BWA/cg

PS/DI/Note 95-15 (Min.)
8 June 1995

Minutes of PS Technical meeting N° 72
held on 7h June 1995

Rundown of CERNVM

Présents: *B.W. Allardyce, B. Autin, J. Boillot, M. Bouthéon, V. Chohan, J.P. Delahaye, D. Foster (CN), R. Garoby, R. Giannini, J. Gruber, J.M. Guijarro (CN), S. Hancock, H. Haseroth, J.Y. Hémery, C. Jones (CN), H. Koziol, M. Marquina (CN), S. Maury, N. de Metz-Noblat, F. Perriollat, J.P. Potier, A. Riche, P. Riunaud, D.J. Simon, E. Tanke.*

C.C: *J. Boucheron, P. Briant, K. Hübner, P. Lefèvre, D. Moehl.*

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1. C. Jones presented a few transparencies showing the use of VM as a function of time and the proposed new architecture (see annexes) followed by short presentations from N. de Metz-Noblat, A. Riche and E. Tanke concerning specific points and concerns by PS staff about the forthcoming VM rundown (see annexes).

2. There was a lively and often detailed exchange of views between the PS users of VM and the CN representatives. Many points were raised, some of which require further study by CN, and it was clear that some of the worries of VM users were due to insufficient information and training/documentation on what the effects of VM rundown would be (which will be rectified shortly).

3. This sort of discussion seems very beneficial for everyone concerned and it should be repeated later in the year.

4. Some of the specific points mentioned were:

(a) When VM stops, so too does the 3812 printer service.

(b) CN considers the installation of structured cabling is essential for the future.

(c) People are encouraged to attend User meetings and to read the next CNL.

(d) M. Santiago (CN) is available for help with REXX and VM-Oracle applications transfer to CERNSP.

(e) The editor RAND will be considered for inclusion in regular CN support on CERNSP.

(f) CN will look further into the need expressed by PS-CO for transparency in viewing files between NICE and CUTE.

(g) The successor to VM e-mail is MS-mail on NICE for the vast majority of PC users. MS-mail will be improved at the end of 1995 by the introduction of "EXCHANGE".

(h) For UNIX users, e-mail would be better transferred to PINE on CERNSP.

(i) The UNIX world can be reached via PC'S by emulation of an X-terminal, provided the PC has a good enough graphics card.

(j) There will be a more uniform use of CERNSP and the PARC cluster in the future.

(k) It was confirmed that large FORTRAN programs can be ported to CERNSP, including library routines. However there may be problems in some cases with REXX routines and in graphics (for example GKS will be replaced by PHIGS). No successor for TOPDRAW is foreseen (This was a SLAC program which will disappear). People are encouraged to contact M. Marquina for individual help with porting their programs.

(l) There is no direct XFIND in UNIX, but a similar tool is being tested currently.

(m) Users are encouraged to make full use of the user support office UCO.

B.W. Allardyce

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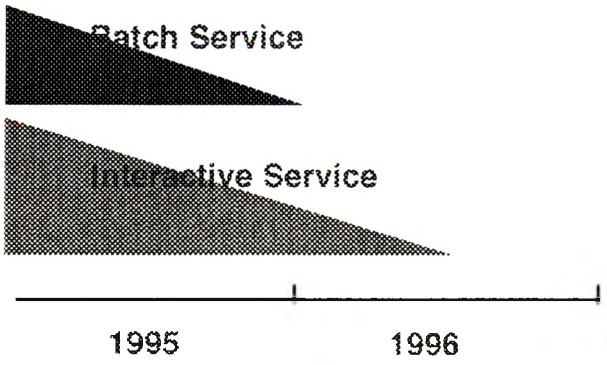
Introductory Remarks

- Welcome !
- Objectives of the meeting
  - NOT to discuss at length CERNVM closure (negative)
  - but to present new services (positive)
  - get feedback
  - establish series of meetings
- Some remarks on CERNVM anyway!
- Distributed computing at CERN and elsewhere
- CN approach to Desktop Computing
  - Architectures to tackle the hidden costs of distributed computing and non-scaling support staff

