



Protege WX

System Networking

Administrator Guide



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Protege WX System

Introduction

Protege WX is a flexible web-based system that allows you to program, monitor and control a site from any smartphone, tablet or computer with a fixed or mobile network connection. It combines access control, alarm intrusion, and automation and control, all into one unified package.

Document Information

This document outlines the operation of the various networking and communication protocols used by the Protege WX system.

It is recommended that at a minimum the ports specified in this document are opened to the device to allow upgrade and effective management of the access control system.

Software Application Version

This document is independent of the software application version that is operating and is based on the default configuration of the Protege WX system.

Protege WX Networking Parameters

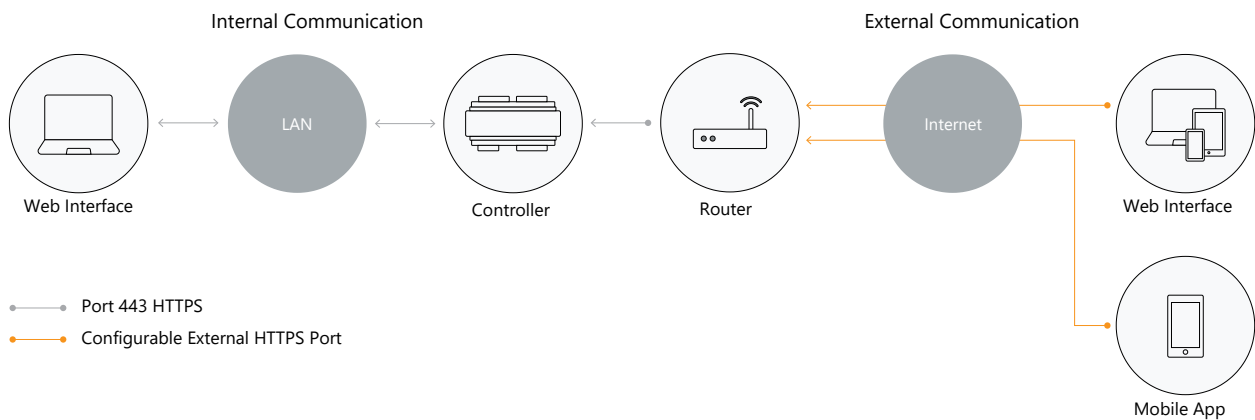
Introduction

The Protege WX modular hardware design allows you to scale your system as your requirements change. Start with the controller or choose one of the cost-effective starter kits, then add optional accessories as and when you need them. The controller is backwards compatible with all Protege expander modules and accessories, meaning you can move to Protege WX without having to replace your existing hardware.

System Architecture

Protege WX controllers are typically connected to a wired LAN. Operators can manage and monitor the controller using the in-built web interface, via either LAN or internet connection.

The following image shows the general structure of a Protege WX system. This is a very basic setup and is not intended to cover every permutation possible. This should be used as a reference when opening ports and configuring routers to allow communications to operate correctly.

