

# DevTest Best Practices

# SAP Service Virtualization

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December 2016

# DevTest Components

<b>Component</b>	<b>Purpose</b>
Enterprise Dashboard	DevTest License and Usage Monitoring
Registry	DevTest Component Registration, DB management
<b>Portal</b>	<b>DevTest Web UI Server</b>
<b>Workstation</b>	<b>Rich DevTest Client UI</b>
Broker	DevTest Java Agent Coordinator
Coordinator	Coordinator for Tests run on Simulators
Simulator	Runs Tests
<b>Virtual Service Environment (VSE)</b>	<b>Hosts Virtual Services</b>

# Agenda

**1. ARCHITECTURE**

**2. COMMUNICATION**

**3. CONFIGURATION**

**4. DEMO**

**5. USEFUL SAP TRANSACTION CODES, TROUBLESHOOTING & BEST PRACTICES**

**6. Q&A**

# SAP Architecture



## Presentation Layer

- Provides Graphical Screen to Users
- Users enter data on screen
- Shows processed data to user



## Application Layer

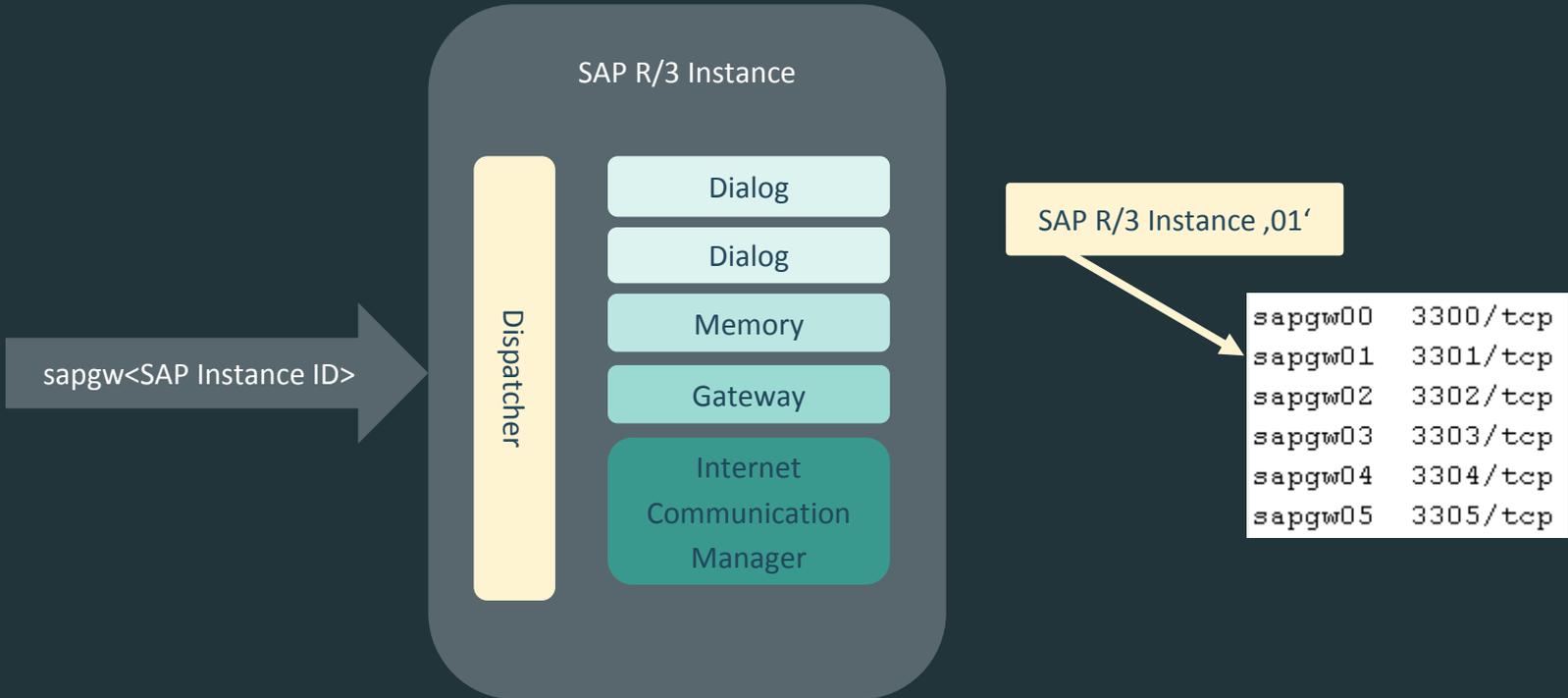
- Processes Data using Application Logic
- Communicates with both layers
- Read/Write from database



