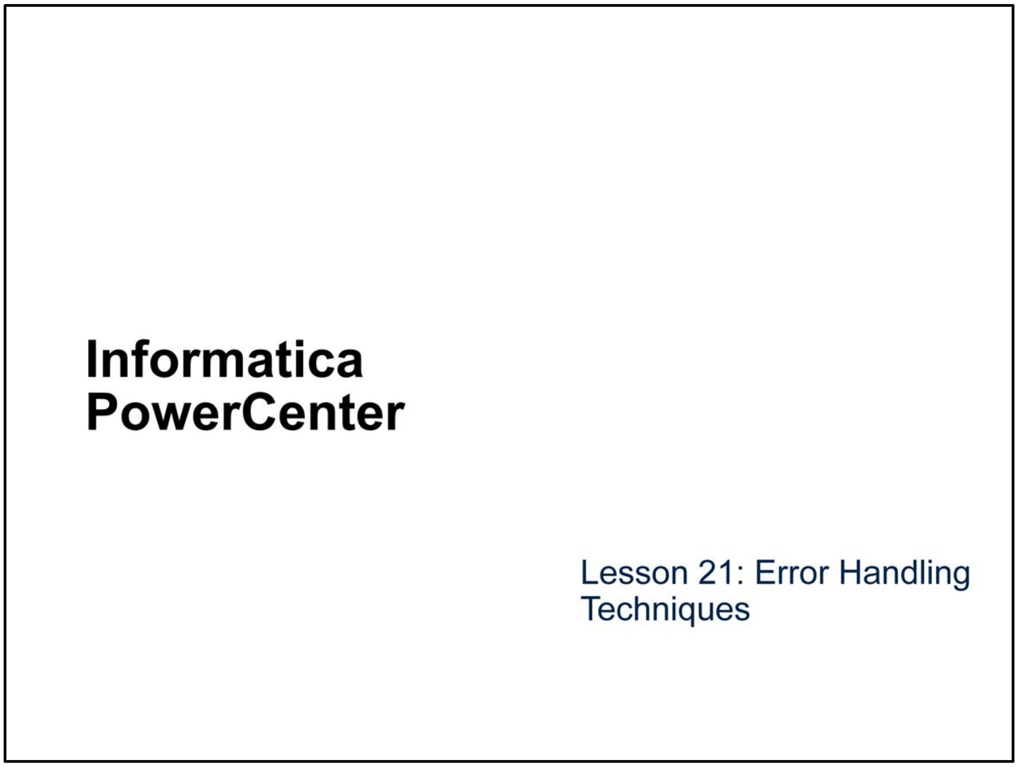
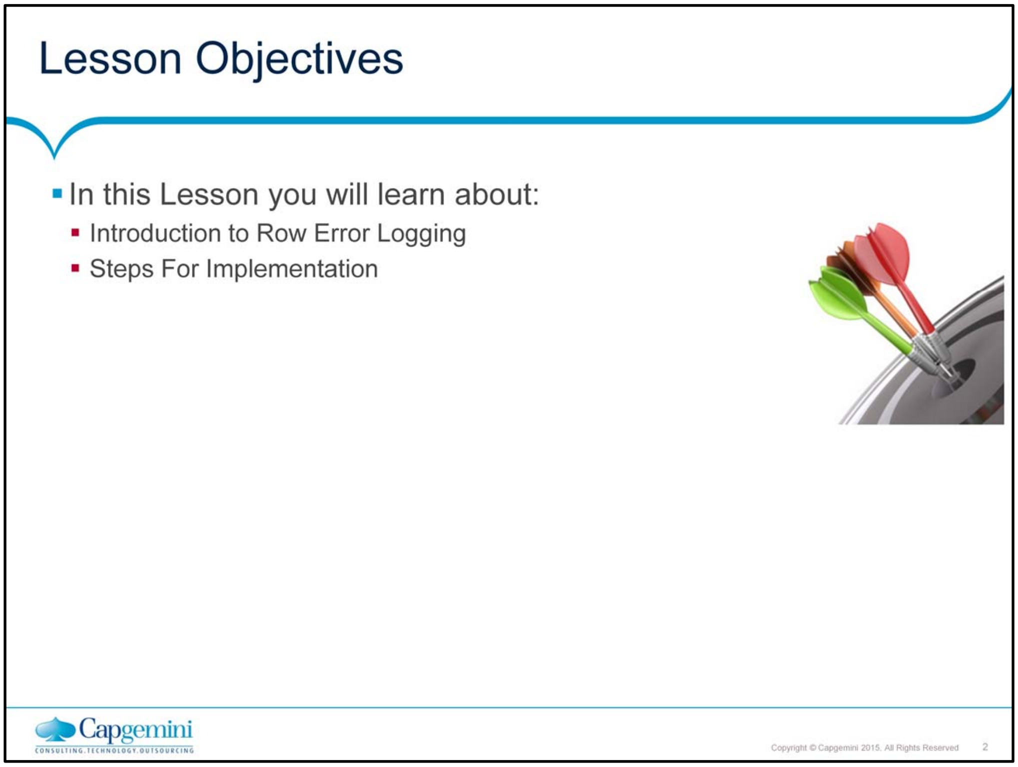


