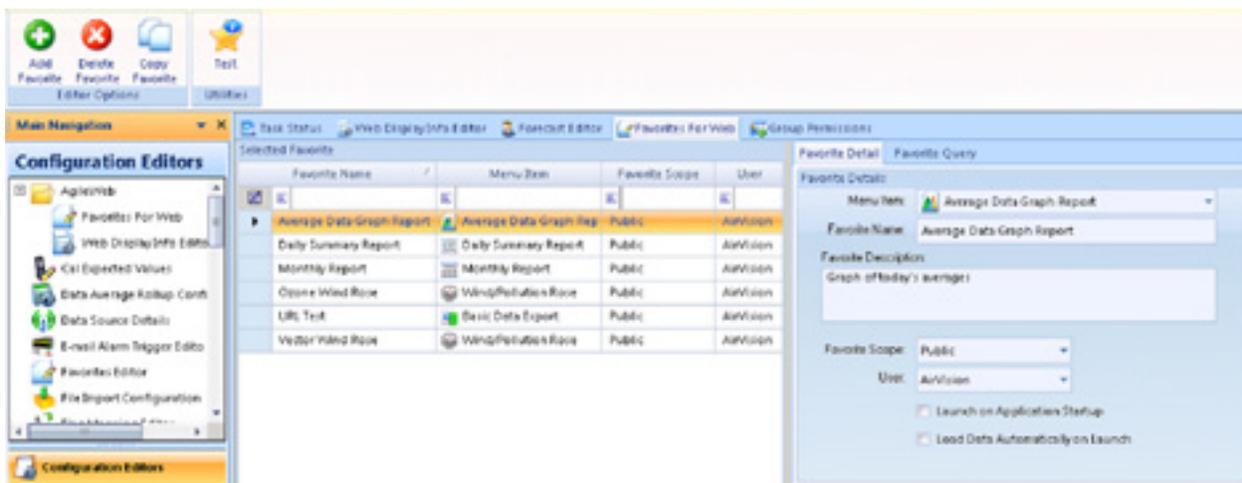
The Launch on Application Startup option may be checked to set a favorite as the default page, when the user browses to the main site.

The Load Data Automatically on Launch option specifies whether to show the query screen or show the generated report. If the box is unchecked (not recommended), the query screen is shown with the configured query preselected. If the box is checked (recommended), the report will be displayed without a query screen, using the favorite query as defined.

▶ **NOTE:** That report output is cached for up to 5 minutes to limit database activity from the web application.

Site Page

Clicking on a site box will navigate to an AQI site specific report, which displays a photograph of the site, the site name and address, a list of the monitored parameters, a link to the agency homepage, and a table displaying values for the current day (up to the current hour) and tomorrow's forecast (information dependent on proper configuration within AirVision).

Monitored Parameters:

SO2, PPB
PM25C, UG/M3
NO2, PPB
OZONE, PPM
OZONET, PPM
OZONE, PPM
OZONET, PPM
PM25C, UG/M3
OZONE, PPM
OZONET, PPM

Back

MainStreet
Address:1234 Central Ave
City:Knoxville
Climate Zone:Zone1

ARB Link: Agency Homepage

Hour	AQI	Class	Responsible Pollutant	Activity Caution	Risk Groups
10:00	125	Unhealthy	SO2		
10:00	3	Good	PM25C		
10:00	1	Good	NO2	None	None
10:00	23	Good	OZONE	None	None
10:00	22	Good	OZONE	None	Children and people with asthma are the groups most at risk.
10:00	3	Good	PM25C	None	People with respiratory or heart disease, the elderly and children are the groups most at risk.
10:00	25	Good	OZONE		
09:00	3	Good	PM25C		
09:00	1	Good	NO2	None	None
09:00	23	Good	OZONE	None	None
09:00	21	Good	OZONE	None	Children and people with asthma are the groups most at risk.
09:00	3	Good	PM25C	None	People with respiratory or heart disease, the elderly and children are the groups most at risk.
09:00	25	Good	OZONE		

Climate Zones

The central map also includes a drop-down list that can be used to group sites, climate zones, regions, etc. When a climate zone is selected the AQI will be displayed only for sites in that zone. The selection list of climate zones begins with **All** and is followed by a list of zones configured in AirVision using the Web Display Info Editor. The climate zone list label can be renamed as desired via the ClimateZoneLabelText key.
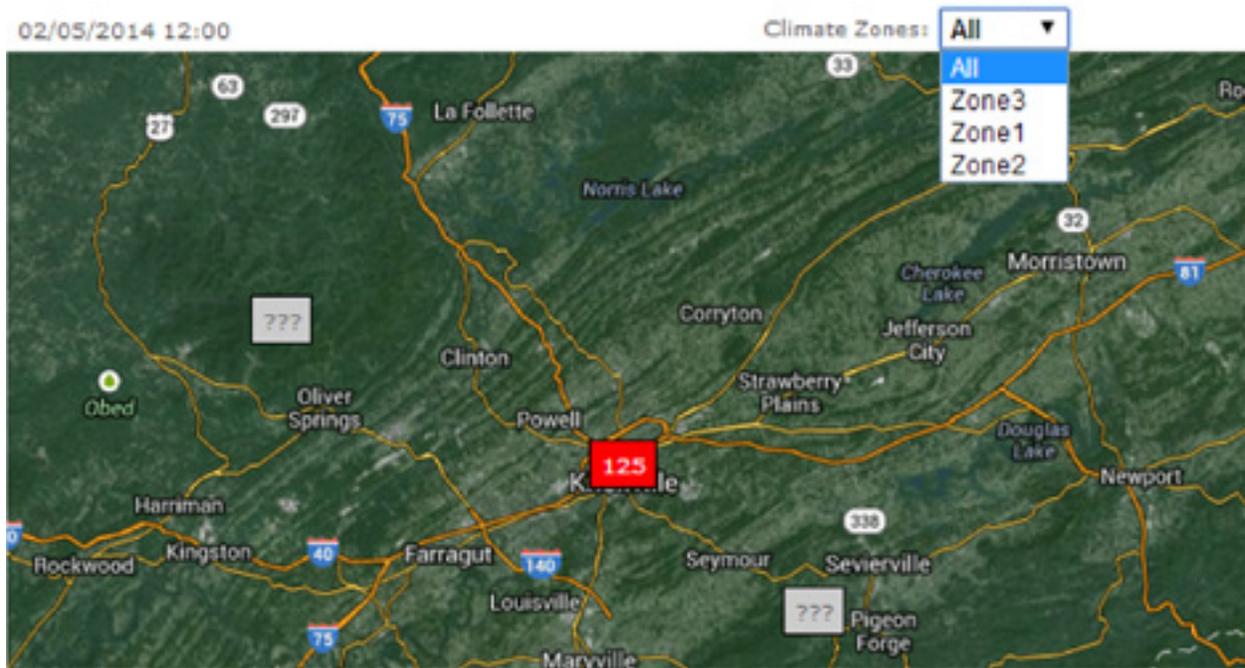
Forecast

A forecast legend below the map provides a link to the AQI forecast as an overlay table with color-coded AQI values for all sites in the district. The forecast table displays AQI values for pollutants, a description of the health effect level, activity caution, groups at risk, and tomorrow's forecast (if entered / available in the AirVision Forecast Editor). Click on a site in the overlay AQI table to see a site specific AQI table.
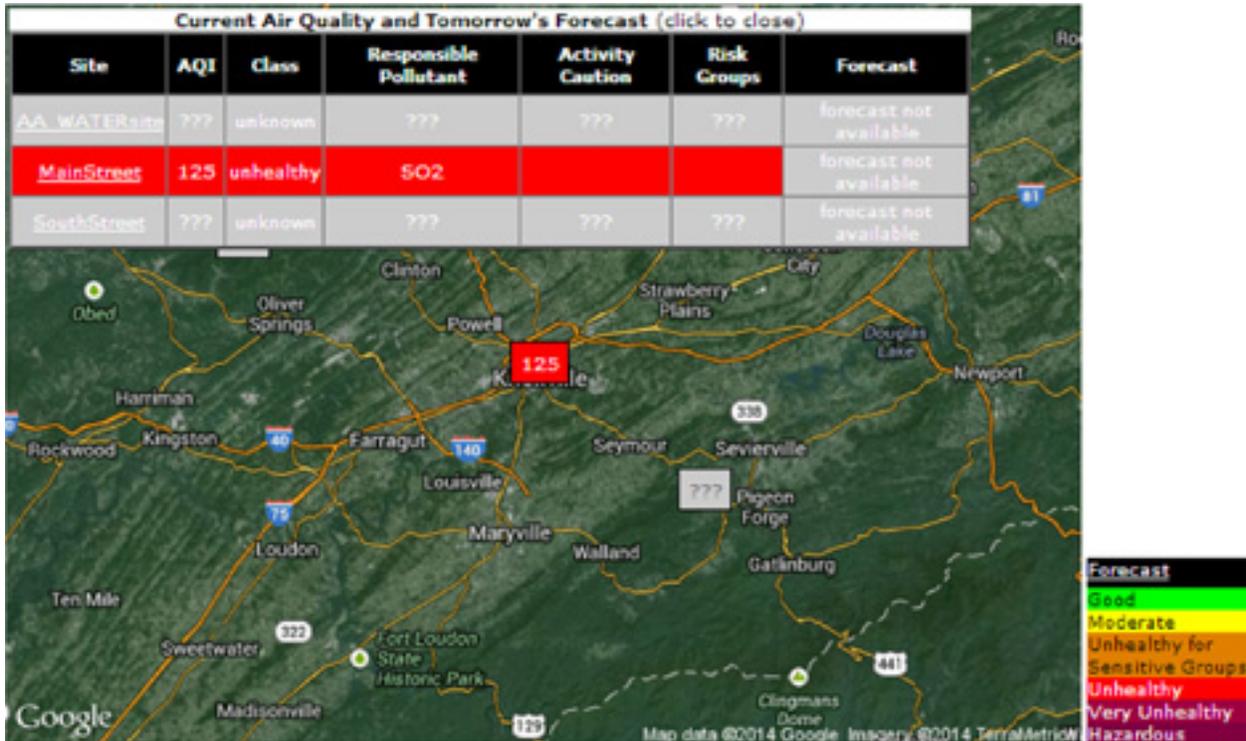
Historical Reporting