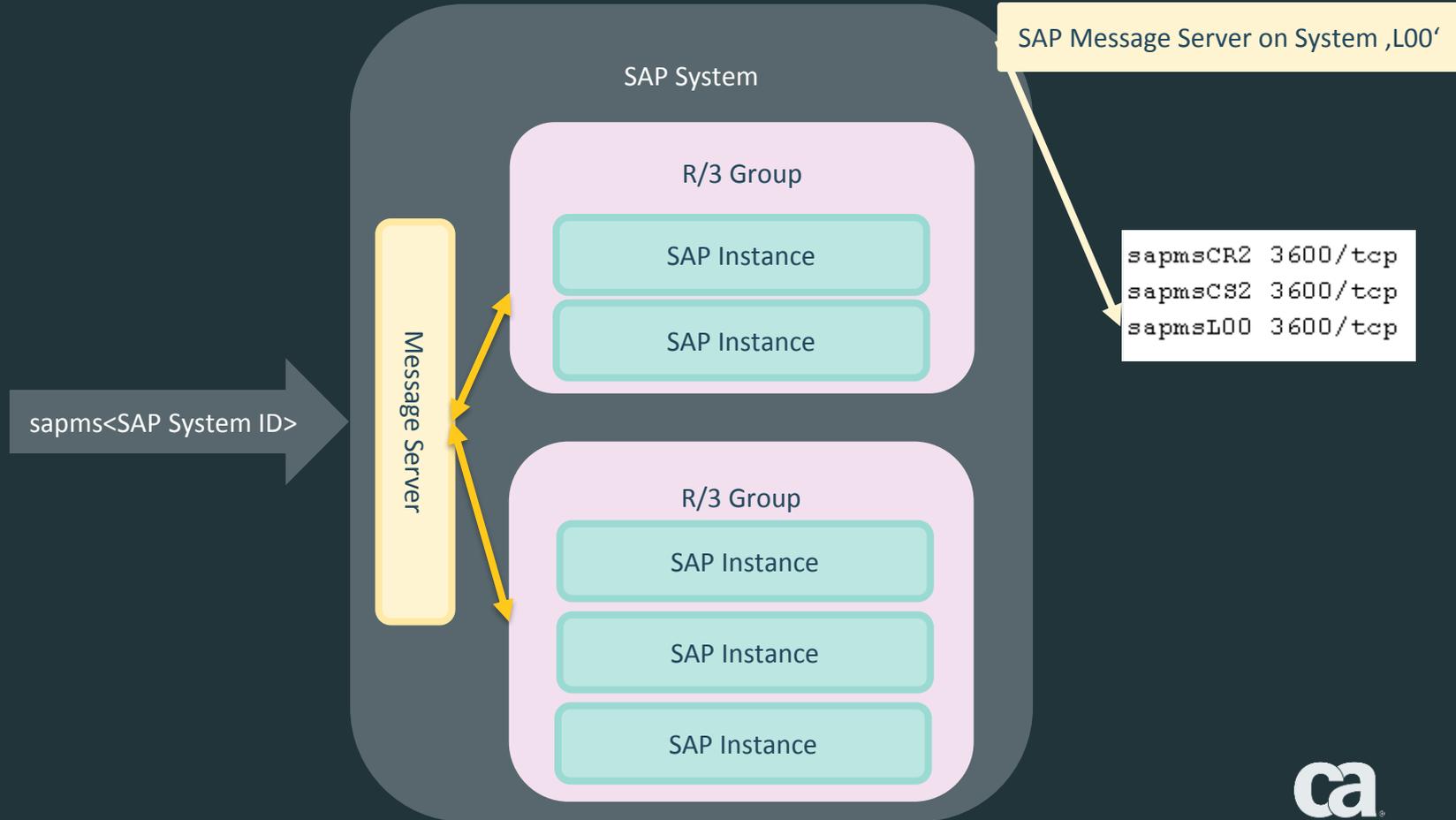
## Database Layer

- Stores Data

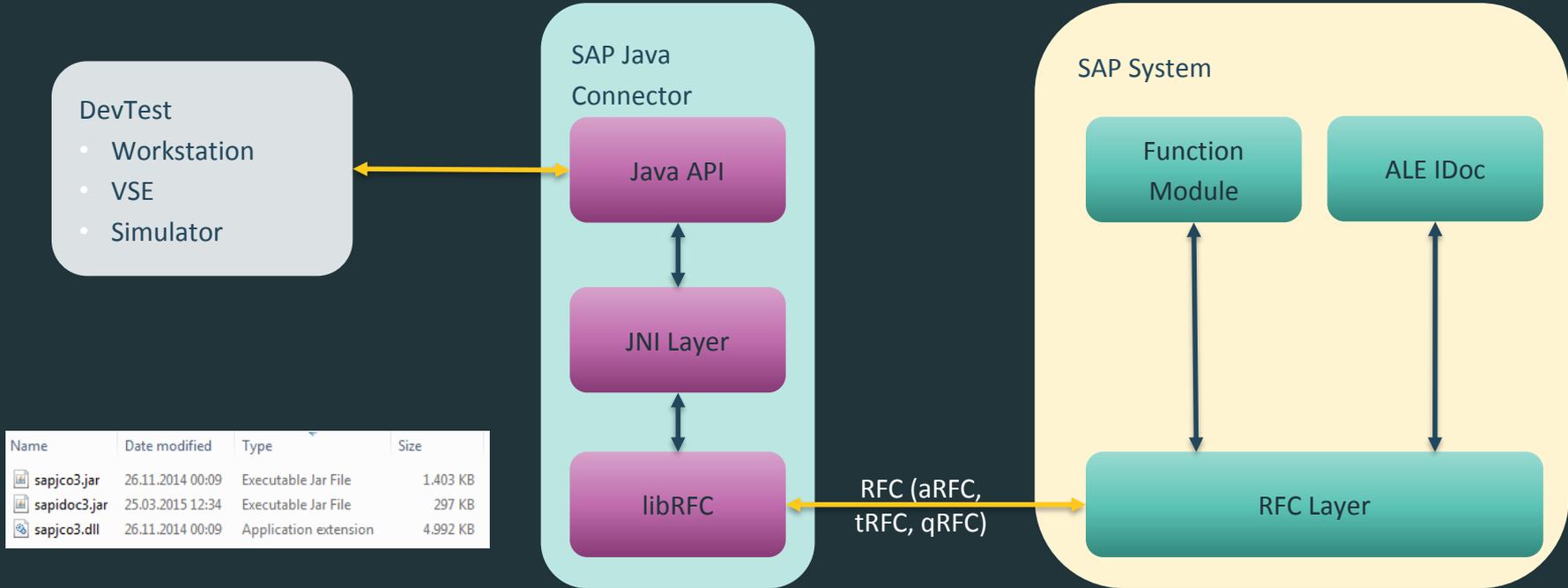
# SAP Architecture – SAP Instance



# SAP Architecture – SAP System

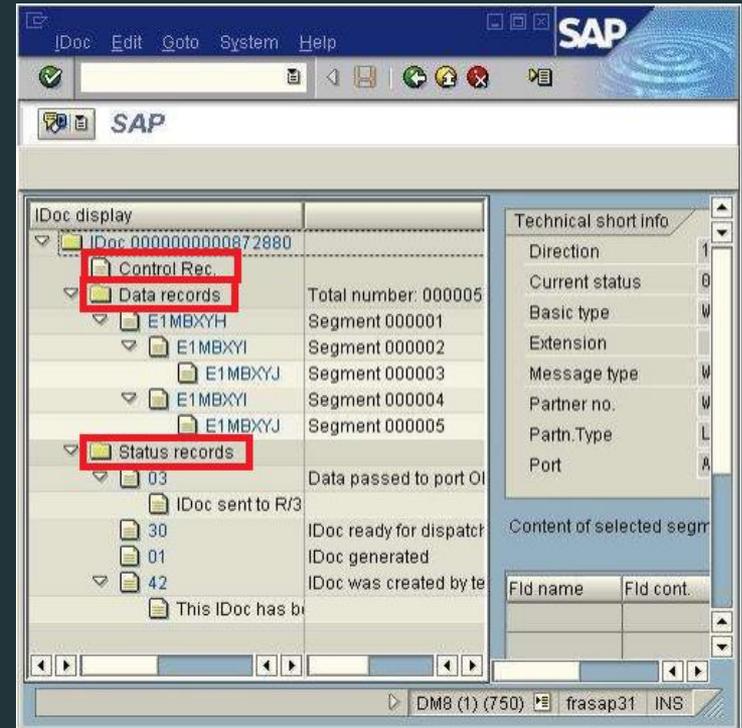


# SAP Java Connector (JCo) Architecture

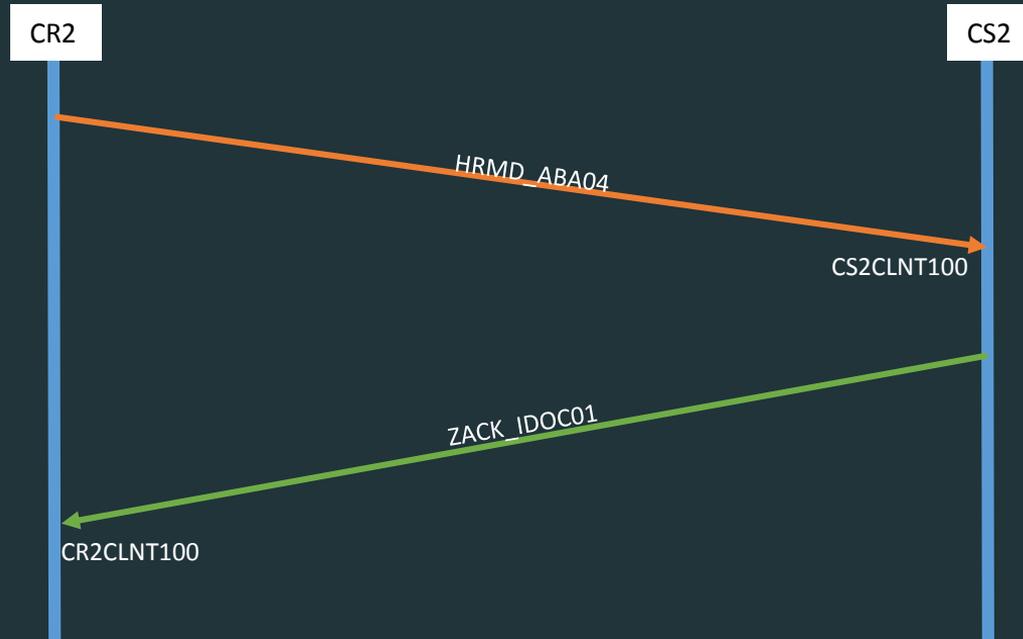


# SAP IDoc Structure

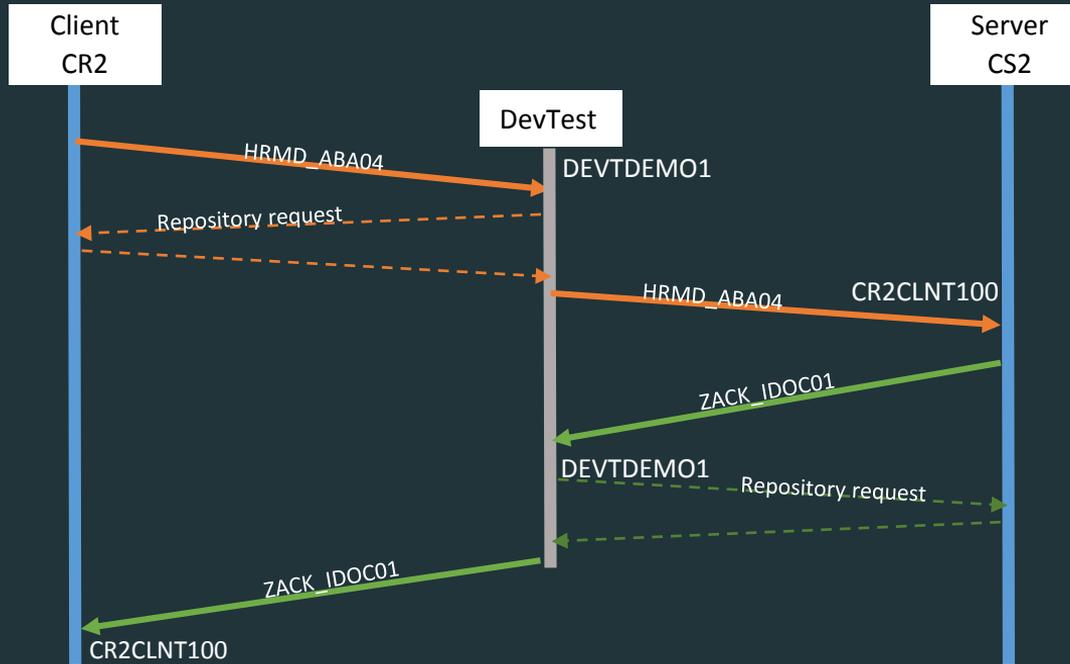
- Control Section
  - Single segment, header information, IDoc ID, sender, receiver
- Data Section
  - Multiple Segments, payload, hierarchical (parent/child)
- Status Section
  - Multiple Segments, local to system, last status segment is significant