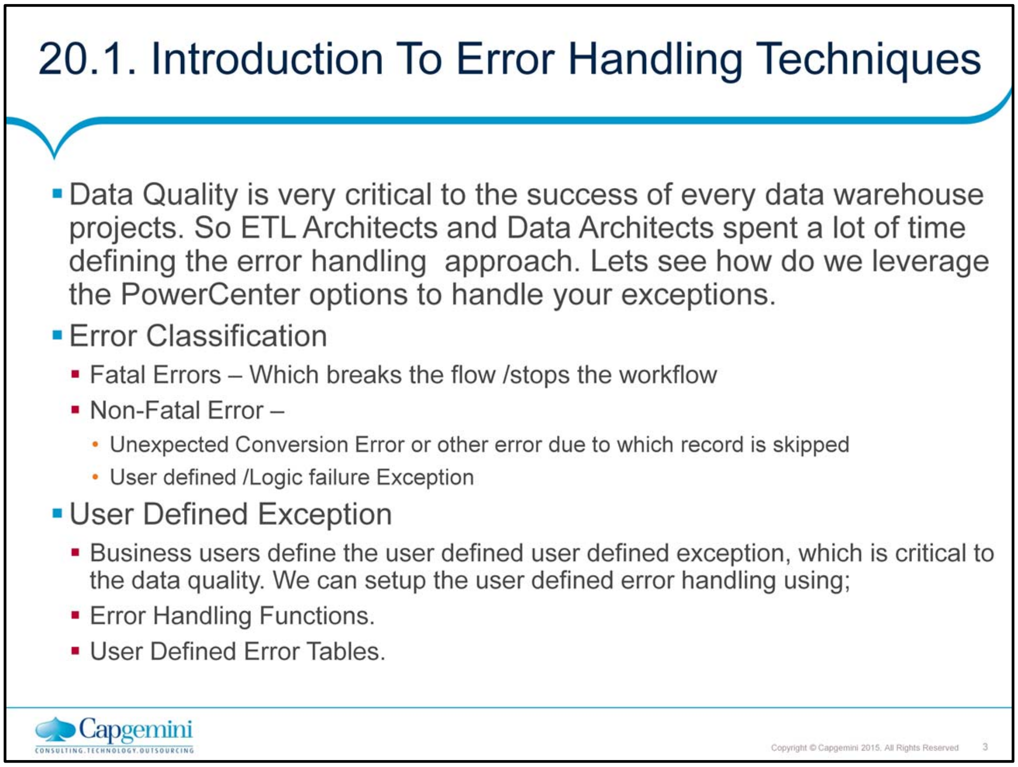
Informatica PowerCenter

Lesson 21: Error Handling Techniques



Lesson Objectives

- In this Lesson you will learn about:
  - Introduction to Row Error Logging
  - Steps For Implementation



20.1. Introduction To Error Handling Techniques

- Data Quality is very critical to the success of every data warehouse projects. So ETL Architects and Data Architects spent a lot of time defining the error handling approach. Lets see how do we leverage the PowerCenter options to handle your exceptions.
- Error Classification
  - Fatal Errors – Which breaks the flow /stops the workflow
  - Non-Fatal Error –
    - Unexpected Conversion Error or other error due to which record is skipped
    - User defined /Logic failure Exception
- User Defined Exception
  - Business users define the user defined user defined exception, which is critical to the data quality. We can setup the user defined error handling using;
  - Error Handling Functions.
  - User Defined Error Tables.

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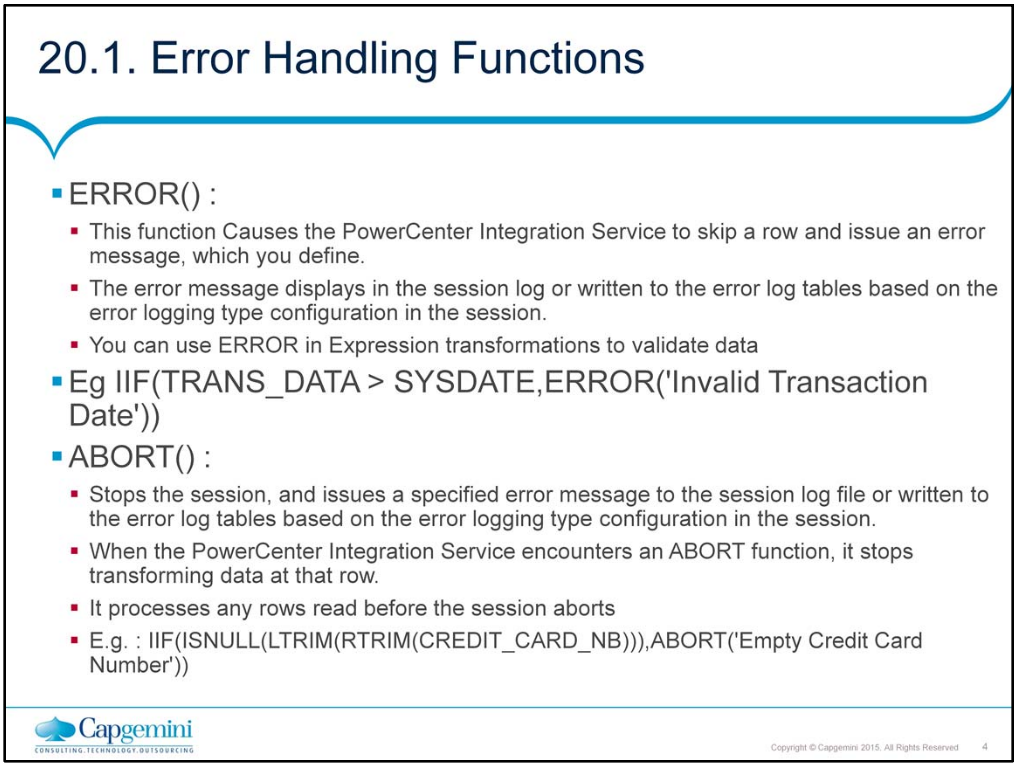
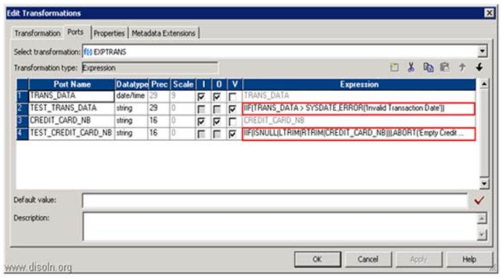


20.1. Error Handling Functions

- ERROR() :
  - This function Causes the PowerCenter Integration Service to skip a row and issue an error message, which you define.
  - The error message displays in the session log or written to the error log tables based on the error logging type configuration in the session.
  - You can use ERROR in Expression transformations to validate data
- Eg IIF(TRANS_DATA > SYSDATE,ERROR('Invalid Transaction Date'))
- ABORT() :
  - Stops the session, and issues a specified error message to the session log file or written to the error log tables based on the error logging type configuration in the session.
  - When the PowerCenter Integration Service encounters an ABORT function, it stops transforming data at that row.
  - It processes any rows read before the session aborts
  - E.g. : IIF(ISNULL(LTRIM(RTRIM(CREDIT_CARD_NB))),ABORT('Empty Credit Card Number'))

21.2. Error Handling Function

- Example Of Using Error Handling Functions



Edit Transformations

Select transformation: EXPTRANS

Transformation type: Expression

	Port Name	Datatype	Prec	Scale	I	O	V	Expression
1	TRANS_DATA	date/time	29	9	☑	☑	□	TRANS_DATA
2	TEST_TRANS_DATA	string	29	0	□	□	☑	IIF(TRANS_DATA > SYSDATE,ERROR('Invalid Transaction Date'))
3	CREDIT_CARD_NB	string	16	0	☑	☑	□	CREDIT_CARD_NB
4	TEST_CREDIT_CARD_NB	string	16	0	□	□	☑	IIF(ISNULL(LTRIM(RTRIM(CREDIT_CARD_NB))),ABORT('Empty Credit ...

Default value:

Description:

- Note :- You need to use these two functions in a mapping along with a session configuration for row error logging to capture the error data from the source system. Depending on the session configuration, source data will be collected into Informatica predefined PMERR error tables or files.