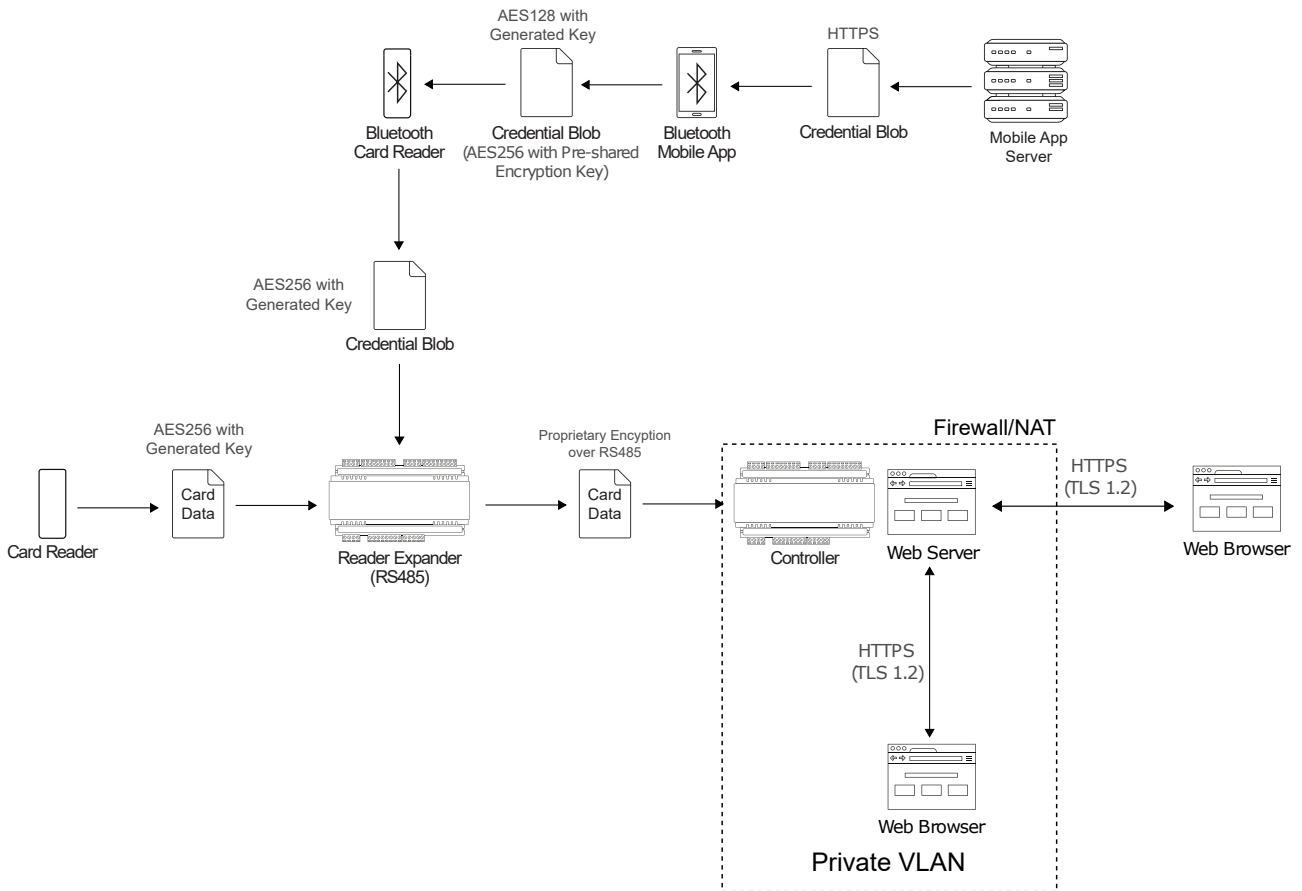


Protege WX controllers can also use a cellular router to communicate over the cellular network. This allows you to manage and monitor controllers remotely, even when they are installed outside of wired networks.

The SIM card network provider must allow both inbound and outbound connections. For supported equipment and configuration instructions, see the [Protege WX Controller Configuration Guide](#), available from the ICT website.

Installing Protege WX on Secure Networks

Protege WX features end-to-end encryption of communications, as shown in the diagram below. Communications with the controller's web server should be protected by a firewall on the local area network.



IP Networking Ports

For the system to function correctly, certain ports must be opened to enable the controller's web server to communicate with a web browser and additional hardware with the controller.

Web Server Ports

The controller has an on board web server that sends the web pages to a browser on any internet capable device through a HTTP connection using the standard web ports for HTTP and HTTPS.

From IP	Port	To IP	Port	Protocol
Controller	80	PC	80	TCP (HTTP)
Controller	443	PC	443	TCP (HTTPS)

Port Forwarding

Port forwarding can be enabled to access a controller over the internet. Networking Address Translation (NAT) must be set up on the router to use this functionality.

The port forwarding number can be different for each situation, but as an example we will use port 10000.

From IP	Port	To IP	Port	Protocol
Remote Client	10000	Router	443	TCP
Router	443	Remote Client	10000	TCP

Module IP Network

The Protege WX system features a number of modules that communicate using their onboard network connection. Module communications will always be sent to and from the ports listed below. Periodic broadcasts to the broadcast address allow time and module synchronization to be sent. A broadcast must be allowed to traverse to all modules on the controller for the correct operation of the IP-based units.

From IP	Port	To IP	Port	Protocol
Controller	9450	Modules	9450	UDP
Modules	9450	Controller	9450	UDP
Controller	9460	Touchscreens	9460	UDP
Touchscreens	9460	Controller	9460	UDP

Mobile App

The Protege Mobile App communicates with the Protege WX controller via the internet on the standard web port (port 80/443), or to a different port number translated through a router.

For port forwarding/translating setup consult your IT advisor.

From IP	Port	To IP	Port	Protocol
Mobile App	Any	Controller	80	TCP (HTTP)

Mobile App	Any	Controller	443	TCP (HTTPS)
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IP Monitoring

IP alarm monitoring has been developed to achieve the same result as Contact ID alarm monitoring (to transmit an alarm message to a central monitoring station), but does so via a network connection across the internet. It is up to the installation company and monitoring station to agree on suitable ports.

Ideal Port Configuration

The ideal port configuration for a system is detailed below and allows for system maintenance and firmware updates across any connected modules. If any of the listed IP modules are not used on a system they may be omitted from port setups.

Protege WX Controller

Direction	From/To IP	Port	Protocol
In/Out	Server IP	443	TCP (with HTTPS)
In/Out	Local Module IP	9450	TCP/UDP
In/Out	Local Module IP	9460	UDP

IP Modules

Direction	From/To IP	Port	Protocol
In/Out	Local Module IP	9450	UDP

Mobile App

Direction	From/To IP	Port	Protocol
Inbound	Local Module IP	443	TCP (with HTTPS)

IP Monitoring

Direction	From/To IP	Port	Protocol
Outbound	Local Module IP	Any	TCP/UDP

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