



Understanding the High Availability Physical Security Infrastructure (HAPSI)

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What is a High Availability Physical Security Infrastructure (HAPSI)?

The term “high availability” is being used more frequently in the context of physical security infrastructure, but what does it really mean? Traditionally, the IT term is used to describe a computer system with minimal disruptions, commonly referred to as outages: a system where all network equipment, servers, operating systems and applications are available 24 hours a day, 365 days a year.

In the physical security world, we use the term “high availability physical security infrastructure” in much the same way: HAPSI means a physical security system that is available and functioning properly all of the time, in every area. However, we go further to define “high availability” to mean centralized management with access to data from remote locations as well as access to, and communication with, other systems such as human resources or facilities. Such an application enables users to bring together a traditionally disparate array of security management systems and hardware into a much more efficient and effective “ecosystem” of data, hardware, and systems.

Some of the highlights of a highly available physical security infrastructure are:

- Facility access controls and video surveillance that can be managed centrally, remotely, or both
- Integration with logical security systems such as Microsoft Active Directory or enterprise directory service
- Immediate access to data at any remote site
- Facility access privileges specified at both the local and global levels
- IP based network appliances
- Redundant communications infrastructure components to minimize potential points of failure

- Open architecture system design providing the ability to interface with data from other systems
- Scalability to multiple locations and managed through a centralized high availability virtual server environment
- High definition video surveillance scaled to provide sufficient visual detail for forensic evidence

What are the advantages of HAPSI and when does it make sense?

HAPSI provides a security environment that is simultaneously 1) easier and cost effective to manage, 2) more effective at reducing physical security liability, and 3) more scalable for future growth, all while providing for greater availability to the management system.

Cost is lowered because in general, the HAPSI system allows personnel to manage the security environment from centralized or remote locations, reducing personnel time and cost. In addition, the centralized database of incident capture allows security personnel to conduct surveillance and forensic searches across the entire global system, in real time, again reducing management time. By reducing fewer redundant hardware (providing fewer stronger servers instead of many smaller servers that are more likely to fail independently) hardware purchase and maintenance costs are reduced. Lastly, when everything is IT based, you can update the hardware, for example a camera, in the field when new software features come out. Instead of needing to replace a camera to get the important new feature, you can now keep the camera and incur a minimal update expense.

HAPSI systems help organizations reduce their liability risk by providing greater system availability (fewer failure points and downtime), better protection of data, faster and smarter signaling of potential security issues, and better communication during a security incident. Data can be assigned priority based on the sender, security application, or recipient. This kind of data assignment provides a huge advantage during disaster response, when you could assign priority to all critical information to/from specific people. HAPSI systems also allow points of the security system to communicate with each other. For example, an attempt to use an access card can trigger the video surveillance camera to capture the event, send an alarm, store the video in a specific place for future analysis, and communicate to specific security personnel.

The downside/risk:

While HAPSI systems make daily management easier and more efficient, they are smarter and more complex, IT-based systems. So, like any new IT system, it requires good design up front. The best systems, for the larger, more sophisticated enterprise-class organizations, will require engineering and design. Make sure your provider has experience with this type of design and has true engineers with IT skills doing the work. Many security integrators, large and small, are jumping into the IP security systems from a sales perspective, but don't have the employees with the experience and skills to deliver. Just like any significant IT-based system installation, you will want your provider's engineers on-site during deployment

Some technical advice for anyone considering implementation of a HAPSI approach:

The biggest challenge faced by any company designing around the HAPSI is understanding how big the data really is. The term big data is normally used to describe great quantities of very small bits of data, however big data in surveillance means the sheer size of the data and the bursting nature of the data requires much more throughput than normal networks. Add to the fact that this data is end to end (meaning from the cameras to the servers, hard drives, operating systems, applications, etc) and most companies find out how little their security networks can handle very quickly. This is where experience matters. HAPSI networks require resilient architecture with an eye on static data transfers and dynamic data transfers. In short, the data can change wildly from Megabytes of data to Gigabytes of data in microseconds. Most security environments cannot handle such changes in such a short period. Complicating matters further, this shortage of data bandwidth can be very hard to troubleshoot since all factors in the environment can change from one second to the next.

Moving forward toward a HAPSI environment:

The HAPSI approach is perfect for any public or private medium to large enterprise where security systems are mission critical. HAPSI ensure business continuity, which in turn supports mission critical activities. HAPSI are a great way for these organizations to improve their physical security environment while reducing costs to manage and providing a system that is more scalable for future growth. Just be careful to partner with a security provider with engineering and technical know-how because good up front system design will ensure an easy to manage, high performing system down the road.