Visitors to the website can access historical data via the Reports menu (depending on User access configured within AirVision). Which reports are shown depend on the Group Permissions assigned to the User.
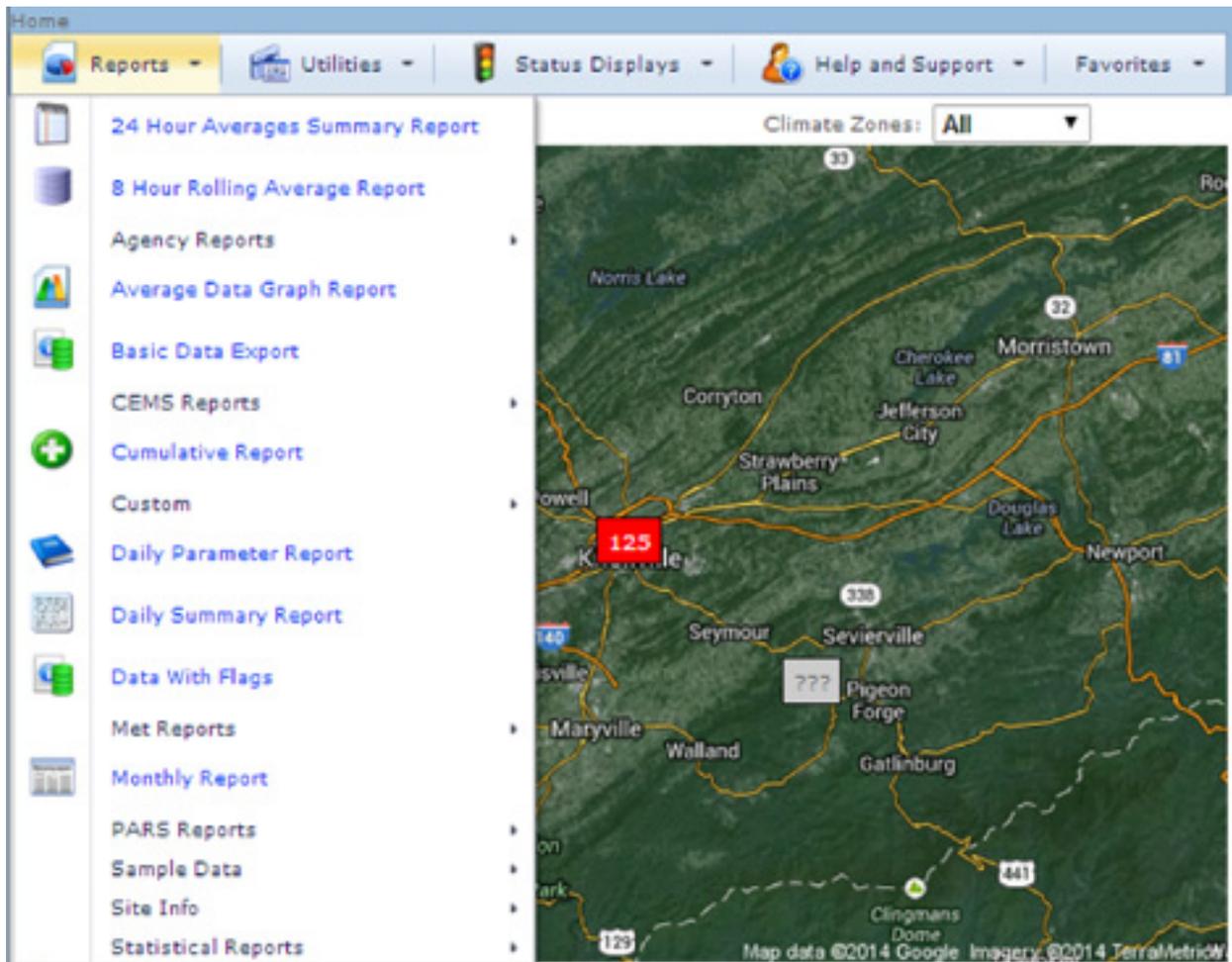
Report functionality is in line with the standard AirVision client. Users select the desired date range, the interval, and parameter(s). After defining the criteria, click the **Generate Report** button.
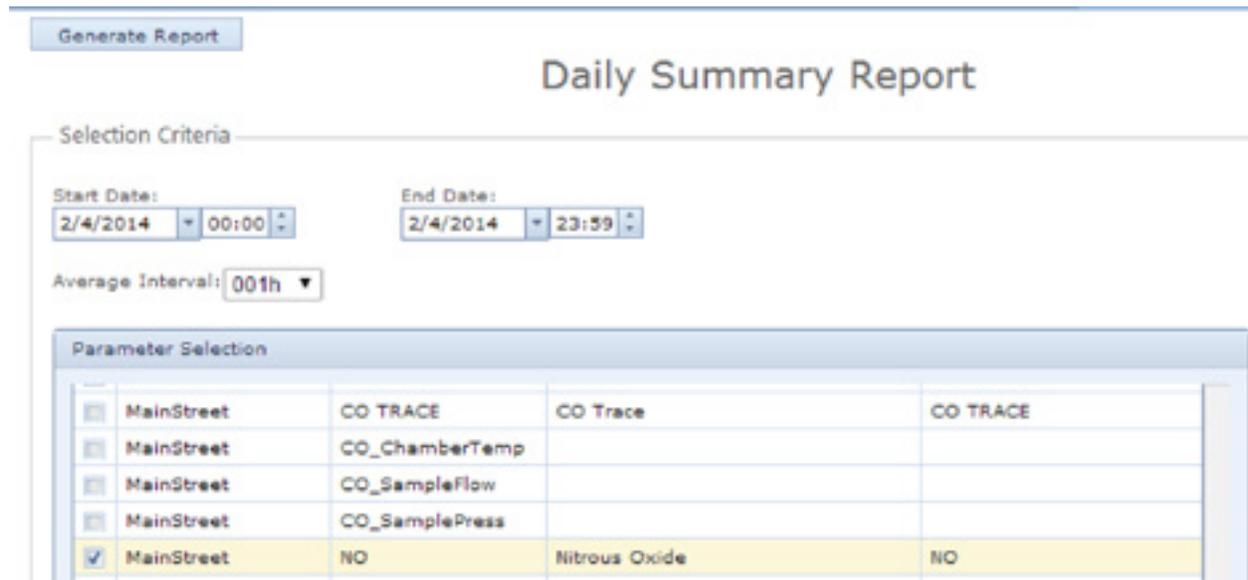
When the report generates, a new browser page will open with the report output. Options are presented to:

• navigate the pages of the report

• print the full report

• print the current page of the report

• save the report in a designated format (as selected from the drop down list)

