PO LAN: Welcome; Wherefore?

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Overview

- Introduction / Why are we here ?
- Context: Brief background - TDC
- Goals
  - Establish clear communication, priorities
  - Assess & Document: Current Setup, "Needs" and "Wants" -> Develop plans / scenarios
- Work:
  - Current work underway
  - Possible work looming
  - Immediate issues to address today

Context – TDC Background

- "Local" origins:
  - Acadia 1994 Bsc Biology (Molbio)
  - Dal 1998 Msc Biochem (MolBio)

- Montreal Jaunt:
  - ~6mo. U.de.M MolBio Lab Research Associate
  - 1yr. McGill – General I.T. @ Comp.Centre
  - 5 yrs @ EcopiaBio: SysAdmin, then also I.T. Assoc.Director (team size range of 12->4..)

Context – IT @ Ecopia

- **Before**: Sun Solaris/Sparc based platform supporting core research operations. Major $ investment in infrastructure, significant ongoing maintenance contracts

- **After**: Gradual introduction of Linux X86 platform to offload from Sun (computation cluster, thin client server, backup hardware, mail and web server, etc)

- **Benefits**: Lower capital costs, increased performance, lower operating costs

Goals for Today … and beyond..

- **Stated Desired Endpoint:** Establish I.T. Infrastructure which supports research operations in the best possible manner, within the constraints of budget / staff available

  (any additions / revisions?! :-)

- In order to reach this goal, very clear communication is required to properly understand requirements, solutions, and to develop a realistic plan (with short, mid, longer term scopes)

Current Platform (1/2)

- "Organic" network / server infrastructure evolution spanning ~15 years

- Core Server Infrastructure: Sun servers providing bulk of services (CPU intensive analysis, bulk data storage, backup, web-mail)

- Discrete Research Groups with resources partitioned (more-or-less) on per-group basis

Current Platform

- "Not-Core" (not in server room) Server Infrastructure: some present in most research groups
  - evaluate: are there any ad-hoc "temporary" solutions present that might be improved?

- **Major Goal**: Evaluate current / looming requirements, develop plan for change to meet those needs, NOT simply to continue supporting all needs of past ~15 years.

Work Underway (1/3)

- Documentation of core systems configuration, minor optimization of configuration

- "Infrastructure Services Consolidation":
  (non-CPU-intensive -- but important roles!)
  - Mail Server
  - Public Website
  - ? Gateway server (inbound ssh, ftp, etc. from outside Dal Network)
  - ? Other options possible – using "virtual server" platform

Work Underway

- Subsequently:
  - Re-Deploy Current mail server as Sunray (thin client workstation) server
  - Re-Deploy Current web server as Systems Monitoring Solution (?)
- Storage Related Topics:
  - Complete Disk Use Audit
  - Deploy unused array
  - Cleanup of "Forgotten TempFiles"
  - Consolidate / Rearrange "split storage pools" to "unified storage pools"
  - Evaluate growth trends, develop plan for future

Work "Underway" (3/3)

- Cargo Deployment (Sun v20z - dual-2.4ghz
  opteron with 1.8 Tb disk array)
  - Never deployed, should be rolled out as part of "Anchor transition" plan(~4.8 vs Anchor's 6 ghz)
  - Target role:
    - General data analysis server role (as per Anchor)
    - Migrate users & all data from Anchor SAN-> Disk Array
    - Add: Unified Samba/NFS File Sharing for easier access
  - Possibly: deploy as Linux (CentOS) to facilitate Matlab (not available for Solaris-x86 platform)

Possible Looming Work

- Water into wine: How to improve things without spending any $?

    - Limited by:
        - Well defined priorities
        - Time
        - "Best" (free/cheap) solutions for highest priorities

Possible Looming Work

- **Increased Network Security**:
  - Block all inbound traffic to POLan from outside Dal campus (with some exceptions):
    - Public web server
    - Gateway server for SSH/FTP
    - Grant access from Dal VPN subnet for all current traffic
- **Monitoring Server:** (sysadmin use only)
  - Server loads, utilization; network traffic
- **Backup Solution:** (L20 robot, open source software)

Possible Looming Work (3/4)

- **Intranet Web** Content Structure
  - internal communication structures ?
- **Improved Fileserver** for Group Collaboration
  - unix, windows access for "not large data" files (word docs, etc)
- **Intranet DMS** (Document Management Server)
  - improved collaborative work within/between groups
- **"Tech Support" Web-Email Ticket System**
  - for clear task assignment / resolution / tracking / "FAQ" Database development
- **"Tech Support" Wiki** -"Reference /HowTo" docs
- …etc….

Possible Looming Work

- Server Room Fun:
  - New Rack to Rackmount Core Gear (Jade, NAS Array, 2 Disk arrays) – (not free: costs $500-$1000)

  - Retire under-utilized (or unstable) hardware following appropriate "service migration" as appropriate
    - SGI Origin? Anchor ? Other ?

    ...pending deployment of offload server(s)...
    - NB: Anchor = 8 x 750mhz = "6000mhz"
    - 2-way Dual-Core Opteron 1u Rackmount Server (4 CPU cores@ 2ghz) ="8000mhz"
    - Cost (CASTALIA) ~ $4-5k per box

Unknown / Inbound Work ..! ?

- **GOAL**: TDC to provide "I.T. consulting / planning" **advice** on appropriate research grant spending **in advance** to ensure good fit for:
  - "New solution requirements",
  - "PO Lan context" and
  - "Long term plan" for overall environment
- **Examples**:
  - Inbound Beowulf / Computation Cluster...
  - Fall/2006-Target: NSERC Equipment Grant Submission
  - Other New Research Projects ?
  - Aside: Possible benefits of virtualized servers / consolidated hardware)

Issues to Address "right now"

- Discussion on above topics ...?

- Schedule 1-on-1 meetings ...?

- I.T. Policy Development before Sept...?
  - Proposal: UCIS material as starting point to establish well defined "line in sand" for acceptable use, etc. which SHOULD evolve to meet the requirements of the PO_Lan environment

All Done!

- Further topics for discussion ?