



Managing replication with PRM

Yves Trudeau Ph. D.
Percona Live DC/January 2012

About me

- <http://www.percona.com>
- <http://www.mysqlperformanceblog.com/>
- <http://www.bigdbahead.com>
- Main focus is High-Availability

Yves Trudeau, Ph.D.

Principal Consultant

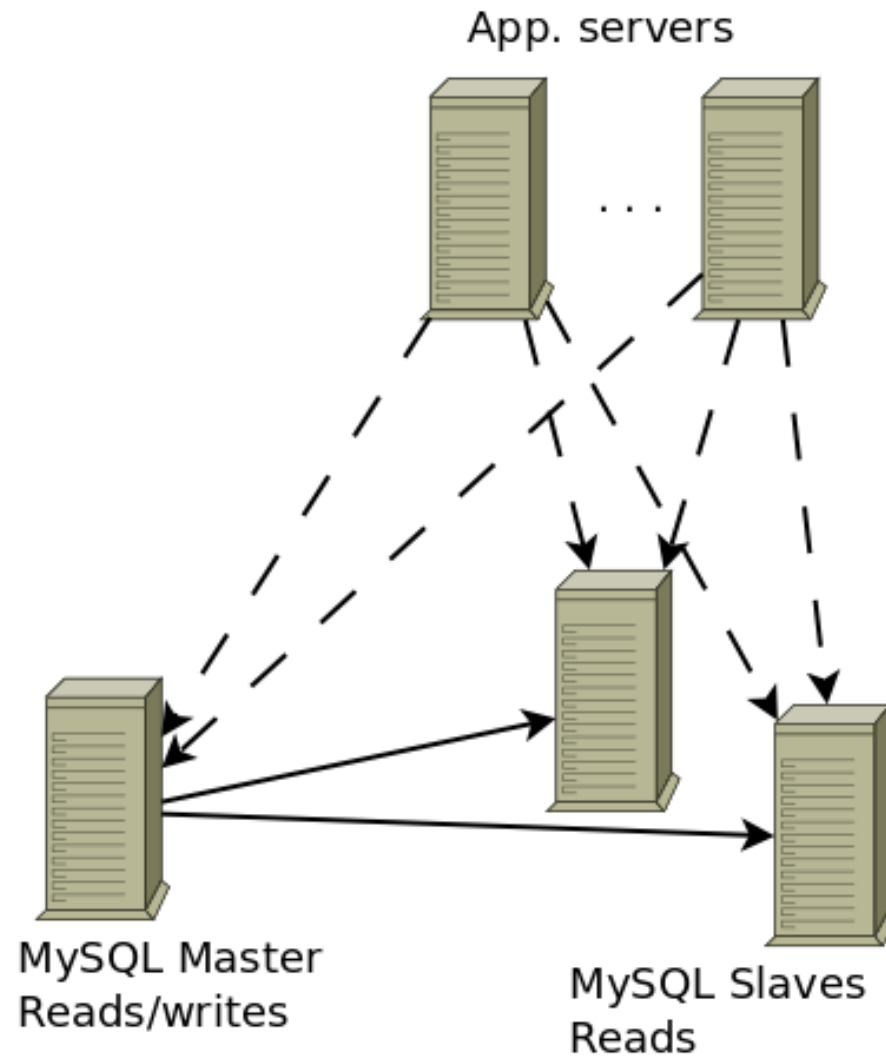
Agenda

- Review of MySQL replication
- Typical MySQL setup
- Challenges with replication
- Current tools
- Description of PRM
- PRM life cycle
- Getting PRM
- Future of PRM

Replication a key feature of MySQL

- Either write statements or updated rows passed to the slaves
- Efficient log file system, binary logs and relay logs, queuing of the updates
- Low overhead on Master
- Slaves are online and can be queried (scaling of reads)
- Very simple failover
- Easy to configure

Typical MySQL setup



Challenges of replication

- Maintenance of the read slaves
 - Disable slaves that lag behind too much
 - Disable slaves when replication is broken
- Upon failover, pick the best slave (most up to date)
- Manage read-only (ON/OFF) behavior of server
- Kill running transactions when setting RO = ON
- Synchronize slaves and masters

