

IRDB Redesign

Making eRA Data
Available

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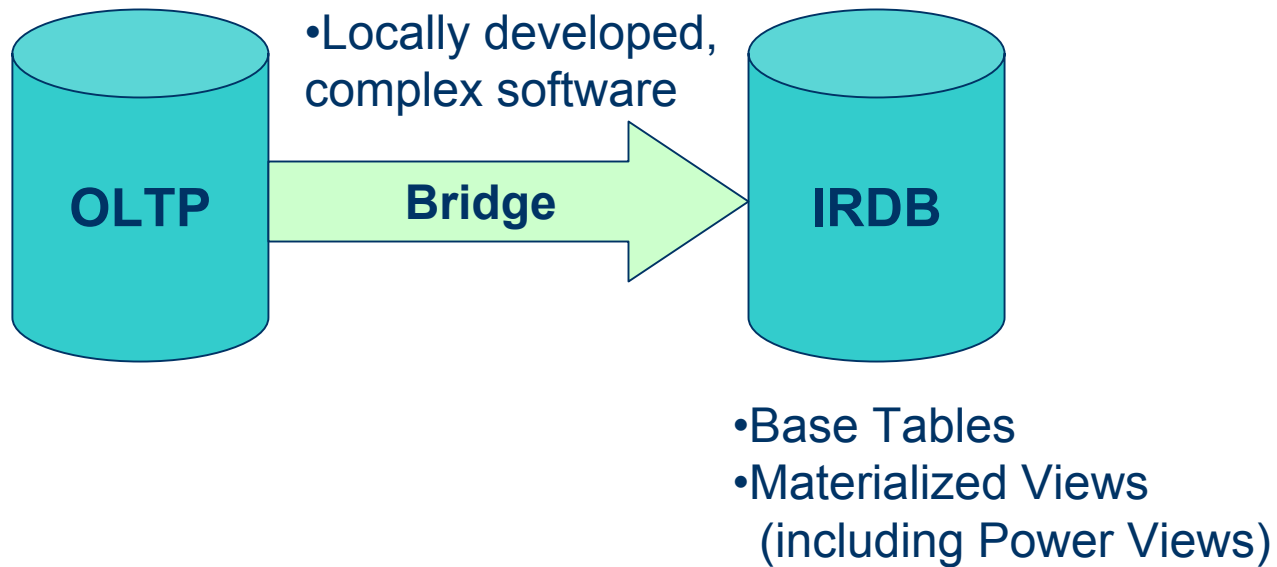
Will Discuss

- eRA Data Architecture
- Why is the IRDB important?
- Why is the IRDB redesign necessary?
- How do we “get there”?
- What’s the impact (e.g., cost, people resources, customers)?

eRA Data Architecture

- eRA architectural infrastructure includes two data repositories
 - OLTP: focused on data input and business process support (i.e., operational functions)
 - IRDB: focused on querying, reporting, and other business decision support activities

Current



IRDB Importance

- Provides Grant Data for
 - Reporting
 - Querying (business decisions)
 - Data for local (IC-specific) systems
- Simplifies the Data structures for reporting
 - Much easier to use than OLTP for this purpose
- Historical source for eRA data (back to 1972)
 - Necessary for congressional reports
 - Necessary for trend analysis
 - Etc.

IRDB Importance (Continued)

- Separating “Reporting” data from “Transaction” data is necessary for:
 - Performance
 - Can be tuned for data access/reporting
 - Moves the reporting/downloading load away from OLTP
 - “Security delineation” for data access

