

Week 2 Unit 1: **Existing Code: Is It Still Valid?**



Existing Code: Is It Still Valid?

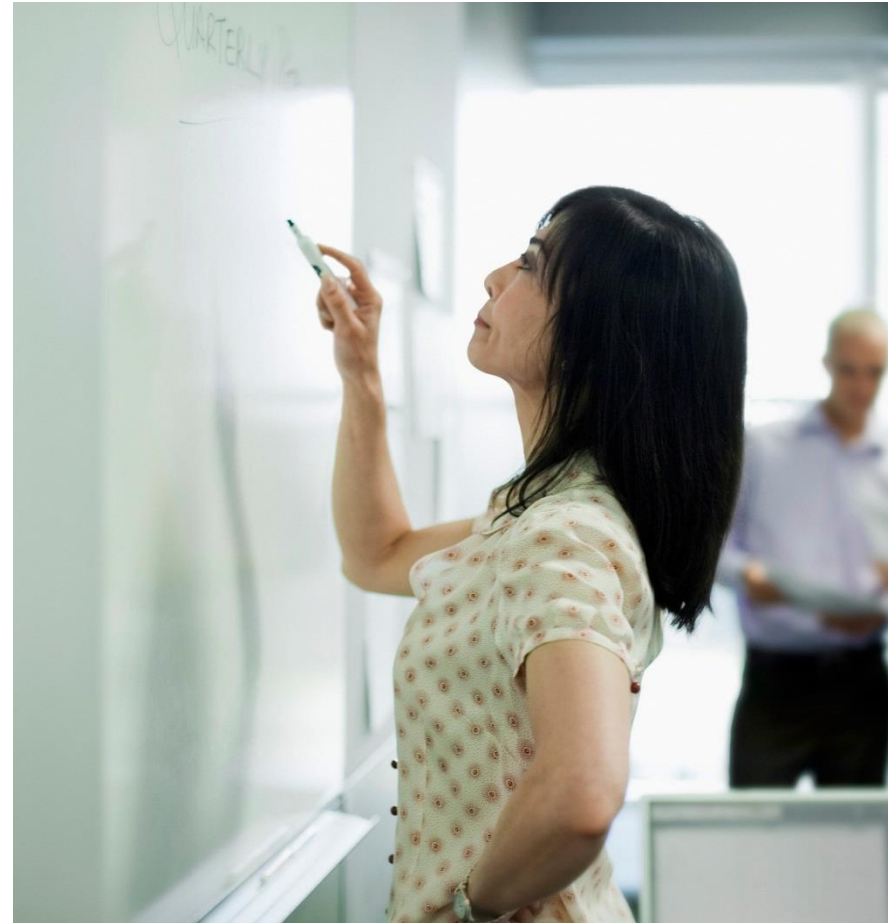
Outline



Additional
Material

Content

- Code Continuity
- Mandatory Adaptions
- ABAP Test Cockpit
- Runtime Checks



Existing Code: Is It Still Valid?

Migration to SAP HANA

1. Detect

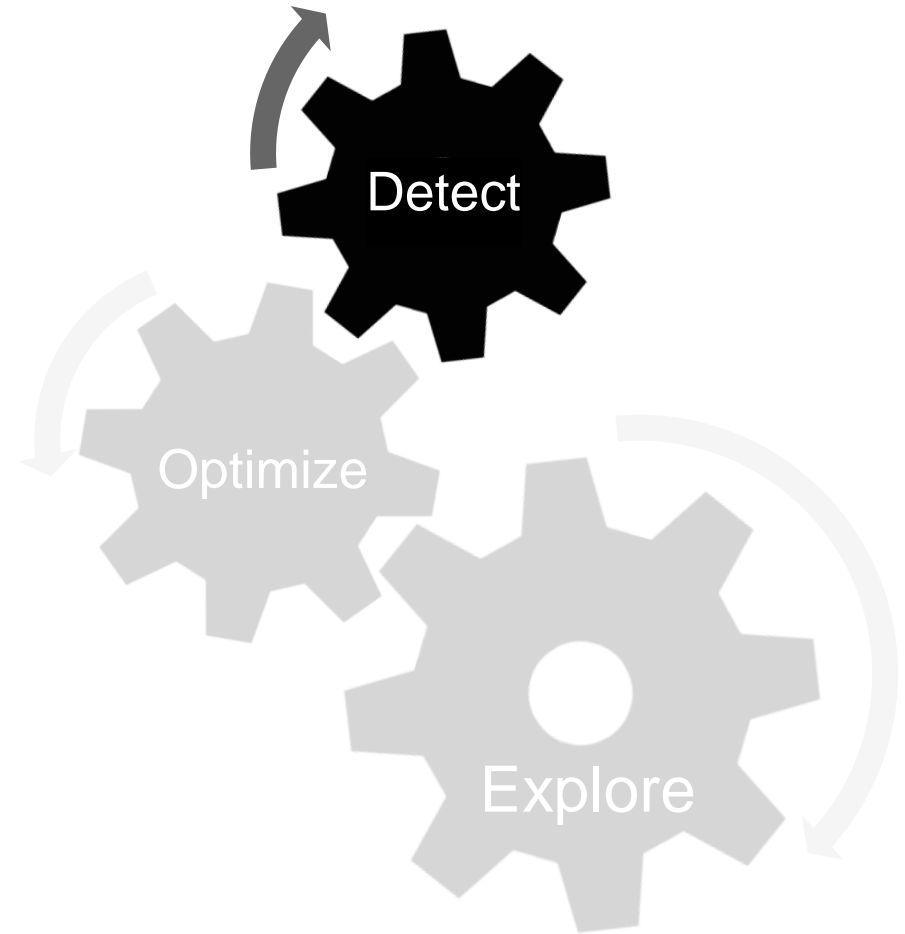
- Functional correctness
- Performance optimization potential

