

Gefördert durch:

Ministerium für Innovation,
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des Landes Nordrhein-Westfalen



Einfach. Sicher. Riesig.



sciebo
dieCampuscloud

**sciebo – The Academic NRW Cloud Storage
Service**

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University of Münster



> sciebo

- sciebo is the brand name, short for “science box”
- Sync and share service for universities and universities of applied sciences in North Rhine Westphalia
- Up to 500,000 users in NRW (if all 30 universities and applied universities participate)
- Organized as a consortium of all participants with the University of Münster as the head



> Scenario and Software

- Started in February 2015 with 12 institutions; 25 at the moment
- 30 GB/user with the possibility for the employees to increase the quota up to 500 GB
- Project boxes for groups (30 GB - 2 TB)
- Guest accounts
- ownCloud 8.2.5 Enterprise
- RedHat 6/7
- Galera cluster with MariaDB
- Snapshots of Spectrum Scale enabled for disaster recovery



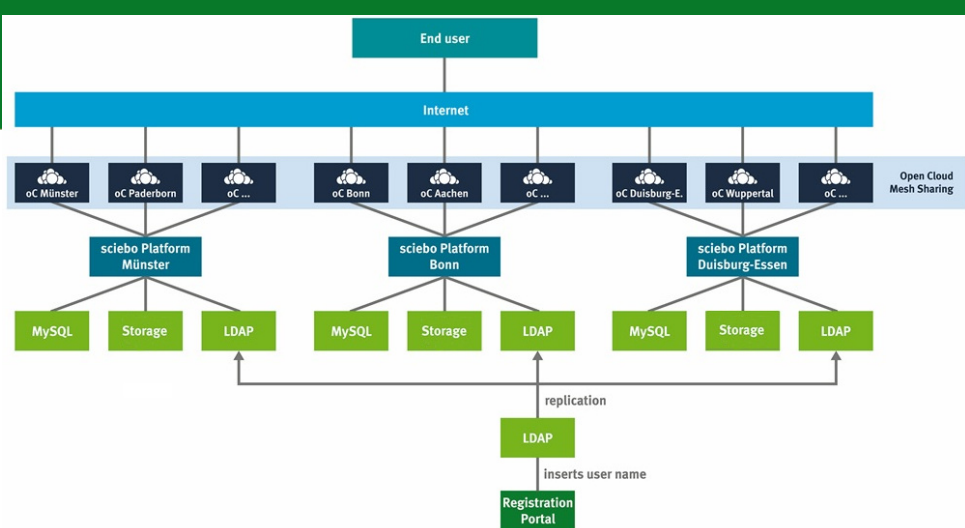


> Three Sites

- One ownCloud installation per institution
- (At the moment) No replication of user data between the sites
- Sharing between institutions via the server to server sharing or federated cloud sharing

Reasons for multiple sites:

- Lower room requirements per computing center
- More aggregated network bandwidth
- Servers are closer to users
- Scaling the service becomes easier



