

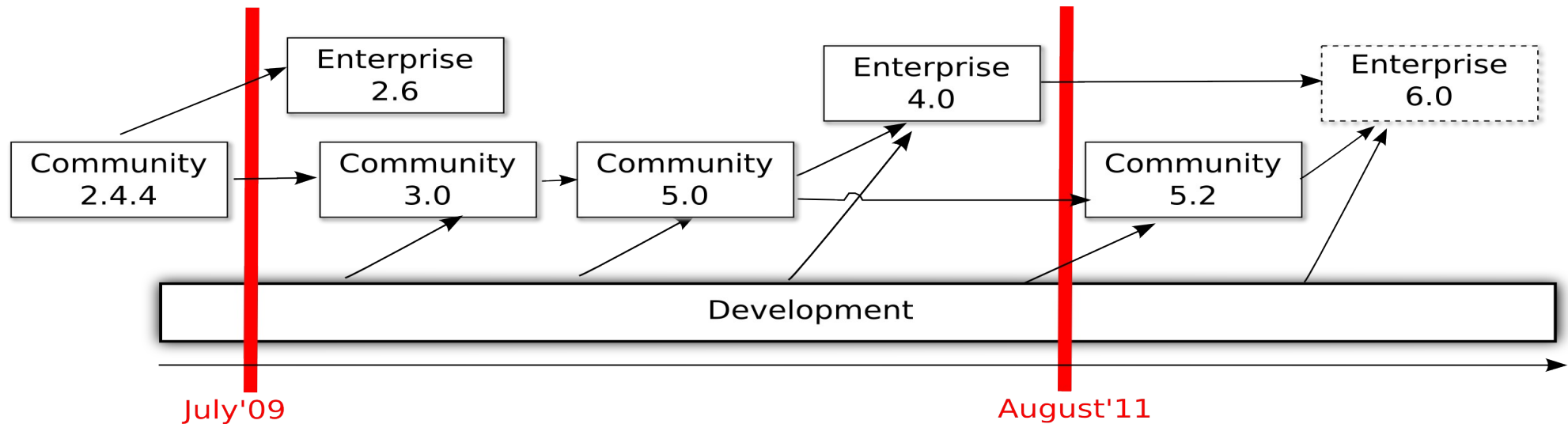


Enterprise backup & recovery

Bacula Conference Köln, Germany 21 September 2011

Development plans & directions

Evolution of Release Cycle



RELEASES...

- thoroughly tested
- suitable for production
- bug fixes backported
- long release cycle
- slow to release contributions

COMMUNITY RELEASES...

- rapid release cycle, new contributions released quickly
- community tested; may not be suitable for production
- bug fixes not backported
- only latest release supported

ENTERPRISE EDITION 4.0.7 (AGPLv3)

- advanced features
- thoroughly tested, suitable for production
- long term support, all releases
- bug fixes backported
- optimized for larger installations

Recent Development



- Community
 - ✓ Working on new features and next version
 - ✓ Moved git repos from Source Forge to bacula.org server
- Enterprise
 - ✓ Two new products (Trial version, LinuxBMR)
 - ✓ 100 new binaries
 - ✓ Linux Bare Metal Recovery in beta testing
 - ✓ Delta plugin in alpha testing (deduplication: saves only changed blocks)

Future Directions



- Bacula Enterprise version 4.0.7 August 2011
- Bacula community version 5.2.0rc1 August 2011
- Bacula Enterprise version 6.0.0 December 2011
- Bacula Enterprise version 6.2.0 – 3Q2012

Current Enterprise Version (4.0.7)



