

H30/VM/Linux S390 in Research domain at CLIPS (Grenoble, France)

- Teaching phase
 - Legacy Mainframe
 - Unix/Linux oriented systems
- Research phase
 - Research domain
 - H30/Linux
 - Evolution towards Linux servers
- Conclusion

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Teaching phase

- LEGACY teaching
 - Teach a mainframe culture, a business data processing, which is nowadays the domain with the most demands (people, SW, HW...)
 - Pratical environments (directed works) on Unix/Linux
- System teaching
- Teach the main system criteria
 - Do exercises in Linux environment
 - Simplicity, easy implementation, reliability, become a real
 - Use the huge possibilities proposed by OpenSource community

Research phase

- Why H30 ?
 - Migrate applications on Linux (open systems, parallel servers)
 - Test & size different capacities/powers for huge servers (large transaction numbers)
 - Promote this kind of architecture & Linux with z/VM Hypervisor
 - In Research world
 - More especially to young research workers

Grenoble environment

- IMAG (Informatique et Mathématiques Appliquées de Grenoble)
 - CLIPS (Communication langagière et Interaction Personne Système)
 - GETA (Groupe d'Etude pour la Traduction Automatique)
 - GEOD (Groupe d'Etude de l'Oral et du Dialogue)
 - MRIM (Modélisation et Recherche d'Information Multimédia)
- CTL (Centre de Technologie du Logiciel)

GETA

- GETA
 - Created in 1960s by Bernard Vauquois, managed now by Christian Boitet
 - Near 25 people
 - Worldwide reputation for TAO innovations
 - Several developed applications for Ariane-G5 (from models to operational systems)
 - Numerous works
 - Participation in C-START & Nespole! Projects in speech TAO

ARIANE-G5 Software

- Generator of automatic languages management tools
 - Methodological, theoretical, practical aspects
 - Testing on several languages (Fr, Ru, De, En, Ba, Ch, Jp, Por)
- Developed in IBM environment (PLI, ...) on VM/CMS since 1960s

Different computers

- 360/67 of CICG (Centre Inter-universitaire de calcul de Grenoble)
- Hours rental in Ecully
- 4331
- 4361
- 9221-130
- H30
- And always VM...
- ...And now Linux

Why VM & Linux/390

- VM is an hypervisor
 - Immediate available power
 - Automatic reconfiguration
 - Automatic & easy management
 - All is centralized on only one server
 - Several operating systems on only one server
 - Owned systems
 - Open systems

Linux/390 in Grenoble

- Linux
 - Red Hat with 8 virtual machines
 - Open source
 - Portable
 - Present Technology
 - Open,
 - Well-known & easy use
 - More and more reliable
 - More and more used
 - Industry
 - Teaching & Research
 - Public and private sector
 - ...

VM/390 Architecture

- Available parallel power
- Reliability
- Large servers
- Non-disruptive environment
 - VM/Linux in development
 - VM/Linux in production
- Easy sizing

Linux in laboratory (GETA-CLIPS)

- Aim : Mainly use H30/VM/Linux like an application server with numerous users
- H30 is also more dedicated to a sizing a exploitation environment than a development one, thanks to Linux'easy applications deployment.

Linux applications

- Ariane
 - Non-disruptive application for Ariane-G5 (since 1960)
 - New « portable » version on Linux Ariane-Y (work in progress)
- PILAF
 - Morphological analyser
- UNL (United Networking Language, (United Nations))
 - Interactive convertor \pm (text \rightarrow UNL)
 - Automatic unconvertors (UNL \rightarrow text)
 - 16 languages

Existing or expected Servers

- Papillon (base lexicale multilingue coopérative)
 - French, English, Japanese, German, Chinese, Vietnamese, Malayan,
- ERIM
 - Integrated translating platform on network
 - Free access to data (bilingual dialogues)
- ENHYDRA
 - Development of open software (for dynamic web sites)
 - H30 utilized by developers to create Linux/390 version

- **CSTAR III**
 - International Consortium
 - Aim : Online translation of dialogues
 - World event in July 99
 - IBM support

Conclusion

- H30/VM/linux
 - Hypervisor
 - Non-disruptive, automatic & easy power management (automatic partitioning), virtual machines shared, servers consolidation, power shared...
 - Linux/390
 - Portable, reliable
 - OpenSource world
 - Some issues to get last released versions
 - Virtualisation