Bacula Enterprise 2020

bacula.us

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Schedule

- Bacula LATAM & Brasil
- Bacula Systems
- Backups today
- Bacula Community versus Bacula Enterprise
- Architecture of Bacula Enterprise
- Features
- Some cases
- Pricing and purchasing models
- Services

Bacula LATAM & Brasil

- Main branch in Brazil, subsidiary in US (strong presence in Florida)
- Operating in more than 10 countries
- Exclusive software distributor in LATAM
- More than 10 years of experience with backups
- All staff officially certified by Bacula Systems

Bacula Systems

- Created by the founder of Autodesk and developer of Bacula Community
- Specialized in backups & restores
- Main branch in Switzerland
- Own offices and distributors in America, Asia, Europe, LATAM and Oceania
- More than 2 million backup clients installed worldwide

Backups Today

- Backup is the replica of any data that can be used to restore its original form [Guise]
- Challenge: by 2020, the volume of data will double each year reaching 44 zettabytes or 44 trillion GB. [IDC]
- Global deduplication and scalability are key factors to succeed in such scenario

Backups Today

Disaster Recovery: 3 levels

- **Data.** Protecting user and application data (dumps, file copies)
- **Application.** Application continuity (PITR, CDP, plugins to provide specific features)
- **OS.** Reduce the time to recover to its minimum (VM export, CDP, snapshot of FS, Bare Metal)

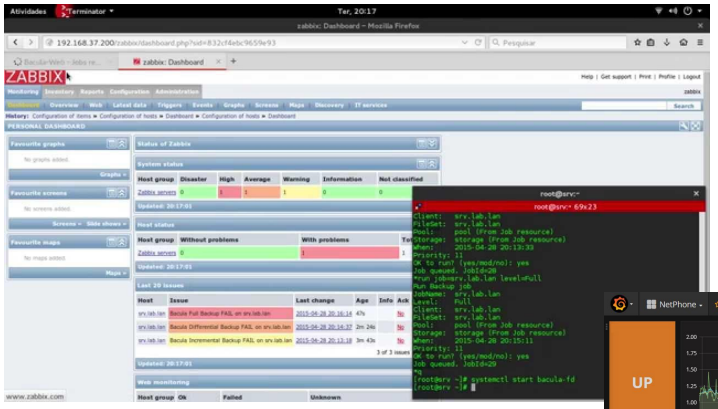
Backups Today

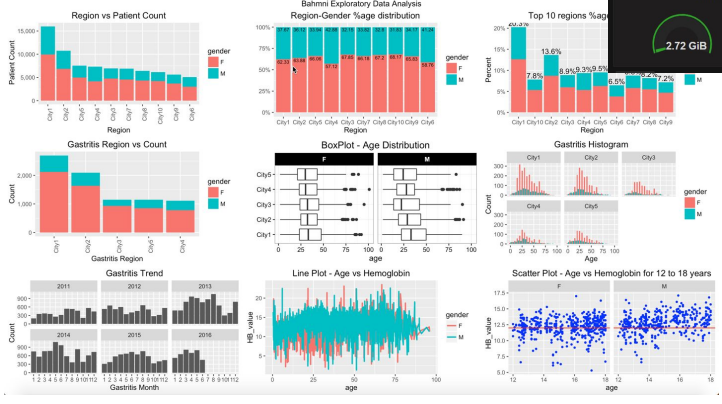
- Backup softwares **must not be monoliths**. They must, for example, allow data mining of their metadata: “without these kind of features, a backup software becomes stagnant and is not able to grow into the environment” [Guise]
- Must have **Open Format of the Catalog and of the Backup Files**