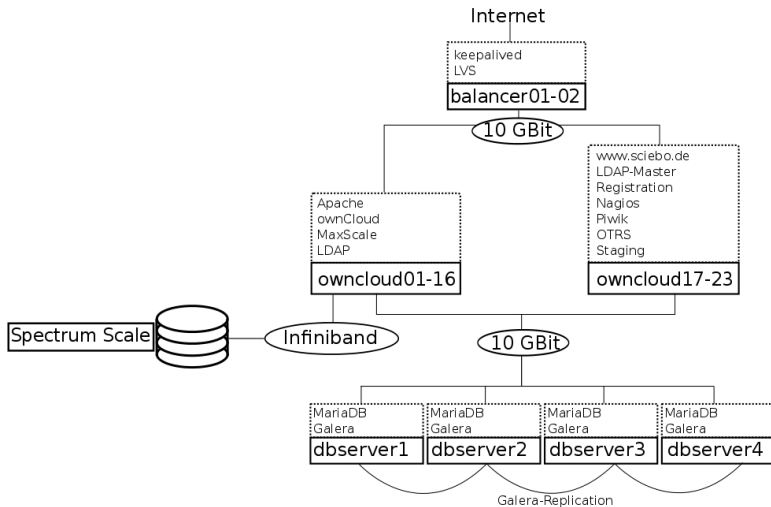


> Hardware

- Storage: 5 PB at three sites (3 PB in Muenster, 1 PB in Essen and 1 PB in Bonn)
- Sizing of server hardware bases on POC of IBM and ownCloud
- File system: IBM Spectrum Scale with declustered RAID and triple parity
- Application servers: 16 IBM servers (16 cores, 128 GB RAM) for ownCloud per site
- Database: 4 IBM servers (20 cores, 256 GB RAM, 6 800 GB SSD [RAID 10]) per site
- Load balancers: 2 Linux machines per site (LVS with keepalive)
- Management: 1 server per site



> Distribution of Services





> Umgesetzte Änderungen

- Derzeitiger Stand Version 8.2.5 Neue Features: UI Modifikationen,
- Desktopclient: Teilen, Performanceoptimierungen, Benachrichtigungen, besserer Umgang mit Word-Dateien, <https://dragotin.wordpress.com/2016/06/24/owncloud-client-2-2-x/>
- Projektboxen sollen bald beworben werden
- Deprovisionierung
- Backup der Daten über Forschungsnetz
- Datenbankoptimierungen
- Störungen: Metadatenverlust im März
- Nextcloud
- Kommunikation: Wiki



> Ausblick

- Nächste Version: 9.0.3, Update voraussichtlich Juli oder August.
Neue Features: Vereinfachung beim Teilen, Kommentare, alle, mit denen Objekt geteilt ist werden angezeigt, Tags
- Server: Betriebssystemupdates auf RedHat 7
- Test von Backup der Daten von Aachener Mitarbeitern ins Aachener TSM
- owncloud Roadmap: Performanceoptimierungen beim Federated Sharing, Verbesserte Login Mechanismen (2 Faktor, Kopplung an Geräte), neuer Chunking Algorithmus
- Mobilclient: Android N/iOS 10 Update, UX, Activity, Notifications, Interactive Design

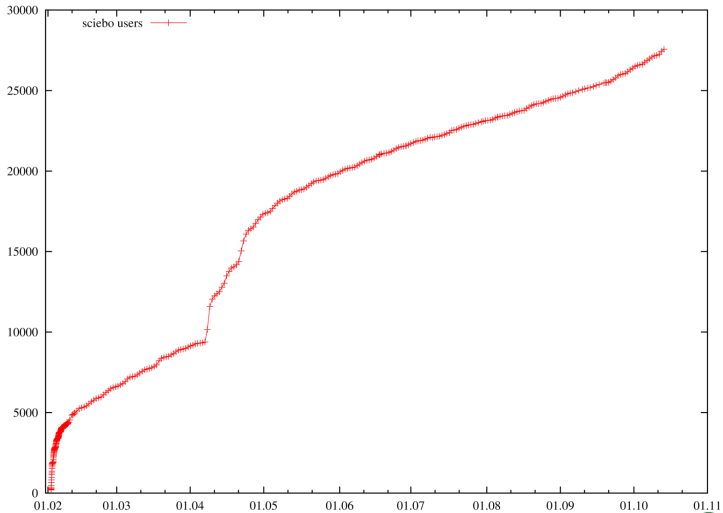


> Featurewünsche

- Collabora
- Kalender
- Selbst verwaltete Gruppen:
<https://github.com/owncloud/core/issues/24684#issuecomment-221498025>