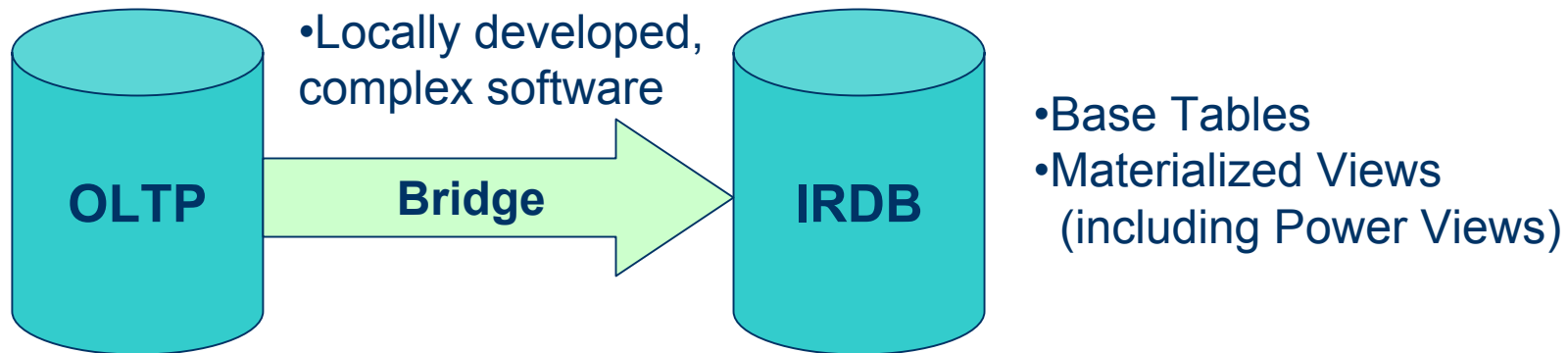
Why an IRDB Redesign?

- ICs (and others) have found major problems with the current IRDB
 - Data is not current
 - Data is missing
 - Data is sometimes unavailable
- The original architectural approach to eRA data (i.e., OLTP and IRDB) is still valid

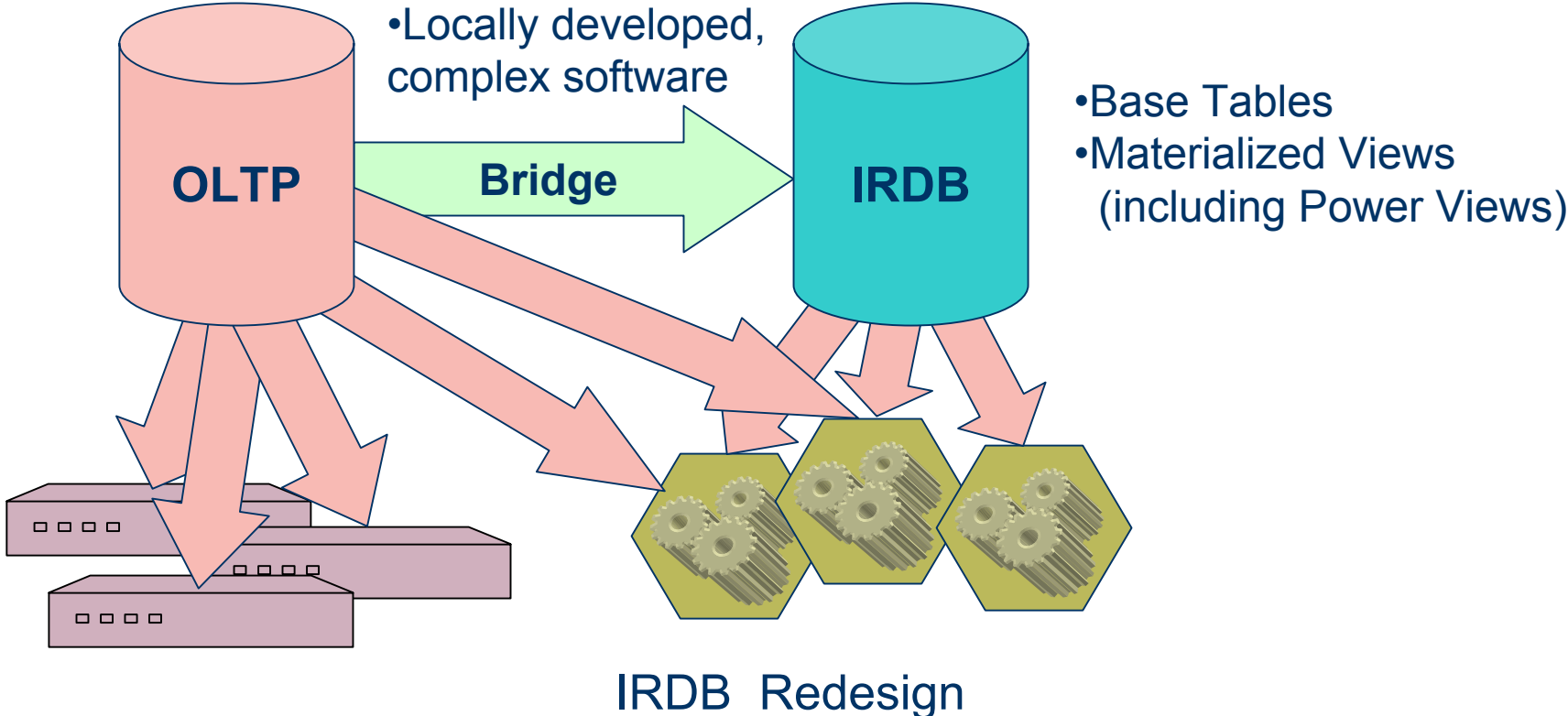
Why an IRDB Redesign? (Continued)

