Backup Retention and Data Availability

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1   NEOnet Backup Procedure

1.1   Overview

This document describes the procedure for the daily backup of all NEOnet systems including the Alpha, Solaris, and Windows systems. Each section is broken down by procedure, and details of the backup procedure process are explained in each section.

1.2   Technology

1.2.1 IBM Tivoli and StorServer

NEOnet currently uses StorServer with IBM Tivoli software to backup all our data on our Alpha based OpenVMS server. All data backed up on the Alpha is stored offsite at the state DR site utilizing ABC backup for OpenVMS. This allows instant recovery of data without recovering tapes from an offsite vault, while still protecting the integrity of data in the event of a catastrophic event. The benefit of the StorServer solution is the limit of human interaction involved in the backup procedure. There is absolutely no human intervention involved in the daily backup procedure with the exception of the following:

- Review of daily backup logs
- Manually correcting software issues for data that did not backup correctly

1.2.2 Commvault Simpana

NEOnet currently utilizes Commvault software to backup all servers not running OpenVMS. The Commvault backups solution is completely disk based which allows for very fast and automated backups. Having no tape eliminates a lot of the physical errors that can occur in the nightly backup procedure. Commvault's mixture of client based backups, virtual machine based backups and de-duplication process makes it a very robust and effective tool very large backup environments. There is absolutely no human intervention involved in the daily backup procedure with the exception of the following:

- Review of daily backup logs
- Manually correcting software issues for data that did not backup correctly
- Adding disk drives when space gets low

1.3   Offsite Backup

1.3.1 Alpha Backups

NEOnet backs up and transfers all Alpha based data offsite to the state DR site where it is stored on disk and on tape in the event of a disk failure. The backups are available electronically for instant restore and also provides fault tolerance for restore at the DR site in the event of a catastrophe.

1.3.2 All Other Backups

Through the auxiliary copy function of Commvault, NEOnet replicates all backup data from the Primary site at 700 Graham Road to a duplicate backup platform deployed at our DR site located at 140 N. Munroe Road, Tallmadge, OH 44278. The replication of this data allows two copies of all backed up data to exist between the two sites in the event of a catastrophe.

1.4 Procedure

1.4.1 Alpha Server

The Alpha server is backed up with the ABC backup client software and the data is sent to the centralized StorServer solution. Each day a full backup of all data on the Alpha server is backed up with a recurring batch routine running in the backup queue. The daily backup log files are stored in the following location `sys$common:[adsm.logs]` and are checked on a daily basis:

1.4.1.1 System Data Backup

Our full system backup is broken down into multiple phases. In attempt to protect the system disks, we currently use two 72 GB drives to hardware mirror the system data. These two mirrored disks are then mirrored to two additional disks of the same size using the software raid support inside VMS. In order to perform a full system backup and assure there are no open files, we break the software raid copy to the second set of disks and dismount them. With the disk mirror broken, the second set of disks is now an exact copy of the production system drive. These drives can then be mounted and backed up to the StorServer appliance as if they were a live system drive, but there will be no open file issues. This replaces the need for downtime on the system to run a full system backup on a weekly or monthly basis. This is a fully automated nightly backup with no user intervention required. The daily backup log files are review each day to ensure the backups ran properly.

1.4.1.2 User Data Backup

A full backup of all user data is backed up on a nightly basis via the ABC backup client. The nightly backup is conducted on all files that are not locked by user activity. In an attempt to avoid file level locks all backups are conducted in the evening when user logins are limited. Each backup is stored on disk and tape in the StorServer backup system and additionally stored offsite. This is a fully automated nightly backup with no user intervention required. The daily backup log files are reviewed each day to ensure the backups ran properly.

1.4.2 WIN32/Solaris/Linux Platforms

The backup of Windows, Solaris and Linux platforms are performed with the Commvault Simpana software suite. Most servers are backed up at the virtual machine level, while others have special clients installed for specific client level backups. The nightly backup is conducted on all files that are not locked by user activity. In an attempt to avoid file level locks, all backups are conducted in the evening when user logins are limited. Each backup is stored on disk in the Commvault backup system and additionally replicated offsite. This is a fully automated nightly backup with no user intervention required. The daily backup log files are review each day to ensure the backups ran properly.

2   Backup Retention and Data Availability

The following sections will provide a detailed list data NEOnet currently has available to its member districts by service area. All files are backed up for a minimum of 45 days with the current backup strategy in place. Any additional data and its associated retention period are available below.

2.1   Fiscal

The following structure will explain how long we retain backups in regards to fiscal data.

- Monthly Backups:
    - 1 previous month on Alpha disk storage
    - 12 previous months on backup
- Yearly Backups:
    - 5 years from current fiscal year are immediately available on the system
    - 7 years from current fiscal year are available on backup
- Daily Backups:
    - 1 previous day on Alpha disk storage
- Reports :
    - 10 years accessible on Alpha disk storage
- Software Versions:
    - Dependent on the State Software Development Team's availability.

2.2   EMIS

The following structure will explain how long we retain backups in regards to EMIS data.

- Every Reporting Period:
    - Backed up via DASL backup procedures
- EMIS Reports:
    - 5 years accessible on Alpha disk storage
- Software Versions:
    - Version 1.7 to current version

2.3   Student

The following structure will explain how long we retain backups in regards to Student data.

- DASL data and reports:
    - Monthly Backups
        - 12 months on backup
    - Yearly Backups
        - 7 years on backup
- PB/SSEM:
    - Monthly Backups
        - 12 months available on backup
    - Yearly Backups
        - 7 years available on backup
    - Reports
        - 3 Years available online
        - 7 years available on backup
- Software Versions:
    - SQL 2008

    o PB/SSEM Releases – current and previous year only
- SIS
  - Current year only
- SIS Software – Current Version Only

2.4 INFOhio

The following structure will explain how long we retain backups in regards to INFOhio data.

- Daily Backup
  - 1 day available on SIRSI disk storage
- Monthly Backup
  - 12 previous months available on backup

2.5 Virtual Servers

The following list will explain how long we retain backups for all NEOnet virtual servers not specifically listed in other sections of this document.

- Virtual Machine Files

  - Standard 45 days on Backup

- VM Agents

  - Exchange Servers

    - Standard 45 days on backup

  - SQL Servers

    - Standard 45 days on backup

  - File Servers

    - Standard 45 days on backup

2.6 Storage Media

The following list shows the different media types that existing and historical backups are currently stored.

- Disk
- DLT - (40GB native 80GB compressed) – Have 2 Drives
- Ultrium3 - (400GB native 800GB compressed) – Have 2 drives
- CDRom
- DVD-ROMs