

# Computing at MPP

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MPP Computing Commission  
+ Fachabteilung IT

MPP Project Review, 17.12.2012

# ~~C/N group~~ Fachabteilung IT

- C/N group upgraded to Fachabteilung IT

# Personnel Fachabteilung IT

Head of group: Erhardt, A.

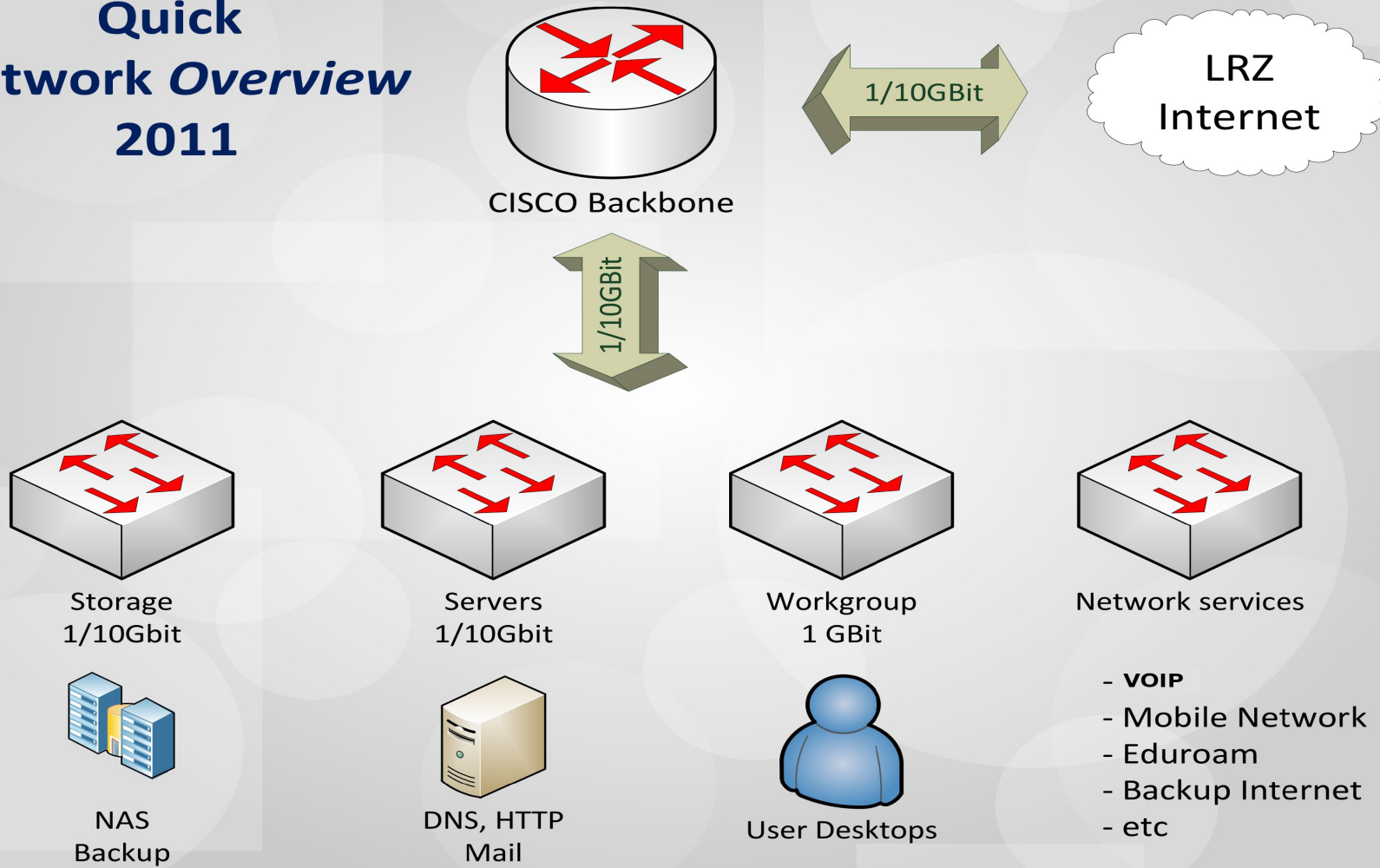
	Linux	MS	SW	LAN	HW	Pr	Tel
Erhardt, A.	x	x	x	x	x	x	x
Leupold, U.	x	x	x	x	x		x
Krämer, M.				x			x
Pan, Y.	(x)	x					
Salihagic, D.	x		x		x		
Vidal, M.	x(AIX)		x		x		
Krebs, K.				x			x

