Bareos Open Source Backup
Overview and what's New

Stephan Dühr, Bareos GmbH & Co. KG
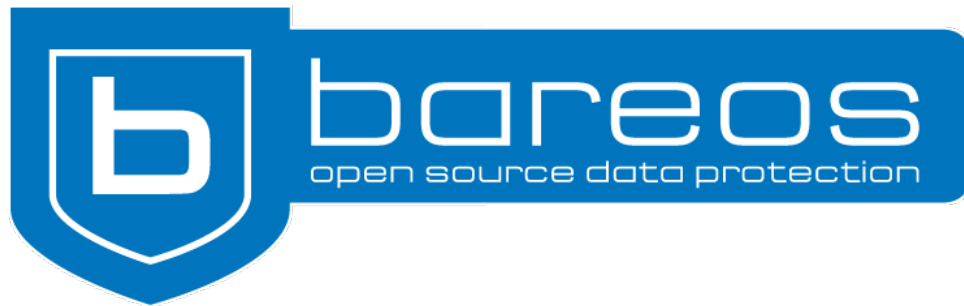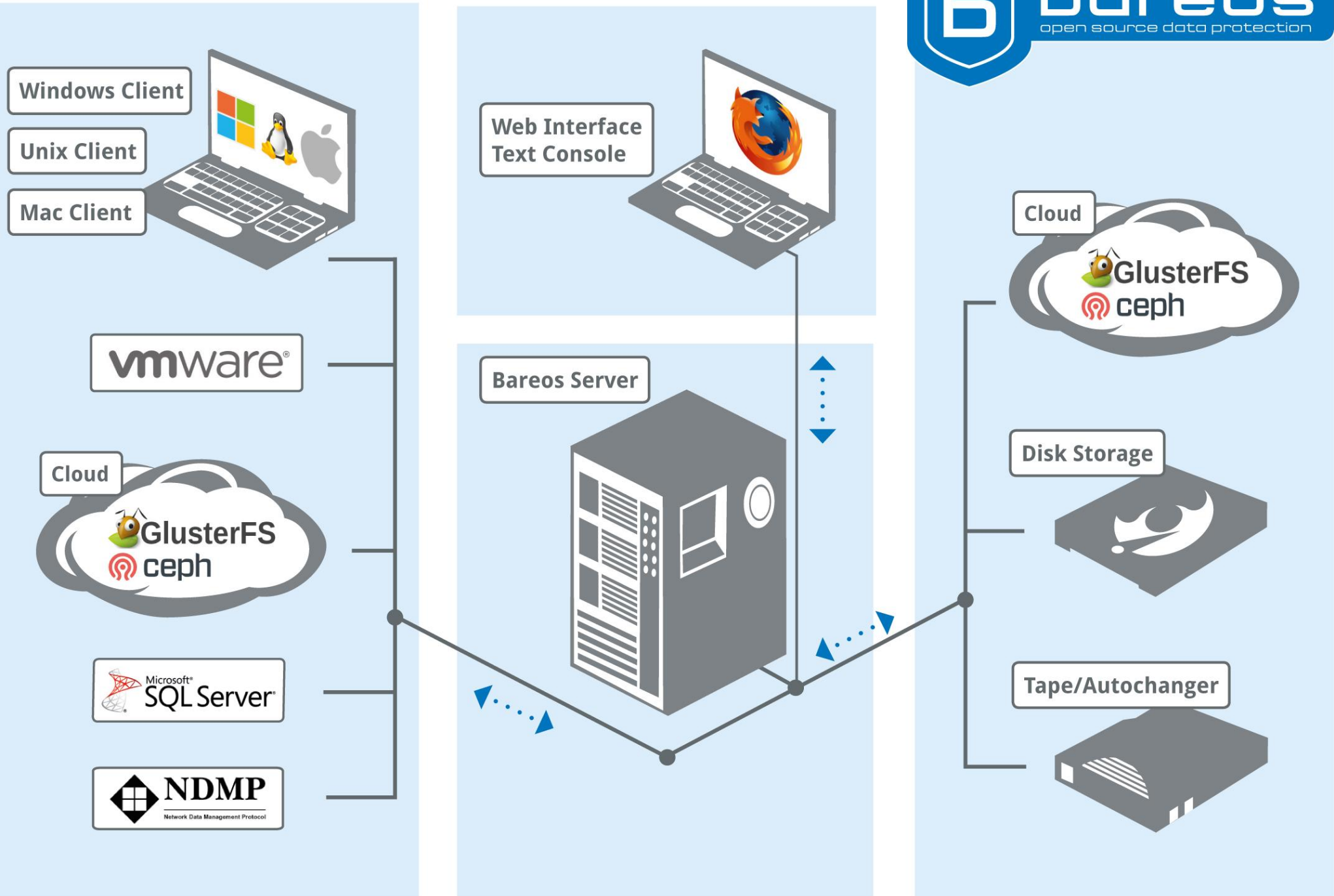
Bareos Introduction

