



13th - 17th May 2019 – Kuala Lumpur

Fraud Model Development and Deployment in SAS FM

Session 7: Model Packaging

Model Packaging

Model Package Components

INIT

Contains code that needs to be executed once when the model loads
(hash declarations, variable declarations, calibration arrays etc.)

RESOLVE_RECODE

Preprocessing required prior
to resolving signature keys

RECODE

Preprocessing prior to
signature updates and scoring

Z##_<CID>_RESOLVE (s)

Logic for resolving signature
lookup keys

Z##_<CID>_UPDATE (s)

Code for updating signatures

SCORE

Actual model code including
segmentation, feature
generation and scoring

Supporting
Macros

Supporting
Hashes

Signature
Definitions

Model Packaging

Packaging

- Essentially appropriate 'include' files within the scoring engine used for model development are gathered into the appropriate modules.
- All files should be expanded to one flat file:
 - Nested includes should be expanded
 - Macro symbols should be resolved
 - Macro calls can be retained
- Any macros used should be included should be defined within the MACRO file

Model Packaging

Trimming

- Final model will have a lot of extraneous code
 - Features that were not selected
 - Unused risk table declarations and lookups
 - Unused segmentation variables
- These codes must be trimmed out from the final package
 - Else model execution will be take too long
- Two approaches:
 - Top – down: regenerate the codes from scratch to only produce the desired features and model score
 - Bottom – up: use a dependency tree to remove all the extraneous code

Model Packaging

Compilation

- Individual modules are compiled into a macro catalog using the *store* & *secure* options
 - If code needs to be masked from the customer
- However this is an optional step
 - An open file for each module can also be provided

Model Packaging

Testing

- Typically a test sample is scored using the final packaged model in the development environment
 - Scored output is written to in PRD API format
- Testing team scores the same sample within a real SAS FM installation
 - Scores are tested against the development output
- This score match test is pretty much the only 'QA' test performed by the testing teams.