• export the report to a new browser window
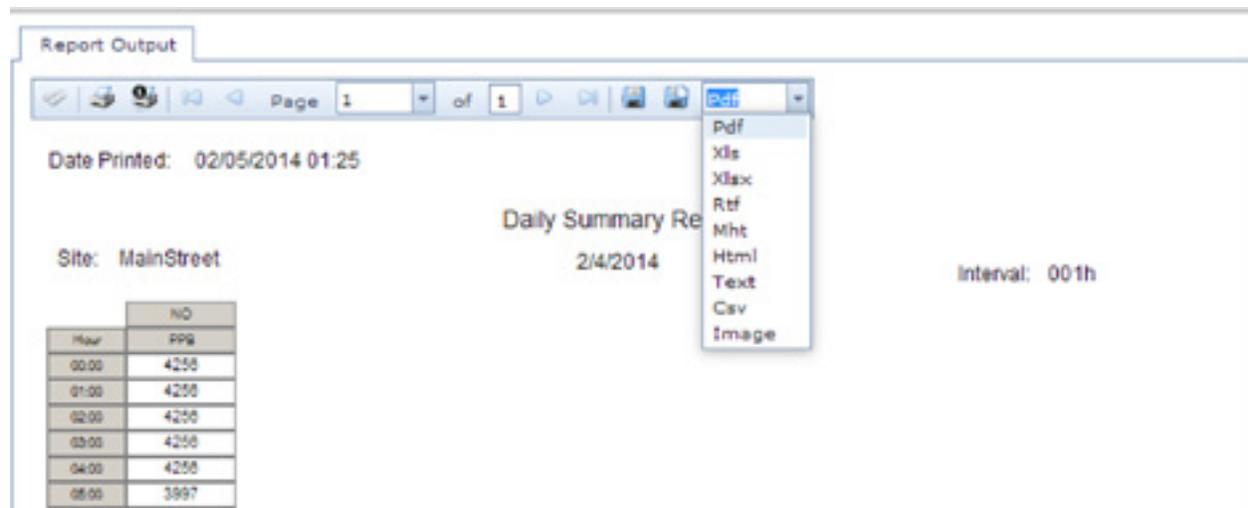
Forecast Editor

The Forecast Editor allows administrative personnel to post an AQI forecast for public viewing. The editor is located in AirVision under Data Editors. Select a date range and click **Retrieve Data** in the ribbon bar. Next, click **Add** in the ribbon bar and fill in the information in the lower window pane. Then click the calculator button in the Forecast AQI column. Finally, click the **Save** icon in the ribbon bar.
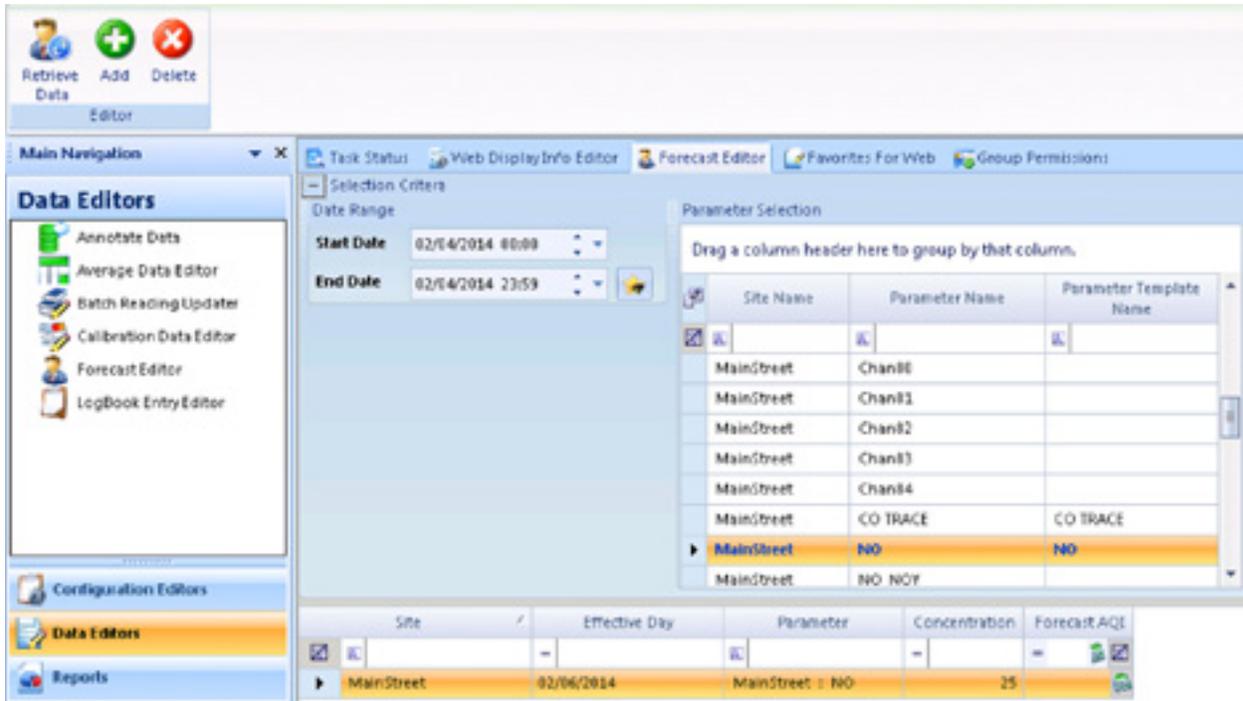
AQI Map Options & Configuration

Static Maps

An option is available where you can source your image via Google's mapping service.

Google's static image API provides images on request. You simply craft a URL with the desired options and Google returns you a png (or jpeg, etc.) image.

PLEASE NOTE: Currently, "free" usage is limited to a set number of accesses per day per API key. If you go over that you can simply pay as you go. Please see https://cloud.google.com/maps-platform/pricing/sheet/ for details. *Please confirm all limits, restrictions, and rules of usage with Google if implementing this map option.*

The URL can be crafted to center/zoom the map, select an image size, choose satellite/roadmap/hybrid view, add markers, etc. Once defined, simply plug that URL into the existing mapPath value in the Web Settings Editor.

http://maps.googleapis.com/maps/api/staticmap?center=33.024785,-116.81531&zoom=9&size=679x440&sensor=false&maptype=hybrid

The link below describes the various options and usage limits, etc. You can even go so far as outlining regions and so on. https://developers.google.com/maps/documentation/static-maps/

Dynamic Maps

Dynamic maps from Google or Bing can be used. This allows the end user to pan and zoom on the map. This requires adding a defaultTransfer key value, configuring an API key, and entering the site latitudes/longitudes.

Additional info and licensing:

Google Maps **https://developers.google.com/maps/faq#usagelimits**

Bing Maps **http://www.microsoft.com/maps/product/terms.html**

Adding a defaultTransfer key

When a dynamic map is used, a key value needs to be added. Below is an example if a Google map is used.

Key- defaultTransfer **value-** ~/Modules/Maps/GoogleMap.aspx

Adding your API key to AgileWeb

Bing and Google require an API key to be provided. The website administrator needs to register for an API key from Bing or Google and enter that into the AgileWeb configuration. Once you've got the API key, it will need to be added to the appropriate AgileWeb key.

Bing example:

Key- BingMapsApiKey **value-** your key here in quotes

Google example:

Key- GoogleMapsApiKey **value-** your key here in quotes

Establishing a Google API key

To use a Google map (static or dynamic) as your AgileWeb map, you will need to obtain a Google API key.

To establish a static map API key, visit

https://developers.google.com/maps/documentation/maps-static/get-api-key

To establish a dynamic map API key visit:

https://developers.google.com/maps/documentation/javascript/get-api-key

▶ **NOTE:** *Each API lists the amount of free requests to the right of the on/off selection.*

Review the terms of service and proceed if you agree to the terms.

When complete, you will be taken to your individual portal, showing your API services. Select the API Access to get your API key:

▶ **NOTE:** The list of allowed "referrers" can be configured if there is concern about other people using your API key. The referrer is the domain name which is hosting the site.

For example, if hosting AgileWeb at **http://mydomain.com/AgileWeb**, there is nothing to stop someone else from viewing the page source and copying the API key. They could then use it from other websites and drive up usage (and ultimately the bill, if it goes past the free limit). However, if you restrict it to specific "referrers" (e.g. "mydomain.com"), it would only work from pages in that referring site.

Configuring Windows Server 2012

Configuring Windows Server 2012 and beyond for AgileWeb

If running your AgileWeb instance on a Windows Server 2012 Machine (or later), there are some Roles and Features in Windows that need to be added.