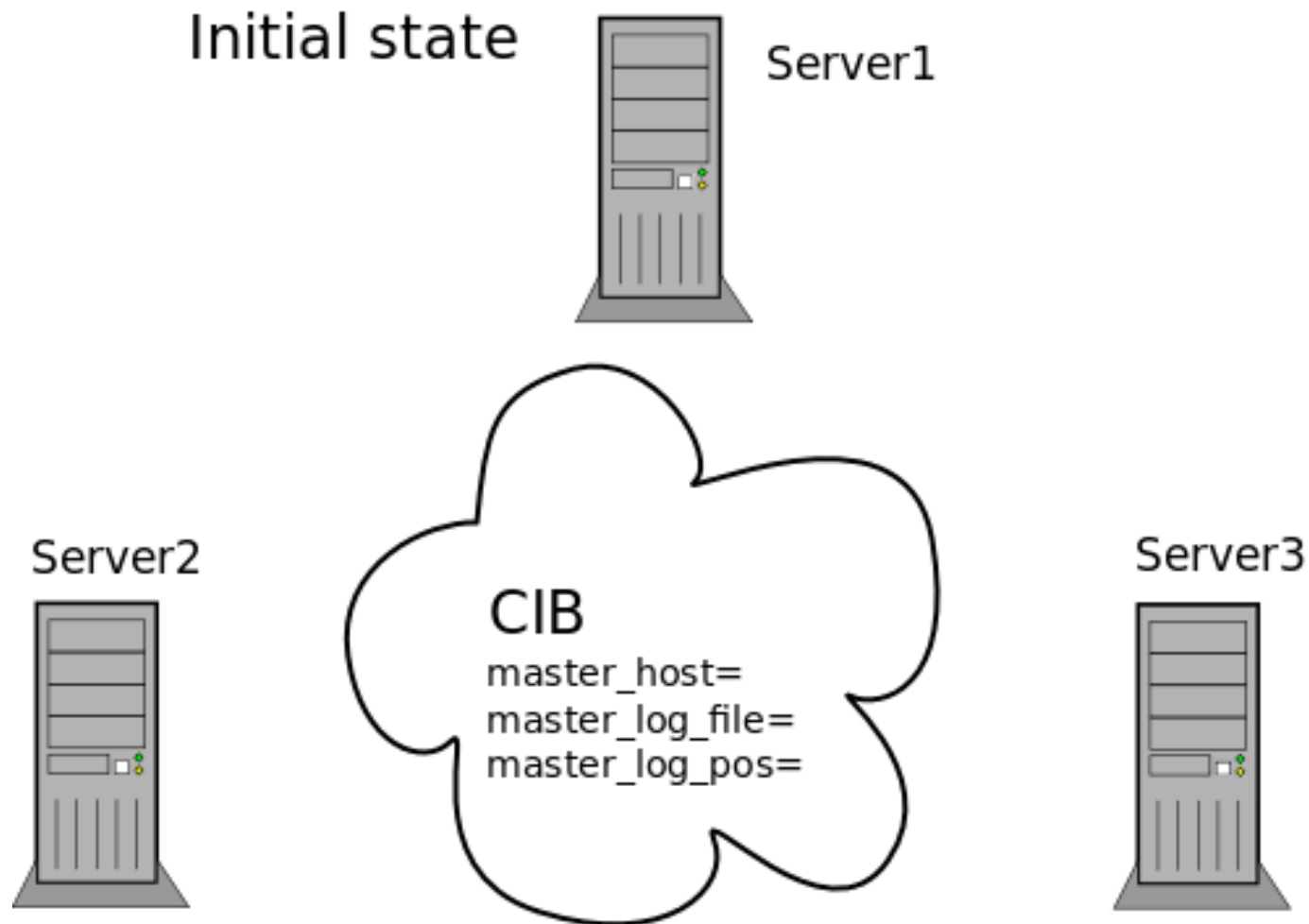
Current tools

- MMM
- Flipper
- MHA

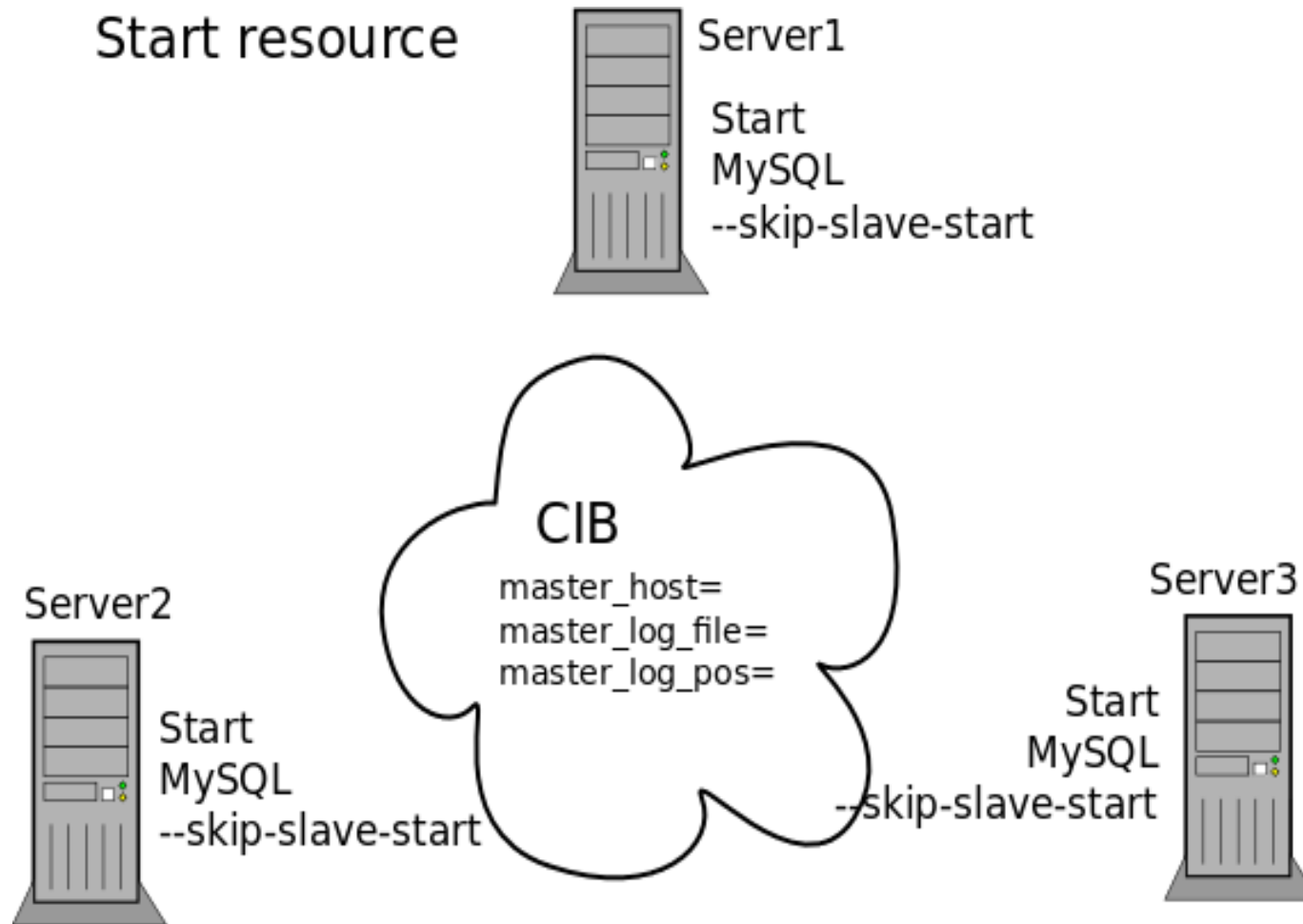
PRM

- Uses Pacemaker
- Distributed architecture, no SPOF
- One master multiple slaves
- Slaves maintain a master_score attribute based on replication state
- Full stonith/fencing stack
- Flexible logic, score based

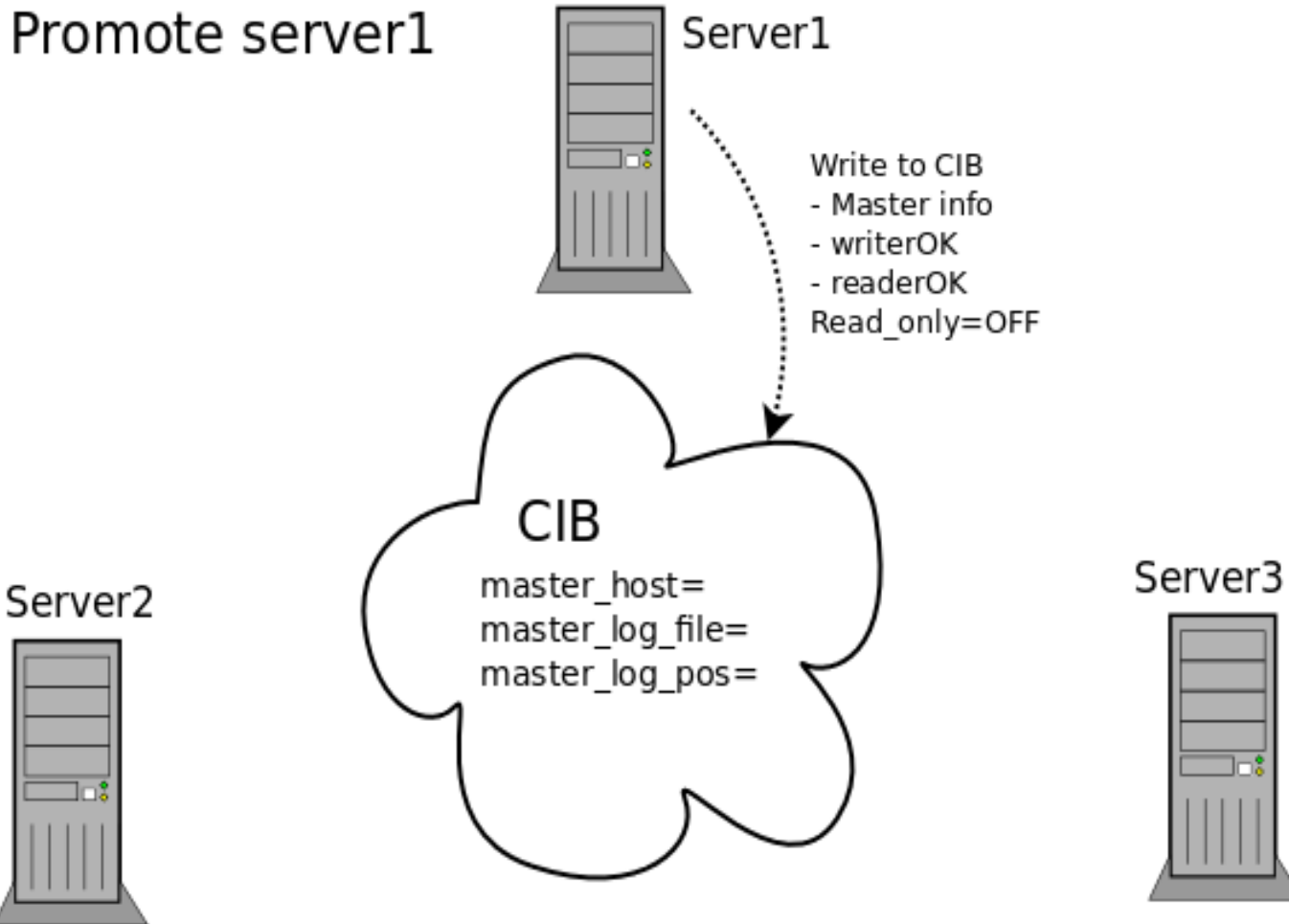
PRM Life cycle (1)



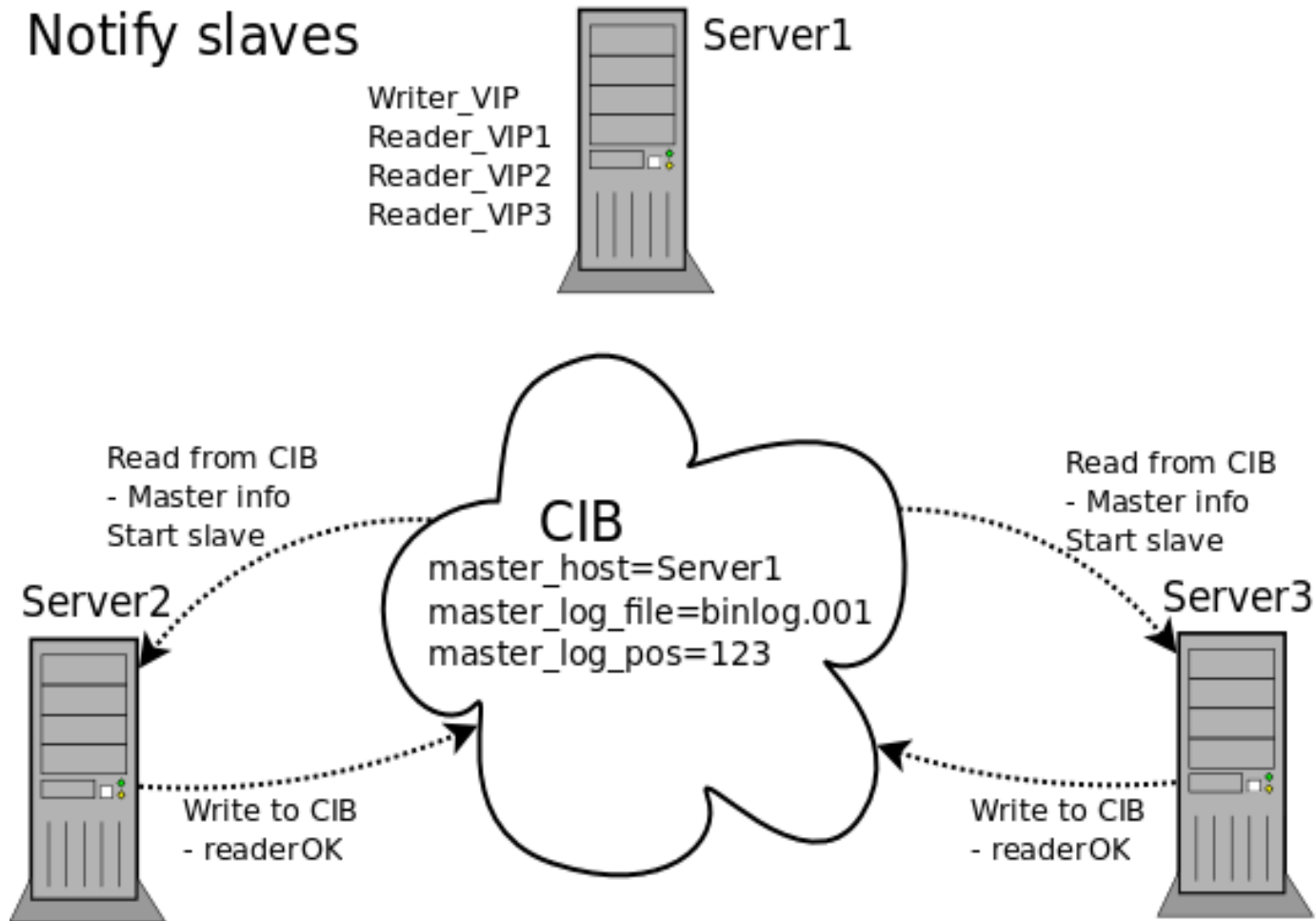
PRM Life cycle (2)



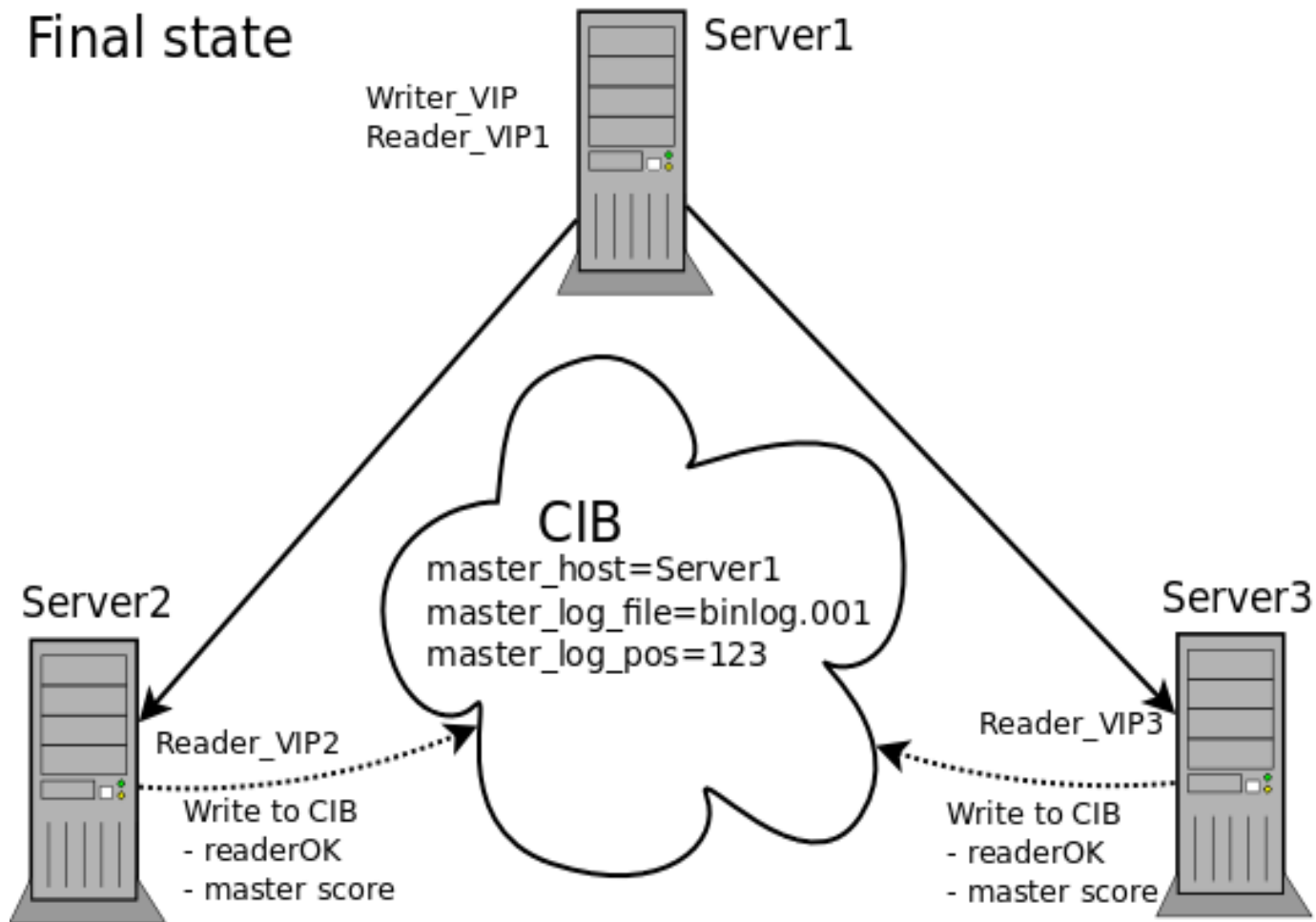
PRM Life cycle (3)



