# CERN Site Report Selected Items

re-using slides from
W. von Rüden and
J-M Jouanigot
presented at FOCUS 2 Oct 03

Jürgen Knobloch

HTASC 3 October 2003

# Update on ongoing IT activities

# FOCUS October 2003

Thanks to all contributors from IT groups

Wolfgang von Rüden

## IT Management changes on 1st October 2003

- F. Hemmer will become the GL of a new group in charge of middleware development for EGEE.
- Pal Anderssen replaces Chris Eck as GL of DI, Chris works fully for LCG
- A small unit will be created in DI dealing with dissemination, communications and strategies, led by François Grey.
- David Foster takes over as GL of CS

- **Thanks to all for their contributions and success in the new roles.**

# Status of Security Actions proposed at last FOCUS Meeting (June 2003)

- AFS password expiry enforced
  - Passwords must be changed at least once per year
  - Users informed by email 30 days before expiry
  - Implementation is being finalised
- Hardware address registration enforced for portables
  - CERN users register at http://cern.ch/register
  - Visitors request temporary access via a web form
  - Enforced before Xmas, started in some buildings (31,513,600)
  - See extra presentation
- Off-site ftp closure:
  - ftp replaced by SSH (Scp/Sftp) or other mechanisms
  - Proposed closure date is 20 January 2004
- Rules for systems connected to CERN network
  - Will define acceptable network and security practice
  - Draft is in preparation

# Architecture and Data Challenges Group (ADC)

**CASTOR software developments**

- **Proposal for new stager software**
  - **circulated to the experiments' mailing lists beginning of June**
  - **presented at the CASTOR users' meeting on 24/6 and to the LCG PEB on 12/8**
  - **well received by the users and CERN CASTOR operations team**
- **development work is progressing according to plan**
- **Formal framework for CASTOR support to external institutes is being discussed in HEPCCC**
- **CASTOR Storage Resource Manager (SRM spec v1.0) is ready for deployment**

# Architecture and Data Challenges Group (ADC)

**Openlab**

- **IBM StorageTank installation, 28 TB of a new type of shared filesystem, first tests underway (i-SCSI)**

**Linux**

- **Major change in the RedHat support strategy for the 'for-free' desktop Linux distribution (used for the CERN certification) on September 22nd**
- **CERN certification strategy now under review, certification group meeting this week**
- **discussion/coordination planned for HEPIX**
- **meeting planned with RedHat**

# CS Communication Systems (CS)

- Tender for GSM operator has been completed
  - Preparing for change to SUNRISE (CH)
- STM-64 circuit to Chicago has been delivered
- Reinforcement of site protection measures
  - Preparing for mandatory computer registration (see additional talk)
- Extension of GSM coverage in the LHC underground areas
- Installation of Network Infrastructure in LHC Sector 7-8

# Database Group (DB)

## Persistency Framework project

- POOL
  - In close collaboration with ROOT team, EP-SFT and experiments
  - POOL successfully integrated into both **ATLAS** and **CMS** frameworks
  - CMS reported **700K** simulated events stored in POOL without major problems
  - Significant use expected in CMS DC04/PCP, ATLAS DC2
  - LHCb expected to follow soon
  - Latest release: 1.3.2 (bug fix release)
- ConditionsDB workplan underway

# Database Group (DB)

- RLS service for LCG (LRC + RMC)
  - Goal: 24 x 7 File catalog and file-level metadata services
    - Crucial to the correct functioning of the Grid
      - Used by EDG replica manager client tools, Resource Broker and POOL, for job scheduling, data access from running jobs
  - Currently deployed in certification test-bed and for LCG itself
    - Total of 7 production services
      - Based on Oracle Application Server (1 per VO) and DB (shared across prod. VOs, within cert. TB, 3rd DB for test)
- Distribution kits for RLS
  - Kits & associated scripts used to setup all CERN servers
  - Deployed in Taiwan; Contacts with other sites
    - Delayed due to LCG 1 priorities & as 1st approach too simplistic
    - Need clear view of target service at start
      - Backup / recovery needs, monitoring etc.
    - Still far from general purpose distribution kits – 10g will help???

