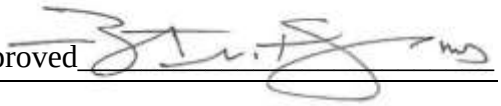
Approved 

TITLE: DATA REDUNDANCY AND BACK-UP

Policy: Where records are computerized, adequate back-up and data redundancies must be in place to prevent forensic data loss in the event of any systems malfunction or failure.

Purpose: To ensure the integrity and high-availability of all forensic and case systems data.

Scope: The following procedure covers all integrated systems within the Office of the Chief Medical Examiner, including file servers, web-based applications, databases, and digital imaging platforms.

1. NETWORK STORAGE FOR ALL USER DATA

1.1. All OCME users are assigned a network location for work related data files and instructed not to rely upon local copies of digital data.
1.2. Daily back-ups do not include local workstations.
1.3. Other network directories have been established for general agency use as well as for specific units. Each unit manager is responsible for ensuring all critical data is saved and stored to its corresponding network share.

2. DATABASE BACK-UP

2.1. The Forensic Analytic Case Tracking System (FACTS) is a Microsoft SQL-based application that is backed-up daily to an offline location on hard disk.
2.2. The database back-up includes all tables, relationships, and transaction logs in the event that the database require a rebuild or restoration.
2.3. That database back-up file is stored in a centralized repository for inclusion in the standard data synchronization protocol.
2.4. All working files (.HTML, .ASP, etc.) for the online web application are included in the synchronization protocol.

3. FILE SERVER SYNCHRONIZATION/REPLICATION

3.1. All file, print, and application servers have an assigned replication partner on the network.
3.2. Each network share and application has a corresponding directory on its replication partner.

3.3. Each server is provisioned with an installation of and licensure for Vision Solutions' Double-Take Management Console.
3.4. Double-Take Management Console enables the Systems Administrator to establish, monitor, and manage all replication jobs.
3.5. A replication job is created for each network share.
3.6. Replication occurs real-time and up-to-the-minute, effectively writing all new or edited data two network locations at all times.
3.7. In the event of a system failure, Double-Take allows the replication partner for the affected share to failover to its partner in real-time. This process is transparent to network end-users and ensures high-data availability.
3.8. No network data repository is without a replication partner.

4. FORENSIC IMAGING SYSTEMS

4.1. The OCME employs various forensic imaging systems, including the Lodox Statscan X-Ray console, Chesapeake Systems PACS (Picture Archival and Communications System), 3COM/Cogent Digital Fingerprint Server, and the Forensic Photography directory.
4.1.1. The Lodox Statscan X-Ray console, while officially network integrated, is a standalone platform on a Windows desktop operating system.
4.1.1.1. Each X-Ray image (radiograph) that is capture on this console is stored locally on the standalone system.
4.1.1.2. It is the responsibility of the Mortuary staff to manually transfer each study (or series of radiographs) upon capture to the PACS.
4.1.2. The Chesapeake Systems PACS application is designed for long-term data archiving.
4.1.2.1. The PACS directory is assigned a replication partner for real-time data redundancy and high-availability.
4.1.3. The 3COM/Cogent Digital Fingerprint Server stores all digitally captured decedent fingerprints.
4.1.3.1. Once captured using the wireless handheld units, they are transmitted directly to the 3COM/Cogent server for long-term storage.
4.1.3.2. The 3COM/Cogent server is assigned a replication partner for real-time data redundancy and high-availability.
4.1.4. Forensic Photographs of both autopsies and scenes are stored only in designated network directories.
4.1.4.1. Each employee in these units is instructed to transfer and save all forensic images to this location.

4.1.4.2. The forensic photography directories are assigned a replication partner for real-time data redundancy and high-availability.

5. DAILY DISK-TO-TAPE BACK-UP PROTOCOL

5.1. In addition to data replication between all file shares and their respective replication partners and replication of all forensic imaging systems, each replication partner is a part of daily disk-to-tape back-up rotation.

5.2. The tape library (Dell PowerVault) accommodates up to 24 Ultrium 4 LTO data cartridges that can hold up to 1600 gigabytes of data (compressed).

5.3. Full data back-ups

5.3.1. Each replication partner is scheduled for a weekly full back-up of all contained data.

5.3.2. The replication partners are targeted for all tape back-ups due to the time-intensive and processor-intensive nature of this method.

5.3.3. Only one full backup is performed for each backup grouping each day.

5.4. Incremental data back-ups

5.4.1. Each replication partner is scheduled for a nightly incremental back-up of all contained data. Incremental back-ups capture only the data that has been added and/or changed since the time of the last full data back-up.

5.4.2. Excluded from the nightly incremental back-ups are the backup groupings scheduled for a full data back-up on that same night.

5.5. The daily back-up rotation schedule is paramount in ensuring accessibility of data in the event the both the online networked storage and their respective replication partners are both offline.

6. OFF-SITE TAPE STORAGE AND ROTATION

6.1. At the end of each month, a full back-up off all network data is captured to tape.

6.2. These tapes are then removed from the tape library and labeled with a time and date stamp, to identify the data's corresponding system.

6.3. These tapes are then transported to a locked vault that is managed by the Office of the Chief Technology Officer (OCTO) at one of its datacenters.

6.4. In the event of a calamity that renders the OCME's physical site unusable, the tapes stored off-site ensure the District's ability to preserve all of the agency's data and restore all critical systems to the point of the last full tape back-up.