

The *LightHouse™ System Manager* is the server and central component for any *LightHouse™* system. It is the central server, managing user permissions, client connections, and device/object linking, timed events, and providing access to specific security Devices through *Portals*.

User Management

The *LightHouse™ System Manager* uses Profiles for each user or user group. A Profile is a permission set that defines what client(s) the user can logon from, what Schedules he or she is authorized for, what Devices he or she can control and monitor, and what features he or she can access in the system. A Profile also defines whether a particular user can add or edit users, configure system setup parameters, and review logs.

Users can be assigned to User Groups for ease of setup. When a number of users will share the same Profile(s), they can be added to a User Group and inherit the Profile(s) assigned to the group.

When users are added to the system, a nonce is created that allows the user to logon to the system the first time. When he or she logs on, the user must create their own password and select their challenge questions and enter their answers. Thus, the user is the only one who sees their password or the answers to their challenge questions.

Client Management

Each *LightHouse™ System Manager* manages its own client connections. Client connections are authorized by assigning the client (by IP address) to a user Profile. When a user attempts to log on, the System Manager will verify that the user is authorized for that client during that Schedule with at least one Profile. The System Manager will return the list of Profiles that are currently valid (for that client and Schedule) and the user selects which Profile to use. If the client is not authorized for any Profile valid during that Schedule, the logon will be rejected.

All communications between clients and the System Manager are authenticated and encrypted, using the latest and most secure algorithms, such as AES256. All users logon to the system using HSPD12-compliant authentication (when smart card readers are used).

Schedules

Schedules are used to determine what time frames a user can perform an action or monitor a Device. They are also used to determine when automatic actions take place, such as turning on lights or bypassing certain alarms at a pre-determined time.

Schedules can be daily repeating, weekly repeating or defined as single or multiple one-time events. One-time events can be defined for any time in the future – even years away. Thus an annual Schedule of holidays can be created with as a one-time event Schedule.

Portals

Portals are software components that provide specific functionality, such as CCTV, intercom and access control capabilities, as well as providing interfaces to third-party systems, such as CCTV, intercom and access control systems made by other manufacturers. Portals can be written to accommodate virtually any type of electronic system, using any type of communication format, from modern IP-based protocols to serial protocols (RS-232/422/485) and proprietary formats.

Each *System Manager* can support an unlimited* number of *Portals*.

Devices

Each **LightHouse™ System Manager** can support an unlimited* number of Devices. A Device is an object representing a physical or even a virtual Device, such as a camera, door, and alarm point or intercom station. (Some entities are treated as “virtual Devices” by the *System Manager*). Each Device is supported by an associated *Portal*. The data associated with a Device is determined by that Device (and it’s *Portal*). Devices can be represented with Graphical Objects (icons, hotspots or perimeter outlines) or textual descriptions on clients.

Devices can be placed into Device Groups to make it easier to manage large numbers of Devices with similar characteristics.

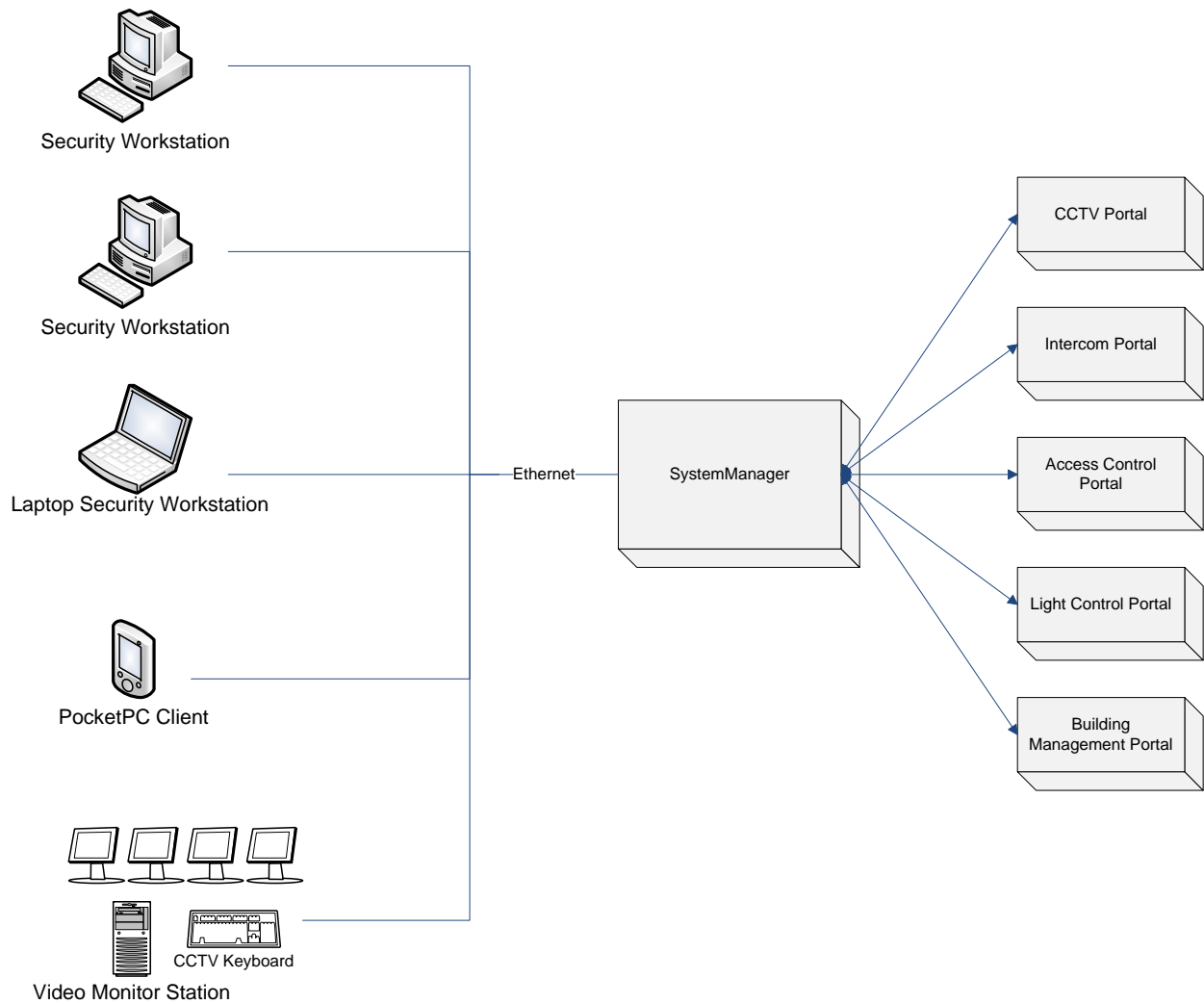
What Devices a particular user can control and monitor, and what specific actions he or she can control or states he or she can monitor, are determined by the Profile(s) assigned to a User.