CERNVM Rundown



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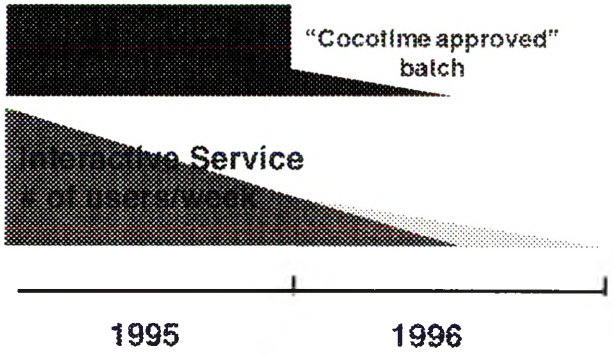
CERNVM Rundown



DCI Group Services

- The "right-sized" VAX/VMS Services,
- The traditional UNIX services, mainframe-style, based on DXCERN and DXNEWS
- The Workstation Support services
  - extended services, front-desk added
- Sundry established servers, e.g. ASIS, WWW, database...

- The Novell-based NICE architecture services, including Windows systems
- The AFS-based CUTE architecture services, including Workgroup and PLUS services

- A new MAIL server, access IMAP, (and POP)

- and the VENUS Project, LHC prototyping

C.M.S. Jones
First Interactive Migration User Meeting
22 May 1996
8

C. JONES 6/95

"Workgroup Services"
(or Distributed Computing Services)

- provide a complete infrastructure for the day to day work of the user
- including
  - handling electronic mail
  - browsing through the news
  - preparing documents or presentations
  - doing program development and
  - interactive data analysis
  - working with a particular application
  - etc.
- these services will be provided on both
  - UNIX-based platforms, and
  - Windows-based platforms, with some provision also for Macintoshes
- Given the number of machines involved, the adoption of some architecture and standards is obligatory

Architecture

- Minimize number of files stored on individual machines
- and number of different installations
- centrally organized "Home Directory File Services"
- centrally organized "Binary Program Servers"
- these servers designed to be replicated as necessary for required performance and capacity
- valid for
  - PCs and Macs
  - X-terminal servers
  - individual desktop machines
  - larger workgroup server machines
  - public login UNIX servers, PLUS
- A heavy dependence on the network to deliver the services
- Strong push to a Structured Network

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Serving the Desktop

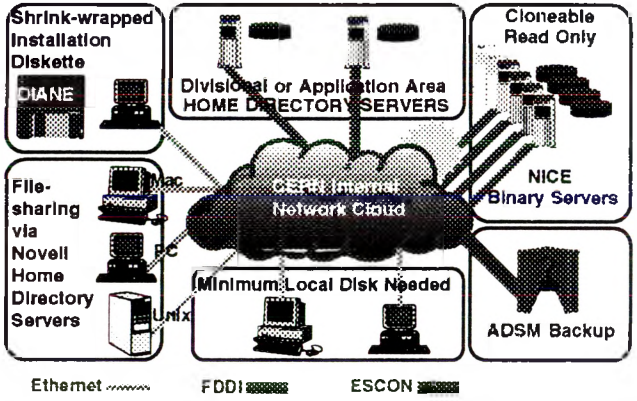
- The Major Service Components
  - Home Directory File Services
  - Binary and Source Program Services
    - Reference environments
  - Common Shrink-wrap environments
  - Electronic Mail Services, multi-media
  - Remote access from home and Internet
  - Information Services
  - Recommended sets of applications
  - Recommended hardware configurations
  - X-terminal servers, standardization and support
  - centralized responsibility for
    - licensing, registration, accounting, security...
  - organized print services
  - a reliable, managed and sufficiently fast network

- Aim: CN provides the infrastructure for the workstation to plug into the network and need nothing else