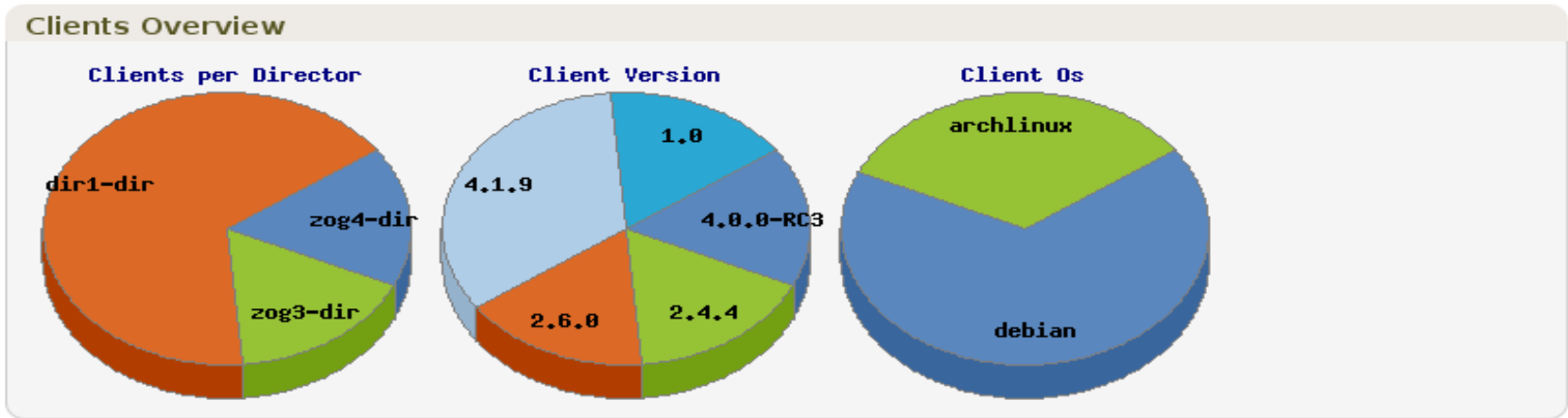
- Bacula Enterprise version 4.0.7 August 2011
 - ✓ Bug fixes for release 4.0.6 (on alldrives plugin)
 - ✓ Trial version based on this version
 - ✓ More than 100 new binaries
 - ✓ Improved test procedure for binaries
 - need for traceability

4.0.7 – Multi-Director Bweb



- Manage multiple sites
- Group clients across directors
- Manage jobs on several directors
- Enhanced statistics
- Statistics for several sites in one front-end
- Centralized, customized reporting

Multi-Director bweb



Clients

Name▲	Select	Desc	Auto Prune	File Retention	Job Retention
admin-fd	<input type="checkbox"/>	4.0.0-RC3 (20Jun10) x86_64-pc-linux-gnu-bacula-enterprise, debian, 5.0.4	1	90 days	180 days
admin2-fd	<input type="checkbox"/>	2.4.4 (28Dec08) x86_64-pc-linux-gnu, debian, lenny/sid	1	90 days	180 days
bstest-fd	<input type="checkbox"/>	1.0 (30Mar09) x86_64-pc-linux-gnu-bacula-systems, debian, lenny/sid	1	90 days	180 days
dir1-fd	<input type="checkbox"/>	4.1.9 (18Sep10) x86_64-unknown-linux-gnu, archlinux,	1	30 days	180 days
dir2-fd	<input type="checkbox"/>	4.1.9 (18Sep10) x86_64-unknown-linux-gnu, archlinux,	1	30 days	180 days
freepbx-fd	<input type="checkbox"/>	2.6.0 (20Aug09) x86_64-pc-linux-gnu, debian, lenny/sid	1	90 days	180 days