# Database Group (DB)

- HARP migration
  - Event data completed;
  - Conditions Data to be migrated; use Oracle implementation (could be considered prototype of LCG AA PF conditions DB?)
- Status of Sun cluster & other physics services
  - Applications migrated from CDB/EDMS cluster
    - But not all! Need to complete migration asap!
    - Conflicting requirements from physics users / EDMS
  - Several dedicated DBs for larger apps (Linux on disk server)
    - Cristal II, CMS Tracker
  - COMPASS data has tripled during 2003 (6 servers, 2TB, 2 x $10^{10}$ events)
- Ever increasing number of physics-related applications requiring a DB
- Oracle $10^{g}$ (Database and Application Server)
  - Announced in September in San Francisco
  - Contains numerous features important for HEP
    - Native floats & doubles, reg. exp., ULDB, data exchange
    - Many deployment, manageability and usability enhancements

# Fabric Infrastructure and Operations (FIO)

- Data Services
  - CDR Successes
    - 250 TB for COMPASS and 115 TB for NA48.
    - NA48 CDR fully integrated with LXBATCH & CASTOR.
  - Transparent move of HEPDB to a new server still to be finished
  - **Reminder: Services to stop at the end of the year**
    - TMS—FATMEN dependency on TMS being removed by Steve O'Neale
    - End of direct access to DLT2000 & IBM 3590 cartridges. All required (known to us) have been copied into CASTOR and emergency copying of data into CASTOR will still be possible.
- Insourced System Administration team
  - First team members arrived in August. Insourced team providing piquet service and managing lxbatch & lxplus since September 29th.

# Fabric Infrastructure and Operations (FIO)

- ELFms components are now thoroughly in control of the CERN computing fabric.
  - quattor installation & configuration system has managed lxbatch & lxplus nodes since RH7.3 migration.
    - LSF upgraded consistently across all nodes in 10 minutes.
    - Security patch for ssh distributed rapidly and consistently to all nodes within one hour after release.
    - quattor now used extensively for tape, disk and Linux database servers.
  - EDG/WP4 OraMon repository in production use since September. We would now like to start working with experiments to record and deliver the monitoring information they need.

# Fabric Infrastructure and Operations (FIO)

- Computer Centre Upgrade continues …

ery tight in 2004.

