Basics: Introduction to Tungsten Replication
Tungsten Replicator in a Nutshell
**Tungsten Replicator is...**

- Transactionally Consistent Asynchronous Replicator
- Supports SQL (homogeneous) and Row-based (heterogeneous)
- Database independent
- Architecture and database neutral storage format
- High performance
- Flexible Extraction
- Flexible Applying
  - JDBC
  - Native
  - Batch
- Flexible Filtering
Transactionally Consistent Asynchronous Replicator

MySQL/Oracle

Master Replicator: Extractor

DBMS Logs

Slave Replicator: Applier

MySQL/Oracle

THL

THL

THL

continuent
Sources

• MySQL
  – Oracle MySQL to 5.6
  – Percona MySQL to 5.6
  – MySQL 5.7 supported with limited data types (full support coming 2017)
  – MariaDB 10/10.1

• Oracle
  – Using ‘Redo Reader’, commercial license only
  – Supports 9i to 12c, SE1 to EE
MySQL Extraction

**Option 1: Local Install**
Extractor reads directly from the logs, even when the DBMS service is down. This is the default.

**Option 2: Remote**
Extractor gets log data via MySQL Replication Slave protocols (which requires the DBMS service to be online). This is how we handle RDS extraction tasks.

THL = Events + Metadata
**Oracle Extraction**

Extractor gets event data by reading the PLOG files generated by the Redo Reader (PLOG generation requires the DBMS service to be online).

THL = Events + Metadata
Targets - JDBC

- MySQL – any version
- Oracle – any version
Targets - Native

• MongoDB
• ElasticSearch, announced
• Kafka, announced
• More coming in 2017
Targets - Batch

- Amazon RedShift
- HP Vertica
- Hadoop (native HDFS)
- Cassandra (announced)
- More coming in 2017
Heterogeneous

MySQL

Oracle

MongoDB

Vertica

Hadoop
Transaction History Log (THL)

- A sequential log of each transaction
- Read from a source in the order applied
- Extracted with header, meta, and actual data
- THL is used internally by replicator
- Data extracted from source to THL
- THL exchanged between replicators
- Replicator converts single transaction into
  - JDBC statement
  - Native apply
  - Batched apply
What Can Filtering Do?

- Remove THL entries
  - For example, filter by schema/table name
  - Filter by data
  - Filter by type (statement, row, DDL, DML)

- Change Content
  - Remove a row or column
  - Change the contents of rows – for example string formats, or
  - Change the datatypes of rows – for example, an Int into Float, SET types into strings, or date types

- Add Data
  - Introduce entirely new transactions
  - Insert new data
  - Duplicate data into other tables
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Upcoming Topics

• Basic Deployment
• How Appliers Work
• How Extraction Works
• Troubleshooting
• Filtering
• Advanced Deployments
Next Steps

• If you would like to download the clustering software so that you can the process for yourself, please visit: https://github.com/continuent/tungsten-replicator

• Read the documentation at https://docs.continuent.com/tungsten-replicator-5.1/index.html

• If you would prefer a more technical deep dive, please contact our sales team who will be able to take you through the details and setup a POC
Upcoming Training and Webinars

• **Tungsten Training Program**  
  – Training -- Tuesday, 27th June 2017, 09:00 PST, 17:00 BST, 30 minutes -- Basics: Introduction to Tungsten Clustering

• **Continuent Webinar Program**  
  – Webinar -- Wednesday, 21st June 2017, 09:00 PST, 17:00 BST, 30 minutes -- Amazon RDS vs. AWS with Continuent Tungsten Clustering
For more information, contact us:

Eero Teerikorpi  
*Founder, CEO*  
eero.teerikorpi@continuent.com  
+1 (408) 431-3305

Eric Stone  
*COO*  
eric.stone@continuent.com

MC Brown  
*VP Products*  
mc.brown@continuent.com