2. Optimize

- Database-oriented programming

3. Explore

- Use SAP HANA-specific features
- Rethink & innovate



Existing Code: Is It Still Valid?

Code Continuity

- Migration to SAP HANA is “just” a database migration
- Everything works as before, except...
 - Native SQL
 - DB-specific hints
 - Implicit DB-specific behavior

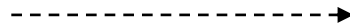


Existing Code: Is It Still Valid?

Mandatory Adaptations: Examples

Previous usage of Native SQL/hints

- Check if Native SQL uses vendor-specific statements and how they can be replaced by either Open SQL or native SAP HANA constructs.

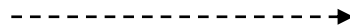


```
" Use of native SQL  
EXEC SQL.
```

```
ENDEXEC.
```

```
" Native SQL via ADBC  
lo_result =  
  NEW cl_sql_statement(  
    )->execute_query(  
    'SELECT ROWNUM, *  
      && ' FROM SNWD_BPA'  
      && ' ORDER BY COMPANY_NAME' ).
```

- Check if previously used hints are still needed in adapted form or can be removed.



```
" Database / Database Interface Hints  
SELECT * FROM snwd_so  
  INTO wa FOR ALL ENTRIES IN fae  
WHERE node_key = fae-node_key  
  &_HINTS MSSQLNT '&prefer_join 0&'.
```

Existing Code: Is It Still Valid?

Mandatory Adaptations: Examples

Relying on undocumented behavior

- Relying on implicit sorting

----->

```
" Relying on implicit sorting
SELECT * FROM my_table
      INTO TABLE lt_data WHERE id < 100.
```

- Direct access to physical pool/clusters

----->

```
" Access to physical pool / cluster
DELETE FROM my_cluster
      WHERE timestamp < '01012000'.
```

- Checking for existence of secondary indices

----->

```
" Check for secondary index
IF ( lv_index_exists = abap_true ).
    ...
ENDIF.
```

Existing Code: Is It Still Valid?

ABAP Test Cockpit

Holistic tools for quality assurance of ABAP code

- Single point of entry for all static code check tools (Code Inspector, ...)
- Verdicts are reported with priorities
- Support for quality management processes
- Available with ABAP 7.02 SP12 and above
- Fully integrated into development environment and transport tools



Existing Code: Is It Still Valid?

ABAP Test Cockpit – Usage



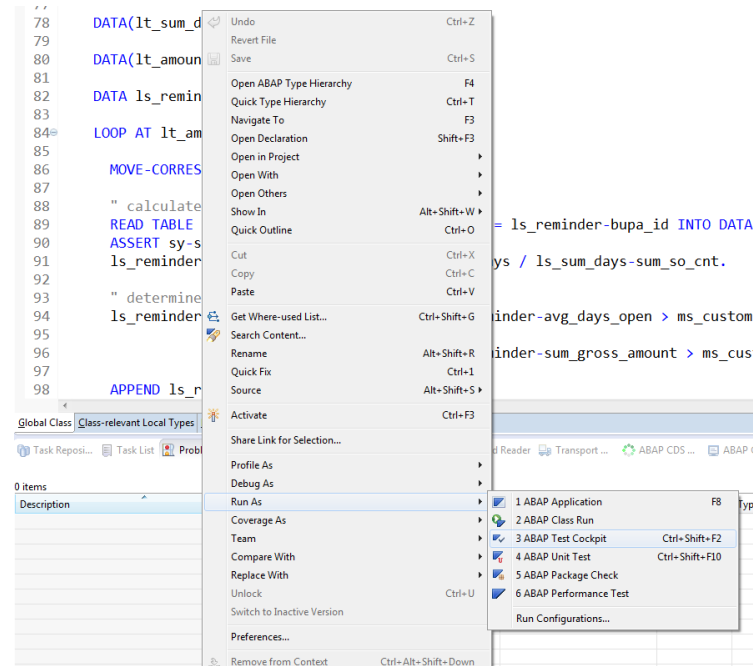
Additional
Material

Developers can

- Execute checks on **single objects**, **package hierarchies**, or **transport orders**
- **Suppress verdicts** using pseudo comments to avoid “false positives”
- Call the ATC from transaction SE80 and **ABAP Development Tools for SAP NetWeaver**