# Grid Deployment (GD)

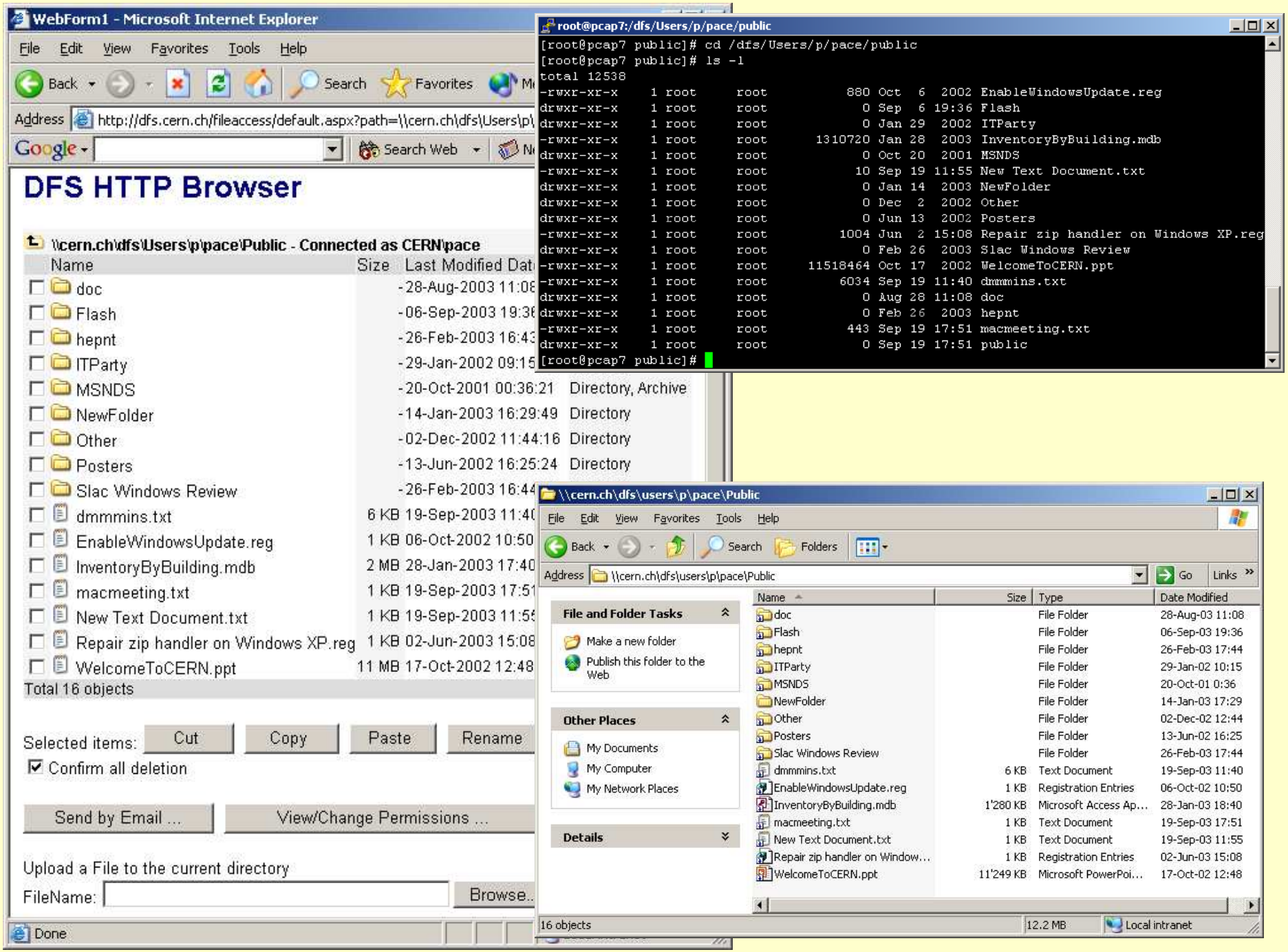
- LCG-1 is now deployed to 11 sites:
  - CERN, CNAF, FZK, FNAL, RAL, Taipei, Tokyo, Moscow, Barcelona, Budapest, Poland
  - 3 more installing: Lyon, BNL, Prague
  - Several others preparing: Switzerland, Nikhef, Bulgaria, Pakistan, and Tier 2 sites
- Middleware in LCG-1 is US + EU toolkits
  - Functionality is somewhat less than originally hoped, will improve over next few months,
  - Will provide a service for 2004 LHC Data Challenges
- Experiments currently integrating their software with LCG-1
  - Tests have already started – e.g. Alice; others are scheduled
  - Initial use is restricted to production-style use, and nominated users
  - Many issues still to understand – e.g. limits of scalability of the system
- See CERN press release for more details

# Grid Deployment (GD)

- RAL provides prototype Grid Operations Centre:
  - System status monitoring
  - System accounting summaries
  - Prototype will be developed over coming months
- FZK provides user support portal
  - Support model is that experiments provide initial problem triage,
  - Experiment support personnel report problems to LCG
  - LCG coordinates problem resolution with middleware providers, regional centres, network ops, etc.
    - And is responsible for ensuring problems are addressed

# Internet Services (IS)

- Windows Terminal services pilot
  - More than 200 users registered as users
  - Strong wish from the community to have it available as a service
  - Cost and long term commitment being identified and discussed within IT division
  - Details on http://cern.ch/wts
- Web storage and Web access to DFS file system
  - Authenticated access to DFS file system using a web browser from any platform (http://dfs.cern.ch/fileaccess)
  - Allows to mount the DFS file system (and mailbox repositories) natively as local files on Linux, Windows and Mac OS.
  - Uses HTTP protocol and Webdav (http://dfs.cern.ch/dfs), can be made available worldwide