ZABBIX

Nagios®

Grafana

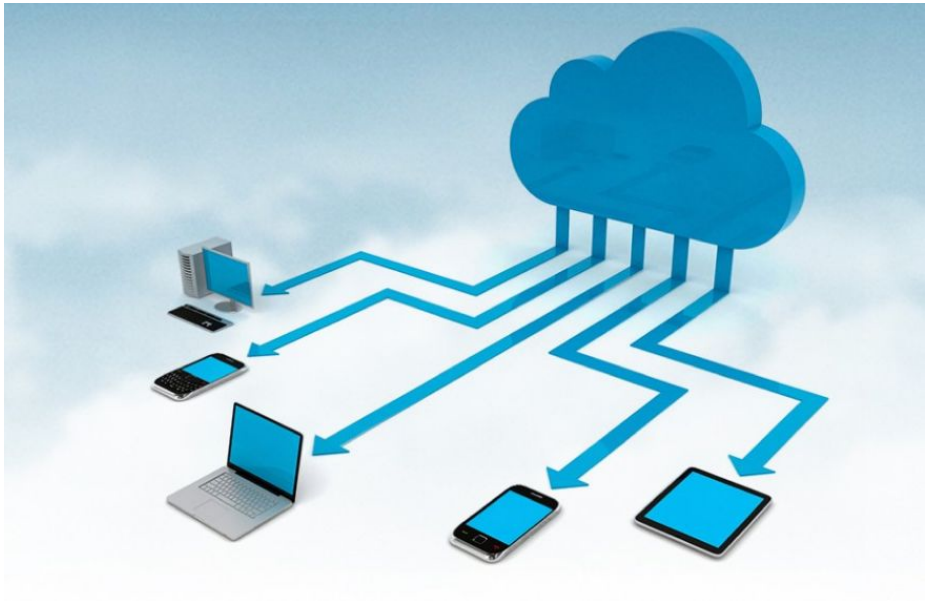


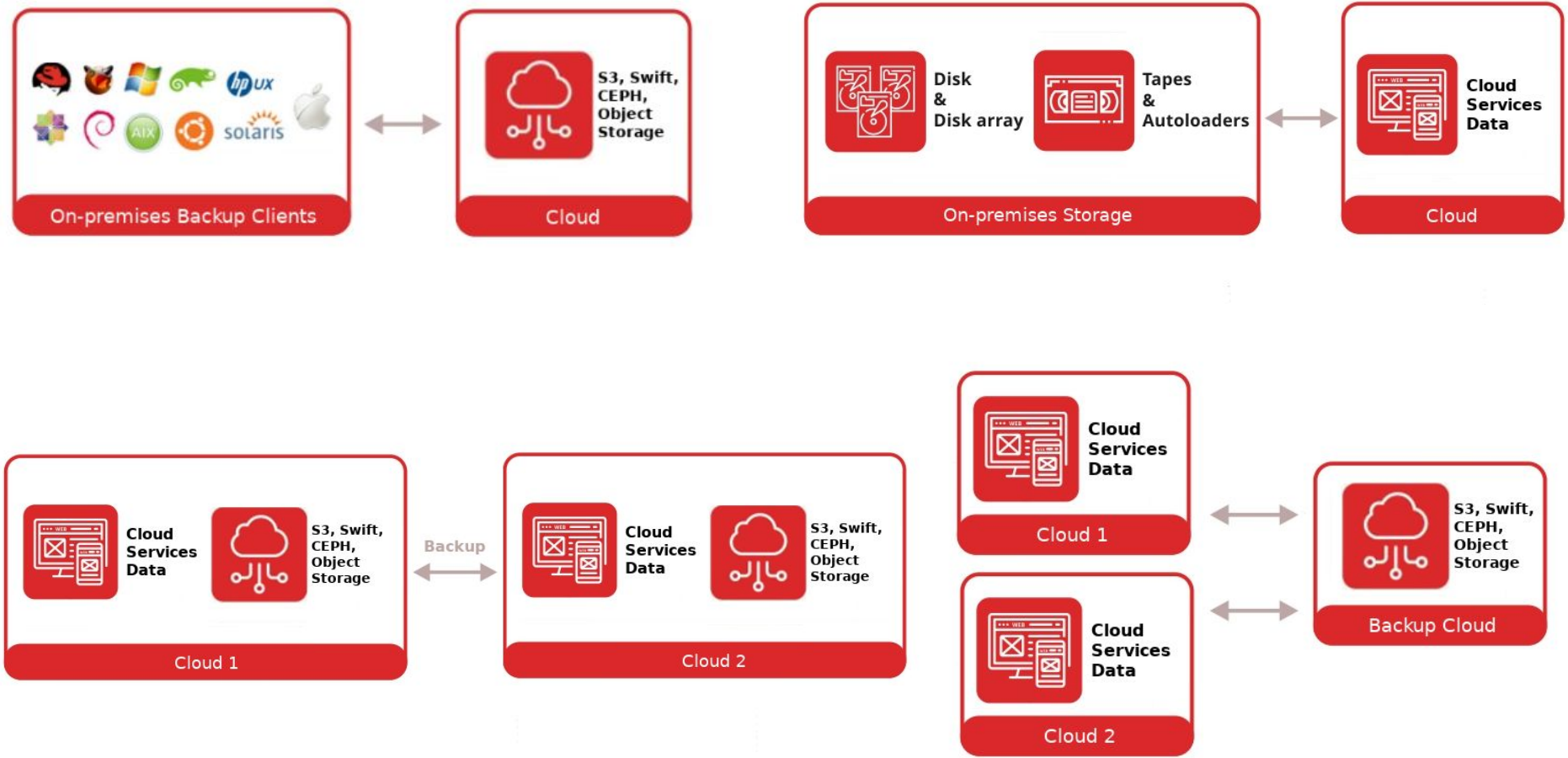


Backups Today

Backup modernization:

- There must be cloud integration [Russel]
- Supporting Object Storage and BaaS are a must




On-premises Backup Clients
S3, Swift, CEPH, Object Storage
Cloud
Disk & Disk array
Tapes & Autoloaders
On-premises Storage
Cloud Services Data
Cloud
Cloud Services Data
S3, Swift, CEPH, Object Storage
Cloud 1
Backup
Cloud Services Data
S3, Swift, CEPH, Object Storage
Cloud 2
Cloud Services Data
Cloud 1
Cloud Services Data
Cloud 2
S3, Swift, CEPH, Object Storage
Backup Cloud

Bacula

- 4º more popular backup software worldwide
- C/C++, High Portability
- Focused in sustainability, performance and scalability
- Suitable to any company size

Bacula Community versus Bacula Enterprise

Community

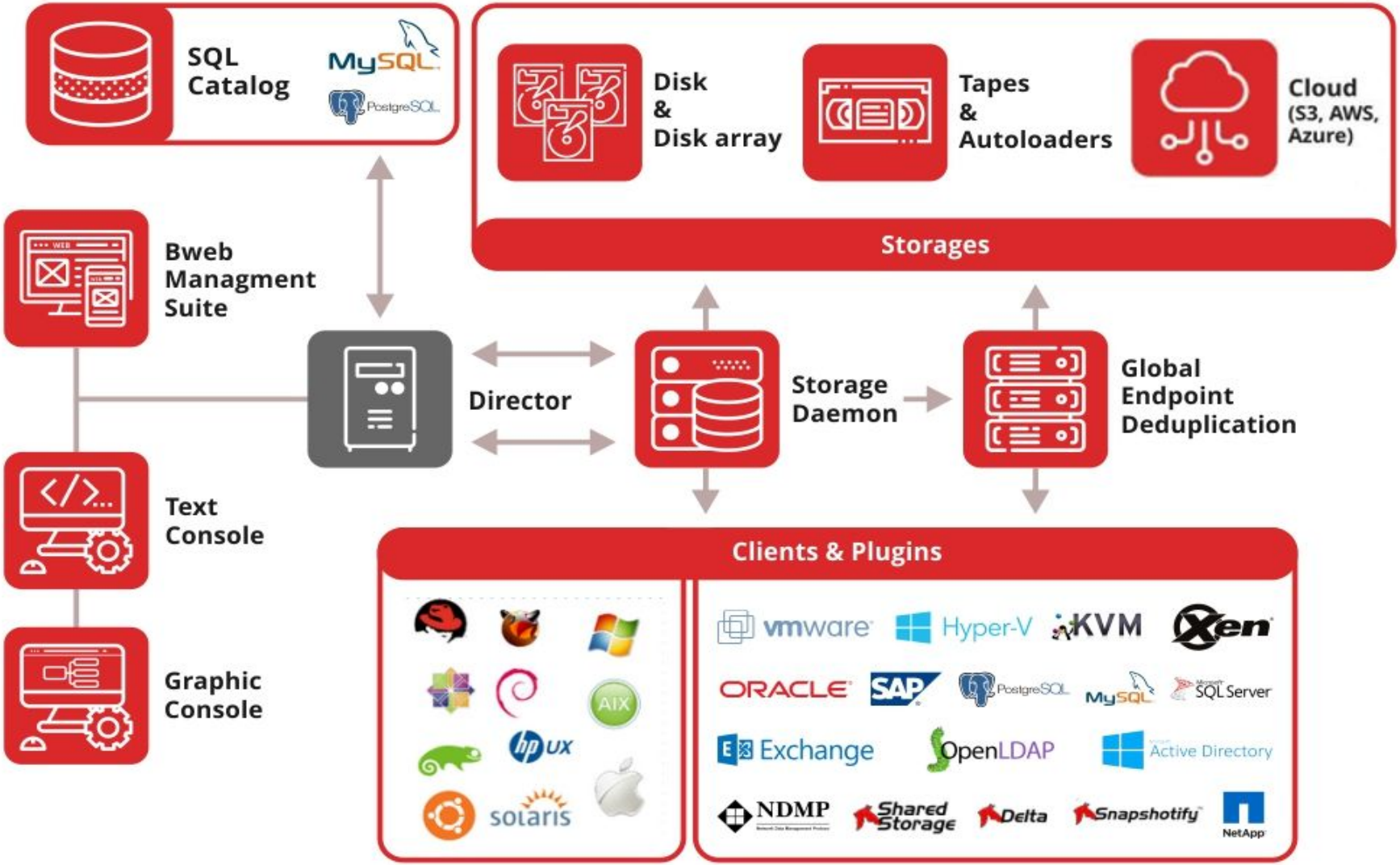
- General Public License (GPL)
- Open Source
- Community packages and/or compiled by user
- User must develop plugins and/or scripts
- Open catalog and open backup files format