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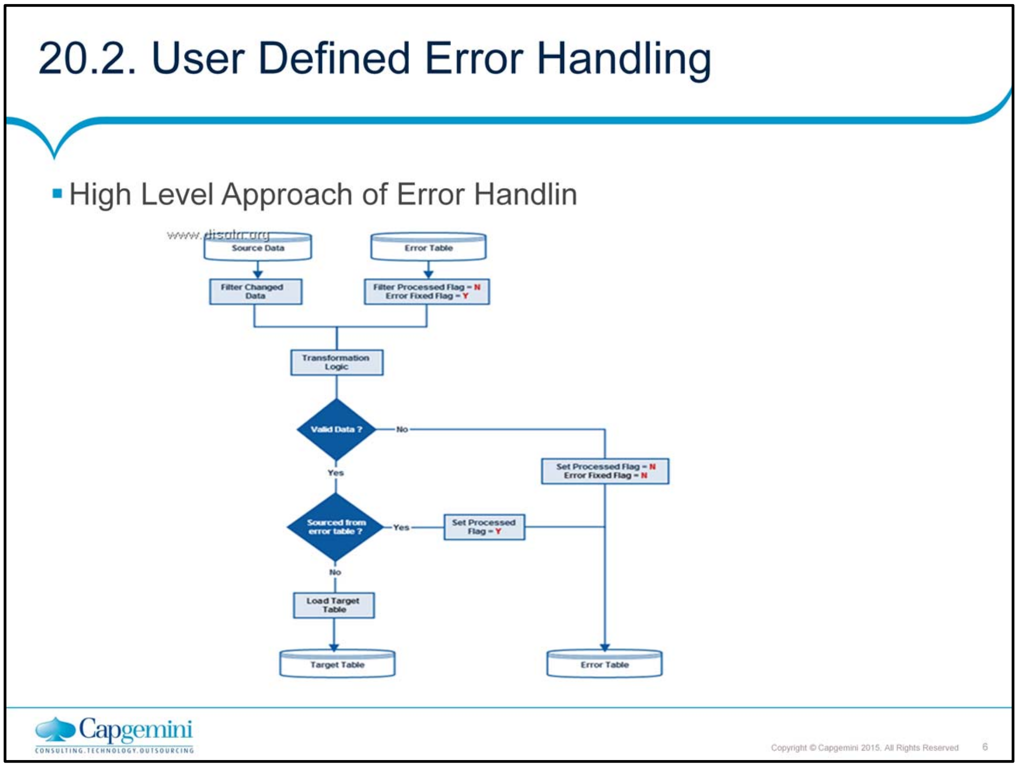
Use this mapping when you do not you need to keep any previous versions / history of dimensions in the table.



20.2. User Defined Error Handling

- High Level Approach of Error Handlin

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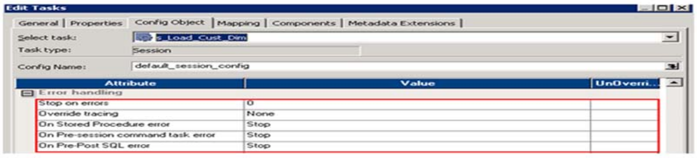
20.2. User Defined Error Handling

- Non-Fatal Exception Can be handled by
  - Default Port Value Setting.
  - Row Error Logging.
  - Error Handling Settings.
- Default Port Value Setting : Good way to handle Null , invalid dates , etc.
  - Row Error Logging – Configuring the session property
  - Error Handling Settings : Configuring session -> Configure Objects -> Error Handling following options are available
  - Stop – will stop the session on failure of the task.



Select task: s_Load_Cust_Dim

Task type: Session

Config Name: default_session_config

Attribute	Value	UnOverri...
Error handling		
Stop on errors	0	
Override tracing	None	
On Stored Procedure error	Stop	
On Pre-session command task error	Stop	
On Pre-Post SQL error	Stop	

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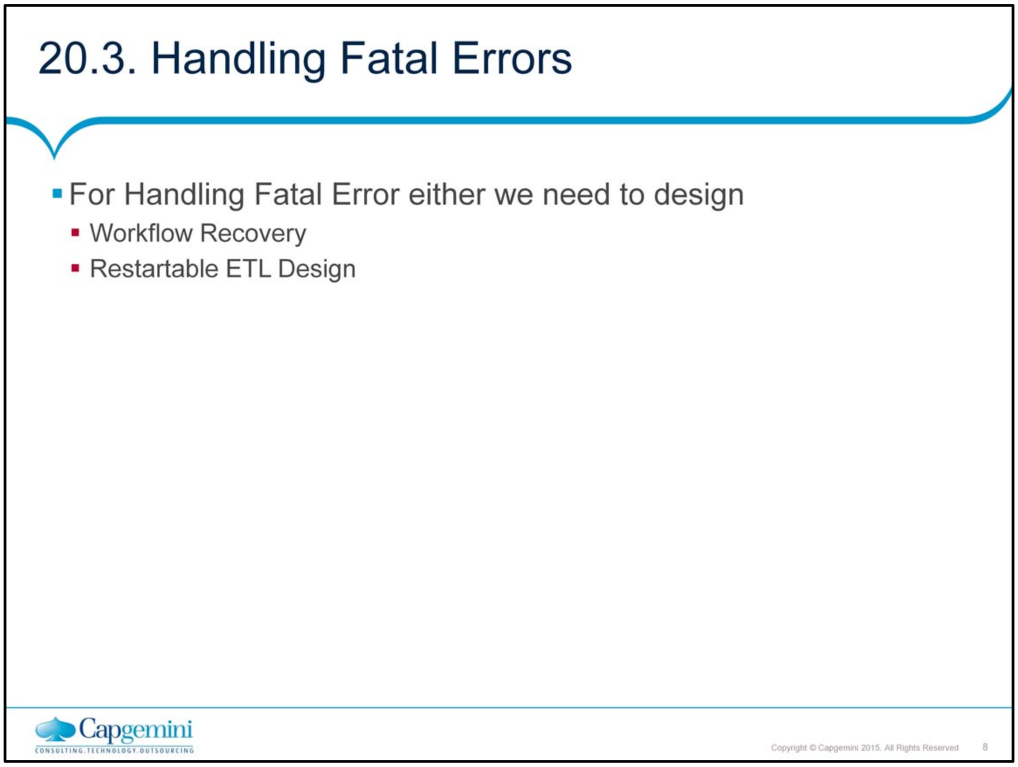
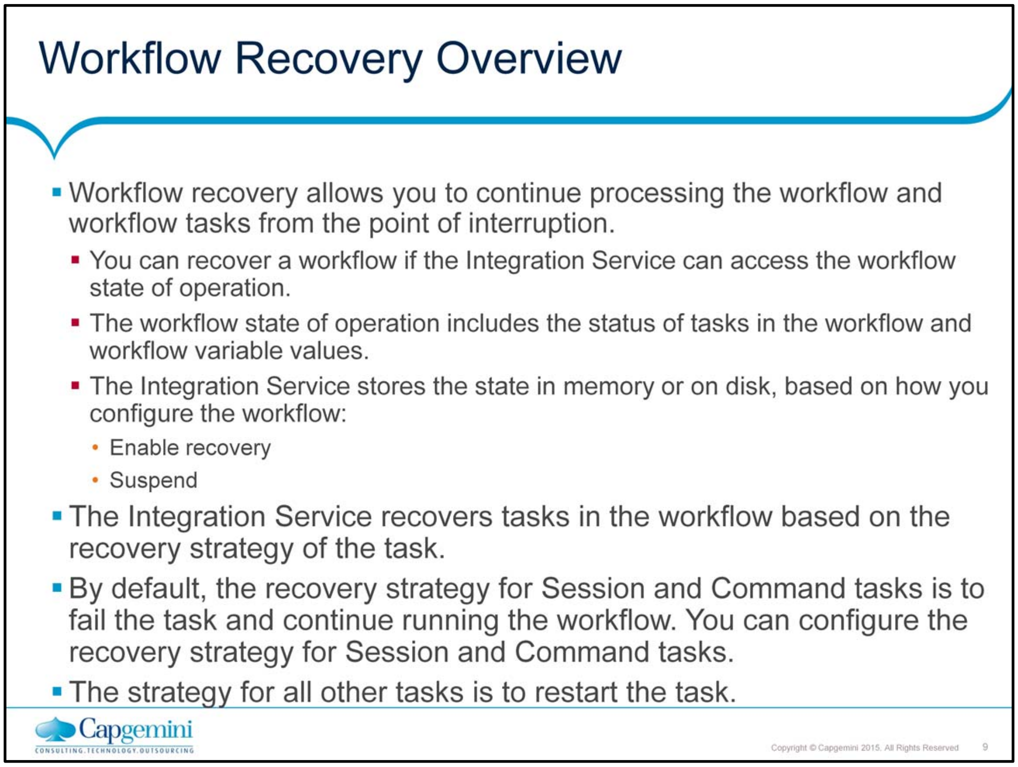


