

ABAP Runtime Error Investigation

/ GUI / ST22

SAP S/4HANA Runtime Dump Analysis (GEN_PROGRAM_NOT_EXISTS)

This project demonstrates the investigation of recurring ABAP runtime errors using transaction ST22. The objective was to identify the nature of the exception, assess its operational impact, and determine whether the issue originated from SAP Basis infrastructure or the SAP application layer.

T-Code / Command

ST22

System

SAP S/4HANA Sandbox

Objective

Runtime error investigation and preliminary root cause assessment

Operational Scenario

A review of runtime dumps revealed a large number of recurring ABAP exceptions occurring within the SAP S/4HANA environment. The objective was to analyse the dumps, identify recurring patterns, evaluate potential causes, and determine whether the issue was related to infrastructure availability or application-level processing.

Business Impact

Recurring runtime errors can interrupt application processing, generate support incidents, increase operational workload, and indicate underlying repository or program generation issues that may affect system stability.

/ Tools Used

- SAP GUI
- ST22 – Runtime Error Analysis

/ Step-by-Step Execution

01

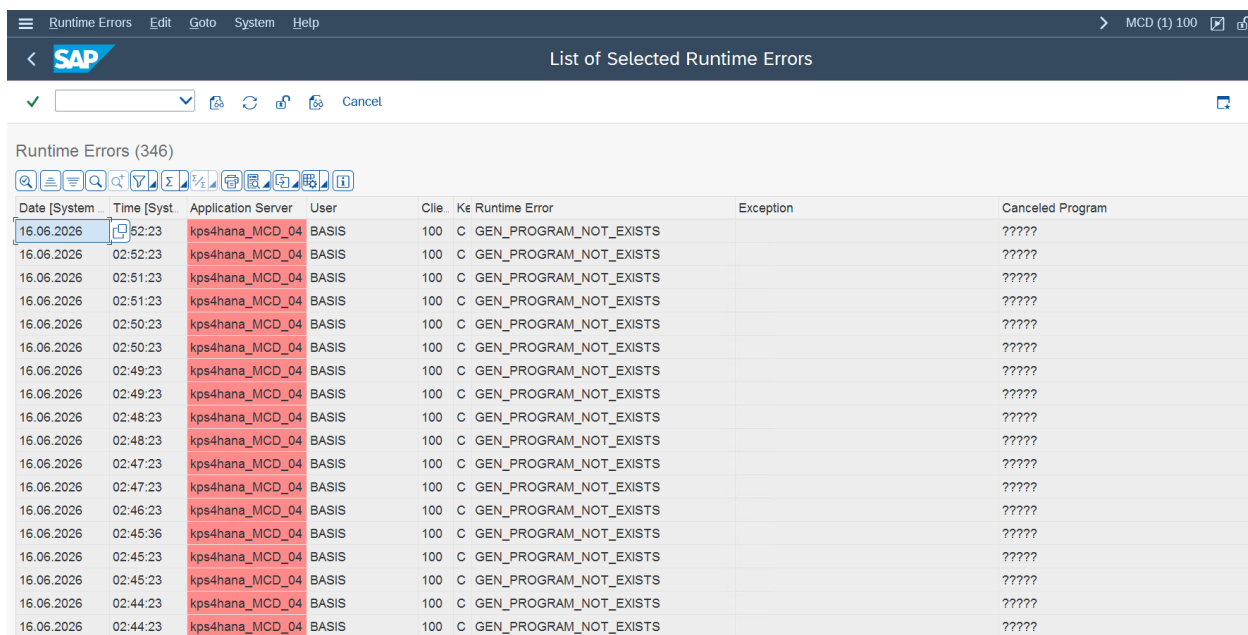
Access Runtime Error List

Transaction ST22 was used to review ABAP runtime dumps generated within the system.

sap gui

/nST22

01-st22-runtime-list.png



The screenshot shows the SAP ST22 'List of Selected Runtime Errors' window. The title bar includes 'Runtime Errors', 'Edit', 'Goto', 'System', and 'Help'. The SAP logo is visible on the left. Below the title bar, there are icons for search, filter, and other functions. The main area displays a table of runtime errors. The first row is highlighted in blue. The table has the following columns: Date [System], Time [Syst], Application Server, User, Clien., Ke Runtime Error, Exception, and Canceled Program. The data shows multiple occurrences of the error 'GEN_PROGRAM_NOT_EXISTS' for user 'BASIS' on client '100' at application server 'kps4hana_MCD_04' on the date 16.06.2026.

