

# basis Testimony -**Administrators** Guide

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**Basis Technologies** 

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### 1. Introduction

Welcome to the Testimony Administrators Guide, a detailed overview of the product and processes to enable your organization to record and playback a successful automated regression test. The Administrator role within Testimony allows the user to configure and execute all functions of the tool. Because of this, the role is typically only given to a few select team members.

In addition to this document, you'll also find the <u>Quick Start Guide</u> which is a high level overview of the key functions and the <u>Testers' Guide</u> which details the defect management aspect of Testimony

Support is also available from Basis Technologies if required via the contact details outlined at the end of this guide.

### 2. Product Overview

Testimony is a one of a kind, digital regression test generation and execution product developed by Basis Technologies.

It is installed on and operates within the SAP ABAP stack and is particularly used to reduce the duration and cost of regression testing SAP systems.

It does this by eliminating effort in:

- · Regression test coverage analysis and planning
- Regression test script development
- Regression test execution (including initial defect analysis)
- Test user maintenance
- Test data creation

It uniquely generates regression test scripts that reflect how your business teams really use their SAP applications on a day to day, month on month, and year on year basis.

This product comes to the fore when managing the following risk scenarios, when you cannot afford to break the as-is production service:

- SAP Upgrades and Support Packs
- SAP Cloud re-platforming
- System migrations
- · Kernel upgrades
- Application of ongoing SAP security patches
- Regular production support and maintenance
- · Project releases

### 2.1. Testimony Process



### 2.2. Technical Overview

The following steps provide an overview at a more technical level of how the Testimony product operates.

#### **Installation Process**

Testimony is installed as a third-party add-on solution to a central ABAP system (typically your SAP Solution Manager system). Transports are provided, which include code and enhancements that must be installed on the recording (Source) systems and the playback (Target) systems. Please see the link <u>here</u> to the installation guide.

#### **Test Plan Configuration**

All Testimony processes are executed within the organization of a "Test Plan". These represent the regression test cycle(s) that are currently being performed for the necessary scenario (e.g. HANA DB migration, AWS re-platforming, technical upgrade etc). Within the central Testimony system, you must configure a test plan and provide some basic information relating to it (e.g. which the system(s) involved for recording and playback, which users are involved from a testing perspective). RFC destinations must be setup to allow Testimony to trigger both the recording and playback processes.

#### **Recording Setup**

A setup activity is then run to prepare the system to be recorded. After this point, the system is ready to enable you to activate the "recording" function in Testimony. Please note that until you perform this activation, there is zero impact on production service.

#### **Recording Activation**

When you are ready to perform a regression test cycle, the Testimony Administrator is able to activate the recording process – which can be either started immediately, or scheduled for a specific time and duration. This will record all technical operations upon the SAP source system including activities such as SAP GUI dialog transactions and RFC / BAPI calls. Immediately after activating the recording, a backup of the source (SAP production) system should be taken. This will be used as the basis for the creation of the playback system. It is typically envisaged that a period of approximately 24 hours of operational activity would be recorded. At the end of the 24 hour recording period, the Testimony Administrator deactivates the recording process. Due to the unique manner in which Testimony operates, the impact on the production system is near zero (in terms of response times and system performance).

#### **Coverage Analysis**

The recording process has in effect automatically generated an entire test script library covering percentage of the customers actual SAP system usage. After the recording process is finished, the testing team can understand the level of coverage they have with the recording based upon the usage information of what the customer actually uses over the past M months (where M is typically 3 months). If key transactions are missing (e.g. month end processes) then the coverage analysis within Testimony can provide this information. In this case, you can either test these processes outside of Testimony or look to include the periods when these processes run in your next Testimony recording.

#### **Playback Process**

Once the recording and coverage process are run, then it is possible to execute the playback process. The playback (target) system that was built from the production database backup must now be started. The Testimony playback agent must be setup on the target system and "bots" run upon supporting infrastructure including Windows based machines. The bots simulate the actions of users as well as other external systems during the playback. Changes that are being made must be deployed to the target system (e.g. upgrade process, project release transports deployed, database migrated). Once the landscape is ready, the playback process can begin. This is simply a process of starting the "execution queue" and allowing it to execute (technically). If issues arise, notifications can be sent to appropriate test team members. The queue can be restarted if problems are detected.

#### **Results Review**

After the playback process has completed, the test team can review the results. They are specifically looking for issues that have arisen during the playback where the "expected output" differs from the "actual output". Any discrepancies identified can be automatically generated as defects. The testing and development team can review these defects (once created) and provide a resolution. Once the bulk of defects are resolved, a new test cycle can be created and the system copy image restored. The playback process can be repeated to ensure that defects identified have been correctly resolved.

### **3. Administrators Guide**

The quick start guide is to be used after installation and includes the key basic steps required to create a recording and a playback. Please check the installation guide <u>here</u> if that process is not complete. It details the process steps required to allow you to use Testimony for a Regression test cycle. It assumes a reasonable level of knowledge of the Testimony architecture, as well as some knowledge of SAP systems architecture and SAP Basis.

Each section in the Quick Start Guide covers a separate step of the overall process. The steps should be followed in the order in which they are described.

#### <u>Test Plan and System Connections</u>

A test plan must first be created and configured prior to any recordings being performed or playbacks.

#### • <u>Performing a Recording</u> This is the process for activating and monitoring the recording on the source systems.

#### <u>Review Recordings/Send to Repository</u>

Once recording is complete, you should review the recordings that have been captured and move them to the Testimony script repository.

#### • Performing a Playback

This is the process to prepare for, execute and monitor the playback of recorded activities on the target systems.

#### • Review Playback Results

The end result of the process which highlights discrepancies between what was recorded from the live system and what potential issues have been identified in the test system that is played back into.

### 3.1. Security

The following sections describe the various security considerations within Testimony.

<u>Overview</u>

Provides an overview of the various security concepts.

• SAP Roles

Details setup of standard SAP roles provided with Testimony for core user setup.

• Testimony User Roles

Details the internal role concept within Testimony for users operating the product.

<u>Action Management</u>

Describes the configuration screens available for customizing security of actions and users.

• UI Profiles

Describes how to modify which menu items and functions are viewable to Testimony users.

• Securing Recordings and Results

Details the manner in which recordings of live systems and associated playbacks can be locked down.

### 3.1.1. Overview

Security for Testimony has four basic layers: SAP Roles, Testimony User Roles, Action Management, and UI Profiles. This document will discuss how security is assigned and controlled for the Testimony application.

Administrators are automatically granted full access to all functionality within the Testimony application. SAP-level access for all users and Testimony-level access for non-administrator users access are further discussed within this document.

### 3.1.2. SAP Roles

Testimony is delivered with the following SAP authorization roles:

Role Name	Description		
/BTI/AUT_BATCH_ADMIN	Background Processing Administrator Role for the Default Batch User during playback		
/BTI/AUT_BOT_RFC	Authorizations for the remote bot RFC user		
/BTI/AUT_BOT_SIMULATION	Authorizations for the BOT Simulation report		
/BTI/ AUT_CENTRAL_ADMINISTRATOR	Testimony Central System Administrator role		
/BTI/AUT_CTS_ADMIN	Testimony transport admin role for root cause analysis		
/BTI/AUT_INBOUND_RFC	Authorizations for Inbound RFC users within the target system during playback		
/BTI/ AUT_NCO_METADATA_ACCESS	Role to access NCo metadata		
/BTI/AUT_SOURCE_RFC	RFC authorizations for the source system RFC user for recording		
/BTI/AUT_TARGET_RFC	RFC authorizations for the target system RFC user for playback		

Customer security policy may require a custom role be created for assignment to users within SAP. If so, these custom roles must contain all of the included authorization objects and values of the delivered roles or Testimony may not operate as expected.

It is recommended to regenerate these roles when they are imported into the system for the first time

Testimony users will also need to be granted access to transaction code /BTI/AUT to access Testimony on the Central system. This is done through the standard SAP security processes and is not covered in this document.

All other access to Testimony application functions and tools is handled within the Testimony application as detailed in this Administrators Guide in the following sections:

Testimony User Roles Action Management <u>UI Profiles</u>

### **3.1.3. Testimony User Roles**

Note the user roles are assigned and maintained in Testimony rather than with standard SAP Roles, however, users will require the transaction /BTI/AUT in their standard SAP authorisations to access Testimony.

Within Testimony, users are considered to be **administrators** or **non-administrators**.

Administrators have full access to all Testimony functions whereas non-administrators only have access to certain functions.

Authorisation for Testimony users requires one of the following Testimony roles to be assigned:

Role Name	Description			
Testimony Administrator	This is a Global role that contains all authorizations to execute and run all steps in Testime and should be assigned to all Admin users.			
Test Plan Administrator	This role contains all authorizations at the Test Plan level to execute and run all steps for the test plan in Testimony and should be assigned to all Test Plan Admins.			
Test Manager	This role contains all authorizations required to execute and run test management all steps in Testimony and should be assigned to all Test Managers.			
Tester	This role contains all authorizations required for test execution steps in Testimony and should be assigned to all Testers.			

The non-administrator roles must be assigned at the Test Plan level. For details on how to assign users to each plan, see <u>Authorizations</u> in the Test Plan section of this guide.

The actions inlcuded in Testimony roles can be adjusted via the <u>Action Manager</u>. Check that section for details.

Administrator users are assigned in Testimony by navigating to **Configuration>User Roles**, clicking the

button and then the 'Assign User' button. Then add a new global administrator to the list and save.

🔄 UI Profiles S <u>v</u> stem <u>H</u> elp					
<ul> <li></li></ul>	<b>***</b>	, , , , , , , , , , , , , , , , , , ,	2 %		
Testimony					
2					
CONTEXT	User roles				
		× 🖪 💼 💵			
S Plan					
Recording and Playback Test #3	User roles				
	Type Role description	1	Role name	Role type	
	Testimony ad total and a data	ministrator	/BTI/AUT_TESTIMONY_ADMIN	Global role	
	Test manage	🔄 User assignment f	or global role /BTI/AUT_TESTIMONY_4	ADMIN	×
	A Tester				
	Le Functional Le	😏   📬 🖌   📇 Ass	ign user 🔁 Remove user		
> Configuration		List of assign	ed users		
Configuration		User	Name		
		ABEKKAT	Amine Bekkat		^
		💄 AGUHARAJA	Anirban Guharaja		~
I Test Plans		SGREEN	BGREEN		
In Number Ranges		BGUYNAN	Bill GUYNAN		
D General Parameters		CMOWL	CMOWL		
Share Memory Limits			Craig Oliver		
Action Manager	E .		Dominik KROPP		
Les User Roles	2		DIFE		
Notification Setup		ERANK	ERANK		
		E GFARKAS	Gabor Farkas		
A Defect assignment		Lo GNGUYEN	GNGUYEN		
V Filter Sets		🚨 JALBU	Jacob Albu		
Business Coverage		Lo JANGELL	John ANGELL		
🤄 Linkage Validation		Lo JDIAS	JDIAS		
			James Roberts		
			JSTEPHENS Kevin Calladhan		
Recording			KEN DYER		
Repository			Liz Heald		
		LLEGRAND	Loïc Legrand		
当 Execution		Lo MALLWOOD	MALLWOOD		
🞼 Results			Mike Gambier-Taylor		^
Reporting		A MKOMENDO	MKOMENDO		~
I Utilities					8
			SAP		

The Admin user being assigned here must already exist in the Central system and should be assigned SAP role /BTI/AUT\_CENTRAL\_ADMINISTRATOR through the standard SAP security process.

## 3.1.4. Action Management

Access for each role to the individual actions/activities within Testimony are assigned within the Action Manager. In **Configuration>Action Manager** you can see all authorizations within Testimony, information about each action, and assign them to the appropriate roles by clicking in the icon in the "Aut" column.