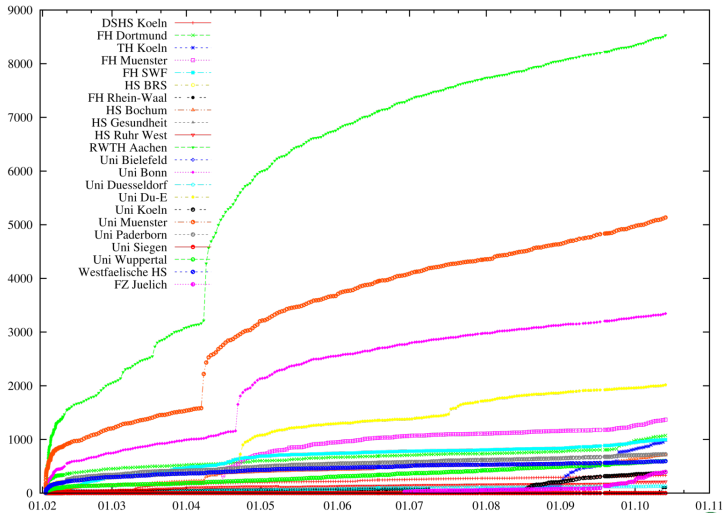


> Registered users



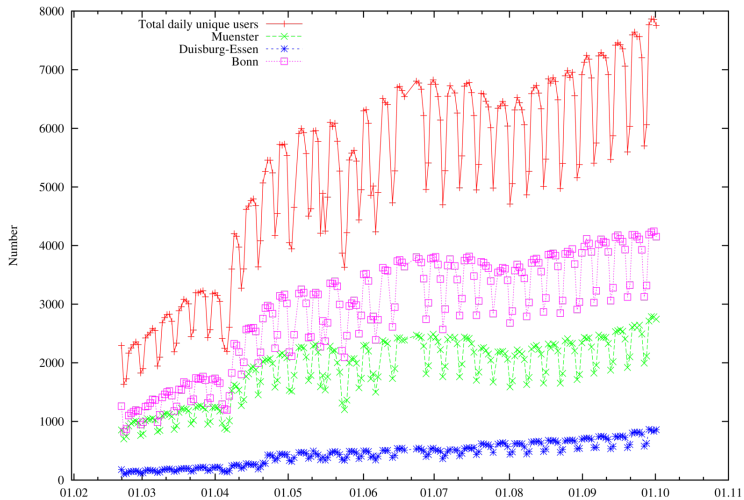


> Registered users





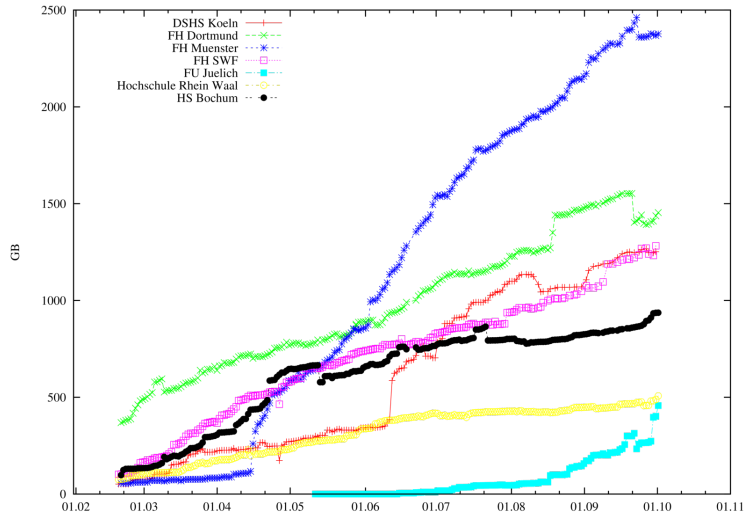
> Actual users



⇒ Users tend to run their sciebo clients ^{Day} at weekends, too. (Use them on their laptops, home computers...)

