CASSANDRA JP 2015
PROBLEM FREE CASSANDRA UPGRADES

Aaron Morton
@aaronmorton
Co-Founder & Team Member

THE LAST PICKLE

About The Last Pickle.

Work with clients to deliver and improve Apache Cassandra based solutions.

Based in New Zealand, USA, Norway.

Why Upgrade?

When to Upgrade

Run Books

Upgrading from 1.2 to 2.0

Why Upgrade?

Bug Fixes
New Features
Performance Improvements

Why Upgrade?

Because it is easy.

Upgrading is a series of short term node failures.

Cassandra is designed to maintain availability when nodes fail.

Why Upgrade?
When to Upgrade
Run Books
Upgrading from 1.2 to 2.0

Upgrade before you need to upgrade.

Upgrade during business hours when people are at their best.

If you are a startup upgrade to whatever release gives you features you need. (Make sure you test.)

If you are a mature company generally avoid the first 6 revisions of a major release. (Still do testing.)

When To Upgrade

Ideally stay 1 or 2 revisions behind on the major version.

Why Upgrade?
When to Upgrade
Run Books
Upgrading from 1.2 to 2.0

Why are we doing this?
What are we doing?
How will we do it?

Phase changes into chunks.

Describe the state of the system at the end of the Phase

Tasks that have checks and rollback.

cut-and-paste actions for operators.

Run Book Sections

Overview
News
Changes
Tickets
Configuration
Schema

Current Situation
Assumptions
Risks
Phases

Why Upgrade?
When to Upgrade
Run Books
Upgrading from 1.2 to 2.0

A detailed Run Book for this upgrade is available at http://thelastpickle.com/blog/

Overview

Prepare the cluster.
To each node in turn:
  Shutdown then node.
  Upgrade the installation.
  Restart the node.
Upgrade on disk files.
Cleanup.

cassandra.yaml

Setting	Change
reduce_cache_sizes_at	Setting has been removed.
reduce_cache_capacity_to	Setting has been removed.
flush_largest_memtables_at	Setting has been removed.
native_transport_min_threads	Setting has been removed.

(There are more changes.)

Schema Change

Setting	Change
read_repair_chance	The default has changed from 0.1 to 0.0.
local_read_repair_chance	The default has changed from 0.0 to 0.1.

Java 7 Required
Cassandra 1.2.9 Required
Blob Formats
New LCS File Size
Speculative Retry Added
Configurable Metrics

```
nodetool status
nodetool version
nodetool gossipinfo
&& date
```

Disk Space
No ERRORs log messages
Gossip Stable
No Dropped Messages
Backups Disabled
Repair Disabled

On Disk File Format
Minimum Version
Monitoring
Blob Constants
Availability

Latency
Availability
Incompatibility
Disk Space

Ensure the cluster works the way we think it does.

Snapshot
Update package repositories
Disable Hinted Handoff

All nodes UP
Graceful shutdown
Clear CommitLog
Upgrade Package

Update cassandra.yaml
Start Node
Tail system.log
watch nodetool tpstats

Rollback (if needed)

Backup 2.0 SSTables.
Delete all data.
Restore from snapshot.
Repair.

Ensure all nodes are UP
Rolling upgrade

Enabled Hinted Handoff

Phase 5. Upgrade SSTables

nodetool clearsnapshot -t pre-2.0
nodetool upgradesstables

Enabled Backups
Enabled Repair

Thanks.

Aaron Morton
@aaronmorton

Co-Founder & Team Member
www.thelastpickle.com

THE LAST PICKLE