

Services and Server Consolidation:

Results of On-Site Requirements Interviews

Data Collection Process

- : On-Site Requirements Interviews were conducted with 28 units in June and July.
- : Toured Server rooms
- : All data collected in interviews was verified with participants
- : All data entered into multi-part spreadsheet, one worksheet per unit
- : No Research Center interviews were conducted

Data Collection Process

: Completed spreadsheet was distributed to all participants, Node Managers, CIT Directors and SSC team members on Thursday July 6th

: A table of institutional data on # of Departments, Faculty, Staff, Students, Servers and Static IP's was constructed by collapsing data from InfoSource and CIT then walking across to Node based on Hierarchy_1_4 code and subnet. This was done to compare institutional data with data collected from interviews to look for correlation.

Data Collection Process

Academic Units (14) - Architecture, College of Arts and Sciences (CAS), Computer Science (CSE), Dentistry, Education, Engineering, Informatics, Law, Management, Medicine, Nursing, Pharmacy, Public Health, Social Work

Academic Support Units (10) - Athletics, Business, CIT [Administrative Computing, ASCIT, LAN Systems, Operational Support, Technical Services], Development, Facilities, Libraries, Research, Provost, ResLife, Student Affairs

Services and Server Consolidation: Results of On-Site Requirements Interviews

Services-Server-Consolidation-On-Site-Requirements-Interview.xls

UB-IT-Node-Profile-Institutional-Data.xls

Observations: Overall

: There is remarkable commonality in the tools used for IT Infrastructure (ex SAV, TSM, BlackIce, HFNetCheckPro, Ghost). This speaks to the trust the units have in CIT recommendations and in each other.

: Anti-Virus, Database Services, File and Print Services, Intrusion Detection, Patch Management, PC Imaging, Workorder and Inventory Tracking are not available centrally. This requires the units to provide those services internally.

: There are twice as many servers outside of CIT as inside (620 vs.322).

Observations: Overall

: Everyone does

Database (Oracle, MS SQL, mySQL)

File and Print

Security (AV [SAV-Managed], IDS [BlackIce], IPS)

Business Continuity (Patch Management [HFNetCheckPro, SUS],
Monitoring [CIT-Spectrum, Big Brother])

Disaster Recovery (Imaging [Ghost], Backups [TSM])

HelpDesk (WorkOrder systems)

Observations: Academic Units

10 of 14 have their own AD and server rooms.

9 of 14 use CIT for Email and backups.

6 of 14 have servers in (or are moving into) the Club Area

4 of 14 have their own Citrix farms

3 of 14 provide student support

3 of 14 build their own PC's

2 of 14 run Directory Services other than AD

Observations: Academic Support Units

10 of 10 are in (or migrating into) Central Active directory

9 of 10 run their own Email system; Microsoft Exchange, for email and calendaring. They went into that business not because of email but because of integrated Calendaring and Scheduling functionality.

7 of 10 support Mobile Computing devices

4 of 10 have their own Citrix farms

4 of 10 have servers in the Club Area

Impressions

: IT staff in the Academic units feel they work for the School and Dean, not the University. This means change will only occur if it's in the best interests of the school or mandated.

: If Academic units see benefit from consolidated Security, Business Continuity, Database and File services, implemented with distributed management (like in the case of TSM backup), units will naturally opt out of their in-house services toward consolidated services. There is a long history of this behavior: Modem pooling, software licensing, DNS, WINS, DHCP, LDAP, TSM, SNMP, spam filtering.

Impressions

: Central administration seems to place a priority on Email and Directory Services even though it already provides the lion's share of those services. Units offering those services do so knowing they are available centrally. They do so because they 'strongly' feel it adds value to their schools. Change in these areas will cause conflict and come at a cost. Do the Benefits outweigh the Costs?

Trends

- : Use of Macs is growing on campus.
- : Instant Messaging, Wiki's, Blogging and RSS use is growing among students
- : Email as an effective means to communicate with students is fading. myUB and UBLeans are the new single points of contact – why not use them instead of email?
- : The IDS package of choice, BlackIce, has reached the end of its useful life. Units are all looking for IDS and IPS alternatives.

Trends

- : Mobile Computing (SmartPhones, Blackberry's, Treo's) is growing with both students and Senior Management. Gartner describes "Personally Owned devices with Campus Network Access" as 1 of only 2 transformational events change over the next 2 years.
- : Securing sensitive personal data (ex: SSN) is challenging the security capabilities of units.
- : Computer Telephony Integration (CTI) will introduce new challenges

Trends

- : In 2007 Microsoft will release new versions of its Operating System, Office Automation and Email platforms (ie. Vista, Office 12 and Exchange 12). PC Imaging strategies will need to adapt.
- : Citrix has matured to the point where it is a viable alternative to traditional PC in many environments.
- : Linux penetration in sciences is increasing.

