



# **IBM Q Replication: Frank's Field Notes Summer '16**

**The Fillmore Group**

## Today's topics:

1. The Fillmore Group overview
2. Cold Start a Q Replication topology
3. Oracle Native Q Apply – replication directly to Oracle
4. Tooling – what tool do I use when?
5. ASNConsumer – used to replicate to Netezza
6. Pricing models



## The Fillmore Group, Inc.



- IBM Analytics software reseller (LUW and z)
- Data Management technical consulting and staff augmentation
- IBM authorized training with Global Training Partner Arrow ECS
- Founded in 1987; headquartered in Towson, MD





## Frank Fillmore

- ▶ DB2 Gold Consultant
- ▶ IBM Champion for Analytics
- ▶ Founder and President of The Fillmore Group



## Topic #1

# Cold Start a Q Replication Topology

- ▶ When and why would you need to consider a Cold Start?
- ▶ What are the steps?



## Cold Start: when and why

- ▶ First time using Q Replication in a new topology
- ▶ Q Replication has been down for an extended period and won't be able to catch up
- ▶ Source database logs are unavailable
- ▶ Topology becomes unstable – typically non-Prod



## Cold Start: **Caution!**

- ▶ The steps discussed *might or might not* be appropriate for your particular situation
- ▶ Review each step with an experienced Q Replication colleague or consultant who understands your topology
- ▶ Test these steps in a non-Production environment



## **Cold Start: the steps**

- ▶ Stop Q Capture and Q Apply
- ▶ Clear out the WebSphere MQ queues
- ▶ Delete any Spill queue datasets
- ▶ Cancel any currently running table load utilities





## Cold Start: the steps (continued)

- ▶ Delete (or rename) autoloader trace files
- ▶ Run the Control Table clean-up scripts *as modified*
  - ▶ `Cleanup_Capture.SQL`
  - ▶ `Cleanup_Apply.SQL`
- ▶ Start Q Capture (COLD) and Q Apply
- ▶ Reset STARTMODE to WARMSI
- ▶ Issue CAPSTART commands