🔍 Last jobs
🔍 View groups
🔍 Status
📊 Stats
📝 Edit groups



4.0.7 Source + Binaries

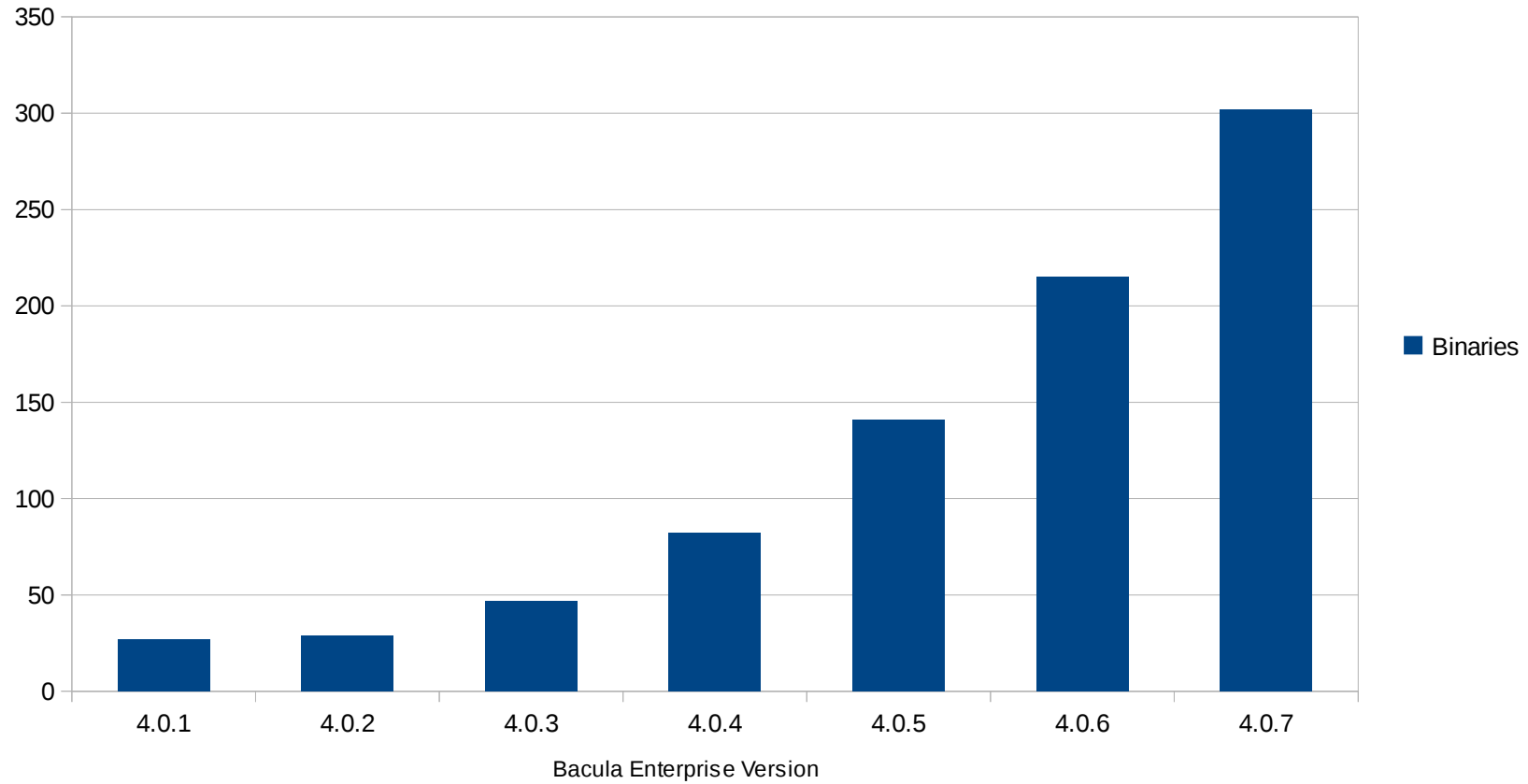
- Source 7 Files
- Win32 / 64 1 File (each)
- *Win32 / 64 VSS plugin 1 File (each)
- RHEL 5 32 / 64 11 Files (each)
- SLES 10 32 / 64 10 Files (each)
- SLES 11 64bit 10 Files
- Debian (Lenny, *Squeeze) 13 Files (each)
- Debian (*Etch, *Sarge FD only) 2 Files (each)
- MacOS (PPC, Intel) 1 File
- Ubuntu (Hardy, Lucid) 13 Files (each)
- *RHEL 6 64bit 10 Files
- *AIX 5.3, 6.1 1 File (each)
- Solaris (not ready yet)
- Total ~ 115 Files

* = recently added

4.0.7 Binaries



Binaries Evolution
Number of Binaries for each Release



Next Community Version (5.2.0)



- Community version 5.2.0 October 2011
 - ✓ Release Candidate 1 released
 - ✓ Source and Windows binaries (no RPMs or DEBs)
 - ✓ Many Bat enhancements
 - ✓ Compatibility with MySQL 5.5
 - ✓ Automatic correction of Volume size between Volume and catalog
 - ✓ New safer pruning algorithm
 - ✓ Community additions:
 - New CRC32 implementation (much faster)
 - New LZO compression

Next Enterprise Version (6.0.0)



- Bacula Enterprise 6.0.0 December 2011
 - ✓ All features listed for Community 5.2.0
 - ✓ Restart failed jobs
 - ✓ Andrew Filesystem (AFS) support used in Universities
 - ✓ More certified binaries
 - ✓ Working on HP-UX FD binaries
 - ✓ Delta plugin (save only changed blocks)
 - ✓ Incremental backup for MS SQL
 - ✓ Continue improving GUIs (Configuration GUI)
 - ✓ Maybe “stop/restart” job
 - ✓ Maybe VMWare vSphere plugin
 - ✓ SAN compatible