- Bareos is a fork of the bacula.org project
- Fork started by Marco van Wieringen 2010
  - Implement own ideas
  - Speed up development
  - Sustainably ensure open source project
- First Release 2013
- Since then yearly a new major version

Data Sovereignty – NO vendor lock-in

- Bareos is 100% Open Source:

  - Affero GNU Public License (AGPL)

  - Code cleanup and re-factoring

  - A lot of new features

  - Python Plugin Interface

  - Growing Open Source Community

  - Open Storage Format

  - Only Open Source backup software lets you for sure restore your data whenever you decide

Bareos Architektur

Windows Client
Unix Client
Mac Client

vmware®

Cloud
GlusterFS
ceph

Microsoft® SQL Server®

NDMP
Network Data Management Protocol

Web Interface
Text Console

Bareos Server

bareos
open source data protection

Cloud
GlusterFS
ceph

Disk Storage

Tape/Autochanger

Bareos Overview

- All common sense features of a network backup system, like

- Multiplatform support: Linux, Unix, Windows, MacOS

- Scheduler with multi generation support (Full-, differential-, incremental, virtual full, accurate, ...)

- Inventory ("catalog") in database (MySQL, Postgres)

- Restore via CLI or GUI on any client

- Encrypted data, transport, ACLs, ...

- Backup media: disk, tape, library, cloud

- Scripting interface for pre- and post – jobs, plugin interface

New Features Overview

- Support for hardware encryption with LTO (4 and upwards) and enterprise tape libraries

- Client-quota support

- Native NDMP Support

- Import/export for tape changer (e.g. export all tapes used by a certain job)