Testimony							
2							
CONTEXT	Action Management						
g5 Plan E1P 20200424 ✓ ✔ 🗋	Action Managemer	nt: 152 actions co	nfigured				
	Type Primary object	Action code	Action text	Aut	Risk	Rsk	Group
	😔 Base grid controller	GRID_REFRESH	Grid Refresh	-ĭ	High	1	RFRSH
	G Tree grid controller	REFRESH_TREE	Tree Refresh	¥Î	High	1	RFRSH
	Additional system	BOTREMOTERESTART	Restart Bot	9	High	1	NEW
	🛃 🥕 Additional system	BOTREMOTETERMINA	Terminate Bot	1	ligh	1	NEW
🖍 Overview	Additional system	CHANGEDRONE	Change Bot		ligh	1	NEW
× Configuration	Additional system	CONNSTATUSRESET	Reset Connection Status	21	High		NEW
·	Additional system	CREATEDRONE	Create Bot Definition	2	High	1	NEW
Configuration	Additional system	DELETEDRONE	Delete Bot Definition	2	High	1	NEW
Link Type	Additional system	DELETESYSTEM	Delete System	21	High		NEW
	Additional system	DISPLAYDRONE	Display Bot Definition	21	High		NEW
Number Ranges	Additional system	PINGDRONE	Ping Bot	1	High		NEW
General Parameters	Additional system	REMOTEDRONEDESKT	Remote Desktop to Bot	21	High		NEW
Share Memory Limits	Additional system	SAPGATEWAY	Show SAP Gateway (SMGW)	21	High		NEW
Shared Memory Explorer	Additional system	SHOWBOTRESOURCEL	Show Bot Resource Info	1	High		NEW
Section Manager	Additional system	SHOWBOTSAPGUIPAR	Show Bot SAP GUI Parameters	2	High		NEW
Ilser Koles	🔑 🥕 Additional system	SHOWBOTSCREENSHOT	Show Bot Screenshot	21	High		NEW
Notification Setup	🛃 🥕 Additional system	SHOWBOTSTATS	Show Bot Statistics	1	High		NEW
T Text Management	Additional system	SHOWDRONELOGFILE	Show Bot Log File	1	High		NEW
	Additional system	SHOW_BOTLOG	Show Bot Log	1	High		NEW
/ Defect assignment	Additional system	SHOW_SCREENSHOT	Show Screenshot	1	High		NEW
Additional Configuration	✓ Base UI object	GUIOBJSHOWCLSNM	Show class name	1	Low	i	EXP
Tiltor Sots	No UI obj config>	DISPLAYASFILE	Display App Server File	1	High		NEW
r mer see	No UI obj config>	DISPLAYLINKAGE	Display Linkage	1	High		NEW
	No UI obj config>	DISPLAYLNKRELBT	Display Related BT	1	High		NEW
	Business transaction	CHANGEBUSTRAN	Change business transaction	1	Low	i	CHNG
	Business transaction	CREATEBUSTRAN	Create Business Transactions	2	Low	i	CHNG
	Business transaction	DELETEALLBUSTRAN	Delete All Business Transactions	1	Low	i	DEL
	Business transaction	DELETEBUSTRAN	Delete business transaction	1	Low	i	DEL

Within each of these Action Management Objects, Testimony Administrators can restrict role assignment to the list of user roles and which user roles can execute those Action Management Objects with the select indicator set to active or inactive as below:

Testimony									
2									
CONTEXT		Information							
Plan     Recording and Playback Test #3	<b>v</b> D	Actions are configured see all actions configu Action Management	in Testimony allowing UI related red in Tesitmony against each prin	functions to be controlled. hary object and the configu	Within here you can ration for each.				_
A Overview		🚱 📲 .							
Configuration		Action Managemen	nt: 78 actions config	ured		_			
Link Time		Icn Primary object	Action code	Action text	AL	t Risk	Rsk Group		
Tost Plans		Test plan	CREATETESTPLAN	Create test plan	×	.ow	i CHNG		^
Number Ranges		60 Test plan	DISPLAYTESTPLAN	Display Test Plan	×	ow	i CHNG		~
General Parameters	E Role	assignment	STARTPTT INP					×	
Shared Memory Limits									
Report Builder	List	of user roles							
Action Manager	昆	Role description	Role name		Role type		Sel.		
Liser Roles	<b>.</b>	Test plan administrator	/BTI/AUT_ADMIN		Test plan role		Image: A start of the start		
Notification Setup	22	Tester	/BTI/AUT_TESTER		Test plan role				
<u>Text Management</u>	1	Test manager	/BTI/AUT_TEST_M	ANAGER	Test plan role				
🗄 Recording									
Repository									
Execution									<u>^</u> .
Results									v.)
									< >
									1 🖬 🖌

### 3.1.5. UI Profiles

The UI Profile assigned to a user determines what menu items and functions that users will see within the Testimony tool. The Testimony Admin by default will see the Administrator profile but can choose which UI Profile to view. All other users are either assigned one by default or manually by an administrator.

A Testimony Admin will see the UI Profile menu item and can change their assigne UI Profile at any time.

C	<u>U</u> I Profiles S	<u>zstem H</u> elp	
	<u>T</u> est Engine T <u>e</u> st Manag	er 🔤 🔍 🔚 🕜 📀 😒 👘 1	HK 6669 🛒
	<u>A</u> dministrato	r	
	<u>F</u> unctional L	ead	
	<u>D</u> eveloper		
	Default ( <u>O</u> ld	) User roles	
	B Plan Production Ramp-	up Level 8d 🗸 🖌 🗋 User ro	al 🙉 🖍 🗋 💼 l 👪 bles
1		Type Role	description Ro
		💄 Test	timony administrator /B
		🛔 Test	t plan administrator /B
		Test	t manager /B
	🟅 Overview	La Test	ter /B
3	Configuration		
C	Configuratio	n	
	Link Type		
	Iest Plans		
1	23 Number Kan	motors	
	Share Memo	ry Limits	
3	Shared Mem	ory Explorer	
	Action Mana	der .	

The UI Profiles can be found in the Configuration menu under User Interface Profiles

	Notification Setup			
CONTEXT				
ुङ्घ Plan	🖸 🖻 🖌			
Production Ramp-up Level 8d 🔽 🖌 🗋	User Interface Profiles			
	Type Profile name	Туре Туре	Sts Status	Dfl Assigned Users
	🔁 Test Engineer	Standard	Active	No users assigned
	🔄 Test Manager	Standard	Active	No users assigned
	🔁 Administrator	Standard	Active	1 users assigned
A Overview	🔄 Functional Lead	Standard	Active	No users assigned
1 Oce Revention	🖻 Developer	Standard	<ul> <li>Inactive</li> </ul>	No users assigned
> Configuration	🖻 Default (Old Testimony)	🗊 Standard	Active	No users assigned
Configuration				
configuration				
Link Type				
I Iest Plans				
123 <u>Number Ranges</u>				
General Parameters				
Share Memory Limits				
Shared Memory Explorer				
Action Manager				
Let Roles	E			
Notification Setup				
TI Text Management				
User Interface Profiles				
<u> <u> </u></u>				

From here the Administrator can assign users to the appropriate UI Profile by clicking on the "Assigned Users" field.

The UI Profile that is assigned to new users by default can be set or changed in **Configuration>General Parameters**, and the numeric value updated to the UI Profile ID desired, which can be found in the UI Profile details.

	🔊 Drone agent	DRONE XMI	Bot configuration filename			
A Overview	A Drone agent		Bot user			
2 Configuration	Ag Dione agent	DRONE_03ER	but user	<u> </u>	-	_
y* comgaration	Drone agent	DRONE_SCREENSHOT	Bot screenshot strategy	i	J	J
Configuration	Marco Brone agent	DRONE_PASSWORD	Bot password in configuration file	i		
coninguration	🔒 File monitoring	OS_COMMAND	OS command to copy files	i	YAUT_COPY_FILE	YAUT_COPY_FILE
Link Type	🔒 File monitoring	APPSERVER_FILES_PATH	Logical file path for app server files	i	/BTI/AUT_APPSERVER_FILES	/BTI/AUT_APPSERVE
Test Plans	🚊 File monitorina	FILE MONITORING	Default mode for file monitoring	7	I	I
123 Number Ranges	Instrumentation	UI_PROFILE_DEFAULT	Default UI profile	i	100004	100004
<u>General Parameters</u>	Instrumentation	ENABLE_PREVIEW	Enable preview functionality	i		
<u>         Share Memory Limits         </u>	Instrumentation	CHK_STP_RFC_VALIDATE	Validate RFC destinations	i		
Shared Memory Explorer	Job management	ORCH_WAIT_LIMIT	Wait time between each iteration (sec.)	<i>i</i>	2	2
Action Manager	: Job management	DATA_TRANS_MASS_SIZE	Data transfer mass proc. package size	<i>i</i>	000001000	000001000
Liser Roles	Job management	DATA_TRANS_MASS_BUFF	Data transfer via mass processing buffer	i	000000001	000000001
Notification Setup	Job management	DATA_TRANS_MASS	Data transfer via mass processing	i	x	X
T Text Management	Playback	PLAYBACK_THRSHLD_RED	Playback mon. comp. threshold (red)	i	60	60
User Interface Profiles	Playback	PLAYBACK_THRSHLD_AMB	Playback mon. comp. threshold (amber)	i	30	30
4 Defect assignment	Playback	PLAYBACK_TRACE	Playback process and timing logging	i		
Additional Configuration	Playback	PLAYBACK_WAIT_STRTUP	Force worker jobs to wait on startup	i		
Filter Sets	Playback	REM_TIME_METHOD	Time remaining estimation method	i	02	02
	Playback	RFC_IN_COMPARE_OLD	Use old comparison algorithm for RFC	i		
	Playback	PLAYBACK_PARAM_AREA	Playback parameter area	i	64000	64000
	Playback	RFC METADATA USER	RFC metadata user (target system)	1	BTI MTD RFC	/BTI/AUT RFM

### **3.1.6. Securing Recordings and Results**

It is also possible to secure access to potentailly sensitive information by enforcing an authority check for the Testimony user attemtping to view test results. This can be achieved in the <u>General parameters</u> section for the object "Authority check for data display". If this is enabled, or set to "X", then Testimony will perform an authority check for the current user to validate authorization in the Source or Target system, depending on whether they're looking at recordings or results.

The items affected by this authorization check are:

- Recording steps (business transactions)
- Recording inputs
- Recording outputs
- Playback steps
- Playback inputs
- Playback expected outputs
- Playback actual outputs
- Playback screen-shots

If the flag is set, an authority check against either the Source or Target system against the current user record. If the user has the appropriate access in the associated system then access is granted to perform the action. Otherwise access to the information is denied. This configuration setting is global and applies to all Test Plans if enabled.

### 3.1.7. Authorisations

Testimony comes with three internal roles:

- /BTI/AUT\_ADMIN: The test plan administrator
- /BTI/AUT\_TEST\_MANAGER: The test manager
- /BTI/AUT\_TESTER: A tester role

Each test plan must have at least one administrator and by default the user who creates a test plan is automatically assigned to the test plan administrator role.

As an optional step, you can add users into your test plan that belong to one or more "**User Roles**". A role represents a set of actions that users in that role are allowed to perform (e.g. activate a recording or view scripts). In this screen, you can control which users belong to which roles for the current test plan. To assign a user a role on a plan, right mouse click on the role and then search for the user and select them. Once you save the plan, the user is assigned to the role.

Test plan ID 001006	🔚 Save 🔇 Cancel
Header     E     Systems     Systems mapping     Authorisations	Parameters
Authorisation hierarchy Name	<b>Vser filters</b>
✓ Koles     ✓ Koles	First name
Assign new user to the role	User Name

### 3.1.8. Authorisation Details & User Mappings

Note that non-admin users will still require access to the transaction /N/BTI/AUT with specific access to activities then maintained in Testimony, users investigating defects in playback systems will require the correct authorisations to investigate the issues found.