The NICE Architecture

Novell Integration Coordination and Evolution

The Architecture of the Novell based services



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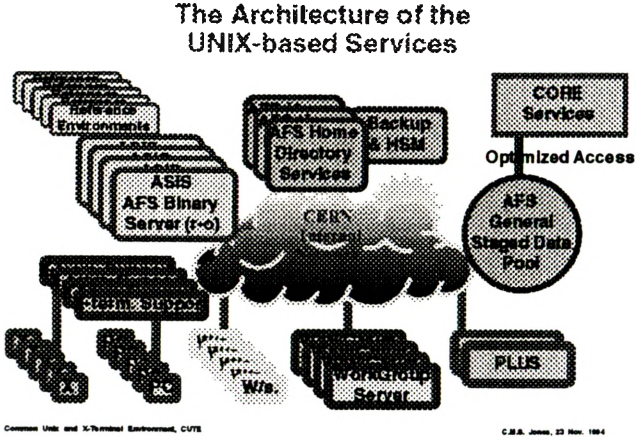
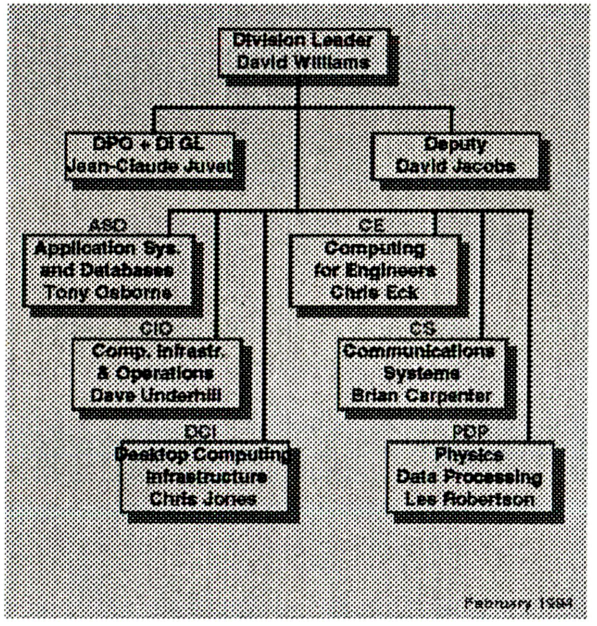
The CUTE Architecture

Common Unix and x-Terminal Environment



Computing and Networks Division



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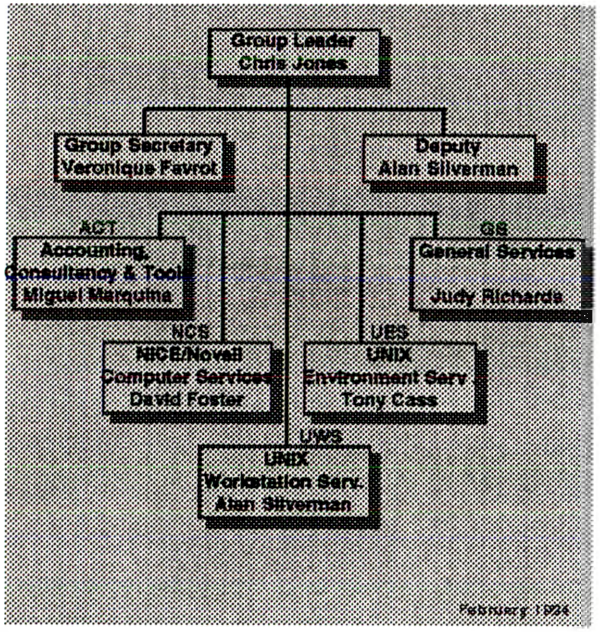
Desktop Computing Infrastructure



For X-terminals and Unix systems, the situation in the PS division begin 1996 should be the following:

- IBM/AIX: 71 (today 8)
  - — 63 stations, 8 servers, mainly used to operate the accelerators.
- DEC/Ultrix: 38 (today 101)
  - — 35 stations, 1 server.
  - — 2 servers for PS/SL database.
- DEC/OSF1: 1
- SUN Sparc stations: 6
  - — should run Solaris 2.x
- NCD X-terminals: 12
  - — should be serviced by an IBM server end 1995.
- LynxOS front-ends
  - — 110 MVME147/167 and 3 PCs, mainly used for the operation.

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Integration with CN ressources:

- SPRINGER service is used to print on Postcript printers.
- ASIS is used to find CERN or public domain programs (paw, emacs, ...).
- User's home directories and Mail spooling files should move to AFS.
- Possible automated central backups.
- Oracle program development will be taken across AFS.
- Whenever possible, central installation from CN and SUE will be used.

Why?

- We operate accelerators, not computers.
- General purpose computing and public network management are not critical for the operation.
- We have no reason to duplicate a work already done centrally.

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Problems with cernvm replacement:

- Formation to AIX .
- Conversion of PS administrative applications (ex: PS inventory).
- Editor choice: why no rand on cernsp?
- FrameMaker, like a lot of other figures donot work by default behind adam.
- AFS login invalid after 24 hours.
- Mail redirection out of cernvm.
- RIOS future.
- Contradictions between NICE and CUTE:
  - — NICE supports only the latests releases and preferably commercial products.
  - — CUTE support only old system releases and seems to support only public domain stuff.
  - — No transparent file exchanges.

