NASA chooses Bacula Enterprise Edition to back up IBM HPSS

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>
> Gustaf J Barkstrom,
> Systems Administrator at SSAI (NASA Langley contractor)

The Challenge

NASA Langley was using SyncSort BackupExpress ("BEX") backed by an IBM High-Performance Storage System (HPSS) hierarchical storage management system to backup 250TB of data from some 300 scientific computing and mission support systems. In 2013 NASA Langley began evaluating various products to replace BEX; alternative software products evaluated included Amanda Enterprise, Arkeia, Commvault Simpana and Bacula Enterprise.

"Of those evaluated, Bacula Enterprise was the only product that worked with HPSS out-of-the-box without vendor development, provided multi-user access (Bweb), had encryption compliant with Federal Information Processing Standards, did not include capacity-based licensing model, and was available within budget", said Mr. Barkstrom, Systems Administrator at SSAI (NASA Langley contractor).

"We evaluated Bacula Enterprise trial edition for about three months and attended 'Bacula Admin I' training. The 'Admin I' training was helpful to us in becoming more familiar with the product, as well as providing excellent technical hands-on training for our system administration personnel" said Mr. Barkstrom.

The Solution

NASA Langley decided that Bacula Enterprise was the solution met the stated requirements. The deployment period was about 4 months to migrate all clients from the old system to Bacula, and was extended over that period to allow for tape media migration from BEX to Bacula data in HPSS. The most important criteria in NASA's selection of Bacula were:

1) Ease of integration with an existing Hierarchical Storage Manager (HSM)
2) Ability to transfer data over SAN from satellite storage servers (storage daemons) distributed about NASA Langley's campus.
3) Centralized web-based management allowing delegation of different groups of backup clients and operations to different system administrators in various organizations.
4) Provision of encrypted backups that are compliant with U.S. Federal Information Processing Standards.

NASA Langley's IBM HPSS implementation consists of an Oracle SL8500 tape library using Oracle T10000C tape drives (5TB) providing a sliding-capacity file system to Bacula for its disk volumes, presently 1.5PB in size. Current capacity of Bacula backups are 300TB client-side and 750TB server-side, with a 225GB Bacula catalog database. An additional 24-tape LTO-4 library is managed by Bacula.

The Results

The Bacula implementation at NASA Langley leverages the IBM HPSS hierarchical storage manager (HSM) to provide migration to/from tape media; from the Bacula perspective, all of its data resides on volumes on disk. *"Because Bacula Enterprise does not place small metadata files unnecessarily in the disk storage structure of a virtual tape volume device directory – unlike some competitors – Bacula can be deployed easily within an IBM HPSS environment. Additionally, because of Bacula's flexibility in device and volume configuration – specifically in unique volume naming, labeling, and allowing volumes to be used only once – management of disk volumes is simplified in an HSM; purged volumes are simply removed from the HSM, which is a database-only operation in HPSS and does not require reading the files from tape to disk for the volumes to be purged, saving disk space and eliminating I/O when volumes are purged"*, said Mr. Barkstrom.

While the Bacula Director does not manage the HPSS HSM tape library, another small tape library is managed by Bacula for certain Bacula backups, such as additional Bacula catalog, configuration and bootstrap backups. Thus, the flexibility of Bacula to handle multiple libraries, multiple storage servers, encrypt backups, provide centralized management and provide additional features such as Bare Metal Recovery met and exceeded the selection criteria.

"Bacula Enterprise gave us a cost savings of about 20% over renewal of support with SyncSort BEX, while providing an additional 200 client licenses, MySQL server backup plugin, and Bare Metal Recovery plugin" said Mr. Barkstrom.

About   NASA

NASA (National Aeronautics and Space Administration) Langley Research Center is a research campus with several thousand employees and numerous computing facilities for aeronautics and spaceflight research. Data from many missions and experiments are modeled, stored, and analyzed at NASA Langley.

To know more about NASA, visit
http://www.nasa.gov

About Bacula Systems:

Bacula Systems provides Support, Training and Consulting services for Bacula Enterprise Edition, the professionnal Backup and Recovery Software version of the Bacula Open Source Software.
Since its first release in 2002, Bacula Enterprise Edition provides to global companies, government agencies, universities and managed service providers an alternative to the high costs and vendor lock-in of proprietary vendors.
Bacula Systems has its headquarters in Switzerland, and have offices in the USA, Germany, Italy, France and Brazil.
Bacula Systems was founded by the developers of Bacula to cover the growing demand for professional support and services for the Bacula Open Source.

For more information about Bacula Systems, visit
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