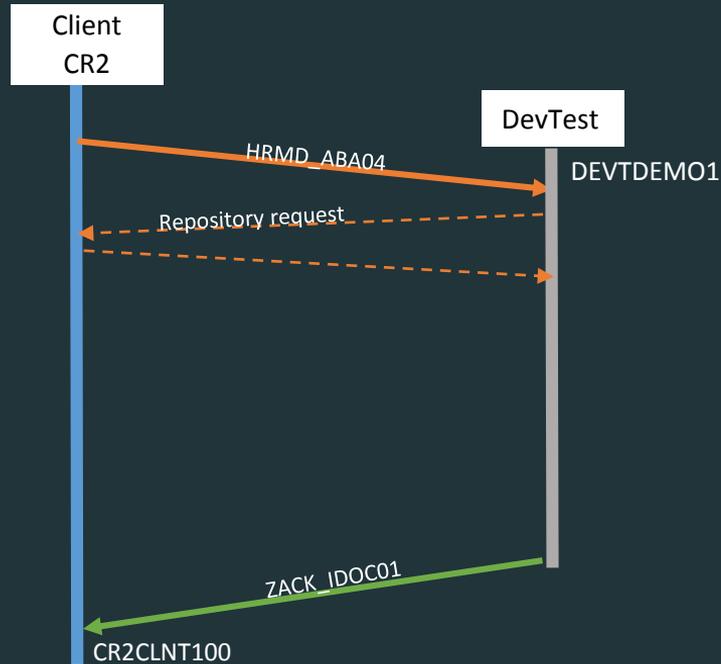
# SAP IDoc Exchange – Live Mode



# SAP IDoc Exchange – Recording Mode



# SAP IDoc Exchange – Replay Mode



# SAP RFC Destination

- SAP Logical System
  - Service Registration
  - Supported Outbound and Inbound IDocs
  - RFC Destination
- SAP Partner Profile
  - Access to IDoc Meta Data Repository

The image displays three screenshots from the SAP S/4HANA interface, illustrating the configuration and management of SAP RFC Destinations.

**Top Left Screenshot: Change View "Logical Systems": Overview**  
This screenshot shows the "Logical Systems" overview page. A table lists various logical systems, with the entry "DEVIDEMO1 DevTest Demo System No. 1" highlighted in a red box.

Log System	Name
DC2CLNT100	Logical System for DC2-100
DC3CLNT020	Logical system for DC3-020
DC3CLNT080	Logical system for DC3-080
DC3CLNT100	Logical system for DC3-100
<b>DEVIDEMO1</b>	<b>DevTest Demo System No. 1</b>
DG1CLNT010	Logical System for DG1-010
DG1CLNT020	Logical System for DG1-020
DG2CLNT100	Logical System for DG2-100

**Top Right Screenshot: Partner profiles**  
This screenshot shows the "Partner profiles" configuration page for the logical system "DEVIDEMO1". The "Outbound paramts." table is visible, with the entry "HRMD\_ABA" highlighted in a red box.

Partner R...	Message Type	Message v...	MessageF...	Test
	CCLONE			
	<b>HRMD_ABA</b>			
	SYNCH			
	USERCLONE			

**Bottom Screenshot: Display Users**  
This screenshot shows the "Display Users" page for user "DEMOS01". The "Profiles" tab is selected and highlighted in a red box. The "Assigned Authorization Profiles" table is visible, with the entry "SAP\_ALL" highlighted in a red box.

Profile	Type	Text
<b>SAP_ALL</b>	All SAP System authorizations	
SAP_NEW	New authorization checks	
T-C2840354	Profile for role ZSRAS SECUSR_GEN	
T-D1610266	Profile for role D-RHRX_A11_INTY_XXXX	

# SAP Application Server

- Host name (FQDN) of SAP Application Server
- SAP System Number
  - SAP Instance ID
  - Two Digits – `00` is common
- SAP Authentication
  - User ID
  - Password
  - SAP Client Number

The screenshot shows the 'SAP AsHost Connection' dialog box. The 'Name' field is set to 'SAP AsHost Connection'. The 'Server Type' is set to 'Application Server'. The 'Host' field contains 'LOD1809.ca.com', 'System Number' is '00', 'User' is 'DEMOS01', 'Password' is masked with dots, and 'Client' is '100'. A red box highlights the 'Verify Asset' section, which displays the message: 'Success: class com.sap.conn.jco.rt.RfcDestination'. A progress bar at the bottom indicates 100% completion. The dialog has 'OK' and 'Cancel' buttons at the bottom.

# SAP Message Server

- Host name (FQDN) of SAP Message Server
- SAP R/3 Name
  - Aka SAP System ID
  - Three chars - `L00` is common
- SAP R/3 Group Name
- SAP Authentication
  - User ID
  - Password
  - SAP Client Number

SAP MSHost

Name: SAP MSHost

Description:

Server Type:  Application Server  Message Server

Host: LOD1809.ca.com

R/3 Name: CR2

Group: SPACE

User: demos01

Password: .....

Client: 100

Advanced Connection Settings

Verifying Asset

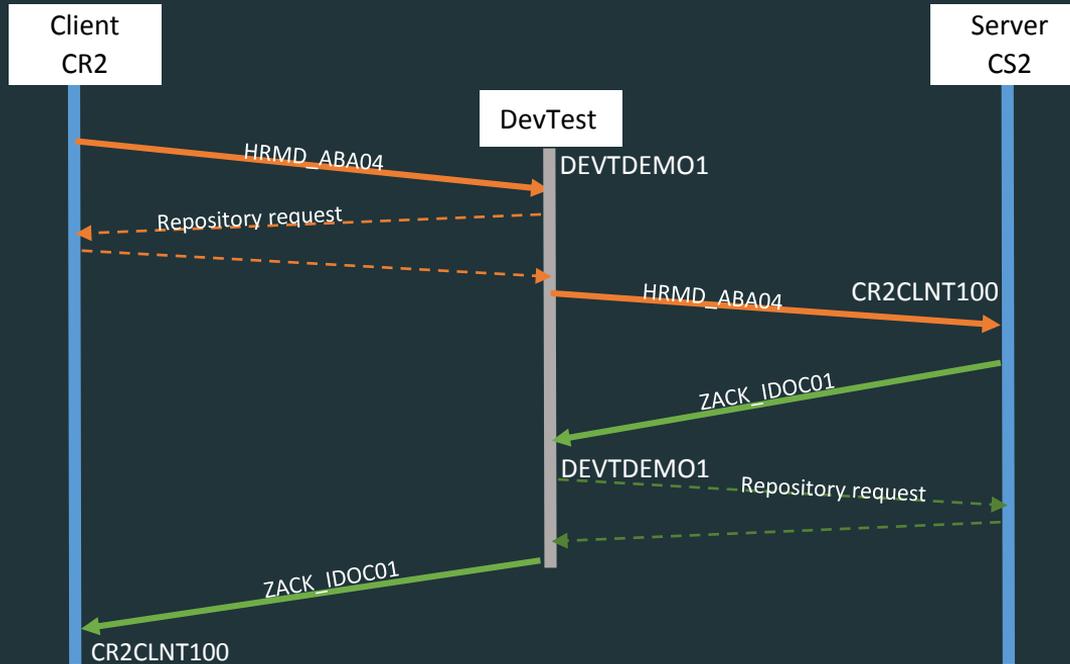
Success: class com.sap.conn.jco.rt.RfcDestination

100%

Cancel

OK Cancel

# SAP IDoc Exchange – Recording Mode



# SAP Virtual Service Recorder Configuration

The screenshot shows the 'Virtual Service Image Recorder' configuration window. It contains several dropdown menus for client and server connection properties and XPath expressions. Yellow callout boxes with arrows point to specific fields, explaining their purpose:

- Where to listen for requests?** points to the 'Client RFC Connection Properties' field.
- Locally Unique Connection Name** points to the 'Client RFC Destination Name' field.
- Where to send the responses?** points to the 'Client System Connection Properties' field.
- Where to find IDoc Meta Info for request?** points to the 'Client System Name' field.
- Where to listen for responses?** points to the 'Server RFC Connection Properties' field.
- Locally Unique Connection Name** points to the 'Server RFC Destination Name' field.
- Where to send the requests?** points to the 'Server System Connection Properties' field.
- Where to find IDoc Meta Info for response?** points to the 'Server System Name' field.
- XPath Queries to match Request and Response** points to the 'Request Identifier XPath Expressions' and 'Response Identifier XPath Expressions' fields.