Date [System]	Time [Syst]	Application Server	User	Clien.	Ke Runtime Error	Exception	Canceled Program
16.06.2026	02:52:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:52:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:51:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:51:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:50:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:50:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:49:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:49:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:48:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:48:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:47:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:47:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:46:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:45:36	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:45:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:45:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:44:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????
16.06.2026	02:44:23	kps4hana_MCD_04	BASIS	100	C GEN_PROGRAM_NOT_EXISTS		?????

Operational Observation

The runtime error list contained a significant number of recurring dumps.

Analysis identified:

Field	Value
Runtime Error	GEN_PROGRAM_NOT_EXISTS
User	BASIS
Client	100
Application Server	kps4hana_MCD_04

Recorded Dumps	725
Frequency	Approximately every minute

The repeated occurrence suggested a persistent technical issue rather than an isolated execution failure.

Next Action

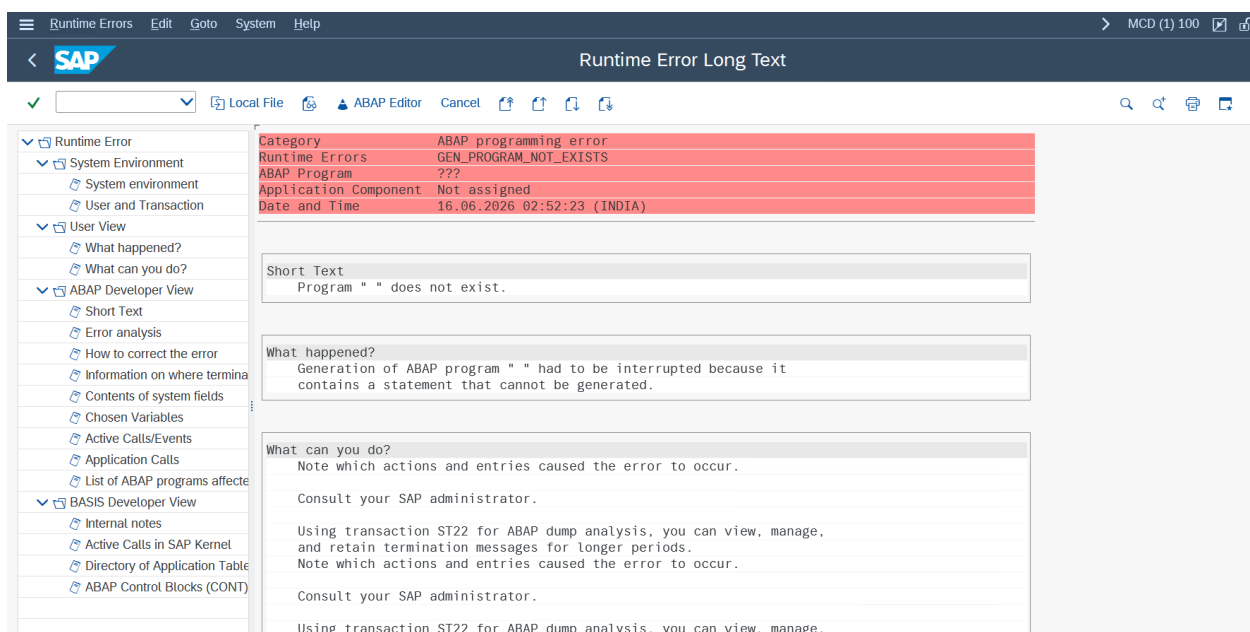
Open a runtime dump entry and review the detailed error analysis.

02

Review Runtime Error Details

A representative dump entry was opened to examine the runtime exception information generated by the ABAP runtime environment.

