

The background features a glowing, translucent sphere on the left side, emitting a soft light. On the right side, there is a metallic, reflective object that appears to be a part of a machine or a tool, with a curved surface and a bright highlight. The overall color palette is dominated by light blues, whites, and oranges.

No Moving Parts: Virtualized CM/OD in a Linux on z Environment

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Problems to be addressed...

- Outdated, overextended existing system
- No document retention/destruction capability
- Instability in hardware and software
- Inability to use blended security for line data reports/'clunky' security
- Inability to have DR/BC capability
- Locked into one platform - no support for the Macintosh platform
- No workflow capabilities

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Organizational Background

Ball State Overview

- Mid-sized public university
- 19,000 students in 270 fully-accredited undergraduate, graduate and doctoral programs
- 2,800 employees
- Distributed environment with about 85% of mission-critical data housed on the mainframe, but about 90% of user-facing software hosted on Windows-based servers

Where We Were...

- Windows-based departmental system installed in 1997
- Optical 'jukebox'
- Dependant on SCSI-connected scanners with special interface boards
 - 'Clunky' interface
 - Multiple points of failure
 - Difficult to diagnose and repair

Where We Were, cont.

- Significantly over-extended for the system's architecture...
 - JBOD with four servers
 - No records management
 - No index-based deletion, just index removal
 - Security difficult to manage and stability was lacking
- Yet vital to the university's content management needs
 - Access to Accounting reports
 - Archival of images



Steps to Implementation

Step 1: Determine Need/Parameters

- Multiple failures in multiple year-end closings led to the Director's imperative
- What content will be managed?
 - In our case, no web-based content managed.
 - Indexed images – TIF format in the old system, TIFF in the new
 - PDF's
 - COLD reports
 - No AFP transforms in use

Step 2: Determine Software/Platform

- RFP process was important to help determine size/shape of our install, both required and desired
- Led to our decision to virtualize on our IFL (Integrated Facility for Linux)
- Factors considered:
 - Speed
 - Flexibility
 - Reliability
 - Scalability
 - The right chassis for the right system

Step 3: Connect Past w/the Future

- Legacy data was not going to go away.
- User-based processing needed to remain as similar in the new system as possible.
- A chance to correct data issues
- Future growth potential

Step 4: Get it Done

- Configure hardware
- Install/configure software
- Complete review of applications, security and other configuration settings

Step 4: Get it Done, cont.

- Complete design/creation of related 'pieces'
- Scanning
- Index lookups
 - From mainframe system – SOA Web Services
 - From CM itself – ODBC
- Plan for future growth potential
- Additional web services

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Current Configuration

Current Configuration

- zLinux environment - SUSE 9.0 SP3
- Hosted on a z9 running z/VM 5.3
- 6 instances
 - CM Test/Production
 - OD Test/Production
 - TSM Test/Production
- Media
 - Disk array – IBM DS8100
 - Magstar 3494 robot-fed tape drives

Current Configuration, cont.

- Imaging system
 - Kofax Ascent Capture 7.5, Service Pack 6
 - Mixture of Canon and Bowe, Bell & Howe scanners
 - » Old SCSI scanners could be used – no add'l capital costs
 - » New USB scanners – flexible, more economical, allow small form factor machines
- User interface
 - eClient running on a Windows server
 - WEBi running on a Windows server

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Recommendations

Recommendations – Data Conversion

- 1) Have well-defined data policies in place first
- 2) If not - get detailed specifications for the retention periods from stakeholders and verify with internal legal counsel. Then apply policies as you load into the new system.
- 3) Annotations – BE AWARE!
 - There are no annotation standards followed.
 - Each system handles annotations in a different way.

Recommend. – Data Conversion, cont.

- 4) Legacy data may likely need to be 'de-wrapped' so that proprietary coding is removed.
- 5) Loading of legacy data must be carefully done, with attention to what data is required day-forward versus what data exists in the past.

Recommendations – Virtualization/ Open Source

- 1) Before considering any software application, check on the status of its release. If it is not GA, we strongly recommend it not be implemented.
- 2) Using Linux on system z allows an organization to more thoroughly utilize a rock-solid platform that takes advantage of specialized processors, which will assist SOA-enablement efforts.

Recommendations –

Virtualization/Open Source, cont.

- 3) Develop some in-house skills in Linux operating systems, Java programming and system configuration. There is a learning curve, but the benefits of being able to self-diagnose and modify system issues, rather than relying solely on third-party vendors, far outweigh the costs of the training.

General Recommendations

- 1) Do a thorough study of the software and how it works, including an observation of it in use. Your structure and deployment may be affected.
- 2) Do not begin the installation process without beginning it on a test system that is the same as your production system.
- 3) Detailed notes about file locations and the system defaults (even screenshots) will prove invaluable later on.

General Recommendations, cont.

- 4) Be very specific about the OS being used, and make sure to point out that it is not 'just' Linux.
- 5) Discourage the installation of freeware, shareware, extra toolbars and all other, non-business applications.
- 6) Provide as many examples as you can to the users of functional pieces running in a test environment.

General Recommendations, cont.

7) To get a good start with the product, utilize partners with specific skillsets and expertise. We used:

 Dayhuff Group: Implementation and setup of Kofax, CM and WPF config.



Image Architects: Custom release scripting for Kofax to produce CM load files



ITC/Cintas: Back data conversion/data quality assurance

Agilent Tech.: Linux on z support for CM/OD and TSM



What We Accomplished

What We Accomplished

- Scalability/Reliability
- Ability to manage deletion of and retain documents within the system
- Platform independence
- Support for the users who have Macintosh computers
- Granular, document-level security on based on multiple values and supported by the ability to utilize SSL connections from the users' desktops
- Deployment on a platform with successful DR testing

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Where We Are Going...

Into the Future

- Virtualized scanning environment
- Cradle-to-grave records management
- Customized interfaces - portals
- Federation across line data, image data, custom systems and departmental document data – web services!!
- One-day user-centered joint application design rollout for simple applications
- Immersive experience for students to design, develop and deploy content management solutions
- Center of ECM Excellence

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