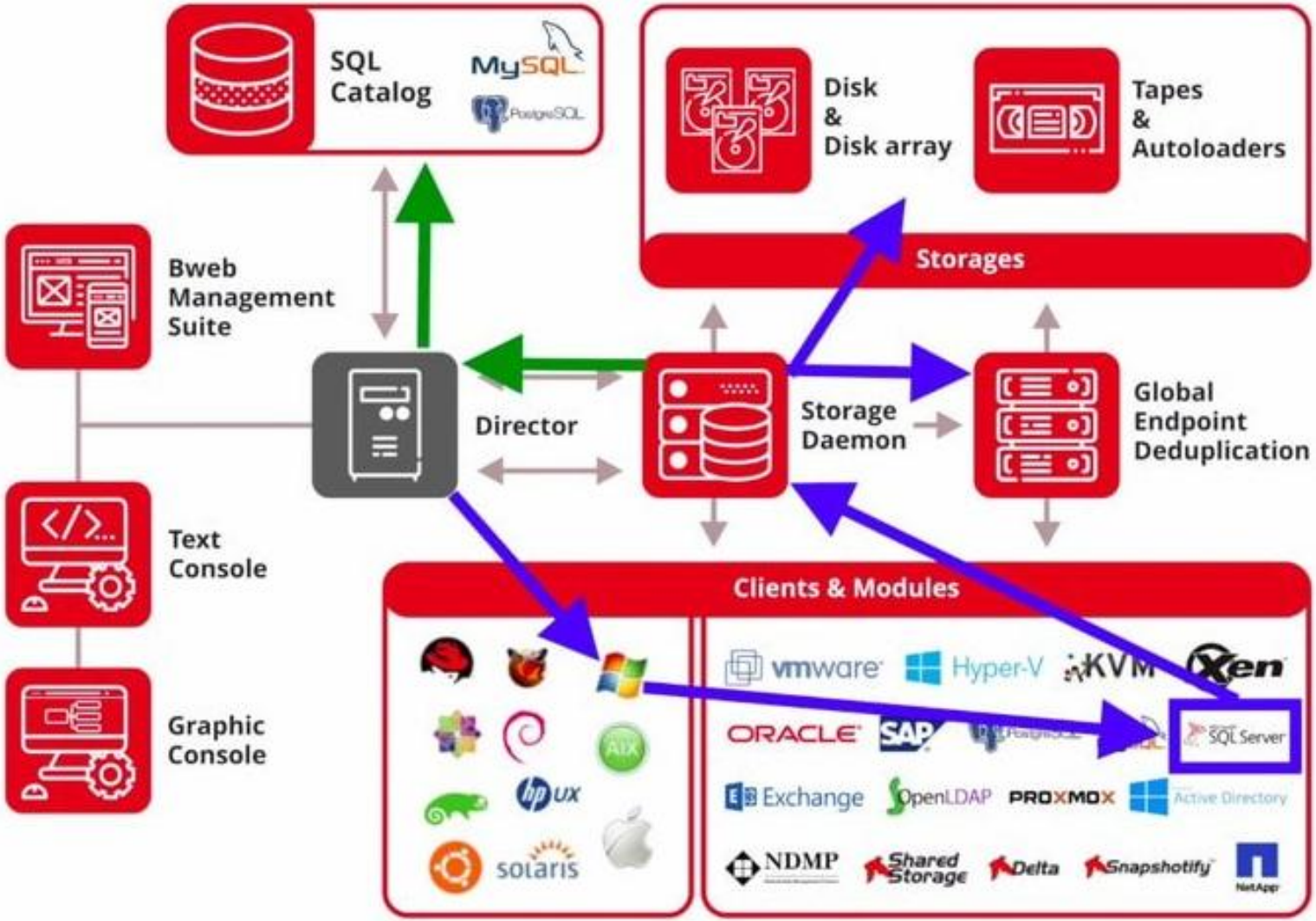
Enterprise

- Paid licensing
- Proprietary code
- Packages approved by developer
- Technical support provided by developer
- Easy-to-use graphic interface
- More than 30 plugins available
- Global deduplication and on the storage side only option
- Open catalog and open backup files format
-
-

Bacula Enterprise versus Backup Leaders (Gartner)

	Plugins	Cloud Support	BaaS	Price
BACULA ENTERPRISE	30	Yes	Yes	Low
COMMVAULT	22	Yes	Yes	Very high
NETBACKUP	14	Yes	No	Alto
SPECTRUM	10	No	No	Very high
EMC	9	No	No	Very high
VEEAM	7	No	Yes	Low
ARCSERVE	4	Yes	Yes	Medium


SQL
Catalog
MySQL
PostgreSQL
Disk
&
Disk array
Tapes
&
Autoloaders
Cloud
(S3, AWS,
Azure)
Storages
Bweb
Managment
Suite
Director
Storage
Daemon
Global
Endpoint
Deduplication
Text
Console
Graphic
Console
Clients & Plugins
vmware
Hyper-V
KVM
Xen
ORACLE
SAP
PostgreSQL
MySQL
SQL Server
Exchange
OpenLDAP
Active Directory
NDMP
Shared Storage
Delta
Snapshotify
NetApp
AIX
hp UX
solaris


SQL
Catalog
MySQL
PostgreSQL
Disk
&
Disk array
Tapes
&
Autoloaders
Storages
Bweb
Management
Suite
Director
Storage
Daemon
Global
Endpoint
Deduplication
Text
Console
Graphic
Console
Clients & Modules
vmware
Hyper-V
KVM
Xen
ORACLE
SAP
SQL Server
Exchange
OpenLDAP
PROXMOX
Active Directory
NDMP
Shared Storage
Delta
Snapshotify
NetApp
AIX
hp UX
solaris

Director (Backup Server, master)

- Central manager of all jobs and of the authentication of the services
- Allows scheduling, setting configuration, retention times, politics, etc

★ Scalable (more than 10.000 clients)

★ Can be virtualized

★ Focused in automation

★ Auto recovers from disasters

Storage Daemon (storage node)

- ★ No data volume charges
- ★ Infinite Storage Daemons linked to the same Director
- ★ Cloud S3, Swift, CEPH
- ★ Internal and external disks, RDX
- ★ Auto loaders, tape libraries, and VTL

- ★ Deduplication on the storage side through software or hardware
- ★ 100% compatible with all LTO and NAS
- ★ Different levels of compression through software
- ★ Scalability: more than 600 backup clients per Storage Daemon

Storage em Nuvem

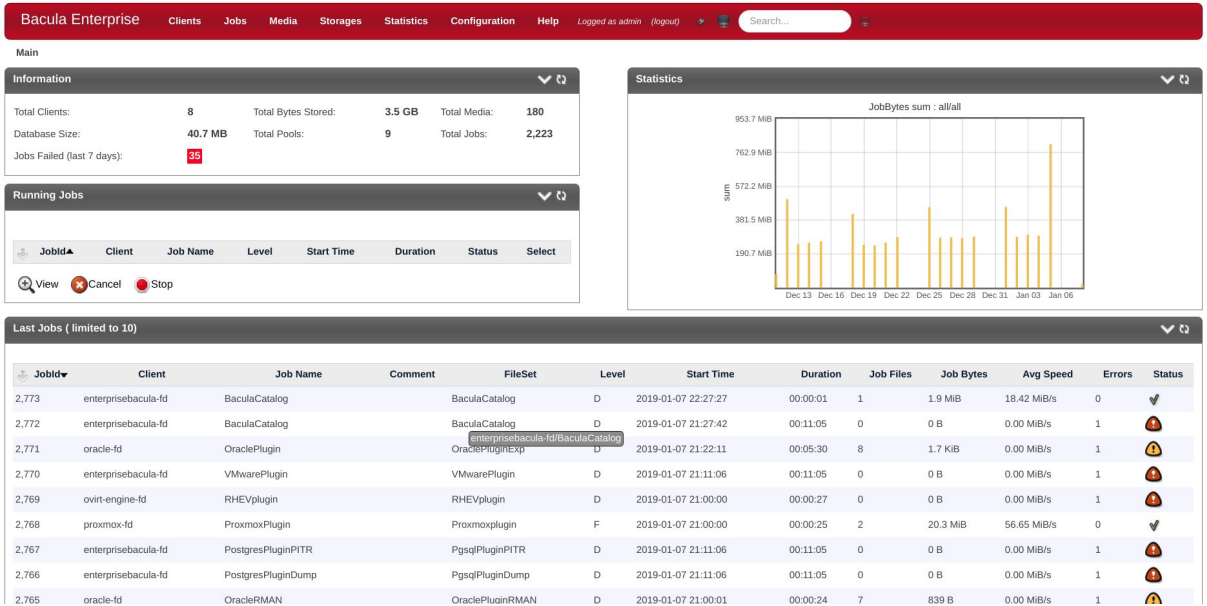
File Daemon (backup client)