Field	Value
Client RFC Connection Properties:	Data/CR2_RFC_Destination.properties
Client RFC Destination Name:	IDOC_CR2
Client System Connection Properties:	Data/CR2_System.properties
Client System Name:	CR2
Request Identifier XPath Expressions:	/HRMD_ABA04/IDOC/E1PLOGI/E1PITYP[7]/E1P0105/USRID/text()
Server RFC Connection Properties:	Data/CS2_RFC_Destination.properties
Server RFC Destination Name:	IDOC_CS2
Server System Connection Properties:	Data/CS2_System.properties
Server System Name:	CS2
Response Identifier XPath Expressions:	/ZACK_IDOC01/IDOC/ZACK_IDOC_SEG/USRID/text()

# SAP Virtual Service Configuration

The screenshot displays the configuration for a JCo IDoc Listener. The interface includes a toolbar at the top and a main configuration area. The configuration area is divided into several sections:

- Client RFC Connection Properties:** Data/CR2 RFC\_Destination.properties
- Client RFC Destination Name:** IDOC\_CR2
- Client System Connection Properties:** Data/CR2\_System.properties
- Client System Name:** CR2
- Request Identifier XPath Expressions:** /HRMD\_ABA04/IDOC/E1PLOGI/E1PITYP[7]/E1P0105/USRID/text()
- Response Identifier XPath Expressions:** /ZACK\_IDOC01/IDOC/ZACK\_IDOC\_SEG/USRID/text()
- Format step response as XML
- If environment error:** [Empty field]

Yellow callout boxes with arrows point to specific elements in the configuration:

- Where to listen for requests? (points to the JCo IDoc Listener icon)
- Locally Unique Connection Name (points to Client RFC Destination Name)
- Where to send the responses? (points to Client System Name)
- Where to find IDoc Meta Info for request? (points to Request Identifier XPath Expressions)
- XPath Queries to match Request and Response (points to both Request and Response Identifier XPath Expressions)

Where to listen for requests?

Locally Unique Connection Name

Where to send the responses?

Where to find IDoc Meta Info for request?

XPath Queries to match Request and Response

# SAP Virtual Service Configuration – Where to Listen

,Registered Program Name' in RFC Destination Definition in SAP

SAP Host Name

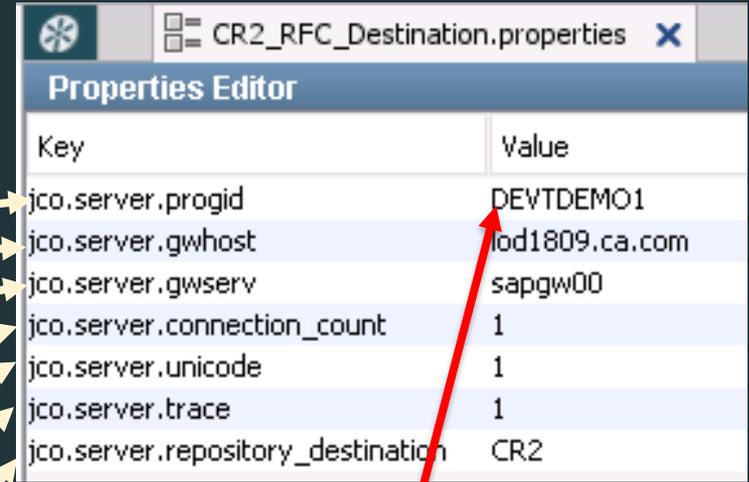
SAP service (port no. in etc/services) is in SAP Instance '00'

Concurrent connections to SAP. **Should match** RFC Destination configuration in SAP.

Unicode support on this connection? **Must match** RFC Destination configuration in SAP

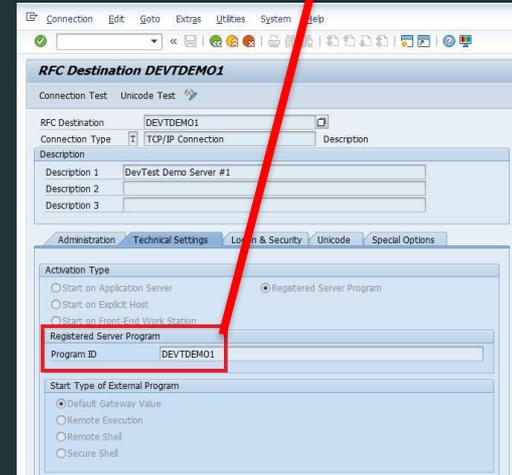
SAP JCo connection Trace level

SAP System ID to find the IDoc Meta Repository



CR2 RFC Destination.properties

Key	Value
jco.server.progid	DEVTEMO1
jco.server.gwhost	lod1809.ca.com
jco.server.gwserv	sapgw00
jco.server.connection_count	1
jco.server.unicode	1
jco.server.trace	1
jco.server.repository_destination	CR2



RF Destination DEVTEMO1

Connection Test: Unicode Test

RF Destination: DEVTEMO1

Connection Type: TCP/IP Connection

Description:

- Description 1: DevTest Demo Server #1
- Description 2:
- Description 3:

Administration | Technical Settings | Login & Security | Unicode | Special Options

Activation Type:

- Start on Application Server
- Start on Explicit Host
- Start on Front-End Work Station

Registered Server Program:

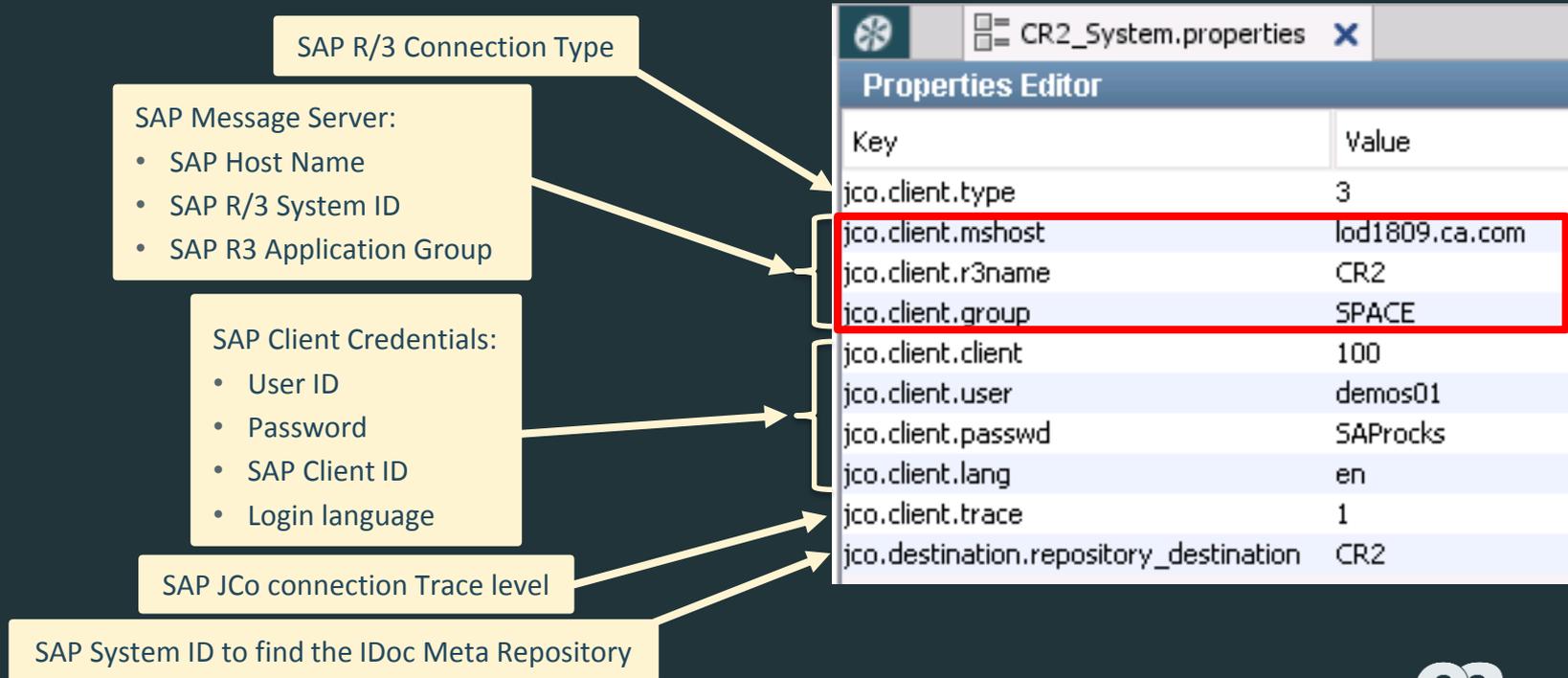
Program ID: DEVTEMO1

Start Type of External Program:

