Troubleshooting Communication Generation

Track: Campus Community
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Presenter: Natalie Alarcon (Oracle/PeopleSoft - CS)
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Your Presenter

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Program Agenda

- Issue Identification / Verification
- Tools for Root Cause Analysis
- Sample Comm Gen Issues and Solutions
- Resources
- Questions & Answers
Issue Identification / Verification
Issue Identification / Verification

Issues are not always what they seem

- Clear Distinction between the *Symptom* versus the *Cause*
  - Symptoms are usually what we first notice
    - Process failure, no results, incorrect results
  - Cause is where we should focus troubleshooting efforts
    - ORA error, send mail failure, etc
- **Verify** the issue with evidence
  - Trace and/or log file, results, data, etc
Issue Identification / Verification

Example of Symptom versus Cause

- **SYMPTOM**: Comm Gen Process runs to Success but the Person Communication page is not updated to ‘Completed’
Issue Identification / Verification
Issue Identification / Verification

Example of Symptom versus Cause

- **CAUSE**: Although there was no error generated by the process, viewing the Message Log shows an error.
Issue Identification / Verification

Example of Symptom versus Cause

- **Cause**: An error in the XDO engine

Message Log

<table>
<thead>
<tr>
<th>Severity</th>
<th>Log Time</th>
<th>Message Text</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8:33:01AM</td>
<td>During calling method PTPDFMerger.mergePDFs, the XDO engine throws an exception: (\ldots) (The system cannot find the path specified). (235,3101) (0,0)</td>
</tr>
<tr>
<td></td>
<td>8:33:02AM</td>
<td>Error generating output file for letter communication.</td>
</tr>
</tbody>
</table>
Issue Identification / Verification

**Verify the Issue**

- Verifying the issue will:
  - Confirm you have an issue
  - Ensure that the issue is properly identified
  - Focus your troubleshooting strategy

- Verify the issue by:
  - Tracing the process
  - Identifying and *documenting* the steps that cause the issue and…
  - Identifying if there are steps that do **NOT** cause the issue
Issue Identification / Verification

Example of Verifying the Issue

- Tracing Application Engine Processes (Doc ID 1324795.1)
  - Most process result errors captured using:
    TRACE 391 -TOOLSTRACESQL 135 -TOOLSTRACEPC 4044
  - Performance issues:
    TRACE 135 -TOOLSTRACESQL 135 -TOOLSTRACEPC 448
Issue Identification / Verification

Example of Verifying the Issue

```
418  10.22.25  0.553000 Creating SendMailException
419  10.22.25  0.001000 SendMailException
420  10.22.25  0.000000 SendMailException: Context: OutboundEmail.Send method called
421  10.22.25  0.000000 SendMailException: Java Exception: javax.mail.MessagingException
422  10.22.25  0.001000 SendMailException: Detail Message: JavaMail Error: IOException while sending message;
       nested exception is:
           java.io.FileNotFoundException: \RptInst\1\QA_CSCGREPO.htm (The system cannot find the path specified).
           at com.sun.mail.smtp.SMTPTransport.sendMessage(SMTPTransport.java:577)
           at com.peoplesoft.pt.mcf.mail.MCFOutboundEmail.send(MCFOutboundEmail.java:762)
           at com.peoplesoft.pt.mcf.mail.MCFOutboundEmail.send(MCFOutboundEmail.java:930)
423  10.22.25  0.054000 PCodeWTl (3/3): Using Output Directory: \P:\PT8.50\appserv\prcs\H900PTAO\files\XMLP\cd62b286-40d7-11df-9a55-9e529d842f8c8\RptInst
```
Issue Identification / Verification

Verify the Issue with Documentation

- Why document the steps that cause the issue?
  - Avoid tunnel vision
  - Controlled testing
  - To engage additional resources, you will probably need to clearly articulate the problem and how you got there.
Issue Identification / Verification