### **Authorization/Role Notes**

User	Role/Authorizations	Notes
Testimony Administrator	/BTI/ AUT_CENTRAL_ADMINISTRATOR, /BTR/DIF:EXPERT, /BTI/ AUT_SOURCE_RFC	The Testimony Administrator(s) will be the technical solution leads for Testimony. Typically this is the Basis admins that will be starting, stopping, and monitoring the recordings.
BOT user in Central	/BTI/AUT_BOT_RFC	The BOT user is used for the BOT machines to establish an RFC connection to the Central system in order to receive script instructions for playback. It is typically named BTI_BOT
RFC user in Source	/BTI/AUT_SOURCE_RFC	The RFC source user is defined in the Source system and entered into an RFC connection defined in the Central system to connect to the Source for recordings. It is typically named BTI_SOURCE_SID
Batch User		
RFC user in Target	/BTI/AUT_TARGET_RFC /BTI/AUT_BOT_SIMULATION	The RFC target user is defined in the Target system and entered into an RFC connection defined in the Central system to connect to the Target for playback. It is typically named BTI_TARGET_SID. The user defined in the Target system requiring auths for creating Users, assigning Roles to Users and Deleting Users, which is required during the BOT Simulation
RFC Metadata User	/BTI/ AUT_NCO_METADATA_ACCESS	
Transactions Needed to Monitor Source	ST22, ST02, SM66 as a minimum	These transactions are used to monitor the Source system during recordings, which is typically performed by a Basis team member
Transactions Needed to Monitor	ST22, ST02, SM66, SM51, SM50, SE16 as a minimum	These transactions are used to monitor the Target system during playback activities, which is typically performed by a Basis team member

Target

### **Authorization/Transaction Code Details**

Role	Transaction Codes	Notes
/BTI/ AUT_CENTRAL_ADMINISTRATOR	/BTI/AUT	Testimony Primary Transaction Code
	/BTR/MDR, /BTR/MDRH, /BTR/ MINICUBE	BTI Diffuser tool transaction codes
	AL08, SM04, SM50, SM51, SM66	Used to monitor active users and processes
	RZ10, RZ11	Used to view/update profile parameters
	SE01, SE09	Used for transport management, only necessary when bringing in new transports
	SE11, SE16	Used for config table maintenance
	SE24, SE37, SE38, SE80, ST22	Used for development, troubleshooting, and code corrections
	SM59	Used for setting up RFC connections
	SMGW	Used to monitor gateway connections, primarily for BOTs
	ST02	Used to monitor memory/buffer statistics
	ST03	Used for system utilization analysis
	SU01D	Used to display user details and role assignments
/BTI/AUT_BOT_RFC	RFC Objects that can be executed using this role: /BTI/*, RFC1, RFC_METADATA, SYST	These are for connecting to the Central system for the purpose of obtaining work to playback via the BOTs into the Target system.
/BTI/AUT_SOURCE_RFC	RFC Objects that can be executed using this role: /BTI/*, SBUF, SCSM, SCSM_COLLECTOR, SDTX, STUB, SUNI, SU_USER, SYST,	These are for activating and deactivating the enhancements, starting and stopping the recordings, and collecting usage data in the Source system

	THFB	
/BTI/AUT_TARGET_RFC	RFC Objects that can be executed using this role: /BTI/*, SDTX, STUB, SUNI, SU_USER, SYST	These are for activating and deactivating the enhancements to facilitate the playback of activities in the Target system
/BTR/DIF:EXPERT	/BTR/DIFFUSER, /BTR/ LICENSE, /BTR/MDR, /BTR/ MDRH, /BTR/MDRH_OLD, /BTR/MINICUBE	BTI Diffuser tool transaction codes

### **3.2. Test Plan and System Connections**

#### **Overview**

The Test Plan in Testimony is the "container" for all testing activities that take place within Testimony. Each Test Plan can be configured to represent a regression test cycle such as a Monthly Release, Project or SAP Upgrade undergoing testing. You can have as many Test Plans setup in the system as required. Typically you will create a new test plan for each recording, although you can repeat multiple playbacks within the same test plan.

Within each Test Plan, you define:

- A plan name and description, as well as some attributes about the scenario (e.g., Upgrade Testing) and whether or not the test plan is currently active.
- The systems that are participating in the testing phase. Each test plan must have at least one source system (in which the recording takes place) and one target system (into which the recording is played back). Multiple recording and playback "pairs" are also possible.
- The mapping of systems, which tells Testimony that a recording executed on System A will be played back in System B.
- The users who will be involved in the testing, and their roles.

Existing test plan definitions can be copied, bringing across all of the information (including systems, system mappings and user roles) into the new test plan. This makes the creation of multiple test plans for the same system pairings much easier.

#### **Process Steps**

- <u>Creating a Test Plan</u>
- <u>System Setup</u>
- <u>Authorisations</u>
- <u>Managing Test Plans</u>

### 3.2.1. Creating a Test Plan

#### **Access Testimony**

Once logged into the Testimony central system, enter transaction **/n/bti/aut**. This will display the Testimony main menu.



To create a new blank plan, select the create button



You will be presented with a screen where you enter a test plan name and a description, specify the scenario and mark the plan as active. Once complete click Save

dentification		
Test plan ID		Save Save Cancel
Header Systems	Systems mapping	
Description		
Test plan name	TY Regression Test Q12020	
Test plan description	2020 Q1 Release	
Configuration		
-	During Trading	
Scenario	Project Testing	

Once saved, you'll see the following status. From here, you will update the plan with the relevant system information

✓ Test plan TY Regression Test Q12020 created

### 3.2.2. System Setup

#### Select Test Plan to change

Use the drop down menu to select your newly created Test Plan and click the Tick. Now you can click Change Plan

co	NTEXT	
5	Plan	_
ΤY	Regression Test Q12020	
<b>*</b> C	Verview	
	•	
Uv	erview	
	Link Type	
A4	Home	
4	Plan Status	
60	<u>Display Plan</u>	
1	<u>Change Plan</u>	
5	Documentation	
i	Version Info	
	Audit Logs	
1	Alerts	

#### Systems

In the main window, you will see the Test Plan header information. Select the Systems tab and click the Create button. It's good practice to start by creating your Source (Recording) system

Test plan ID	001006	1		Save 🕴 Cancel
Header	/stems Sy	/stems m	happing 👪 Authorisations 🕨 Parameters	
1 📲 1 60 2	2 🗡 🗋 🖬	Ī		
est Plan Syst	ems			
	Namo	SID	System description	

In the Identification section, enter the required information as follows:

- System name: A 4-character internal identification for the system. Note that this is different than
  the standard 3-character SAP SID but it is suggested you use your SAP SID along with "R" for
  your Source (Recording) system and "P" for your Target (Playback) system. The 4-character
  identifier allows you to specify the same SAP system for both recordings and playback (for
  example, when performing initial smoke testing of Testimony).
- A short-text description for the system.
- A longer system description

Er Creation of a new system	×	
Identification		
System name	TY1R	
System short text	TY1 Recording	
System description	Ty1 Source (Recording) System	

In the Configuration section, enter the initial technical information to allow the Testimony central system to connect to this remote system.

For a source system (i.e., a system that will be recorded), only the following information is required:

- System ID: The SAP SID
- · Client: The client of the remote system to which the central system should connect
- RFC destination: the RFC destination to the remote system. This should already have been set up as part of the initial installation and configuration phase.
- System type: whether the system is a source (recording) system or a target (playback) system.
- · System role: whether the system is a production system or a test system
- System component: the SAP system component (ECC, BW, etc.)
- IP Address: you can get the IP address of the system by clicking on the "Get via RFC" button. This
  will connect to the remote system using the RFC destination that you specified during the technical
  setup.

- Company			
Sustem ID	my1		
Client	800		
RFC destination	AUT_TY1_SRC		
System type	Source system	~	
System role	Test system	~	
System component	ECC	~	
IP address	10.0 2.212		
	🗞 Get via RFC		

For a target system (i.e., a system into which your recordings will be played back) the following additional information is needed so that the playback bots know how to connect:

• Connection type: Whether the bots will connect directly to an application server or will use logon load balancing

If the connection type is "Application server":

- Target host: The host name of the application server
- Instance No.: The SAP instance number

iciliadion		
/stem name		
/stem snort text		
stem description	TY1 Playback	
Configuration 📮 Rem	ote Data	
onfiguration		
System ID	TY1	
Client	800	
RFC destination	AUT_TY1_PLAYBACK	
System type	Target system $\vee$	
System role	Test system V	
System component	ECC ~	
IP address		
	🗞 Get via RFC	
scholand anttinga		
Connection type		
Application server	Message server and logon group	
Application server details		
Target host		
Instance No		
instance no.		
Misc. details		
SAP router		

If the connection type is "Message server and logon group":

- Message server: The host name of the SAP message server
- Message server port: The port number (usually 36nn) that the message server listens on
- Logon group: The logon group (from SMLG) that the bots should use to connect to the system

Creation of a new system		
entification		
System name	TY1P	
System short text	TY1 Playback	
system description	TY1 Playback	
Configuration	te Data	
Configuration		
System ID	TY1	
Client	800	
RFC destination	AUT_TY1_PLAYBACK	
System type	Target system V	
System role	Test system V	
System component	ECC 🗸	
IP address		
	🔌 Get via RFC	
echnical settings		
Connection type		
O Application server	Message server and logon group	
Message server and logon gr	oup details	
Message server		
Message server port		

In the Misc. details section enter any (optional) configuration:

- SAP router: If you are using a SAP router to secure access to the playback system, enter the SAP router string here
- · Gateway host: Enter the SAP gateway host
- Gateway service: Enter the SAP gateway service id

SAP router	
Gateway host	
Gateway service	

Once complete click the Tick to save your configuration. You'll receive the following status message. At this point you should also save your plan

System created, now save the plan

Repeat the same steps to configure additional systems. You will minimally need a Source and Target system defined.

You should now have at least 2 sytems defined in your plan

Test plan ID	001000	5		🔚 Save 😢 Cance
Header Sys	tems 🔠 S	ystems m	apping 🔒 Authorisations 🕨 Parameters	
🔁   🚟 🖌   60 🔼		Ū		
Test Plan Syste	ems			
Type Syst. type	Name	SID	System description	
Source system	TY1R	TY1	TY1 Recording	
	-	TVA	TV1 Disubade	

#### **Systems Mapping**

It is now necessary to map the systems so that Testimony knows which recording system equates to which playback system. This is a required step, even if you only have two systems in the test plan. In the test plan screen, go to the Systems mapping tab. Here you will see the systems you have defined. Click on the Create Link button



At this point, your cursor will change to a Pencil. Draw a line between the two systems you want to link and you get the following screen where you can click the Save button to save your System Mapping.



#### Remote data

The retrieval of remote data from the source system enables Testimony to perform a number of important functions. Firstly, it allows text descriptions of objects (e.g., transaction codes, screens, etc.) to be displayed, making the job of interpreting the output from Testimony much easier. It also allows Testimony to gather certain technical information (e.g., screen field definitions) which are an important part of Testimony's "learning" process.

Remote data extraction only needs to be run in one system for each SAP component type (e.g., once in ECC, once in SRM, etc.). Other systems of the same component type can share this information. Basis Technologies recommends that this data be extracted from a test system to avoid putting any additional overhead on production.

The remote data extraction needs to be run when a new system landscape is first added to Testimony, and then when there is a major upgrade or release. For example, if you are applying support packages then a further extraction will be required so that Testimony has the most up-to-date definitions of the objects that it uses. We also recommend that, in any case, the extraction is run at least every 6 months so that Testimony can be kept up-to-date.

To extract the remote data, within the Change Plan screens, navigate to your source system and go to the Remote Data tab: You will see all of the remote data types that Testimony needs to extract, and also that the remote data extraction has not yet been executed.

	dification of system TY1R						
[dent	ification						
Sys	tem name		TY1R				
Sys	tem short text	ŀ	TY1 Recording				
Sys	tem description	-	Ty1 Source (Recording)	System			
Ţ	Configuration 🛛 🔳 Remote I	Data	1				
Dep	Anto Data Course Plan						
Ken	IOLE DALA SOURCE PIAN	1					
	Remote Data Plan	00	01006 TY Regression T	est Q12020	~		
	Remote Data Sys. Name	Т	Y1R TY1 Recording (Re	mote data not run)	`	~	
<u>9</u>	획   🚱						
Re	mote Data Sources						
Тур	Remote Data Type	Sts	Status D	at Last Execution Information	Rows Stored	Last Object	
Тур	Remote Data Type Data domains	Sts	Status D Not executed	at Last Execution Information Never executed	Rows Stored No data	Last Object	^
Typ	Remote Data Type Data domains Data elements	Sts	StatusDNot executedINot executedI	at Last Execution Information Never executed Never executed	Rows Stored No data No data	Last Object	×
Typ	Remote Data Type Data domains Data elements Table fields	Sts	StatusDNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed	Rows Stored No data No data No data No data	Last Object	<b>^</b>
Typ	Remote Data Type Data domains Data elements Table fields Tables and Structures	Sts	StatusDNot executedNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed	Rows Stored No data No data No data No data	Last Object	
Typ	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components	Sts	StatusDNot executedNot executedNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed Never executed	Rows Stored No data No data No data No data No data	Last Object	
Typ	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents	Sts	StatusDNot executedNot executedNot executedNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed Never executed Never executed	Rows Stored No data No data No data No data No data No data No data	Last Object	~
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields	Sts	StatusDNot executedNot executedNot executedNot executedNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed	Rows Stored       No data	Last Object	× •
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens	Sts	StatusDNot executedNot executedNot executedNot executedNot executedNot executedNot executedNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed	Rows Stored         No data	Last Object	
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters	Sts	StatusDNot executedNot executed	at Last Execution Information Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed Never executed	Rows Stored         No data	Last Object	×
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs	Sts	StatusDNot executedNot executed	at       Last Execution Information         Never executed	Rows Stored         No data	Last Object	* 
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs Idocs	Sts	StatusDNot executedNot executed	at       Last Execution Information         Never executed	Rows Stored         No data	Last Object	
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs Idocs Messages	Sts	StatusDNot executedNot executed	at       Last Execution Information         Never executed	Rows Stored         No data	Last Object	
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs Idocs Messages Number Range Objects	Sts	StatusDNot executedNot executed	at       Last Execution Information         Never executed	Rows Stored         No data	Last Object	
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs Idocs Messages Number Range Objects Object components	Sts	StatusDNot executedNot executed	at       Last Execution Information         Never executed	Rows Stored         No data	Last Object	
	Remote Data Type Data domains Data elements Table fields Tables and Structures Application components Change Documents Dialog screen fields Dialog screens Program parameters Executable programs Idocs Messages Number Range Objects Object components	Sts	StatusDNot executed1Not executed1	at       Last Execution Information         Never executed         Never executed	Rows Stored         No data         No data	Last Object	

00

You can start the remote data extraction by clicking on the "Run remote data in background" button.

