



阿里巴巴-中间件 卫乐

Large-Scale Stream Processing in Alibaba



自我介绍

- 阿里巴巴技术专家
 - JStorm
 - 淘宝足迹
 - 推荐系统



团队介绍

- 团队职责
 - 应用开发
 - 技术支持
 - 集群运维管理
 - 平台/框架演进
 - 开源社区

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- 架构
- JStorm增强
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- JStorm Future

发展历史

JStorm Milestones

从2013-04-30 起发布了超过25个版本

2013/12/30

0.7.1/**0.9.0**/**0.9.1**/**0.9.2**/**0.9.3**/**0.9.3.1**/**0.9.4**/**0.9.4.1**/**0.9.5**/**0.9.5.1**/**0.9.6**/**0.9.6.1**/**0.9.6.2**/**0.9** .6.3/0.9.7/0.9.7.1/0.9.7.2/0.9.8/0.9.8.1/0.9.8.2/2.0.4/2.1.0/2.1.1/2.2.0/2.2.1/2.3.0

2015/11/12

2.1.0

Donate to apache Support Storm 0.10 binary Metrics Redesign

Koala 3.0

2015/10/27

Koala 2.0

Backpressure 2.0

Topology Master

2013/4/30

0.7.1

Java core Scheduler

0.9.0 Nimbus HA 1.0 Backpressure 1.0 1.0 Scheduler 2.0

2014/10/11

0.9.6.3

Koala 1.0

Scheduler 3.0

User Defined Log

User Defined Metrics

1.0



0.9.8.1

Scheduler 4.0

2016/5/31

2.2.0

Improve performance

Exactly Once

Sliding Window

Shade Dependency... Backpressure 3.0



使用场景

JStorm在阿里现状

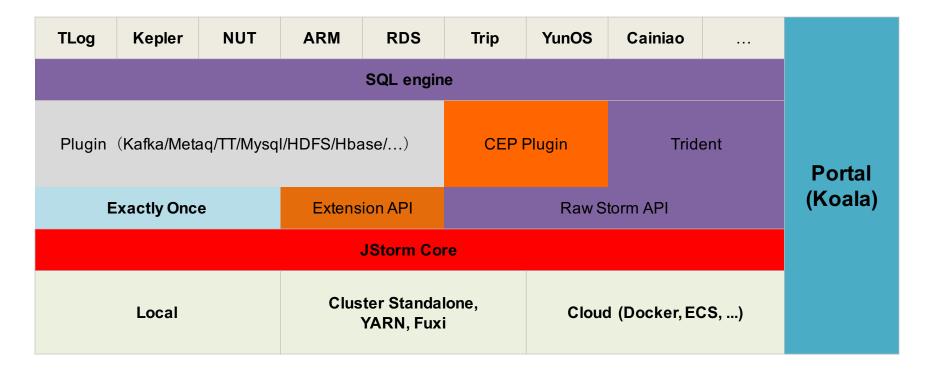
- 阿里集团、蚂蚁、优土、高德...
 - 4000+机器
 - Standalone
 - JStorm-on-YARN
 - JStorm-on-docker
 - 1500+应用,2000+拓扑
 - 2PB+数据/天

应用场景

- 反欺诈: Nut/Velocity
- 审计: 阿里妈妈广告/P4P, AMG
- 数据统计分析: Eagleeye, AE, BI
- 监控:Tlog , Rds-monitor , Oceanbase-monitor, Cainiao Radar, YunOSMonitor
- 数据同步:RDS-Log-Sync, Unify-Log
- 实时推荐: Alipay 1315, Alipay Hyperloop, TPP
- 应用调度: AE邮件实时分析, 网销宝