- Bandwidth limitation

- Windows Backup „all (local) drives" option in fileset definition and Windows File daemon
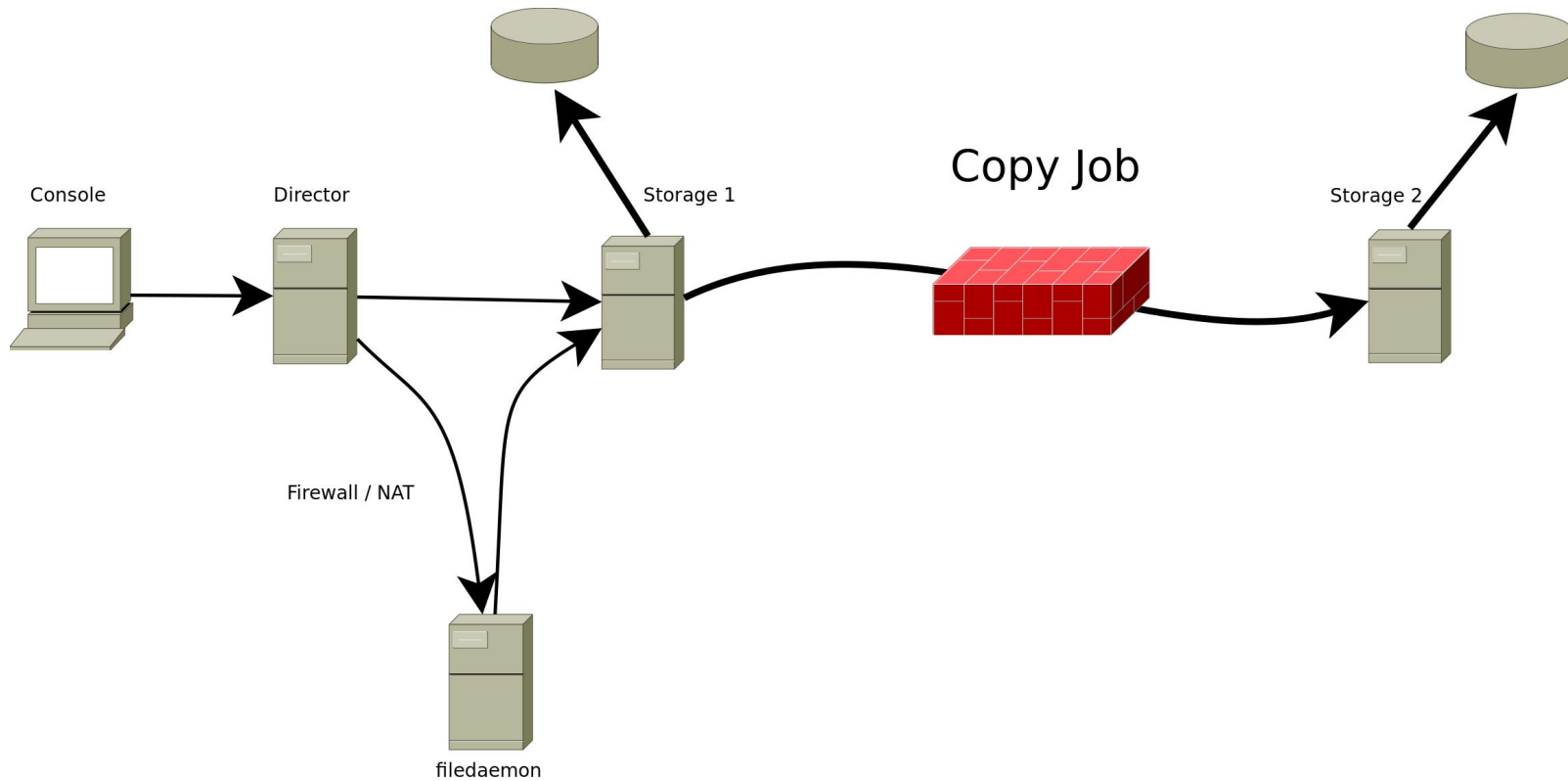
New Features Overview

- Creating Packages using Open Build Server
  - All packages out of one source
  - All major Linux Distributions
  - MacOS
  - Windows Installer Packages with lean redesign of cross compile makefiles, silent install possible
- Additional / on request: AIX, HP-UX, BSD

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13.2: Backup Replication

- With new SD to SD communication:

Console   Director   Storage 1   Copy Job   Storage 2

Firewall / NAT

filedaemon

Kommunikation mit "Passive Client":

Console   Director   Storage

Firewall / NAT   - Firewall can block inbound traffic
                      - NAT is no problem also in multiple levels

