

Self-Hosted Baseline Server

The AppManager™ application is available on a self-hosted server in the following configurations:

- Pre-installed on solid state server module hardware
 - Intel™ Next Unit of Computing™ (NUC) box
 - Fully web manageable after initial configuration
- As a virtual machine image suitable for installation in rack mount VMware® server environments
 - Requires a minimum of 4GB of RAM, 120GB of disk space, and an Intel i3 class processor or equivalent
 - Fully web manageable after initial configuration
- Applications in AppManager use map data that is loaded from a third-party. This data transfer requires general access from the client to the Internet and from the Internet back to the client. The client makes requests and downloads data over an Internet connection.
- The Baseline server must have an externally accessible static IP address or hostname if external access is desired:
 - To allow remote desktop and laptop users to access the system, or
 - To allow mobile devices to access the server
- Software updates and technical support are available for a yearly fee.
- The Baseline server enables users to operate their irrigation controllers through a web-based (browser-based) interface. The irrigation controllers are connected through web-based ports (HTML-5 standard, WebSocket Protocol).
- All traffic is TCP/IP with varying media types (cell, wireless, packet-radio) as needed along the route.
- The server routes communication, performs maintenance tasks, stores watering logs and information, and enables remote updating and configuration.

Networking

All communication to/from clients (browsers) and controllers is done securely over SSL port 443.

- Controllers are required to talk to the server on that port and be allowed to use SSLv3.
- There is no requirement for opening firewall pinholes or configuring port mapping at an off-site facility, unless outgoing connections on port 443 are specifically blocked.
- No special configuration is required on the controller side when the controller is connected to an Ethernet port that can get out to the Internet.

Baseline Server Security

Security measures common to the cloud-based Baseline server and the self-hosted Baseline server:

- All IP traffic between the web-browser client and the Baseline server is SSL-encrypted.
- Firewall is established by Linux kernel IPTABLES (statewise). The only port essential to be opened is 443. Although, if remote administration is desired, port 22 should be opened.
- Clients (browsers) are allowed to remain connected indefinitely or can be logged off and dropped.
- Controllers are able to connect to the IP address of a single assigned Baseline server (programmable).

Security measures specific to the self-hosted Baseline server:

- All data is stored on a local database server (MySQL). Traffic is internal only to local drive. There is no database access from external connections.
- Industry standard Apache web security is employed. Further access controls is supported to manage access via IP, network, or MAC address through the .htaccess facility of Apache.
- Controllers only listen to the assigned server, only over the secure WebSocket Protocol (not HTTP), and only through encrypted traffic.
- Controllers/clients need not respond over the same Ethernet device on the server. In some standalone situations, it may be preferable to have controllers on their own Internet-isolated network.
- Webmin (a web-based system configuration and management tool) is enabled by default on a specified SSL (https) port 10001. Webmin access can be disabled from external access (i.e., localhost only) or disabled entirely.

How to Specify Self-hosted Baseline Server Options

Part Number	Description
BL-APPMGR-VM	AppManager with BaseManager, PipeView, the FlowStation app, and AdminManager as a virtual machine.
BL- APPMGR-COM	AppManager with BaseManager, PipeView, the FlowStation app, and AdminManager on a pre-installed server.
BL- APPMGR-MAA	Mobile Access Advanced Plugin for self-hosted AppManager

Note: For information about Baseline’s BACnet plugin that connects AppManager and your irrigation controllers to a Building Management System, refer to the BACnet product information on Baseline’s website.