- ★ Secure Authentication (password or encryption key)
- ★ FIPS compliant

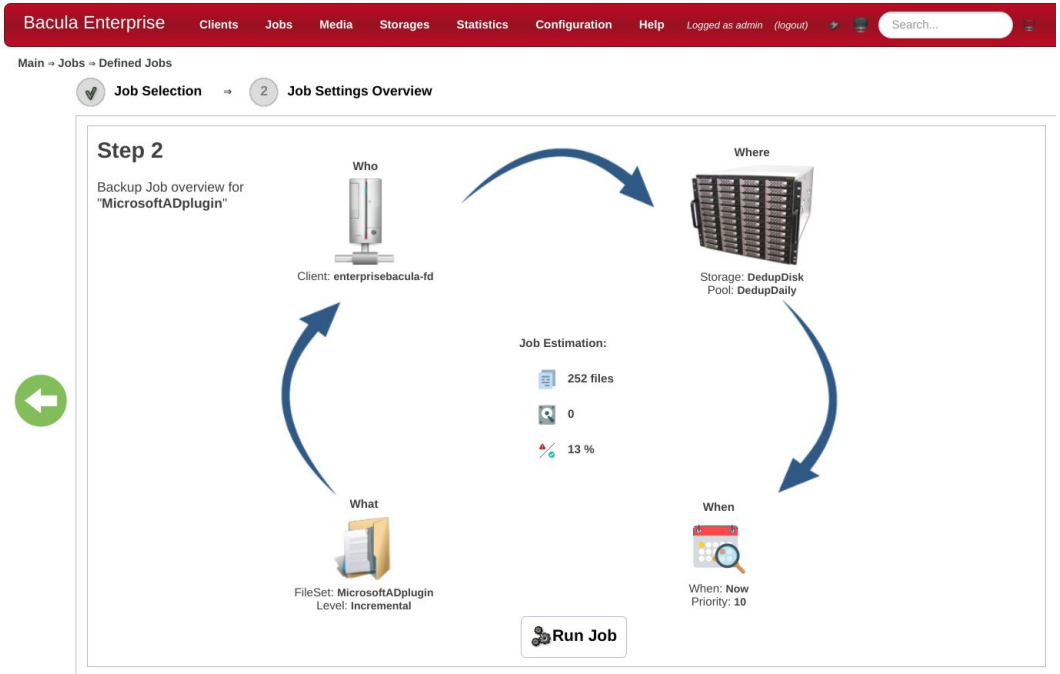
- ★ Global Deduplication
- ★ Minimum Configuration
- ★ Legacy OS
- ★ Low impact
- ★ Scripts before and after Jobs

BWeb

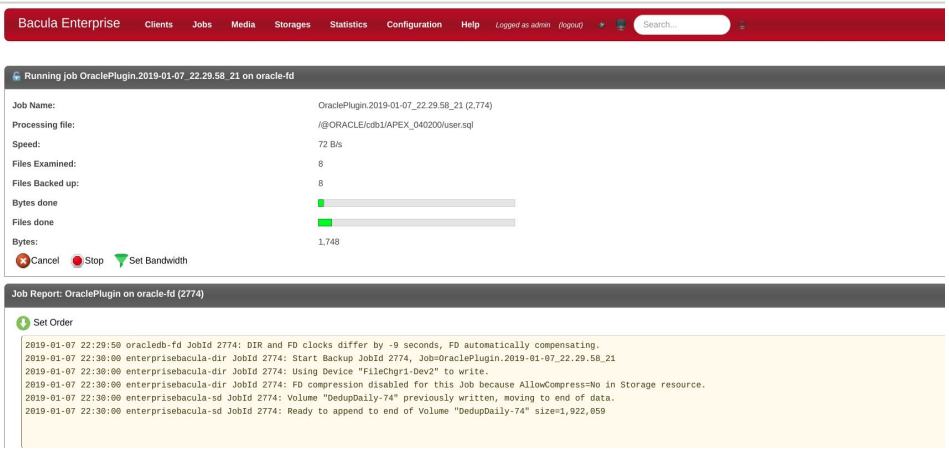
- ★ Plug-in free (e.g. Java/Flash)
- ★ Audit of all transactions
- ★ Self-restore profile
- ★ Client groups management
- ★ ACLs (users and profiles)
- ★ Media and storage management
- ★ Monitoring, statistics and reports modules
- ★ Plugins Operations

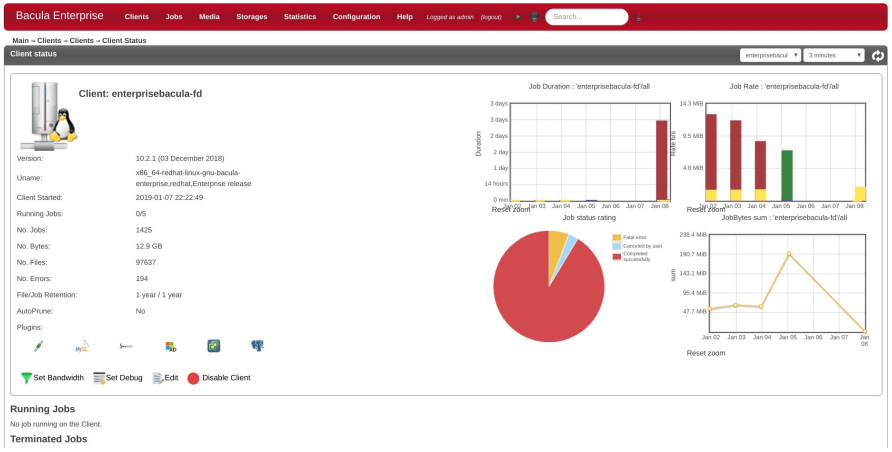


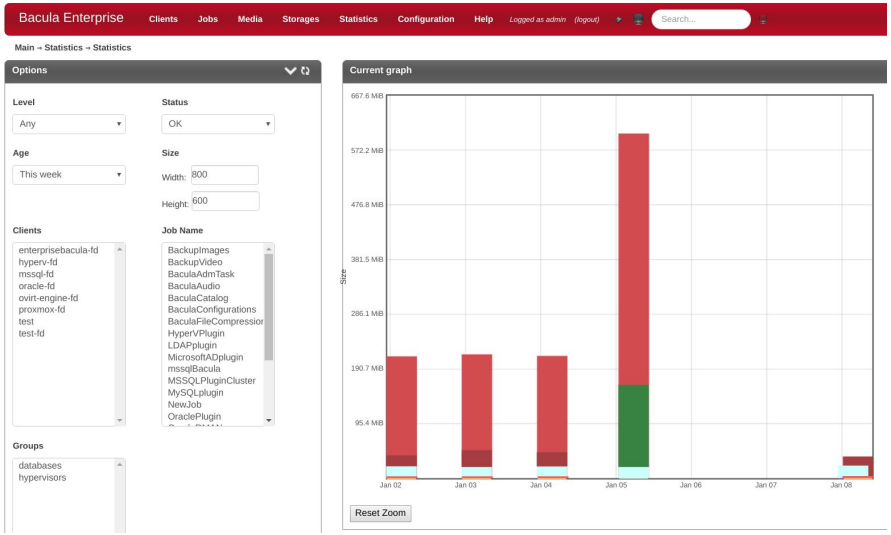
BWeb

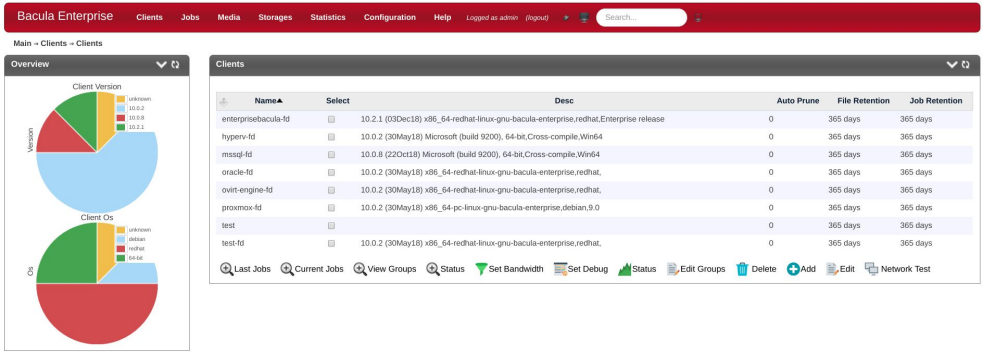


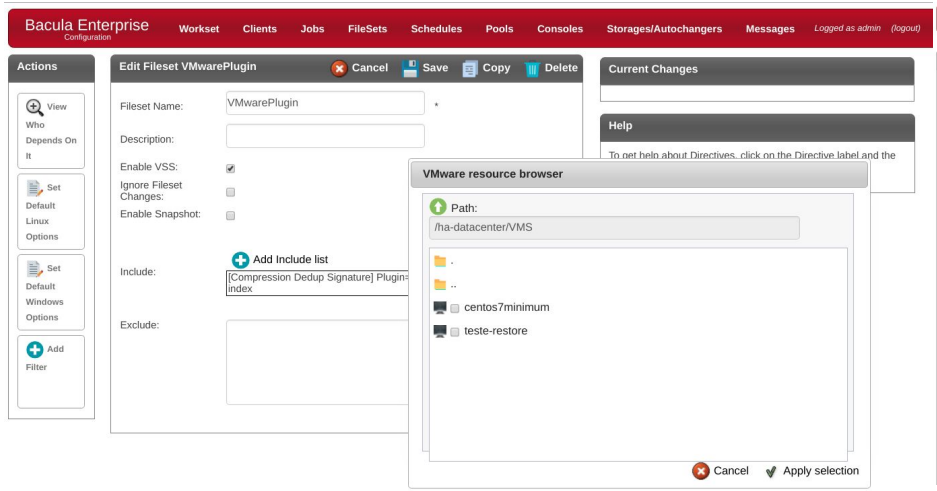
- ★ 100% graphical operation
- ★ User-centered design
- ★ Few clicks operations
- ★ Integration with AD/LDAP
- ★ Backup clients configuration and deployment

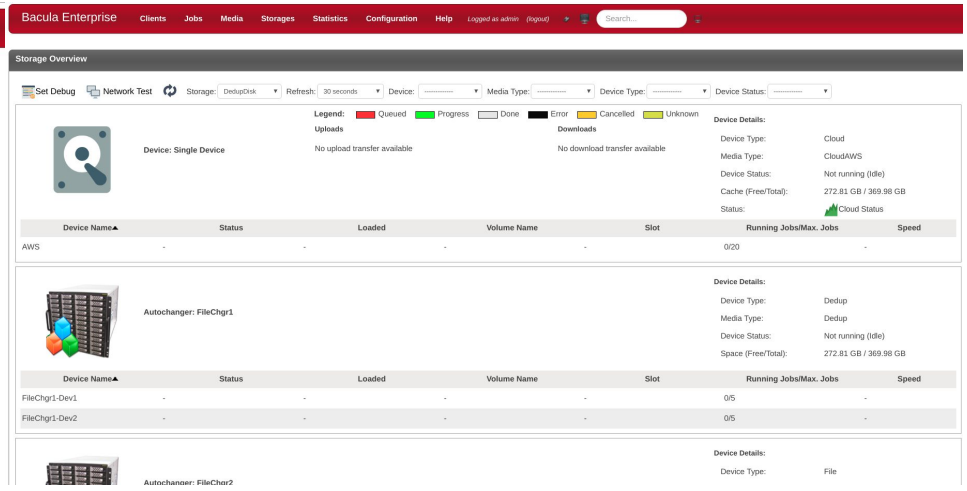

Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin
(logout)
Search...
Running job OraclePlugin.2019-01-07_22.29.58_21 on oracle-fd
Job Name:
OraclePlugin.2019-01-07_22.29.58_21 (2,774)
Processing file:
/@ORACLE/cdb1/APEX_040200/user.sql
Speed:
72 B/s
Files Examined:
8
Files Backed up:
8
Bytes done
Files done
Bytes:
1,748
Cancel
Stop
Set Bandwidth
Job Report: OraclePlugin on oracle-fd (2774)
Set Order
2019-01-07 22:29:50 oracledb-fd JobId 2774: DIR and FD clocks differ by -9 seconds, FD automatically compensating.
2019-01-07 22:30:00 enterprisebacula-dir JobId 2774: Start Backup JobId 2774, Job=OraclePlugin.2019-01-07_22.29.58_21
2019-01-07 22:30:00 enterprisebacula-dir JobId 2774: Using Device "FileChgr1-Dev2" to write.
2019-01-07 22:30:00 enterprisebacula-dir JobId 2774: FD compression disabled for this Job because AllowCompress=No in Storage resource.
2019-01-07 22:30:00 enterprisebacula-sd JobId 2774: Volume "DedupDaily-74" previously written, moving to end of data.
2019-01-07 22:30:00 enterprisebacula-sd JobId 2774: Ready to append to end of Volume "DedupDaily-74" size=1,922,059

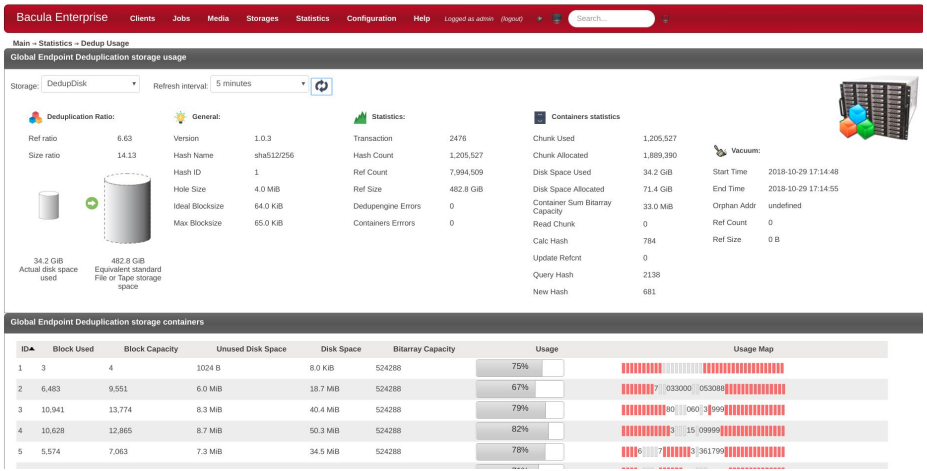

Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin
(logout)
Search...
Main → Clients → Clients → Client Status
Client status
enterprisebacula
3 minutes
Client: enterprisebacula-fd
Version:
10.2.1 (03 December 2018)
Uname:
x86_64-redhat-linux-gnu-bacula-enterprise,redhat,Enterprise release
Client Started:
2019-01-07 22:22:49
Running Jobs:
0/5
No. Jobs:
1425
No. Bytes:
12.9 GB
No. Files:
97637
No. Errors:
194
File/Job Retention:
1 year / 1 year
AutoPrune:
No
Plugins:
Job Duration : 'enterprisebacula-fd'/all
Job Rate : 'enterprisebacula-fd'/all
Reset zoom
Job status rating
Fatal error
Canceled by user
Completed successfully
JobBytes sum : 'enterprisebacula-fd'/all
Reset zoom
Set Bandwidth
Set Debug
Edit
Disable Client
Running Jobs
No job running on the Client.
Terminated Jobs

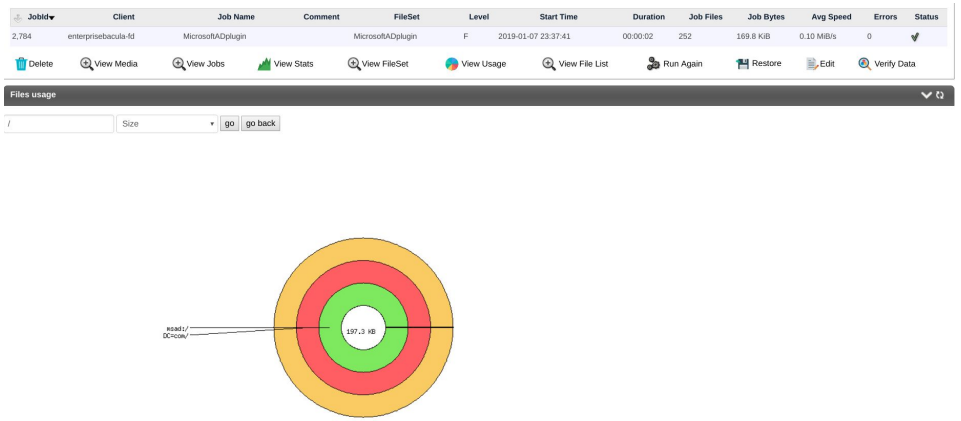

Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin
(logout)
Search...
Main → Statistics → Statistics
Options
Level
Any
Status
OK
Age
This week
Size
Width:
800
Height:
600
Clients
enterprisebacula-fd
hyperv-fd
mssql-fd
oracle-fd
ovirt-engine-fd
proxmox-fd
test
test-fd
Job Name
BackupImages
BackupVideo
BaculaAdmTask
BaculaAudio
BaculaCatalog
BaculaConfigurations
BaculaFileCompressior
HyperVPlugin
LDAPplugin
MicrosoftADplugin
mssqlBacula
MSSQLPluginCluster
MySQLplugin
NewJob
OraclePlugin
Groups
databases
hypervisors
Current graph
667.6 MB
572.2 MB
476.8 MB
381.5 MB
286.1 MB
190.7 MB
95.4 MB
Size
Jan 02
Jan 03
Jan 04
Jan 05
Jan 06
Jan 07
Jan 08
Reset Zoom


Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin
(logout)
Search...
Main → Clients → Clients
Overview
Client Version
Version
Client Os
Os
Clients
Name
Select
Desc
Auto Prune
File Retention
Job Retention
enterprisebacula-fd
10.2.1 (03Dec18) x86_64-redhat-linux-gnu-bacula-enterprise,redhat,Enterprise release
0
365 days
365 days
hyperv-fd
10.0.2 (30May18) Microsoft (build 9200), 64-bit,Cross-compile,Win64
0
365 days
365 days
mssql-fd
10.0.8 (22Oct18) Microsoft (build 9200), 64-bit,Cross-compile,Win64
0
365 days
365 days
oracle-fd
10.0.2 (30May18) x86_64-redhat-linux-gnu-bacula-enterprise,redhat,
0
365 days
365 days
ovirt-engine-fd
10.0.2 (30May18) x86_64-redhat-linux-gnu-bacula-enterprise,redhat,
0
365 days
365 days
proxmox-fd
10.0.2 (30May18) x86_64-pc-linux-gnu-bacula-enterprise,debian,9.0
0
365 days
365 days
test
0
365 days
365 days
test-fd
10.0.2 (30May18) x86_64-redhat-linux-gnu-bacula-enterprise,redhat,
0
365 days
365 days
Last Jobs
Current Jobs
View Groups
Status
Set Bandwidth
Set Debug
Status
Edit Groups
Delete
Add
Edit
Network Test

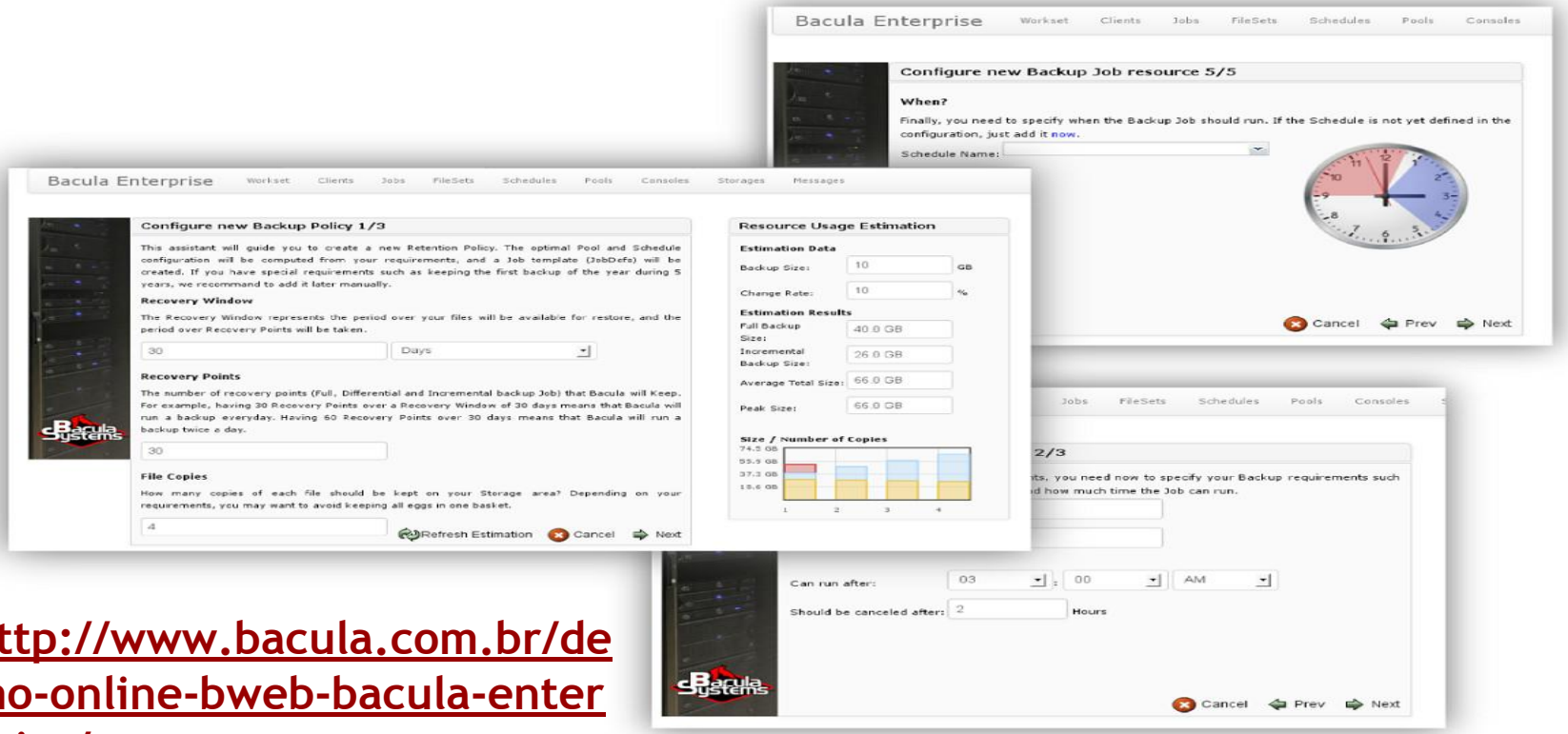

Bacula Enterprise
Configuration
Workset
Clients
Jobs
FileSets
Schedules
Pools
Consoles
Storages/Autochangers
Messages
Logged as admin (logout)
Actions
View Who Depends On It
Set Default Linux Options
Set Default Windows Options
Add Filter
Edit Fileset VMwarePlugin
Cancel
Save
Copy
Delete
Fileset Name:
VMwarePlugin
Description:
Enable VSS:
Ignore Fileset Changes:
Enable Snapshot:
Include:
Add Include list
[Compression Dedup Signature] Plugin=
index
Exclude:
Current Changes
Help
To get help about Directives, click on the Directive label and the
VMware resource browser
Path:
/ha-datacenter/VMS
.
..
centos7minimum
teste-restore
Cancel
Apply selection


Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin (logout)
Search...
Storage Overview
Set Debug
Network Test
Storage: DedupDisk
Refresh: 30 seconds
Device:
Media Type:
Device Type:
Device Status:
Legend: Queued Progress Done Error Cancelled Unknown
Device: Single Device
Uploads
No upload transfer available
Downloads
No download transfer available
Device Details:
Device Type: Cloud
Media Type: CloudAWS
Device Status: Not running (Idle)
Cache (Free/Total): 272.81 GB / 369.98 GB
Status: Cloud Status
Device Name
Status
Loaded
Volume Name
Slot
Running Jobs/Max. Jobs
Speed
AWS
0/20
Autochanger: FileChgr1
Device Details:
Device Type: Dedup
Media Type: Dedup
Device Status: Not running (Idle)
Space (Free/Total): 272.81 GB / 369.98 GB
FileChgr1-Dev1
FileChgr1-Dev2
0/5
Autochanger: FileChgr2
Device Type: File


Bacula Enterprise
Clients
Jobs
Media
Storages
Statistics
Configuration
Help
Logged as admin (logout)
Search...
Main » Statistics » Dedup Usage
Global Endpoint Deduplication storage usage
Storage: DedupDisk
Refresh interval: 5 minutes
Deduplication Ratio:
Ref ratio 6.63
Size ratio 14.13
34.2 GiB Actual disk space used
482.8 GiB Equivalent standard File or Tape storage space
General:
Version 1.0.3
Hash Name sha512/256
Hash ID 1
Hole Size 4.0 MiB
Ideal Blocksize 64.0 KiB
Max Blocksize 65.0 KiB
Statistics:
Transaction 2476
Hash Count 1,205,527
Ref Count 7,994,509
Ref Size 482.8 GiB
Dedupengine Errors 0
Containers Errors 0
Containers statistics
Chunk Used 1,205,527
Chunk Allocated 1,889,390
Disk Space Used 34.2 GiB
Disk Space Allocated 71.4 GiB
Container Sum Bitarray Capacity 33.0 MiB
Read Chunk 0
Calc Hash 784
Update Refcnt 0
Query Hash 2138
New Hash 681
Vacuum:
Start Time 2018-10-29 17:14:48
End Time 2018-10-29 17:14:55
Orphan Addr undefined
Ref Count 0
Ref Size 0 B
Global Endpoint Deduplication storage containers
ID
Block Used
Block Capacity
Unused Disk Space
Disk Space
Bitarray Capacity
Usage
Usage Map
1 3 4 1024 B 8.0 KiB 524288 75%
2 6,483 9,551 6.0 MiB 18.7 MiB 524288 67%
3 10,941 13,774 8.3 MiB 40.4 MiB 524288 79%
4 10,628 12,865 8.7 MiB 50.3 MiB 524288 82%
5 5,574 7,063 7.3 MiB 34.5 MiB 524288 78%