- server does not initiate communication
- name resolution not needed

filedaemon
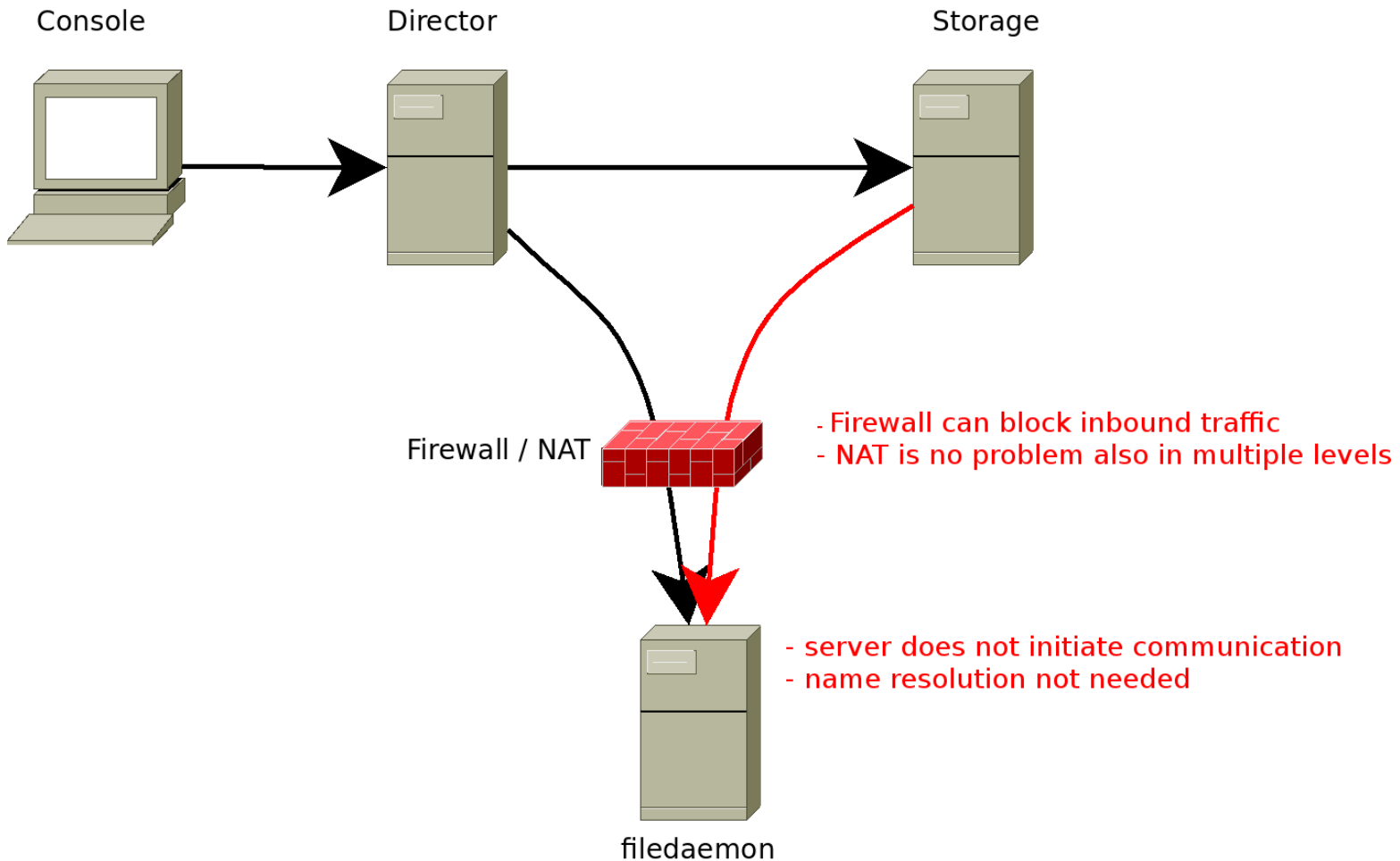
New Features in 14.2

- Performance tuning (variable blocksize)

- Storage Abstraction Layer

  – Backup to Cloud Storage (Ceph, Gluster)

- Windows Director / Storage Daemon (disk-only)

- Improved Windows Support (*NotToBackup* Key, VMP, EFS, Windows 2012 Deduped Volume)

(Some) new Features in 15.2

- VMware Plugin (Disk Images, Incremental)

- WebUI with self service portal restore browser

- Director API

- Secure Erase - sponsored by cardtech for compliance reasons:
  HIPAA, FACTA, GLB, SOx, PCI DSS, ...

- Backup of Ceph / Gluster storage

- Plugins:
  - MySQL, Icinga / Nagios, LDAP

Bareos 16.2 / 17.2

- Sponsored Developments

  - Director Reload Enhancements

  - Client initiated Backups for roaming users and systems behind firewall

  - NDMP Enhancements

  - S3 compatible storage for backups

- Always Incremental

- WebUI: multi-tenant and multi-language

- Database optimization for very large installations

Bareos 18.2

- Hassle-free Security:
  - Transport encryption enabled by default using connections passwords as pre-shared keys (TLS-PSK)
- PAM integration for authentication
  - No more clear-text passwords in config for WebUI users
- Modernized legacy code
  - Replaced Autoconf (70000 lines) by CMake (5000 lines)
- Modernized Documentation
  - Converted from LaTeX to reST using Sphinx
  - Includes main Documentation, Developers Guide and Documentation Style Guide
  - see https://docs.bareos.org/
- Full List: https://www.bareos.org/en/whats_new.html

Roadmap for 19.x

- Continue to modernize and refactor legacy code
- Replace regression tests by unittests using CTest and GoogleTest
- Support SCSI drive reservation
- Auto-Configuration of multiplied storage devices
- WebUI enhancement: Restore a specific file version
- Modernize CI/CD using Jenkins Pipeline
- Performance enhancement for very high number of files by using PostgreSQL table partitioning
- oVirt/Red Hat Virtualization Plugin
- Red Hat Enterprise Linux 8 packages
- FreeBSD 12 packages

Web UI Restore Browser

Web UI Restore specific Version

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Publicity

- " This is one of the largest open-source teams in the world, and is in the top 2% of all project teams on Open Hub."