- Current IRDB design no longer works
 - Materialized views provide necessary performance; however, their nightly creation is problematic since materialized views are “all or nothing”
 - IRDB data can not be updated more frequently without negatively impacting the OLTP
 - Some data elements required by customers are only in OLTP; process for adding elements to IRDB needs redesign

Current



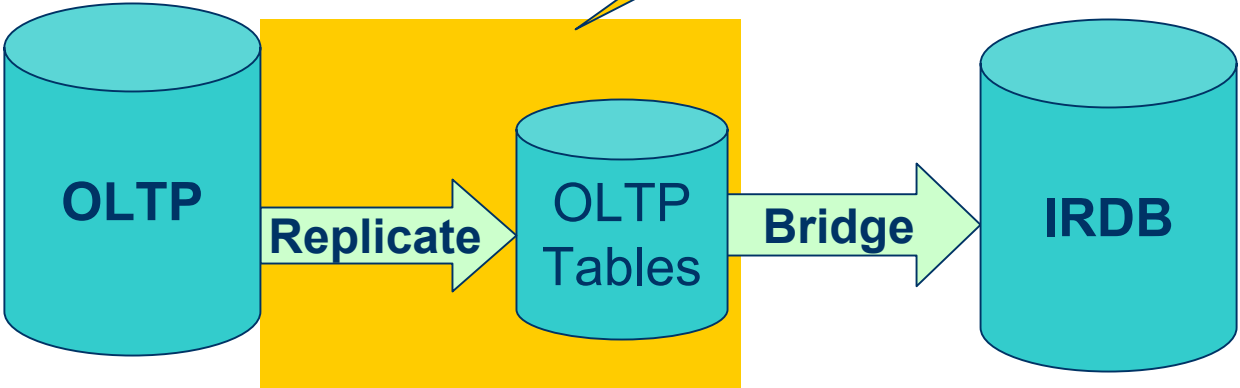
Current



How do we “get there”? (Continued)