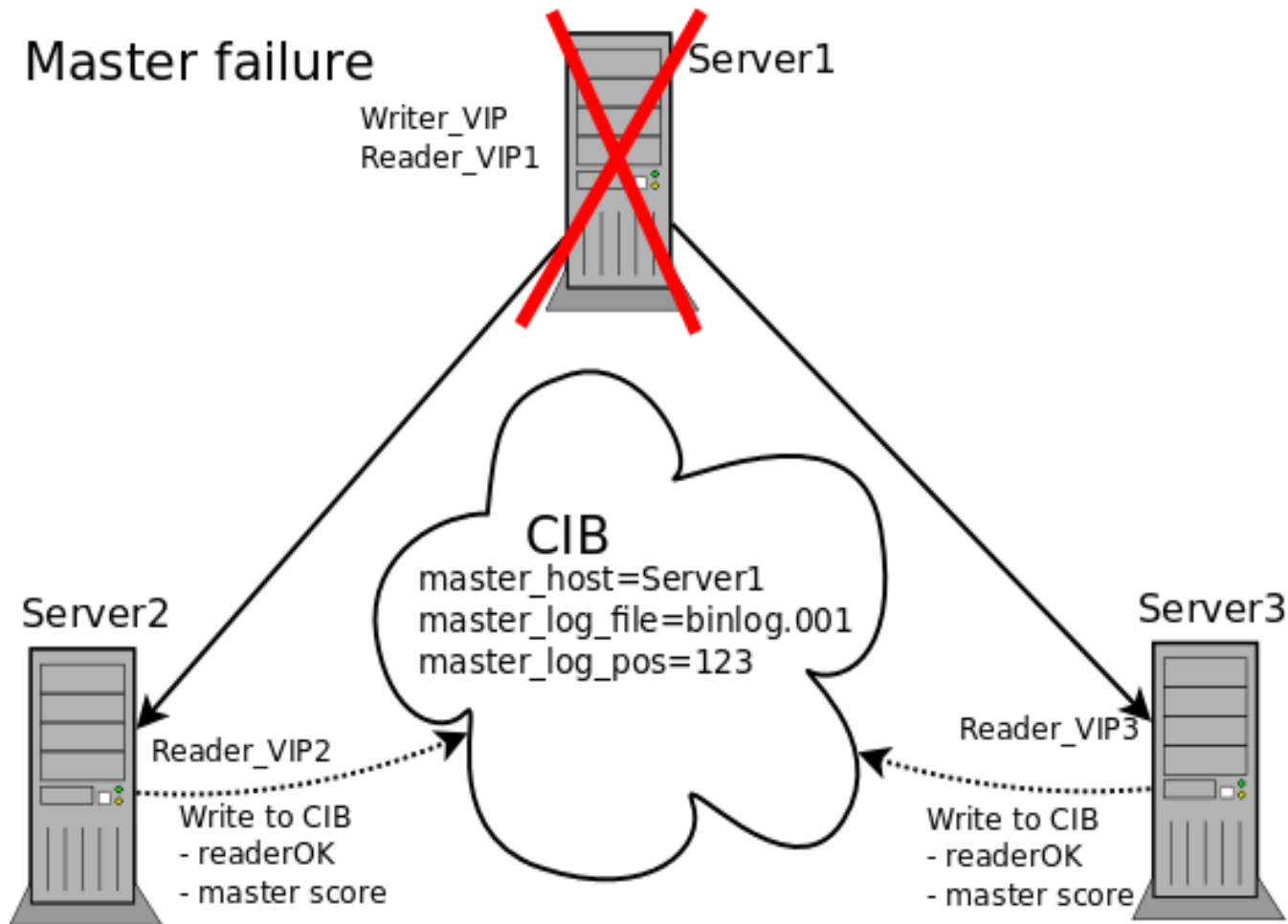
PRM Life cycle (4)



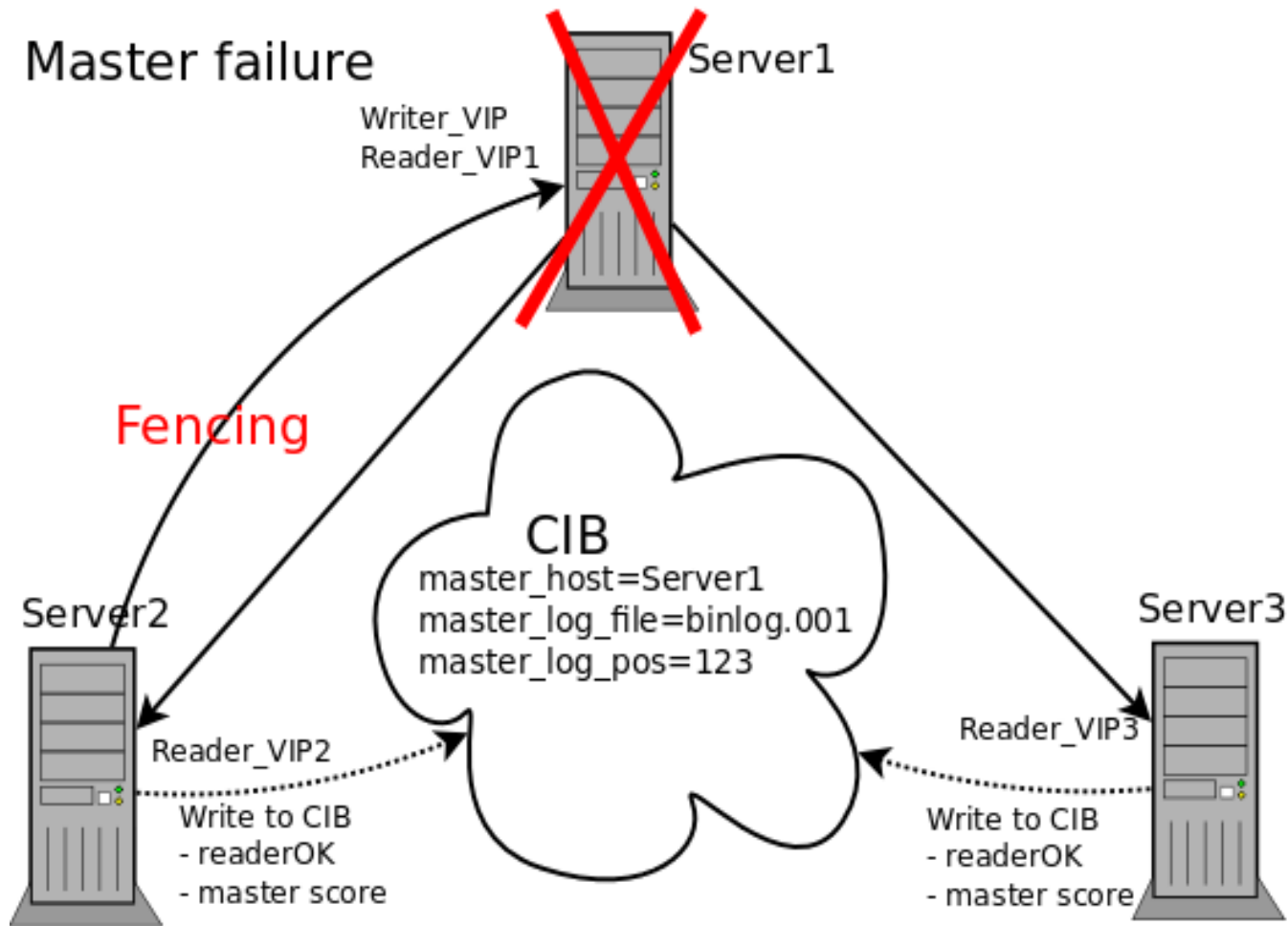
PRM Life cycle (5)



