Computing at MPP

Stefan Kluth

MPP Computing commission, chairman

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Personnel C/N Group

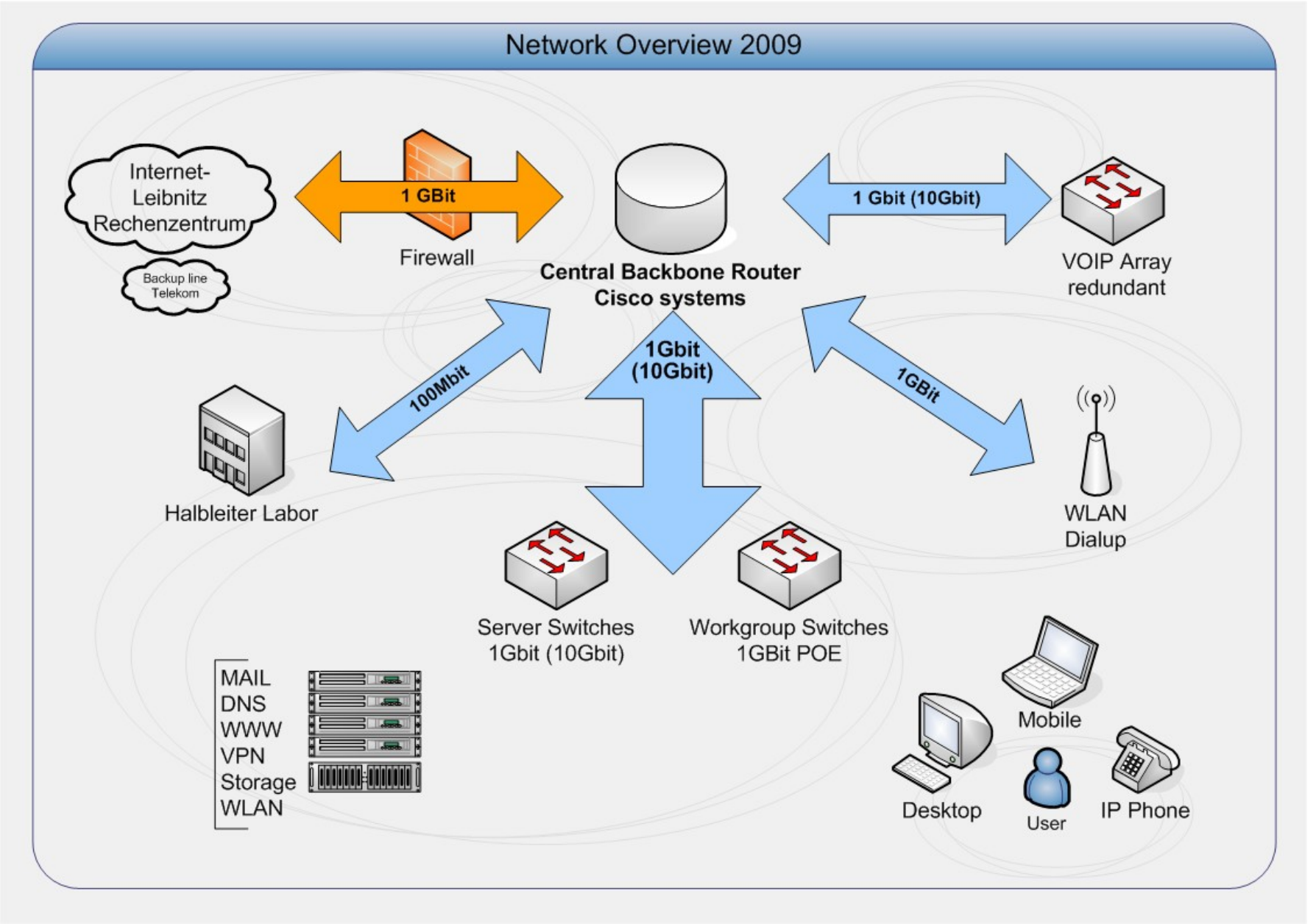
Head of group: Leupold, U.