- Bareos recommend on SILLS list of open source applications by French government

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Admin Magazine #17 / 2013 Editor's summary:
The Bareos fork of Bacula adds new features, expanded functionality, and simplified configuration

Downloads

- Weekly unique visits on download.bareos.org
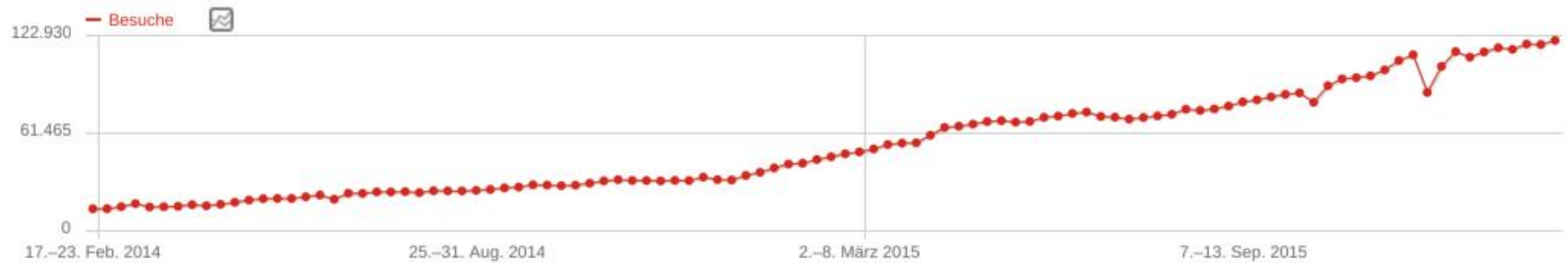
Command your Data

> Imagine you are buying a new safe to store important documents and valuables but your vendor keeps the safe's key. If you want to access your valuables later, your may have to pay some extra-fees. This experience is shared by many users of proprietary backup solutions.

Philipp Storz
Managing Director Bareos GmbH & Co. KG
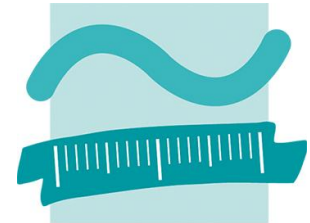
Customers

- Several Max-Planck-Institutes
- Beuth Hochschule Berlin
- Cardtech: Payment Transaction Provider
- Bavarian State Archives
- Lab Logistics Group
- Mixed industries
  - Public / government
  - Universities / Research
  - SMB
  - Provider
  - Finance
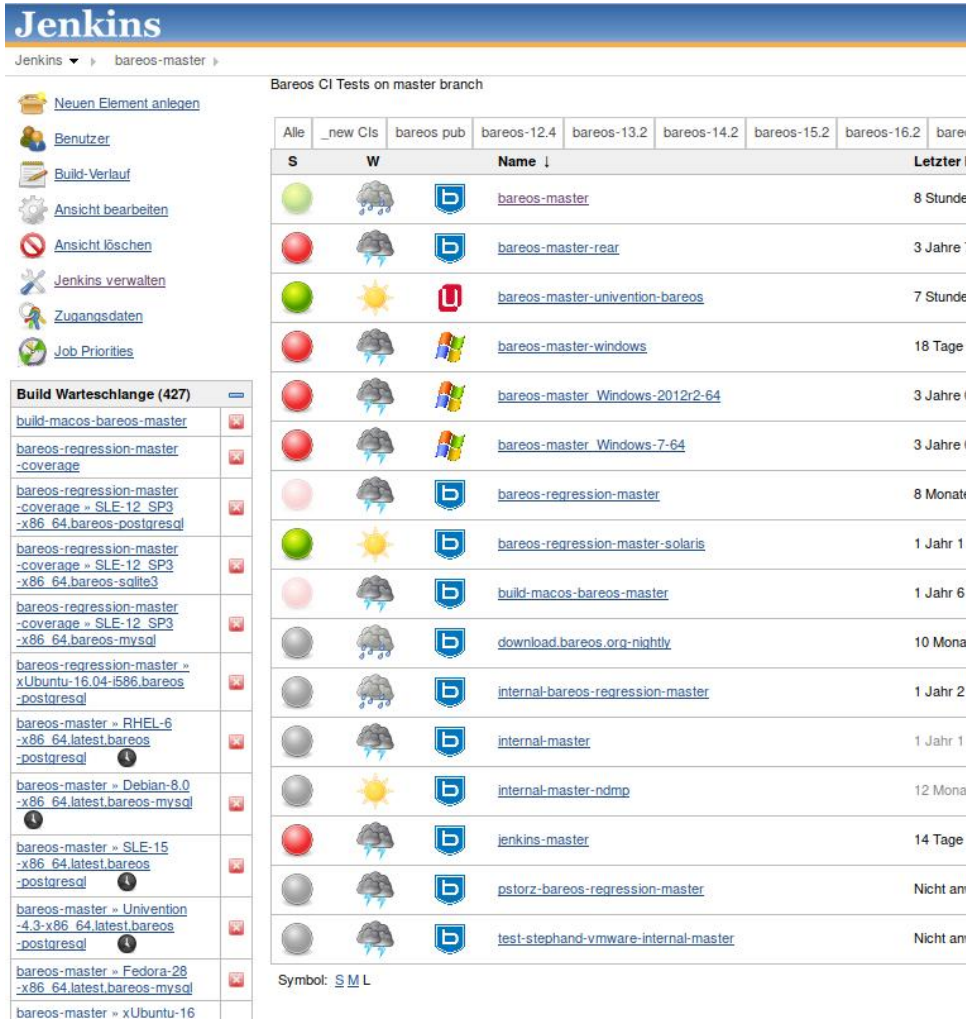
Standard Development Environment