WebForm1 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://dfs.cern.ch/fileaccess/default.aspx?path=\\cern.ch\dfs\Users\p\
Google Search Web
DFS HTTP Browser
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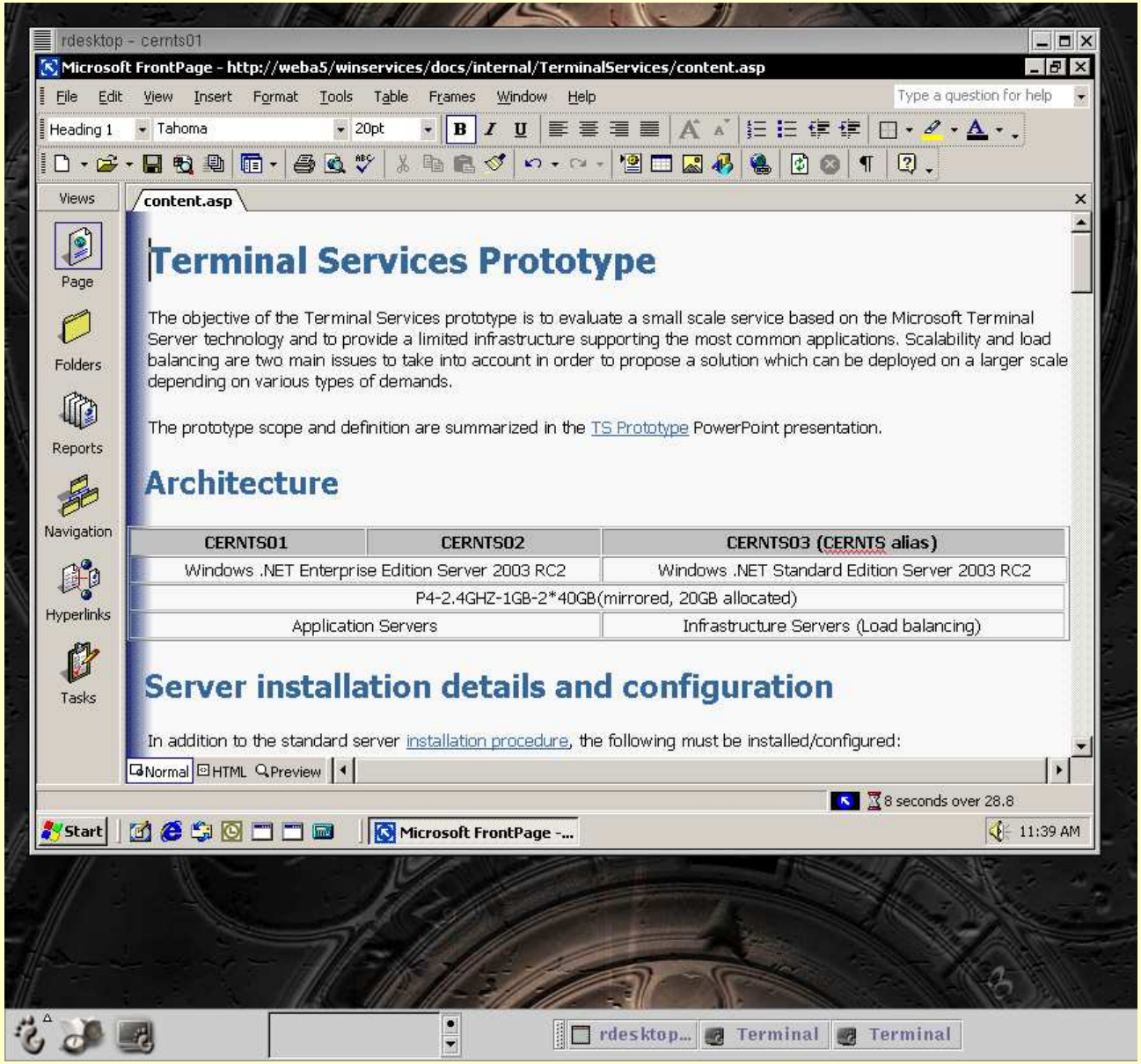
Name Size Last Modified Dat
doc -28-Aug-2003 11:08
Flash -06-Sep-2003 19:36
hepnt -26-Feb-2003 16:43
ITParty -29-Jan-2002 09:15
MSNDS -20-Oct-2001 00:36:21 Directory, Archive
NewFolder -14-Jan-2003 16:29:49 Directory
Other -02-Dec-2002 11:44:16 Directory
Posters -13-Jun-2002 16:25:24 Directory
Slac Windows Review -26-Feb-2003 16:44
dmmmins.txt 6 KB 19-Sep-2003 11:40
EnableWindowsUpdate.reg 1 KB 06-Oct-2002 10:50
InventoryByBuilding.mdb 2 MB 28-Jan-2003 17:40
macmeeting.txt 1 KB 19-Sep-2003 17:51
New Text Document.txt 1 KB 19-Sep-2003 11:55
Repair zip handler on Windows XP.reg 1 KB 02-Jun-2003 15:08
WelcomeToCERN.ppt 11 MB 17-Oct-2002 12:48
Total 16 objects
Selected items: Cut Copy Paste Rename
Confirm all deletion
Send by Email ... View/Change Permissions ...
Upload a File to the current directory
FileName: Browse...
Done
root@pcap7:/dfs/Users/p/pace/public
[root@pcap7 public]# cd /dfs/Users/p/pace/public
[root@pcap7 public]# ls -l
total 12538
-rwxr-xr-x 1 root root 880 Oct 6 2002 EnableWindowsUpdate.reg
drwxr-xr-x 1 root root 0 Sep 6 19:36 Flash
drwxr-xr-x 1 root root 0 Jan 29 2002 ITParty
-rwxr-xr-x 1 root root 1310720 Jan 28 2003 InventoryByBuilding.mdb
drwxr-xr-x 1 root root 0 Oct 20 2001 MSNDS
-rwxr-xr-x 1 root root 10 Sep 19 11:55 New Text Document.txt
drwxr-xr-x 1 root root 0 Jan 14 2003 NewFolder
drwxr-xr-x 1 root root 0 Dec 2 2002 Other