3	<b>a</b>   🕞				
Rer	mote Da Ri	un Remote data in b	ackground		
Тур	Remote Dat	· / F		Dat	Last Execution Inform
	Data domains	5 🔶	Not executed		Never executed
	Data element	ts 🔷	Not executed		Never executed

This will start a background job in the Central System which submits requests via RFC to the source system to gather the required data.

Alternatively, you can extract the data for individual components by selecting the component and clicking on the "Execute extraction" button.

🔁   🗣   😥						
Remo Execute extraction Ces						
Typ Reniece Data Type	Sts	Status	Dat	Last Execution Information	Rows Stored	Last Object
📎 Data domains		Not executed		Never executed	No data	
Data elements	•	Not executed		Never executed	No data	
🕾 Table fields	٠	Not executed		Never executed	No data	
Tables and Structures		Not executed		Never executed	No data	
Application components	٠	Not executed		Never executed	No data	

### Note that some of the data extraction steps (in particular, the extractions of Dialog screen fields, Table fields and Program parameters) can take a very long time.

If submitting the extraction in the background, you can check on the status of the extraction process from within this screen by using the Refresh button.

2   😥						
Remote Data	Sources					
Typ Remote Data T	rpe Sts	Status	Dat	Last Execution Information	Rows Stored	Last Object
Tables and St	uctures	Complete	8	12.05.2020 19:26:05 19:26:25	512026	
Application co	mponents	Complete	8	12.05.2020 19:26:25 19:26:25	12372	
Change Docum	ents 🗧	Complete	8	12.05.2020 19:26:25 19:26:26	36586	
Bialog screen	fields 🔼	In Progress	8	12.05.2020 19:26:26 12:39:25	0	/AIN/SAPLUI_DOD1
D: I			-	17 00 0000 15 00 14 15 00 10	200050	

Note that extracting all of the remote data from a system can take 18-24 hours.

If you have already extracted the remote data for one system, then you can re-use this data, avoiding the need to re-run this process. To do this, go into Change Plan and change your source system, then navigate to the Remote Data tab.

You will see that the Remote Data Plan and Remote Data Sys. Name fields are editable via drop-downs. Select the plan whose remote data you wish to use, and the system field will be automatically updated, as will the extraction statuses of the remote data objects.

Modification of system TY1R							
Identification							
System name		TY1R					
System short text	-	TY1 Recording					
System description		Ty1 Source (Record	ing) S	ystem			
Configuration Remote	Data						
Remote Data Source Plan						_	
Remote Data Plan	0	00590 Remote Data	Job		~		
Remote Data Sys. Name	Т	Y1R TY1 Recording	(Rem	ote data last run 20200512 )	8	~	
2   <del>1</del>   <del>()</del>							
Remote Data Sources							
Typ Remote Data Type	Sts	Status	Dat	Last Execution Information	Rows Stored	Last Object	
Tables and Structures		Complete	8	12.05.2020 19:26:05 19:26:25	512026		^
Application components			-		10070		

Click on the tick to confirm your selection, and then save the plan.

### 3.2.3. Managing Test Plans

As well as maintaining Test Plans from the Overview -> Change Plan screen (as previously shown) it is also possible to maintain them without first having to select the individual plan.

Navigate to Test Plans item from the Configuration section. You will see a list of all Test Plans defined in the system. From this screen you can perform the following actions to your Test Plans:

- Create Plan
- Display Plan
- Change Plan
- Copy Plan
- Activate Plan
- Deactive Plan
- Analyse Plan

CONTEXT	Test plans									
S Plan TY Regression Test Q12020 ✓ ✓										
	Type Scenario	Test plan name	Test plan description		Status	Source(s)	Target(s)	User Defau		
Ť	T Carve-out	GF Test 1	Test	1	Inactive	TY1	TY1			
< >>	A Project	TY1 Test PLan 294	TY1 Test PLan 294	1	Inactive	TY1	TY1	JSHAFFER		
A Overview	Production	TY1 Test PLan 297	TY1 Test PLan 297	1	Inactive	TY1	TY1			
× Configuration	3 Consolidation	Test LL	Test plan for LL tests	1	Inactive	TY1	TY1			
	Te Upgrade	AGR tesp plan 01	Beta Hardening 2	1	Inactive	TY1	TY1			
Configuration	Project	TY1 Test PLan 266	TY1 Test PLan 266	1	Inactive	TY1	TY1	USER1		
Link Tume	A Project	TY1 Test PLan Number range	TY1 Test PLan Number range	1	Inactive	TY1	TY1			
The Direct	A Project	TY1 Test PLan Number range 1	TY1 Test PLan Number range 1	1	Inactive	TY1	TY1			
I I I I I I I I I I I I I I I I I I I	Project	TY1 Test PLan Number range 2	TY1 Test PLan Number range 2	1	Inactive	TY1	TY1			
123 Humber Ranges	Project	AGR test plan 02	test plan 02	1	Inactive	TY1	TY1			
	A Project	TY1 Test PLan ME21N	TY1 Test PLan ME21N	1	Inactive	TY1	TY1			

#### Copy a Test Plan

If you have a test plan that you wish to duplicate, then the **Copy Test Plan** function allows you to do this, copying across not only the test plan header information but also the system assignments and mappings and the user assignments. This is a great time saver to creating new Test Plans

Simply select the Test Plan you want to copy and click the Copy Test Plan button. You have the choice to create the copy with a recorded data or not.

Test plans				
🔁   🚟 🖌   🍸	🖌 । 🗋 💉 6Ә । 📘	🗾 🗡 🏂 🖳   🗠		
Test plans		<u>C</u> opy plan		
Type Scenario Test plan name		Copy plan with recorded data		
Project	I TV-367	SUILEMAN LTV/2163-2164		

If you selected to copy with Recorded Data, you'll then need to give the new copied project a name and optionally select copying Filter Sets. Once these fields are complete, click the Execute button.
Copy Test Plan with reco Đ	rded data	
Selected Plan		
Plan ID	001006	
Test plan name	TY Regression Test Q12020	
Copy to Test plan name		
Conv Business Transactions		

### **Deactivate Test Plan**

By default, new test plans are created as active plans, meaning that they are available for selection in the drop-down list in the plan context menu. If you wish to remove a plan from this list (for example, if it is an old plan that should no longer be used) then you can deactivate from the configuration screen. Simply select the plan and click on the Deactivate Plan button and the plan's status will change to inactive.

est plans				
🛃   🏭   🍸	▲   🗅 🖍 6ð   🗈 ↓	* 🎢 🕵   🗠		
Test plans		Deactivate Plan		
Type Scenario	Test plan name	l est plan description		Status
📥 Project	TY1 regression Q4	Q4 2019 regression testing	1	Inactive

Likewise, you can reactivate an Inactive Test Plan in order to make it visible in the drop-down list by selecting the Test Plan and clicking on the Active Test Plan button



## **3.3. Version check**

To check your current Testimony version on the Central System, go to the Testimony transaction and choose Overview —> Version Info:

<u></u> c	Verview	
Οv	erview	
	Link Type	
2	Home	
4)	Plan Status	
68	Display Plan	
	Change Plan	
E	Documentation	
i	<u>Version Info</u>	
	Audit Logs	
!	Alerts	
	License Keys	

This will show the current version, as well as the base version transport that was applied on the Central System:

Central System Version			
Product Name	Testimony		
Version	2.40	2 0.4	4
Transport Request	P24K900088		

To check which Cumulative Patch level your Central System is on, go to the import overview for the Central System in STSM and display all Testimony transports. (These begin with P24K\*.)

Number	Request	RC	Owner	Short Text
5 6 7	P24K900088 P24K900110		COLIVER GFARKAS	Basis Technologies: Testimony (Version: 2.40) Basis Technologies: Testimony 2.40.5 Patch
8	P24K900122 P24K900126		GFARKAS	Basis Technologies: Testimony 2.40.6 Patch Basis Technologies: Testimony 2.40.9 Patch
9	P24K900137		GLAKKAD	basis rechnologies: restimony 2.40.15 Patch

You can check the source and target system version and cumulative patch level by looking at the STMS import history, again looking for P24K\* transports.

# 3.4. Licence key check

Testimony licences are installed using the Testimony transaction /BTI/AUT. You can go to Overview —> Licence Keys to view the status of your licences. Before starting a recording it is important that valid licences exist for *both* the Central and Source systems:

License	e Key Management						
3	📆   🥰   🛃 (	7					
Lio	ense Key Sta	tus (	Central and Source S	Systems)			
Тур	e System Type	ID	System Desription	Inst. Number	Expiry Date	Sts	License Key Status
Ē	Source System	GDE	GDE Source System	0020104803	01.04.2022		License Valid
Ē	Central System	GSM	Controller / Central System	0020182949	01.04.2022		License Valid

In addition to Testimony licences, Diffuser licences must also be installed on both the Central and Source systems. You can check the status of Diffuser licences by logging on to each system and calling transaction /BTR/LICENSE and using the "Check installed keys" function. Diffuser licence keys for Testimony are listed as "Testimony (Listener package)":

Diff	user License Manage	er						
9	L 🗧 🖓   🖓   🖄   🕒							
Prod. ID	Product Name	Consist.	Valid	Expiry	Date	Sys ID	Installation	Reports
AUT	Testimony (Listener package)			01.04.	2022	GDE	0020104803	

# 3.5. Filters, Suppressions & Plan Configuration

#### **Overview**

Filter sets are the way to configure Testimony to limit the selection of what is recorded and played back for a test and/or to suppress error messages for certain objects. There are 4 points (Process Steps) where this can occur: Recording, Transfer to repository, Transfer to Execution & Comparison (Playback). You can exclude and/or include RFC/Dialogue/Batch jobs at every point. Filter Sets can be set up for specific Test Plans or to used across all Test Plans. They are accessible from the Configuration menu as shown below.

×С	onfiguration	M	
Co	nfiguration		
	Link Type	1	
	Test Plans		
123	Number Ranges		
+0+	General Parameters		
$\overline{\sim}$	Share Memory Limits		
٩,	Action Manager		
21	User Roles		
	Notification Setup		
TI	Text Management		
百	User Interface Profiles		
4	Defect assignment		
P	Filter Sets	]	
		-	
1	Recording 🔄 Repository	Execution	Comparison

By default, there will always be a pre-configured (Default) Filter Set for each Process Step (Recording, Repository, Execution and Comparison). They are used to exclude activities that are running in your Source system, but are not required for Testimony to accurately play back in your Target System. During your installation and initial configuration, your Basis Technologies consultant may also add exclusions specific to your environment.

NOTE: Since Filter Sets can be Active or Inactive, you can easily set up multiple custom Filter Sets that you Activate only when required for a particular test.

To create a new Filter Set, click on the Process Step tab (in this case, "Execution") and then on the create button

<u></u> F	Recording	Repository Execution 🥵 Compa	arison			
<b>છ</b>		60 🗈 💼 🖬 🛙 🖓	😢 । 🖣			
Exe	cution Filte	r Sets(2)				
Туре	Filter Set ID	Filter Set Name	System Type	Active	Users	Objects
•	000000003	Testimony Execution	ECC	1	0	0
-	900000003	Custom Execution	ECC	1	0	1

The follow window will appear. Fill in the required info. The "Type" field will determine if this filter set will be Custom (You'll need to give it a name) or a plan specific Filter Set (you'll need to give it the Test Plan number and the name will be generated). By default, your new Filter Set will be Inactive, so be sure to Activate it when you want to use it. The Exclusion Stage field will default to the tab you were in when you clicked the Create button. You can change it if your intent was for a different stage.