	Linux	MS	SW	LAN	HW	Pr	Grid
Leupold, U.	x	x	x	x	x		
Kriesel, A.	x(reg.)				x	x	
Krämer, M.				x			
Pan, Y.	(x)	x					
Salihagic, D.	x		x				x
Vidal, M.	x(AIX)		x		x		
Krebs, K.				x			

Hardware Overview

- Central servers
  - 2 IBM BladeCenter, 56 cores (ATLAS)
  - 28 fileservers with ~85 TB
  - mail, web, DNS, accounts, backup, printer, …
  - ~500 cores for batch (BCs and PCs)
- Experimental and engineering groups
  - ~400 PCs, 2/3 Linux, 1/3 MS
- Theory group
  - ~80 PCs (Linux), 1 DEC Alpha

LAN


Network Overview 2009
Internet-
Leibnitz
Rechenzentrum
Backup line
Telekom
1 GBit
Firewall
Central Backbone Router
Cisco systems
1 Gbit (10Gbit)
VOIP Array
redundant
100Mbit
1Gbit
(10Gbit)
1GBit
Halbleiter Labor
WLAN
Dialup
Server Switches
1Gbit (10Gbit)
Workgroup Switches
1GBit POE
MAIL
DNS
WWW
VPN
Storage
WLAN
Mobile
Desktop
User
IP Phone

Software overview

- OS
  - Linux (MPI, Debian → Ubuntu 10.04 (ATLAS/BELLE/ILC), peb (theory) → Opensuse 11.3)
  - AIX (1 server left), Solaris (Elektronik)
    - MacOSX, VMS without C/N support
  - MS Windows (Admin, Labs, h1win, thwin)
- Applications/libraries
  - Mathematica, Maple, Portland pgf compiler, IDL, NAG, Matlab, ifortran
  - OSS with C/N group & mpicc