Future Enterprise Version 1 of 2



- Bacula Enterprise version 6.2.0 – 3Q2012
 - ✓ New (additional) Volume format that permits easier deduplication (aligned blocks)
 - ✓ SD redesign -- one thread per drive will double speed for despooling and migration/copy jobs
 - ✓ Snapshot backup by images
 - ✓ Deduplication of comm line data for better laptop support
 - ✓ More automatic archival features
 - ✓ Stop/Restart Job

Future Enterprise Version 2 of 2



- Bacula Enterprise version 6.2.0 – 3Q2012
 - ✓ Additional Modules (plugins or scripts)
 - SAP (Oracle and MaxDB – Swisscom) (EricS/Arno)
 - Oracle (Arno)
 - Zimbra
 - Zarafa
 - Lotus Notes
 - ✓ Configuration GUI
 - ✓ LAN free backup
 - ✓ Improved SD statistics (dynamic rates)
 - ✓ Volume and Device logs

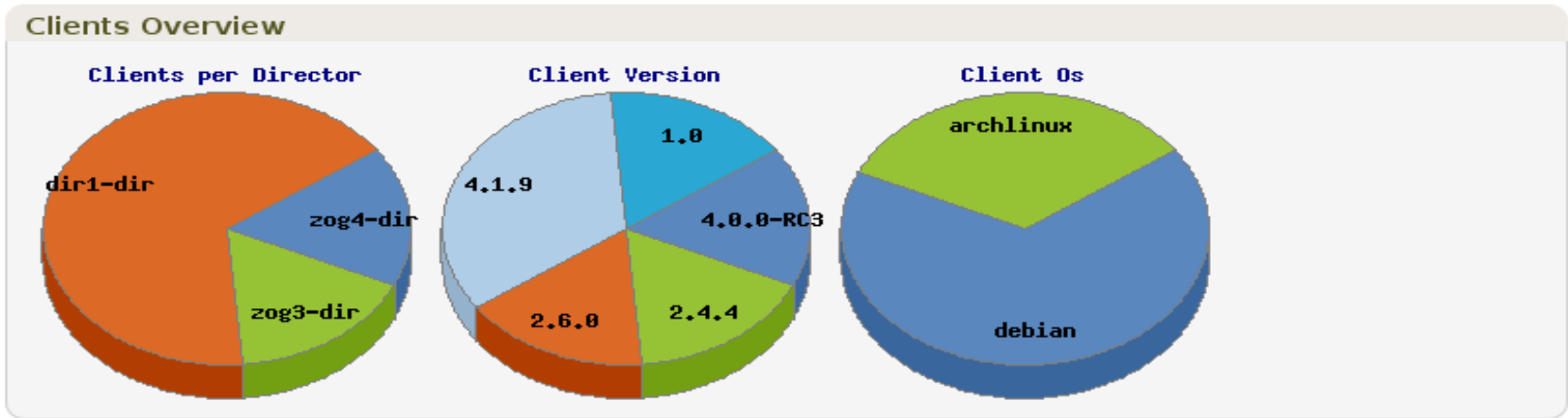


Enterprise backup & recovery

Bacula Systems

Thank you for your time and attention.

Multi-Director bweb



Clients

Name▲	Select	Desc	Auto Prune	File Retention	Job Retention
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🔍 Last jobs
🔍 View groups
🔍 Status
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📝 Edit groups

Multi-Director bweb

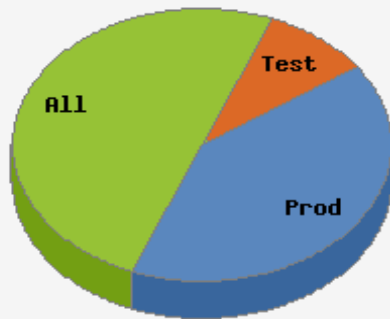


Bweb - Bacula Web Interface +

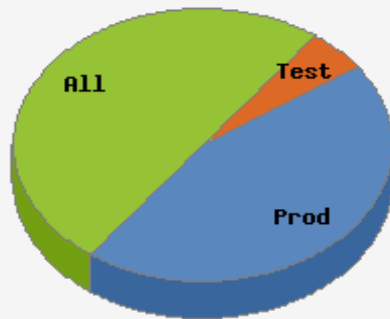
Main Directors Clients Jobs Media Statistics Configuration About search...

Groups Overview

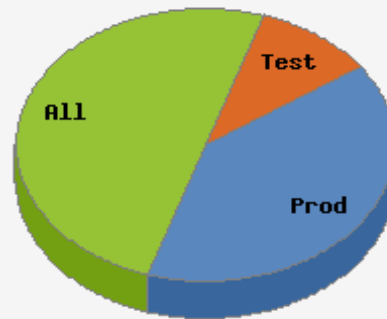
Files per Groups



Bytes per Groups



Jobs per Groups



Groups

Name▲	Selection
All	<input type="radio"/>
Prod	<input type="radio"/>
Test	<input type="radio"/>

+ Add - Remove 📄 Edit +🔍 View members +🔍 View jobs 📊 View stats
+🔍 View others

Multi-Director bweb



Bweb - Bacula Web Interface

Main Directors Clients Jobs Media Statistics Configuration About

Group: 'All'

Group:

Directors:

- All
- zog4-dir
- zog3-dir
- dir1-dir

Clients:

- freepbx-fd
- bstest-fd
- admin2-fd
- admin-fd

Members of this group:

- bstest-fd
- admin-fd
- freepbx-fd
- admin2-fd

Client filter

Save

Multi-Director bweb



Bweb - Bacula Web Interface

Main Directors Clients Jobs Media Statistics Configuration About search...