1. Launch the Server manager and select the local server. From the Roles and Features area, select the Tasks pick list and choose the option to add.
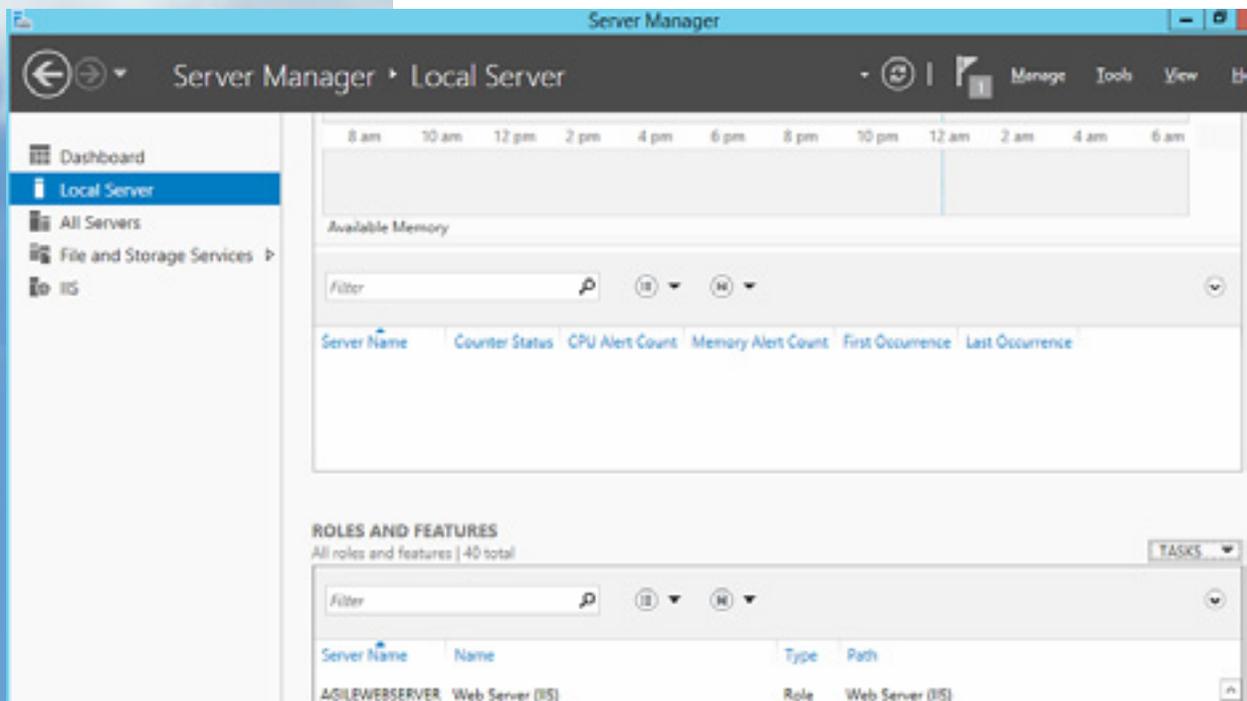
2. Go through the Roles and Features wizard.
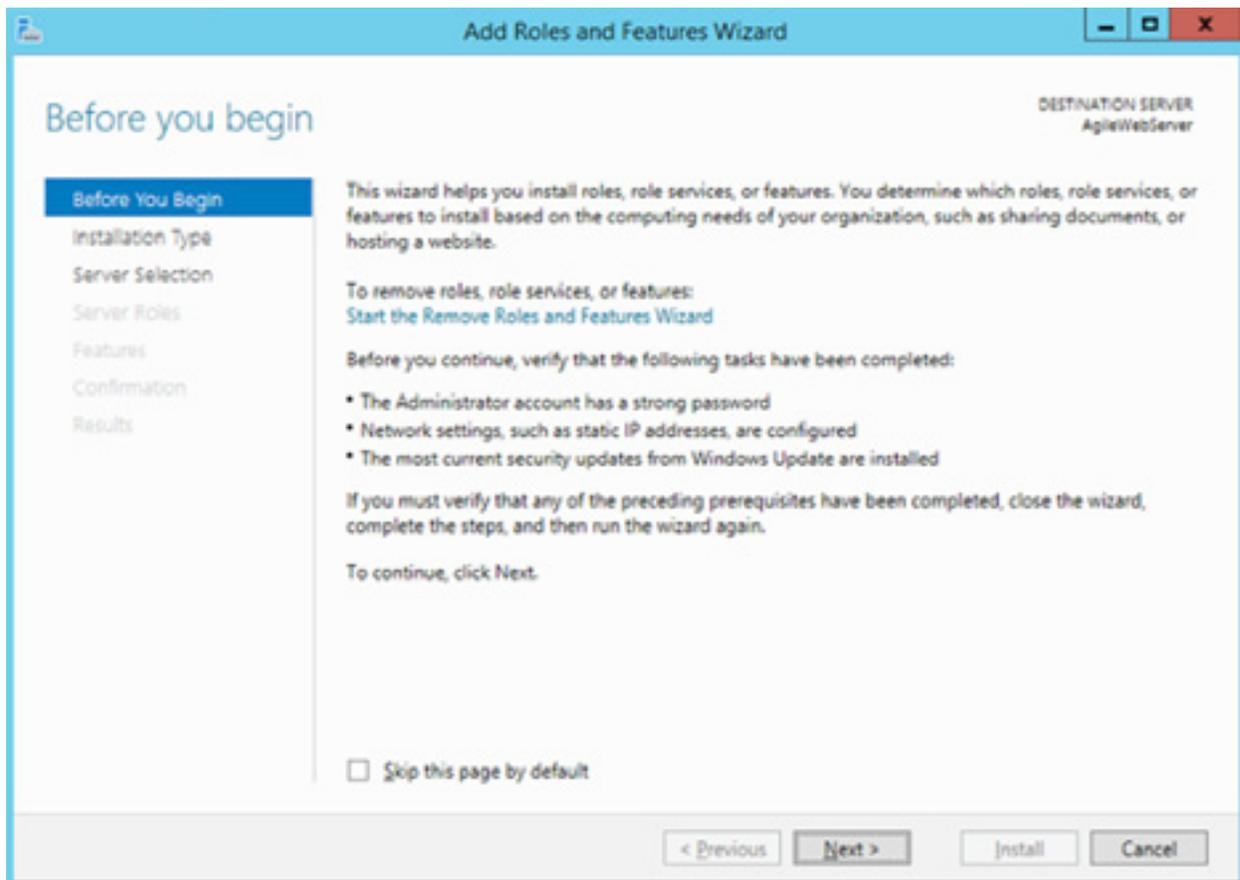
3. Select the installation type.
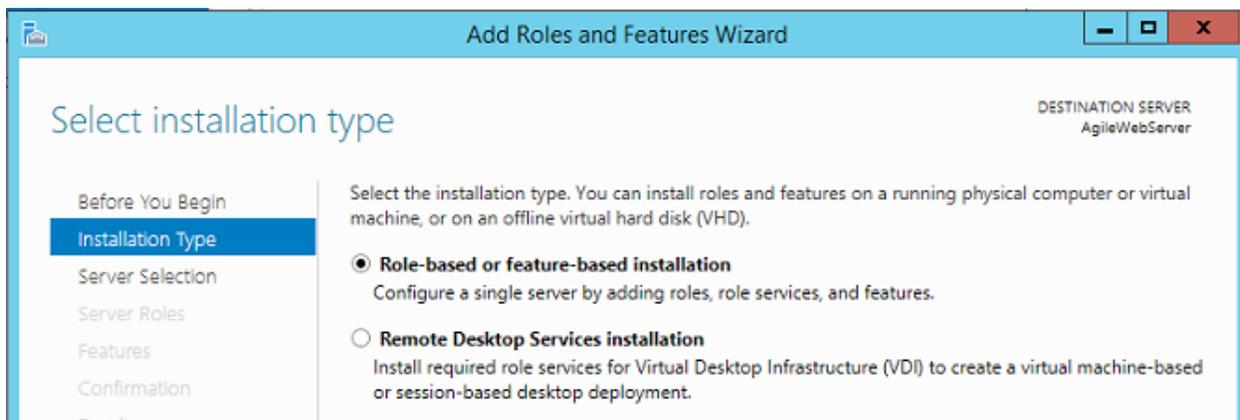
4. Select destination server.
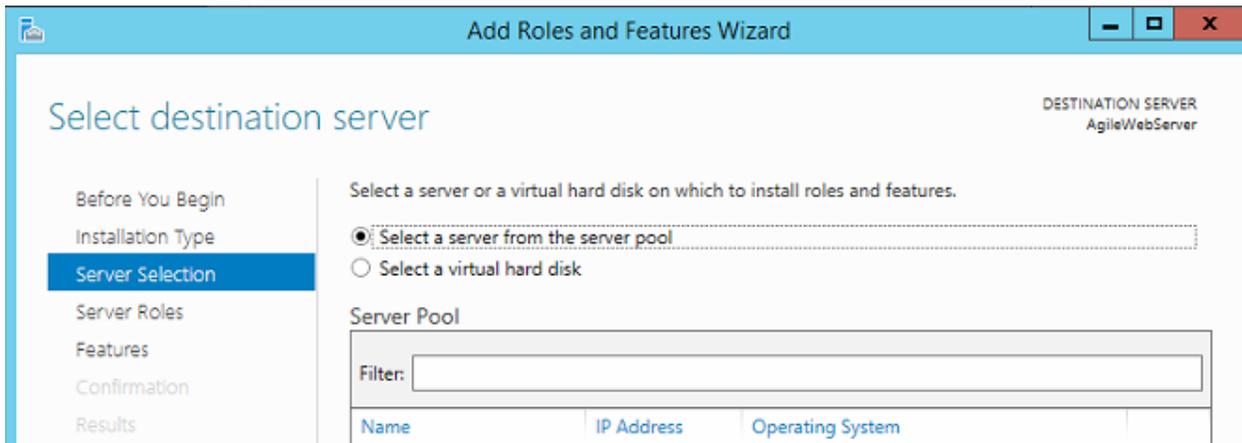
5. Under Server Roles, select the following:
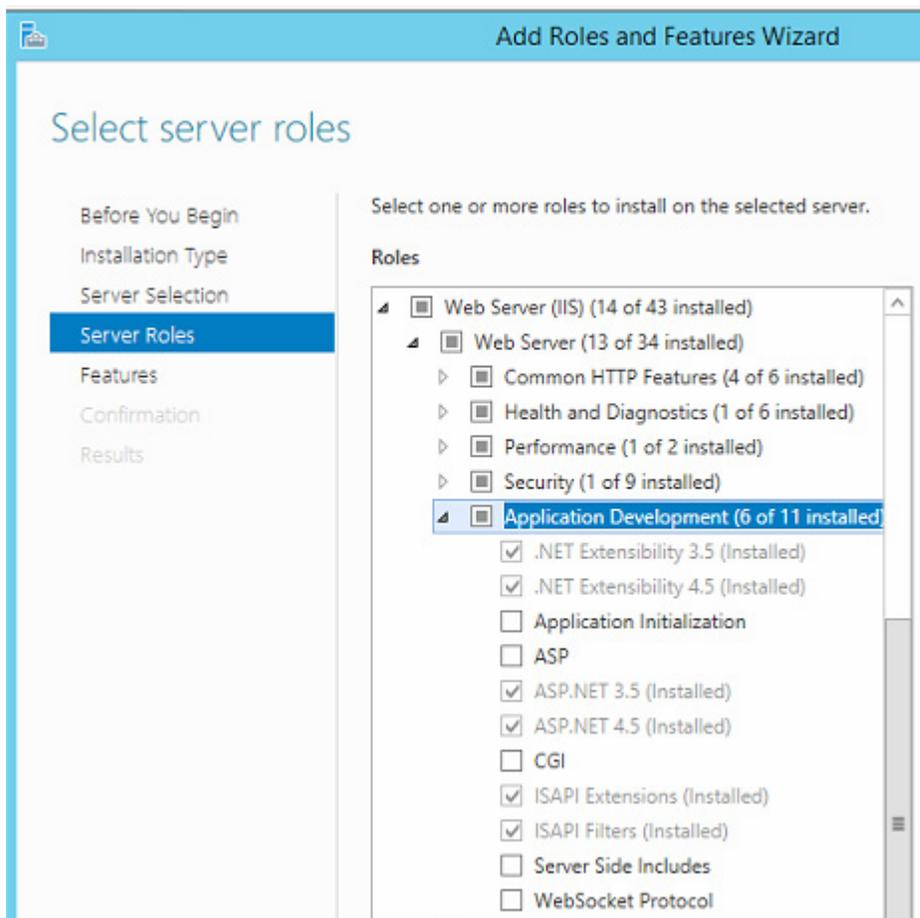
6. Under Features, select the following:
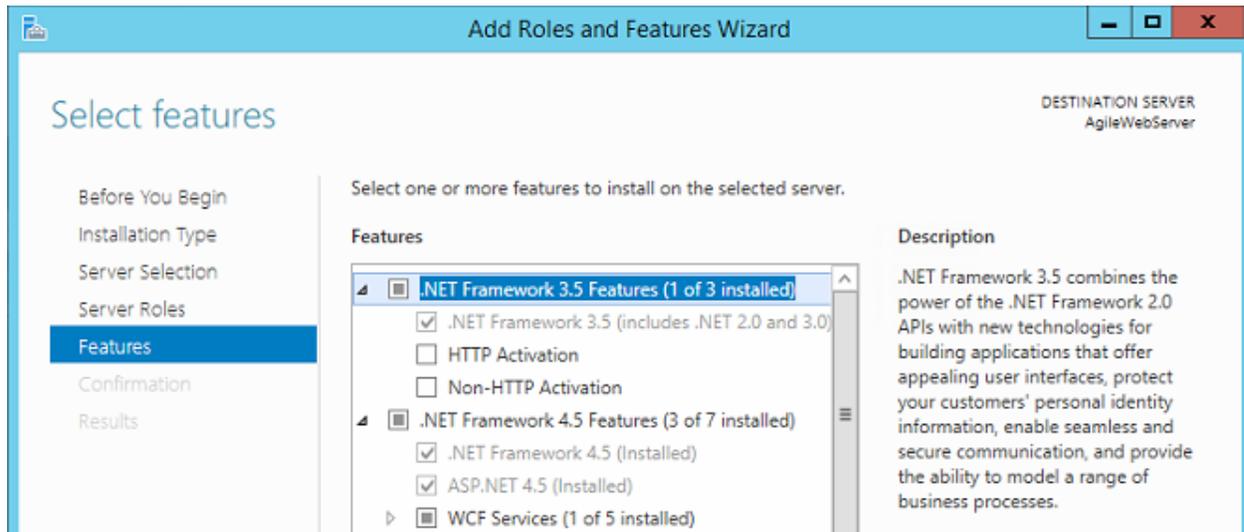
AgileWeb Advanced Configuration