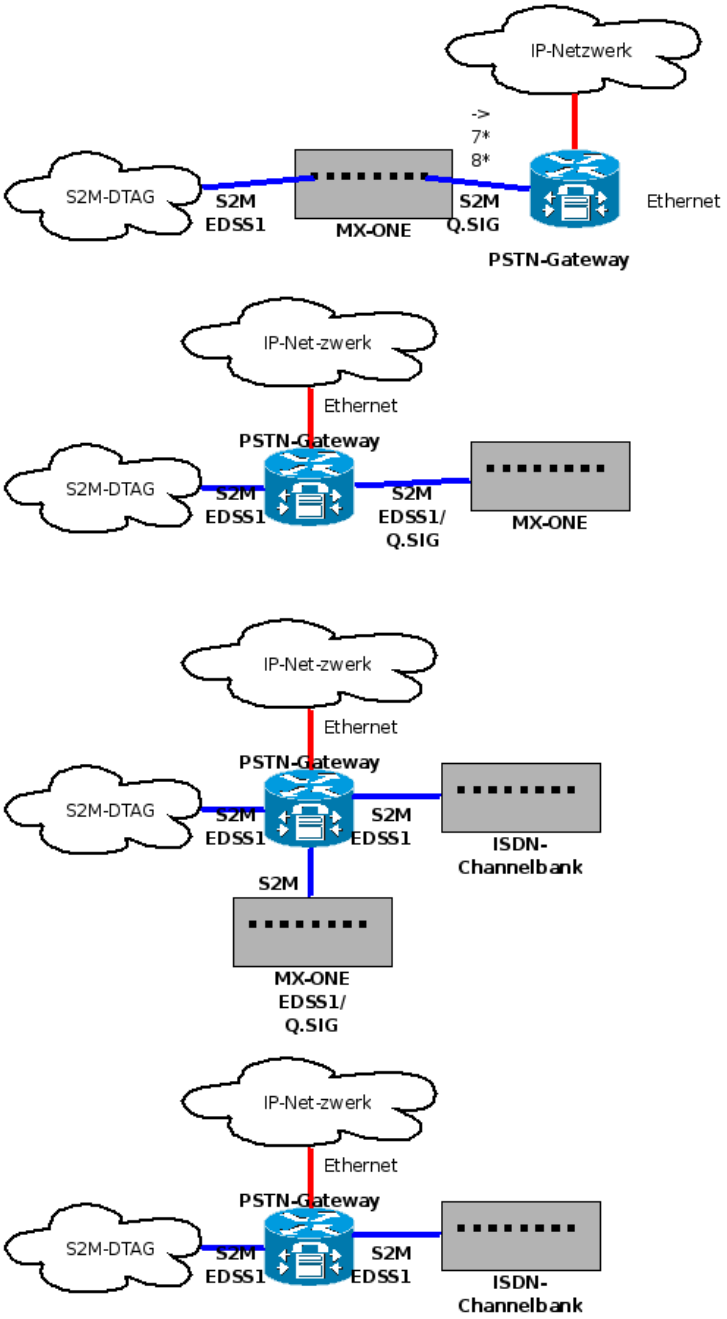
Software Applications

- Commercial
  - Oracle 10, Infoparc cms Fiona, Tivoli (backup), Wilma (WLAN manager), Gleitzeitserver, LogInventory, HP ProCurve Manager
- OSS
  - Indico, mysql, root, CERNLIB, phpBB, twiki, Asterisk, eGroupware, ...

New Phonesystem

- MX-ONE plus Cisco/Asterisk VoIP system
  - consulting (BayCom) done
- In-house
  - new GBE LAN edge switches with PoE and vlan (done)
  - production service with >150 phones
- Future (2011)
  - Upgrade Asterisk and phone firmware
  - phase out MX-ONE

Phonesystem Migration



1 MX-ONE und VoIP parallel, replace phones, keep numbers

2 Phones replaced, MX-ONE serves old legacy phones

3 ISDN channelbank or SIP adapter for legacy phones and fax machines

4 MX-ONE switched off

C/N Plans 2011

- ATLAS-ILC/Belle homedir servers
- Consolidate “RZF”
- New phonesystem
- LAN 1 → 10 GBE
- WAN 1 → 10 GBE
- WLAN AP in rooms
- Linux migrations
- Firewall upgrade
- Condor → SGE
- Windows server to W2008
- nfs3 → nfs4/afs?
- nis → Krb/LDAP?

MPP computing commission

- Subcommittee of IA
  - members: Abt, Bethke, Hahn, Kluth, Leupold, Reimann, Simon, Stonjek, Wagner
  - meetings are public
- Mandate
  - oversight of C/N operations
  - medium- and longterm planning
- Please consult before buying hardware or requiring services

Rahmenverträge

- MPG has procurement contracts for IT
  - hardware, LAN, software, services
  - order without tendering procedure
  - competitive prices (still check F&L or street prices)
  - FSC, HP, IBM, Acer, Dell, Lenovo, Apple, ...
- Experience
  - good for standard orders
  - companies respond well