Timer/Linker Plug-in

The **LightHouse™ System Manager** performs advanced functions such as timed (automatic) events and linked events between Devices using *Timer/Linker Plug-in(s)*, specialized software components designed for specific tasks. These plug-in(s) allow **LightHouse™** to perform tasks and add “logic” to meet specific requirements. Timer/Linker Plug-in(s) can be provided to address specific needs on a per-customer basis.

Advanced Software Architecture

The **LightHouse™ System Manager** is written using the latest .NET framework and makes extensive use of XML data, not only in the database, but also for processing events and commands. This means that the *System Manager* architecture is extensible and can manage Devices from many different types of systems – including building management, lighting control, telephone, or virtually any type of electronic system that can communicate with the “outside world” in virtually any format or protocol imaginable. By remaining “agnostic” about the actual Devices, states and events it is managing, *System Manager* is not limited to one type of application, such as security system functions. This is especially important in an enterprise environment where systems of many types – IT, physical security, personnel management, network security, HVAC and even manufacturing – often share data and interact with each other.



LightHouse™ can provide the unification necessary to make these systems function together, at any level of unification desired – from complete automated interaction between systems to simply providing status of all Devices to system users.

Summary

LightHouse™ Specifications

NOTE: Specifications are per *System Manager*.

Clients

Number of clients:	Unlimited*
Number of concurrent connections:	Unlimited*

Portals and Devices

Number of <i>Portals</i> supported:	Unlimited*
Number of Devices controlled:	Unlimited*
Number of Device groups:	Unlimited*

Schedules

Number of schedules supported	Unlimited*
Number of events per schedule:	Unlimited*

Profiles

Number of Profiles:	Unlimited*
Number of Devices per Profile:	Unlimited*
Number of Schedules per Profile:	Unlimited*
Number of clients per Profile:	Unlimited*

Users

Number of Users	Unlimited*
Number of User Groups:	Unlimited*
Number of Profiles per User:	Unlimited"
Number of profiles per User Group	Unlimited*

* Limited only by hardware limitations of the PC, software limitations imposed by Windows™, and network limitations. Actual numbers for concurrent client connections, *Portals*, and Devices determined by licensing.

Basic Provisions:

- Multiple User Setup w/ User-Specific Preferences
- Multiple Workstation Setup w/ "Roaming" Client Capability (log on from anywhere!)
- Server-Specific Device Configuration and Setup
- Database-Driven Architecture using Microsoft SQL Server
- On-Screen Map Display (AutoCAD, BMP, and JPG supported)

Advanced Features:

- Scalable Challenge Question Configuration w/ User-Specific Override Capability
- Client Multiple Server Logons
- Unified Device Architecture - Provides Infinite Scalability and Configuration (Portals)
- Client-Based File Transfer Utility
- Abstract Location Association for Devices and Workstations (Refines Sorting)
- User Schedule Capability - Prevents Off-Hours Logon Attempts
- Profile Generation - Ties Users, Screen Layouts, Workstations, Devices and Groups Together
- User Groups –Ties users into a common collection for one click operations
- Device Groups- Ties devices into a common collection for one click operations

LightHouse™ Advanced:

- Encrypted, Compressed and Authenticated Bi-Directional Communication
 - > Uses RSA-2048 Asymmetric Encryption for Initialization Messages
 - > Uses AES-256 Symmetric Encryption for Standard Messages
 - > Uses SHA-512 for Message Signatures to Prevent Message Tampering
 - > Uses System Managed Compression
- Server-Based Streaming Forms
 - > Compressed Transmission Reduces Downtime
 - > Provides Forms and Data "As-Needed"
 - > Dynamic Loads Reduce Client Footprint - No Excessive Memory Waste on Unused Forms
 - > Optional Workstation-Specific Filters for Retaining Streamed Data on Logoff
- User-Specified Dynamic Layout Generation
 - > Simplified Three-Step Process
 - > Provides On-Screen Simulation of Workstation
 - > Highly Customizable - Place Any Available Dialog in an Open Space!
 - > XAML-Based Forms – flexible, scalable, adaptable and fast. Ideal for custom development