Customizing Oracle Applications with CUSTOM Library (CUSTOM.pll)

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Personal Introduction

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Presentation Agenda

- Current environment at UVA
- Pre-Requisites
- Overview of CUSTOM.pll
- Common Customizations
- Events & Triggers Supported
- Coding Standards & Restrictions
- Case Studies: Customizations from UVA
- Troubleshooting CUSTOM.pll code
- Tips & Suggestions
- Future of Forms & CUSTOM.pll
- Q&A

Current Environment at UVA

- Oracle Applications 11.5.10.CU2
  - 2001 - 11.0.3
  - 2004 - 11.5.9 (11i)
  - 2006 - 11.5.10 upgrade
- Database: 10.2.0.3 (10G Rel2)
- Modules: Financials, HR & Payroll
- O/S: UNIX - SUN SPARC Solaris 10

Pre-Requisites

- Oracle Applications knowledge
  - CUSTOM.pll is only for Oracle Apps
- Oracle Forms Programming Skills
  - Uses Forms Builder – Forms 6i
  - Uses Forms Triggers & Functions
- PL/SQL Knowledge

Overview of CUSTOM.PII

- **What is CUSTOM.pll - Form's attached library – open an Oracle Form**

- **How does it work?**

- **$AU_TOP/resource – *.pll & *.plx**

- **Beauty of CUSTOM.pll**

  - **Customizing forms without modifying it (*.fmb)**

  - **Customizations are protected from Oracle Patch.**

Common Customizations

- Disabling fields/blocks based on conditions or special business logic
- Hiding DFF and confidential data
- Defaulting or copying values to a field based on a custom logic
- Enabling Zoom icon
- Adding custom validations and error messages
- Changing Forms behavior for different responsibilities

Events & Triggers supported in CUSTOM.pll

- **WHEN-NEW-FORM-INSTANCE**

- **WHEN-NEW-BLOCK-INSTANCE**

- **WHEN-NEW-RECORD-INSTANCE**

- **WHEN-NEW-ITEM-INSTANCE**

- **WHEN-VALIDATE-RECORD**

- **ZOOM**
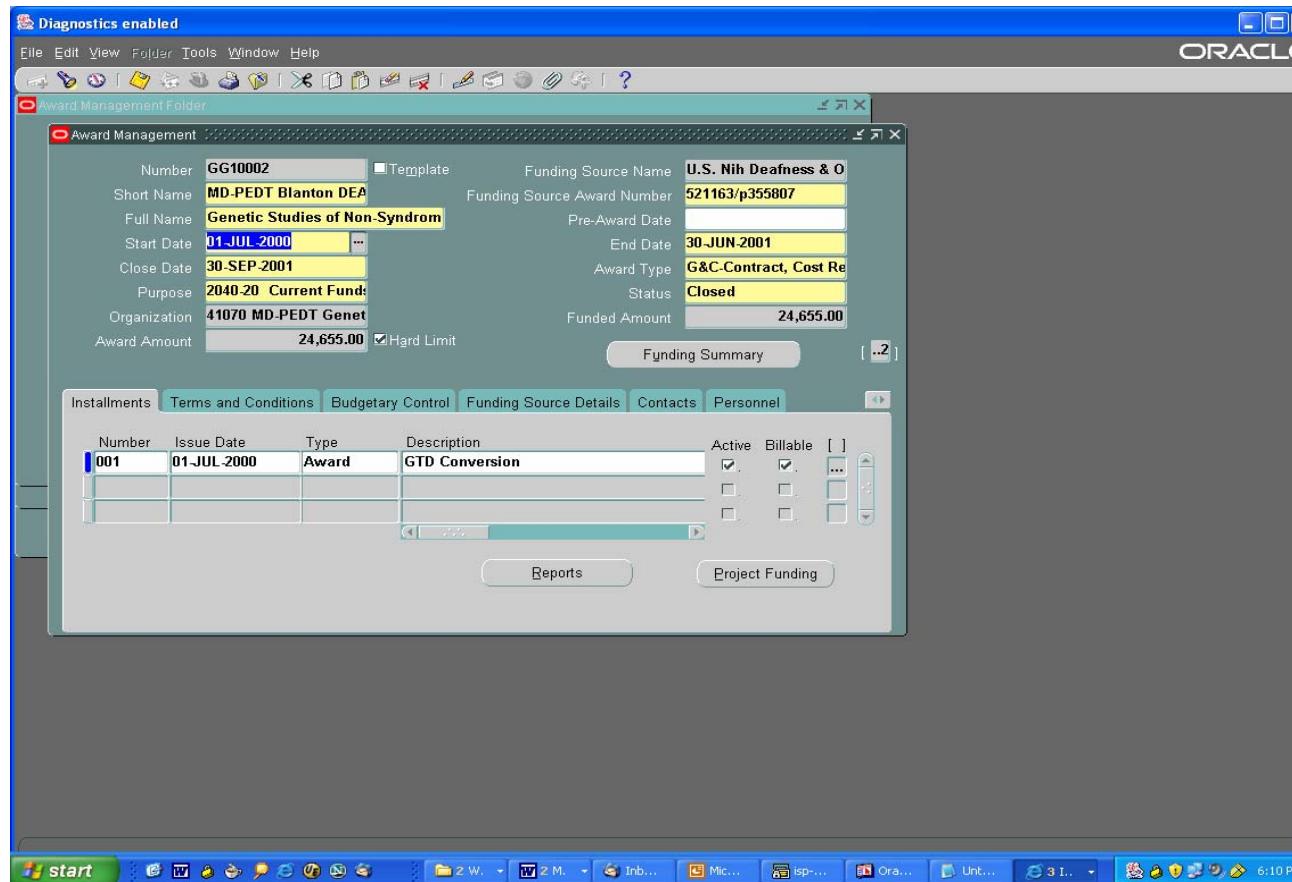
Triggers in CUSTOM.pll (cont'd)

