Electronic Delivery of Case Documents from the New Orleans Police Department to the Orleans Parish District Attorney Office (Zip and Ship)

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Developed for Orleans Parish District Attorney during tenure at Geocent

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1. Introduction

The Zip and Ship system was designed to improve and simply the process of delivering case information from the New Orleans Police Department (NOPD) to the Orleans Parish District Attorney (OPDA) office. This information included important items such as incident reports, supplemental reports, arrest warrant, search warrant, evidence, etc. Before the system was in place, these items had to be hand delivered by NOPD officers to the district attorney's office. With the new system in place, all document delivery is performed electronically and is paperless. Development of the system started in late 2012 and was rolled out in production in 2013.

2. Design

2.1. System Requirements

The system had to meet the following requirements:

1. Interface into the city's (New Orleans) Data Exchange server to log when a file has been received from NOPD and when a Further Information Request (FIR) has been submitted from a user at the district attorney's office.
2. Receive and process files that were submitted from NOPD via FTP and assign to appropriate attorney or section as designated in the CRIMES case management system.
3. Provide a user-friendly interface where users can download and review files.
4. Maintain an audit log of actions performed in the system.
5. Provide reporting capability for internal usage.

In order to meet many of these requirements, it was decided that the Microsoft technology stack would be used in implementing this system. The following technologies were used: Windows Server 2008 R2, Internet Information Services 7 (IIS), SQL Server 2012 Express, ASP.NET 4.0, Windows Communication Foundation (WCF) 4.0, .NET 4.0, Windows Services, Active Directory Services, and SQL Server Reporting Services (SSRS).

2.2. Process Overview

The documents sent by NOPD would be delivered electronically via FTP to a designated machine on the DA's side. Each file received would include the offense number, and a date stamp when it was originated, e.g. *A-11919-13_2013_3_6_14_15.zip*. This file would be dropped into a local share folder at which point services would perform a complex workflow which would determine to which section or assistant district attorney to assign the file for review. A file is then either assigned directly to an attorney or made available for claim to an entire section. Any person in the section, whether an investigator or attorney can claim an available file, at which point it becomes assigned to him or her. The assignee then downloads the file and reviews the contents. If no more information is needed it is marked as reviewed otherwise the assignee can request further information from the NOPD officer which submitted the file. The file is marked as reviewed with a further information request indicator and the NOPD officer is notified. At this point the NOPD officer would then submit a new file for the same offense number and the entire process would start over again. If the newly submitted file has all the necessary contents, the file is marked as reviewed, otherwise another further information request can be submitted.
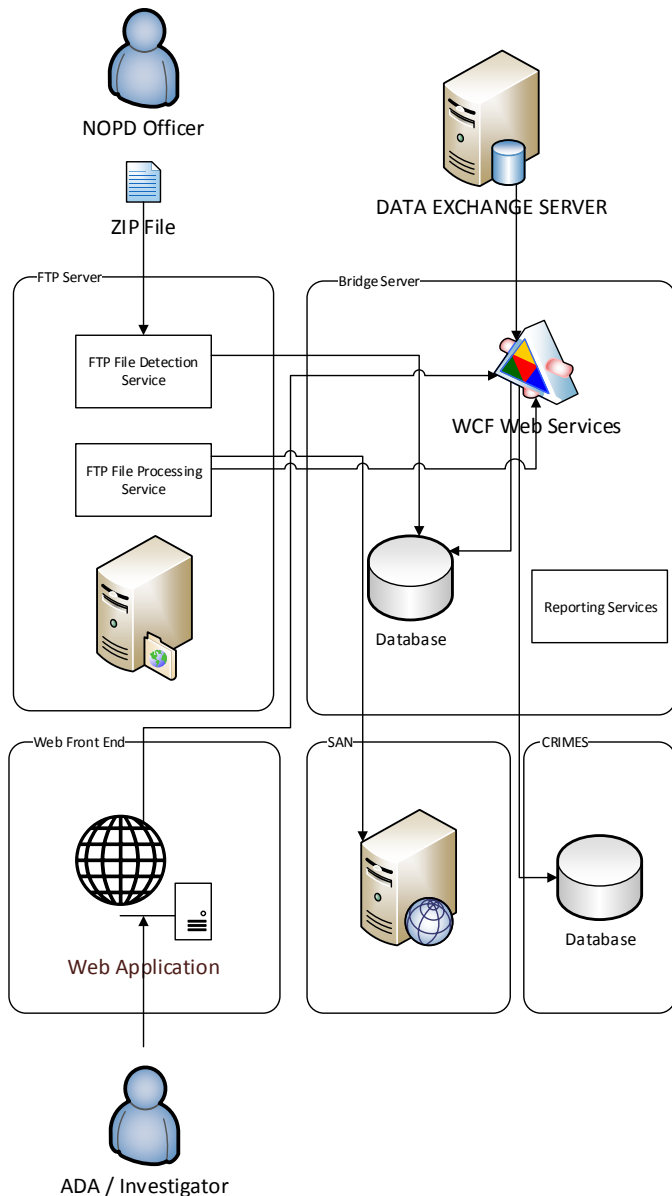
NOPD Officer