Locations Overview

Size per Location

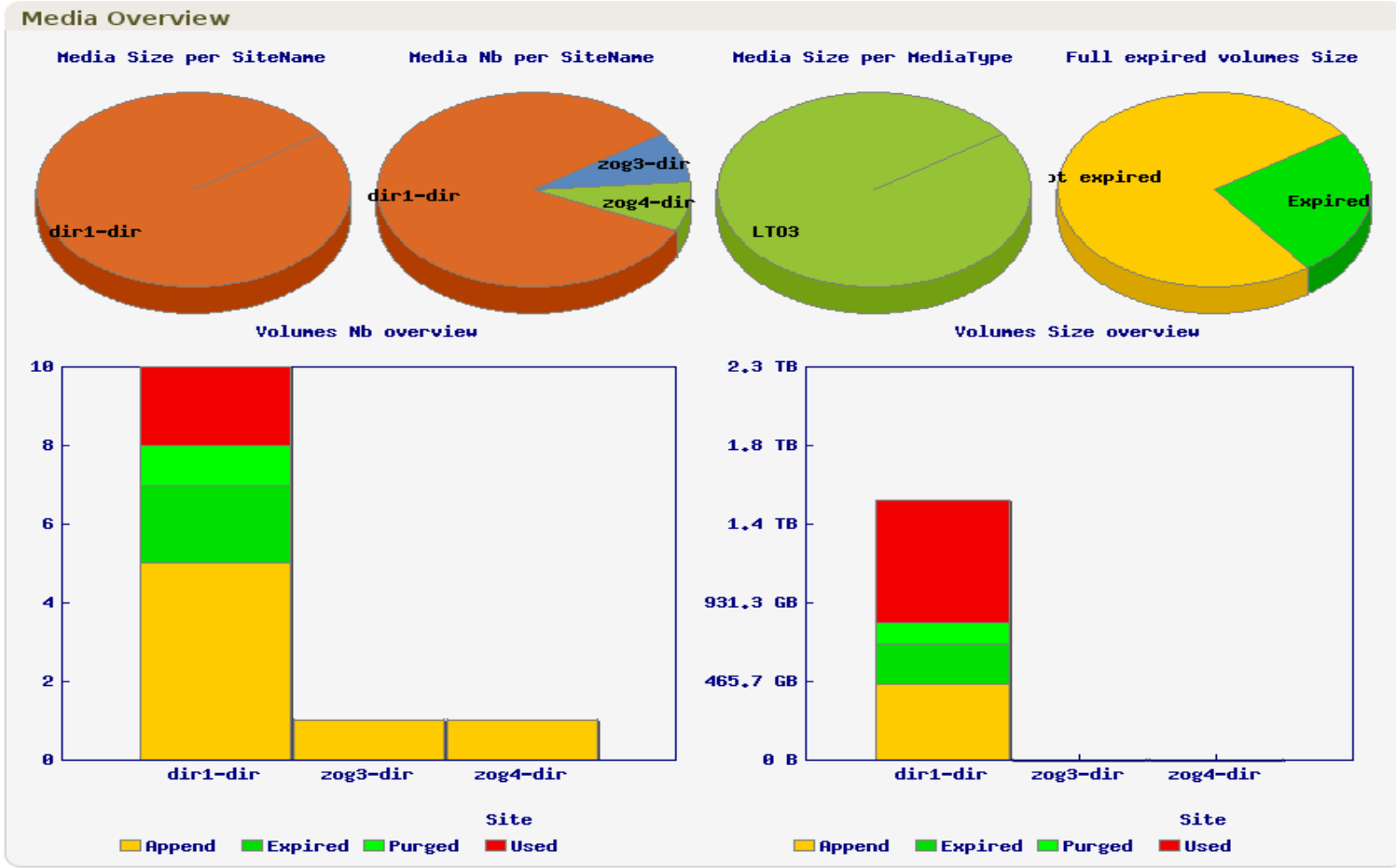
Nb per Location

Locations

Name▲	Enabled	Cost	Nb volumes	Select
Bank		100	0	<input type="radio"/>
LTO		10	7	<input type="radio"/>
Office		10	2	<input type="radio"/>

+ Add - Remove Edit View content

Multi-Director bweb



Multi-Director bweb



Bweb - Bacula Web Interface

Main Directors Clients Jobs Media Statistics Configuration About search...

Filter

Since

Age

Number of items

Groups

- All
- Prod
- Test

Directors

- zog4-dir
- zog3-dir
- dir1-dir

Statistics Overview (last 7 days limited to 100)

Bytes per Groups

Jobs per Groups

Files per Groups

Statistics (since 2010-09-14 18:33:14 and during 7 days)

Name▲	Nb Jobs	Nb Err	% Ok	Nb Resto	Nb Bytes	Nb Bytes	Nb Files
All	21	0	100.00		55.3 GB	59385270078	543593
Prod	14	0	100.00		52.9 GB	56770378347	456862

Multi-Director bweb



Bweb - Bacula Web Interface + on zog3-dir

Overview Main Directors Clients Jobs Media Storages Statistics Configuration About

Information about job backup

JobId	Client	Job Name	FileSet	Level	StartTime	Duration	JobFiles	JobBytes	Errors	Pool	Volume Name	Status
1	dir1-fd	backup	Full Set	F	2010-09-21 15:32:35	00:00:01	2260	49.0 MB	0	File	TestVolume001	✓

Delete View media View jobs View stats View FileSet View file usage Run this job

Log: backup on dir1-fd (1)

```
dir1-dir JobId 1: No prior Full backup Job record found.
dir1-dir JobId 1: No prior or suitable Full backup found in catalog. Doing FULL backup.
dir1-dir JobId 1: Start Backup JobId 1, Job=backup.2010-09-21_15.32.33_03
dir1-dir JobId 1: Using Device "FileStorage"
dir1-sd JobId 1: Wrote label to pre-labeled Volume "TestVolume001" on device "FileStorage" (/tmp/regress1/tmp)
dir1-sd JobId 1: Job write elapsed time = 00:00:01, Transfer rate = 51.70 M Bytes/second
dir1-dir JobId 1: Bacula dir1-dir 4.1.9 (18Sep10): 21-Sep-2010 15:32:36
Build OS: x86_64-unknown-linux-gnu archlinux
JobId: 1
Job: backup.2010-09-21_15.32.33_03
Backup Level: Full (upgraded from Incremental)
Client: "dir1-fd" 4.1.9 (18Sep10) x86_64-unknown-linux-gnu, archlinux,
FileSet: "Full Set" 2010-09-21 15:32:33
Pool: "File" (From Job resource)
Catalog: "MyCatalog" (From Client resource)
Storage: "File" (From Job resource)
Scheduled time: 21-Sep-2010 15:32:33
Start time: 21-Sep-2010 15:32:35
End time: 21-Sep-2010 15:32:36
Elapsed time: 1 sec
Priority: 10
FD Files Written: 2,260
SD Files Written: 2,260
FD Bytes Written: 51,414,551 (51.41 MB)
SD Bytes Written: 51,708,165 (51.70 MB)
Rate: 51414.6 KB/s
Software Compression: None
VSS: no
Encryption: no
Accurate: no
Volume name(s): TestVolume001
Volume Session Id: 1
Volume Session Time: 1285075952
Last Volume Bytes: 51,820,711 (51.82 MB)
Non-fatal FD errors: 0
SD Errors: 0
FD termination status: OK
SD termination status: OK
Termination: Backup OK

dir1-dir JobId 1: Begin pruning Jobs older than 6 months .
dir1-dir JobId 1: No Jobs found to prune.
dir1-dir JobId 1: Begin pruning Jobs.
dir1-dir JobId 1: No Files found to prune.
dir1-dir JobId 1: End auto prune.
```