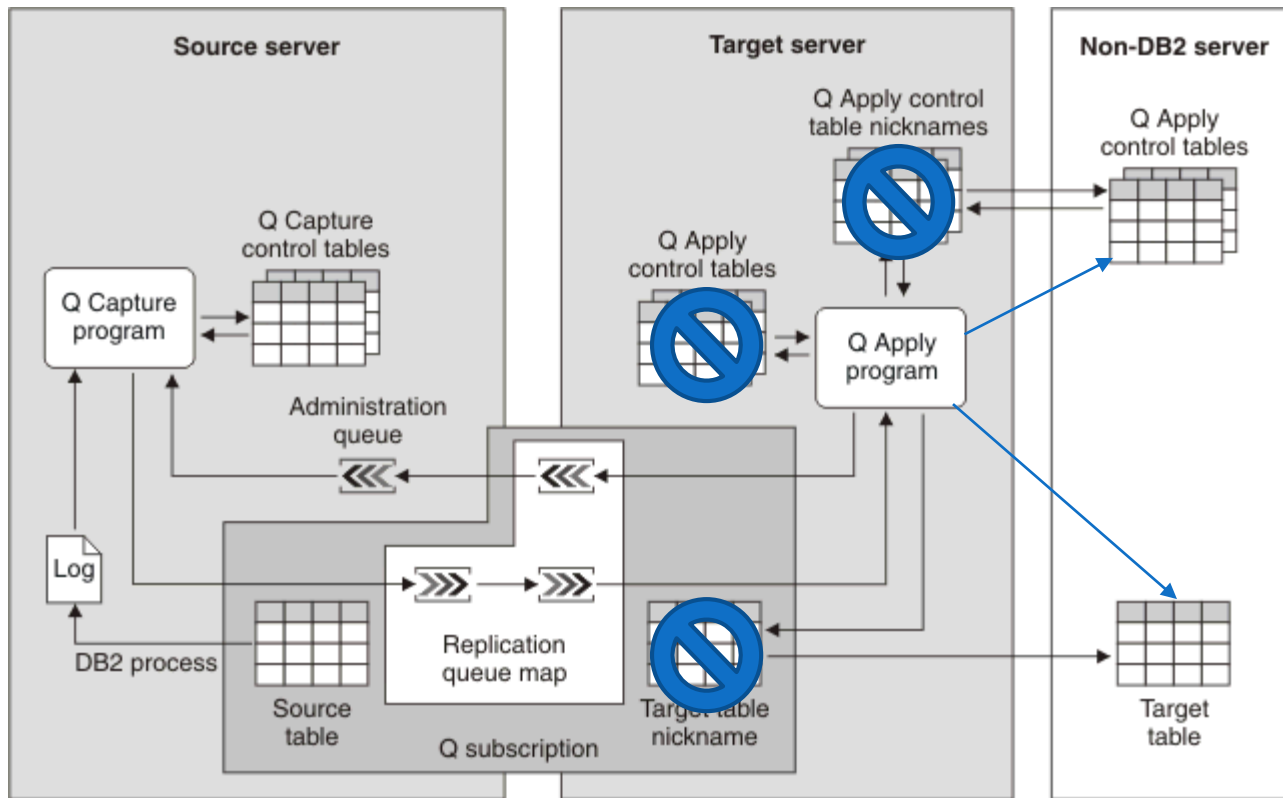


## Topic #2 Oracle Native Q Apply

- ▶ IBM's "Recommendation"
- ▶ Comparison to Federated Apply
- ▶ Installation: Server, Client
- ▶ Coexistence and migration



# Compare Federated, Native Q Apply



## Provision and install - Server

- ▶ IBM InfoSphere Data Replication (IIDR) v10.2.1
  - ▶ Bundled with DB2 for LUW
  - ▶ Install InfoSphere Federation Server (IFS)
- ▶ Install Fixpack 7 (FP7) for DONEMSG issue
- ▶ Create DB2 instance (no database)
- ▶ Install Oracle Call Interface (OCI)
  - ▶ `tnsnames.ora` configuration file



## Installation - Client

- ▶ ASNCLP and Replication Center
  - ▶ Oracle JDBC Type 4 Driver
    - ▶ `ojdbc6.jar` or `ojdbc7.jar`
- ▶ ASNCLP
  - ▶ Verify CLASSPATH
  - ▶ `asnserver.ini` configuration file
- ▶ Replication Center “Add Connection”

## Migration and coexistence

- ▶ Q Apply local to the target database is preferable for performance
- ▶ Install different copy of the IIDR code for upgrade flexibility
- ▶ Can use the same intermediate server as Federated Apply