Phase 1: “Replicate” identified OLTP tables

Phase 1



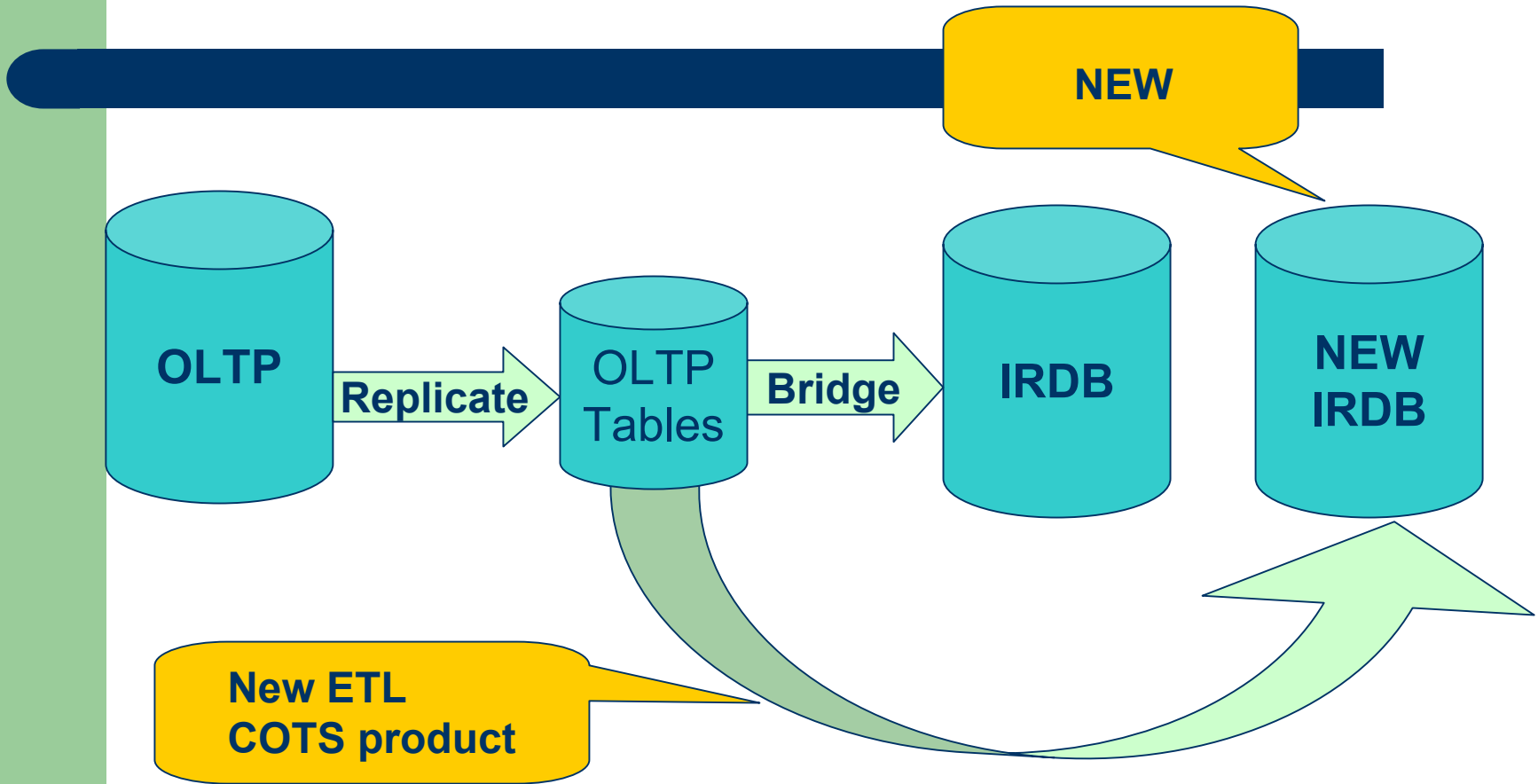
- Selected Tables required by existing OLTP and IRDB users

- Base Tables
- Materialized Views (including Power Views)

How do we “get there”? (Continued)

Phase 2: Design and build new IRDB structure and acquire Extract/Transform/Load (ETL) product to populate it.