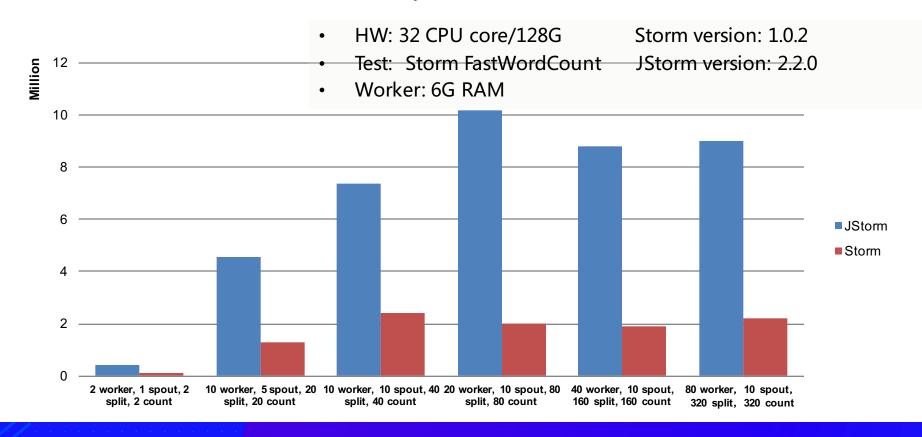
架构

JStorm架构

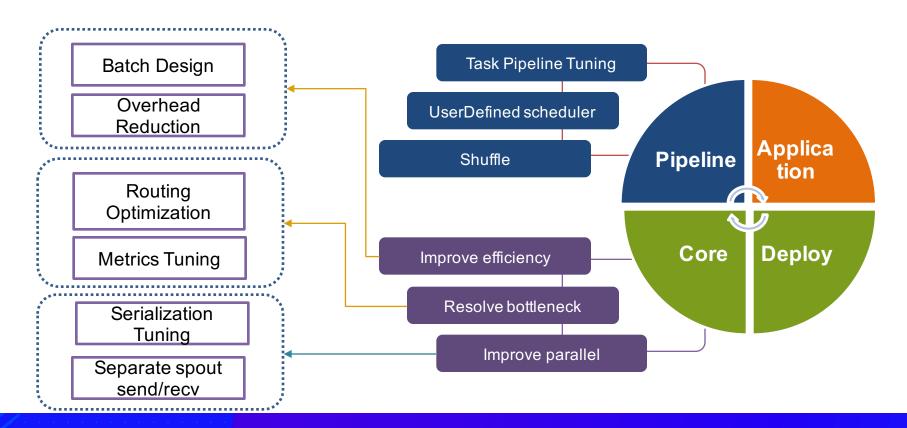


JStorm增强

性能



How do we optimize?