20.3. Handling Fatal Errors

- For Handling Fatal Error either we need to design
  - Workflow Recovery
  - Restartable ETL Design



Workflow Recovery Overview

- Workflow recovery allows you to continue processing the workflow and workflow tasks from the point of interruption.
  - You can recover a workflow if the Integration Service can access the workflow state of operation.
  - The workflow state of operation includes the status of tasks in the workflow and workflow variable values.
  - The Integration Service stores the state in memory or on disk, based on how you configure the workflow:
    - Enable recovery
    - Suspend
- The Integration Service recovers tasks in the workflow based on the recovery strategy of the task.
- By default, the recovery strategy for Session and Command tasks is to fail the task and continue running the workflow. You can configure the recovery strategy for Session and Command tasks.
- The strategy for all other tasks is to restart the task.

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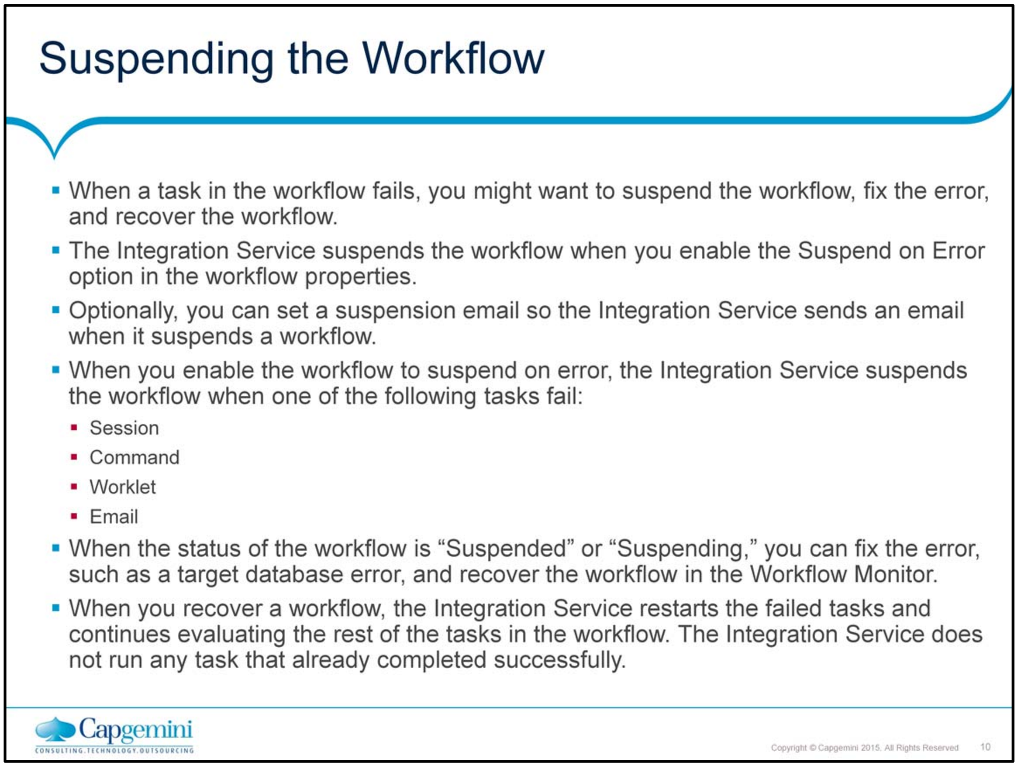


Suspending the Workflow

- When a task in the workflow fails, you might want to suspend the workflow, fix the error, and recover the workflow.
- The Integration Service suspends the workflow when you enable the Suspend on Error option in the workflow properties.
- Optionally, you can set a suspension email so the Integration Service sends an email when it suspends a workflow.
- When you enable the workflow to suspend on error, the Integration Service suspends the workflow when one of the following tasks fail:
  - Session
  - Command
  - Worklet
  - Email
- When the status of the workflow is “Suspended” or “Suspending,” you can fix the error, such as a target database error, and recover the workflow in the Workflow Monitor.
- When you recover a workflow, the Integration Service restarts the failed tasks and continues evaluating the rest of the tasks in the workflow. The Integration Service does not run any task that already completed successfully.

Suspending the Workflow

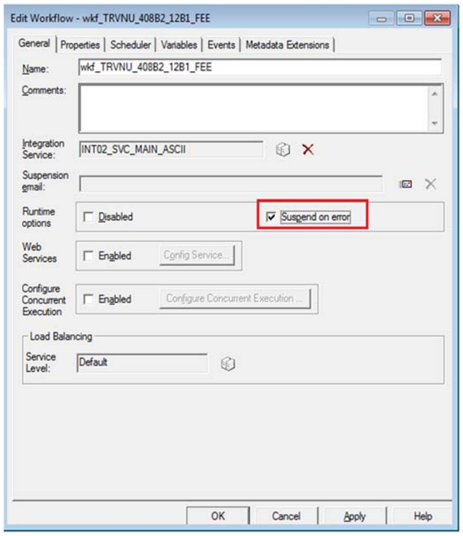
- To suspend a workflow:

1.In the Workflow Designer, open the workflow.