– Jenkins CI tests, install and test packages on each supported distribution

Jenkins CI/CD Pipeline

- Automate complete process of building – testing – publishing

- Same procedure for development branches, pull requests, releases

- More time to focus on coding

- Quicker response to pull requests from community

Free Software + Subscription

- Up2date source code always freely available via GIT 100% Open Source (A)GPL.

- Public on download.bareos.org:

  – Binary packages for all major releases

- Subscription service:

  – Additional intermediate and maintenance releases including quality assurance of binary packages

  – Prerequisite for Bareos support offerings

- Valid 1 year

- Access to Bareos subscription Repositories

  – Latest updates and patches

  – Quality assured

- Prerequisite for Bareos support offerings

- Right to use the software eternally

Subscription and support

- Subscription customers can buy additional support packages with guaranteed response time at several service level

- Incident based

- Unlimited support with 24x7 availability possible

- Distribution through partners

Subscription

from 290€/year

- Building, Testing and Maintenance of software packages for all common operating systems
- Continuous development, bug-fixes and quality assurance
- A backup unit is used either as Bareos - Client, VM* or as 1TB storage backup capacity for NDMP or cloud storage backup

*Virtual machine by Plugin

SKU/Description	# Units	price/year
BASB – Basic Subscription per Backup-Server	5	290 €
BASB-10	10	400 €
BASB-100	100	3.000 €
BASB-1000	1.000	20.000 €
BMSSQL Bareos Microsoft SQL Plugin – per MSSQL Server	n/a	290,00 €
BNDMP Bareos NDMP Backup Option – per NDMP Device	10	880,00 €
BCLOUD Bareos Backup of Ceph/Gluster Storages	10	880,00 €
BBMRL Bareos Bare Metal Restore for Linux	1	60,00 €

Support

from 1000€/year

- Analysis of issues and bug fixes
- Prerequisite: Subscription
- Quickstart only available for installations with max. 15 clients and no plugins.

SKU	Descr.	# Incidents	Service Level	price/year
BASP-Q	Quickstart	3	n/a	1.000 €
BASP-S	Standard	10	2 business days	2.400 €
BASP-A	Advanced	20	Next Business Day	5.000 €
BASP-P	Premier	50	4h at business times	9.800 €
BASP-G	Global	unlimited	1h, 24 x 7	36.000 €

Contact and links

- Subscriptions, Support, References, Partners:
  http://www.bareos.com

- Community, Documentation, Download:
  http://www.bareos.org

- GIT:
  https://github.com/bareos

- Bugtracker:
  https://bugs.bareos.org