02-st22-dump-overview.png



Capture:

ST22 → Runtime Error → Dump Overview

Include:

- Runtime Error
- Date

- Time
- User
- Client

Operational Observation

The selected dump was classified as:

GEN_PROGRAM_NOT_EXISTS

The exception indicated that SAP attempted to execute a generated ABAP program object that could not be located within the repository at runtime.

Next Action

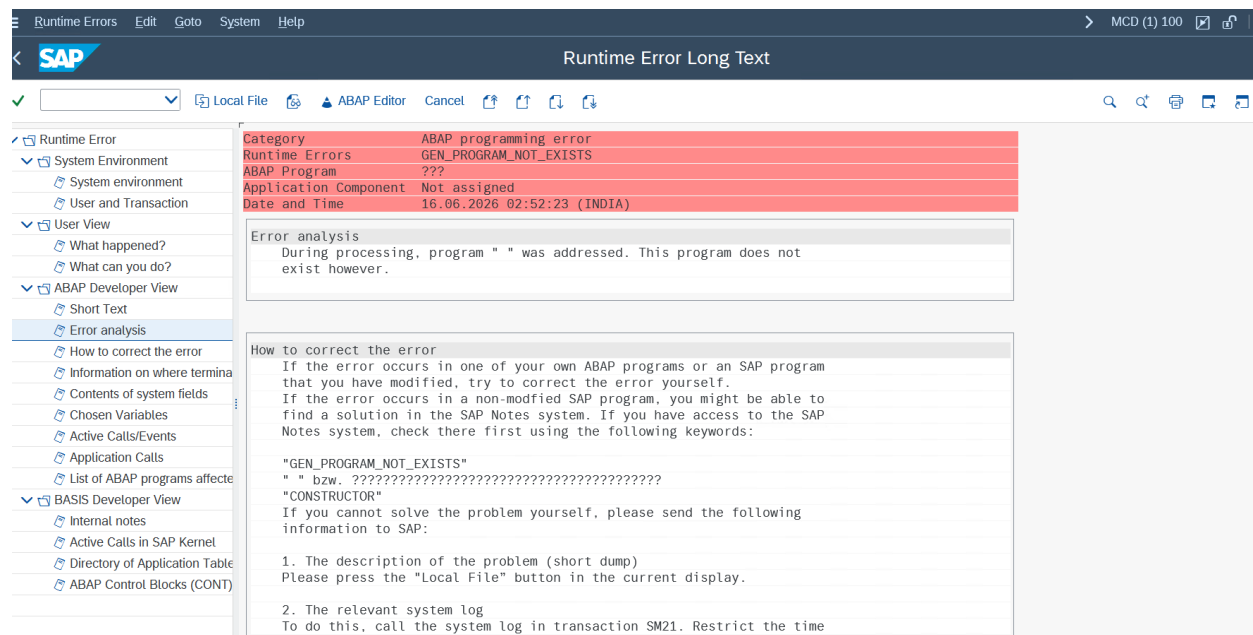
Review the Error Analysis section to determine the technical cause.

03

Analyse Error Analysis

The Error Analysis section was reviewed to understand the condition that triggered the runtime exception.

03-st22-error-analysis.png



Capture:

ST22 → Error Analysis section

Operational Observation

The technical information section was reviewed to identify additional execution details associated with the runtime exception. The analysis provided further context regarding the affected program references and execution environment.

The findings remained consistent with an application-layer issue involving program generation or program object availability. The findings remained consistent with an application-layer issue involving program generation or program object availability.