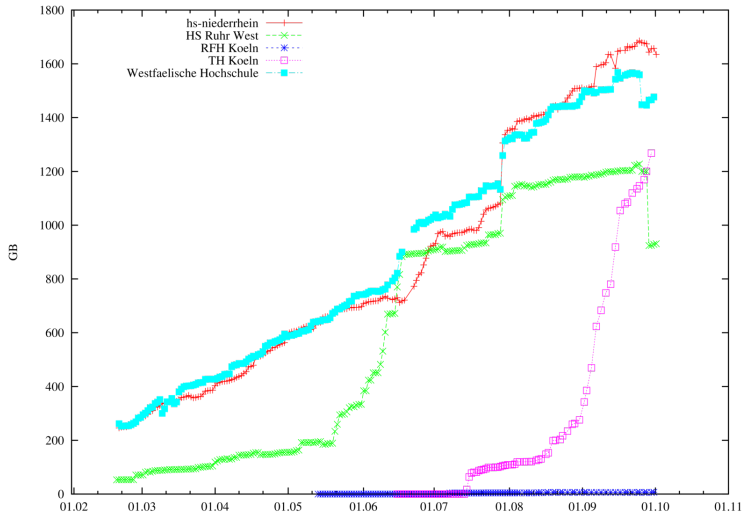


> Amount of data I



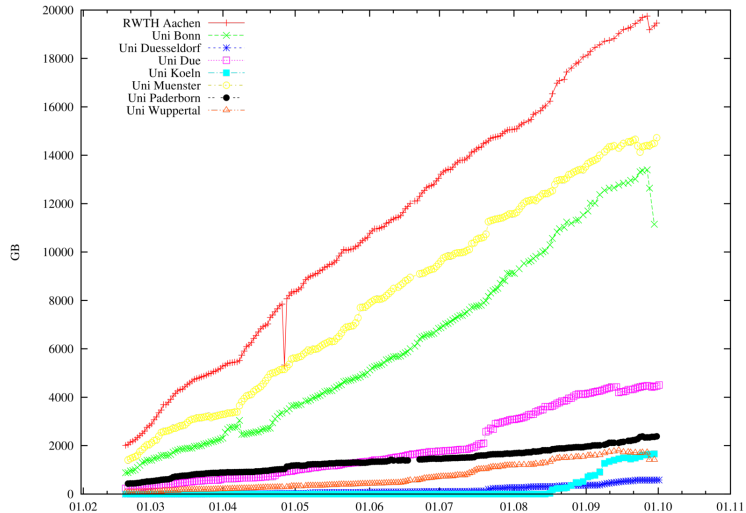


> Amount of data II



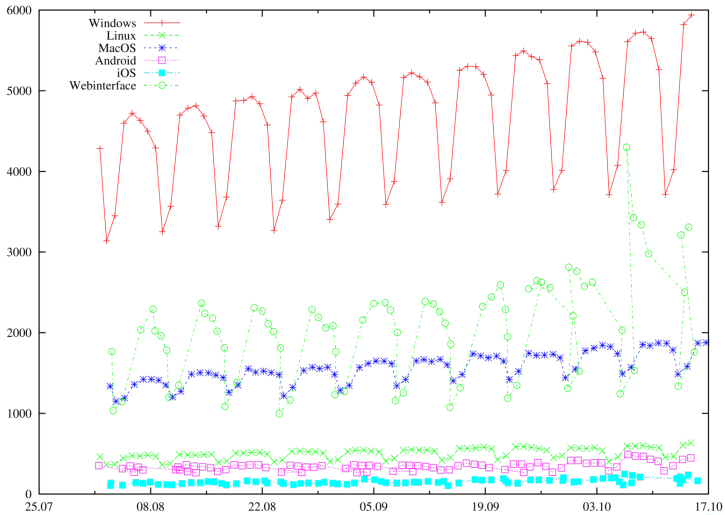


> Amount of data III





> Clients





> Summary

- Distributed infrastructure makes scaling easier
- Service is running stable, no problems that affect many users
- Very positive user feedback

Thank you for your attention!



> Ganglia


sciebo Cluster Report for Fri, 16 Oct 2015 14:59:19 +0200
[Get Fresh Data](#)

 Metric **cpu_report** Last **hour** Sorted **descending**
[Physical View](#)
Grid > sciebo > --Choose a Node

Overview of sciebo

 CPUs Total: **598**

 Hosts up: **31**

 Hosts down: **0**

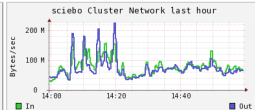
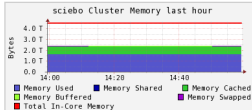
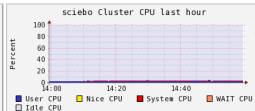
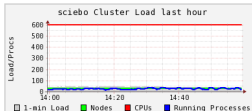
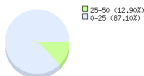
Avg Load (15, 5, 1m):

6%, 6%, 7%

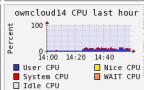
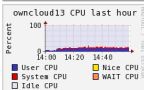
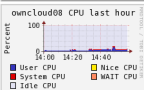
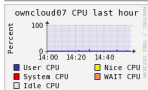
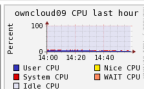
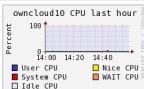
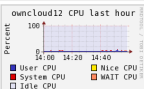
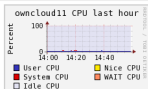
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2015-10-16 14:59

