



IBM Mainframe z/OS OAM Migration - JANUS **An Automated, Fast, Cost-Efficient and Compliant Data Migration Solution**

JANUS Introduction

The JANUS OAM migration solution is a high function automated tool that expedites OAM object data migration from one storage media type to another (E.g. 3995 Optical → CAS Disk Array, 3590 Physical Tape → TS1120 Physical Tape, Etc.).

Why is OAM Migration Required?

The requirement for compliant archive storage has increased in significance over the last decade or so, primarily due to regulations such as Sarbanes-Oxley, Basel II, et al. For IBM Mainframe archive data, traditionally the only Write Once Read Many (WORM) storage device was the 3995, no longer manufactured by IBM, although there are alternative virtual 3995 compatible solutions (E.g. Intercom I-4995 Spirit, I-7995 ContentStore). Physical tape solutions evolved to provide WORM functionality, but the periodic requirement to migrate archive data from one device to another is inevitable.

Latterly Content Addressed Storage (CAS) and Archive Compliant disk arrays such as EMC Centera, HDS Content Archive Platform (CAP) and NetApp SnapLock have been integrated into IBM Mainframe virtual tape solutions (E.g. Bus-Tech MDL, Intercom I-6994 Gazelle), allowing archive data to be stored efficiently, but more importantly, allowing significantly faster retrieval times from the associated disk array. However, once again, adoption of these solutions inevitably requires a migration of legacy archive data, either from 3995 optical or physical tape (E.g. 3590, 3592, TS1120, 9840, 9940, Etc.) tape media.

From an application viewpoint, many IBM Mainframe software solutions integrate OAM functionality to provide a fully-rounded and compliant archive solution, for example, [IBM DB2 ImagePlus](#), [IBM Content Manager OnDemand for z/OS](#), while OAM itself provide a hierarchy of storage levels for archive object storage. Initially OAM just provided two layers for disk and optical storage. The [OAM storage hierarchy](#) was then expanded in z/OS 1.9 to four levels, including Tape Sub-Level 1 (TSL1) and Tape Sub-Level 2 (TSL2). An [additional Disk Sub-Level](#) was added to OAM in z/OS 1.13, where Disk Sublevel 1 (DSL1) consists of traditional OAM/DB2 tables, and Disk Sublevel 2 (DSL2) consists of a new zFS or NFS file system level.

It is estimated that ~50% of IBM Mainframe users will have archive sizes exceeding 30 TB and that ~50% of IBM Mainframe users will experience archive growth rates of more than 20%, so seasoned data storage professionals appreciate the periodic challenges of media migration, whether for tape or optical devices, while OAM interaction just complicates these matters.

JANUS Overview

The JANUS OAM data migration process is as simple as 1-2-3:

- 1. Mapping Old Collections to New Collections:** This step allows the current configuration to be automatically inspected and documented, while creating a target environment for the OAM data migration process.
- 2. Collecting the Objects to be Migrated:** This step collects the data object reference data for the actual migration process, but more importantly provides sufficient information that allows the user to **Plan, Control and Monitor** the migration process. Thus staged migration minimizes risk, allowing for migration to be controlled, as per user requirements.
- 3. Migration of Objects to New Media:** Object migration is performed via the standard OAM interface, namely the OSREQ macro. The migration processes therefore appears to OAM just as additional concurrent (E.g. Batch) users, in contrast to OAM utilities such as MOVEVOL or OSMC, which may generate locking problems or poorly defined intermediate states.

Why Use JANUS?

There are many benefits associated with deploying the JANUS solution for OAM migration, for example:

- Automated OAM migration, converting large archive repositories with millions of objects consistently, without risk
- Faster OAM migration due to JANUS parallelism architecture, minimizing overall elapsed time, delivering TCO benefits for legacy hardware (E.g. 3995, Physical Tape) and minimizing ROI times for new hardware (E.g. CAS Disk)
- Consistent data access for Business As Usual (BAU) data retrieval requests, as the JANUS architecture eliminates object locking conflicts that can be a consequence of other OAM migration techniques
- Safe OAM migration, as JANUS deploys a non-destructive Modus Operandi, leaving the original OAM data intact, while the user can dictate the OAM migration speed using the JANUS **Plan, Control and Monitor** methodology...

Value-4IT Limited
7 Wright Road, Long Buckby
Northampton, NN6 7GG
United Kingdom
Tel: +44 (0) 845 0579386
sales@value-4it.com
www.value-4it.com



Dr. Rainer Hartmann & Partner AG
Langegasse 101
CH-4104 Oberwil
Switzerland
Tel: +49 (0) 172 2028657
rh@drhartmannpartner.com
www.drhartmannpartner.com