2.Click Workflows > Edit.

3. In the General tab, enable Suspend on Error.

4.Click OK.



Edit Workflow - wkf_TRVNU_408B2_12B1_FEE

Name: wkf_TRVNU_408B2_12B1_FEE

Comments:

Integration Service: INT02_SVC_MAIN_ASCII

Suspension email:

Runtime options: □ Disabled ☑ Suspend on error

Web Services: □ Enabled

Configure Concurrent Execution: □ Enabled

Load Balancing

Service Level: Default

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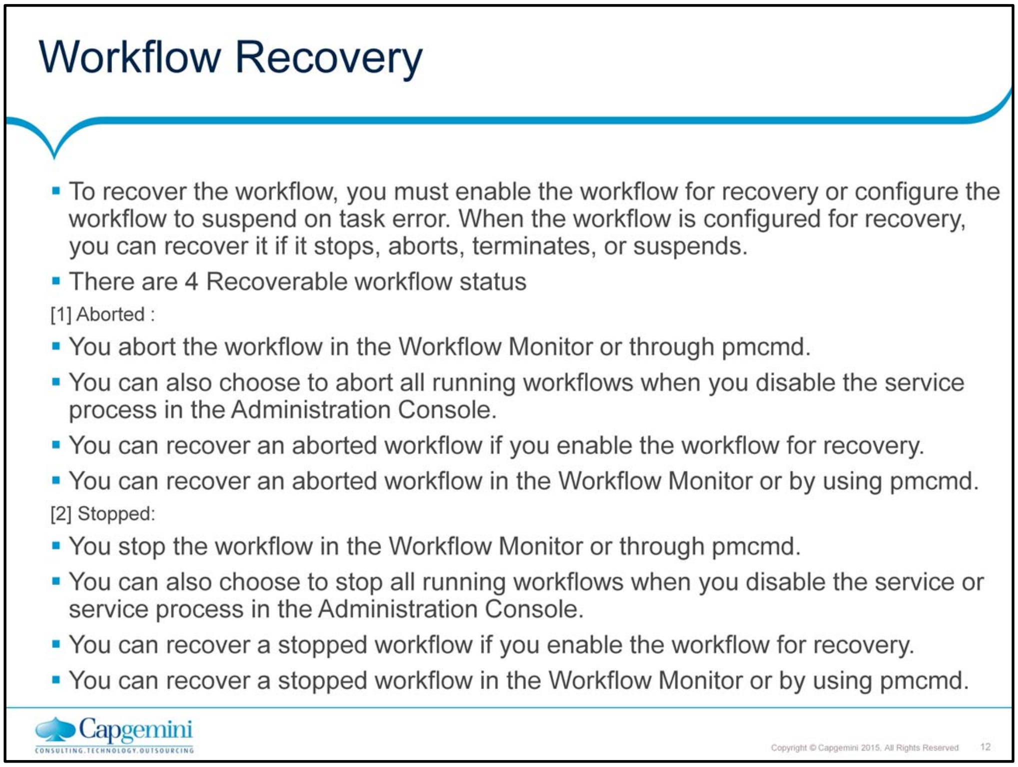

Workflow Recovery

- To recover the workflow, you must enable the workflow for recovery or configure the workflow to suspend on task error. When the workflow is configured for recovery, you can recover it if it stops, aborts, terminates, or suspends.
- There are 4 Recoverable workflow status

[1] Aborted :

- You abort the workflow in the Workflow Monitor or through pmcmd.
- You can also choose to abort all running workflows when you disable the service process in the Administration Console.
- You can recover an aborted workflow if you enable the workflow for recovery.
- You can recover an aborted workflow in the Workflow Monitor or by using pmcmd.

[2] Stopped:

- You stop the workflow in the Workflow Monitor or through pmcmd.
- You can also choose to stop all running workflows when you disable the service or service process in the Administration Console.
- You can recover a stopped workflow if you enable the workflow for recovery.
- You can recover a stopped workflow in the Workflow Monitor or by using pmcmd.

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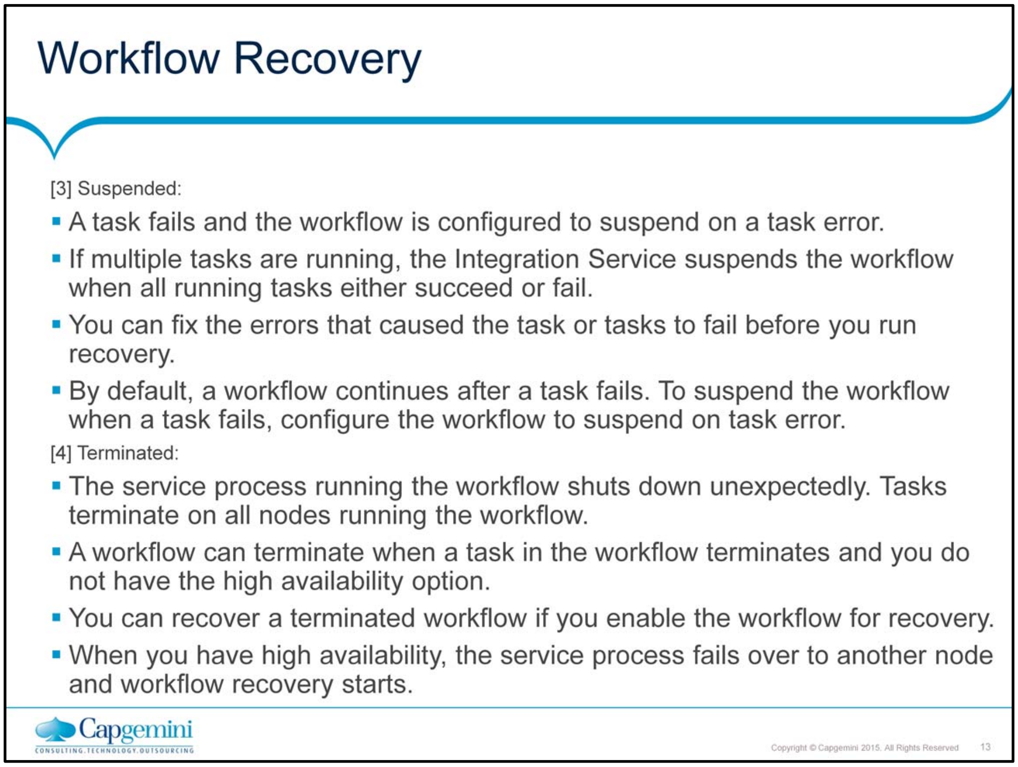

Workflow Recovery

[3] Suspended:

- A task fails and the workflow is configured to suspend on a task error.
- If multiple tasks are running, the Integration Service suspends the workflow when all running tasks either succeed or fail.
- You can fix the errors that caused the task or tasks to fail before you run recovery.
- By default, a workflow continues after a task fails. To suspend the workflow when a task fails, configure the workflow to suspend on task error.