Verify the Issue with Documentation

- What should you document?
  - Steps that cause the issue
  - What precipitated the issue? Did you recently apply a patch or perform an upgrade?
  - What data is involved?
  - Scenarios where process is successful
Tools for Root Cause Analysis
Root Cause Analysis

Communication Generation

- What CommGen is made of...
- Campus Solutions Setup tables
- PeopleTools Query or Application Class - define Data Source
- XMLP / BI Publisher – Report Templates
- PeopleTools – Report Definition
- SCC_COMMGEN Application Engine
Root Cause Analysis

Tools for Root Cause Analysis

- Use available resources
  - My Oracle Support Knowledge Library
  - My Oracle Support Community
  - HEUG List Servs
  - Internet
- Testing (e.g. Test Scripts)
- Trace and log files
Root Cause Analysis

My Oracle Support Search Results using error code (235,3101)
Root Cause Analysis

My Oracle Support Advanced Search Criteria
Root Cause Analysis

My Oracle Support Search Criteria

- **Bug Database** – Issues or enhancement requests past and present
- **Communities** – Constituent base
- **Documentation** – Oracle Documents such as PeopleBooks, White/Red Papers, Configuration Guides, Technical Papers, Product Release documents
- **Knowledge Base** – Articles on Known Issues, Proactive Support, How-To, Alerts
Root Cause Analysis

Testing

- Replicate the issue in a non-prod environment
- Verify Configuration
  - Standard Letter Table - CS
  - Communication Data Source
    - Run the Query. Does it produce results?
  - Report Definition
    - Test the Template Preview
  - All pages of the Communication Generation Run Control
  - Campus Community Installation
- Test different admin functions, report definitions, data sets
Root Cause Analysis

Trace and Log Files

- The following provides enough information to troubleshoot most of the Application Engine process:
  - `-TRACE 391 -TOOLSTRACESQL 135 -TOOLSTRACEPC 4044`
- For performance issues, it is better use this combination of options:
  - `-TRACE 135 -TOOLSTRACESQL 135 -TOOLSTRACEPC 448`
- Environment Issues or issues involving Process Definition (ex: PSPAL ::ABORT) In psprcs.cfg file set
  - `logfence=5` and `smtptrace=1`

How to acquire an Application Engine trace [Video] (Doc ID 1094728.1)
Tracing Application Engine Processes (Doc ID 1324795.1)
Root Cause Analysis

Contacting Oracle

- When logging a Service Request relating to Comm Gen, consider providing the following to speed time to resolution:
  1. Maintenance Info: latest CS & HRMS Bundles applied; PeopleTools patch level,
  2. This issue began after what event, upgrade, update, fix, etc.?
  3. At what stage are you using Communication Generation: (a) just beginning to implement or (b) implemented?
  4. Screen shots (or images) of pages relating to issue:
     a) Standard Letter Table - CS
     b) Communication Data Source
     c) Report Definition
     d) All pages used for the Communication Generation run control
     e) Campus Community Installation
     f) Communication Data Source Query - screen shot of the View SQL page for each query used
  5. The stdout log file from the Process Monitor verifying error, if applicable.
Sample Comm Gen Issues and Solutions
Sample Comm Gen Issues and Solutions

Process Error – Environment Issue

- **PSPAL Error:**
  PSPAL: Abort: Unrecoverable signal 22 received
  PSPAL: Abort: Location: e:\pt853-903-R1-retail\peopletools\SRC\pspal\exception_winunhandled.cpp:357:
  PSPAL::UnhandledExceptionFilter::SignalExceptionFilter

- In general, this is a crash and you should review the process_state.txt report in your appserver log folder for details relating to the root cause of the crash.