Phase 2

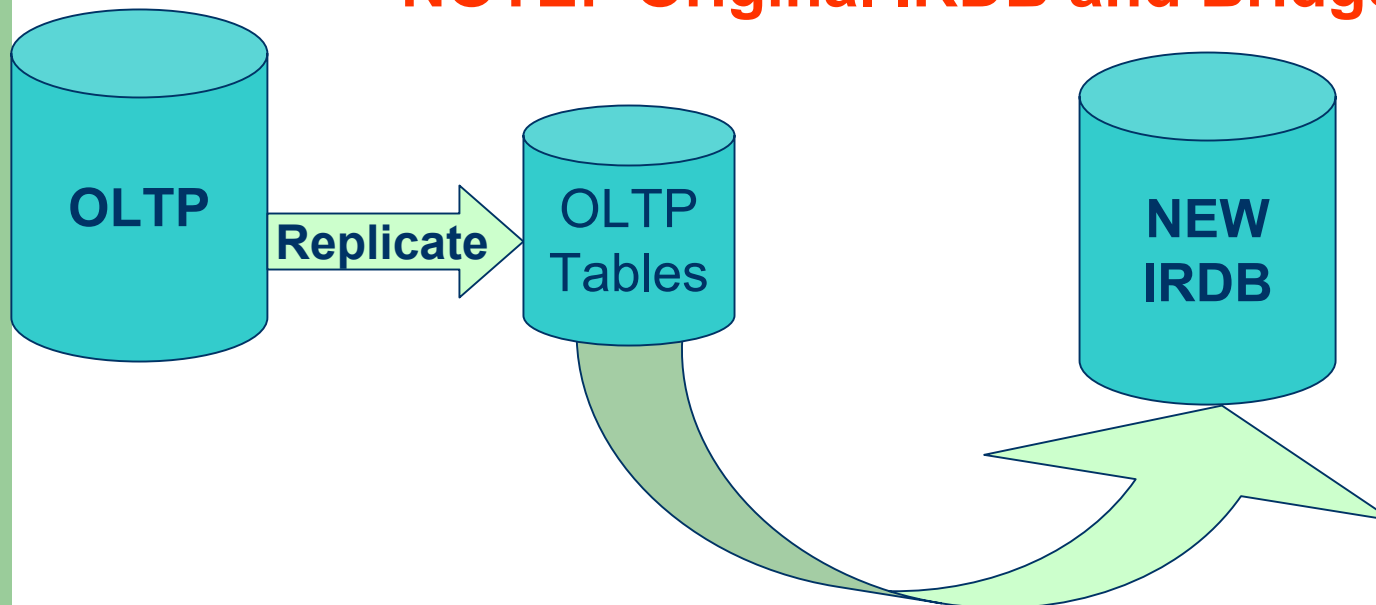


How do we “get there”? (Continued)

Phase 3: Migrate IRDB users to new IRDB structure

Phase 3

NOTE: Original IRDB and Bridge gone!



ETL COTS Product

IRDB Redesign

Phase 4

- Migrate users of replicated OLTP tables to new IRDB structure
 - Many may migrate only when applications are reengineered or replaced
 - Promote replacement of individual IC applications with an enterprise solution

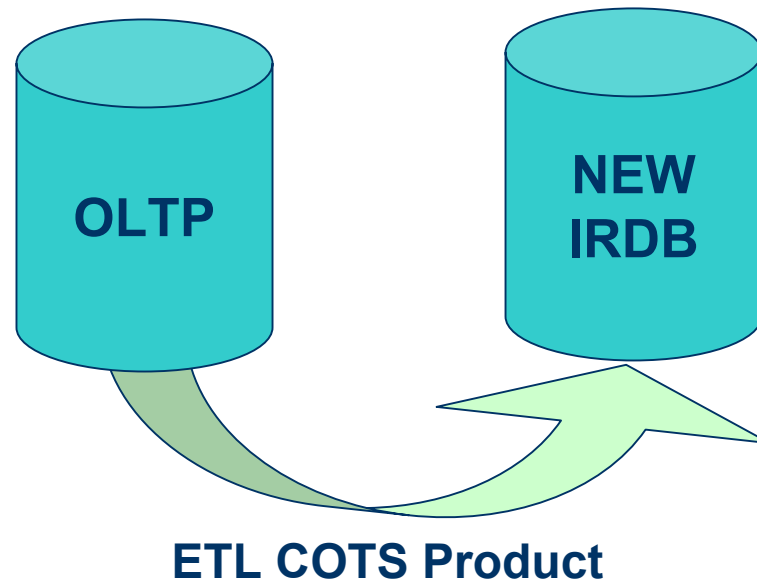
How do we “get there”? (Continued)

Phase 5: Retire replicated OLTP tables

IRDB Redesign

Phase 5

NOTE:
Replicated
OLTP tables
and
associated
software are
gone!



IRDB Redesign

What's the impact (e.g., cost, people resources, customers)?

- The effort/cost is still being determined.
- If redesign isn't done soon, it will be harder and harder to address.

IRDB Redesign

Questions?