JobId
Client
Job Name
Comment
FileSet
Level
Start Time
Duration
Job Files
Job Bytes
Avg Speed
Errors
Status
2,784 enterprisebacula-fd MicrosoftADplugin MicrosoftADplugin F 2019-01-07 23:37:41 00:00:02 252 169.8 KiB 0.10 MiB/s 0
Delete
View Media
View Jobs
View Stats
View FileSet
View Usage
View File List
Run Again
Restore
Edit
Verify Data
Files usage
/
Size
go
go back
197,3 kB

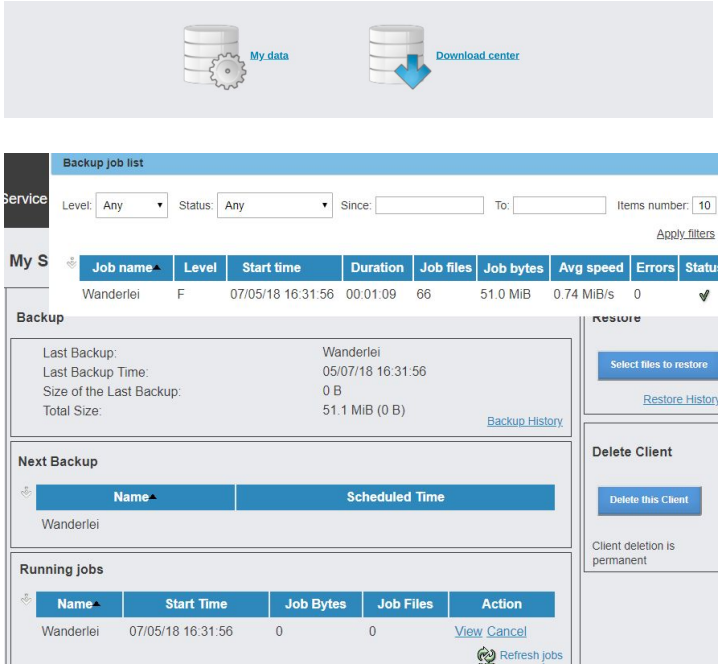
BWeb Wizards



http://www.bacula.com.br/demo-online-bweb-bacula-enterprise/

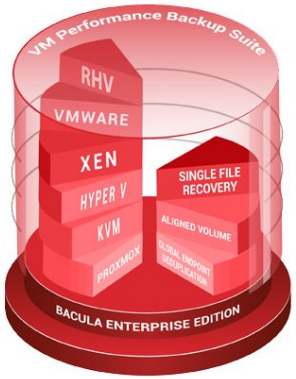
Self-Service Backup

- Regular users may deploy and/or restore backups
- Billing and quota management
- Allows **Backup-as-a-Service - BaaS**



Plugins

- VMware
- Hyper-v
- KVM
- Xen
- Proxmox
- RHEL/oVirt
- OracleVM



- ★ Clientless Backups
- ★ Auto-discover of new VMs
- ★ Differential backups on block level
- ★ Automatic restore of VMs
- ★ File level granular restore

Plugins

- MYSQL
- PostgreSQL
- Oracle
- SAP
- SAP Hana
- Sybase ASE
- MS SQL Server
- Active Directory
- LDAP
- MongoDB
- Cassandra
- Hadoop
- DB2

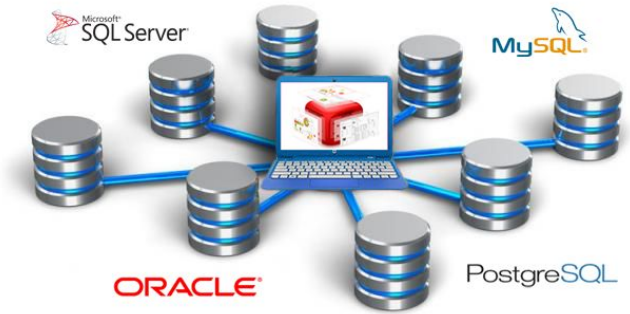
★ **Auto-discover of new databases**

★ **Differential e incremental backups**

★ **PITR/Archive Log**

★ **Granular and automatic restores**

★ **Clusters backups**



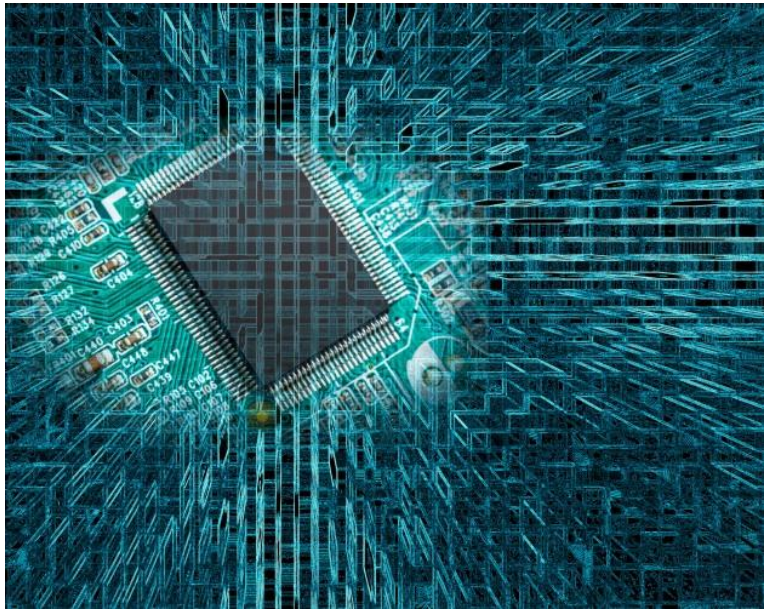
Plugins

- CDP (Continuous Data Protection)
- Docker
- Bare Metal Linux e Windows

(restore and migration of full machines *physical/virtual/cloud*)

- REST API
- Zimbra
- MS Exchange
- Sharepoint
- VSS
- bpipe
- Delta
- NDMP
- Storage SAN
- Incremental Netapp

Other Features



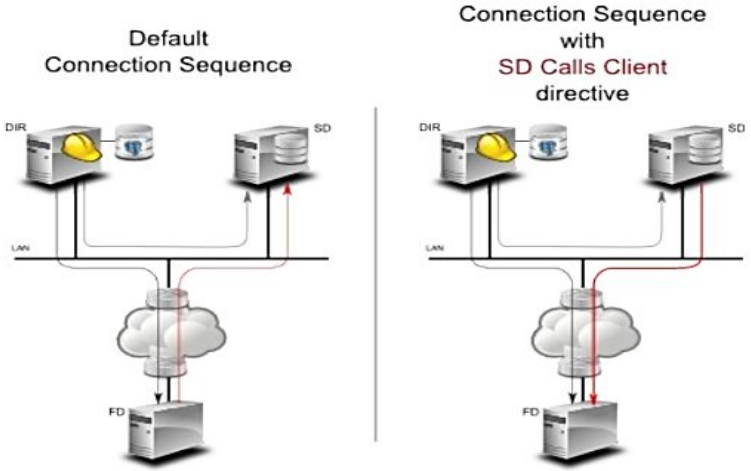
- Multi-volume backups
- Multi-backups to the same volume
- Firewall traversing and NAT - backups started by backup clients
- Incremental and differential backups
- Network traffic compression
- Copy and migration jobs
- Bandwidth limitation
- No memory leak
- Volumes automated recycle
- GFS and other backup strategies compliant