🔄 Create Filter Set		×
Filter Set		
Filter Set ID		
Туре	Custom	
System Type	ECC	Window
Exclusion stage	Transfer to queue	
Status	Inactive	
Filter Set Name	Regression execution exclusior	S
Created By		
Created On		
Created At	00:00:00	
		Create Cancel

Once you click the create button, you'll see the new Filter Set in the list where you can now add Exclusion and Suppression objects.

## 3.5.1. Exclusions

To exclude objects, double click on a Filter Set and select the tab for the exclusion type (in this case, Objects was selected). You'll then click the "Create Filter Values" button seen below where you get a new window to create the rules. **Note that you will not be able to update a default Filter Set** 

identified with the 💽 icon

(ec	ution Filter	Sets(3)	System Type	Activo	lleare	Objects
e		Testimony Execution	FCC	Active	Osers	Objects
	9000000003	Custom Execution	FCC	1	0	1
	9000000072	Regression execution exclusions	FCC		0	0

The following window is where you'll create a rule. You'll need to click on one of the selection icons (Dialog in the example below) which will take you to a Multiple Selection window.

RFC	to	
HTTP Inbound	to	<u></u>
HTTP Outbound	to	đ
Dialog	to	đ
3SP	to	
Veb Dynpro	to	<u></u>
Batch Job	to	
Web Service	to	<u></u>

Once in the Multiple Selecction window, you can choose Single Values or Ranges to either select or exclude. **It is far more common to Exclude so the examples below will reflect this scenario.** Clicking on the "Exclude Single Values" tab will allow you to enter 1 or more objects to exclude. In the example below, transactions "ZMM02" and "ZMM03" were added.

🖙 Multiple Selection for Dialog					×
Select Single Values Sel	ect Ranges	Exclude Single Values (1)	Exc	lude Ranges	
	g			g.c.	
O Single value					
ZMM02			^		
ZMM03			~		
			-		
			-		
			-		
			_		
			^		
			~		
< >		< :	•		
					<b>5 1 7 9 6 8</b>

You can also double click on a row which will open the following window to change the boolean operator from the defaul "=" to another operator.

E M	aintain Selection Options	×
Dialo	g	1
Sele	Description	
=	Single Value	
2	Greater than or Equal to	
≤	Less than or Equal to	
>	Greater than	
<	Less than	
¥	Not Equal to	
< 1	elect Exclude from Selection	10000
	Delete Row	8

Once all selections are entered, click the Copy button



which will take you back to the prior screen

#### where you will save your selections. Notice how the Icon changes to reflect multiple values.

RFC		to	d 1
HTTP Inbound		to	<u></u>
HTTP Outbound		to	rt.
Dialog	<b>=</b> ZMM02	to	<b>*</b>
BSP		το	
Web Dynpro		to	<u> </u>
Batch Job		to	<u></u>
Web Service		to	<u></u>

You'll now see your excluded objects back on the Filter Sets screen. **Be sure to active the filter set once you intend to use it.** 

		💼   📅   🐺   🎪   🏹	7				
xecution Filte	r Sets(3)						
ype Filter Set ID	Filter Set Name		System Type	Active	Users	Objects	
• 000000003	Testimony Execut	tion	ECC	1	0	0	
<b>900000003</b>	Custom Execution	n	ECC	1	0	1	
<b>900000080</b>	Regression execu	ution exclusions	ECC		0	2	
B Users	ects						
Lisers Obj	ects		Rectangular	Snip			
👪 Users 🔁 Obj	ects		Rectangular	Snip			
🕌 Users 🔂 Obj	ects		Rectangular	Snip			
Users Obj	ects	sions : Objects (2)	Rectangular	Snip			
Users Object Type	ects	sions : Objects (2)	Rectangular	Ship Ship ect Name (Hig	1)	Object Text	
Users Object Type Dialog transac	ects	sions : Objects (2)	Rectangular	Snip Solo	1)	Object Text	

NOTE: When setting up "Recording" exclusions for Batch Jobs, you will need to use the Program Name of the first step in the batch job. When setting up "Repository" exclusions for Batch Jobs you will need to used the Job Name.

# 3.5.2. Screen Field Validation

Allows you to capture specifically configured SAP GUI dialog screen fields during the recording and validate that these fields contain the same values during the playback.

The original requirement for this came from a pharmaceutical company (FDA regulated) who needed to ensure that the "expiry date" for a batch of drugs that had been produced matched what was expected. This was one of their critical business processes that must be tested as a part of FDA compliance.

In order to capture screen fields during the recording, you must configure the table **/BTI/AUT\_C\_DVFL** within the central system that specifies which field(s) upon which screens within which transactions should be captured and validated. You perform this configuration via transaction SM30.

Screen field capture and validation is "**approve-listed**". This means that, unless you configure this table, no screen fields will be captured during the recording.

You are able to configure this table with wild-cards for the various fields. So if you would like to capture all fields for a given transaction code and screen number, then you are able to do this. Equally, you may capture a certain screen field (upon a given program and screen number) regardless of the transction code that initiated it.

Additional information for configuring this new functionality can be found in this <u>FAQ</u> in Zendesk.

The key table for configuration of this functionality is **/BTI/AUT\_C\_DVFL**.

# 3.5.3. Defect Suppression

As you use Testimony over time, you can "teach" it to suppress certain failures that are either expected or unavoidable, given the way that Testimony works (data-related defects for example) or the set-up of your environment (e.g., bot-related defects) By suppressing these failures, you can ensure that defects are not raised for them, meaning that the effort required for defect analysis will decrease and become more focussed over time.

There are two types of failure suppression in Testimony: step-level suppression, and script-level suppression. These are discussed below.

## 3.5.3.1. Step-level suppression

In some cases it may be possible to suppress a failure at the step level and carry on with the rest of the script. When you switch on step-level suppression for a particular failure, Testimony will mark the step as successful and attempt to continue with the rest of the script.

There are two steps involved in deciding whether or not a failure is suitable for step-level suppression. Firstly, of course, you need to have determined that this is a failure that should be ignored in subsequent Testimony playbacks. The examples given above should help you to determine this, based on some common types of defects.

The second step is to determine whether or not it would be possible for the script to continue, given the defect that has been raised.

# 3.5.3.1.1. Example of a step-level suppression

If we take another look at <u>one of the defects we saw earlier</u> relating to a file download failure, we can see that we had a message in the recording ("Download 191 KB …") and a different message ("Setting was applied") in the playback.

Expected Parameters	Value	Actual Parameters	Value
Y 🛐 FBL5N - Select Spreadsheet		Y 🚰 FBL5N	
> = Message	Download 191 KB N:\06. E	> 📼 Message	Setting was applied
<ul> <li>Next Program</li> </ul>	SAPLSLVC_FULLSCREEN	<ul> <li>Next Program</li> </ul>	SAPLSLVC_FULLSCREEN
<ul> <li>Next Screen Nr.</li> </ul>	0500	<ul> <li>Next Screen Nr.</li> </ul>	0500
<ul> <li>Next Screen title</li> </ul>	Customer Line Item Display	<ul> <li>Next Screen title</li> </ul>	Customer Line Item Display

Note here that the Next Program and Next Screen Nr. are identical in the expected and actual parameters. This is important, as if we are on a different screen in the playback then it will not be possible to continue with the rest of the script.

We now need to take a look at the function that would have been executed next in the script. This can be done by selecting the step after the one that failed.



We can see here that the user pressed the back button (Function Back (=&F03)). So in this case, since we have an identical screen on the step that failed, and the function being executed in the next step is a standard function, we can deduce that if the failed step (step 8) was suppressed by Testimony, then the rest of the script would be able to continue. This failure is therefore suitable for step-level suppression.

# 3.5.3.1.2. Creating a step-level suppression

You can create a step-level suppression from within the Investigate Screen by selecting the failed step and then clicking on the Suppress button.

A Prev Vext 🔚 Layout 🔺							
Test Script Steps							
Step	Object	Object	Description	Res			
<u>1</u>	FBL5N	Custon	ner Line Item Display	E,			
2	FBL5N	Custon	ner Line Item Display	E,			
<u>3</u>	FBL5N	Custon	ner Line Item Display	Ξ,			
<u>4</u>	FBL5N	Custon	ner Line Item Display	E,			
<u>5</u>	FBL5N	Custon	ner Line Item Display	Ξ,			
<u>6</u>	FBL5N	Custon	ner Line Item Display	Ξ,			
<u>Z</u>	FBL5N	Select Spreadsheet					
<u>8</u>	FBL5N	Customer Line Item Display ?					
🗹 Suppress 🕨 Play 🗟 Export							
Test Script Header							
Exec.	Queue ID		000009				
Exec.	Exec. Queue Itm ID 000000576						
Test S	Test Script ID 0000351880						
Exec.	Queue Ty	/pe	Standard scripts				
Test S	cript Typ	e	Dialog transaction				
Object	Name		FBL5N				
User			CAIRT0				

 Status
 Partially complete

 Result
 Failed

 Failure Reason
 Unexpected message

The following screen is then displayed.

Create Suppression	n	×
Suppresion Key		
Filter Set	Testimony Comparison 🗸 🗸	
Object Type	Dialog transaction 🗸 🗸	
Object Name	FBL5N	
Failure Reason	Unexpected Message ~	
Message Type	S Success	
Message Class	SALV_BS_MSG	
Message Number	811	
Suppression Type		
⊖ Step	Passes the Current Step and attempts to run the	ne Subsequent Steps
<ul> <li>Script</li> </ul>	Fails the Current Step and Suppresses the entir	e Script
Suppression Result		
Step Status	~	
Step Result	Failed 🗸	
Script Status	Suppressed 🗸	
Script Result	02 ~	
E		Create Cancel

The Suppression Key contains information on the failure to be suppressed, including the object name, error type and the message to be suppressed.

Firstly, select your custom filter set from the first drop-down. By default, the option to create a script-level suppression is selected. You will therefore need to select the Step suppression type.

Don't use the default Testimony Comparison filter set, as this will be overwritten when you come to upgrade Testimony.

Your screen should now look like this.

х.

Create Suppression

Suppresion Key		
Filter Set	1	~
Object Type	Dialog transaction	~
Object Name	FBL5N	
Failure Reason	Unexpected Message	~
Message Type	S Success	
Message Class	SALV_BS_MSG	
Message Number	811	

Suppression Type	
<ul> <li>Step</li> </ul>	Passes the Current Step and attempts to run the Subsequent Steps

OScript	Fails the	Current Step	and	Suppresses	the	entire	Script
Obchpe	Tails cire	current step	anu	Suppresses	cire	encile	Scripe

Suppression Result		
Step Status	Suppressed	~
Step Result	Failed	~
Script Status		~
Script Result	02	~

	Create	😮 Cancel
N		

Click on Create, and the suppression will be created. In future playbacks, if Testimony encounters this same error again it will mark the step as passed as attempt to execute the rest of the script.

# 3.5.3.2. Script-level suppression

Where there is an error you want to suppress, but it is not suitable for step-level suppression, then a script-level suppression is possible.

With a script-level suppression, the failed step is still marked as failed, and the script is terminated, but no defect is raised. It is also possible to determine how this is reported in the overall playback statistics.

# 3.5.3.2.1. Example of a script-level suppression

In the below defect, we can see that we have a <u>data-related defect</u> we received a "No stocks exist..." message on the selection screen.

Expected Parameters	Value	Actual Parameters	Value
Y 🔄 ZML_WHREPORT - 1		Y 🔄 ZML_WHREPORT	
> 🔤 Message		> 📼 Message	No stocks exist for specified data
<ul> <li>Next Program</li> </ul>	SAPLSLVC_FULLSCREEN	<ul> <li>Next Program</li> </ul>	ZR_ML_WAREHOUSE_INVENTORY_REP
<ul> <li>Next Screen Nr.</li> </ul>	0500	<ul> <li>Next Screen Nr.</li> </ul>	1000
• 🔳 Next Screen title	Warehouse Stock	• 🔳 Next Screen title	Warehouse Stock

In this case, notice that the screens are different in the expected and actual parameters. In the recording, the user was taken to a list of stock, whereas in the playback the bot remained on the selection screen. This failure, therefore, is not suitable for a step-level suppression.