- Possible causes:
  - Java Heap Size. In the Process Scheduler definition, add Java parameters for max and min JVM
  - Query doesn't meet Comm Gen Requirements. Crashes AppServer
Sample Comm Gen Issues and Solutions

Out of Memory Error

- **Out of Memory Error:**
  
  java.lang.OutOfMemoryError

  OR

  Out of available memory. - E:\pt84929b-retail\peopletools\SRC\psmgr\mgr.cpp @ 1411
  (PSAESRV.1511)
Sample Comm Gen Issues and Solutions

Out of Memory Error - Solutions

- Increase Java Heap size in both appserv.cfg and psprcs.cfg
  
  `JavaVM Options= -Xrs Dxdo.ConfigFile=%PS_HOME%/appserv/xdo.cfg -Xmx512m -Xms512m`

- The heap setting that you need to use depends on environmental factors such as:
  - Number of users,
  - Session Timeout setting (additional heap memory is needed for higher timeout settings)
  - Types of transactions running

- In a production environment, we recommend a minimum heap setting of 512mg. But you may need to set heap higher depending on above factors.

E-BI/XMLP: Performance Tuning BI Publisher/XMLP Reports (Doc ID 962712.1)
Sample Comm Gen Issues and Solutions

Out of Memory Error - Solutions cont..

- Verify CACHE Directory exists on process scheduler server
  - [PS_HOME]/appserv/PRCS/[domain]/CACHE
  - If you have modified the CacheBaseDir setting in psprcs.cfg, you need to change the system-temp-dir in the xdo.cfg configuration file in the process scheduler server to point to another valid directory. *Temporary files created in that directory could grow very large depending on the size of your reports. Choose your system-temp-dir for optimum system performance.*

- AE Process PSXPCLEAN: Clean out BI Publish Metadata - It is recommended to use it frequently if the servers are overloaded.
  - E-BI/XMLP: Cleaning up BI Publisher/XML Publisher MetaData (Doc ID 653458.1)

- Eliminate the XMLP Trace File Within SCC_COMMGEN
  - Update the PSXP_RPTDEFNMANAGER.ReportDefn class to force the use of "AppLogFence" in "PSAPPSRV.cfg" to control the logging

Master Note: Communication Generation (Doc ID 1270136.1)
Sample Comm Gen Issues and Solutions

Report Definition Error

- **Error generating report output:**
  During calling method PTFOProcessor.generateOutput, the XDO engine throws an exception: NULL. (235, 3101) (235,2309). Error occurred during the process of generating the output file from template file, XML data file, and translation XLIFF file.

- **Report Definition Configuration**
  - The Channel on the Report Definition Template page needs to be set to
    - “Printer” for letters
    - “HTML” for email
  - The Location on the Output page needs to be be set to
    - “Any”
Sample Comm Gen Issues and Solutions

PDF Results

- Comm Gen runs to Success but no PDF output created

- Invalid Template Type –
  - Template Type must be RTF

- Corrupt Template
  - Preview Template on the Report Definition

- RTF Template contains image(s) that are improperly formatted.
  - The Wrapping Styles of Square, Tight, Behind and InFrontOf do not survive the Preview to RTF or the Run to RTF and HTM using the Query Report Viewer/Scheduler. This occurs in both the Design Helper Plug in and within Reporting Tools - XMLP Report Definition - Preview.
    - In the RTF template file, modify the Layout of the field containing images to “INLINE”

E-BI/XMLP: Images In RTF Template Do Not Appear In RTF Or HTM, But Do Appear In PDF (Doc ID 750266.1)
Sample Comm Gen Issues and Solutions

CommGen Data Source Issues

- **Process Error:**
  No valid queries found in the first 300 items evaluated

OR

- **User Cannot find Query to select as Communication Data Source**

  The query used with the Communication Data Source, which should be used to select the additional data that is needed for the letter or e-mail, should include a prompt for each of the variable data items relating to the administrative function.