drwxr-xr-x 1 root root 0 Jun 13 2002 Posters
-rwxr-xr-x 1 root root 1004 Jun 2 15:08 Repair zip handler on Windows XP.reg
drwxr-xr-x 1 root root 0 Feb 26 2003 Slac Windows Review
-rwxr-xr-x 1 root root 11518464 Oct 17 2002 WelcomeToCERN.ppt
-rwxr-xr-x 1 root root 6034 Sep 19 11:40 dmmmins.txt
drwxr-xr-x 1 root root 0 Aug 28 11:08 doc
drwxr-xr-x 1 root root 0 Feb 26 2003 hepnt
-rwxr-xr-x 1 root root 443 Sep 19 17:51 macmeeting.txt
drwxr-xr-x 1 root root 0 Sep 19 17:51 public
[root@pcap7 public]#
\\cern.ch\dfs\users\p\pace\Public
File Edit View Favorites Tools Help
Back Search Folders
Address \\cern.ch\dfs\users\p\pace\Public Go Links
File and Folder Tasks
Make a new folder
Publish this folder to the Web
Other Places
My Documents
My Computer
My Network Places
Details
Name Size Type Date Modified
doc File Folder 28-Aug-03 11:08
Flash File Folder 06-Sep-03 19:36
hepnt File Folder 26-Feb-03 17:44
ITParty File Folder 29-Jan-02 10:15
MSNDS File Folder 20-Oct-01 0:36
NewFolder File Folder 14-Jan-03 17:29
Other File Folder 02-Dec-02 12:44
Posters File Folder 13-Jun-02 16:25
Slac Windows Review File Folder 26-Feb-03 17:44
dmmmins.txt 6 KB Text Document 19-Sep-03 11:40
EnableWindowsUpdate.reg 1 KB Registration Entries 06-Oct-02 10:50
InventoryByBuilding.mdb 1'280 KB Microsoft Access Ap... 28-Jan-03 18:40
macmeeting.txt 1 KB Text Document 19-Sep-03 17:51
New Text Document.txt 1 KB Text Document 19-Sep-03 11:55
Repair zip handler on Window... 1 KB Registration Entries 02-Jun-03 15:08
WelcomeToCERN.ppt 11'249 KB Microsoft PowerPoi... 17-Oct-02 12:48
16 objects 12.2 MB Local intranet