However, since we know that this is a data-related defect caused by either sequencing or the failure of a previous transaction, we want to suppress the creation of a defect, which we can do at the script level.

## 3.5.3.2.2. Creating a script-level suppression

As before, we can create a script-level suppression by clicking on the Suppress button on the Investigate Screen. We again get a pop-up to enter the suppression details, and this time we select our custom filter set and keep the Script suppression type radio button selected.

Create Suppressi	on		×
Suppresion Key			
Filter Set		~	
Object Type	Dialog transaction	~	
Object Name	ZML_WHREPORT		
Failure Reason	Unexpected Message	~	
Message Type	S Success		
Message Class	ZML_MSG		
Message Number	022		
Suppression Type			
○ Step	Passes the Current Step a	nd attempts to run th	e Subsequent Steps
<ul> <li>Script</li> </ul>	Fails the Current Step and	Suppresses the entire	e Script
Suppression Result			
Step Status		~	
Step Result	Failed	~	
Script Status	Suppressed	~	
Script Result	No result	~	
			Create 🛛 💟 Cancel

In the Script Result drop-down, there are two possibilities for determining what the final status of the script should be.

 No result: this excludes this script from the calculation of passed or failed scripts. Instead, it is added to the count of "Suppressed, No Result" scripts that can you can see in the Execution Queue status:

Exec	Execution Queue Playback Overview										
Туре	Queue type	Sts	Status	Tot	Run	Pass	Fail	Suppr. No res	Error	Canc	Not Run
<b>a</b>	Standard queue		Complete	<u>16314</u>	<u>16304</u>	<u>12074</u>	<u>1427</u>	<u>346</u>	<u>1059</u>	<u>1353</u>	<u>8</u>

• Passed: this passes the script, adding it to the total of passed scripts for the playback.

In general, it is best to select No Result, as this gives a more accurate representation of the status of the

playback. We only want genuinely passed scripts to marked as such.

## 3.5.4. Sampling

Sampling is part of Filter Set functionality and is only applicable at the "Transfer to Repository" stage. The idea behind it is as follows :

If you recorded 1000 VA03 transactions, you can play a sample of x% to help reduce playback times. Sampling works for:

- Dialogue transactions
- Batch Jobs
- RFC's

#### Within Filter Sets

To Create a sampling you need a "Repository" Filter Set already created. Go to the "Sampling" tab and click on the "Create Sample" button

🖞 Recording 🛛 🙀 R	epository 😫 Execution 📫 C	Comparison							
🔁   🚟 🖌   🍸 🖌	🗅 💉 60 🗈 🗑 I 🎞 I	📅   😢   🖣							
Repository Filte	er Sets(3)								
Type Filter Set ID	Filter Set Name		System Type	Active	Users	Objects	Inputs	Sampling	
• 000000002	Testimony Repository		ECC	1	0	0	0	0	
<b>900000040</b>	Automatically Created		ECC	1	1	61	0	2	
H P012000828	TY1 Regression Test Q3		ECC		0	0	0	0	
Sers Z Obje									
3   📲   🍸	D 🖌 60 💼								
Y1 Regression	n Test Q3 : Sampling (	(0)							
ype Object Type	Object Name	Object Description	Applicat	ion Area	Ap	plication Compon	ent	Sample %	

The following will will appear where you enter the relevant info about your sample. In the example below, we will only be executing the Dialog Transaction VA03 10% of the actual recorded volume.

Script Type	Dialog transaction	~
Object Name	va03	
Sample %	10	
Created By		
Created On		
Created At	00:00:00	

Once you click the "Create button, you see your new Sampling listed under the "Sample" Tab.

👪 Users 📃 🧵 Objects	▶□ Inputs <b>F.</b> Sam	bling			
9   📽   🍸   🗅	60 🛅				
TY1 Regression Te	est Q3 : Sampli	ng (1)			
Type Object Type	Object Name	Object Description	Application Area	Application Component	Sample %
Dialog transaction	VA03	Display Sales Order	Sales and Distribution		10

### After Recording and before "Transfer to Repository"

You can also create a Sampling Filter after you've creaded a recording and before you transfer it to the repository. From the "Performance eAnalysis" tab, find the transaction you want to sample. Once highlighed, click the Exclude/Sample button and select the rate of your sampling. In the example below, Dialog step VF03 would be sampled at a rate of 10%.

💰 Overview									
≯ Configuration									
necording	🚨 Session view 📑 Step view 🔝	Component view 🦉 Lir	kage view /// Performance Analysis						
Recording			^						
Link Type	😥   🖏   🍸 🖉 🛨 🖬 🔂	🖌   🔳   📫 🔌							
File System Monitoring	Performance Analysis	Exclude from	•						
Enhancement Setup     Outbound PEC Setup	Type Object Type Object	Sample during	<u>T</u> ransfer to repository	1%	hos	Stens	Smn Samnled?	Exc. Excluded?	
Recording Status	GUI dialog step VA03	Set Default Filter Sets	ease execute the Remote Data C	5%	1	214	Not sampled	Not excluded	^
Standard Recordings	: GUI dialog step VL01N		Please execute the Remote Data C	10%		18	Not sampled	Not excluded	~
S Filtered Recordings	GUI dialog step VL02N		Please execute the Remote Data C	25%		12	Not sampled	Not excluded	
Job Manager	GUI dialog step VT03N	1	Please execute the Remote Data C	2070		144	Not sampled	Not excluded	
	GUI dialog step MM01		Please execute the Remote Data C	33%		566	Not sampled	Not excluded	
	GUI dialog step CJ13		Please execute the Remote Data C	50%		210	50% - R	Not excluded	
	GUI dialog step CL03		Please execute the Remote Data C	Manual		225	Not sampled	Not excluded	
	GUI dialog step CV03N		Please execute the Remote Data Out	Ject rex	-13	135	Not sampled	Not excluded	
	GUI dialog step FB03		Please execute the Remote Data Ob	oject Tex	15	150	Not sampled	Not excluded	
	GUI dialog step VL03N	D	Please execute the Remote Data Ob	oject Tex	15	271	Not sampled	Not excluded	
	GUI dialog step FD03		Please execute the Remote Data Ob	bject Tex	16	61	Not sampled	Not excluded	
	GUI dialog step MB03		Please execute the Remote Data Ob	oject Tex	16	112	Not sampled	Not excluded	
	GUI dialog step FI03		Please execute the Remote Data Ob	oject Tex	18	72	Not sampled	Not excluded	
	GUI dialog step IW33		Please execute the Remote Data Ob	oject Tex	20	254	Not sampled	Not excluded	
	GUI dialog step VF03		Please execute the Remote Data Ob	oject Tex	21	193	Not sampled	Not excluded	
	Batch job RSARF	CSE	Please execute the Remote Data Ob	oject Tex	40	40	Not sampled	[x] Excluded (Repos)	-
	📲 Web service TE_WE	B_SERVICES	Please execute the Remote Data Ob	oject Tex	110	110	Not sampled	Not excluded	3 ~

# 3.5.5. User Preference and Plan Configuration

Important: All user preferences are configured in the Central system only. The two important tables are **/BTI/AUT\_C\_USPA** and **/BTI/AUT\_C\_USPR**.

## **User Preferences**

The following user preference configuration has been added or amended to the configuration tables in order to more accurately capture this data during the recording and restore during the playback. Please review these entries and check if any custom configuration entries should be added (for example for Y/Z transactions that store and use user-specific settings).

Transaction	Configuration Table
MB51	ESDUS
ME21N	ESDUS
ME22N	ESDUS
ME23N	ESDUS
ME29N	ESDUS
ME51N	ESDUS
ME52N	ESDUS
ME53N	ESDUS
MEPO	ESDUS
MIGO	ESDUS
MIRO	ESDUS
PA30	LTDX
PPO1	LTDX
PPO2	LTDX
PPO3	LTDX
PPO4	LTDX
PPO5	LTDX
PPO6	LTDX
PPOC	LTDX

PPOCA	LTDX
PPOCE	LTDX
PPOCW	LTDX
PPOC_OLD	LTDX
PPOM	LTDX
PPOMA	LTDX
PPOME	LTDX
PPOMW	LTDX
PPOM_OLD	LTDX
PPOS	LTDX
PPOSA	LTDX
PPOSE	LTDX
PPOSW	LTDX
PPOS_OLD	LTDX

## **Defect Configuration**

Define your own Defect Status names.

Configurable table via SM30: /BTI/AUT\_C\_BTSG ( the corresponding text mapping table is /BTI/ AUT\_C\_BTST, this however does not need to be touched )

All entries are modifiable and deletable except for "Proposed", "New", "Assigned" and "Suppressed" ACTIV flag decides whether the status is in use or not – Deleting from this table is not needed, however allowed (except for "Proposed", "New", "Assigned" and "Suppressed")

This can also be used to define subtypes

🖙 <u>T</u> able View <u>I</u>	<u>E</u> dit <u>G</u> oto Se <u>l</u> ection	Utilitie <u>s</u> S <u>y</u> stem <u>H</u> elp							
0	~ « 📙 🔇	3 😣 😒 🖶 H H							
New Entries:	Overview of Added B	Entries							
Defect status									
🗈 Status ID	Defect Status	Group	Activ						
07	Custom Status Here	Open	× 🔽 🔨						
			× 🗆 ×						
			· ·						

Change View	"Defect status": Ov	verview				
6 New Entr	ies 🗈 🔁 🖬	r r r				
Defect status						
🕏 Status ID	Defect Status	Group		Activ	<b>iii</b>	
00	Proposed	Open	~	<ul><li>✓</li></ul>	^	
01	New	Open	~	<ul><li>✓</li></ul>	<b>*</b>	
02	Assigned	Open	~	<ul><li>✓</li></ul>		
03	In Progress	Open	Open 🗸			
04	Complete	Closed	~	<ul><li>✓</li></ul>		
05	Cancelled	Closed	~	<ul><li>✓</li></ul>		
06	Suppressed	Closed	~	<ul><li>✓</li></ul>		
07	Custom Status Here	Open	~	<ul><li>✓</li></ul>		

Def	ect Managen	nent											
	🔂   🚰 🗸   🍸 🖉 🗐   🖍 Gô)   📺   🔎 💽 🖤 🔛 😿 🖉   🗙 My open 🗶 All open 🗶 All unassigned												
	Business Task Defect Management (21)												
₽	Defect ID	Defect Description	Defect Type	Defect Subtype	Object Name	Object Type	Technical Type	Pri	Priority	Scripts	Status	Х	Role (t
	1686	Difference in output values in RFC BAP	Defect	Playback difference	BAPI_BUPA_EXI	RFC	RFC	41	Critical	226	Proposed		
	1685	Difference in output values in RFC BAP	Defect	Playback difference	BAPI_BUPA_RO	RFC	RFC	41	Critical	139	Proposed		
	1694	Difference in output values in RFC BAP	Defect	Playback difference	BAPI_USER_GET	RFC	RFC	8	Unknown	12	Proposed		
	1687	Difference in output values in RFC BAP	Defect	Playback difference	BAPI_BUPA_AD	RFC	RFC	41	Critical	6	Proposed		
	1688	Difference in output values in RFC BAP	Defect	Playback difference	BAPI_USER_GET	RFC	RFC	41	Critical	3	Proposed		
	1696	Unexpected message in job in Batch jo	Defect	Playback difference	Z_SK_CHANGE	Batch job	Batch job	8	Unknown	3	Assigned		
	1681	CJ13 : No message received. Expected :	Defect	Playback difference	CJ13	Dialog	Dialog	41	Critical	2	Proposed		
	1682	Change document missing in Dialog tra	Defect	Playback difference	VLO2N	Dialog	Dialog	-	High	2	Custom Status Here		
	1684	/BTI/AUT DIA 0080 : Unexpected nex	Defect	Playback difference	/BTI/AUT_DIA	Dialog	Control Dialog	6	High	2	Proposed		
	1689	/BTI/AUT_DIA_0051 : Unexpected nex	Defect	Playback difference	/BTI/AUT_DIA	Dialog	Dialog	41	Critical	2	Proposed		
	1690	/BTI/AUT DIA 0085 : Unexpected nex	Defect	Playback difference	/BTI/AUT_DIA	Dialog	Dialog	10	Medium	2	Proposed		
	1693	Unexpected in Dialog transaction SE38	Defect	Playback difference	SE38	Dialog	Unknown	8	Unknown	2	Proposed		
								-					

## **Plan Configuration**

Prior to playback it is important to recheck the Plan's configuration within General Parameters