    - EX: ADMA Admin Function has the following Variable Data Fields:
      - ACAD_CAREER
      - STDNT_CAR_NBR
      - ADM_APPL_NBR

    - Your query needs to include a prompt for each
Sample Comm Gen Issues and Solutions

CommGen Data Source Issues

- **Cannot open the Report Definition component online. User sees:**
  
  Invalid XSD File: Expected 'EOF'. (235,18) This XSD file is not valid. Please correct the error and upload again

- The Data Source may be corrupt
  - Create a new Communication Data Source,
  - Register the Data Source,
  - Create a new Report Definition, attaching the template, and
  - Run the Communication Generation process.
Sample Comm Gen Issues and Solutions

CommGen Data Source Issues

- Cannot select a Data Source Type when adding a new Report Definition

- There is an issue with security access. The User ID must have the delivered Security Role ‘XMLP Report Developer’, which includes Perm List PTPT2600.
Sample Comm Gen Issues and Solutions

CommGen Data Source Issues

- Cannot view output after clicking Preview button on Report Definition > Template page.

- There may be a problem with the SQL relating to the query being used as part of the Data Source (e.g. missing core record relating to the administrative function, prompt for EMPLID needs the Unique Prompt Name changed to PERSON_ID, prompts needed for variable data)

- The Template may be corrupt
Sample Comm Gen Issues and Solutions

CommGen Print Issues

- Process fails with error:
  XDOException:CACHE\xdo040908_0455078594.fo (The system cannot find the path specified)
Sample Comm Gen Issues and Solutions

CommGen Print Issues

- Confirm that the directory, [PS_HOME]/appserv/PRCS/[domain]/CACHE, exists on the process scheduler server.

- If you modified the CacheBaseDir setting in psprcs.cfg configuration file, is the 'system-temp-dir' property defined in xdo.cfg for this environment?
  
  - **By default, the system-temp-dir property is not set.** This property must be set to point to a temp folder on the server. Note that temporary files created in that directory could grow very large in size depending on the size of your reports, so you need to choose your system-temp-dir for optimum system performance.

  - The psappsrv.cfg file points to the xdo.cfg file to use. Original line in psappsrv.cfg:

    ```
    JavaVM Options=-Xrs -Dxdo.ConfigFile=%PS_HOME%/appserv/xdo.cfg
    ```

    **NOTE:** If you change the content of xdo.cfg, you don’t need to restart the application server or the process scheduler domain that uses it. It refreshes automatically the next time you run it. But if you change the application server or process scheduler configuration file, you need to restart the affected domain.
Sample Comm Gen Issues and Solutions

CommGen Print Issues cont...

- PIA configurations for XMLPublisher:
  - Setting Up Report Categories - Select *Reporting Tools, XML Publisher, Setup, Report Category*
    - Report Category is a required attribute on all report definitions and Content Library sub-templates. By assigning a report category, you are actually applying row level security to the data on those components.
  - Global Properties - Select *Reporting Tools, XML Publisher, Setup, Global Properties* & Report Definition  *Reporting Tools > XML Publisher > Report Definition*
    - Set three properties as follows:
      - `pdf-security = False` *(this property set to False controls the merge of all pages in the output and eliminates blank pages)*,
      - `pdf-encryption-level = 0*`, and
      - `pdf-no-changing-the-document = <True or False, depending on needs>* *(This property determines whether to allow the output to be edited or changed. Setting to True would prevent the output from being edited, and False would allow changes to the output. When False is selected, it is assumed that the end user has a version of Adobe that has editing capabilities.)*
Sample Comm Gen Issues and Solutions

E-Mail Send Error

- **E-mail Send Error**
  
  (Return Code: 0) for COMMON_ID: 123456789, SEQ_3C: 2, CG_SEQ: 1

- Settings for SMTP mail need to be configured in both PSAPPSSRVCFG and PSPRCSCFG
  
  - SMTPServer=PSP-SMTP-01 <----- name of your SMTP server (this can also be the IP address of the SMTP server)
  
  - SMTPPort=25 <----- port number for your server (usually will be 25)
  
  - SMTPServer1=PSP-SMTPG-01 <----- name of backup server (not necessary)

  - The backup server is optional. If your institution plans on sending high volumes of email, you may set up a backup server to handle overflow of the primary server. If the primary server is overloaded or has simply gone down, the backup will take over. SMTP will not try to re-send any failed mail.

