

Fourth Annual



**MySQL**®

Users Conference 2006



DISCOVER • CONNECT • SUCCEED

# What do you mean there's no backup?

Mike Kruckenberg  
OpenAir, Inc.

Jay Pipes  
MySQL, Inc.

Presented by



O'REILLY

# Backups, More Fun Than . . .



# Creating the Plan

# The Plan

- Downtime is measured in dollars
- Expectation setting
- Important for both team and one-man shops
- Paranoia only as deep as the pocketbook
- Importance of a written policy and rehearsal

# Plan Points

- What data (all of it?) should be backed up?
- How frequently is the data backed up?
- Who handles the backup and restore management? (and do \*they\* have a backup?)

# The Plan Details

- Details on the backup location(s)
- Details on your schema very important
- Details on all relevant log files and configuration
- Details on the toolset and procedure used
- Contact number for all involved
- Expectations on acceptable loss, if any
- Reviewed on a regular basis

# Executing the Plan

# Backups, More Fun Than . . .





# Executing the Backup Plan

- Map the plan to available tools
- Implement technical piece
- Test backup process
- Test recovery scenarios
- Recruit data owners to test
- Revisit backup plan and implementation
- Report to data owners

# Usual Backup Tools

- `mysqldump` - all engines, creates DDL and INSERT statements for sets of data
- `mysqlhotcopy` - filesystem copy of MyISAM tables
- `ibbackup` - InnoDB (+ `mysqlhotcopy`) (requires license)
- filesystem utilities - straight off disk or using filesystem snapshots (LVM)
- `mysqlbinlog` - utility for replaying logs forward from the time of the last backup

# Other Backup Tools

- automysqlbackup
- amanda
- MySQL Administrator
- clever use of unusual tools (winzip?)
- custom scripts

# Small Installation

- Situation
  - MyISAM tables, hundreds of MB
  - Data updated infrequently
  - Backed up for disaster recovery
  - Nightly window for maintenance
- Solution
  - Nightly mysqldump or mysqlhotcopy
  - Restore from dump or file copy

# Medium Installation

- Situation
  - Mix of MyISAM/InnoDB, few GB data
  - Actively updated data
  - Backed up for system or table restore
  - Brief nightly maintenance window
- Possible Solutions
  - mysqldump for individual and all tables
  - Restore using dumpfile and binary logs

# Large Installation

- Situation
  - InnoDB/MyISAM mix, dozens to hundreds of GB
  - Heavy loads of data inserts and updates
  - System restores needed
  - No regularly-available downtime
- Solutions
  - Replication to second machine for hot spare
  - mysqldump or ibbackup for nightly snapshots
  - LVM - lock tables and use filesystem snapshot
  - Restore with file copy or rebuild from dump

# More to Think About

- Design database with backup in mind
- Know how long the backup and restore process takes
- Check backup to make sure everything is there
- Backed-up data is stored where it can be retrieved to meet restore requirements
- Be sure data is flushed and tables are locked

# The Future

- Engine-agnostic online backup API somewhere in the works
- dbsnapper - pluggable filesystem snapshot tool



# Thank You

- automysqlbackup: <http://sourceforge.net/projects/automysqlbackup/>
- [amanda: http://www.zmanda.com/amanda-community-edition.html](http://www.zmanda.com/amanda-community-edition.html)
- dbsnapper: <http://jcole.us/blog/archives/2006/04/25/plugin-based-backup-for-mysql/>