

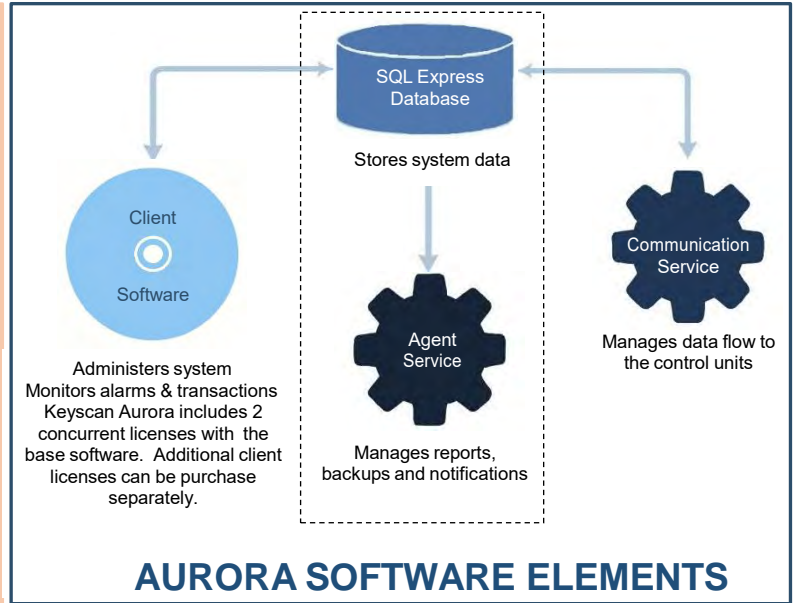
SYSTEM OVERVIEW

Keyscan is committed to providing an adaptable and scalable single access control solution that meets the needs of any customer installation - from a small system controlling only a few doors, to a multi-site installation with thousands of doors.

System performance depends heavily on the computer hardware infrastructure that the system is installed on. A small system when first installed, may run very effectively on a single PC, but as the access control system grows, additional hardware and software may be required.

It is important that as an access control system grows, by numbers of doors, numbers of credential-holders, or activity, that the system performance is assessed and hardware requirements reviewed and upgraded accordingly.

One of the easiest ways to maximize system performance is to utilize the modular design of the Keyscan Aurora Access Control Management Software and install the modules onto different hardware components. The software consists of the following modules: Client Software, SQL Express Database/Aurora Agent Service and Aurora Communication Service.



SYSTEM ARCHITECTURE - 25+ DOORS

When an access control system exceeds 25 doors, a greater hardware infrastructure may be required to ensure efficient system performance. When designing a system greater than 25 doors, please refer to the Keyscan Aurora System Architecture Document for information about system expansion, server and large system infrastructure.

SMALL SYSTEM ARCHITECTURE - 1 to 25 DOORS

SMALL SYSTEM HARDWARE SPECIFICATIONS

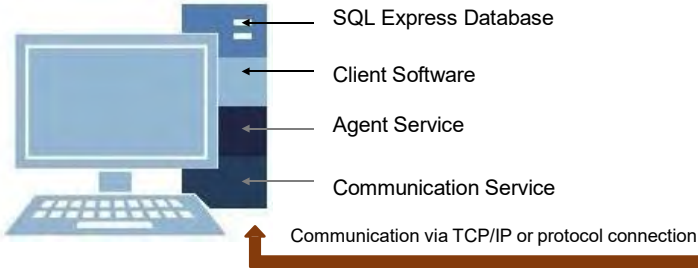
RECOMMENDED MINIMUM REQUIREMENTS FOR EACH COMPUTER		
CPU Processor	Intel Core i7-4770 3.40GHz or faster with 4 cores min.	
Memory	16 GB RAM 1600MHz DDR3 NON-ECC or greater	
Hard Drive	500 GB of available space 7.2K RPM SATA	
Network Adapter Card	Ethernet port – 1GB network card	
Video Card	AMD RADEON HD 8490 1GB	
Operating Systems Supported	For 1 to 5 IP connected access control units For systems that require fewer than 5 IP connected access control units, select Windows Desktop OS Software. Windows 7, 8 and 10 support 20 concurrent TCP connections.	Windows 8 Professional 64-bit Windows 7 SP1 64-bit Ultimate, Enterprise, Professional Windows 10 Professional
	For 5 or more IP connected access control units For systems that require more than 5 IP connected access control units, choose a Windows Server Operating System for the host PC. Windows Desktop OS supports a maximum of 5 dedicated IP connections for access control. Using Windows Server OS removes the IP connection limit and provides greater communication flexibility when using more than 5 IP connected control units.	Windows Server 2012 64-bit Datacenter, Essentials, Standard, Foundation Windows Server 2008 R2 64-bit Datacenter, Essentials, Standard, Foundation Windows Server 2016 Standard
DVD Drive	8X Internal for software installation DVD burner for backup and secondary storage	
Peripherals	Monitor: System compatible with 1024 x 768 or higher resolution – single or dual monitor Keyboard: System compatible Mouse: System compatible USB Port: optional	