  - SMTPPort1=25 <----- backup server port number
  
  - SMTPSender=PeopleSoft@peoplesoft.com <----- Valid email ID format
  
  - SMTPSourceMachine=ts-hp03.peoplesoft.com <-----<machine name that App Server or Process Scheduler is on>.<companyname>.com (This can also be the IP address of the machine without the <companyname>.com) Note: This needs to be the machine name of the server being configured, Application or Process Scheduler, NOT THE NAME OF THE DATABASE YOU ARE CONNECTING TO.
Sample Comm Gen Issues and Solutions

E-mail Results

- **Comm Gen Runs to success but E-mails not received**

OR

- **Process Errors:**
  
  Process %s ABENDED at Step %s.%s.%s (Action %s) -- RC = %s

  *Log File shows all test students have 'missing critical' data.

- **Possible causes:**
  - Invalid E-mail address. Check if there are any emails in your Bounce-Back address?
  - Verify the Address Usage Selection is correct. On the Communication Generation > Process Parameters page, address type usage selected must contain at least one e-mail type. To add or modify an address type, navigate to Set Up SACR > Product Related > Campus Community > Establish People Processing > Setup > Address Usage Table
Sample Comm Gen Issues and Solutions

E-Mail Results

- E-mail received with context but doesn’t include the enclosures as expected

- User failed to Check the Include Enclosure checkbox on the Standard Letter Table CS.
  
  *Campus Community, Communications, Set up Communications, Standard Letter Table CS*
  
  - Usage: Select to indicate that other letters must be grouped and sent with this letter. When selected, the Enclosures group box appears.

- User failed to Refresh Enclosure List on Comm Gen Run Control
  
  *Campus Community, Communications, Communication Generation, Selection Parameters*
  
  - Usage: Click to cause the Enclosures Assigned (Softcopy) section to include all available softcopy enclosures including enclosures that were added to the system since the last refresh of the process run control ID.

- Invalid Template Type – Template Type must be RTF
Sample Comm Gen Issues and Solutions

E-mail Results

- When a communication is sent as an e-mail, the format is distorted and includes HTML tags

- XML/BI Publisher uses CSS Stylesheets as opposed to Inline CSS. Place the following configuration in the xdo.cfg file, typically found in: C:\Oracle\BI Publisher\BI Publisher Desktop\Template Builder for Word\config

```xml
<config version="1.0.0" xmlns="http://xmlns.oracle.com/oxp/config/">
  <properties>
    <! html-css-embedding valid values embed-to-element | embed-to-header | externalize -->
    <property name="html-css-embedding">embed-to-element</property>   </properties>
</config>
```

Please be aware that this may affect all HTML output, with output file sizes likely to increase.
Resources
## Knowledge

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<thead>
<tr>
<th>Document ID</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>1270136.1</td>
<td>Master Note: Communication Generation</td>
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<tr>
<td>1068079.1</td>
<td>Campus Solutions 9.0 Communication Generation</td>
</tr>
<tr>
<td>943773.1</td>
<td>How is it Possible to Print to a Linux Printer using the Communication Generation Process?</td>
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<tr>
<td>1318030.1</td>
<td>Where is Data Stored for Communication Generation Letters to be Regenerated?</td>
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<td>962612.1</td>
<td>CS 9 Communication Generation How To</td>
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<td>821195.1</td>
<td>E-XMLP: How to Run XMLP Reports in Debug Mode/Turn ON XMLP logging. [Video]</td>
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Hardware and Software Engineered to Work Together