# Hardware Overview

- Central Servers
  - 29 file servers with ~ 90 TB
  - mail, web, DNS, accounts, backup, printer, ...
  - ~730 cores in condor for batch (BCs and PCs)
- Experimental and engineering groups
  - ~400 PCs, 2/3 Linux, 1/3 MS
- Theory group
  - ~ 80 PCs (1 DEC Alpha)

# LAN

## Quick Network Overview 2011



# Software overview

- OS
  - Linux (Ubuntu 10.04/12.04 (ATLAS/BELLE/ILC)), OpenSUSE 12.2 (Theory), RHEL & clones
  - AIX, Solaris (Electronics workshop)
  - MacOSX, VMS (without C/N infrastructure)
  - MS Windows (Admin., Labs, h1win, thwin)
- Applications / libraries
  - Mathematica, Maple, Portland & intel compilers, IDL, NAG, Matlab, ...
  - OSS with C/N group & mppcc

# Software Applications

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

# New Phonesystem

- Cisco/Asterisk VoIP system
  - Phone system in production service
  - Betriebsvereinbarung Telefonanlage
  - TLS-aware phone firmware installed
  - Templates for different phone use cases developed
  - Maintenance contract with BayCom



# Phonesystem Observations

- Power outage revealed insufficient UPS capacity → UPS for 30+ min of service after power loss installed (needs testing)
- Fax over VoIP not yet stable

# IT Security

- MPP Email infrastructure redesigned:
  - No NFS mounts from other desktops needed on mail/imap server needed for service anymore → significant increase in service reliability
  - No NFS export of mail storage into MPP after security incident on Cisco IRS in 2012.

# C/N Plans 2013

- Replacement of old WLAN Aps
- Phase out all 100MBps Ethernet in scientific environments
- NFS+NIS → Krb5/LDAP+AFS: needs very thorough evaluation of MPP situation and future requirements.
- Finish Linux OS upgrades
- Tivoli Backup\*\*2 to RZG

# MPP computing commission

- Subcommittee of IA
  - members: Abt, Bethke, Erhardt, 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 (1)

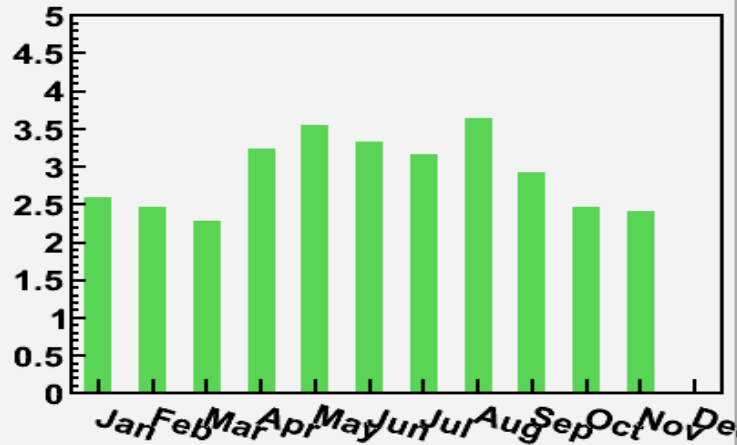
- Operation
  - main users: ATLAS (WLCG), MAGIC
  - open for all MPP groups (10% share)
  - connection via 10GbE link
- Usage
  - need RZG account (via web form)
  - direct access: “ssh mppui[1,3].t2.rzg.mpg.de”
  - direct access to dcache storage (dccp, dcap)
  - Direct access to tape storage via afs