# Terminal Services Linux Example



# Product Support (PS)

- CVS Service
  - **38 CVS repositories are successfully running on the public CVS service.**
  - **On request of the LCG architects, we are working on a specific CVS service for the LCG based on local disks.**
    - It should be ready for production beginning of October.
- Solaris
  - **Received 10 Sun Fire V210 dual 1GHz UltraSPARC-IIIi for the technology refresh of SUNDEV.**
    - They are being connected now to the gigabit network.
    - Performance improvement at least 120% over the current machines.
  - **EDG WP4 (Quattor) fabric management software been ported to Solaris.**
    - We plan to use this software to manage Suns on the CERN site.
    - This port is funded by Sun Microsystems.
  - **Received Sun Blade server 1600 with 12 650MHz UltraSPARC-IIe.**
    - We plan to test the Sun N1 management software together with AS division.

# Product Support (PS)

- Desktop Support Contract
  - Current contract extended until end of June 2004
    - 6 months prolongation because retender exercise running late
    - Will soon issue OSVCs for 1st half of 2004
  - Tender documents for new contract sent out end of July
  - Deadline for bids: end of October
  - Adjudication at March Finance Committee
  - Short, but probably enough time for negotiations and transition preparations
  - Must be prepared for reduced performance at start of contract if personnel changes

# User Services (US)

- Communication with experiments
  - Judging from calls at the Helpdesk: information flow from IT to users occasionally ends “somewhere in-between”
- Virus infections, PC clean-up
  - Substantially higher call volume at the Helpdesk (over 1000/first week, typical volume is 600/week)
  - Additional person hired (under service contract) to work off the backlog (some 70 cases were in the queue)
  - Typically some 15 laptops/week (non-CERN standard) cleaned up (OS versions: English, French, Dutch, Chinese, Italian, Japanese)
  - IT paid the cost for “misbehaving” users this time, not clear this will be done in the future.

# User Services (US)

- Mac support
  - Small inter-divisional task force with members from AB, AT, EP (2 members), ETT, IT, TH has taken up work on defining and testing the details of future Mac support (as mandated by the Desktop Forum)

# Portable Computer Registration

Jean-Michel Jouanigot et al.

Presentation to FOCUS on 2 October 2003

# What is the Problem?

- Past & Recent incidents with devices connected to portable outlets or wireless
  - Security
  - Network safety

- In essence, versatile “connections” are
  - hard to track down to a particular plug
  - almost impossible to track on wireless connections
- **Need to put a name behind a computer to allow contacting the user in case of problems**
- Similar practices exist in other institutes

# Registration Enforced

- All devices using Sockets for Portables (PB) or Wireless will have to be registered to get access to the Network
  - Register all interface cards potentially used
  - Filtering based on Hardware Addresses
  - The DHCP servers will only reply to registered systems

