



## FaxCore and Cantata Help Vanderburgh County Sheriff's Office Integrate Fax over IP into Their VoIP Network



Based in Evansville, Indiana, the Vanderburgh County Sheriff's Office [www.vanderburghsheriff.com](http://www.vanderburghsheriff.com) is in the business of law enforcement. The sheriff's department serves Vanderburgh County, which has a population of roughly 173,000. In addition to law enforcement, the sheriff's department enforces all criminal and traffic laws, and is the primary investigative agency for vehicular accidents spanning approximately 565 miles of state and county roads.

In January 2006, the sheriff's department moved into a brand new state-of-the-art facility that houses up to 512 inmates. With more than 150,000 square feet of floor space, the new facility features pneumatically controlled doors and locks, integrated touch screen security with an internal communications system, and 130 surveillance cameras to monitor round-the-clock operations.

As part of its workflow processes, the sheriff's department relies heavily on fax communications to send and receive critical paperwork between the county court, attorneys, and other law enforcement agencies at state and federal levels. At one point, it operated 15 standalone fax machines before deploying a new VoIP-based phone system.

According to Greg Selby, manager of information systems for Vanderburgh County Sheriff's Office, the uptime of fax communications is critical to keep administrative operations running smoothly. "If fax goes down, we are unable to process inmate release forms which could impact many aspects of our business."

### The Challenge

Serving such a large jurisdiction along with increasing demands and tighter budget constraints, the sheriff's department needed to reduce their fax consumables cost, boost productivity by automating error-prone and inefficient manual fax process and avoid the cost of dedicated analog fax circuits by integrating it with its newly installed Cisco VoIP system. According to Selby, it was too costly to support the 15 standalone fax machines between paper, toner and on-going maintenance contracts plus the manual routing process of sending and receiving faxes was not very efficient and prone to failure due to human error. They also wanted to implement a solution that allowed them to leverage their VoIP investment and reduce the overall cost of operating a fax server by consolidating it on a common network infrastructure and eliminate dedicated analog circuits.

### The Solution

In seeking a fax server solution that could tie-in directly to their VoIP network, Selby consulted with several colleagues from other counties whom suggested FaxCore's [www.faxcore.com](http://www.faxcore.com) Web-based IP-enabled system. The sheriff's department selected TMI (TransOptions Messaging, Inc.) as its implementation partner and reseller for the FaxCore and Cantata solutions. In November 2005, Vanderburgh County Sheriff's Office began deploying FaxCore since it offered the capability to integrate seamlessly with its VoIP system, which was configured with 20 Direct Inward Dial (DID) lines.

#### Organization

Vanderburgh County Sheriff's Office

#### Industry

Public Sector

#### The Challenge

Improve fax communications, reduce paper/ink and maintenance fees associated with analog fax machines and integrate with Cisco VoIP system.

#### The Solution

FaxCore's namesake fax server solution and Cantata's Brooktrout SR140 FoIP software.

#### Results

Vanderburgh has successfully deployed FaxCore and Cantata solutions and aligned with its VoIP system. The office is planning future migrations with other personnel including the Indiana Department of Corrections and county detectives.



*"We are at the cutting edge of technology and knew an integrated FoIP and VoIP system would allow us to streamline our operations and reduce costs," explained Eric Williams, chief deputy of the Vanderburgh County Sheriff's Office. "This system will allow us to optimize the workflow of faxes throughout our department and gives us the flexibility to grow."*

FaxCore provides small- and medium-size businesses (SMBs) and enterprise-class operations with a powerful, Web-based solution to centralize, control, and manage all types of fax communications and streamline business processes. Its intuitive, browser-based interface enables users to send and receive faxes with the same convenience of e-mail. Using a thin-client system, organizations can easily deploy and maintain FaxCore, and seamlessly integrate the solution to "fax-enable" other applications.

Selby worked with FaxCore engineers to implement the fax server solution within the VoIP system, which at the time was one of the first deployments of its kind. As part of the integration, the sheriff's department selected Cantata's Brooktrout SR140™, a software-only intelligent fax platform, to link the FaxCore server to the VoIP system, enabling real-time fax-over-IP using the T.38 the fax-over-IP protocol. The Brooktrout SR140 has been tested and certified with market leading T.38 gateways, including Cisco.

Faxing is a real-time synchronous technology, which is at odds with the asynchronous nature of IP networks. The fax process defined by the real time T.30 fax protocol relies on tight timing tolerances.

Some fax servers utilize a G.711 voice codec to transmit and receive faxes over an IP network. Unfortunately, simply passing an analog fax signal through a codec designed for voice communication produces an unreliable result, frequently failing completely. Latency and jitter, which are common in VoIP networks, pose a challenge for IT managers. What may be tolerable for a voice conversation or for data communication is not necessarily tolerated by a fax device. T.38, which is a wrapper around T.30 protocol messages that are packetized for delivery over an IP network, solves this problem with techniques like spoofing that keep the fax connection alive while fax data in transit catches up with the process. In order to achieve PSTN fax reliability that companies have become accustomed to, T.38 is a necessary requirement for serious fax applications as is a robust T.30 protocol implementation.

Additionally, The Brooktrout SR140 takes into account security concerns with integrating fax with a VoIP network. Even if a malicious packet was to penetrate the firewall, the SR140's T.30 and T.38 protocol implementations only allow only for the transfer of T.4 and T.6 fax images, and not data. Non-fax packets will be ignored.

## Results

With the FaxCore and Cantata solutions integrated with its Cisco VoIP system, the sheriff's department is realizing much success. "In addition to cost savings from the reduction of consumables, we are realizing an increase in productivity since the system allows users to send and receive faxes from their desktops," Selby said.

The sheriff's department now has 50 users optimizing FaxCore who constantly send faxes through a web browser or from within their email application. According to Selby, the sheriff's department sends and receives hundreds of faxes on a monthly basis using FaxCore, and this number will continue to expand as new applications and processes are leveraged by this new system.

Looking ahead, Selby is in the process of providing Vanderburgh County's detective unit and Indiana's Department of Corrections with access to FaxCore, replacing their standalone fax machine use. "Currently, there are as many as 200 personnel at the state's department of corrections who can benefit from FaxCore," he said.



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