ADDITIONAL NOTES

UPS Backup	Recommended
Additional System Performance	Overall system performance will improve as CPU Processor, RAM or hard drive read / write specifications exceed minimum stated requirements provided.
Virtual Machine Server	Keyscan Aurora supports virtual machine topology, providing that all licensed and required Keyscan software applications are allocated sufficient server resources for proper system performance and that the VM software / server is supported by qualified IT personnel For best results in VM, dedicate hardware use on the network card and serial or USB port for Keyscan image <i>Virtual machine topology does not always provide optimal system performance</i>

SMALL SYSTEM HARDWARE CONFIGURATION: SINGLE COMPUTER

A small access control system, consisting of fewer than 25 doors, may run effectively on a single PC as follows:



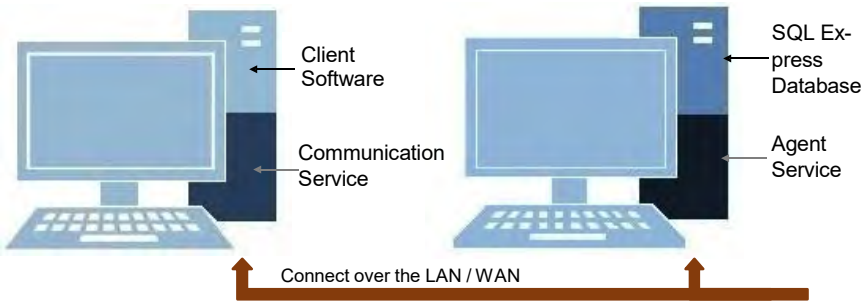
Configuration: Install all Aurora modules, Client Software, SQL Express Database/Agent Service and Communication Service on one computer.

Environment: This type of configuration is better suited to small access control system environments with fewer readers, credential holders and site transaction volumes.

Refer to the SMALL SYSTEM HARDWARE SPECIFICATIONS for hardware requirements for this configuration.

SMALL SYSTEM HARDWARE CONFIGURATION: MULTI-COMPUTER

As the access control system grows and a single computer hardware configuration no longer meets the performance requirements of the site, the software elements may be split onto different computers.



Configuration: Aurora elements are separated onto two computers.

Environment: This type of configuration is best suited to small access control system environments with:

- **High Transaction Traffic:** Install the SQL Express Database/Agent Service modules onto one computer and install the Client Software and Communication Services onto another computer (as shown).
- **High Access Control Unit Count:** Install the Communication Service onto one computer and install Client Software and SQL Express Database/Agent Service onto another computer.

Each computer in this configuration should be designed according to the SMALL SYSTEM HARDWARE SPECIFICATIONS.

Image shows a multi-computer configuration for a system with high transaction traffic.

Computers running the Communication and SQL Express Database/Agent Service must remain on at all times to ensure communication to the access control units for report collection.

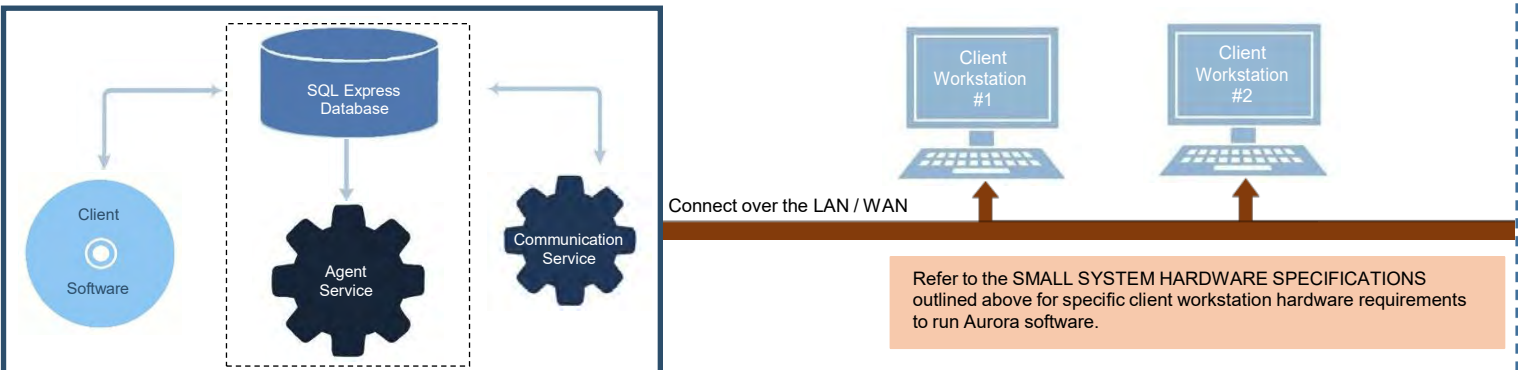
SQL Express Database and Agent Service must be installed on the same computer.

For systems greater than 25 doors, please refer to the Keyscan Aurora System Architecture Document for information about large system infrastructure.

www.keyscaan.ca/English/Aurora.html

CLIENT WORKSTATION CONFIGURATION

Aurora Client software may be installed on other workstations providing they have a network path to the server with the SQL Express Database Server over the LAN/WAN. Keyscan Aurora provides client licenses with the base software package that allows 2 users to operate Aurora software concurrently. Additional client licenses are available for purchase.



Refer to the SMALL SYSTEM HARDWARE SPECIFICATIONS outlined above for specific client workstation hardware requirements to run Aurora software.