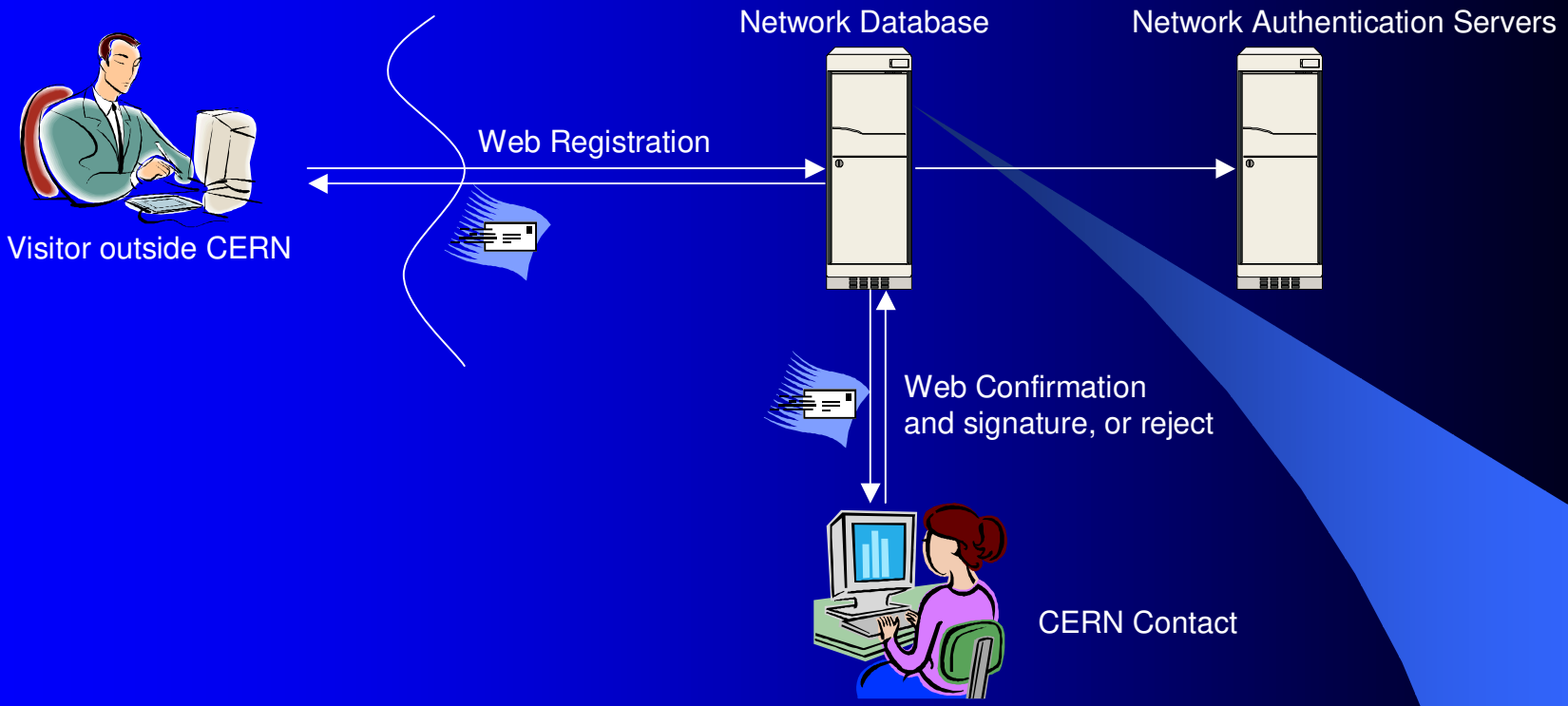
# How do I register ?

- You have a CERN account on NICE/Mail
  - New: http://cern.ch/register; New Portable
  - Update: http://cern.ch/register; Update Information
  - If outside CERN, register when you arrive (see slide 7) or use VPN
- You do not have such an account, but you are a member of CERN personnel, associate, student, “user” etc
  - Ask for a NICE/Mail account
  - … and follow the same procedure
- Registration is activated within 10 minutes