Features for quality managers

- **Central** execution runs with notifications
- Results of check runs can be transferred to **other systems**
- Integration with **SAP Solution Manager**



Statistics: Check		Des...	Prio 1	Prio 2	Prio 3
▼ Total	Total		67	255	27
▶ Search problematic statements for result of SELECT/OPEN C	Check...		5		
▶ Analysis of WHERE Condition for SELECT	Check...		7	36	
▶ Search DB Operations in loops across modularization units	Check...		46		
▶ NonLocal Nested Reading DB OP (...) found	Check...		9		
▶ Local Nested Reading DB OP (...) found	Check...		34		
▶ Local Nested Writing DB OP (...) found	Check...		1		
▶ Local Nested EXEC SQL found	Check...		2		
▶ EXIT or no statement in SELECT...ENDSELECT loop	Check...				4
▶ Unsecure use of FOR ALL ENTRIES	Check...			4	10
▶ Depooling/Decustering: Search SELECT for Pool/Cluster-Tabl	Check...		1		
▶ SELECT Statements That Bypass the Table Buffer	Check...			7	
▶ Use of ADBC Interface	Check...				13
▶ Analysis of WHERE Condition in UPDATE and DELETE	Check...			21	
▶ Search problematic SELECT * statements	Check...		6		
▶ Existence check. No fields used	Check...		3		
▶ Select-Statement can be transformed. ...% of fields used	Check...		3		

Existing Code: Is It Still Valid?

Static Code Analysis: Demo

Code Inspector

- Overview of the available robustness checks
- Analysis example of ABAP coding with the Code Inspector

ABAP Test Cockpit

- Analysis example of ABAP coding with the ABAP Test Cockpit

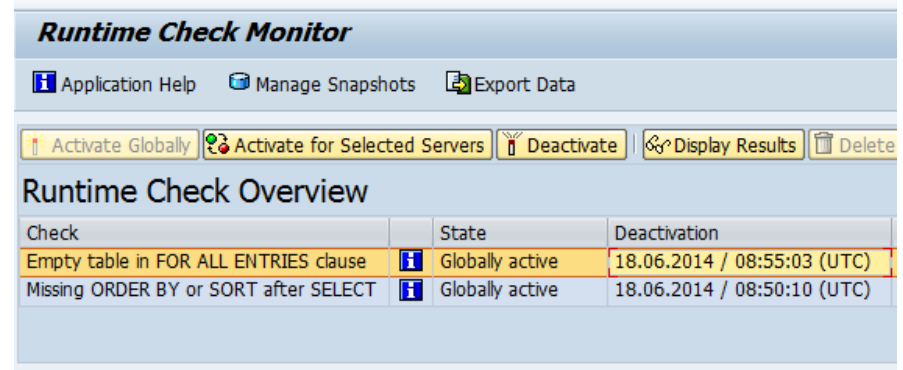


Existing Code: Is It Still Valid?

Runtime Check Monitor

Runtime Checks

- Supplement static code checks
- Executed in productive system (negligible performance overhead)
- Available for ABAP 7.4 SP2 and above
- More information:
SAP Notes 1912445 & 1931870



Runtime Check Monitor

Application Help | Manage Snapshots | Export Data

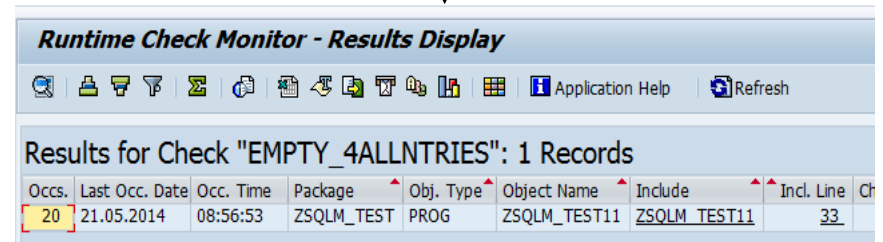
Activate Globally | Activate for Selected Servers | Deactivate | Display Results | Delete

Runtime Check Overview

Check		State	Deactivation
Empty table in FOR ALL ENTRIES clause		Globally active	18.06.2014 / 08:55:03 (UTC)
Missing ORDER BY or SORT after SELECT		Globally active	18.06.2014 / 08:50:10 (UTC)



Wait 4 weeks ...



Runtime Check Monitor - Results Display

Application Help | Refresh

Results for Check "EMPTY_4ALLNTRIES": 1 Records

Occs.	Last Occ. Date	Occ. Time	Package	Obj. Type	Object Name	Include	Incl. Line	Ch
20	21.05.2014	08:56:53	ZSQLM_TEST	PROG	ZSQLM_TEST11	ZSQLM_TEST11	33	

```
select a from <table>
into table <itab>
for all entries in <fae_table>
where a = <fae_table>-table_line.
```

Existing Code: Is It Still Valid?

What's Next?

Week 2 Unit 2

Existing Code: What About Performance?





Thank you

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open**SAP**

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