<u>O</u> IPromes System Help								
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Testimony								
2								
CONTEXT		General parameters						
	^		1					
B Plan								
resumony 2.30 24hrs Recording		General paramete	rs					
		Type Parameter type	Technical name	Parameter description	Help	Current Value	Default Value	
	~	Archiving	SPOOL_OUTPUT_DEVICE	Default spool output device	i	LP01	LP01	
		Archiving	SPOOL_RETENTION_PER	Retention period for spool requests	i	9	9	
C	>	Marcone agent	SAP_ROUTER_STRING	SAP router string in bot config. file	i	/H/46.51.205.136/H/		
💦 Overview		Marcone agent	DRONE_XML	Bot configuration filename	i			
* Configuration		Marcone agent	GUI_LOGON_TIMEOUT	Max. wait time for GUI logon (secs)	i	300	300	
2. comgatadon		Marcone agent	DRONE_PASSWORD	Bot password in configuration file	i	autinit		
onfiguration		Marco agent	RFC_WAIT_THRESHOLD	Max. wait time before breaking bot RFC	i	900	900	
Link Type		Marcone agent	BOT_MEM_THRESHOLD	Bot memory consumption threshold	i	900	800	
Report Builder		Marcone agent	DRONE_REFRESH_TIME	Drone refresh time (sec)	i	30	60	
Test Plans		Marcone agent	DRONE_SCREENSHOT	Bot screenshot strategy	i	P	J	
Number Ranges		Drone agent	DRONE_USER	Bot user	i	/BTI/AUT_USR		
Conoral Paramotors		File monitoring	APPSERVER_FILES_PATH	Logical file path for app server files	i	/BTI/AUT_APPSERVER_FILES	/BTI/AUT_APPSERVER_FILES	
Share Memory Limits		File monitoring	OS_COMMAND	OS command to copy files	i	YAUT_COPY_FILE	YAUT_COPY_FILE	
Action Manager		🔒 File monitoring	FILE_MONITORING	Default mode for file monitoring	i	I	I	
licer Polec	:	Instrumentation	INV_SCR_VER	Investigate Screen Version	i	02	02	
Notification Setup	:	Instrumentation	CHK_STP_RFC_VALIDATE	Validate RFC destinations	i	x		
Text Management		Instrumentation	UI_PROFILE_DEFAULT	Default UI profile	i	100007	100004	
licer Interface Profiles		Instrumentation	ENABLE_PREVIEW	Enable preview functionality	i			
Defect assignment		Job management	ORCH_WAIT_LIMIT	Wait time between each iteration (sec.)	i	2	2	
Filter Sets		Job management	DATA_TRANS_MASS	Data transfer via mass processing	i	X	X	
Linkage Validation		Job management	DATA_TRANS_MASS_BUFF	Data transfer via mass processing buffer	i	000000001	000000001	
Linkage valuation		Job management	DATA_TRANS_MASS_SIZE	Data transfer mass proc. package size	i	0000001000	0000001000	
		Playback	PLAYBACK_ORCHJOB_SRV	Application server for playback jobs	i			
		Playback	PLAYBACK_MAX_BLOCKS	Max. number of parallel server threads	i	9	3	
		Playback	PLAYBACK_GET_SPOOL	Retrieve batch job spools after playback	i	X	X	
		Playback	PLAYBACK_EXTRA_JOBS	Background processes to be spared	i	0	2	
		Playback	PLAYBACK_CHK_SSF_OTF	Check OTF data in SAP Script Forms	1	x	x	
		Playback	PLAYBACK CHK IDOC SG	Check IDoc segment field contents	i	x	X	
🗄 Recording		Playback	PLAYBACK_PARAM_AREA	Playback parameter area	i	64000	64000	
Repository		Playback	PLAYBACK_STEP_DELAY	Delay between steps during playback (s)	1	0	0	
SE Execution		Playback	PLAYBACK_THRSHLD AMB	Playback mon. comp. threshold (amber)	1	30	30	
		Playback	PLAYBACK_THRSHLD_RED	Playback mon. comp. threshold (red)	ī	60	60	
Ne Results		Playback	PLAYBACK_TRACE	Playback process and timing logging	1			
Reporting		Playback	PLAYBACK_WAIT_STRTUP	Force worker jobs to wait on startup	ī			
🗔 Utilities								

Linkage Validation Configuration

A major issue with validation of linkages for batch jobs in particular was that is often be slight discrepancies in timing and data during the playback. This means that during the recording, a batch job (for example) may produce 1000 outbound IDoc's, but during the playback it may produce something slightly different (e.g. 1001 or 999). The chances of it producing precisely what was captured in the recording, especially for recurring batch jobs, is low. Testimony is sensitive to these differences so almost always flag these batch jobs up with a failure, and creates a defect for investigation.

To mitigate this problem Testimony allows you are able to mark a particular object type (e.g. batch job) along with the corresponding linkage type (e.g. outbound IDoc's) so that instead of validating the linkage during the playback, it is instead done **after the playback**.

In addition, you can specify a particular object type (e.g. dialog transaction VA02 and

linkage type change documents) if you require this capability to be more focused.

## 3.5.5.1. Default Validation Methods

Default configuration is delivered for the way in which linkages are validated. This is by object type and by linkage type. The default configuration is the following:

Linkage	validation configuration and ana	ysis				
. 💕	Default Validation Method	👌 Ob	ject Level Validation Method	<u>о</u> ? ма	atching Method 🛛 🕵 Linkage Analysis Runs	;
	^					
<b>-</b>	₩ . I 🔳					
Link	kage Validation Meth	nod (	(Defaults)			
Тур	Object Type	Lnk	Linkage Type	Mth	Validation Method	
1	RFC		SAP Script Form	<b>«</b>	During Playback	
1	RFC		Inbound IDoc	>>	After Playback	
1	RFC		Outbound IDoc	<b></b>	During Playback	
	RFC		Change Document	<b></b>	During Playback	
2	GUI dialog step		SAP Script Form	<b>«</b>	During Playback	
2	GUI dialog step		Inbound IDoc	<b>«</b>	During Playback	
<b>1</b>	GUI dialog step		Outbound IDoc	>>	After Playback	
1	GUI dialog step		Change Document	<b>«</b>	During Playback	
JOB	Batch job		SAP Script Form	>>	After Playback	
JOB	Batch job		Inbound IDoc	>>	After Playback	
JOB	Batch job		Outbound IDoc	>>>	After Playback	
JOB	Batch job		Change Document	>>	After Playback	
	Web service		SAP Script Form	<b>※</b>	During Playback	
52	Web service		Inbound IDoc	<b></b>	During Playback	
	Web service		Outbound IDoc	<b>※</b>	During Playback	
52	Web service		Change Document	*	During Playback	

Default Linkage Validation Methods

As can be seen, the default validation methods are delivered as default for batch jobs only. You can over-ride these defaults with your own settings as per your requirements. There are really only two settings here – either the linkages of that particular type are validated **during the playback** or they are done **after the playback**.

Batch jobs are the most common scenario that requires validation of linkage types after the playback rather than during it.

## 3.5.5.2. Object Level Validation Method

It is possible to configure object level validation methods which will **over-ride** the default configuration in the previous section. You simply add the entry via the configuration section with the following key fields:

- Object Type
- Object Name
- Linkage Type
- Validation Method

Comparison Method       Object Level Validation Method       Atter Playback         Image Validation Method by Object       Image Validation Method by Object         Typ       Object Type       Object Name       Link Linkage Type       Mth       Validation Method         Image Object Type       Object Name       Link       Linkage Type       Mth       Validation Method         Image Object Type       Object Name       Link       Linkage Type       Mth       Validation Method         Image Object Type       Object Name       Link       Change Document       Image Analysis Runs	Default Validation Method Object Level Validation Method Image Analysis Runs   Change Validation Method by Object   Object Type Object Name Lnk   Change Document Image Analysis Runs			on and analysis				
Image Validation Method by Object         Inkage Validation Method by Object         Typ Object Type       Object Name         Object Type       Object Name         Image Object Type       Object Name	age Validation Method by Object Dbject Type Object Name Lnk Linkage Type Mth Validation Method GUI dialog step VA02 Change Document Mth Validation Method	<u>(</u>	Default Validation Met	thod 🛛 🜔 Object Level Va	alidation M	ethod 🔍 Matching Meth	nod 🙎	Linkage Analysis Runs
Image Validation Method by Object         p Object Type       Object Name         Lnk       Linkage Type         Mth       Validation Method         GUI dialog step       VA02	Image Validation Method by Object         Object Type       Object Name         Link Linkage Type       Mth         Validation Method         GUI dialog step       VA02         Image Document       Image Document	-						
Implementation Method by Object         Nkage Validation Method by Object         yp       Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         Implementation       GUI dialog step       VA02       Implementation       Mth       Validation Method	age Validation Method by Object          Dbject Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         GUI dialog step       VA02       The Change Document       Image Type       After Playback	<u> </u>	a I 🖬					
MKage Validation Method by Object         p       Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         g       Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         g       GUI dialog step       VA02       Tele       Change Document       >>       After Playback	Description       Method by Object         Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         GUI dialog step       VA02       Tell       Change Document       Image Network       After Playback	- 1	ara Validatia	w Mathad by Ohia	- <b>F</b>			
yp       Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         Image: State of the state of th	Object Type       Object Name       Lnk       Linkage Type       Mth       Validation Method         GUI dialog step       VA02       Tele       Change Document       Mth       Validation Method	пк	age validatio	on Method by Obje	CL			
GUI dialog step VA02 📲 Change Document » After Playback	GUI dialog step VA02 Change Document » After Playback	ур	Object Type	Object Name	Lnk	Linkage Type	Mth	Validation Method
		ð	GUI dialog step	VA02		Change Document	>>	After Playback

#### Object level validation methods

In the example from the screen-shot above, this means that even though the default validation method for dialog transactions and change documents is "during playback", because VA02 has been entered here it means that this will over-ride the default configuration for dialog transactions and change documents.

Please note that this works in the opposite direction. If the default validation method is to perform it after playback (for example for batch jobs), then you can specify an entry above which over-rides this and you can ensure that object performs that type of validation during the playback instead.

## 3.6. Notifications

### Overview

It is possible to configure Testimony so that certain activities or events automatically notify one or more users as a one-off notification or on a regular basis during a particular activity.

#### **Process Steps**

To setup the notifications three steps are required:

- 1. It is required that the central system has SAPconnect set up (see SAP transaction SCOT). This requires a Basis Administrator to set up if this is not already available. The RSCONN01 program also needs to be running regularly as a batch job.
- 2. Testimony has to be configured to determine which notifications are sent and to which users/roles. Instructions on quickly configuring notifications are <u>here</u>
- 3. The program /BTI/AUT\_NOTIFICATION\_ENGINE needs to be set up as a batch to run at regular intervals. The instructions on this program are <u>here</u>

## **3.6.1. Quick Notifications Configuration**

#### Overview

This section provides a quick guide to getting notifications configured.

Testimony provides a variety of activities or events that can be configured to automatically notify one or more users as a one-off notification or on a regular basis. The process of determining which activities trigger a notification, to which users and roles, and for which plans is detailed here.

#### Accessing Notification Setup

As a Testimony Administrator the **Notification Setup** should appear under the **Configuration** tray as per the screenshot below.

CONTEXT	Notification Setup			
G <sup>®</sup> Plan	🖸   🖏   획   🔌 📑			
2019 Q1 ECC Test Plan 🗸 🖌 🗋	Notification Types			
,	Notification Types			
	Typ Notification Type	Area Area	Per Period	Pre Hlp Schedules
	User Actions	General	One Off	i <u>1 Schedule</u>
	License Key Expiration Warning	General	D) One Off	i <u>1 Schedule</u>
	License Key Expired	General General	D) One Off	i <u>1 Schedule</u>
	Precording Started	Recording	D) One Off	i <u>1 Schedule</u>
A Overview	Recording Progress Update (High level)	Recording	Pegular	i <u>1 Schedule</u>
	Recording Progress Update (Technical)	Recording	e Regular	i <u>1 Schedule</u>
/* Configuration	Recording Failure	Recording	D) One Off	i <u>1 Schedule</u>
Configuration	Precording Finished	Recording	D) One Off	i <u>1 Schedule</u>
Link Ture	Precording Results	Recording	One Off	i <u>1 Schedule</u>
	Playback Started	Playback	One Off	i <u>1 Schedule</u>
Number Ranges	🎐 Playback Progress Update (High level)	Playback	P Regular	i <u>1 Schedule</u>
123 Multiper Nanges	🏴 Playback Progress Update (Technical)	Playback	P Regular	i <u>1 Schedule</u>
Share Memory Limits	🏴 Playback Failure	Playback	One Off	i <u>2 Schedules</u>
Shared Memory Explorer	Playback Complete	Playback	One Off	i <u>1 Schedule</u>
Benort Ruilder	Playback Paused	Playback	One Off	i <u>1 Schedule</u>
Action Manager	Playback Results	Playback	D) One Off	i <u>1 Schedule</u>
	-			
Notification Setup				
T Text Management				
E User Interface Profiles				
	1			

### Setting up a Notification

To view a **Notification Schedule** double click on the **Notification Type** that you want to set up and the details of the **Notification Schedule** appear as below.