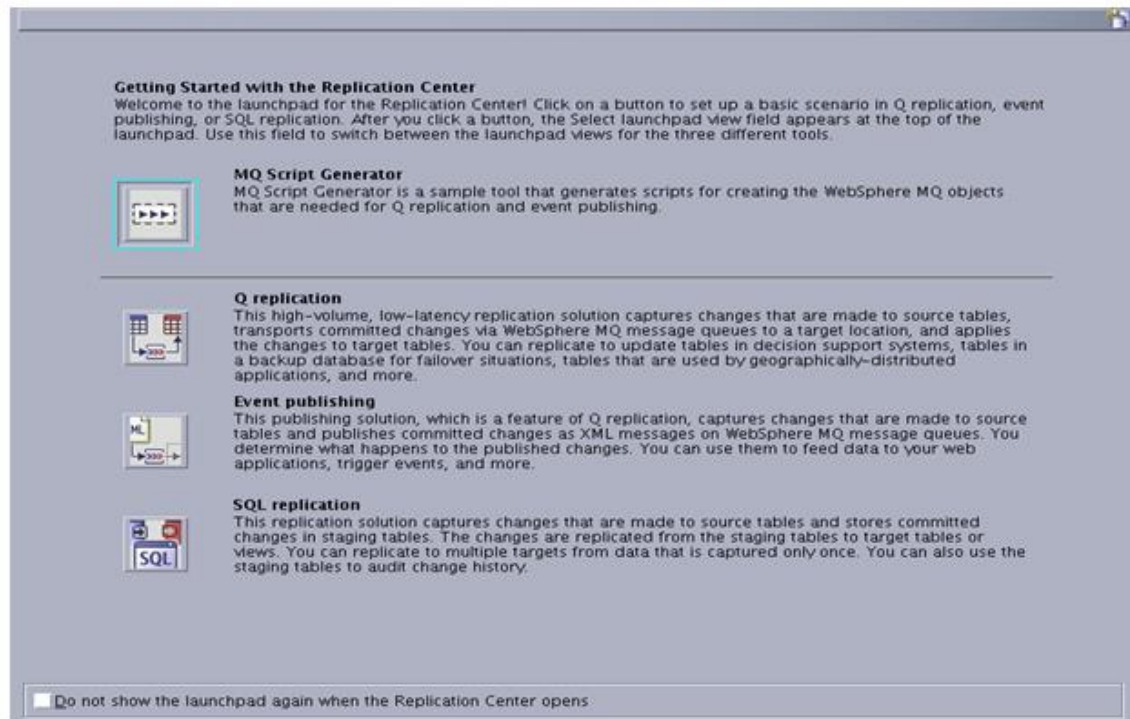
## Topic #3 Tooling

- ▶ Replication Center – GUI interface
- ▶ ASNCLP – scripting language (e.g. “DDL”)
- ▶ Q Replication Dashboard – real-time monitor
- ▶ Replication Alert Monitor – event monitor



# Replication Center

## Replication Center Launchpad





## Replication Center

- ▶ Available in IBM Data Server Client
- ▶ Useful for
  - ▶ Initial proof-of-concept (POC)
  - ▶ Inexperienced users
- ▶ *Not* recommended for
  - ▶ Dozens, hundreds, or thousands of subscriptions
  - ▶ Managing Q Capture and Q Apply

## ASNCLP

- ▶ “ASNCLP Program Reference for Replication and Event Publishing” (SCI9-3639-00)
- ▶ Invoke `asnclp -f filename`
- ▶ Runs on Q Replication Client or Server
- ▶ Use to create and manage Control Tables, Queue Maps, and Subscriptions
- ▶ Beneficial for Test → QA → Prod



# ASNCLP

- ▶ Q Subscription creation scripts can be generated for many tables at once using SQL
- ▶ Use the PROMOTE command to extract ASNCLP from an existing topology (e.g. created using Replication Center)



# Q Replication Dashboard



▶ <http://www-01.ibm.com/support/docview.wss?uid=swg27007070>



## Q Replication Dashboard

- ▶ Use for real-time and event monitoring
- ▶ Lightweight webserver can be installed
  - ▶ On individual client workstations
  - ▶ Centrally accessible via a browser
- ▶ Sends e-mail if user-defined threshold is breached
- ▶ Parses data from Control Tables



# Replication Alert Monitor

- ▶ Event monitor for one or more topologies
- ▶ Alerts can be scripted using ASNCLP
- ▶ Sends e-mail if user-defined threshold is breached
- ▶ Parses data from Control Tables



## Topic #4 ASNConsumer

- ▶ Originally developed by The Fillmore Group  
<http://tinyurl.com/asnconsumer>
- ▶ Event Publishing: you provide Q Apply
- ▶ Originally designed for Netezza
- ▶ Template adapted for other non-relational targets (e.g. Hadoop)



## Topic #5 Pricing models

- ▶ Typical: Total PVUs for Source + Target

[https://www-01.ibm.com/software/passportadvantage/pvu\\_licensing\\_for\\_customers.html](https://www-01.ibm.com/software/passportadvantage/pvu_licensing_for_customers.html)

- ▶ Potential options:
  - ▶ Source-only pricing
  - ▶ Mid-tier pricing
- ▶ Contact The Fillmore Group





## **CE243 “Using Queue Replication”**

- ▶ Four day instructor-led hands-on class  
August 23 – 26, 2016 09:00 – 16:30 EDT
  - ▶ Baltimore, USA in classroom
  - ▶ Distance Learning from anywhere
- ▶ Only class in North America 2H16
- ▶ To register:  
[megan.byrne@thefillmoregroup.com](mailto:megan.byrne@thefillmoregroup.com)

## Contacts

### ▶ Kim May

- ▶ [kim.may@thefillmoregroup.com](mailto:kim.may@thefillmoregroup.com)
- ▶ [twitter.com/KimMayTFG](https://twitter.com/KimMayTFG)
- ▶ <https://www.linkedin.com/in/kimmaytfg>

### ▶ Frank Fillmore

- ▶ [frank.fillmore@thefillmoregroup.com](mailto:frank.fillmore@thefillmoregroup.com)
- ▶ [twitter.com/ffillmorejr](https://twitter.com/ffillmorejr)
- ▶ <https://www.linkedin.com/in/frank-fillmore-9a65976>
- ▶ [tinyurl.com/ChannelDB2](http://tinyurl.com/ChannelDB2)
- ▶ Flipboard for iPad, iPhone, Android: “BigData”



# THE FILLMORE GROUP

Relational Database Solutions



**Thank you!**

**[www.thefillmoregroup.com](http://www.thefillmoregroup.com)**