Start Page Logic

The following are evaluated in this order:

1. If (defaultTransferStartupFavorite) is set to True: Load the best match favorite for user, with "launch on start up" set to true (as in Favorites For Web editor), if one exists (Best match involves checking the User, Global, and Public scope settings to find the best match)

2. If (defaultTransfer) is set, transfer to that page (browser URL remains as default)

3. If (defaultRedirect) is set, redirect to that page (browser URL reflects new page URL)

Web Favorites Logic

In addition to the start page logic above, 'Load Data Automatically on Launch' controls whether an initial query screen is shown or the report is launched directly.

▶ **NOTE:** If the user doesn't have security permission to the report page (i.e. the query page), then the report viewer will attempt to generate the report without a query (as if 'Load Data Automatically' were true).

Frames

If you will be hosting the AirVision site within a frame or iframe of an existing site, you will want to use a minimal frameless master page for AirVision so it fits nicely into the frame of your other website. The default provided Public. master file is an example of this. This shows the page's main content without any additional banners, logos, links, etc. Again, you may wish to make a copy of this master file and modify it to alter any CSS styles, etc. Then you would save it as Site.Master in the Custom folder so all the pages would take on this appearance.

If you host the site within a frame, be sure the X-FRAME-OPTIONS value is either blank or set to a value which allows frames. (See 'Frames and Click-Jacking Prevention' under Security)

Security

Site-based security (as configured in Group Permissions in AirVision) is now observed throughout the web app in editors and selection lists and is based on the logged in user. If no user is logged in, the 'anonymous' user will be used (if configured in AirVision). If no user is logged in, and the 'anonymous' user is not configured, the experience will essentially stop at the public map / page.

For public-facing pages such as the map pages and related site details pages, it does not look at site-based security and instead looks at the Display field in the 'Web Display Info Editor' for sites, and the 'Filter From Web' setting for parameters within those sites. The Filter From Web will filter those parameters out, UNLESS the user has been granted the ShowFilterFromWebParametersInSelection Panel security activity in Group Permissions.

Anonymous User Permissions

The web application allows fine grained control of anonymous users (not logged in) by creating a user in AirVision and assigning them specific security rights (via Group Permissions Editor under Configuration Editors->Security). This can be used to grant anonymous access to specific menu items and read access to all or individual sites (for report generation). It does not affect public favorite reports – those will run for whatever criteria the administrator configured them for.

The default username is "anonymous" but this can be changed via custom.config by adjusting the key:

Key- AnonymousAirVisionUserName **value**- anonymous

The value specifies the username in AirVision. If you wish to use a different name for your anonymous user configuration, change this value. If this key value is empty, then the anonymous users are not granted access to any security actions (and thus are unable to query any sites).

Further, regarding the favorite report list mentioned previously, you may also assign web favorites to the anonymous user. This is similar to specifying PUBLIC scope, except that while PUBLIC scope makes the report visible on everyone's list, alternatively specifying USER scope for user anonymous makes the report visible only on the anonymous user's list (not to other logged in users).

Optional Web Settings Editor / custom.config Settings (default settings shown for reference)

Each folder within the web application may have a web.config and corresponding custom.config. The custom.config file should contain an appSettings element with "add key" sub elements.

▶ **NOTE:** After changing values in a custom.config, you need to recycle the app pool in IIS to force it to pick up the values immediately. Otherwise existing values may be cached for some time before it reloads them.

Banner Image

Key- BannerImagePath **value**- ~/images/agilaire_banner.png

(Set to empty string to hide image.)

Report opening

key- OpenReportsInNewWindow **value**- False

(If True, report query screen launches report output in a separate browser tab and minimal master page without menu/etc.)