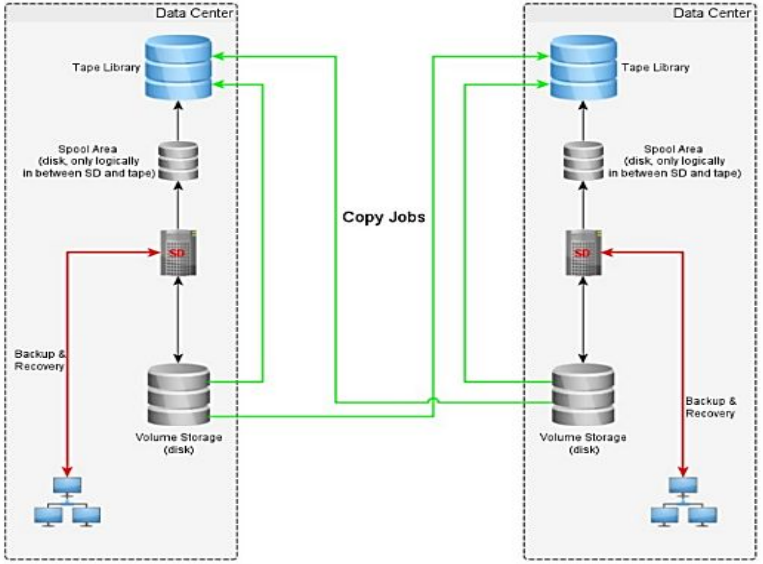
Exclusive Features

- More than 30 Plugins (hundreds of specialized features)
- Filesystems snapshot support (LVM, ZFS, etc)
- Assures data compatibility for 30 years
- Specific data removal (GPDR compliant)
- Open Catalog
- Open format backup Volume

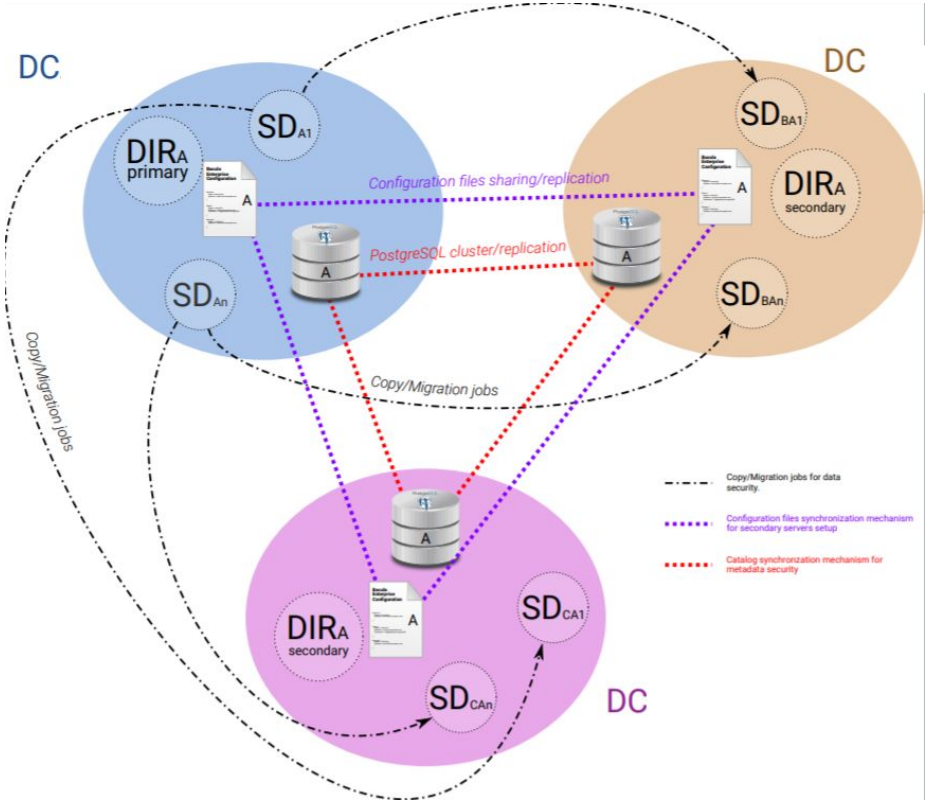
Data Center Replication

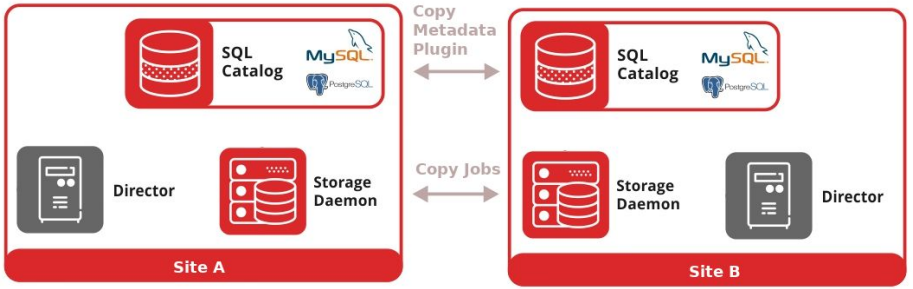
- Catalog Cluster, Config Replication, Copy Job with Metadata Replication or DRBD





Data Center Replication





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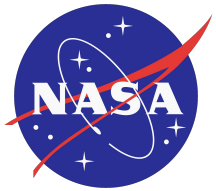
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15ª

Cost Reduction

Up to 77% of economy

- Backup specialists
- Simplified licensing
- Lean structure

Annual Pricing - Factors of Sizing

(1)

Backup Clients Quantity (VMs, Servers, Desktops etc.)

- Ranges

(1-25; 26-50;51-200; 201-500;

1001-2000; 2001-5000)

(2)

Plugins of choice

- Illimited use
- Fixed price

Licensing Levels

		SMB	Standard	Bronze	Silver	Gold	Platinum
Subscription Basics	Maximum File daemons	25	50	200	500	2000	5000
	Authorized Contacts	1	1	2	3	5	5
	Number of platforms	2	4	All	All	All	All
	Web Support	● (1)	●	●	●	●	●
	Phone Support	○ (2)	○	○	●	●	●
	Bacula Systems Certified Binaries	●	●	●	●	●	●
Response Committment	Severity 1	○	1 D (4)	6 H (3)	4 H	1 H	1 H
	Severity 2	○	2 D	1 D	6 H	2 H	2 H
	Severity 3	○	3 D	3 D	1 D	1 D	1 D
	Severity 4	○	4 D	4 D	2 D	2 D	2 D
Additionnal services	Access to Plugins	○	◪ (5)	◪	◪	◪	◪
	Access to Deduplication Volumes	○	○	○	●	●	●
	Access to Professional Services	○	◪	◪	◪	◪	◪
	Access to Senior developers		○	○	○	●	●
	Access to funded development	○	○	○	◪	◪	◪
	Training seats included per year (6)	—	—	—	—	—	1
	PostgreSQL Catalog support		○	○	◪	◪	●

(1) ● Included in the subscription
(2) ○ Not included - Not an option
(3) H: Business Hours
(4) D: Business Days
(5) ◪ Not included – Option to purchase
(6) "Administrator I" or "Administrator II" courses

Purchase Options

(1)

Subscription

- Same licensing price every year to keep using the software and to keep guarantee (technical support and updates)

(2)

Perpetual Licensing

- Greater initial investment
- May use the last updated version in a perpetual way
- 20% of purchase price annually to keep guarantee (technical support and updates)

Licensing Rights

- Correctional and evolutionary updates of all purchased modules
- Bacula Systems technical support
- Exclusive download repository
- Higher levels:
  - roadmap participation and feature requests;
  - Seat on official training (Bacula Systems in Switzerland).

Adicional Services

- Certified in-company deployment
- Certified in-company training
- Complementary technical support with customized SLA
- Backup Management Outsourcing (any backup software and/or combined backup softwares)

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Sales

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