- How these triggers are executed on the form ?
- How to find the right trigger ?
- Display events from CUSTOM.pll
  - Help->Diagnostics->Custom Code->Show Custom Events
  - Used in debugging custom.pll code
- Order of precedence – Form->CUSTOM.pll
- Sample trigger logic in CUSTOM.pll

Oracle Application Form

Sample code from custom.pll

```
procedure event(event_name varchar2) is

    form_name     varchar2(30) := name_in('system.current_form');
    block_name    varchar2(30) := name_in('system.cursor_block');

  begin
   if (event_name = 'ZOOM') then
     if (form_name = 'DEMXXEOR' and block_name = 'ORDERS') then
        .........
   elsif (event_name = 'WHEN-VALIDATE-RECORD') then
     if (form_name = 'APXVENDR') then
       if (block_name = 'VENDOR') then
         copy(upper(name_in('VENDOR.NAME')), 'VENDOR.NAME');


       end if;
     end if;
   else
     null;
   end if;
end event;
```

Coding Standards and Restrictions

- Cannot use SQL, but can call PL/SQL function.
- Copy command instead of Assignment operator
- fnd_message.set_string & fnd_message.error
- fnd_message.set_name('UVA','uva_msg')

   fnd_message.error
- Use app_item_property instead of set_item_property ()
- Cannot create blocks & items ,but can modify the properties.