Navigation bar

key- EnableNavbar **value**- True

(If false, the area containing the menu, current page name, and login area are all hidden entirely.)

Mobile browser theme

key- DevExpressTheme_Mobile **value**- Moderno

(Controls the DevExpress theme for mobile browsers. If empty, the DevExpressTheme setting will apply to mobile as well.)

'Home' menu item

key- ShowHomeMenuItem **value**- True

(True to show a "Home" button on the menu, which takes user to the default page (controlled by default transfer settings.))

Parameters displayed in historical concentration

key- SiteDataParameterTemplateNames **value**-

(Controls which parameter templates the Historical Concentration Data shows (blank defaults to all.))

'Public' master page title text

key- PublicMasterTitle **value**- Air Quality

(Optional title text appended to page title in browser window, public masterpage.)

Enable/disable autocomplete on the password input box

```
<add key="EnablePasswordAutoComplete" value="False" />
```

(This should be false (default) for security reasons. Only set to True for internal applications.)

Disable automatic switching of HTTP/HTTPS based on page content

key- DisableSecurityEvaluationRequest **value**- False

By default, any logged-in content requires HTTPS (SSL) to access it. If you do not have an SSL certificate configured on the web server, and wish to allow non-encrypted HTTP access, you can set this config variable to True to disable the HTTPS enforcement.

Enable features for improved accessibility compliance

key- EnableAccessibilityCompliant **value**- False

(Emit extra html code to provide better support for screen readers. Grid column links, better keyboard navigation, etc.)

Server side cache duration

Key- DefaultCacheDuration **value**- 002m

(Server-side data cache duration for most reports, menus, etc. Leave this alone unless you are having performance problems)

Show all AQI parameters on site hover

key- HoverOverAllParameters **value**- True

(True will list all parameters with an AQI for the site when it is hovered over on the map. False will result in only the highest AQI parameter being shown when hovered over.)

Use Stored AQI calculation results

key- UseStoredAqiResults **value**- False

(Look in AmbAqiSiteIndexResult table for AQI calcs rather than calculating them every time. Requires scheduled task to be configured to populate the table.)

Show all AQI parameters in Site Display

key- ShowAll_Parameters_In_Site_Display **value**- True

(True will list all parameters with an AQI for the site when the Site Display page is loaded. False will result in only the highest AQI parameter being shown on the page.)

Set custom scaling factor for wind barb

key- WindSpeedCategoryScalingFactor **value**- 0.868976

(Scaling factor for determining which category of windbarb icon to display. Default is MPH-> Knot conversion (0.868976).)

Set custom wind barb image

key- WindBarbImageFolder **value**- ~/Custom/images/windbarbs

(Optional custom windbarbs to use, instead of the defaults.)

Set browser refresh timer

key- MapRefreshIntervalSeconds **value**- 300

(If configured, the map page will use a timer to refresh itself (full browser refresh).)

Hide Climate List selection

key- HideClimateList **value**- False

Hide Layer List selection

key- HideLayerList **value**- False

Parameters to display on MetView page

key- MetViewParameterTemplateNames **value**- SWSP,SWDR,BARPRESS,AMBTEMP,SOLARRAD, RELHUM,SWDR,RAINFALL

(Comma separated list of parameter template names to be displayed on MetView page. These are in order from left to right, top to bottom. Note the SWDR is there twice since there is a compass gauge and digital gauge for this parameter.)

Default site for MetView page

key- MetViewDefaultSiteID **value**- 2638b9f6-4584-e311-826f-5c514f50a43c

(This is optional. If there is only one site configured, it is used automatically. This setting is only needed if you have multiple sites, and want to default to a specific site.)

Hide site list for MetView page

key- MetViewHideSiteList **value**- False

If you have only one site, or don't want the end users to change sites, you can set this to True to hide the site selection control. If you use this with more than one site, you will need the MetViewDefault SiteID value set as well (see entry above).

Set refresh interval for MetView page

key- MetViewRefreshInterval **value**- 005s

Interval for refreshing data on the MetView page.

Set stale interval for MetView page

key- MetViewStaleInterval **value**- 030s

Sets the interval after which data is considered "stale" and should be indicated as missing.

Set default screen for Realtime View page

key- RealtimeViewDefaultRealtimeScreenID **value**- 95f9a739-a4ab-e311-827e5c514f50a43c

(Set the default realtime screen displayed by the RealtimeView page. This is optional. If there is only one screen configured it is used automatically.)

Hide Realtime View List

key- RealtimeViewHideRealtimeScreenList **value**- False

If you have only one screen configured, or don't want the end users to change screens, you can set this to True to hide the screen selection control. If you use this with more than one screen, you will need the RealtimeViewDefaultRealtimeScreenID value set as well (see entry above).

Set map type for Bing map

key- BingMapTypeId **value**- Microsoft.Maps.MapTypeId.birdseye

Set map type for Google map

key- GoogleMapTypeId **value**- google.maps.MapTypeId.HYBRID

Set background map layer type

key- GeoMapBackgroundLayerType **value**- OpenStreetMap

(Values are OpenStreetMap, Bing, Google, WorldMapKitWmsWeb.)

Add additional custom css file to the main site master

Key- SiteMasterCustomStyleSheet **value**- ~/Custom/Custom.css

Add additional custom css file to the public master

key- PublicMasterCustomStyleSheet **value**- ~/Custom/Custom.css

Add additional custom css file to the report viewer master

key- ReportMasterCustomStyleSheet **value**- ~/Custom/Custom.css

Option to hide delete button from the Site/parm editor

key-SiteEditorForm_DeleteButtonVisible **value**- True

Disable browser cache

key- DisableBrowserCache **value**- False

(The disable browser cache setting is really intended for data pages. It should be ok to allow browser caching of menu images.)

If this is True, each page returns HTTP response headers to advise the client's browser to disable caching for the page. It sends the following header values:

"Cache-Control": "no-cache, no-store, must-revalidate"

"Pragma": "no-cache"

"Expires": "0"

CSS Styles

If you need to tweak specific CSS styles within the application, Agilaire has provided a simple way for an html/CSS developer to accomplish this. Just place your custom CSS file(s) into the Custom folder, and add a custom.config entry to specify the path to the file. There are 3 primary areas of the application you may choose to customize: the Report Viewer pages, the Public pages, and the overall Site pages. These are referred to with the following keys: reportMasterCustomStyleSheet, publicMasterCustomStyleSheet, and siteMasterCustomStyleSheet.

For example:

key- siteMasterCustomStyleSheet **value**- ~/Custom/Custom.css

This would add your styles from Custom.css to pages site-wide (except for report viewers and the public folder). Note that this layers your CSS on the existing CSS supplied by default. So you only need to provide CSS information for specific things you want to change. Also note you may need to utilize the "!important" keyword in CSS in some cases to force your setting over the default.

Similarly, to customize the report viewer pages use:

Key- reportMasterCustomStyleSheet **value**- ~/Custom/Custom2.css

Similarly to customize the public folder pages use:

Key- publicMasterCustomStyleSheet **value**- ~/Custom/Custom3.css

▶ **NOTE:** You can use a single CSS file for all, or you can assign different CSS files to each.

Custom Master Pages

The Master page defines the common content for the site. This typically includes a banner logo, navigation links, etc., as well as style sheet information for custom appearances.

If you need to control the common content, or need to add fine-grained control of CSS styles, you can use a custom Master Page. By placing a customized copy of the master file into your "Custom" folder, the application pages will use that instead of the default master file(s). The application uses a naming convention to scan the custom folder and use those files instead of the defaults.

The default master page shows an Agilaire logo, along with a Login link, and a menu. This file is called Site.Master. Customers may use this as an example of how to build their own master page. ***Do not alter the included Site.Master file directly!*** It will be replaced each time you upgrade, therefore losing your custom changes. Instead you must create your own copy of the Site.Master file, place it into the Custom folder, and edit that file. Then the web app will use your custom file instead of the default.

▶ **NOTE:** Within your master file, you must leave the ContentPlaceholder components with IDs called "HeadContent" and "MainContent" in order for the pages to function properly. Further, your custom master file must preserve the Inherits="AirVision.Web.Site.SiteMaster" attribute, since the application depends on some the code found there.

At that point all pages which use Site.Master within the application will take on your custom master page. The same procedure can be used for other master pages in the application (the public master page, reporting master page, and so on). You simply need to copy them into the Custom folder and alter the contents (with the restriction that they must preserve the same ContentPlaceHolders and Inherits statement).