稳定性

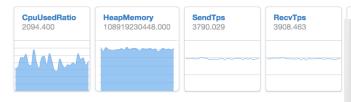


监控系统

Cluster Metrics 2

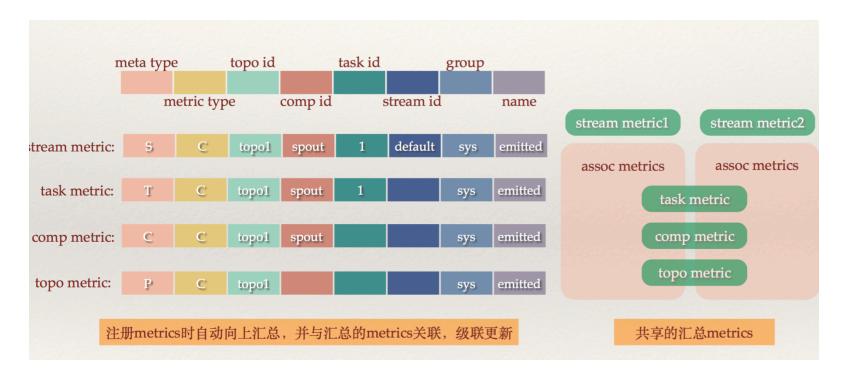


Topology Metrics C 指标含义 @

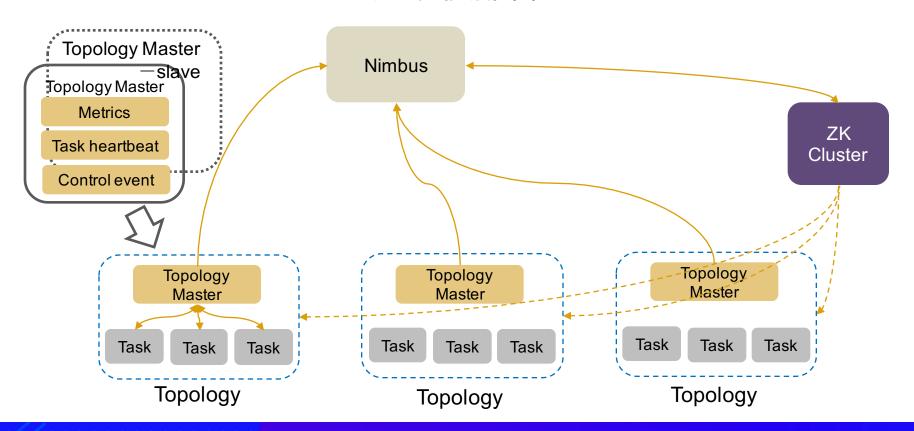




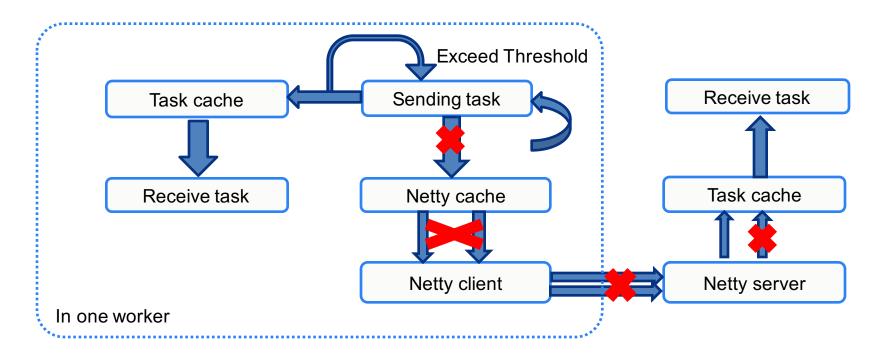
自定义监控



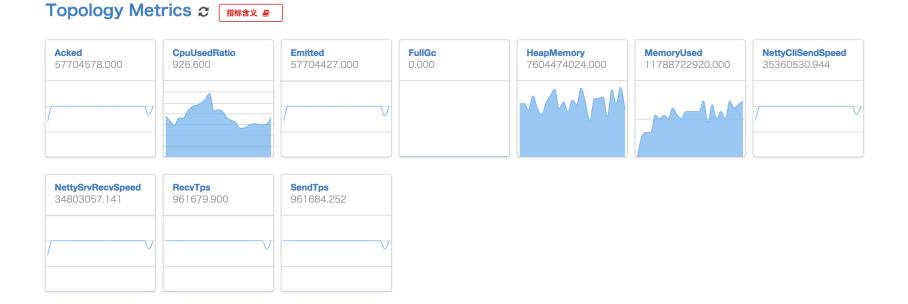
大规模部署



反压



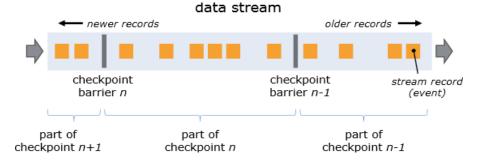
灰度发布&热升级



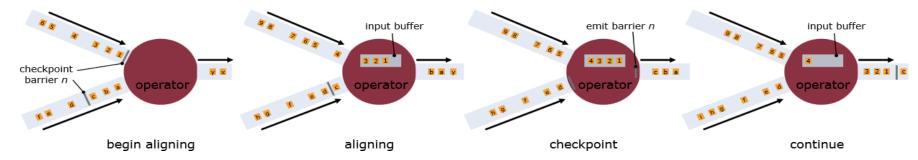
Exactly-Once

Chandy-Lamport Algorithm

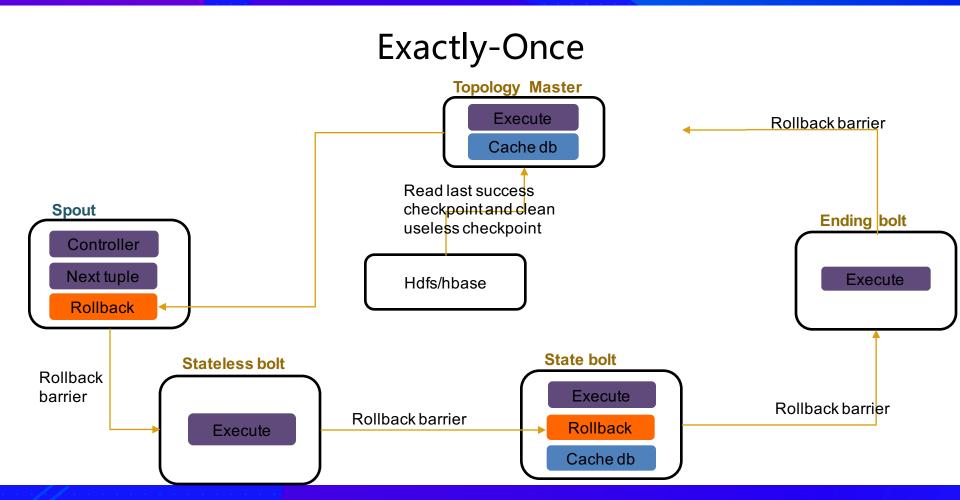
Barrier



Stream Aligning



Exactly-Once Topology Master Execute **Checkpoint barrier** Cache db Jstorm checkpoint Checkpoint and clear **Spout** old checkpoint **Ending bolt** Commit Controller offset JStorm checkpoint (optional) Next tuple Execute Hdfs/hbase Commit Normal batch State bolt Stateless bolt Checkpoint Execute barrier Checkpoint barrier Checkpoint Commit Execute barrier Cache db



其他feature

- 自定义调度
- 动态调整日志级别
- 自定义日志
- 用户自定义metrics
- 优雅shutdown
- 动态扩容、更新配置
- ...

新的窗口机制

- 重构的窗口机制,支持:
 - Processing time
 - Ingestion time
 - Event time
 - Watermark (late element)
 - Window early fire

开源社区

开源社区现状

50+公司





















保险·银行·投资









JStorm Future

- Apache Beam JStorm runner
- JStorm SQL
- 编程框架:易于开发、调试,性能最优化





THANKS