ZIP File

FTP Server

FTP File Detection Service

FTP File Processing Service

DATA EXCHANGE SERVER

Bridge Server

WCF Web Services

Database

Reporting Services

Web Front End

Web Application

SAN

CRIMES

Database

ADA / Investigator

Figure 1 - System Architecture

2.3. System Architecture

The following system architecture was used:

- One dedicated box for web front-end.
- One dedicated box for database and web services as well as system reports.
- One dedicated box used for FTP transfer and file processing by Windows services.
- One dedicated SAN.

3. Components

3.1. Windows Services

In order for the zip file to be consumed and assigned, two windows services were developed which performed these tasks. One service was used to detect when an FTP file transfer of a zip file started and the other service was used to process and assign files that have completed the file transfer.

The file detection service was mainly responsible for detecting when a file has been created on the local file folder as a result of the FTP transfer and creating a record in the database indicating that a file has been created. The file processing service would query the database records created by the detection service and see which files have not been processed. It would then iterate through each record and check to see if it has been completely transferred over. If it hasn't been completely transferred over it is ignored. Once the transfer is complete, it is then processed and properly assigned or made available to a section. The service then waits for a period of time and then starts over again.

3.2. Web Services

The web services directly interface into the CRIMES case management system as well as the Data Exchange Server. During the processing of the zip file, the file processing windows service retrieves case information from the CRIMES case management system which uses in the file processing. Additionally the processing service retrieves and puts data in the Data Exchange Server to indicate that files have been retrieved, as well as to indicate that a further information request has been made.

3.3 Reports

SQL Server Reporting Services and Business Intelligence Studio were used for the development and hosting of reports.

3.4. Web Application

The web application developed for the system allows users to perform the following actions:

- View and search for files by the offense number
- Download and review assigned files and request further information if necessary
- Claim files available to an entire section

The application also has the following built in administrative features:

- Reports
- Audit log view
- User management

The web application also used Active Directory Services for authentication and authorization.

Figure 2 - Web Application

3.5 SAN

The SAN is strictly used for the storage and archiving of received zip files. During the processing of the zip file, the processing windows service copies the file received on the FTP Server to the SAN. When users are downloading the file through the web application, then are downloading it directly from the SAN.

3.6. Auditing

The system has a very comprehensive auditing system built in so that user actions, exceptions, communications with Data Exchange Server, etc. has been logged.

4. More Information

The New Orleans Police and Justice Foundation (NOPJF) published a news article announcing the Zip and Ship System, which can be found here:

http://nopjf.org/index.php/news/113-zip-and-ship-district-attorney-and-nopd-start-sharing-new-information-electronically

NOPJF also reported on the usage of Zip and Ship to the Criminal Justice Committee of the New Orleans City Council. The video can be found here: