



Advanced Development Technology

Uniface 10.2.02

Migration experiences

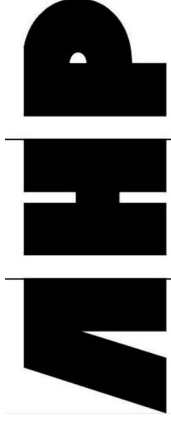
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Topics

- Customer Application Migration testing
- The migration process
- How to best prepare
- Controlling the migration
- Migration experiences

Customer application migration testing

- Migration test program since August 2016
- > 20 customers
- > 30 applications
- Objectives:
 - make migration easy, simple and painless
 - Learn and improve migration
 - Help customer to assess impact and effort
- Migration 'roadshow' conducting test migrations 'on site'
- Live migration in the Lab
- Migration test bed in the Lab



Hybrid Denno



The migration process

Import into Uniface 9

Take zero-measurement in Uniface 9

Import into Uniface 10 and migrate

Compile all in Uniface 10

Open critical objects in editors

Take zero-measurement in Uniface 9 (1/4)

- Review import log
- High level summary or repository
- Check repository for certain constructions
- Perform clean up: `idf /cln`
- Detect and remove orphans
- Compile all: `idf /war /lis=2 /all`
- Review compilation log

Take zero-measurement in Uniface 9 (2/4)

- High level summary or repository
 - Number of supertypes, subtypes
 - Largest entity (number of fields)
 - Number of relationships
 - Number of components, by type
 - Largest component (number of entities, fields)
 - Are modeled components used?
 - Number of global objects, by type

Take zero-measurement in Uniface 9 (3/4)

- Pre-scan repository
 - Usage of *loose* code in certain triggers
 - Usage of \$triggerAbbr in code
 - Usage of #define outside DEFINES triggers
 - Presence of comment only and/or module declarations only in triggers with default behavior

Take zero-measurement in Uniface 9 (4/4)

- Detect and remove orphans
 - Modeled fields not belonging to an entity
 - Component fields referring to non-existing component
 - Component fields referring to non-existing component entity
 - Component entities referring to non-existing component
 - Component variables referring to non-existing component

Import into Uniface 10 and migrate

- Use a single export file containing *everything*
- Automatic migration

Automatic migration

(1/2)

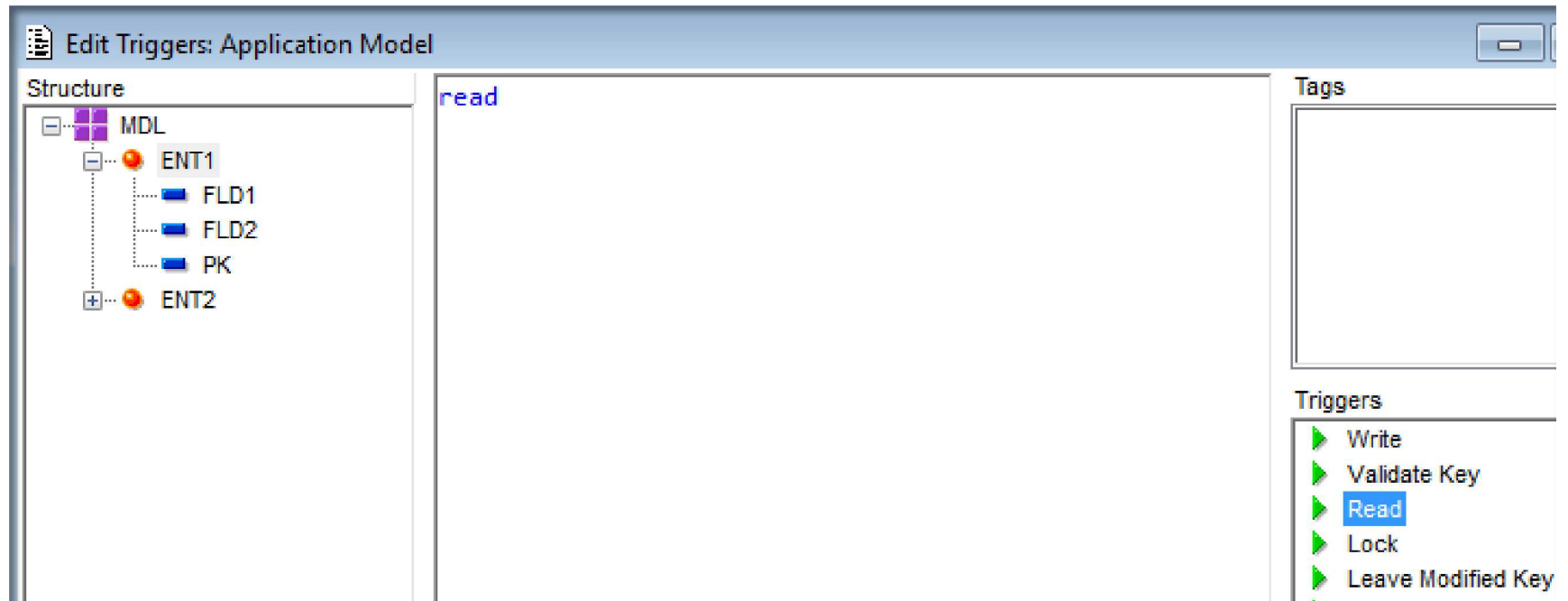
- Code from old UF9 triggers to new UF10 containers
- Remove code from triggers that are irrelevant to specific component types
- Every object on a Form's or Report's *Paint* gets a unique name
- Component variables moved from UXREGS => Component level DECLARATIONS container
- Remove invalid Component Variable definitions (invalid names, invalid layout definitions)
- Duplicate component fields are removed

Automatic migration

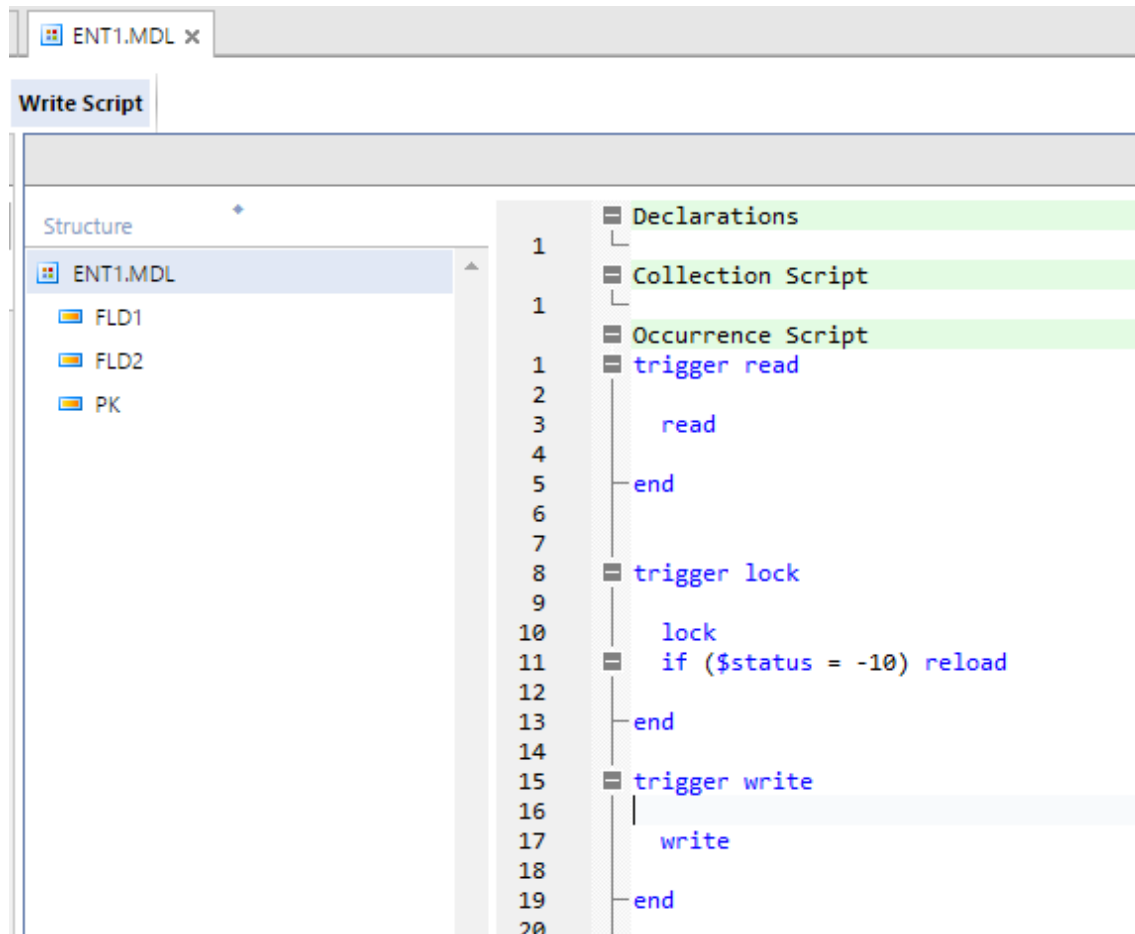
(2/2)

- Library for Include Proc => Typed library for IncludeScript
- Field Interface templates, Syntax templates and Layout templates
=> defined in typed library, named LIB
- User defined component templates => Modeled Components
- Field Templates => New type Field templates, defined in palette
U9TEMPLATES.U9TEMPLATES
- Existing UDEFAULTS => Uniface 10 Templates
- Remove Uniface 9 DICT definitions from tables

UF 9: Implicit trigger declaration



UF10: Explicit trigger declaration



Component Variables

The screenshot displays the Uniface 10 IDE interface. At the top, two 'Define Component Variable: CPT7' dialog boxes are open. The first dialog shows a table with two variables:

Variable Name	Description
MY_CPT_VAR1	Variable #1
MY_CPT_VAR2	Variable #2

A 'New' button is visible next to the table. Below the dialog boxes, the 'Uniface 10 IDE' window is shown. The 'BROWSE' tab is active, displaying a tree view of the project structure. The 'CPT7' component is selected. Below the tree view, the 'Write Script' tab is active, showing the following script:

```
1  Declarations
2  variables
3      numeric    DIS(zzzz9P99)    MY_CPT_VAR1    ; Variable #1
4      numeric    @LIB::MY_TEMPLATE MY_CPT_VAR2    ; Variable #2
5  endvariables
6
7
8
9
10
```

Typical conversion messages

INFO Component 'ECT001CTRL': content of trigger Clear cleared; it is not relevant for component type Service

INFO Component 'ECT001DF6': content of trigger Accept cleared; it is not relevant for component type Static Server Page

```
=== MIGRATION INFO [cpt:XXXXXXX] ===  
Object of type [lbl] with invalid or duplicate name found: [LABEL_45] updated to [LABEL_1]  
Object of type [are] with invalid or duplicate name found: [] updated to [AREA_1]  
Object of type [lin] with invalid or duplicate name found: [] updated to [LINE_1]
```

Removed non-applicable layout for component variable 'EDXEXPORTFLAG': 'B'

Cleanup of layout of component variable 'NTOTALPMTAMT': layout updated from 'DIS(bzzzzzzzzzzzzzzzp99-),RGT' to 'DIS(bzzzzzzzzzzzzzzzp99-).'

Duplicate fields named COMP_NAME.YTRH.CMDSERIES have been removed

Typical error message

```
Migrating component Z_DD_NAV_TREE
=== MIGRATION ERROR [cpt:Z_DD_NAV_TREE] ===
    Failed to migrate cpt:Z_DD_NAV_TREE. Object will be removed from the
    repository.
        ErrorID: -100006
        Error  : Formpic conversion to struct has detected an error
        Context information:
            [context]
                [Error 1] = "Entity ET_NAVIGATION.ET_BASE and Entity
ET_NAV_CHILD_SB1.ET_BASE are overlapping"
                [Reported error] = "-10104"
                [status] = "-1"

Removed cpt:Z_DD_NAV_TREE from repository
```

Typical error message

```
Migrating component BUC_XBST_1
=== MIGRATION ERROR [cpt:BUC_XBST_1] ===
    Failed to migrate cpt:BUC_XBST_1. Object will be removed from the
    repository.
        ErrorID: -100006
        Error  : Formpic conversion to struct has detected an error
        Context information:
            [context]
                [Error 1] = "Dimension information for Entity BST.BUC is missing"
                [Error 2] = "Dimension information for Entity AYR.SRS is missing"
                [Error 3] = "Dimension information for Entity STU.SRS is missing"
                [Error 4] = "Dimension information for Entity SCJ.SRS is missing"
                [Error 5] = "Dimension information for Entity CRS.SRS is missing"
                [Error 6] = "Dimension information for Entity CBO.SRS is missing"
                [Reported error] = "-10105"
                [status] = "-1"

Removed cpt:BUC_XBST_1 from repository
```

Compile all in Uniface 10

- Compare Uniface 10 compilation log to Uniface 9 compile log
 - New warnings?
 - New Errors?
- Compare compiled module information for Uniface 9 versus Uniface 10 using *Lab proprietary tooling*
 - Additional modules, missing modules
 - Modules compiled in different context
 - Different module(entry) compiled

How to best prepare using Uniface 9

- Use Uniface 9.6 or higher
- Perform clean up of all components: `idf /cln`
- Check and remove orphan definitions
- Compile everything: `idf /war /lis=2 /all`
- Check for dependencies on Uniface defaults
- Create one big export file using Export Utility

Dependencies on Uniface 9 defaults

- Forms and reports to access meta repository (model DICT)
- Include procs in library 'U' (ZPROCERROR)

Controlling Conversion

; Migration settings

; add comment with old trigger name to migrated triggers (default = 0)

MIGRATION_SCRIPT_ADD_INFO = 0

; add explicit 'end' to migrated triggers (default = 1)

MIGRATION_SCRIPT_ADD_END = 1

; explicitly define <\$triggerAbbr> for migrated triggers (default = 2)

MIGRATION_TRIGGERABBR = 2

; add scope block for #defines to migrated triggers (default = 2)

MIGRATION_SCOPEDEFINE = 2

Migration experiences

- Migrations tests were very useful for the Lab
- Participating customers received report of migration test results plus recommendations for preparation
- Participating customers are planning for migration
- Migration takes anywhere from a few minutes to 4 hours
- Migration incrementally improved in patches on 10.2.01 (F1xx) and 10.2.02 (F2xx)
- **F206**: correction for migrating triggers with default behavior
- **F207**: correction for ensuring run time compatibility with Uniface 9 in case of breaking inheritance for entry definitions

THANK YOU & QUESTIONS



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