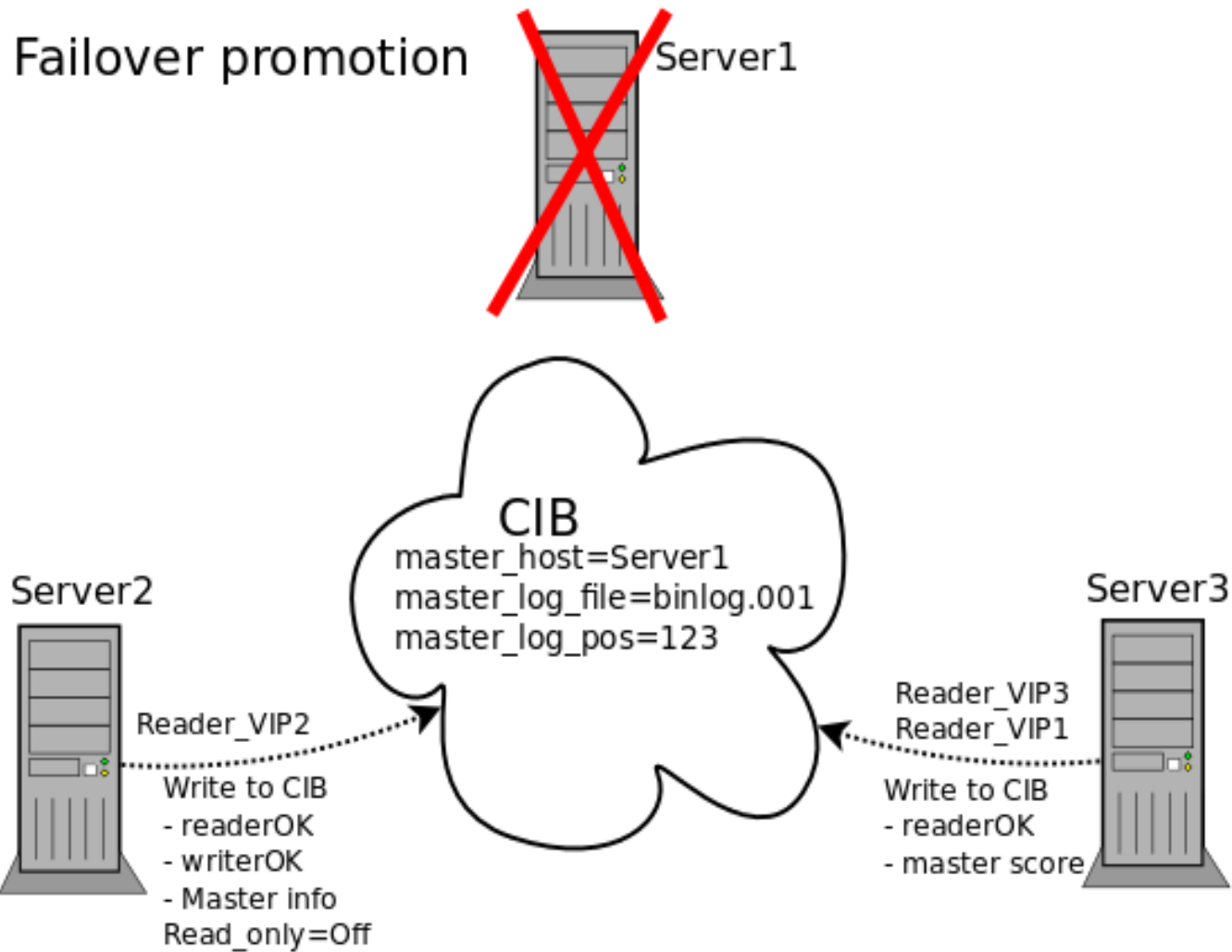
PRM Life cycle (6)



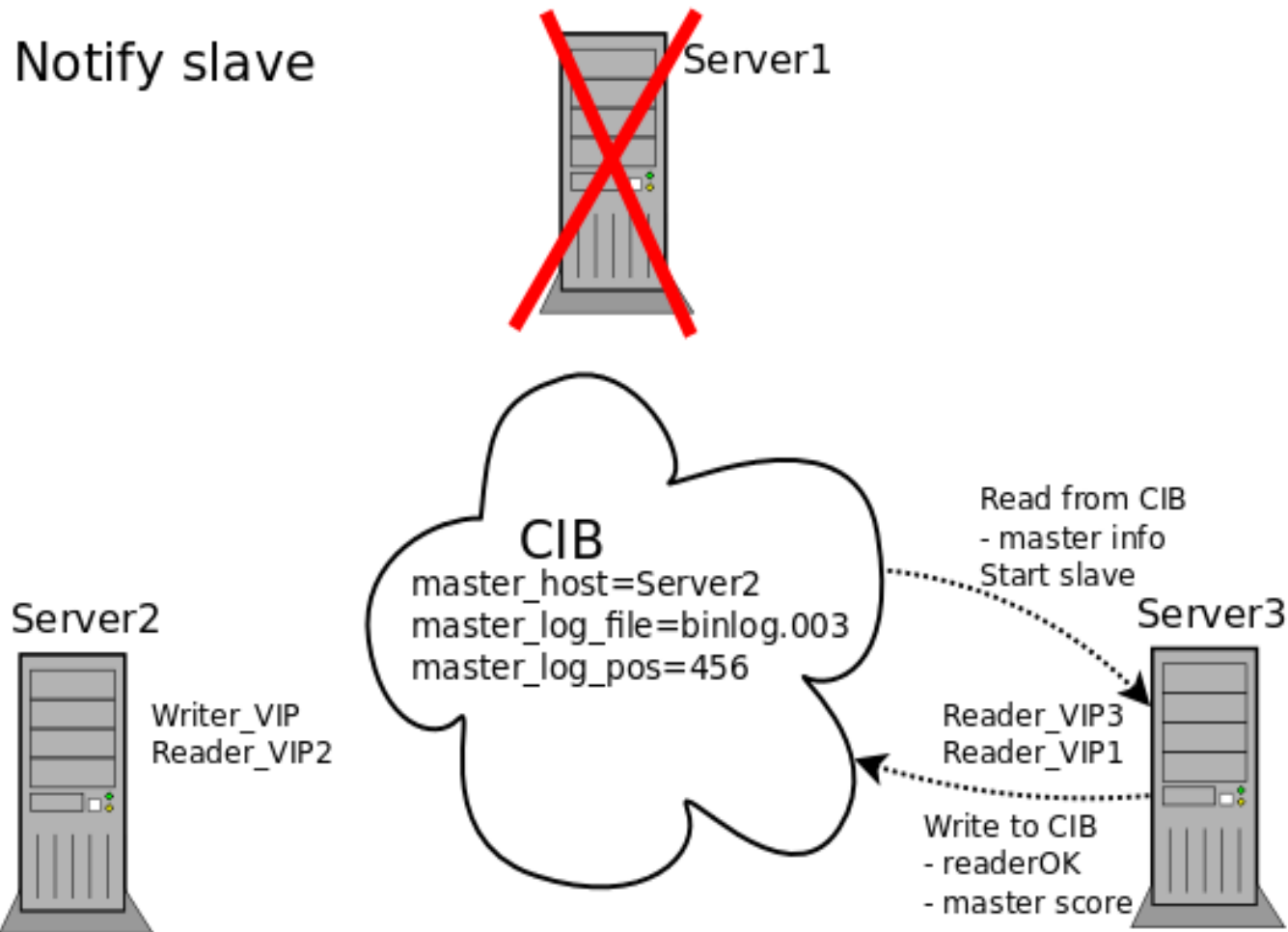
PRM Life cycle (7)