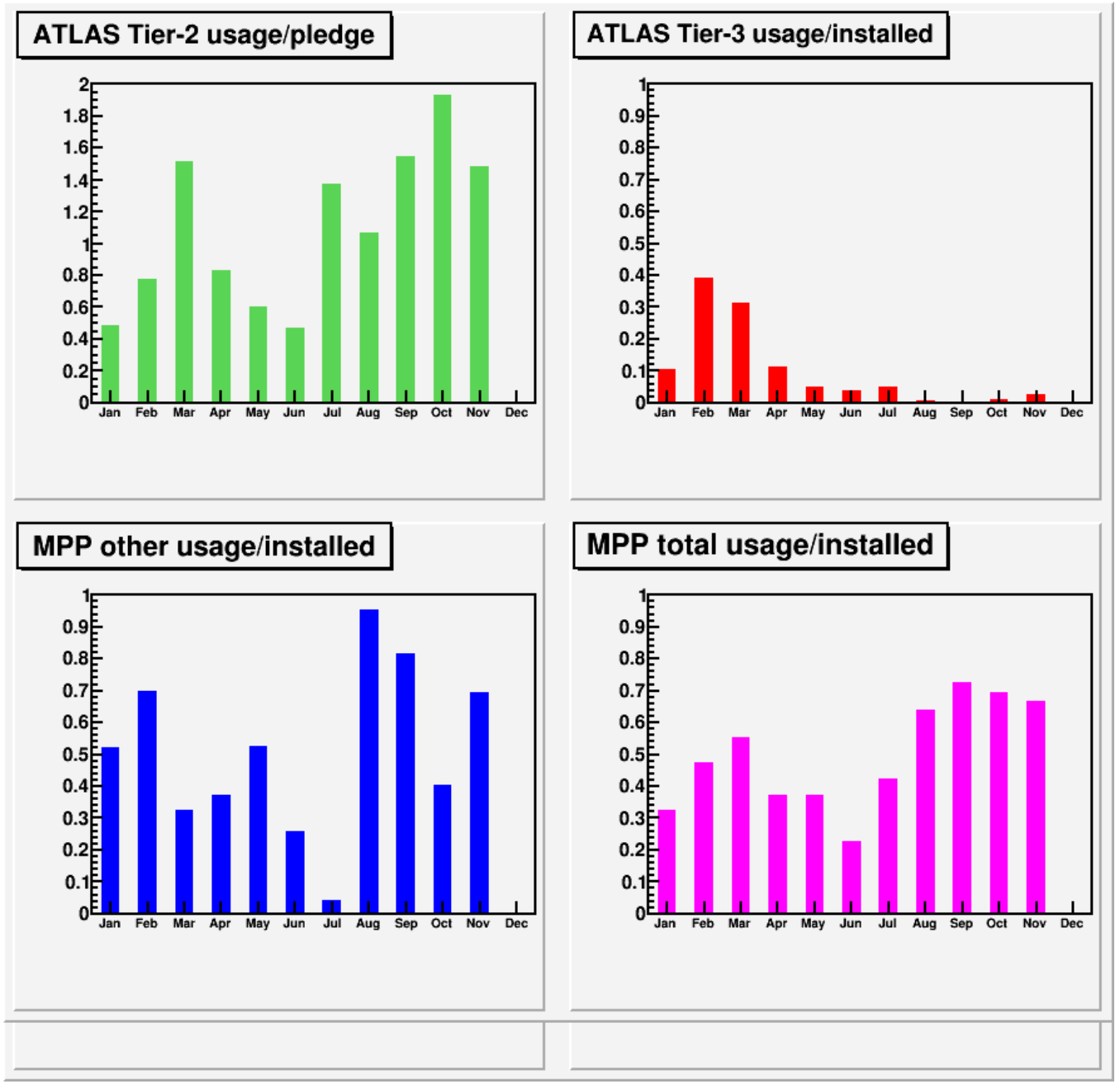
Computing at RZG

- Operation
  - main users ATLAS (WLCG), MAGIC
  - open for all MPP groups (10% share)
  - connection via 1 GBE link
- Usage
  - need RZG account (via web-form)
  - direct access e.g. “ssh at01.t2.rzg.mpg.de”
  - direct access to dcache storage (dccp, dcap)
  - direct access to tape storage via afs

Computing at RZG

- Current status
  - 884 cores, 2 GB/core, > 300 TB disk
  - ATLAS Tier-2/3 and MDT calibration
  - MAGIC analysis centre
  - Others: theory, GERDA, ILC, BELLE(II)
- Upgrade for 2011
  - + 792 cores, + 500 TB, new 10 GBE LAN
- Other tasks possible at RZG
  - AIX (xlf), parallel computing

Computing at RZG



Use HS06 benchmark

Usage = HS06*s normalised to HS06*s available in period

Overall ~50%
ATLAS grid ~100%

Capacity in 2011 more than doubled! Please use!

Computing at RZG

- Software
  - SLES10/11, WLCG, dCache, afs, SGE
  - access to tape storage (via afs)
  - various gcc versions, other tools
  - experiment software
- Functions
  - WLCG: send/receive grid jobs and data
  - local SGE batch jobs
  - Work interactively

Summary and Trends

- MPP IT landscape continuously changing
  - rapid changes in hard- and software
  - keeps C/N staff busy
- Mass data storage at MPP growing fast
  - > 100 TB soon? CPU power? Management?
  - consider using RZG cluster
- IT security
  - needs a well-managed setup
  - requires some protocol upgrades