- Default Gateway Value
- Remote Execution
- Remote Shell
- Secure Shell

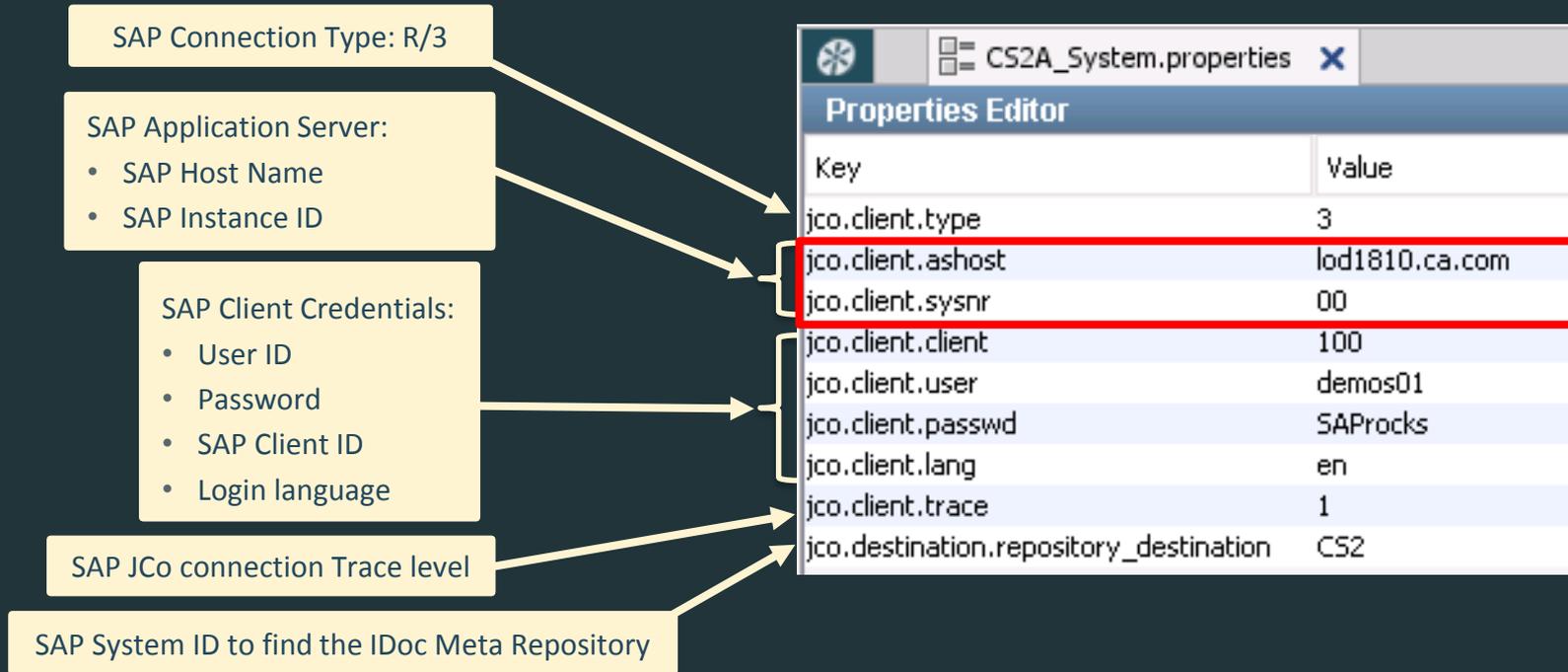
# SAP Virtual Service Configuration

## Send to Message Server



# SAP Virtual Service Configuration

## Send to **Application Server**



# SAP Virtual Service Configuration IDoc Request/Response Correlation

Request: /HRMD\_ABA04/IDOC/E1PLOGI/E1PITYP[6]/E1P0105/USRID/text()

```
<?xml version="1.1"?>
<HRMD_ABA04>
  <IDOC BEGIN="1">
    <EDI_DC40>
      <E1PLOGI SEGMENT="1">
        <PLVAR>01</PLVAR>
        <OTYPE>P</OTYPE>
        <OBJID>00044087</OBJID>
        <OPERA>I</OPERA>
        <E1PITYP>
        <E1PITYP>
        <E1PITYP>
        <E1PITYP>
        <E1PITYP>
        <E1PITYP>
      </E1PLOGI SEGMENT="1">
      <E1PITYP SEGMENT="1">
        <PLVAR>01</PLVAR>
        <OTYPE>P</OTYPE>
        <OBJID>00044087</OBJID>
        <INFTY>0105</INFTY>
        <SUBTY>0001</SUBTY>
        <BEGDA>18000101</BEGDA>
        <ENDDA>99991231</ENDDA>
        <E1P0105 SEGMENT="1">
          <PERNR>00044087</PERNR>
          <INFTY>0105</INFTY>
          <SUBTY>0001</SUBTY>
          <ENDDA>99991231</ENDDA>
          <BEGDA>20110704</BEGDA>
          <SEQNR>000</SEQNR>
          <AEDTM>20110602</AEDTM>
          <UNAME>DEVSU02</UNAME>
          <USRTY>0001</USRTY>
          <USRID>SCHCH44</USRID>
        </E1P0105>
      </E1PITYP>
    </E1PITYP>
  </IDOC>
</HRMD_ABA04>
```

# SAP Virtual Service Configuration IDoc Request/Response Correlation

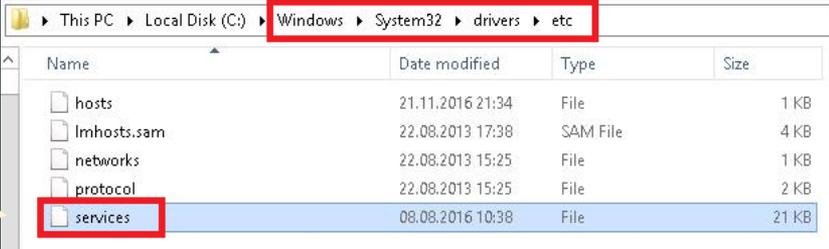
Response: /ZACK\_IDOC01/IDOC/ZACK\_IDOC\_SEG/USRID/text()

```
<?xml version="1.1"?>
<ZACK_IDOC01>
  <IDOC BEGIN="1">
    <EDI_DC40>
      <ZACK_IDOC_SEG SEGMENT="1">
        <IDOC_NUM>00000000001948334</IDOC_NUM>
        <USRID>{{=request_IDOC_E1PLOGI_E1PITYP_E1P0105_USRID_1;/*SCHCH44*/}}</USRID>
        <STATUS>Error</STATUS>
      </ZACK_IDOC_SEG>
    </IDOC>
  </ZACK_IDOC01>
```

# SAP Virtual Service Configuration

## SAP Service/Port Configuration

etc/service on Windows



This screenshot shows a Windows file explorer window with the address bar set to 'This PC > Local Disk (C:) > Windows > System32 > drivers > etc'. The file list contains the following items:

Name	Date modified	Type	Size
hosts	21.11.2016 21:34	File	1 KB
lmhosts.sam	22.08.2013 17:38	SAM File	4 KB
networks	22.08.2013 15:25	File	1 KB
protocol	22.08.2013 15:25	File	2 KB
services	08.08.2016 10:38	File	21 KB