List of master page files that can be customized by copying them to your Custom folder:

MASTER FILE NAME	LOCATION	DESCRIPTION
Site Master	/	Outer shell around main pages, including banner image, border around page, and so on
Application Master	/	Main application logic including the login link, and menu system
ReportQueryPage.Master	/Modules/Reporting/QueryScreens	Report query screen pages
ReportViewer.Master	/Modules/Reporting/ReportViewers	Report viewer pages
ReportViewerOnly.Master	/Modules/Reporting/ReportViewers	Report viewer pages when OpenReportsInNewWindow=True (report only without banner, etc.)
Public.Master	/Public	Public pages

Within your master page, you can reference additional CSS style sheets, images, and other content as appropriate. This requires some web development skills with ASP.NET, html, and CSS. Agilaire can assist with this process; contact for details. We recommend keeping all additional custom files (images/scripts/css) in the "Custom" folder in the root of the web application. This helps organize your custom content and makes it easier to manage at upgrade time.

Your custom master page can be styled as desired. However the MainContent of the page typically has existing default styles applied. When altering the styles of the main content of each page with CSS, note that you may need to use the "!important" modifier in CSS to override the existing styles.

Custom Themes (Advanced)

If you need more control of the appearances, you can use ASP.NET custom themes. This requires web development knowledge to set up. Once you've created your theme, simply put the files into a subfolder with the desired name (for example "myTheme"), under the App_Themes folder. Then add the value to the key:

Key- Theme **value**- myTheme

Default Page Configuration (AQI Map and Reports)

By default, when a user browses to the website, they are transferred to the AQIMapLink.aspx page which shows the AQI map and public favorite reports (if configured). This can be changed if desired, by transferring them to another page by default. To change the default page the user is shown, set the defaultTransfer or defaultRedirect* key value.

Examples of default pages:

SETTING	NOTES
key- DefaultTransfer value- ~/AQIMapLink.aspx	This is the default. It shows the AQI map and favorite links.
Key- DefaultTransfer value- ~/ Modules/Reporting/QueryScreens/ AverageDataReportQueryPage. aspx?Action Key=AverageDataGraph& DateRangeType=LookbackDays&Look BackIntervals=2	This would show a report query screen for the Average Data Graph Report with the time range of the last 2 days preselected. You could configure this for any report, and preset specific selections if preferred.
Key- DefaultTransfer value- ~/ Public/Viewer.aspx?GuiFavoriteID= 353dbbb2-6a36-4d02-b5d9-24da978fd485	This would show a specific favorite as the default page (for example: a dashboard layout). The GUID shown here is for demonstration only; you would need to use the GUID of one of your dashboard favorite items, etc.

The AQIMapLink.aspx page in the root folder and the default.aspx page in the public folder (Public/ Default.aspx) both show an optional map with AQI/forecast info and an optional list of reports. These are available to anonymous users (no login required).

▶ **NOTE:** The difference between "defaultTransfer" and "defaultRedirect" is as follows. A transfer does a back-end transfer to the selected page, leaving the browser's address bar at the root of the site (e.g. http://myserver/AirVision). A redirect redirects the browser to the selected page, incurring an additional round trip to the server and also showing the actual page URL in the browser address bar (e.g. http://myserver/AirVision/Modules/Reporting/QueryScreens/ .....). Agilaire recommends using the transfer method in most cases.

Appendix D:

Using Lets Encrypt for AgileWeb SSL Certificate

This guide is provided as a courtesy to Agilaire customers needing to obtain an SSL certificate. The referenced utility is NOT an Agilaire product and Agilaire provides no support or warranty of the Lets Encrypt application.

Before beginning the Lets Encrypt setup, you will need a site name bound to your website. Contact your web service / hosting provider to get a host name assigned.

Once the host name is available, it should be added to the site bindings in IIS Manager.take on this appearance.

If you host the site within a frame, be sure the X-FRAME-OPTIONS value is either blank or set to a value which allows frames. (See 'Frames and Click-Jacking Prevention' under Security)
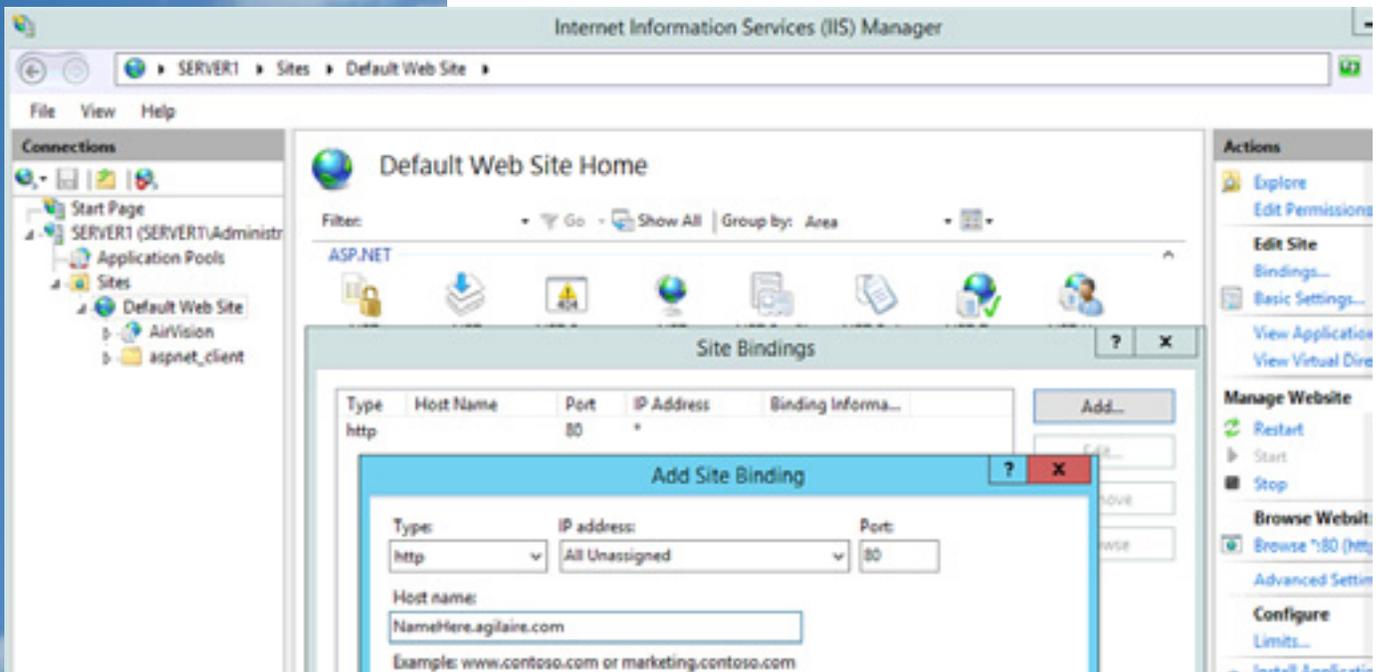
Locate the Lets Encrypt zip file, open it, and extract the contents to a destination folder of your choosing.
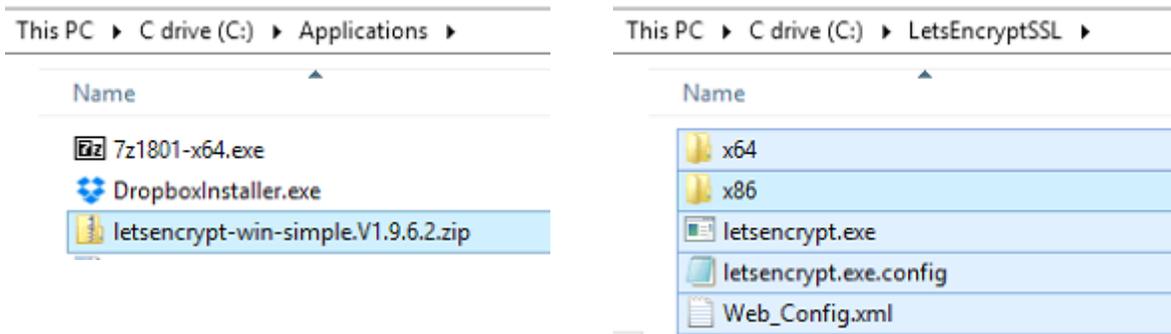
Right click on the letsencrypt executable and choose the option to 'run as administrator'.
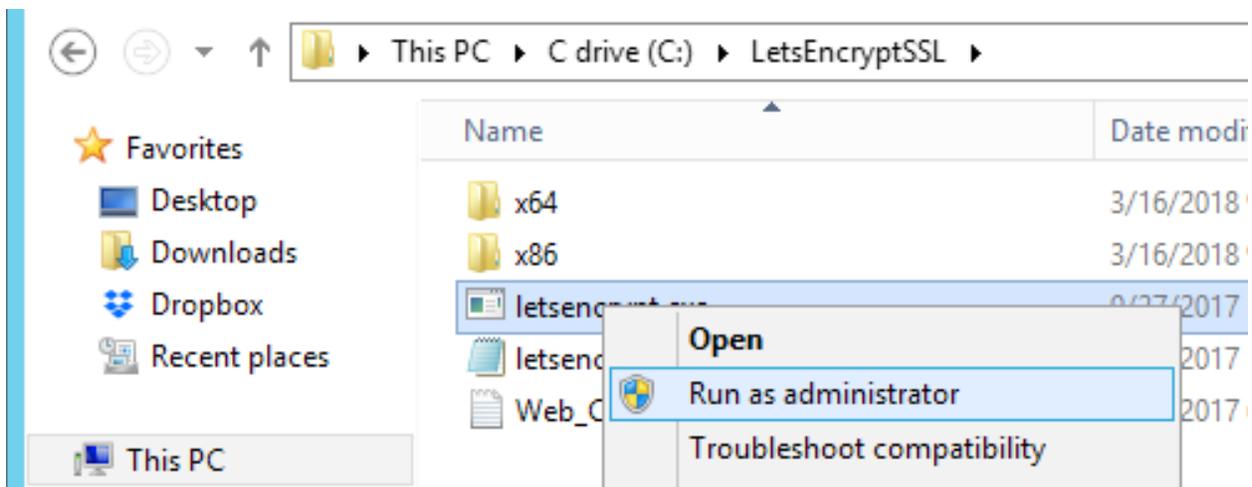
Enter an email where you will receive notices regarding the certificate.
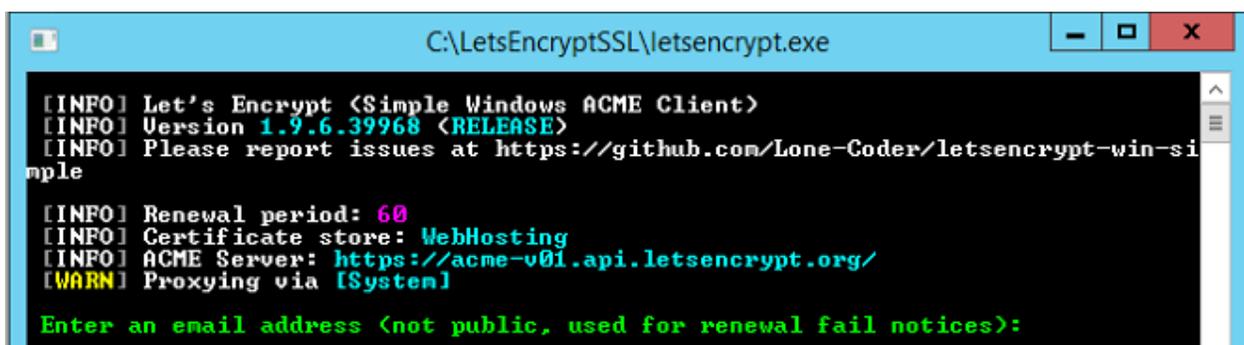
Review the agreement PDF then type 'y' to continue.

