MySQL InnoDB Cluster
MySQL HA Made Easy!

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Program Agenda

1. MySQL InnoDB Cluster
2. MySQL Shell / AdminAPI
3. Live Demo – Setting up a cluster in a snap!
4. Live Demo – Automatic fail-over!
5. Summary
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100% Virtually all organizations require their most critical systems to be highly available
MySQL InnoDB Cluster: Background

• **High Availability**: critical factor
• **Replication** as a common solution
• MySQL has support for:
  – Classic **master-slave** replication
  – DRBDS
  – Other OS or VM solutions...
MySQL InnoDB Cluster: Background

• High Availability: critical factor
• Replication as a common solution
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Group Replication!

• Update-everywhere (m-m)
• Virtually synchronous replication
• Automatic server fail-over
  – Distributed recovery
  – Group reconfiguration
• Powered by a GCS:
  ✓ Implementation of Paxos
MySQL InnoDB Cluster: **Background**

- **Challenging task**
  - Not easy to setup and maintain
  - Technical knowledge needed
  - How to configure the applications?
  - How to integrate all the components?
MySQL InnoDB Cluster: Vision

“A single product — MySQL — with high availability and scaling features baked in; providing an integrated end-to-end solution that is easy to use.”

— MySQL Engineering Team
Ease-of-Use
Built-in HA

Scale-Out
High Performance

MySQL InnoDB cluster

Out-of-Box Solution
Everything Integrated
MySQL InnoDB Cluster
MySQL InnoDB Cluster

App Servers with MySQL Router

MySQL Group Replication
MySQL InnoDB Cluster

App Servers with MySQL Router

MySQL Shell
Setup, Manage, Orchestrate

MySQL Group Replication
MySQL InnoDB Cluster

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Clients
MySQL InnoDB Cluster

- App Servers with MySQL Router
- MySQL Shell Setup, Manage, Orchestrate
- MySQL Group Replication

One Product
- Full Stack HA Solution
- Easy to use!
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MySQL Shell: Intro / Features

• Interactive multi-language interface that supports development and administration for the MySQL Server

• Can be used to perform data queries or updates, and administration operations:
  ✓ Scriptable “DevOps” APIs
  ✓ Unified Interface for MySQL Developers and DBAs: one tool!

• Intuitive and easy to use
MySQL Shell: Features

• **Multi-language support**
  – JavaScript, Python and SQL
  – Both interactive and batch operations

• **Document and Relational models**
  – Supports the classic relational model
  – Modern fluent API for the MySQL Document Store
    • CRUD and Relational
MySQL Shell: **AdminAPI**

- **Administration API**
  - Creation and Management of InnoDB Clusters
  - Hides the complexity of:
    - Configuration
    - Provisioning
    - Orchestration
  - Simple and straight-forward
  - Doesn’t require MySQL expertise
  - Flexible, powerful and secure
  - Available in both JavaScript and Python
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Setting up a cluster in a snap!

AdminAPI
Live Demo!
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Automatic Failover!

AdminAPI
Live Demo!
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Summary

- MySQL InnoDB Cluster is **THE** built-in **HA** solution for MySQL:
  - Full-stack: **High Availability** _out-of-the-box_
  - Easy to use: _usability_ as a top concern

- MySQL Shell with **AdminAPI**
  - Brings together developers and DBAs
  - Easily configure and administer InnoDB clusters
  - Powerful, flexible and secure
Resources

• MySQL InnoDB Cluster Userguide:

• MySQL Shell Userguide:

• APIs Reference manuals
  – Python: https://dev.mysql.com/doc/dev/mysqlsh-api-python/

• Blogging
  – http://mysqlserverteam.com/category/high-availability
Thank you!

Q/A

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