Moving from Rdb to Oracle and PostgreSQL

On OpenVMS

Agenda

- Why move?
- Data storage move
- Application considerations
  - SQLMODs => Pro*C / SQLPGPCs
  - Embedded SQL goes to SQLMODs
- For consideration
  - Date format (quadword vs timestamp)
  - Other tricks: Tinyints
  - Overloaded tables – data equivalency

Why move away from Rdb?

Can’t find people to support/manage Rdb.

While the SQL access is pretty much industry standard, nothing else is.

Future support?

Targets:

- PostgreSQL (suggest V16)
- Oracle 19 (last one from OpenVMS with existing client)

Roadmap away from Rdb

Replicate the data storage in the target RDBMS

Migrate the Rdb access method(s) to fit the target RDBMS

- SQLMODs
- Embedded SQL in C/C++
- Embedded SQL in COBOL, Fortran, Pascal.
  - Embedded SQL becomes SQLMOD
  - Procedure calls are placed in-line automatically

Moving the Data Storage - 1

- Extract the Rdb schemas for existing DBs.
  - Tables with columns, indexes, etc.
  - Views
  - Triggers (may need rewrite because of differences between Rdb and others.. Straightforward.
    - Rdb Multiple whens, Oracle single when.
  - Stored procedures (may need rewrite)
  - Identify external calls

Moving the Data Storage - 2

Migrate the schemas to target RDBMS schemas.

- Beware date formats, tinyints, data overloads, etc.
- All date items are SQL timestamp in new DB
- Convert from timestamp to quadword on retrieval
- Convert from quadword to timestamp on storing to DB.

Rationalize the schemas

- Rdb is a multi-DB paradigm.
- Oracle/Postgres, etc. can have multiple schemas within one DB.
  - Critical for multi-DB transactions.
- Recovery/throughput

Moving the Data Storage - 3

- Extract the data with RMU
  - One data file per table
  - One control file per table
  - All numbers are extracted as ASCII
  - All dates are expanded

Moving the Data Storage - 4

Copy	Copy the data to target system
Adjust	Adjust loading parameters (control files)
Load	Load the data with sql*loader or pgloader • Use scripts to load data

After the data load

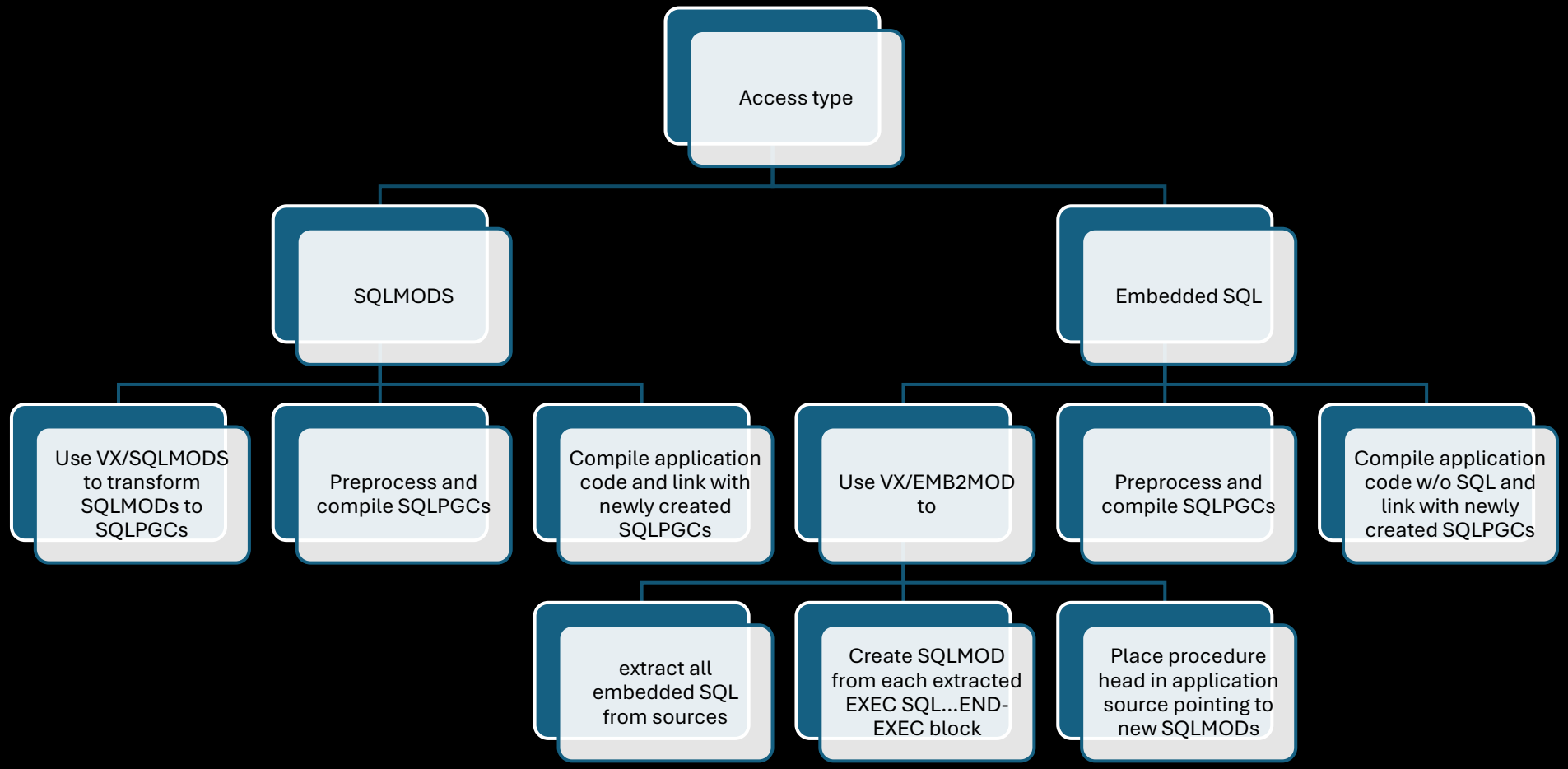
For multiple Rdb DBs into one Oracle/Postgres DB:

- Create users that can be used by application
- Adjust access for all required tables to these users

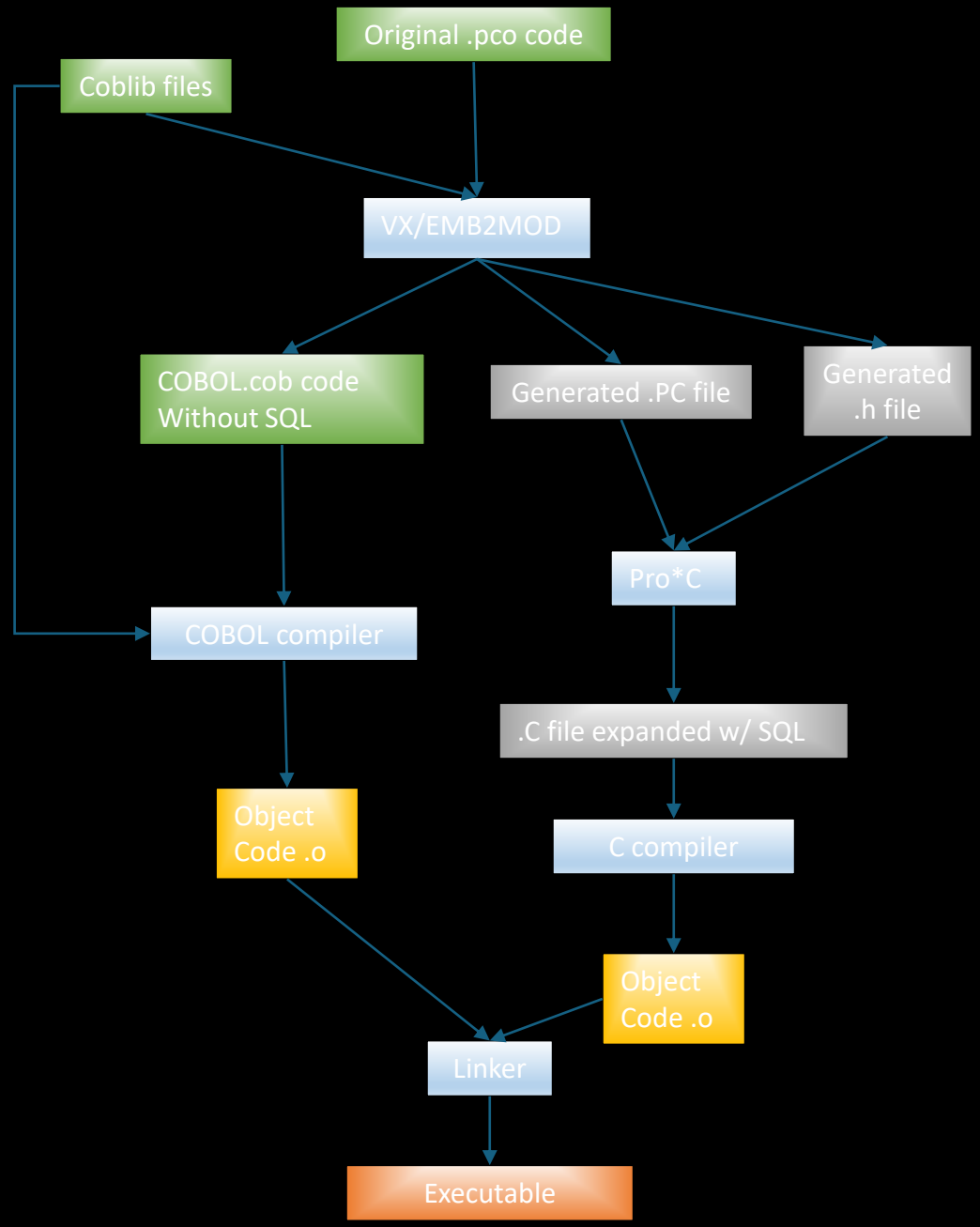
Need to transfer the stored procedures, if any.