[4] Terminated:

- The service process running the workflow shuts down unexpectedly. Tasks terminate on all nodes running the workflow.
- A workflow can terminate when a task in the workflow terminates and you do not have the high availability option.
- You can recover a terminated workflow if you enable the workflow for recovery.
- When you have high availability, the service process fails over to another node and workflow recovery starts.

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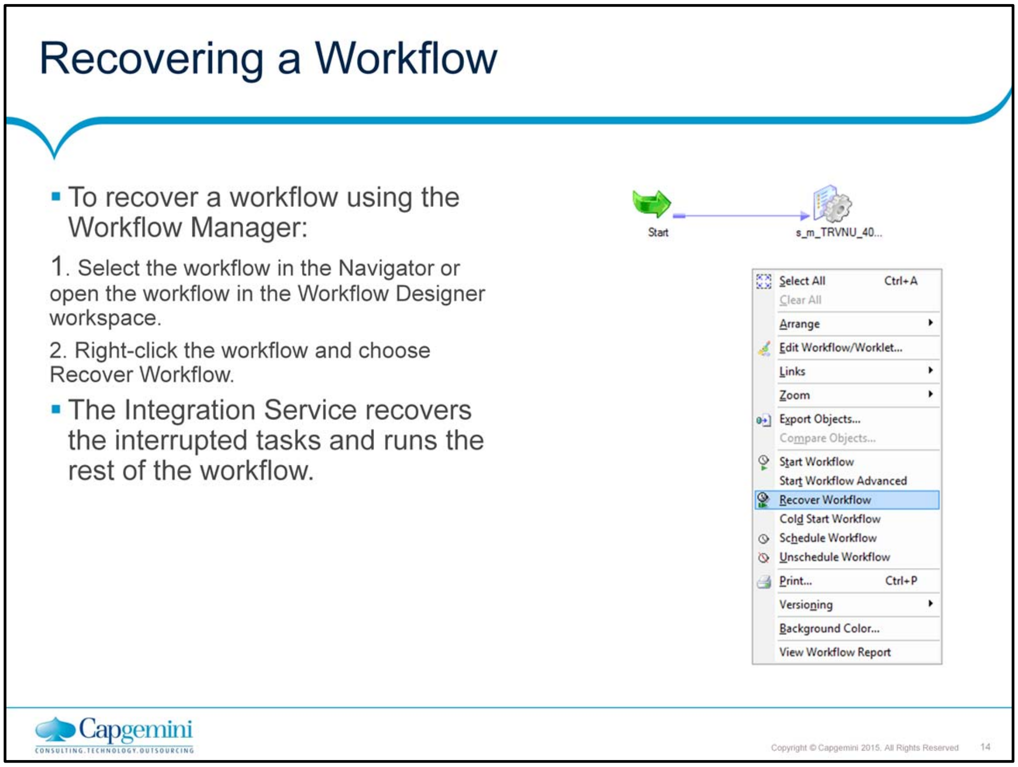

Recovering a Workflow

- To recover a workflow using the Workflow Manager:

1. Select the workflow in the Navigator or open the workflow in the Workflow Designer workspace.

2. Right-click the workflow and choose Recover Workflow.

- The Integration Service recovers the interrupted tasks and runs the rest of the workflow.

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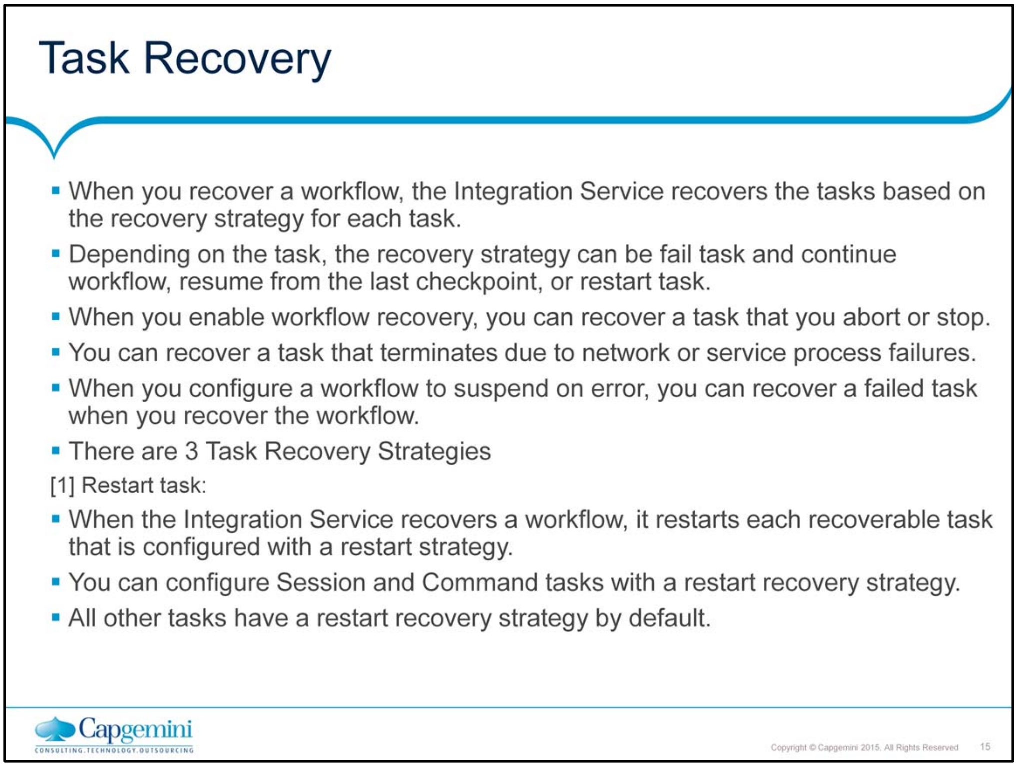

Task Recovery

- When you recover a workflow, the Integration Service recovers the tasks based on the recovery strategy for each task.
- Depending on the task, the recovery strategy can be fail task and continue workflow, resume from the last checkpoint, or restart task.
- When you enable workflow recovery, you can recover a task that you abort or stop.
- You can recover a task that terminates due to network or service process failures.
- When you configure a workflow to suspend on error, you can recover a failed task when you recover the workflow.
- There are 3 Task Recovery Strategies

[1] Restart task:

- When the Integration Service recovers a workflow, it restarts each recoverable task that is configured with a restart strategy.
- You can configure Session and Command tasks with a restart recovery strategy.
- All other tasks have a restart recovery strategy by default.