Case Studies: UVA Customizations

- **Enable ZOOM icon – Purchasing Form.**

- **HR Confidential Data hiding - Hide data based on responsibility**

- **HR Override Tax Address - Defaulting local City address.**

- **GMS - Workflow kicks off after Project funding in Awards form.**

- **HR Salary approval - Single line of code, but more research in forms**
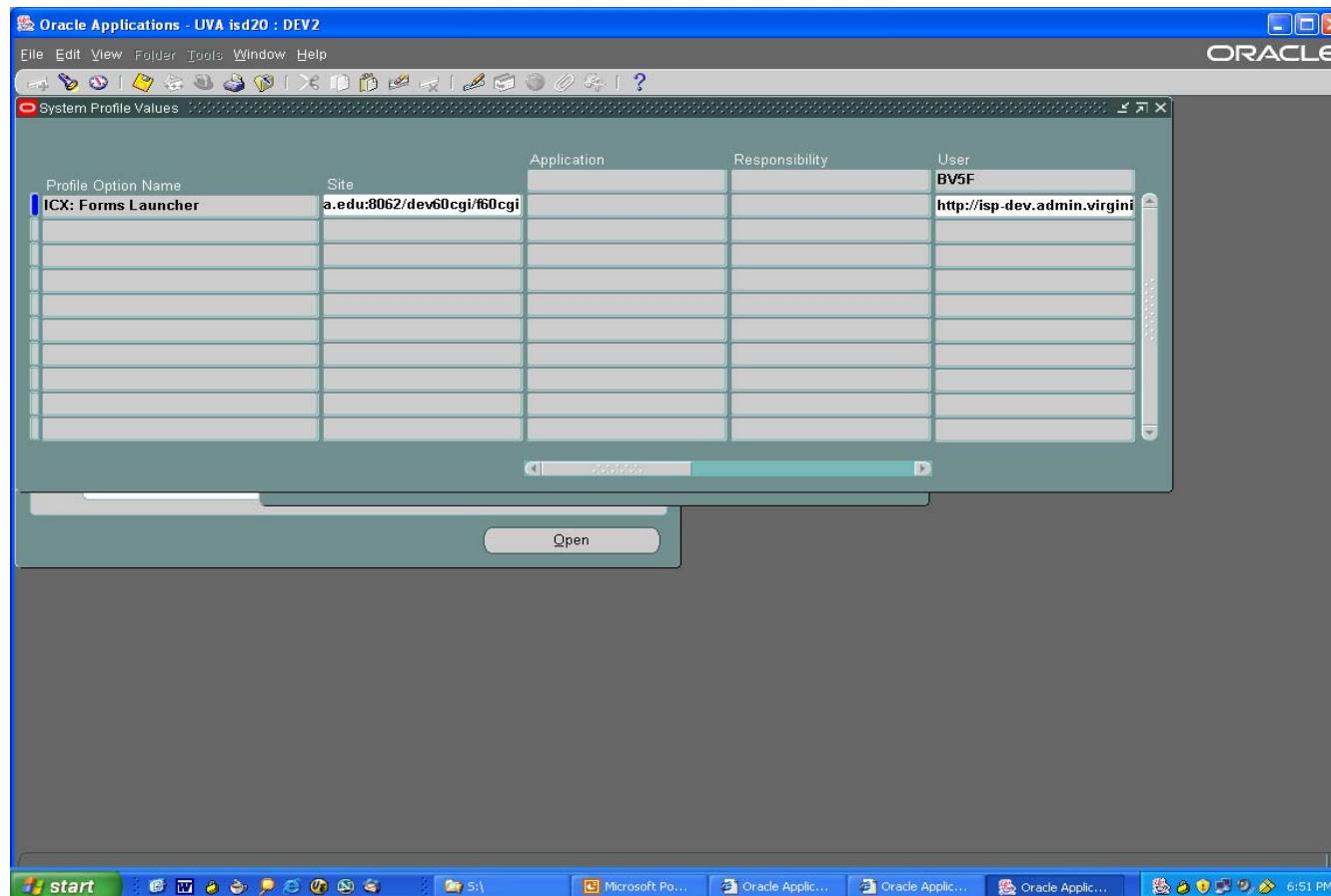
Troubleshooting CUSTOM.pll code

- Exception handling for each event and PL/SQL package calls.

- Error messages: fnd_message.debug – Quick

- Disabling Custom.pll code(Help -> Diagnostics -> Custom Code -> Off)

- Show Custom events (Help -> Diagnostics -> Custom Code -> Show Custom events)

- Forms Run-time Diagnostics (FRD)
  - Assign value to Profile 'ICX: Forms Launcher'
    /dev60cgi/f60cgi*?record=all&log=/tmp/uva_frd.log*
  - $FORMS60_TRACE_PATH -> uva_frd.log

Profile: ICX: Forms Launcher

Tips & Suggestions

- How to avoid hard coded values ?
  - Create Profiles and read values using PL/SQL.
  - Profiles can be managed by functional people.
- What if Oracle overrides your CUSTOM.pll logic ?
  - Go to the next inner level Event(block-> item)
  - Open Oracle form and find out their logic and bypass it with special logic.
- Divide CUSTOM.pll by modules (Ex: UVAHR.pll)
- Always test CUSTOM.pll customizations after major upgrade or mega patches.

Reading Profile values

```
FUNCTION get_applicant_profile_value (p_resp_id IN NUMBER)
    RETURN VARCHAR2
     ... SELECT profile_option_value
        INTO l_profile_option_value
        FROM fnd_profile_option_values
       WHERE profile_option_id IN (
            SELECT profile_option_id
              FROM fnd_profile_options
             WHERE profile_option_name = 'UVA_HR_APPL_ACCESS'
               AND TRUNC (SYSDATE) >= start_date_active
               AND TRUNC (SYSDATE) < NVL (end_date_active, c_eternity))
         AND level_id = 10003
         AND level_value = p_resp_id;
    EXCEPTION

        ....
     END;
    RETURN l_profile_option_value;  ...
```

Future of Forms & CUSTOM.pll

- **Forms (*.fmb) -> OA Framework Pages (JAVA objects)**

- **Custom.pll -> Page Personalization**

- **OA Framework Customizations**

- **Apps Rel 12 & Fusion.**

Questions?

Thank You