For a new certificate, choose option 'N' then press Enter.

```
N: Create new certificate
W: [Legacy] Generate a certificate via WebDav and install it manually.
F: [Legacy] Generate a certificate via FTP/ FTPS and install it manually.
L: List scheduled renewals
R: Renew scheduled
S: Renew forced
C: Cancel scheduled renewal
X: Cancel *all* scheduled renewals
Q: Quit

Please choose from the menu: _
```

Select the desired option, option 1 in most cases, then press Enter.

```
1: Single binding of an IIS site
2: All bindings for a single IIS site
3: All bindings for multiple IIS sites
4: Manually input host names
C: Cancel

Which kind of certificate would you like to create?:
```

Select the desired site then press Enter.

```
1: maricopaco.agilaire.com (SiteId 1) [@%SystemDrive%\inetpub\wwwroot]
C: Cancel

Choose site: 1_
```

If successful, info messages like the following will be returned, followed by a prompt asking if you want to specify the user that will 'run' the scheduled Windows task to check and automatically renew the certificate.

```
[INFO] Authorizing identifier maricopaco.agilaire.com using http-01 challenge
[INFO] Answer should now be browsable at http://maricopaco.agilaire.com/.well-k
nown/acme-challenge/6rWCGzhgKIDH0de_xvjdkJW_TNKvDf0-acv19rKd1NQ
[INFO] Authorization result: valid
[INFO] Requesting certificate: maricopaco.agilaire.com
[INFO] Saving certificate to C:\ProgramData\letsencrypt-win-simple\httpsacme-v0
1.api.letsencrypt.org\maricopaco.agilaire.com-crt.der
[INFO] Saving issuer certificate to C:\ProgramData\letsencrypt-win-simple\https
acme-v01.api.letsencrypt.org\ca-0A01414200000015385736A0B85ECA708-crt.pem
[INFO] Saving certificate to C:\ProgramData\letsencrypt-win-simple\httpsacme-v0
1.api.letsencrypt.org\maricopaco.agilaire.com-all.pfx
[INFO] Installing Non-Central SSL Certificate in the certificate store
[INFO] Installing Non-Central SSL Certificate in server software
[INFO] Adding new https binding for maricopaco.agilaire.com
[INFO] Committing binding changes to IIS
[INFO] Closing certificate store
[INFO] Adding renewal for [IIS] maricopaco.agilaire.com (SiteId 1) [@ %SystemDr
ive%\inetpub\wwwroot]
[INFO] Creating task letsencrypt-win-simple httpsacme-v01.api.letsencrypt.org w
ith Windows Task scheduler at 9am every day.

Do you want to specify the user the task will run as? (y/n):
```

Select 'no' to manually review the scheduled task and your Lets Encrypt work should be finished.

```
[INFO] Renewal scheduled maricopaco.agilaire.com - renew after 2018/5/18 2:01:1
3 PM

Would you like to start again? (y/n): _
```

Launch the Windows Task Scheduler and review / edit the task as needed (use the Properties link in the 'Actions' pane on the right).
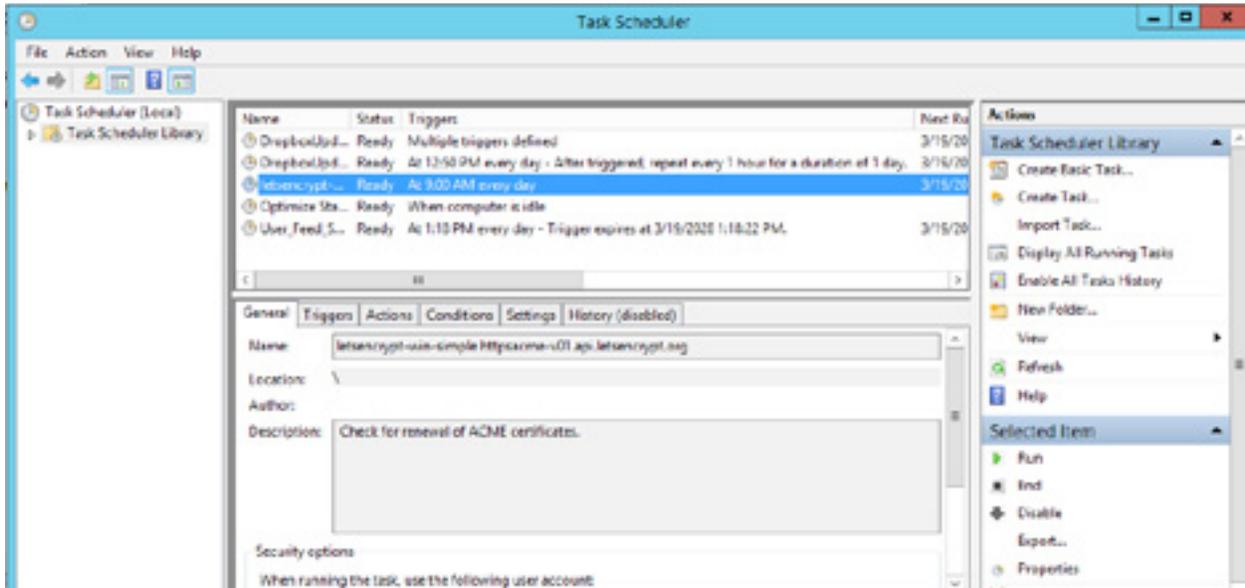

Once finished, be sure to update your AgileWeb custom settings so that SSL is NOT disabled.

Custom config approach (prior to version 3.5.137):
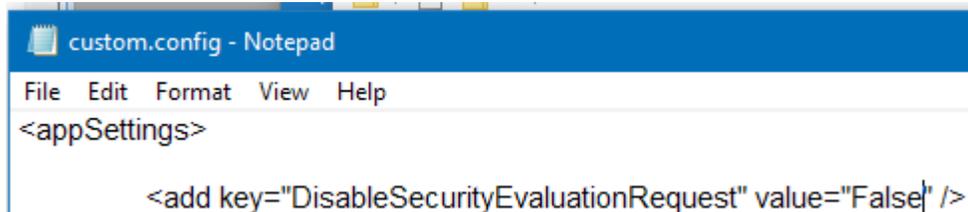
Web Settings Editor approach (after version 3.5.137):