Multi-Director bweb



Bweb - Bacula Web Interface

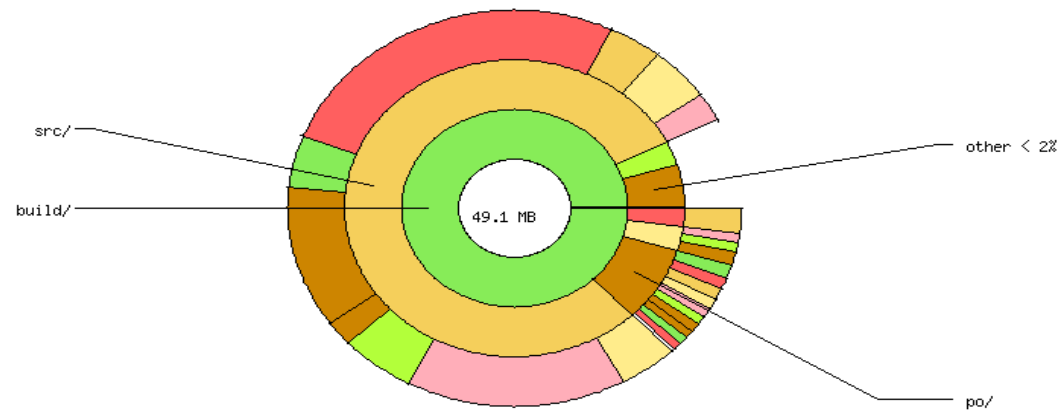
Overview Main Directors Clients Jobs Media Storages Statistics Configuration About search... on zog3-dir

Information about job *backup*

JobId	Client	Job Name	FileSet	Level	StartTime	Duration	JobFiles	JobBytes	Errors	Pool	Volume Name	Status
1	dir1-fd	backup	Full Set	F	2010-09-21 15:32:35	00:00:01	2260	49.0 MB	0	File	TestVolume001	✓

Delete View media View jobs View stats View FileSet View file usage Run this job

/tmp/regress1/ go



4.0.7 - System State backup



Restore Select of Director s-su-1-dir

Restore Select Up Mark Unmark Files

Directories	Mark	File	Mode	User	Group
/	<input checked="" type="checkbox"/>	ASR Writer/	drwx-----	root	root
@SYSTEMSTATE/	<input checked="" type="checkbox"/>	COM+ REGDB Writer/	drwx-----	root	root
ASR Writer/	<input checked="" type="checkbox"/>	Performance Counters Writer/	drwx-----	root	root
COM+ REGDB...	<input checked="" type="checkbox"/>	Registry Writer/	drwx-----	root	root
Performanc...	<input checked="" type="checkbox"/>	System Writer/	drwx-----	root	root
Registry W...	<input checked="" type="checkbox"/>	Task Scheduler Writer/	drwx-----	root	root
System Wri...	<input checked="" type="checkbox"/>	VSS Metadata Store Writer/	drwx-----	root	root
Task Sched...	<input checked="" type="checkbox"/>	WMI Writer/	drwx-----	root	root
VSS Metada...					
WMI Writer/					
C:/					
\$Recycle.Bin/					
Bacula/					
Documents and...					
PerfLogs/					
Program Files/					
Program Files...					
ProgramData/					

Current Dir: /@SYSTEMSTATE/ OK Cancel

Status:

