

SpeedCHEX – Electronic Check Processing System

Overview

SpeedCHEX is an Internet-based system that collects, processes and ultimately submits electronic checks as ACH transactions through the Federal Reserve. When operating a system like this, there are two critical areas of concern that must be addressed.

First, this is a financial system that receives, transmits, and stores bank account information that belongs to individuals and businesses and it must have the highest levels of protection at all times. Second, merchants and their customers depend on this system to be reliable, meaning that it must be available at all times and it must respond quickly to all interactions.

To address these areas of concern, special consideration, effort, and time were given to important details like selecting a hosting facility, building a solid infrastructure, monitoring for system failure, providing the highest level of security, and including redundancy at all possible levels.

Facilities

The SpeedCHEX data center is located in one of the most advanced hosting facilities in the world. The Dallas InfoMart was designed specifically for telecommunication providers, Internet data centers, and other high-end technology companies requiring redundant high-speed connectivity.

Hospital-grade electrical power is supplied to the building by three independent Texas utility stations. The hosting facility is further equipped with industrial-grade uninterruptible power supplies in case of the unlikely event that all three power stations go offline or some other catastrophe occurs. The SpeedCHEX servers also have their own independent uninterruptible power supply in case of localized power problems.

The building includes many other important features including 24/7 surveillance and protection by security guards and a state-of-the-art fire suppression system. For more information on the Dallas InfoMart, please visit their website at <http://www.infomartusa.com>.

Infrastructure

The Internet data center that provides hosting for the SpeedCHEX servers features multiple tier-1 network connections to three different Internet backbone providers. If a problem occurs with any single network connection, traffic is re-routed onto the other redundant connections until the problem is resolved.

The SpeedCHEX servers are all connected on their own private 100Mbps Fast Ethernet network that is hidden behind a state-of-the-art firewall system. Each server is equipped with multiple hot-swappable hard drives in standard RAID configuration to keep the servers running in case of any single hard drive failure.

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Monitoring

The hosting facility for the SpeedCHEX servers provides a fully staffed Network Operations Center with trained system administrators on duty 24 hours, seven days a week. These professionals monitor the Internet connectivity and traffic for any disconnections, bottlenecks, or slow-downs that need to be fixed. They also perform system maintenance as needed to ensure the servers operate a maximum efficiency and availability.

To help with the detection of potential or real problems, each server is equipped with internal software that monitors the entire SpeedCHEX system and immediately notifies the support professionals when a problem is detected or a potential problem needs to be addressed.

Physical Security

Security guards provide protection for the facilities 24 hours a day, seven days a week by restricting access through a reception area, making physical patrols and monitoring a closed-circuit video surveillance system.

The SpeedCHEX data center is restricted physically to authorized personnel only. Any person wishing to gain access to the servers must use photo ID, an electronic access badge, and keys to gain access through alarmed doors, closed-circuit monitors, motion detectors, and key locks.

Data Security

The SpeedCHEX servers are protected by a Linux-based firewall system that has been custom configured to the highest security specifications. Security breach attempts are monitored and reported. The operating systems are kept up-to-date with the latest security patches issued by the OS makers.

All transaction data sent to and from the SpeedCHEX servers are secured during transmission using 128-bit SSL encryption verified by Thawte, a VeriSign subsidiary. Data is backed-up daily to ensure protection in case of catastrophic system failure.

And finally, every merchant and processor that is granted access directly to the SpeedCHEX servers is assigned a unique ID, login name, and password that must be included as part of each data packet sent to the servers. An IP filtering scheme is used to ensure that transaction packets are only received and processed if the IP address of the computer system sending the transaction fits into the IP address range specified in the merchant's or processor's security profile.

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Conclusion

Although much effort has been made to ensure the security and reliability of the SpeedCHEX system, these issues will remain as an ongoing priority for the SpeedCHEX system designers and support teams. Any new technologies that evolve in these areas will be evaluated and the best ones will be incorporated to make the SpeedCHEX system even better for the future.