Next Action

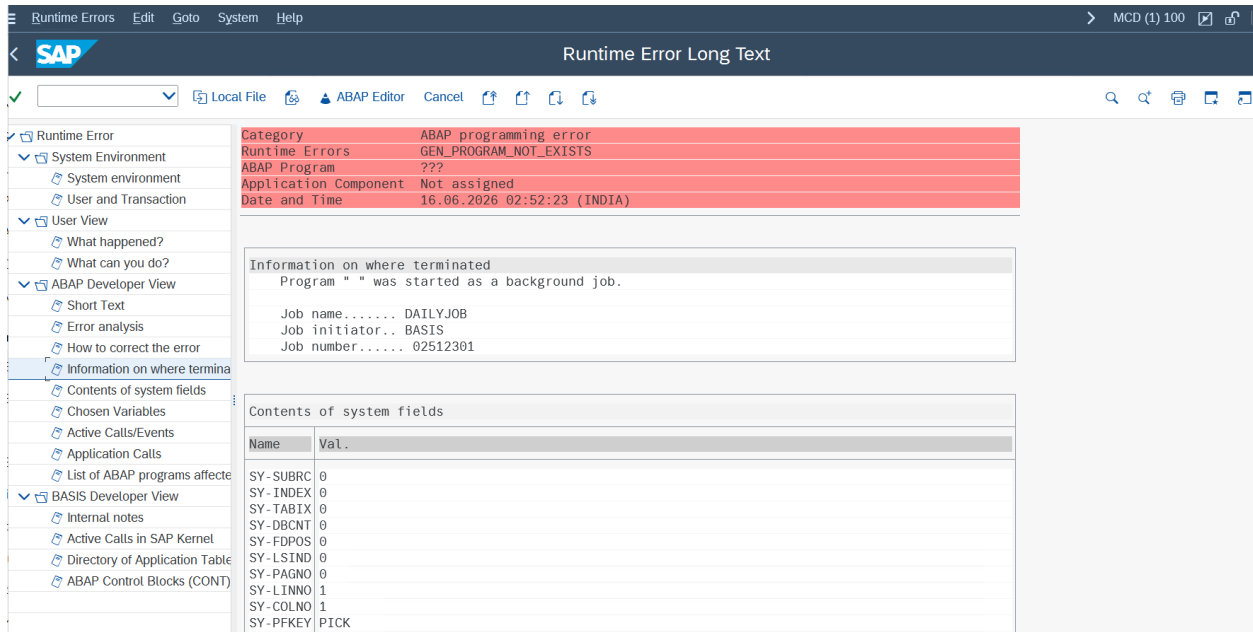
Assess whether infrastructure-level factors contributed to the runtime exception and review additional diagnostic information to further refine the probable root cause assessment.

04

Review Technical Information

Additional diagnostic sections were reviewed to identify affected program objects and execution context.

04-st22-technical-information.png



Capture:

- Background Job Name
- Job Initiator
- Job Number
- Termination Information

Operational Observation

The termination information identified that the runtime exception occurred during execution of a background job rather than an interactive user transaction. ST22 indicated that the affected process was running under background job **DAILYJOB**, initiated by user **BASIS**.

The recurring occurrence of the dump, combined with its execution through a scheduled background process, suggests that the same job was repeatedly attempting to execute or generate a program object that was unavailable at runtime.

Next Action

Review the execution path and active calls associated with the runtime exception to identify the processing components involved immediately before termination.

05

Review Active Calls and Execution Path

The runtime error findings were reviewed alongside previous Basis monitoring activities.

The screenshot displays the SAP 'Runtime Error Long Text' window. The left sidebar shows a navigation tree with 'Runtime Error' selected. The main area is divided into several sections:

- Category:** ABAP programming error
- Runtime Errors:** GEN_PROGRAM_NOT_EXISTS
- ABAP Program:** ???
- Application Component:** Not assigned
- Date and Time:** 16.06.2026 02:52:23 (INDIA)

Below this, the 'Active Calls/Events' section shows a table of active calls:

No.	Ty.	Name	Program	Include	Line
2	METHOD	LCL=>CONSTRUCTOR	RS_ABAP_SYN_TYPES	RS_ABAP_SYN_TYPES	257
1	EVENT	START-OF-SELECTION	RS_ABAP_SYN_TYPES	RS_ABAP_SYN_TYPES	734

The 'Chosen Variables' section shows a table with one variable:

Name	Val.
SYNT_ID - TYPE	TYPE

Below this, the 'SYNT_ID - TYPE' section shows a table with one variable:

Name	Val.
SYNT_ID - TYPE	TYPE

Operational Observation

The Active Calls/Events section was reviewed to identify the execution sequence immediately preceding the runtime exception.