SAP Message Server Services

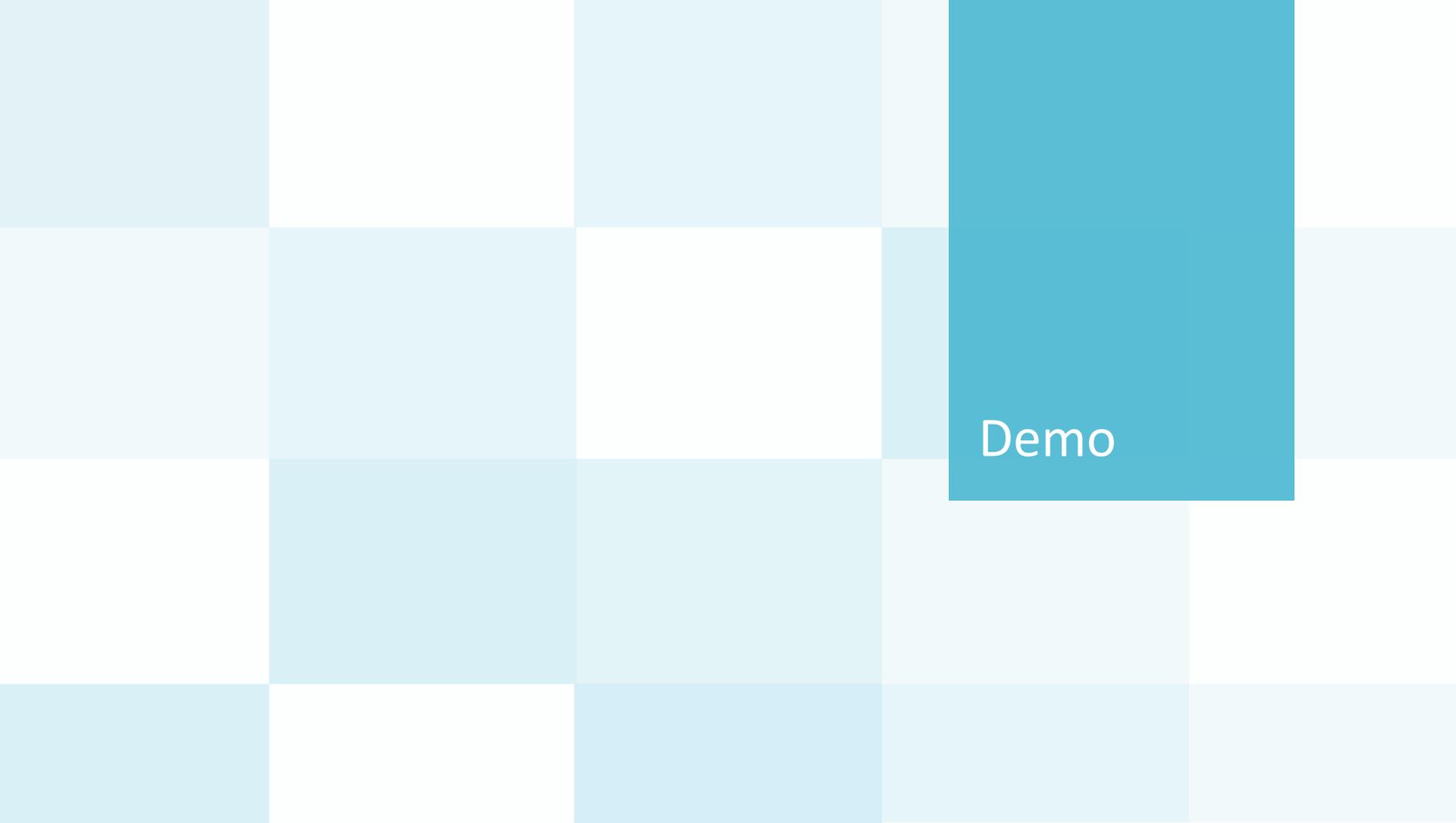
```
sapmsCR2 3600/tcp  
sapmsCS2 3600/tcp  
sapmsL00 3600/tcp
```

SAP Application Server Services

```
sapgw00 3300/tcp  
sapgw01 3301/tcp  
sapgw02 3302/tcp  
sapgw03 3303/tcp  
sapgw04 3304/tcp  
sapgw05 3305/tcp
```

# SAP Configuration Checklist

- SAP JCo Libraries
  - DEVTEST\_HOME/lib/shared
  - DEVTEST\_HOME/bin
- SAP User Credentials
  - Privileges to Read IDoc Meta Data from IDoc Repository
- SAP Communication Settings
  - RFC Destination (SAP JCo Server)
  - SAP System (SAP JCo Client)
- XPath Specification for IDoc request and response
- SAP Service aka Gateways in etc/services
- RR Pairs in XML Format

The image features a background of a grid of squares in various shades of light blue and white. A solid teal rectangle is positioned in the upper right area, containing the word "Demo" in white text.

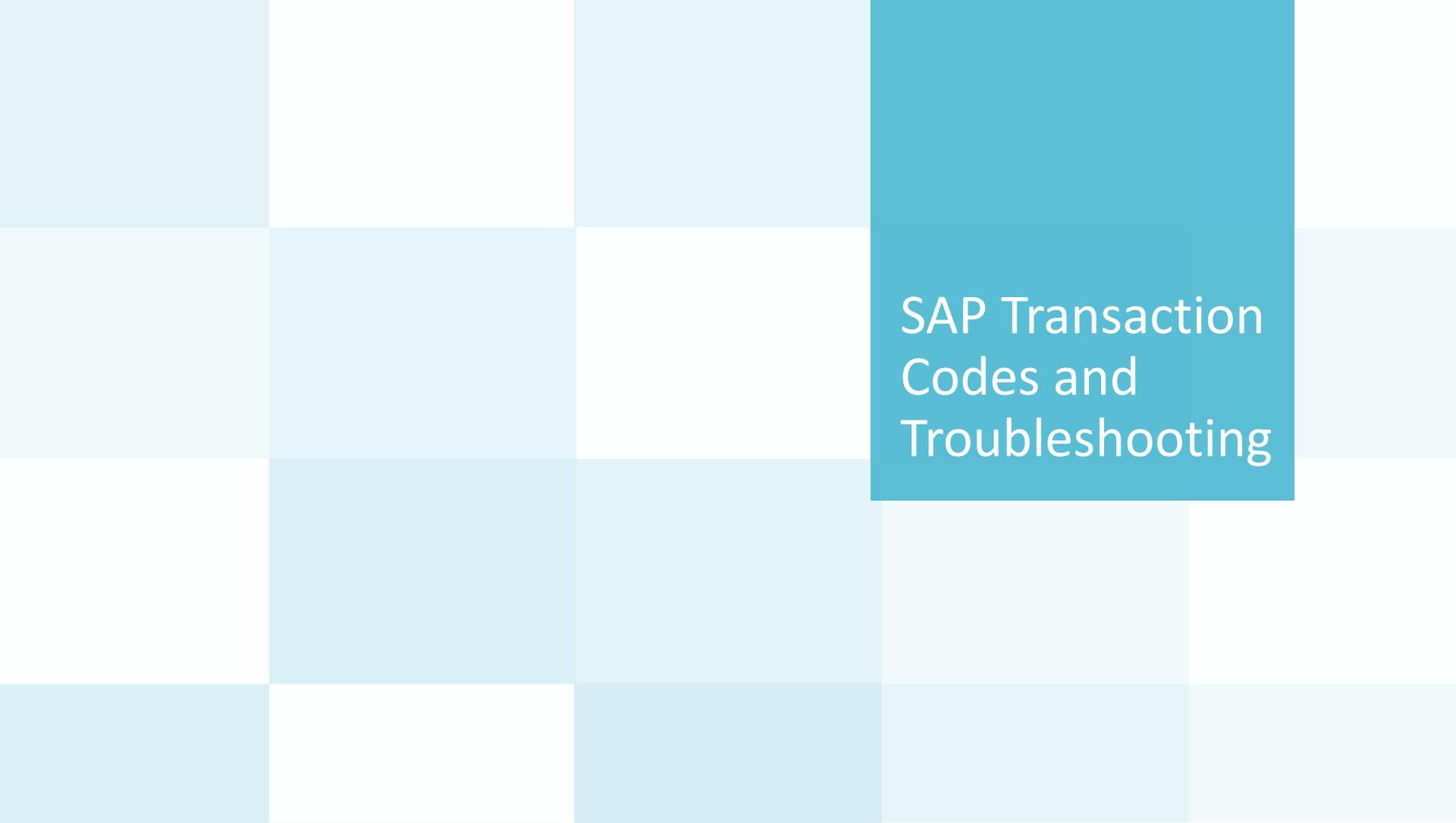
Demo

# SAP Service Virtualization – Bill of Material

- SAP JCo Libraries (Version 30P\_12 (14/11) used in demo)
- SAP Service RR Pairs in XML Format
  - XPath queries for Request/Response Correlation identified
- SAP Communication Specifications
  - SAP User ID and Credentials
  - SAP User Privileges to access/read from IDoc Repository
  - SAP RFC Destination configured
  - SAP Message Server or Application Server identified
  - SAP Services for etc/services
  - Unicode enabled/disabled

# SAP Virtualization Best Practices

- Get SAP Communication Configuration settings in advance to create the SAP JCo configuration files in advance
  - Validate the settings with the SAP administrator or on the target SAP system
- Get SAP IDoc RR pairs in XML format in advance
  - Test creation of virtual SAP service with connection to inhouse SAP test system
  - Determine the Xpath expressions
- Two Appointments
  - Communication Configuration Setup and Validation
  - Use Case Execution
- SAP Administrator support/attendance required
- SAP Application SME support/attendance required

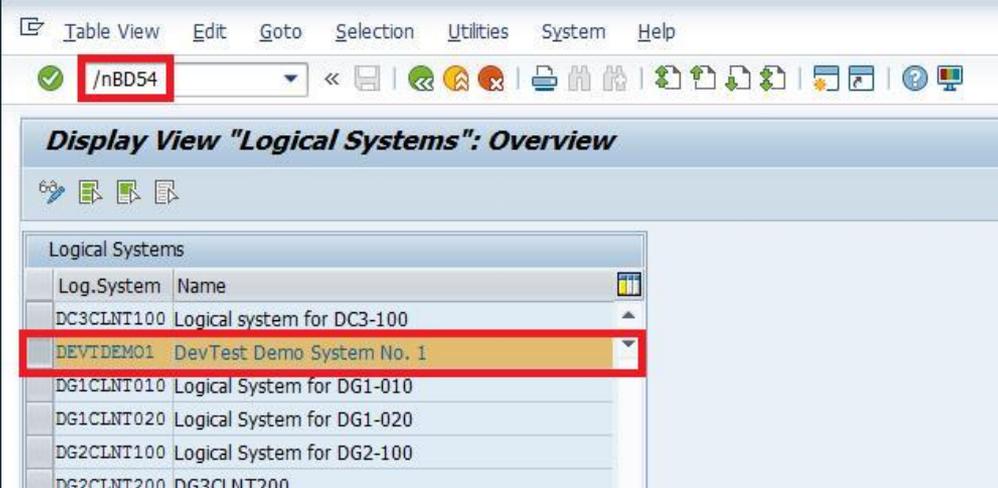


SAP Transaction  
Codes and  
Troubleshooting

# SAP Transaction Codes

## BD54 – List Logical Systems

- DevTest System must be listed in SAP as a logical system (LS)



The screenshot shows the SAP interface for transaction code BD54. The title bar reads "Display View 'Logical Systems': Overview". Below the title bar is a table of logical systems. The entry "DEVTEMO1 DevTest Demo System No. 1" is highlighted with a red box. The table has two columns: "Log.System" and "Name".

Log.System	Name
DC3CLNT100	Logical system for DC3-100
DEVTEMO1	DevTest Demo System No. 1
DG1CLNT010	Logical System for DG1-010
DG1CLNT020	Logical System for DG1-020
DG2CLNT100	Logical System for DG2-100
DG2CLNT200	DG3CLNT200

# SAP Transaction Codes

## WE20 – Partner Profile

- DevTest must have a partner profile in SAP for configuration of outbound IDoc requests and inbound IDoc responses

The screenshot displays the SAP WE20 'Partner profiles' transaction. The main window title is 'Partners Edit Goto Utilities System Help'. The search field contains '/nWE20'. The left pane shows a tree view of partner profiles, with 'DEVTDEMO1' highlighted. The right pane shows the configuration for 'DEVTDEMO1'.

**Partner Data:**

Partner No.	DEVTDEMO1	DevTest Demo System No. 1
Partn. Type	LS	Logical system

**Post processing: permitted agent**

Ty.	US	User
Agent	R3ALEREMOTE	R3ALEREMOTE
Lang.	EN	English

**Outbound parmters.**

Partner Role	Message Type	Message va...	MessageFu...	Test
	CCLONE			<input type="checkbox"/>
	HRMD_ABA			<input type="checkbox"/>
	SYNCH			<input type="checkbox"/>
	USERCLONE			<input type="checkbox"/>

**Inbound parmters.**

Partner Role	Message Type	Message va...	MessageFu...	Test
	BBP1V			<input type="checkbox"/>
	MBGMCR			<input type="checkbox"/>
	ZACK_IDOC			<input type="checkbox"/>

# SAP Transaction Codes

## WE20 – Partner Profile: Immediate Transfer

- Double click on the **Outbound Message Type**
- Verify IDocs are submitted immediately, i.e. ‘Transfer IDoc immed.’ is selected.

The screenshot displays the SAP WE20 transaction interface for configuring an Outbound Message Type. The window title is 'Outbound parameters' and the header is 'Partner profiles: Outbound parameters'. The main area is divided into several sections:

- Partner Information:** Partner No. (DEVIDEM01), Partn. Type (IS), and Partner Role.
- Message Information:** Message Type (HRMD\_ABA), Message code, and Message function.
- Outbound Options (Active Tab):** Receiver port (DEVTEST1), Pack. Size (1), Queue Processing (unchecked), and Output Mode (Transfer IDoc Immed. selected, Collect IDocs unselected). The 'Output Mode' section is highlighted with a red box.
- IDoc Type:** Basic type (HRMD\_ABA04), Extension, View, and processing options like 'Cancel Processing After Syntax Error' (checked).

# SAP Transaction Codes

## SM59 – Configuration of RFC Connections

- RFC Destination for DevTest must be configured transaction code SM59
- Often the RFC Destination name is identical to the SAP Logical System (LS) name.
- The 'Registered Server Program' name used in JCo (jco.server.p

CR2 RFC Destination.properties

Key	Value
jco.server.progid	DEVTDEMO1
jco.server.gwhost	lod1809.ca.com
jco.server.gwserv	sapgw00
jco.server.connection_count	1
jco.server.unicode	1
jco.server.trace	1
jco.server.repository_destination	CR2

The screenshot shows the SAP SM59 transaction interface. The top menu bar includes 'RFC', 'Edit', 'Goto', 'Extras', 'Utilities', 'System', and 'Help'. The main window title is 'Configuration of RFC Connections'. The left sidebar shows a tree view of 'RFC Connections' with folders for 'ABAP Connections', 'HTTP Connections to External...', 'HTTP Connections to ABAP Sys...', 'Internal Connections', 'Logical Connections', and 'TCP/IP connections'. The 'TCP/IP connections' folder is expanded, showing sub-items like 'CALLTP\_AIX', 'CALLTP\_Linux', 'CCMS\_SYSTEM\_PING\_DEST', 'DESTITKO', and 'DEVTDEMO1'. The main area displays the configuration for 'RFC Destination DEVTDEMO1'. The 'Connection Type' is 'TCP/IP Connection'. The 'Description' field contains 'DevTest Demo Server #1'. The 'Activation Type' is set to 'Registered Server Program'. The 'Registered Server Program' field is highlighted with a red box and contains the value 'DEVTDEMO1'. Below this, the 'Start Type of External Program' options are visible, including 'Default: Gateway Value', 'Remote Execution', 'Remote Shell', and 'Secure Shell'. A red arrow points from the 'Registered Server Program' field to the 'Properties Editor' table in the foreground.

# SAP Transaction Codes

## SM59 – Connection Tests

- Tests require virtual SAP service or VSE recorder for SAP IDoc recording is started successfully
- If Unicode is required in 'jco.server' settings, Unicode must also be defined in RFC Destination configuration.

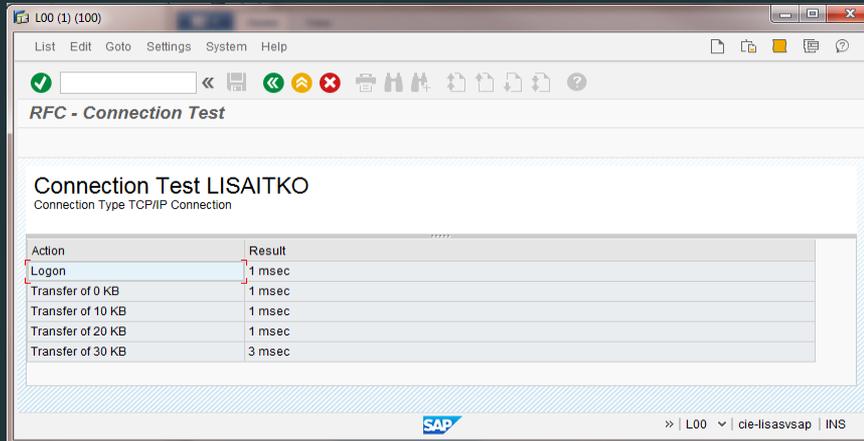
The screenshot displays the SAP SM59 transaction for configuring an RFC Destination. The destination is named 'DEVTDEMO1' and is of type 'TCP/IP Connection'. The 'Unicode' checkbox is selected under the 'Communication Type with Target System' section. The 'Registered Server Program' is set to 'DEVTDEMO1'. A 'Properties Editor' window is open, showing the following configuration:

Key	Value
jco.server.progid	DEVTDEMO1
jco.server.gwhost	lod1809.ca.com
jco.server.gwserv	sapgw00
jco.server.connection_count	1
jco.server.unicode	1
jco.server.trace	1
jco.server.repository_destination	CR2

# SAP Transaction Codes

## SM59 – Connection Test Outcomes

- Successful

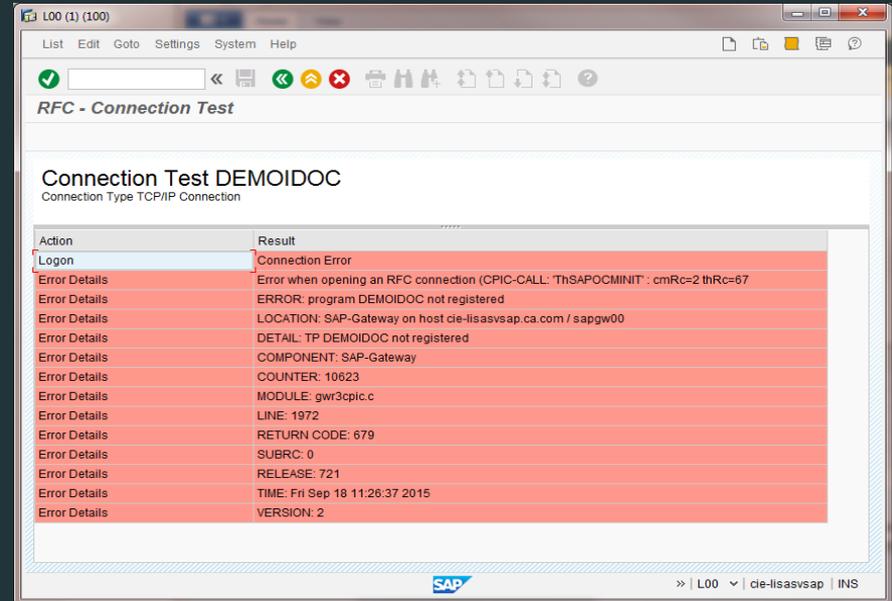


The screenshot shows the SAP SM59 interface for a successful connection test. The title is "Connection Test LISAITKO" with a sub-header "Connection Type TCP/IP Connection". A table below shows the results of various actions:

Action	Result
Logon	1 msec
Transfer of 0 KB	1 msec
Transfer of 10 KB	1 msec
Transfer of 20 KB	1 msec
Transfer of 30 KB	3 msec

The interface includes a menu bar (List, Edit, Goto, Settings, System, Help), a toolbar with navigation icons, and a status bar at the bottom showing "» | L00 | cie-lisasvsap | INS".