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Other needs:

- AFS or DFS don't exists for LynxOS and the only solution is to move towards a cross-development for M68K and later for PowerPC.

Other central services used by PS:

- VXCERN: LEAR software.
- DXCERN: RMS68K (ends with AAC), OS/9 (still used?) and mail.
- PARC: will CERNSP replace it?
- DSY-SRVx: MaxPlus

A. RICHE
6/95

QUESTIONS SOULEVEES PAR LE REMPLACEMENT DE CERNVM PAR CERNSP ET PARC. QUE DEVIENT VAX?

I. PROGRAMMES EXISTANTS.

Le **temps consacré au calcul** peut varier considérablement selon les fonctions et les circonstances, mais en tout cas peu de personnes ont du **temps à consacrer a l'informatique** dans une division dont ce n'est pas la vocation, (PS), comme pour les divisions autres que CN.

D'où **l'inquiétude devant des changements drastiques des procédures** à utiliser et la **perte considérable de temps** et d'expérience mise en jeu.

Quel est le degré de complexité des conversions à opérer.

Cette conversion sera-t-elle **différente selon la machine** (PARC,CERNSP...)?

1. Conversion des **programmes** pour UNIX.

2. Conversion des **parties graphiques** des programmes pour UNIX.

3. Conversion des **fichiers d'éxécution** des programmes pour UNIX.

Ceci n'impose-t-il pas:

4. Le maintien des bibliothèques de programmes existantes (CERNLIB,NAGLIB...).

5. Le maintien des facilités graphiques existantes.

A. RICHE
6/95

II. PROGRAMMES A VENIR.

Un **calcul est une expérience**, avec des conditions d' opération, des interprétations, des résultats qui sont analogues à ceux d'une expérience.

Cela peut être relativement simple à faire, surtout si on est aidé par un bon support de programmes des librairies et par des possibilités de voir les résultats sous forme graphique.

Un calcul demande à être **corrigé, développé**.

Pourtant,

Un certain nombre de **machines nouvelles** sont présentées comme des machines faites pour:

l' **exploitation intensive de programmes,**

et **non pour le développement de nouveaux programmes,**

sans doute par ce que on a pas l'intention de doter ces machines des facilités indispensables pour le développement. (PARC)

A. RICHE
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Le maintien de l'activité de **création de programmes** ne peut se faire que si des facilités réelles existent:

1. Facilités **d'édition** pour création ou modification de FORTRAN (l'éditeur pleine page VM supprimeét remplacé par des éditeurs UNIX considérés par beaucoup comme moins commodes ('vi'...).

2. Facilités **de compilation**: Possibilité de recompiler une routine sans avoir à recompiler un programme entier, ce qui utilise inutilement les machines et accroit les attentes (PARC).

3. Facilités **de diagnostic** des erreurs.

4. Facilités **graphiques** pour les programmes FORTRAN, qui soient les plus simples possibles (comme l'est par exemple TOPDRAW), et non pas seulement des systèmes graphiques extrêmement ambitieux qui sont beaucoup trop compliqués et quelquefois incapables de répondre à des demandes élémentaires (PAW).
Que devient GKS?

5. Richesse des **programmes des bibliothèques** et facilité d'utilisation. Par exemple, NAGLIB propose pour chacune des routines un programme d'essai: on peut calquer les séquences d'appel sur ce programme d' essai, ce qui évite les erreurs de déclarations, de dimensions et économise ainsi un temps considérable.

PS/HI/E.Tanke
7/June/1995

SOME REMARKS ABOUT THE MIGRATION OF CERNVM

Concerning the desktops and the SP2 :

- **Training of new users ?**
- **Lack of user support (both on- and offline) :**
  - **Online : Need for a "global" help facility like CERNVM's xfind**
  - **Offline : "It works on my computer" or simply nobody available, hence users have to ask other users for solutions**
- **Other services and features :**
  - **Standardization of certain features, e.g. Why can't I recall commands at the touch of a key (SP2, PARC)**
  - **Proper recognition of terminal types, like VT200 (SP2, PARC)**
  - **Why are new versions of software installed regardless of the hardware it has to run on ? (desktops)**
  - **Why insist on so many new versions of software in the first place (though theoretically maybe more powerful, seldom without bugs) (desktops)**
  - **Why insist on yet another editor rather than an existing one ? (SP2,PARC)**
  - **Transparency for the user concerning the 16 nodes on the SP2**