# Computing at RZG (2)

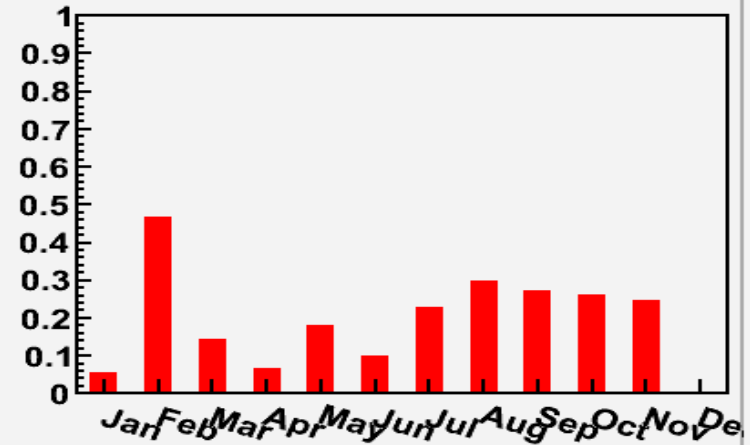
- Current status
  - ~ 3000 cores + ~ 1400 virtual (HT) cores,  
2 GiB/core, ~ 2200 TB disk
  - New intel arch: HT cores almost as good as real ones
  - ATLAS Tier-2/3 and MDT calibration
  - MAGIC analysis centre
  - Others: Theory, GERDA, ILC, BELLE(II)
- AIX (xlf) on IBM POWER @RZG