Cluster Load Percentages

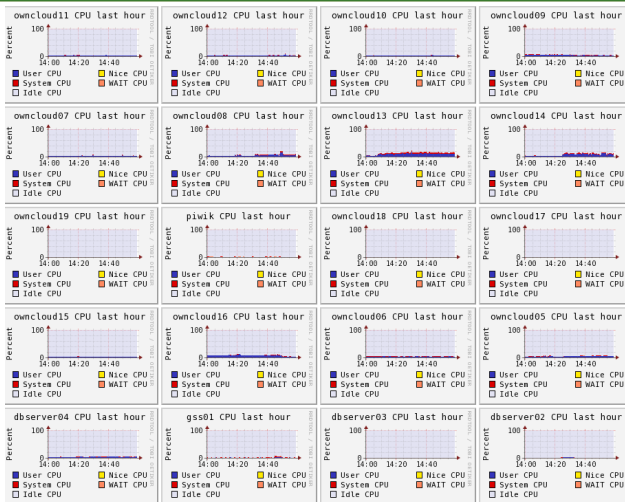

 Show Hosts: ☒ yes ☐ no

sciebo cpu_report last hour sorted descending

 Columns **4** Size **small**




> CPU Usage



Some webserver have a slight CPU usage.



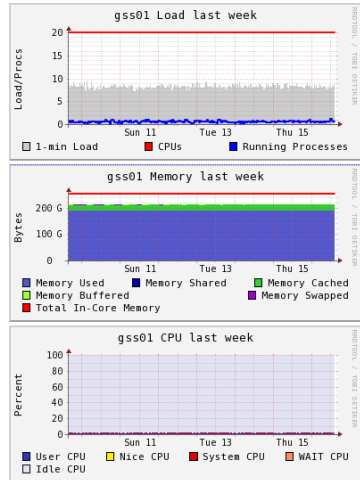
> Filesystem Performance

Top: CPU load

Center: Memory Consumption

Bottom: Actual used CPU

Even with thousands of concurrent users, the load is pretty small
 ⇒ IBM's Spectrum Scale is no bottleneck here. We would not expect this with nfs, for example.





Checkmk
1.2.4p5
Main Overview
omdadmin (admin) 15:07 **CMK**

Tactical Overview

Hosts	Problems	Unhandled	
91	0	0	
Services	Problems	Unhandled	
2828	20	0	

Quicksearch

Views

- Dashboards
 - Host & Services Problems
 - Main Overview
 - Network Topology
 - Hosts
 - Hostgroups
 - Services
 - Servicegroups
- Business Intelligence
 - All Aggregations
 - Hostname Aggregations
 - Problem Aggregations
 - Single-Host Aggregations
 - Single-Host Problems
- Problems
- Addons
 - Search Graphs
- Other
 - Comments
 - Downtimes
 - Host- and Service events
 - Host- and Service notifications
 - Search Global Logfile

EDIT

Bookmarks

Add Bookmark

WATO - Configuration

Host Statistics

Up	91
Down	0
Unreachable	0
In Downtime	0
Total	91

Service Statistics

OK	2808
In Downtime	0
On Down host	0
Warning	0
Unknown	1
Critical	19
Total	2828

Host Pri

state	Host
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Service Problems (unhandled)

State	Host	Service	Icons	Status detail	Age	Checked
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Events of recent 4 hours

	Time	Host	Service
	17 min	msowncloud12	HTTP webdav
	18 min	msowncloud12	HTTP webdav
	73 min	mspiwik	IPMI Sensor PIB_Ambient_Temp
	73 min	mspiwik	IPMI Sensor Mezz_Card_Temp
	73 min	mspiwik	IPMI Sensor CPU_2_Temp
	73 min	mspiwik	IPMI Sensor CPU_1_Temp
	74 min	localhost	IPMI Sensor PIB_Ambient_Temp

© Mathias Kettner



> Database Performance

Top: MySQL Throughput
(writes) over four hours

Bottom: MySQL
Throughput (writes) over
24 hours