- Failed



The screenshot shows the SAP SM59 interface for a failed connection test. The title is "Connection Test DEMOIDOC" with a sub-header "Connection Type TCP/IP Connection". The results table shows a "Connection Error" and detailed error information:

Action	Result
Logon	Connection Error
Error Details	Error when opening an RFC connection (CPIC-CALL: 'ThSAPOCMINIT' : cmRc=2 thRc=67
Error Details	ERROR: program DEMOIDOC not registered
Error Details	LOCATION: SAP-Gateway on host cie-lisasvsap.ca.com / sapgw00
Error Details	DETAIL: TP DEMOIDOC not registered
Error Details	COMPONENT: SAP-Gateway
Error Details	COUNTER: 10623
Error Details	MODULE: gwr3cpic.c
Error Details	LINE: 1972
Error Details	RETURN CODE: 679
Error Details	SUBRC: 0
Error Details	RELEASE: 721
Error Details	TIME: Fri Sep 18 11:26:37 2015
Error Details	VERSION: 2

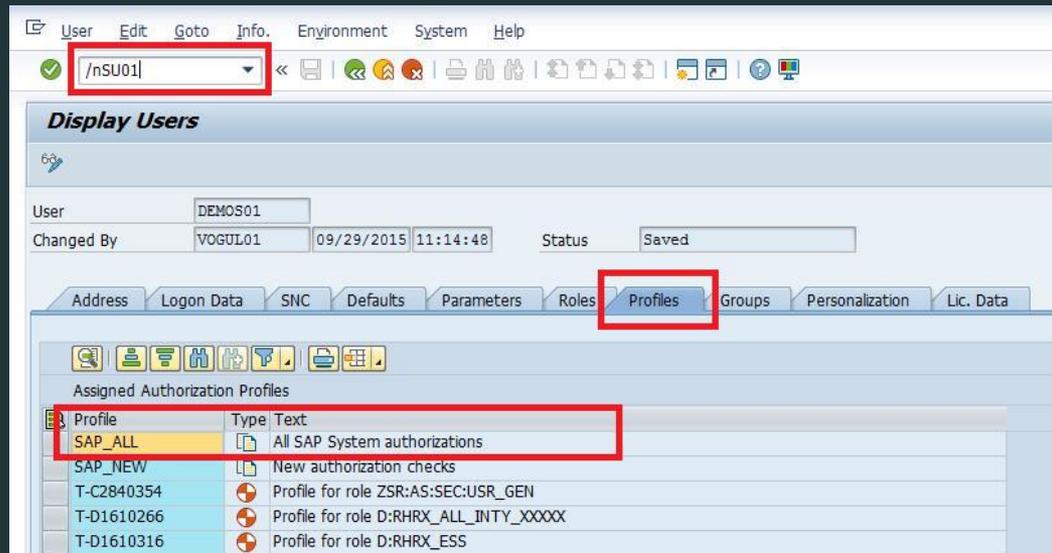
The interface includes a menu bar (List, Edit, Goto, Settings, System, Help), a toolbar with navigation icons, and a status bar at the bottom showing "» | L00 | cie-lisasvsap | INS".



# SAP Transaction Codes

## SU01 – Display Users

- SAP user ID must have access to IDoc Meta data repository. In our SAP test environments the user ID has SAP privilege 'SAP\_ALL'



The screenshot shows the SAP SU01 'Display Users' transaction. The user ID is DEMOS01. The 'Profiles' tab is selected, showing a list of assigned authorization profiles. The 'SAP\_ALL' profile is highlighted, indicating it is assigned to the user.

Profile	Type	Text
SAP_ALL		All SAP System authorizations
SAP_NEW		New authorization checks
T-C2840354		Profile for role ZSR:AS:SEC:USR_GEN
T-D1610266		Profile for role D:RHRX_ALL_INTY_XXXXX
T-D1610316		Profile for role D:RHRX_ESS

# Troubleshooting DevTest/SAP Connectivity issues I

- Symptom: Workstation or VSE cannot connect to SAP system although connection settings are correct
- Cause: SAP JCo resources bound to an even failed connection to the SAP system are not released correctly and are considered still in use
- Workaround: Bounce Workstation or VSE that was connected or attempted to connect to SAP system, even with erroneous connection settings. Shutdown virtual SAP service first

# Troubleshooting DevTest/SAP Connectivity issues II

- Symptom: VSE or Workstation cannot connect to SAP system.

Log file shows error

```
com.itko.lisa.test.TestNo  
com.sap.conn.jco.JCoExcept  
not exist java.lang.Runtim  
JCO_ERROR_RESOURCE: Desti
```

- Cause: jco.server.ref to an existing client or Server System Name

- Fix: Rename (Client virtual SAP service or VSE Recorder settings. Bounce VSE or Workstation.

Virtual Service Image Recorder

Please provide us with the client and server connection information

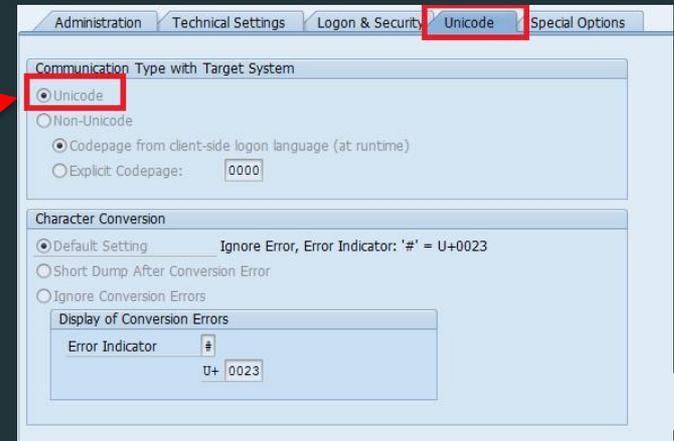
Client RFC Connection Properties:	Data/CR2_RFC_Destination.properties
Client RFC Destination Name:	IDOC_CR2
Client System Connection Properties:	Data/CR2_System.properties
Client System Name:	CR2
Request Identifier XPath Expressions:	/HRMD_ABA04/IDOC/E1PLOGI/E1PITYP[7]/E1P0105/USRID/text()
Server RFC Connection Properties:	Data/CS2_RFC_Destination.properties
Server RFC Destination Name:	IDOC_CS2
Server System Connection Properties:	Data/CS2_System.properties
Server System Name:	CS2
Response Identifier XPath Expressions:	/ZACK_IDOC01/IDOC/ZACK_IDOC_SEG/USRID/text()

# Troubleshooting DevTest/SAP Connectivity issues III

- Symptom: SAP System sends IDoc, but Workstation or VSE does not receive IDoc. Log file shows error

```
2016-11-30 08:44:34,821Z (09:44) [JCoServerThread-2] ERROR com.ca.sv.protocol.jcoidoc.connector.JcoldocConnector -  
Server Error Occurred for connection 1-lod1809.ca.com|sapgw00|DEVTDEMO1  
com.sap.conn.idoc.IDocMetaDataUnavailableException: (3) IDOC_ERROR_METADATA_UNAVAILABLE: The metadata for the  
IDoc type "          踔刀鸫骑开袂箭袂          † †" with extension " HRMSAPCRL CR2CL          " is unavailable.
```

- Cause: SAP RFC Destination is not configured for Unicode
- Fix: Adjust SAP RFC Destination configuration. Restart VS



# Summary

- DevTest Concept for SAP Service Virtualization
- SAP JCo Configuration for DevTest
- SAP BOM for DevTest and SAP Configuration Checklist
- Best Practices for virtualizing SAP Services
- Important SAP Transaction Codes to Validate SAP Configuration and to test IDoc transfer to DevTest
- Troubleshooting hints



Questions?



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