# Computing at RZG: Usage 2012

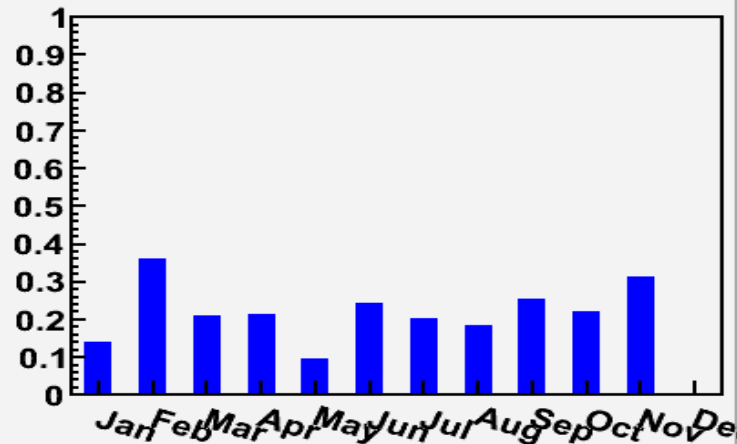
ATLAS Tier-2 usage/pledge



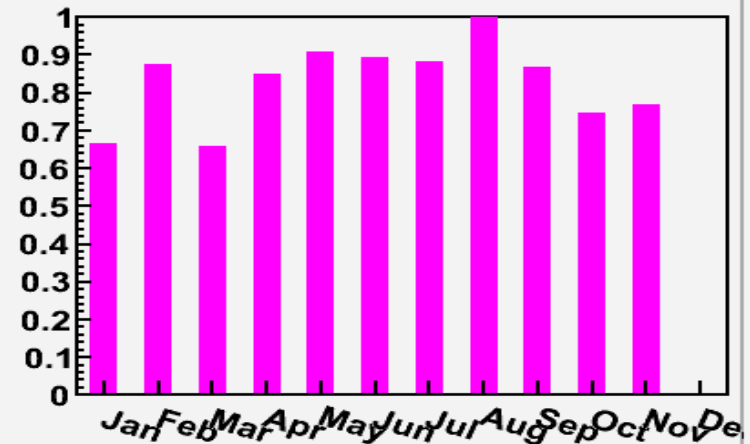
ATLAS Tier-3 usage/installed



MPP other usage/installed



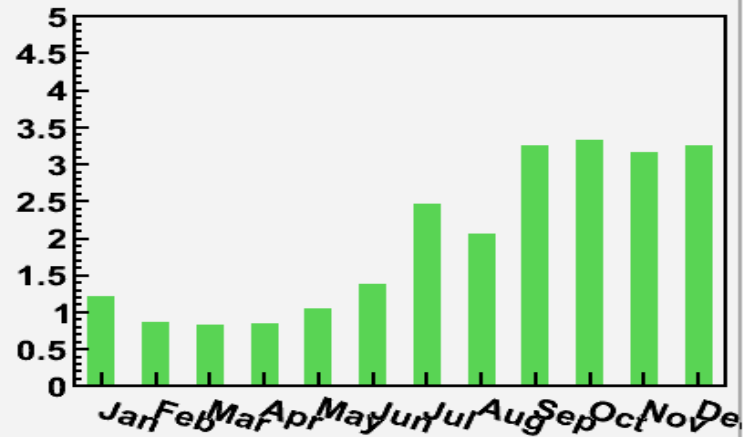
MPP total usage/installed



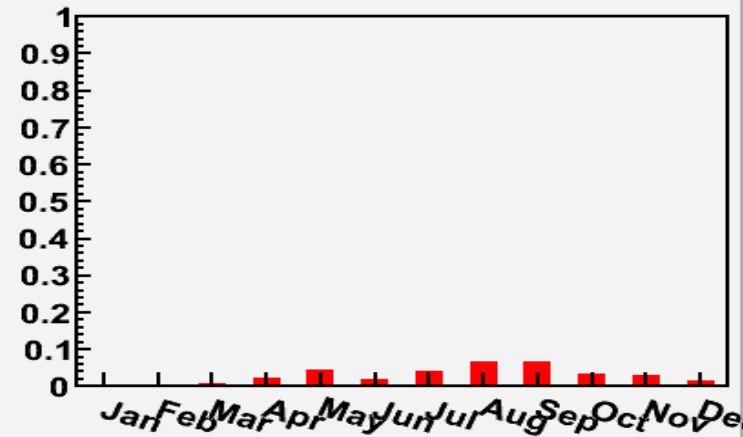


# Computing at RZG: Usage 2011

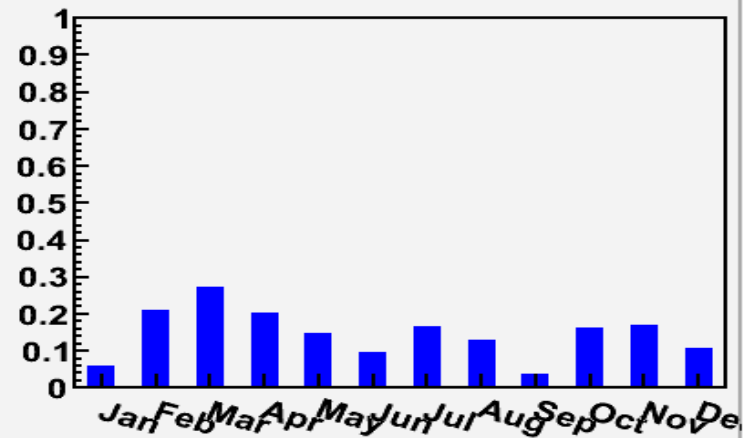
ATLAS Tier-2 usage/pledge



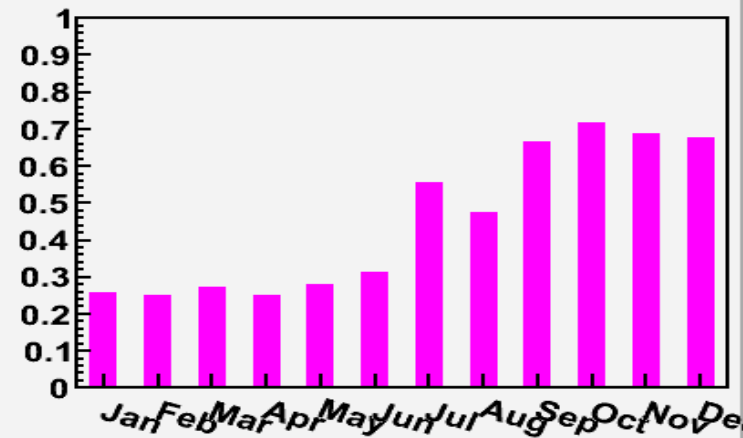
ATLAS Tier-3 usage/installed



MPP other usage/installed



MPP total usage/installed



# Computing at RZG (5)

- Software:
  - SLC5, WLCG, dCache, afs, SGE
  - access to tape storage (via afs)
  - various gcc versions, other dev. Tools
  - experiment software
- Functions
  - WLCG: send/receive grid jobs and data
  - local SGE batch jobs
  - Work interactively: ([mppui\[1-5\].t2.rzg.mpg.de](http://mppui[1-5].t2.rzg.mpg.de))

# Summary and Outlook

- 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. CPU power? Management?
  - use RZG cluster+storage (10GbE to MPP)
- IT security
  - needs a well-structured and -managed setup
  - requires some protocol upgrades