4.0.7 - Multi-Director in Bat

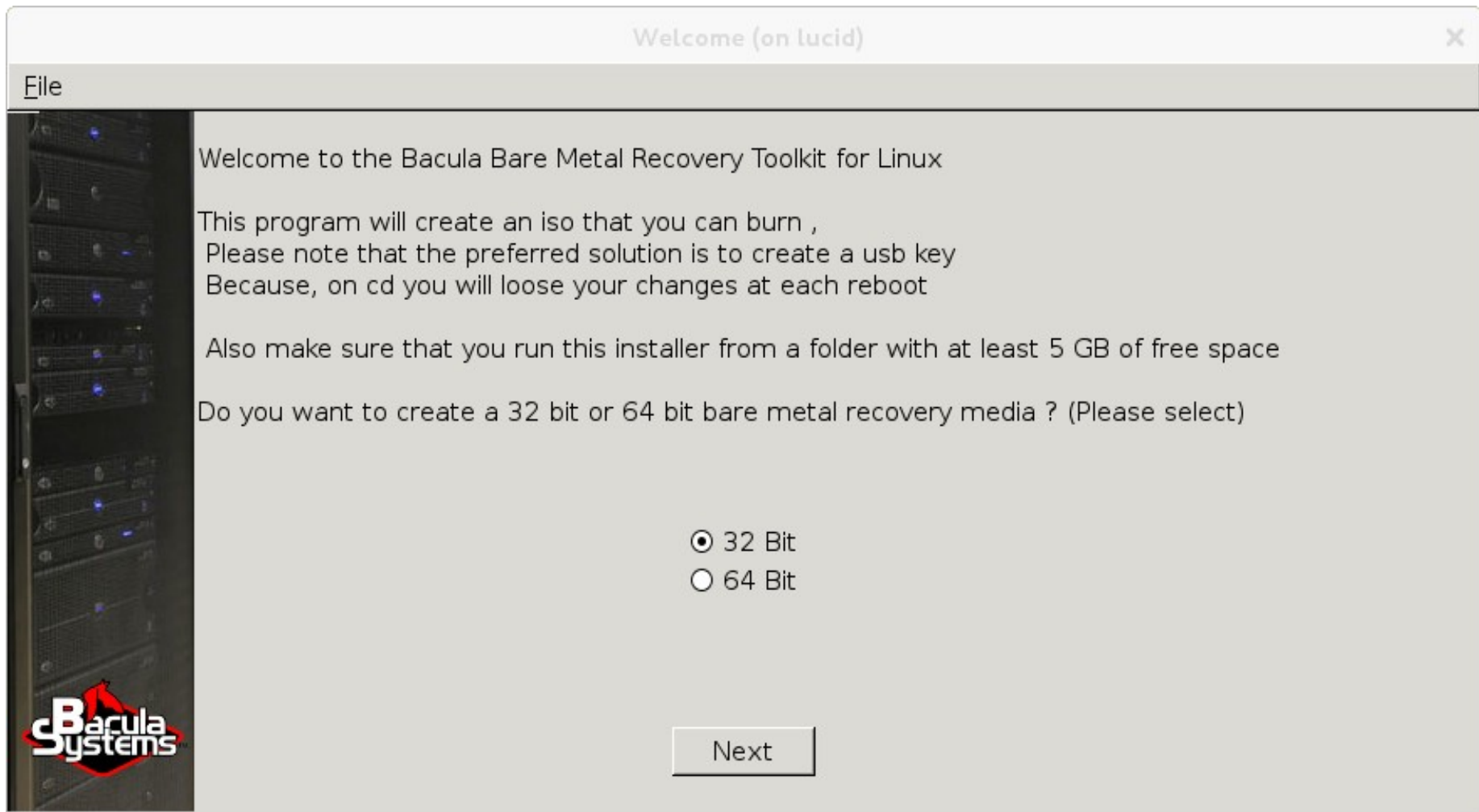


The screenshot shows the 'bat - Bacula Admin Tool' window. The interface includes a menu bar with 'File', 'Settings', and 'Help'. Below the menu is a toolbar with various icons. On the left, there is a 'Select Page' tree view. The tree is expanded to show two directors: 'lsb-250-dir' (highlighted in pink) and 's-su-1-dir' (highlighted in grey). Under 'lsb-250-dir', the 'Console' option is selected. Under 's-su-1-dir', the 'Console' option is highlighted in green. At the bottom left, there is a 'Command:' label and an empty text input field. On the right side, there is a 'Console' window with two tabs, both labeled 'Console'. The active console window displays the following text:

```
Connecting to Director lsb-250:  
1000 OK: lsb-250-dir Version: 4
```

At the bottom of the console window is a scrollbar.

Linux BMR (Bare Metal Recovery)




Linux BMR (Bare Metal Recovery)



Recognise your disks

File About



On the left , are your real disks ,
on the right, you have the disks that we've backed up with bacula,
you have to choose which one you want to assign to the drive on the left
when you feel you have assigned the right disk to the right image, press Next

sda	sda Disk size 20480MB	is not set		Change
sdb	sdb Disk size 5229MB	is not set		Change

Back Next

Linux BMR (Bare Metal Recovery)



The image shows a disk partitioning interface for the disk `sdb`. The main disk is `sdb` with a size of 20480MB. It contains two partitions: `sdb1` (243MB, Primary) and `sdb2` (20230MB, Extended). The interface includes buttons for `resize`, `recreate partition table` (checked), and `edit partition table manually`. For each partition, there are checkboxes for `format` and `Restore Data`, both of which are checked.

Partition	Size	Type	Format	Restore Data
sdb	20480MB			
sdb1	243MB	Primary	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
sdb2	20230MB	Extended	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>