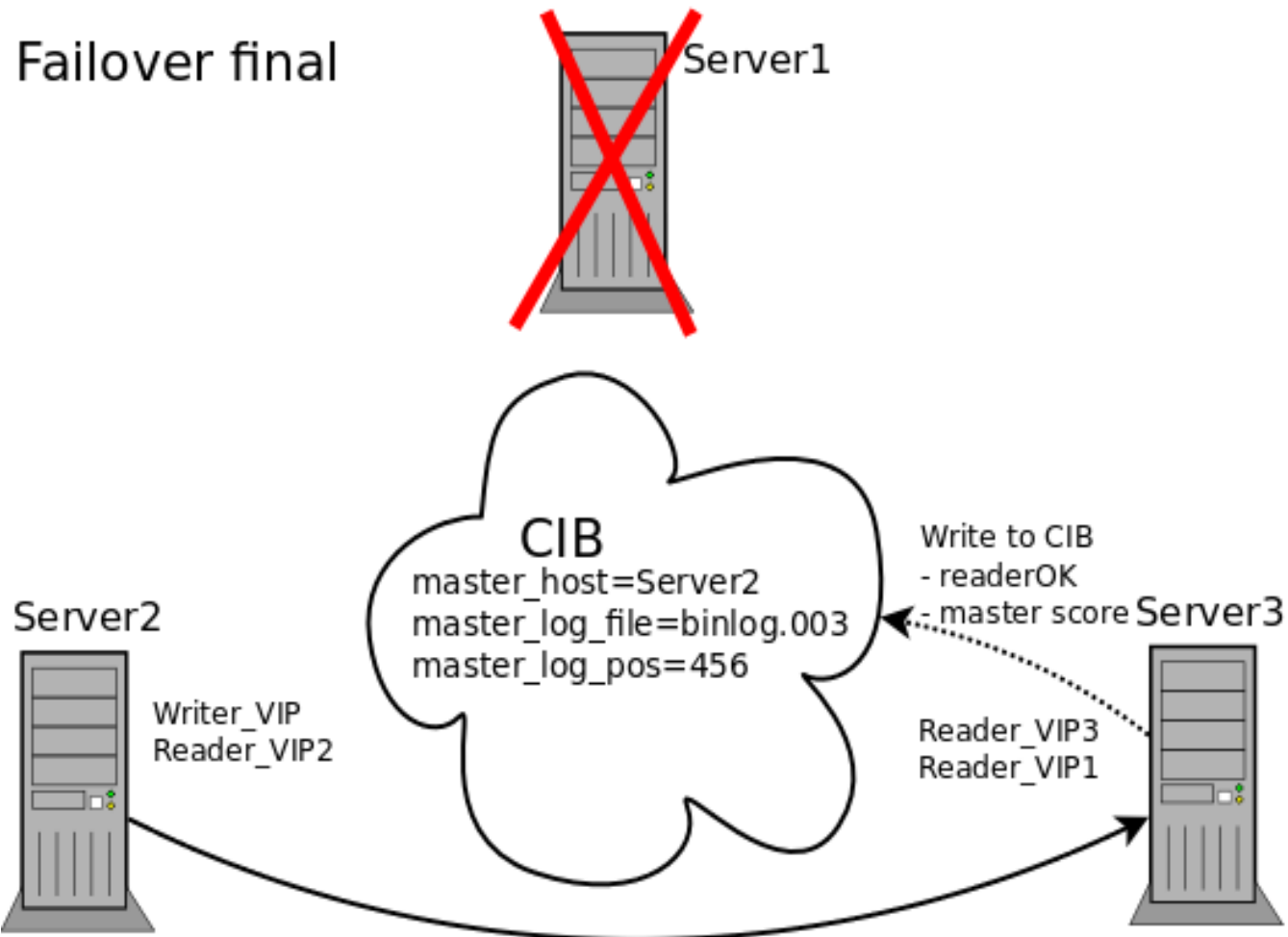
PRM Life cycle (8)



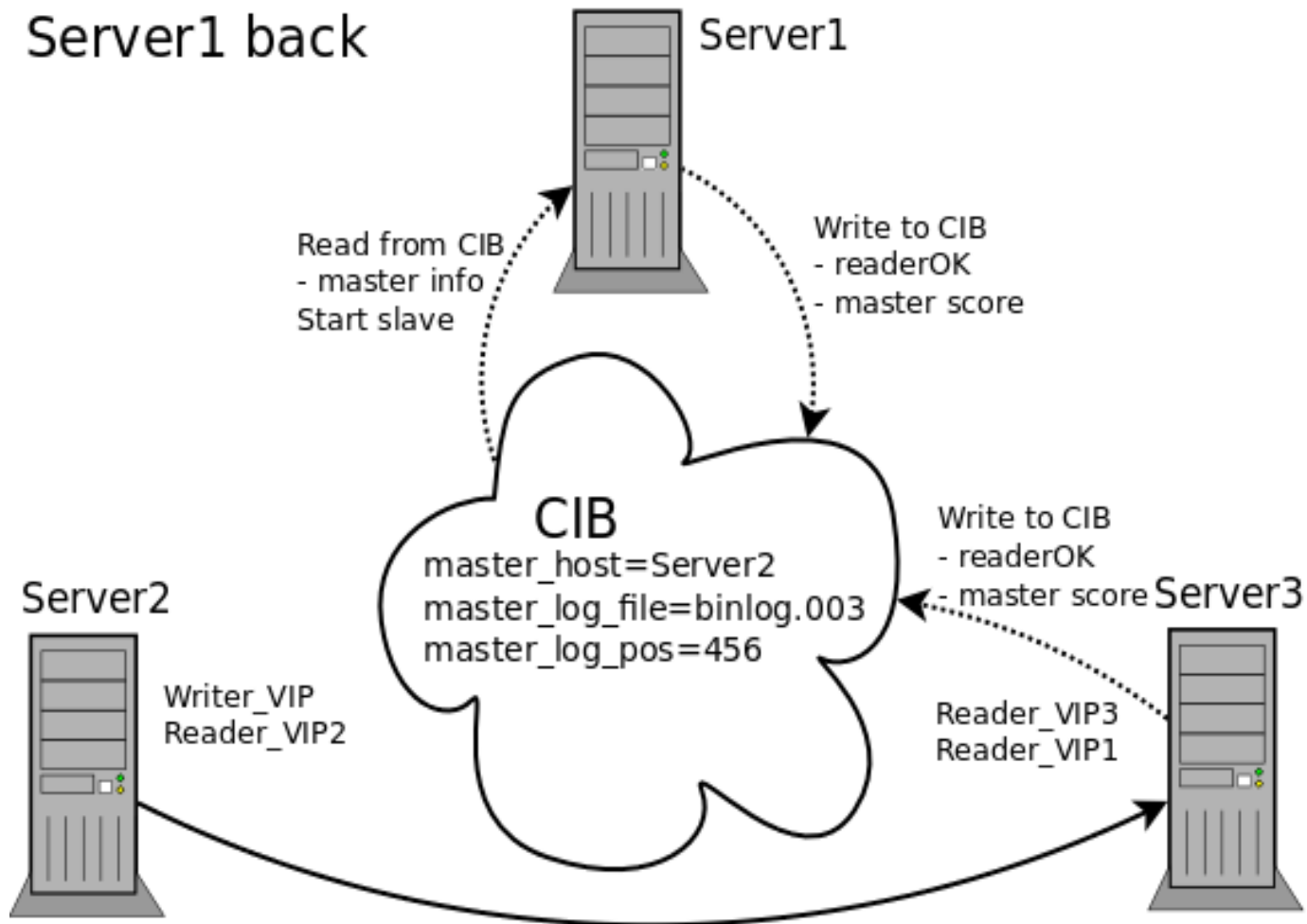
PRM Life cycle (9)