# You invite a person to CERN …

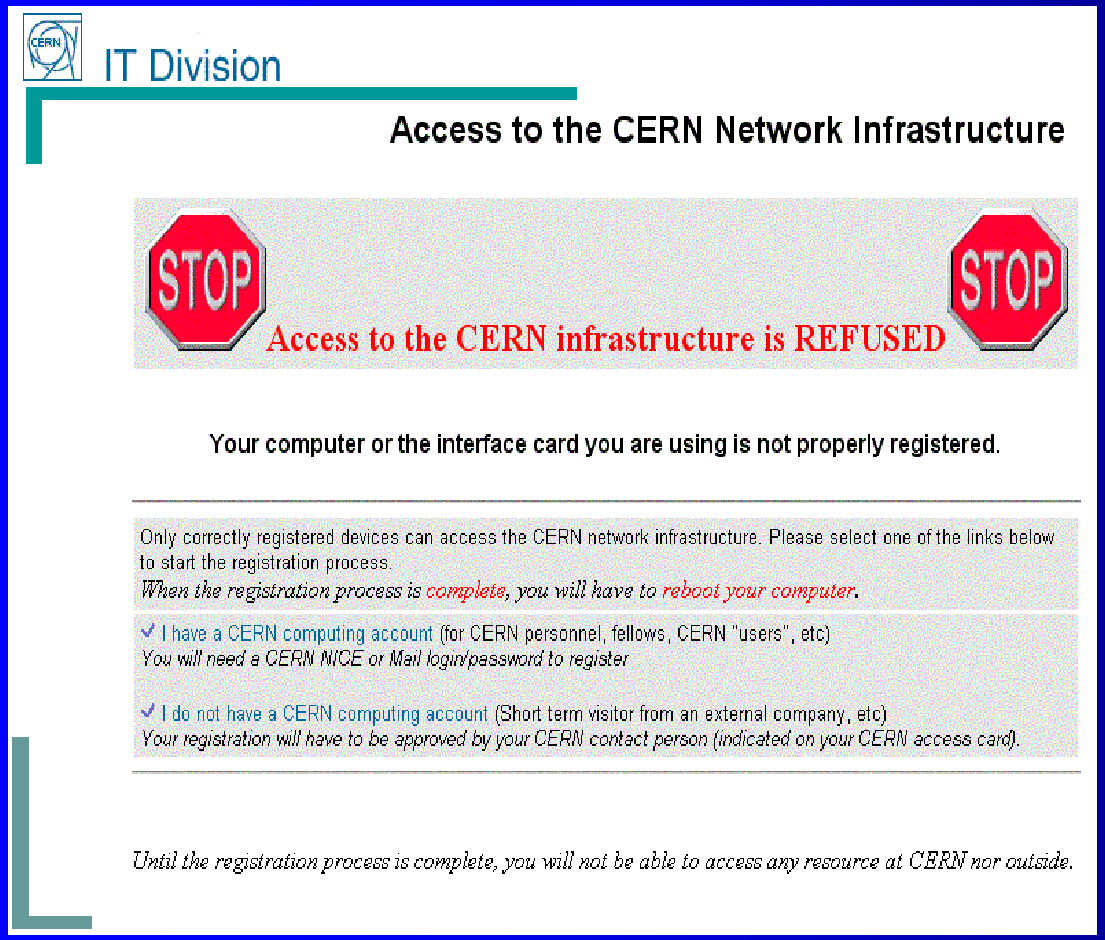
- You invite a person to CERN for a short visit and the person needs to connect his computer to the CERN network
- New procedure in place for a visitor to register his portable (from home or at CERN)
  - http://cern.ch/registerVisitorComputer
- The visitor provides
  - Visitor Information: name, first name, company/institute, email, phone (mobile if possible)
  - Responsible at CERN: name, first name, (division and group required in case of duplicate)
  - Start date and duration: 1,2,3 or 4 weeks
  - Reason for the visit

# Registration Process for Visitors




1. Visitor registers his portable from home using a web interface
2. Contact person at CERN receives an e-mail; connects to CS WEB server (NICE login) where (s)he can reject or accept by signing a web form (like EDH)
3. The database registers the visitor's portable for a limited period of time (max 4 weeks): VISITOR-XXXXXXX

# What If I do not register ?




- Your access to the network is blocked
- Opening a WEB browser will automatically connect you to the registration service
- Follow the instructions
- Registration activated almost immediately (after acceptance by CERN contact for

# When will this happen ?

- ✓ The system development is completed
- ✓ Pilot Hardware Address enforcement active since 29 September for buildings 31, 513 & 600
- ➢ Procedures will be adapted as required
- ➢ Full deployment on CERN site by the end of this year

# Please help us by

- Registering all computers **NOW**
- Informing your colleagues, in particular your visitors about the new rules
- Exposing the instruction leaflet for short-term visitors