Recommendations: Database

- : Consolidate Database service for the 3 most popular database engines (Oracle, Microsoft SQL and MySQL).
 - All three are necessary as vendors provide applications that require one of the three.
 - Evaluate the business case for running isolated or other database systems on campus.

Recommendations: Directory Services

: Consolidate directory services to a minimum number.

- DNS
- LDAP
- Novell Directory Services

: Reduce the number of Active Directories to a minimum level. Assist units who are currently planning migrations in Central Active Directory toward that endeavor. Determine the business case in those units that continue to run independent Active Directories. Evaluate whether modification of the existing Central AD will address those business cases. Finally consider the establishment of trusts between AD forests or the migrate of Domain Controllers to a single support model makes sense.

Recommendations: Email

- : Consolidate all Academic (2) and Academic Support Exchange servers (9) to a single Exchange infrastructure.
- : Consolidate all Unix email systems to a single Unix email infrastructure.
- : Establish a non-Microsoft based Calendaring system, such as Oracle Corporate Time, for all non-Exchange faculty and staff users. Allow units to opt-in.

Recommendations: Email

- : Allow units to opt-into Exchange or Unix infrastructure, as desired.
- : Evaluate the business case for outsourcing student email to a service such as Microsoft's Live@edu or Google gmail.
- : Re-evaluate the proposed 2 email/calendaring system solution over the next 5 years to determine if the campus can consolidate at that time to a single communication solution.

Recommendations: File and Print

- : Consolidate file servers to a minimum number. Re-host the service on the central network appliance file system.
- : Consolidate standard file services on campus into one service instance using the current UBFS replacement project as a technical base. File services that do not have exceptional needs should be consolidated into a single campus-wide file service. An example of exceptional needs would be high-performance research SANs.

Recommendations: File and Print

- : Consolidate all Unix print queue services on campus into one service instance.
- : Consolidate all Mac/Windows print queue services on campus into one service instance. With the elimination of the majority of the file servers comes the need to relocate the print queues those servers were also providing. Due to limited cross-platform printing standards, we recommend two implementations at this time.

Additional Recommendations Under Discussion: On-Site Interview data

- : Consolidate Academic and Academic Support Citrix farms and provide that service to all faculty and staff.
- : Create a south campus "club" room and increase capacity on the north campus club room.
- : Research why units are not utilizing TSM and enforce usage where possible.
- : Provide a site license for Symantec Ghost imaging software

Additional Recommendations Under Discussion: On-Site Interview data

- : Create an annual updated listing of departmental services and/or applications that could be leveraged or used by other departments on campus.
- : Provide a centrally managed Symantec Anti-virus and patching services for units to participate in.
- : Make intrusion detection firewall rules available.
- : Provide a central/consolidated server and services monitoring other than SNMP

Additional Recommendations Under Discussion

: Given their close working relationship and commonality of support models investigate the consolidation of other Services in the Academic Support Nodes (Athletics, Business Offices, CIT, Development, Facilities, Libraries, Provost, Res Life, Research, Student Affairs) to a minimum number.

Additional Recommendations Under Discussion

- : Investigate using Citrix Workstations and Citrix servers as a replacement to traditional computers used in Public Sites, kiosk's, walk up's, library search computers, Technology classrooms, Student Assistant workstations.
- : Consolidate support for mobile computing devices (Blackberry's, SmartPhones, Treo's) used by faculty and staff.
- : Consolidate Work Order systems

What's already in place: Academic

RenderDrive, GIS/AutoCAD, Netapps SAMBA server, Course Eval, Events Management in Fine Arts, Coppba - SARA in Linguistics, Unix syslogs, Big Brother, WorkOrders, SAV, SUS, Image Storage (Ghost), BASIS (Door Card Access), NTP, FTP, CVSUP, console, Kerberos, Lock Controller, PACS server, CAS (Archiving, Compliance), Rapport Thin Client Management, Card Access System, Course Management/Curriculum Analysis, Scheduling, License Management, PhPSurveyor (RCEP), Persuis 7 (Accounting), Streaming Video (Mother Hen), Provost LAMP server, research clusters, storage lockbox, site license management, WARP 7.0 (Accounting), Homeland Security grant - 2 servers, 22 devices, Webcreator, Best Access card access, Seating Charts, in-house developed course and document management systems, customized built MS-Millennium PC's, Windows Streaming Video, Virtual Grading Office, on-line Contact Management for Admissions, BarCode Scanning Inventory