- May need some rewrite stored procedures
- Look for system calls inside stored procedures.

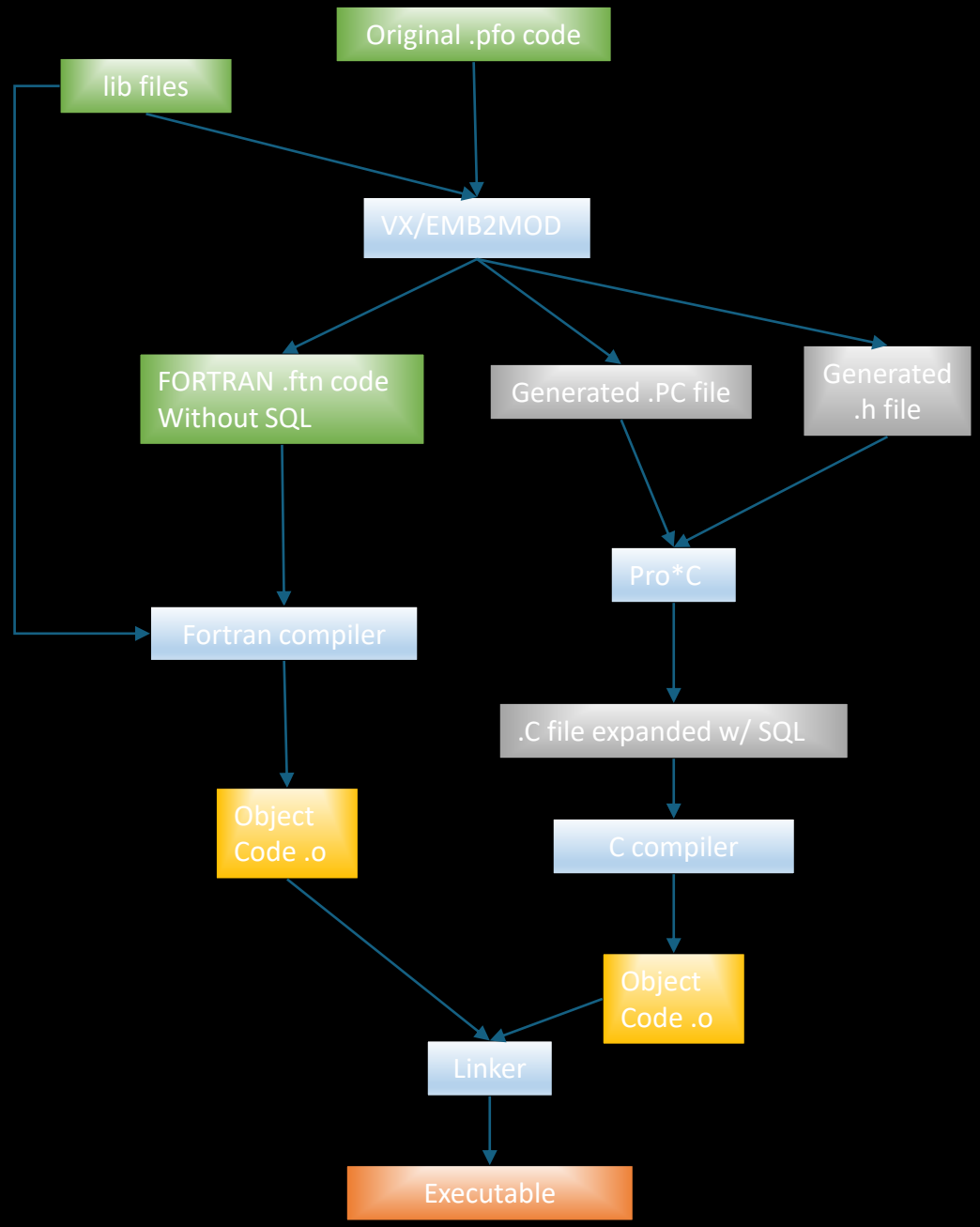
Rdb access in application code



FLOW DIAGRAM - COBOL



FLOW DIAGRAM - Fortran



FLOW DIAGRAM - Pascal