Analysis of the call stack identified activity within program **RS_ABAP_SYN_TYPES**, including execution of method **LCL=>CONSTRUCTOR** and event **START-OF-SELECTION**.

The execution path provided additional context regarding the processing activity that occurred before termination. Combined with the findings from the Error Analysis section, the evidence suggests that the runtime exception originated within the SAP application layer during internal ABAP processing. No evidence was identified indicating work process exhaustion, dialog process shortages, memory limitations, or other SAP Basis infrastructure-related failures.

Next Action

Consolidate the collected runtime evidence and perform a preliminary root cause assessment.

Preliminary Root Cause Assessment

All available runtime evidence was reviewed collectively.

Operational Observation

The investigation identified recurring GEN_PROGRAM_NOT_EXISTS runtime errors generated by background job DAILYJOB.

Analysis of the runtime dump, termination information, and Active Calls/Events section identified execution activity within program RS_ABAP_SYN_TYPES during method LCL=>CONSTRUCTOR and event START-OF-SELECTION.

The collected evidence suggests that the exception originated within the SAP application layer during internal ABAP processing associated with program generation or repository processing activities. No evidence was identified indicating work process exhaustion, dialog process shortages, memory limitations, or other SAP Basis infrastructure-related failures.

Technical Evidence Collected

Investigation Area	Result
Runtime Error Identified	GEN_PROGRAM_NOT_EXISTS
Dump Count Reviewed	346
Repeated Pattern Confirmed	Yes
Background Job Identified	DAILYJOB
Job Initiator Identified	BASIS
Client Identified	100
Application Server Identified	kps4hana_MCD_04
Call Stack Reviewed	Yes
Program Activity Identified	RS_ABAP_SYN_TYPES
Infrastructure Failure Identified	No Evidence
Application Layer Failure Indicated	Yes
Background Job Source Identified	DAILYJOB

Assessment

The investigation identified recurring GEN_PROGRAM_NOT_EXISTS runtime errors occurring within background job DAILYJOB. Analysis of the runtime dump, termination information, and execution path indicated that the exception originated during internal

ABAP processing within the SAP application layer. The available evidence suggests that program generation or repository processing activities may have contributed to the runtime exception.

No evidence was found indicating work process exhaustion, dialog process shortages, memory constraints, or other SAP Basis infrastructure-related failures. The findings suggest that the issue is more likely related to program generation, repository consistency, object activation status, transport activity, or application-level configuration.

Technical Interpretation

Runtime error GEN_PROGRAM_NOT_EXISTS occurs when SAP attempts to access or generate an ABAP program object that is unavailable during execution.

The Error Analysis section indicated that SAP attempted to access a program object that did not exist at runtime. Additional evidence from the Active Calls/Events section identified processing activity within program RS_ABAP_SYN_TYPES, while termination information confirmed that the exception was generated by background job DAILYJOB.

The recurring nature of the dumps suggests a persistent condition affecting the same execution path rather than an isolated execution failure.

Recommended Next Steps

- Review the definition and scheduling of background job DAILYJOB.
- Identify the executable program associated with DAILYJOB.
- Verify repository object activation and generation status.
- Review recent transports affecting related objects.
- Regenerate affected program objects where appropriate.
- Review system logs (SM21) for related events.
- Monitor ST22 after corrective actions to confirm resolution.

Project Outcome

This investigation demonstrated the use of ST22 to identify and analyse recurring ABAP runtime exceptions within SAP S/4HANA. Analysis of 346 recurring GEN_PROGRAM_NOT_EXISTS dumps confirmed that the issue was not related to work process availability or SAP Basis infrastructure constraints.

The investigation identified DAILYJOB as the source of the exception, traced execution activity to program RS_ABAP_SYN_TYPES, and isolated the probable failure domain to the SAP application layer. The exercise demonstrated the ability to investigate recurring runtime exceptions, analyse execution paths, distinguish application-layer failures from SAP Basis infrastructure issues, and document findings using a structured SAP troubleshooting methodology.