What's already in place: Academic

Standardized patient program, Medent, Medisoft, AMCAS, Great Plains Accounting, PDA Support for students, Streaming Video, Security Cameras (Xprotect), Anatomical Gift Program, Basis Input, Basis Update, ERAS Processing, Grading, Personnel Admin, Faculty Council Admin, Graduate Students Admin, Medical Students Admin, Deans Letter Admin, Lottery, PosPrtDig, RCS, RUS, IRW, on-line tutorial, ReviewDB, Survey, Core Curriculum Registration, Scholarly Exchange Day Registration, Class Photo's, ECV, Faculty Profile data feeds, Find-a-Doc, Find-a-Researcher, iMOLE, PDA Quick Survey, Provider Directory Report, SMBS Calendar, Telehealth Calendar, UBMD, LCS, Click-To-Meet from Radvision, Elemental (Security), Streaming Video, HLM (Stat Package), In-House Built PC's, Course Eval for Admissions, Oracle Corporate Time, Chromotography data acquisition, NAS for IT staff, WinNonLin, Nessus (vulnerability scanner), Course Eval, Lotus Notes - Aging, Nutrition Pro, iPrint Testing w/ issues, Student Management in Access, Field Placement, Continuing Education

What's already in place: Academic Support

Recruiting Pro (FileMaker), XOS (Video Editing), Kronos (SA Time Clock), Envisage (Donor Management - ChoiceOne), BullStore (on-line Shopping), Dartfish (performance enhancing sport video training), Doc Imaging (Beals), SUS, Streaming Video, 3 Backup servers, 3 Silver Stream (Screen Scaping - Transactions), 3 Telephone/Vmail, MOM, Oracle Enterprise Management, Building Security, AV Servers, TOAD (Oracle Development), SpamAssisin, Drupal (Content Management), ARMS (In-House Reports - PowerBuilder), BIS (In-House Reports - Powerbuilder going to Crystal Resports), GoodLink (Treo support), UBFWIT - Credit Cards, Maximo (Facilities and Project Management - 3 servers), Facilities Maintenance System (In-House FoxPro), Master Project List (In-House Access), ADA DB, EHSA - Environmental Health Safety Assistant, Maximo - Oracle (3 DB servers), Time and Attendance (FoxPro), Key/Card Access (LockShop), Time-Clocks

What's already in place: Academic Support

TOAD (Oracle Development), ActivePDF (Oracle Reports to PDF for functionality), ActivePDF, Coldfusion, RealMedia, Electronic Research, Electronic Filing, ACD (Verizon/Rockwell), AdvisorTrac (Red Hill), Blackberry (RIM), EMAS (EMAS), GrAdmit (AMS), SharePoint (Microsoft), MS Project, Best Card Access, Kronos Time Keeper, Residence Management System, TMA WorkOrder System, 50 Non-shadowed Database Apps (In-House), Informant, Iview, Medicat (Vendor), WebSurveyor (Vendor), SharePoint (MS), Quark (Vendor), FileMaker Pro (MS), Doc Management (In-House), Medicat (Vendor), Phoenix (Vendor) Accumen (Vendor), Clients and Profits (Vendor), Titanium (Vendor) Events Management, UB Orientation w/ EPay, Iliad, TextML - Document Repository

What's already in place: CIT

Toad (Oracle Development), Shavlik, Terminal Server, Perl, Regplace, Weblod software, MCV Streaming Video, Video Conferencing Bridge, Student Timesheet, WorkOrder System, 2 Billing systems in fileMaker Pro, Access for Budgetting, Backup Exchange Servers, Public Sites License Server, Appraisal System, MS Project, DHCP, DHCP Sweep, OSS Net Tools, IDS, Sniffer, Netpass, Covenant, HR Timesheet, NSM for Firewall, Telephone Billing, Instant Messaging (Jabber), Paging, Job Scheduling

What's already in place: CIT

iPrint, Network Storage, Central Active Directory, Citrix, Club Room, Database servers, DNS services, Oracle Corporate Time, TSM data backup, Windows AD service, Exchange 2003, WebMail, Network Switch replacement, Remedy, Streaming media, VPN, Video surveillance, Time Sharing, Backup and Patch servers, RDP, servers, Electronic card access, Clarity Workbench (Project Management), Web Hosting, Big Brother Monitoring, Firewall support, UBLeads, MachineTracker, BladeLogic's Operations Manager, VoIP Phone System, Cisco Unified Contact Center Express Premium, Linux Distribution (SUSE)

Next Steps

: Recommendations completed and implementation teams being formed for

- Database (MS-SQL / MySQL / Oracle)
- Email - (Exchange / Mobile Computing / SharePoint)
- Email - (Unix / Calendaring / Student Email)
- File/Print

: Team membership currently being compiled from names submitted by Node Directors. The Services and Server Consolidation Team will identify additional names and select the implementation teams (Implementation team charge posted)

: DNS and AD are being addressed directly with the specific units.

Next Steps

: Subgroups working on recommendations for:

- Patch Management/Backup /AV – high importance
- Citrix Implementation
- Electronic Card Access / Video Surveillance
- Streaming Media

: Web and application servers are up next for discussion

: Inventory servers slated for consolidation

: Build Service Catalog with Shared Service Desk

Q & A