

#### Configuration Guide | PUBLIC

Application Server ABAP 7.57 FPS00 Document Version: 3.28 – 2022-10-10

# **Configuring the ABAP Back-end for ABAP Development Tools**

Client Version 3.28





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## 1 About This Configuration Guide

The installation of front-end components includes all steps that you must perform in order to work smoothly with ABAP Development Tools on the ABAP back-end system. It includes the completion of the subsequent activities for each back-end system you want to work with.

#### **Scope of Documentation**

This documentation describes how to configure an ABAP back-end system in order to enable ABAP Development Tools (ADT).

#### **Target Audience**

ABAP system administrators who configure the ABAP server for each back-end system in order to connect them with ADT.

#### **Validity of Documentation**

This documentation belongs to the ABAP Development Tools with the client version **3.28** and refers to the range of functions that have been shipped as part of the standard delivery for:

- - SAP NetWeaver 7.3 EHP1 SP04 and higher
  - SAP NetWeaver 7.4 SP02 and higher
  - SAP NetWeaver 7.5 SP00 and higher
  - SAP NetWeaver AS for ABAP 7.51 innovation package **SP00 and higher**
  - SAP NetWeaver AS for ABAP 7.52 **SP00 and higher**
  - Application Server ABAP 7.53 **SP00 and higher** (a.k.a. ABAP platform 1809)
  - Application Server ABAP 7.54 **SP00 and higher** (a.k.a. ABAP platform 1909)
  - Application Server ABAP 7.55 **FPS 00 and higher** (a.k.a. ABAP platform 2020)
  - Application Server ABAP 7.56 **FPS 00 and higher** (a.k.a. ABAP platform 2021)
  - Application Server ABAP 7.57 **FPS 00 and higher** (a.k.a. ABAP platform 2022)
  - SAP S/4HANA Cloud, private edition
- Cloud SAP BTP ABAP environment

## 2 Providing Roles and User Authorizations

The assignment of authorizations to back-end system users is based on roles that are predefined in the ABAP system. As a system administrator, you assign one or more roles to these back-end system users. The roles are based – at a technical level – on authorization objects.

When you are assigning user authorizations in an ABAP system for access to repository objects from within an ABAP project, we strongly recommend using the standard roles and authorization default values that are provided for working with ABAP Development Tools.

#### **Procedure**

Use one of the standard SAP roles below as a master copy to assign users of the ABAP Development Tools in your organization.

#### **Related Information**

User and Role Administration of Application Server ABAP

### 2.1 Standard Roles and Authorization Objects

The table below shows the standard roles. Assign one of them to the users of ABAP Development Tools (ADT), depending on the required authorizations:

#### i Note

Since the first ADT release was shipped with SAP NetWeaver 7.4 SP02 and SAP NetWeaver 7.3 EHP1 SP04, the subset of the following roles has changed. To provide all required authorization roles, refresh this role.

List of Predefined Standard Roles

Role	Description	
SAP_BC_DWB_ABAPDEVELOPER	Role that is relevant for ABAP developers who work in ABAP Workbench and with ADT.	

Role	Description	
SAP_BC_ABAP_DEVELOPER_5	Role that is relevant for ABAP developers who mainly work with ADT in order to build and run Cloud-ready and upgradestable ABAP custom code.	
	→ Recommendation  SAP recommends that you only assign one of these roles to an user. This means, either  SAP_BC_DWB_ABAPDEVELOPER or  SAP_BC_ABAP_DEVELOPER_5.	
	For more information, see Getting Started with Developer Extensibility	
SAP_BC_DWB_WBDISPLAY	Role that contains all authorizations to display and browse development objects in the back end and ADT.	
	i Note Users are not allowed to modify ABAP development objects.	

These standard roles are linked with the following authorization objects that are also required to use ABAP Development Tool:

- S\_ADT\_RES: Resource access by ABAP Development Tools [page 5] that is the standard authorization object which you can use to check a random incoming URI against a predefined list of allowed URIs
- S\_RFC: Authorization check for RFC access [page 9]
   )
- S\_ TCODE: Transaction codes check at transaction start [page 10]
   )

## 2.1.1 URI Prefixes for the Authorization Object S\_ADT\_RES

In accordance to the relevant SAP NetWeaver Release, ABAP Development Tools (ADT) uses the following URI prefixes for the **S\_ADT\_RES** authorization object:

List of the Relevant URI Prexfixes for Enabling ADT

URI Prefix	Enables Access for Resources of	Available since Back-End Ver- sion
/sap/bc/adt/abapsource/*	ABAP source code functionalities (for example, ABAP source code formatter, ABAP Doc export)	7.31 SP04
/sap/bc/adt/abapunit/*	ABAP Unit	7.31 SP04

URI Prefix	Enables Access for Resources of	Available since Back-End Ver- sion
/sap/bc/adt/acm/dcl/*	ABAP Data Control Language (DCL) source code	7.40 SP10
/sap/bc/adt/activation	Activation of development objects	7.31 SP04
/sap/bc/adt/activation/*		
/sap/bc/adt/amdp/debugger/*	Debugger for ABAP Managed Database Procedures (AMDP)	7.31 SP04
/sap/bc/adt/apireleases/*	API state of a development object	7.53 SP00
/sap/bc/adt/bo/*	Behavior definitions	7.54 FPS00
/sap/bc/adt/bopf/*	Business objects	7.50 SP00
/sap/bc/adt/businessservices/*	Service binding	7.54 SP00
/sap/bc/adt/atc/*	ABAP Test Cockpit (ATC)	7.31 SP06
/sap/bc/adt/checkruns	Consistency checks (for example, syntax check)	7.40 SP02
/sap/bc/adt/checkruns/*		
/sap/bc/adt/classifications	Classifications	7.50 SP00
/sap/bc/adt/classifications/*		
/sap/bc/adt/communication/batch	Batch Requests	7.40 SP20
	i Note	7.50 SP12
	A batch request consists of inner requests	7.51 SP07
	which are checked additionally.	7.52 SP03
		7.53 SP00
/sap/bc/adt/compatibility/*	ADT compatibility: Feature graph	7.31 SP04
/sap/bc/adt/core/discovery	ADT compatibility: Core discovery resource	7.40 SP02
/sap/bc/adt/crosstrace/*	ABAP Cross Trace	7.56 SP00
/sap/bc/adt/cts/*	Change and Transport System (CTS)	7.31 SP04
	i Note This URI prefix replaces /sap/bc/cts/*. For further information, see SAP note 2047506	

URI Prefix	Enables Access for Resources of	Available since Back-End Ver- sion
/sap/bc/adt/datapreview/*	Data preview	7.40 SP05
	•	7.40 SP02
/sap/bc/adt/ddic/*	ABAP Dictionary	
/sap/bc/adt/debugger	ABAP Debugger	7.31 SP04
/sap/bc/adt/debugger/*		
/sap/bc/adt/discovery	ADT compatibility: discovery resource	7.31 SP04
/sap/bc/adt/dlp/*	Dynamic Log Points	7.50 SP00
/sap/bc/adt/docu/*	Documentation (for example, ABAP language help and DDL language help)	7.31 SP04
/sap/bc/adt/documentation/*	ABAP long text repository (for example, ATC prob- lem long texts)	7.31 SP04
/sap/bc/adt/enhancements/*	Enhancement Framework	7.31 SP11 or 7.4 SP05
/sap/bc/adt/error/*	Error handling in ADT	7.31 SP04
/sap/bc/adt/feeds	Feed reader	7.31 SP04
/sap/bc/adt/feeds/*		
/sap/bc/adt/filestore/ui5-bsp/*	UI5 team provider	7.31 SP04
/sap/bc/adt/fpm/*	Floorplan Manager	7.31 SP11
/sap/bc/adt/functions/*	ABAP function modules and function groups	7.31 SP04
/sap/bc/adt/hota/*	HDI Namespace	7.52 SP02
/sap/bc/adt/includes/*	ABAP includes	7.31 SP04
/sap/bc/adt/logs/*	Log files (for example, the DDIC activation log)	7.40 SP05
/sap/bc/adt/messageclass	Message classes	7.31 SP06
/sap/bc/adt/messageclass/*		
/sap/bc/adt/navigation/*	ABAP navigation	7.31 SP04
/sap/bc/adt/nhi/*	Integration of native SAP HANA artifacts (for example, external views, database procedures, or delivery units)	7.31 SP05

		Available since Back-End Ver-
URI Prefix	Enables Access for Resources of	sion
/sap/bc/adt/objectrelations/*	Relation explorer	7.54 FPS00
/sap/bc/adt/oo/*	ABAP classes and interfaces	7.31 SP04
/sap/bc/adt/packages	ABAP packages	7.31 SP04
/sap/bc/adt/packages/*		
/sap/bc/adt/programs	ABAP programs	7.31 SP04
/sap/bc/adt/programs/*		
/sap/bc/adt/quickfixes/*	Quick fixes	7.31 SP06
/sap/bc/adt/refactorings	Refactorings	7.31 SP06
/sap/bc/adt/refactorings/*		
/sap/bc/adt/repository/*	ABAP respository metadata	7.31 SP04
/sap/bc/adt/runtime/dumps	ABAP short dumps	7.31 SP04
/sap/bc/adt/runtime/dumps/*		
/sap/bc/adt/runtime/systemmessages	System messages	7.31 SP04
/sap/bc/adt/runtime/ systemmessages/*		
/sap/bc/adt/runtime/traces	ABAP runtime traces (for example, profiling)	7.4 SP02
/sap/bc/adt/runtime/traces/*		
/sap/bc/adt/uc_object_type_group/ sapc	ABAP Push Channels	7.51 SP00
/sap/bc/adt/uc_object_type_group/ sapc/*		
/sap/bc/adt/uc_object_type_group/ samc	ABAP Messaging Channels	7.52 SP00
/sap/bc/adt/uc_object_type_group/ samc/*		
/sap/bc/adt/vit/wb*	Properties of the development objects that have no native integrated editor in ADT	7.51 SP00

URI Prefix	Enables Access for Resources of	Available since Back-End Ver- sion
<pre>/sap/bc/adt/runtime/workprocesses /sap/bc/adt/runtime/ workprocesses/*</pre>	Access on resources that terminate no more required SAP GUI sessions	7.51 SP00
/sap/bc/adt/security/*	Security (for example, re-entrance tickets)	7.31 SP04
/sap/bc/adt/sqlm/*	SQL Monitor	7.50 SP00
/sap/bc/adt/sscr/*	Developer and object registration services	7.31 SP08
/sap/bc/adt/st05/trace/*	Performance traces (for example, SQL trace)	7.54 SP00
/sap/bc/adt/system/*	System clients and users	7.31 SP04
/sap/bc/adt/urifragmentmappings	URI Fragment Mapper	7.31 SP14 or 7.4 SP08
/sap/bc/adt/wdy	Web Dynpro	7.31 SP07
/sap/bc/adt/wdy/*		
/sap/bc/adt/xslt/*	XSLT transformations	7.50 SP00
/sap/bc/esproxy/*	ABAP connectivity and integration development tools	7.40 SP02

#### i Note

The wildcard "\*" is used for the subpaths of the URI.

## 2.1.2 Remote Access to Function Modules (Specified in the Authorization Object S\_ RFC)

ABAP Development Tools requires remote access to the following function modules that are specified for the authorization object **S\_ RFC**:

List of function modules, specified for the authorization object S\_RFC

Activity [ACTVT]	Name of RFC Object That Can Be Accessed [RFC_NAME]	Type of RFC Object That an Be Accessed [RFC_TYPE]
16 (Execute)	DDIF_FIELDINFO_GET	FUNC (Function module)
	RFCPING	

Activity [ACTVT]	Name of RFC Object That Can Be Accessed [RFC_NAME]	Type of RFC Object That an Be Accessed [RFC_TYPE]
	RFC_GET_FUNCTION_INTERFACE	
	SADT_REST_RFC_ENDPOINT	
	SUSR_USER_CHANGE_PASSWORD_RFC	
	SYSTEM_RESET_RFC_SERVER	

## 2.1.3 Transaction Code Check at Transaction Start (Specified in the Authorization Object S\_ TCODE)

ABAP Development Tools (ADT) has to start certain transactions in order to enable the SAP GUI integration in Eclipse. To do this, users need the authorization object  $\mathtt{S}_{-}$  TCODE with the following field values:

- SADT START TCODE
- SADT\_START\_WB\_URI

#### i Note

These transactions are **not** intended to be started directly in SAP GUI. They are automatically started in a parameterized fashion by ADT.

## 3 Activating ICF Services in Development Systems

In the Internet Communication Framework (ICF), an ICF service is an endpoint that enables the IDE-based front-end client to communicate with the server.

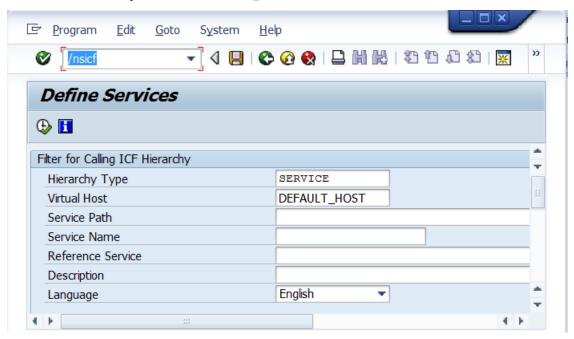
#### Context

In an ABAP system, ICF services are inactive by default. To enable the full functionality of ABAP Development Tools in a development system, the system administrator needs to activate the set of ICF services listed below for each system.

The ICF services are activated on the *Maintain Services* page. In the subsequent sections, you will find information about activating the specific ICF services to enable a certain functionality.

#### **Procedure**

- 1. Call the transaction SICF in the relevant back-end system.
- 2. In the *Virtual Host* entry field, enter **DEFAULT\_HOST**.



Entry page of the SICF transaction

3. Press F8 or use the *Execute* icon from the toolbar to display the services tree.

#### Results

The *Maintain Service* page is opened and displays the available virtual hosts and services. From here, you navigate to the corresponding ICF service that you want to activate.

#### **Related Information**

Providing Access to Documentation [page 12] Sharing HTTP Links [page 14] Web Dynpro ABAP Development [page 15]

### 3.1 Providing Access to Documentation

To make documentation available to ABAP developers (for example, in the ABAP Keyword Documentation, ABAP Problem Description, and ABAP Element Info views), you need to activate all the involved ICF services.

#### **Prerequisites**

#### i Note

**As of** Application Server ABAP 7.55, the documentation in the system can be accessed **without** activating ICF nodes. Therefore, there are **no** more steps required to activate the ICF nodes for documentation manually.

In ABAP system **lower** than Application Server ABAP 7.55, you **still** need to proceed the following steps and enable the relevant ICF nodes manually.

#### Context

Different ICF nodes are used to provide the following documentation:

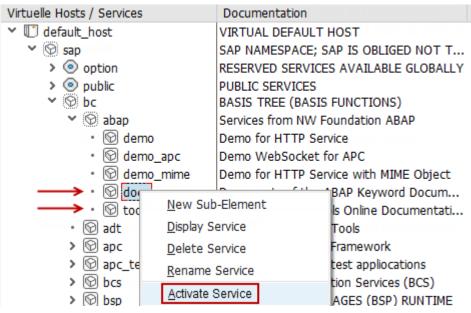
- 1. For the ABAP Keyword Documentation view
  - default\_host > sap > public > bc > abap > docu
  - default\_host > sap > bc > abap > docu
- 2. For the ABAP Problem Description and ABAP Element Info views
  - default\_host > sap > public > bc > abap > toolsdocu >
  - default\_host > sap > bc > abap > toolsdocu >

To activate these ICF nodes, you have the following two options:

- Since SAP NetWeaver AS for ABAP 7.51 innovation package, you can activate all nodes at once as follows:
  - 1. Launch the RS\_DOCU\_ADT\_ACTIVATE\_ICF\_NODES ABAP program in transaction SE38. All the relevant ICF nodes are listed on the *ADT Documentation: Activate ICF Nodes* page.
  - 2. To activate, choose F8 or the Activate Inactive Nodes button from the toolbar.
- You can activate each node manually in transaction SICF as follows:

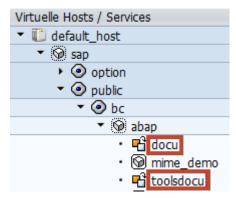
#### **Procedure**

- 1. On the *Maintain service* page, expand the default\_host sap bc abap ICF node. The subtree displays the subnodes.
- 2. Select the **docu** subnode and choose *Activate Service* from the context menu.



Nodes for activating the abap/docu ICF service

3. Activate the public ICF node: default\_host sap public bc abap docu



Nodes in the public subtree for activating the docu and toolsdocu ICF services

#### i Note

For the public ICF node, no user name and password are required to access this documentation.

Access to the target documentation is fully configured when both of the above nodes are activated. If not, a warning is displayed whenever ABAP developers try to display this documentation.

4. Activate the **toolsdocu** ICF nodes in the same way as for **docu**.

#### i Note

When proceeding, just select the relevant toolsdocu ICF nodes.

#### Results

All inactive documentation-relevant ICF services are now activated and can be accessed using HTTP.

#### **Related Information**

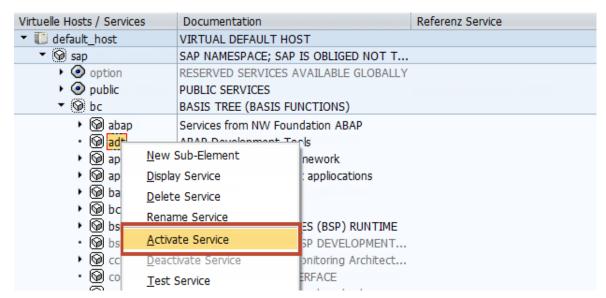
Enabling Linking From The ABAP Keyword Documentation to The SAP Help Portal [page 19]

### 3.2 Sharing HTTP Links

To enable your ABAP developers to share HTTP links between themselves, you can activate the adt ICF service. The receiver of the link can then render the target development object in his or her default Web browser.

#### **Procedure**

- 1. On the Maintain service page, expand the default\_host sap bc node.
- 2. Select the adt ICF service.
- 3. Choose Activate Service from the context menu.



Nodes for activating the adt ICF service

#### Results

This ICF service can now be accessed using HTTP from external. This means that the ABAP developers can create shortcuts that refer to development objects in the current ABAP system.

## 3.3 Web Dynpro ABAP Development

The Web Dynpro View Controller Editor provides a preview of the user interface at design time only if the preview service is active.

#### Context

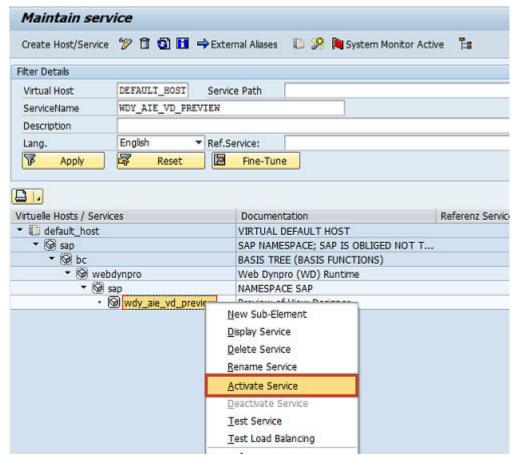
If you plan to use Web Dynpro in ABAP Development Tools, you have to activate the preview service to access the Layout page of the Web Dynpro View Controller Editor.

#### i Note

For further information, see also SAP Note 1088717 - Active Services for Web Dynpro ABAP in Transaction SICF.

#### **Procedure**

- 1. On the *Maintain service* page, expand the default\_host sap bc webdynpro sap node. The sub-tree displays several service items.
- 2. Select the wdy\_aie\_vd\_preview service.
- 3. From the context menu, choose Activate Service.



Nodes for activating the wdy\_aie\_vd\_preview ICF service

#### Results

This ICF service can now be accessed using HTTP from external. This means that developers can send requests to the back-end to create source code for Web Dynpro components.

## 4 Configuring Profile Parameters

In addition to logon tickets, ABAP systems can also issue the more restricted assertion tickets when accessing system services. This might be important to meet maximum security requirements when you are using the integrated SAP GUI in ABAP Development Tools. Instead of asking for the password, the back-end system checks the validity of the assertion ticket to allow the user access to system services.

#### Context

Use the following settings to configure your ABAP system in such a way that it only issues the assertion tickets (without logon).

#### → Recommendation

Assertion tickets provide the highest level of security when creating an RFC or HTTP connection and easiest usability for working with an ABAP system. We therefore recommend that you use assertion tickets to allow ABAP developers to log onto an ABAP system. To do so, check that the profile parameters listed below are set as recommended. If the profile parameters are set differently, you need to set all connected components to the values belowto ensure connectivity. For more information, see Authentication Assertion Tickets

#### **Procedure**

- 1. In your ABAP system, open transaction RZ11.
- 2. Check which values are set for the relevant parameters.

#### i Note

If you are using assertion tickets, check that the values of these parameters are defined as follows:

#### List of Profile Parameters

Parameter	Value	Description
login/create_sso2_ticket	3	This parameter value means that the ABAP system to issue only assertion tickets (no logon tickets).
login/accept_sso2_ticket	1	This parameter value configures the ABAP system to accept assertion tickets.

For more information about the values, choose the **Display docu** button. This displays the value help for the selected parameter.

# 5 Enabling Linking From The ABAP Keyword Documentation to The SAP Help Portal

To enable linking from help content (provided in the ABAP Keyword Documentation) to help content (provided on the SAP Help portal ), the SAP system administrator needs to configure back-end help links for each back-end system in addition.

For more information, see the SAP S/4HANA installation guide, chapter *User Assistance Settings*.

#### **Related Information**

Providing Access to Documentation [page 12]

## 6 [Optional:] Enabling the ABAP Source Search

The ABAP Source Search functionality enables ABAP developers to find text that is contained in source-based repository objects (like classes, programs, function pools, and so on) as well as message classes of an ABAP project.

#### **Prerequisites**

#### Relevant for SAP HANA Database Connections:

- Ensure to have enough free database space for creating an index file. This index file will consume between 10 to 100 GB depending on the number of sources stored in the ABAP system. Therefore, ensure that the required space is available before you activate the corresponding business function.
- You have activated the SRIS\_SOURCE\_SEARCH business function with the SFW5 transaction code in each ABAP system. To do this, you require the S\_SWITCH authorization object with the following activities:
  - 02 (Change) with the SFBF and SFBS object types
  - **07** (Activate)
- You are working with SAP NetWeaver 7.4 SP05 or higher.

#### Relevant for IBM Db2 Database Connections:

You are working with SAP NetWeaver AS for ABAP 7.51 innovation package or higher.

#### Context

To enable the ABAP Source Search for:

- IBM Db2-based database connection, you will find all relevant information in SAP note 2241079
- SAP HANA-based database connection, you will find all relevant information in the subsequent procedure:

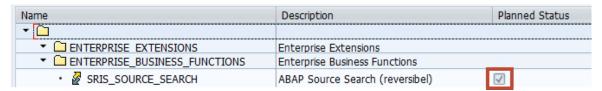
#### ⚠ Caution

In the latter case, an index will be created. The creation might last a few seconds or several hours. To create the index, activate the SRIS\_SOURCE\_SEARCH business function only.

For more information, see Switching on Business Functions

#### **Procedure**

- 1. In the back end of your ABAP system, open Switch Framework Customizing with the SFW5 transaction code.
- 2. In the ENTERPRISE\_BUSINESS\_FUNCTIONS tree, select the SRIS\_SOURCE\_SEARCH business function and select the empty checkbox in the Planned Status column.



Activated SRIS\_SOURCE\_SEARCH business function

#### i Note

The checkbox is only displayed if your user is assigned the  $s\_switch$  authorization object. Otherwise a text is displayed.

3. In the toolbar, choose the Activate Changes Activate Changes button.

#### Results

The creation and activation of the index file is started.

#### i Note

To check the status of the index creation, you can run the SRIS\_CODE\_SEARCH\_PREPARATION report. It also checks another index on the TADIR table, which is usually updated regularly with the where-used index. If this TADIR index is incomplete, you can also schedule an index rebuild with this report.

After executing these reports, we recommend that you wait at least two hours before executing the ABAP Source Search for the first time.

## 7 Support Case

## 7.1 Running ADT in Protected Mode

#### Context

In SAP NetWeaver 7.4 SP08 and higher, the transaction <code>SADT\_PROTECTED\_MODE</code> is provided to display and maintain protected mode for ABAP Development Tools (ADT).

Protected mode is only required in the case of a support where there is a support issue in order to keep certain functionalities of ADT running. Protected mode can be applied to all (global) users, but can also be overruled for a specific user.

The light bulbs in front of the global or user button indicate the activation status for protected mode. When activated, the light bulb glows.



Example of a deactivated protected mode

#### **Procedure**

- 1. Press the **Global** button to toggle the status for all users in the system.
- 2. [Optional] If you want to overrule the global activation status for a specific user, toggle the user-specific activation state by pressing the **User** button for the specified user in question.

#### i Note

Only use this transaction if SAP support instructs you to enable protected mode for ADT. In all other cases, protected mode should be deactivated for global and specific users.

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