Protecting a SAP cloud with Bacula at Swisscom IT Services

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Agenda

• Short Introduction
• Platform Overview
• Bacula Usage
• Experiences
• Future Enhancements
• Wishlist
• Q&A
Short Introduction

Swisscom IT Services AG is a subsidiary of Swisscom

Core business
• Large-scale IT projects
• IT infrastructure management
• SAP consulting, solutions and operation
• Business Process Outsourcing (BPO)

Core competencies
• Management of complex IT infrastructure
• SAP
• BPO for the financial sector
• End user services
Swisscom IT Services Group – who we are

**Facts & Figures**

- Headquarters in Berne
- Revenues
  - 2009: CHF 841 million / CHF 435 million*
  - Q2/2010: CHF 240 million* (+30.4% compared with previous year)
- 300 customers
- 16 additional Swiss locations
- 3,300 employees**

**Data centres**

- 2 locations
- 8 petabytes of storage capacity
- 10,000 servers
- 2 mainframes with about 5,000 MIPS

* Revenue from external customers/ ** of which 500 are external employees
Platform Overview

- We built a so-called „Private Cloud“ based on a HP BladeMatrix infrastructure
- Provides template-based services to several customers
- We focus solely on SAP Services
- Only standardized offers
- Pay-per-use model (performance and storage)
Platform Overview

- HP BladeMatrix is only the base for deployments, so we had to add:
  1. A Hypervisor,
  2. A backup software,
  3. A monitoring and reporting tool,
Platform Overview

• Requirements for the backup software
  – Windows and Linux client support
  – Virtual and physical servers
  – Scalable
  – Integration with Nagios available
  – Easily adaptable
  – Simple license model
  – Disaster recovery
  – Database-Integration possible (pre- and post-tasks)
Bacula Usage

• Bacula Advantages:
  – No license cost involved
  – No vendor lock-in
  – Easily adaptable
  – Well documented
  – Business-class support
  – Knowledge available
Bacula Usage

- Version 3.0.3
- Director and Storage Daemon on SuSE SLES 10
- Director and Storage HP Blade 2x QC with 12 GB
- File Daemon on SuSE SLES 10, Windows 2003 x64 and Windows 2008 x64
- Only backup-to-disk
- Disaster Recovery by replication to another location
Experiences

- It was nearly finished before it began...
Experiences II

• Today we save more or less daily:
  – Filesystems Linux and Windows
  – Database Logfiles
  – Databases 100 to 400 GB each

• 3 OS x 4 Databases (MySQL*, DB2, MaxDB, Oracle, MS SQL*) we need to cover

• 2 major SAP installation types (ABAP and JAVA) and many different SAP products
Experiences III

- Database backup:
  - The easy one: Dump and backup (e.g. MySQL)
  - The basic one: Shutdown and backup
  - The normal one: Tell the database its backed up and backup (copy it) online (e.g. Oracle)
  - The preferred one: Backup the database with the database utility to a pipe and get it from there (e.g. MaxDB, DB2)
Experiences IV

–The ultimate one: Tell the database its backed up, snapshot it, release the database lock, mount the snapshot somewhere and backup without involving the db server (called split-mirror backup, easily combined with so-called system copies)
Experiences V

- Out experiences so far:
  + Very stable environment
  + High performance achievable
  + Client directly integrated into the templates
  + Easily adaptable to the database backups
  + Fantastic support

- Calculating volumes, generations and retentions is not so easy
- I am missing a nice GUI on Windows (TS)
Future Enhancements

• Soon update to Enterprise Edition 4.0
  – A big decrease in used storage is expected because of Base Jobs

• Improve alarming
  – Tighter integration with Groundworks/Nagios

• Backup full VM images
  – Easier Disaster Recovery
Future Enhancements

- Integration of a remote site
  - Replace rsync with a second storage daemon

- Prepare split-mirror backups
  - Scripting with HP RSM
Wishlist

• Deduplication (block-level)
  – Best case: on the client
  – Also useful: on the server

• SAP Integration
  – SAP-readable Logfile
  – May be using SAP scheduler (we dont really want that)
Wishlist II

- Reporting
  - Non-IT people keep asking the same questions over and over (SAS70, Service Manager before going to the customer etc.)
    - How often do you backup?
    - When do you backup?
    - How long do you store it?
    - When was the last successful restore?
Q & A

• Questions anyone?