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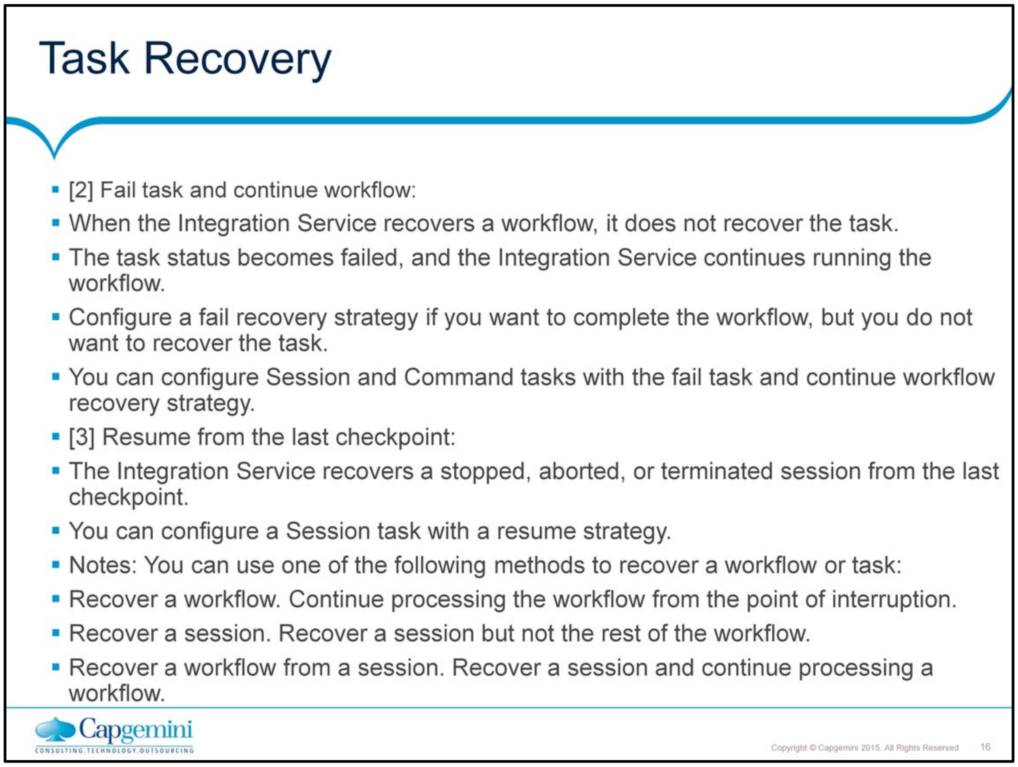

Task Recovery

- [2] Fail task and continue workflow:
- When the Integration Service recovers a workflow, it does not recover the task.
- The task status becomes failed, and the Integration Service continues running the workflow.
- Configure a fail recovery strategy if you want to complete the workflow, but you do not want to recover the task.
- You can configure Session and Command tasks with the fail task and continue workflow recovery strategy.
- [3] Resume from the last checkpoint:
- The Integration Service recovers a stopped, aborted, or terminated session from the last checkpoint.
- You can configure a Session task with a resume strategy.
- Notes: You can use one of the following methods to recover a workflow or task:
- Recover a workflow. Continue processing the workflow from the point of interruption.
- Recover a session. Recover a session but not the rest of the workflow.
- Recover a workflow from a session. Recover a session and continue processing a workflow.

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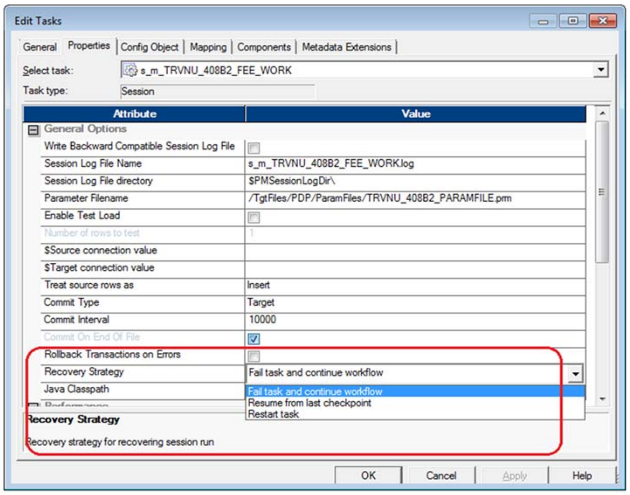
Task Recovery Strategies



Select task: s_m_TRVNU_408B2_FEE_WORK

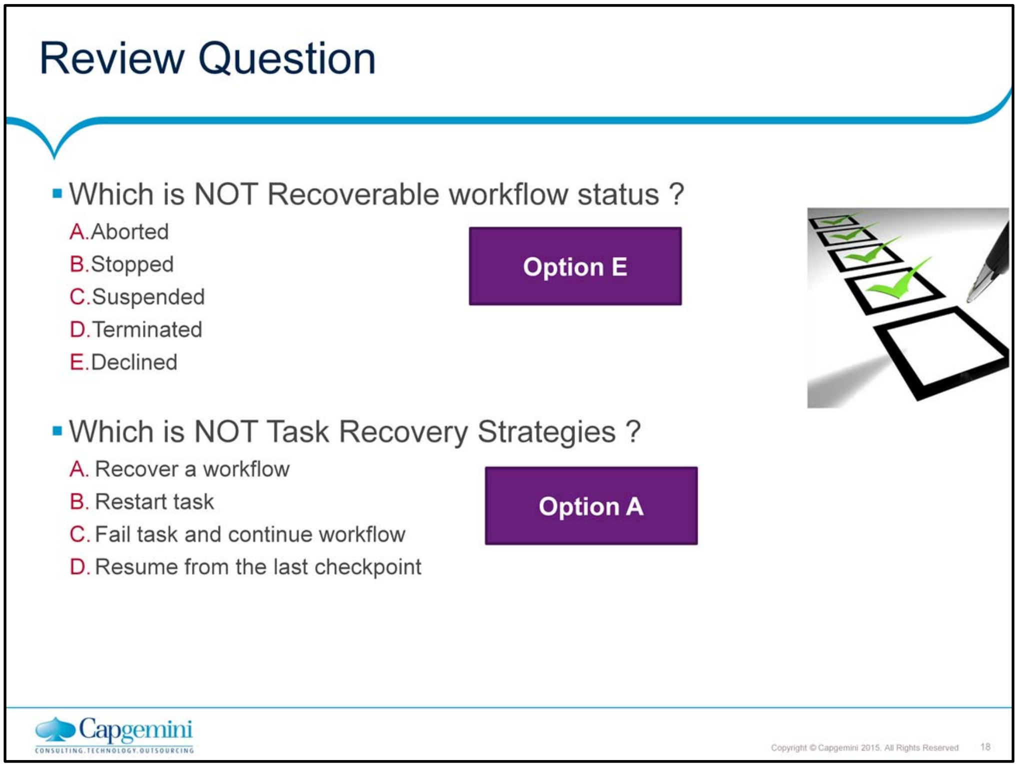
Task type: Session

Attribute	Value
General Options	
Write Backward Compatible Session Log File	□
Session Log File Name	s_m_TRVNU_408B2_FEE_WORK.log
Session Log File directory	$PMSessionLogDir\
Parameter Filename	/TgtFiles/PDP/ParamFiles/TRVNU_408B2_PARAMFILE.prm
Enable Test Load	□
Number of rows to test	1
$Source connection value	
$Target connection value	
Treat source rows as	Insert
Commit Type	Target
Commit Interval	10000
Commit On End Of File	☑
Rollback Transactions on Errors	□
Recovery Strategy	Fail task and continue workflow
Java Classpath	