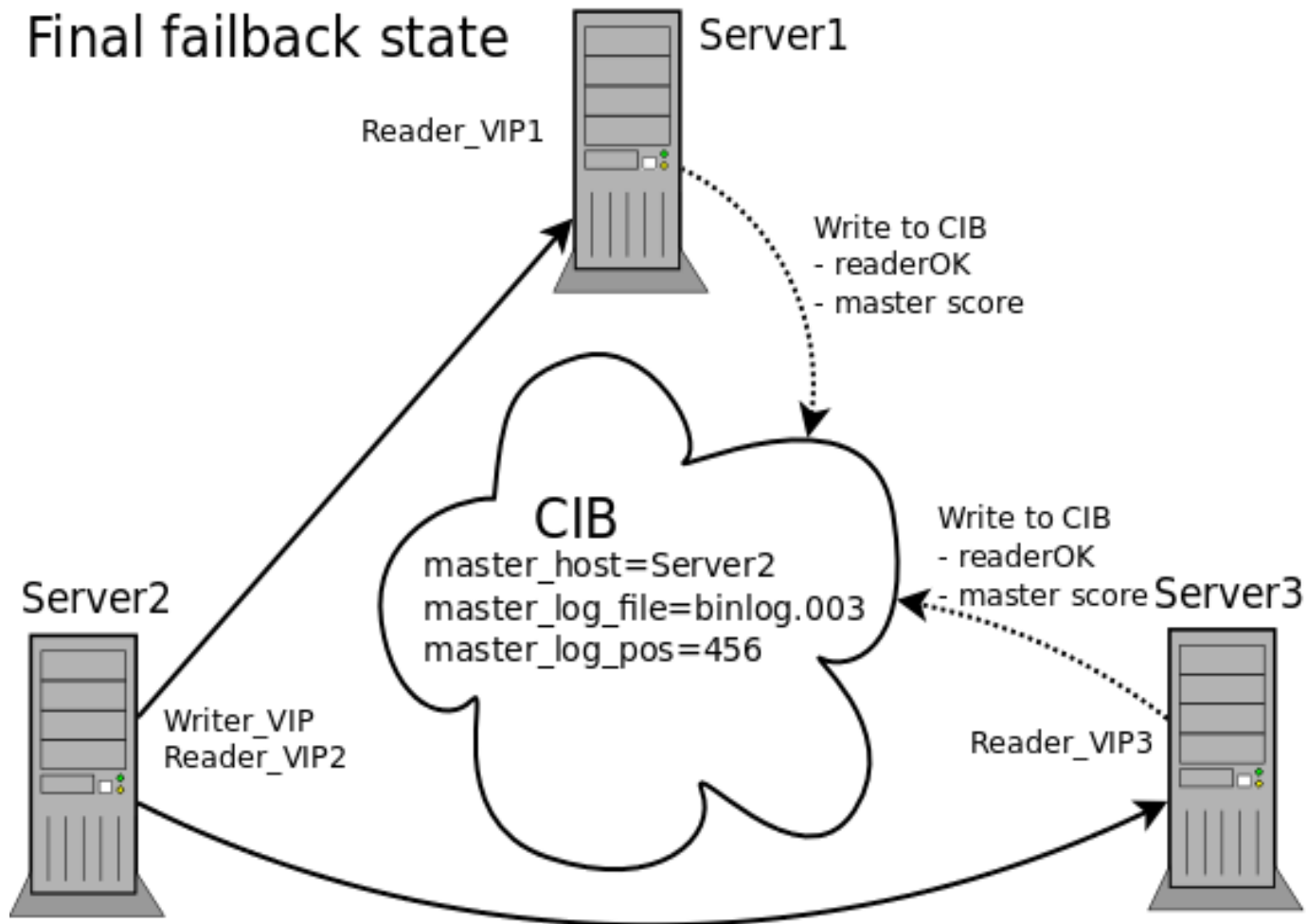
PRM Life cycle (10)



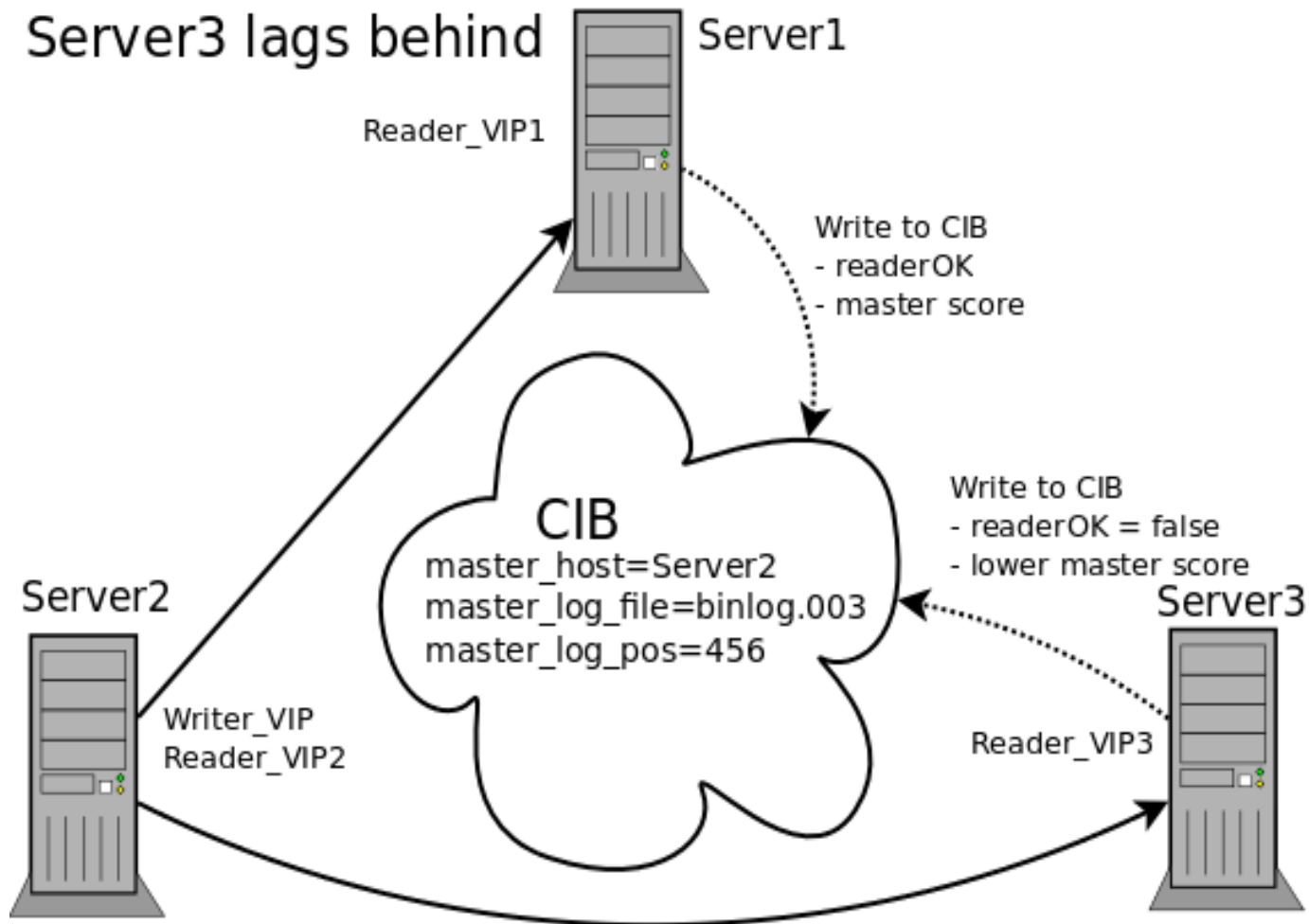
PRM Life cycle (11)