Fail task and continue workflow
Resume from last checkpoint
Restart task

Recovery Strategy

Recovery strategy for recovering session run



Review Question

- Which is NOT Recoverable workflow status ?
  - A. Aborted
  - B. Stopped
  - C. Suspended
  - D. Terminated
  - E. Declined

Option E

- Which is NOT Task Recovery Strategies ?
  - A. Recover a workflow
  - B. Restart task
  - C. Fail task and continue workflow
  - D. Resume from the last checkpoint

Option A

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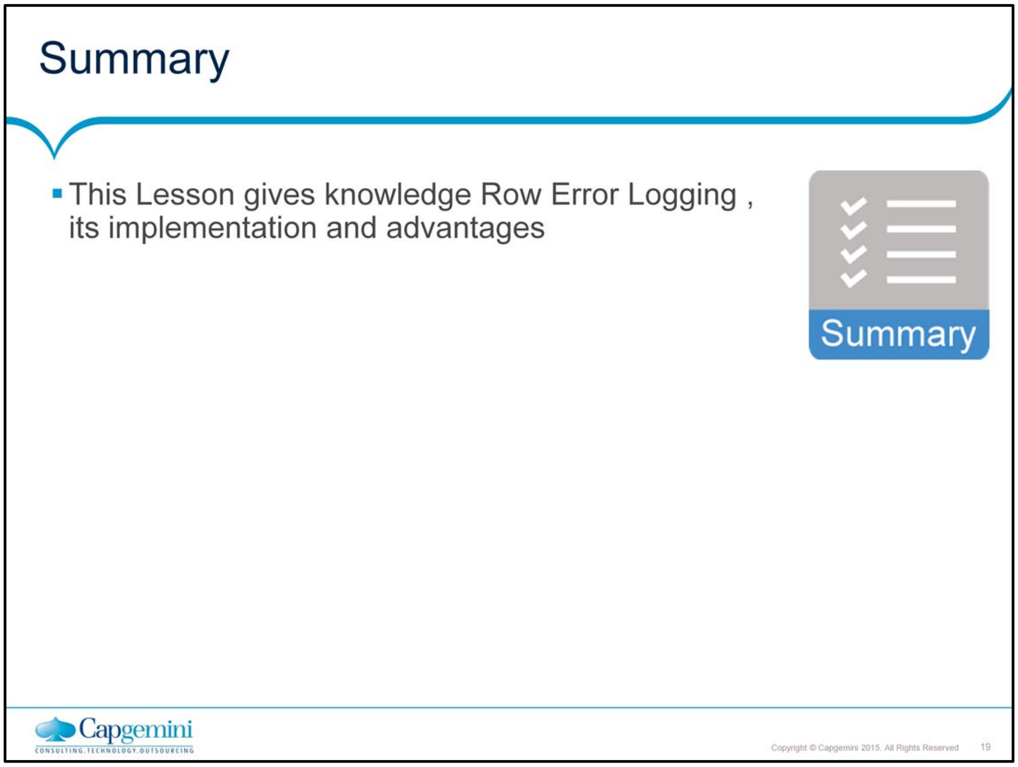
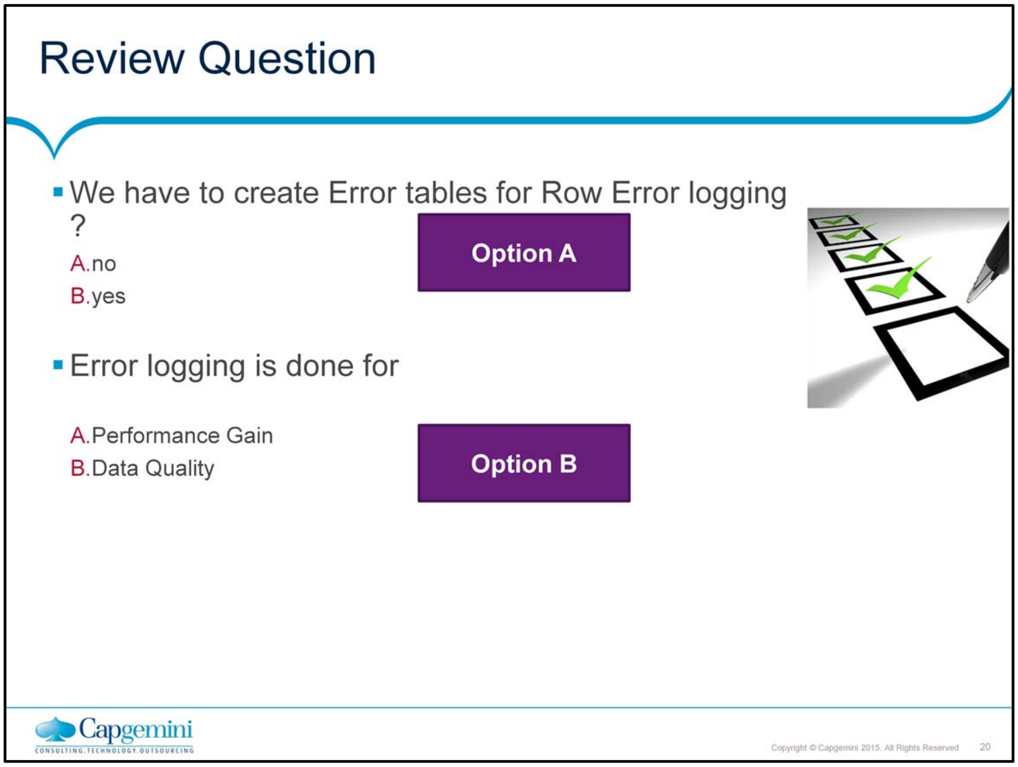


Summary

- This Lesson gives knowledge Row Error Logging , its implementation and advantages



Review Question

- We have to create Error tables for Row Error logging ?

A.no

B.yes

Option A

- Error logging is done for

A.Performance Gain

B.Data Quality

Option B