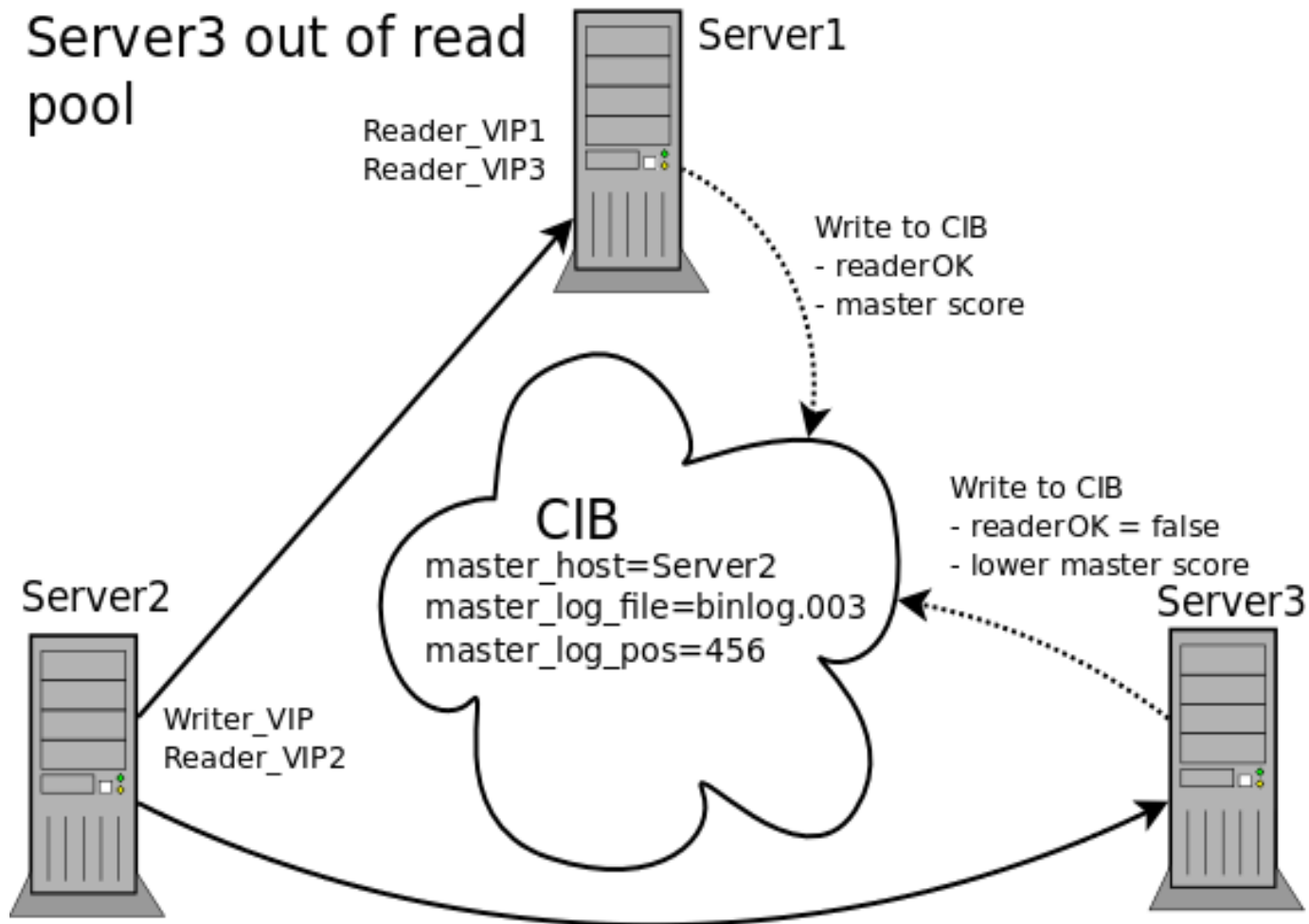
PRM Life cycle (12)



PRM Life cycle (13)



PRM Life cycle (14)



Getting PRM

- 3 components
 - Pacemaker
 - MySQL resource agent
 - Configuration

<http://bit.ly/uX5Kb4>

Future of PRM

- More installations and field experience
- Integration with MHA for better cluster syncing

Percona Live DC Sponsors



MySQL Conference & Expo 2012

Presented by Percona Live

The Hyatt Regency Santa Clara & Santa Clara Convention Center

April 10th-12th, 2012

Tutorials & Initial Breakout Sessions Announced

<http://www.percona.com/about-us/pressreleases/percona-live-mysql-conference-and-expo-heads-to-santa-clara-california-april-10-12-2012/>

Featured Speakers

Mark Callaghan (Facebook), Jeremy Zawodny (Craigslist), Marten Mickos (Eucalyptus Systems)

Sarah Novotny (Blue Gecko), Peter Zaitsev (Percona), Baron Schwartz (Percona)

Learn More at www.percona.com/live/mysql-conference-2012/

Want More MySQL Training?

Percona Training in Washington DC Next Week

January 16th-19th, 2012

MySQL Workshops

MySQL Developers Training - Monday

MySQL DBA Training - Tuesday

MySQL InnoDB / XtraDB - Wednesday

MySQL Operations – Thursday

Use Discount code DCPL30 to save 30%

Visit <http://bit.ly/dc-training>

Upcoming Percona MySQL Training

Washington, DC – January 16, 2012

Vancouver, Canada - February 6, 2012

Frankfurt, Germany - February 13, 2012

Irvine, CA – February 14, 2012

Denver, CO - February 20, 2012

San Francisco, CA - March 12, 2012

Austin, TX - March 19, 2012

Visit <http://percona.com/training>



Yves Trudeau Ph. D.
yves@percona.com

We're Hiring!
www.percona.com/about-us/careers/



PERCONA
LIVE

www.percona.com/live