🖸   🖏   🗅 🖍 🚳 🔟   🛅   🎽	×   🖭 🔒 🖌		7					
Notification Schedules for R	Recording Sta	rted						
Schedule Name	Тур Туре	Sts Status	Md Medium	Period	Flt	Filters	Last Run Date/Time	
Inform admins of recording start	🔚 Standard	<ul> <li>Inactive</li> </ul>	👕 Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run	

The simplest way to configure a notification is to copy the standard Notification Schedule, by

highlighting the standard and pressing the copy button . A new **Notification Schedule** will then appear with a type of **Custom** as below. For full details on all of the functions available for notifications please see the <u>Detailed Notification Configuration</u> section.

6											
No	otification Schedules for R	eco	ording Star	tec	1						
	Schedule Name	Тур	Туре	Sts	Status	Md.	. Medium	Period	Flt	Filters	Last Run Date/Time
9	Inform admins of recording start	i.	Standard	٠	Inactive	$\mathbf{\overline{N}}$	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run
G	Copy of Inform admins of recordi	-	Custom	٠	Inactive	Т	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run

Next, ensure that the **Notification Schedule** is active. To do this select the new custom **Notification Schedule** that you just created and press the activate button  $\checkmark$ . Pressing the refresh button  $\checkmark$  will now show the custom **Notification Schedule** to be active as below.

#### Note if a schedule is inactive it won't be triggered and no notifications will be sent out.

If you already have the program /BTI/AUT\_NOTIFICATION\_ENGINE running as a batch job then when this action is triggered at the next point the batch job runs the notifications will be sent out. If you don't have the batch job set up you should set this up as per the instructions <u>here</u>.



To check to whom the notification will be sent select the new custom **Notification Schedule** and press the filter button  $\square$ . The screen below shows that for this schedule any user with the Testimony Administration role will receive this notification.

🖙 Not	ification schedule filters	
Notific	ation Schedule Filters	
<u>6</u>	🖏 🖌 🗋 🚺	
No	tification Schedule	Filters
Flt	Filter Type	Filter Vaue
21	User Role	/BTI/AUT_TESTIMONY_ADMIN

## **3.6.2. Detailed Notification Configuration**

#### Overview

This section provides a more detailed guide to the functionality available for notifications.

### **Notification Types**

The Notification Types are displayed as below. Each one has the following fields:

- Area is the part of Testimony that this Notification Type relates to.
- **Period** can be a one off notification sent each time that action is triggered or regular notifications occurring throughout the recording or playback at periods determined by the schedule.
- Clicking on Pre shows a preview of the notification that is sent out.
- Clicking on the information button under **Help** provides details on each **Notification Type** if further clarity is required on when it might get triggered.
- Schedules shows how many schedules have been set up for that Notification Type. Note that each Notification Type will have a standard Notification Schedule provided as a template to copy. A double click displays the schedules set up under this type.

#### 🔂 । 🚟 🖌 । 🗣 । 🔌 🗎

#### Notification Types

Тур	Notification Type	Area	Area	Per	Period	Pre	Hlp	Schedules
2	User Actions	× = 7	General	b))	One Off	D.	i	1 Schedule
2	License Key Expiration Warning	× = 7	General	b))	One Off	∎ <mark>`</mark> ⊕	i	1 Schedule
2	License Key Expired	× = ?	General	<b>b</b> )	One Off	E.	i	1 Schedule
2	Recording Started		Recording	<b>b</b> )	One Off	E.	i	2 Schedules
2	Recording Progress Update (High level)		Recording	٩	Regular	<u>∎</u> ⊕	i	1 Schedule
2	Recording Progress Update (Technical)		Recording	٩	Regular	<u>∎</u> ⊕	i	1 Schedule
2	Recording Failure		Recording	<b>b</b> ))	One Off	<b>₽</b>	i	1 Schedule
2	Recording Finished		Recording	<b>&gt;</b> ))	One Off	Ē.	i	1 Schedule
2	Recording Results		Recording	<b>b</b> ))	One Off	<u>∎</u> ⊕	i	1 Schedule
2	Playback Started		Playback	<b>b</b> ))	One Off	<u>∎</u> ⊕	i	1 Schedule
2	Playback Progress Update (High level)		Playback	٩	Regular	<u>∎</u> ⊕	i	1 Schedule
2	Playback Progress Update (Technical)		Playback	٩	Regular	<u>∎</u> ⊕	i	1 Schedule
2	Playback Failure		Playback	<b>b</b> ))	One Off	<u>∎</u> ⊕	i	2 Schedules
2	Playback Complete		Playback	<b>b</b> ))	One Off	<u>∎</u> ⊕	i	1 Schedule
2	Playback Paused		Playback	<b>b</b> ))	One Off	Ē.	i	1 Schedule
2	Playback Results		Playback	<b>b</b> ))	One Off	Ē.	i	1 Schedule

The Notification setup has the following actions:



This allows a simple refresh of the grid to update any changes.

Grid Tools 🛅

The grid tools enable you to change the layout of any grid.

#### **Run Notification Job**

Ŧ

On selecting one of the notification types this button can be pressed to call the program /BTI/ AUT NOTIFICATION ENGINE and as a test trigger the one off sending of the notification to SAP connect.

#### SAPconnect

Directs you to the SAPconnect transaction SOSA which displays requests that are being sent, or have already been sent by using SAPconnect, according to the selection criteria



Directs you to the SAP standard transaction SMW0 to view the templates for the notifications

Note that double clicking a **Notification Type** will display the **Notification Schedules** with further details as below:

#### **Notification Schedules**

The **Notification Schedules** are displayed as below. Each one has the following fields:

- **Type** can be standard as supplied with Testimony or custom which is a customised version. The standard version can't be used so you will need create your own custom versions to operate with Testimony.
- Status can either be inactive which means that the notifications won't be sent or active which means is should be operating. Note that you can't activate the standard template supplied: it is provided as a template to copy.
- Medium is how the notifications are supplied. Only email notifications are available at present.
- **Period** is only shown for regular Notification Types to show how frequently these will be sent while the activity is running.
- Filters shows the groups that will receive this notification and this can be restricted by plans, roles and users.
- Last Run Date/Time is simply the last time that the notification was run.

5	🖏   🗅 🖍 🏟 🍵   🛐   🎢	1	1 🖭 🖌 👪 🖌	2 4	Y   🕒   !	7													
No	tification Schedules for R	leco	ording Star	ted	l														
	Schedule Name	Тур	Туре	Sts	Status	Md	Medium	Period	Flt	Filters	Last Run Date/Time								
9	Inform admins of recording start	i	Standard	•	Inactive	T	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run								
G	Copy of Inform admins of recordi	2	Custom		Inactive	T	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run								

The Notification Schedule has the following actions:



This allows a simple refresh of the grid to update any changes.

Grid Tools 强

The grid tools enable you to change the layout of any grid.

### Create

Enables the user to create a new Notification Schedule based on the Notification Type. Only custom notification schedules can be created.



Enables the user to change the selected Notification Schedule. The schedule's name, period and whether or not it is active can be changed.



Simply displays the selected Notification Schedule.



Simply deletes the selected Notification Schedule. Note: don't delete the standard one as then it won't be available to copy in the future.



The recommended method to create a new schedule is to select the standard template provided and press the copy button.

## Activate 🔀

Select a custom **Notification Schedule** press the activate button then press the refresh button **Description Schedule** should now be active as below. If a schedule is inactive it won't be triggered and none of its notifications will be sent out.

5	📲 🔎 🚺 🗀 💼   🎦 🎽	1	:   🖭 🖌 👪 🖌	2	Y   🕑	₽						
No	tification Schedules for R	ec	ording Sta	rteo	ł							
	Schedule Name	Тур	Туре	Sts	Status	Md.	. Medium	Period	Flt	Filters	Last Run Date/Time	
9	Inform admins of recording start	i.	Standard	•	Inactive	1	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run	
9	Copy of Inform admins of recordi	-	Custom		Active	5	Email	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run	

Deactivate 堡	Deactivate	ř
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Select a custom **Notification Schedule** press the deactivate button then press the refresh button **Image**. The custom **Notification Schedule** should now be inactive. No further notifications will now be sent out for this schedule.

## Test Plans 🖭

Notifications can be configured just for one Test Plan or all plans. Pressing the right hand side of button reveals the options to select all Test Plans or select an individual Test Plan as below. Note it is possible to select more than one test plan if required.

G	]  🕾 ]   🗋 🖍 🎰 💼   🗈   🧪	E 🎢 I 🖭		_					
N	otification Schedules for F	Recordir	<u>A</u> ll Test Plans						
	Schedule Name	Тур Туре	2019 Q1 ECC Test Plan	ledium	Period	Flt	Filters	Last Run Date/Time	
9	Inform admins of recording start	🔚 Stan	<u>K</u> MC1	imail	Not Applicable	P	Plans: All, Roles: 1, Users: All	Never Run	
°:	Copy of Inform admins of recordi	. 🛔 Cust	Customer Demo 2019	mail	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run	
				-					

## Roles 🏭 🖌

Notifications can be configured to be sent to certain user roles. Pressing the right hand side of button reveals the roles that can be selected as below. Note it is possible to select more than one role if required.

🛐   🖏   🗅 🖍 🚳 💼   🛅   🎽 🏸   😫 🔳					
Notification Schedules for Recording S	<u>A</u> ll User Roles				
Schedule Name Typ Type	<u>T</u> est plan administrator Tester	Period Not Applicable	Flt	Filters Plans: All, Roles: 1, Users: All	Last Run Date/Time
Copy of Inform admins of recordi 2 Custom	<u>T</u> estimony administrator	Not Applicable	Y	Plans: All, Roles: 1, Users: All	Never Run
	<u>T</u> est manager	]			



Notifications can be configured to be sent to specific users. Pressing the right hand side of button reveals all the users that can be selected as below. Note it is possible to select more than one user if required.

🛐   🖼   🗅 🖍 🏟 🃺   🛅   🥕 🥕   😫 💵 🔎	<u>R</u> FC_ACX				
Notification Schedules for Recording Starte	<u>R</u> MCLANACHAN				
Schedule Name Typ Type S	RMONTES	d F	Fit I	Filters	Last Run Date/Time
肇 Inform admins of recording start 🛛 🕍 Standard 🛛 📢	<u>R</u> ROBB	pplicable	۳ I	Plans: All, Roles: 1, Users: All	Never Run
🖺 Copy of Inform admins of recordi 🛔 Custom	SBARNASH	pplicable	Y I	Plans: All, Roles: 1, Users: All	Never Run
	<u>S</u> KHAWAR				

## Filters 🍸

Filters can be used to check who the notification will be sent to. Select a custom Notification Schedule

and press the filter button 1. The example below shows that any user with the Testimony Administration role will receive this notification. Using the delete option here is the best way to remove part of a filter. Options are available here to create or change filters, however, it is recommended that the Test Plan, Roles and User options are used to do this as above.

Er Notification schedule filters							
Notification Schedule Filters							
🔂   🖼 🖌 🗈 👘							
Notification Schedule Filters							
Flt Filter Type	Filter Vaue						
Les Role	/BTI/AUT_TESTIMONY_ADMIN						

Set Last Run Date/Time



The ability to set the last run date and time if required.

## Run Notification Job

On selecting a notification schedule this button can be pressed to call the program /BTI/ AUT\_NOTIFICATION\_ENGINE and as a test trigger the one off sending of the notification to SAP connect.
## 3.6.3. Batch Job for Notifications

#### **Overview**

To enable the notifications to be sent out regularly the program /BTI/AUT\_NOTIFICATION\_ENGINE must be set to run as a batch job at regular intervals. When determining the periodicity of the batch job, consider the following.

- The minimum "delay" you want between a one-off event (e.g., a playback finishing) occurring and a notification being received
- The minimum period defined for a recurring notification (e.g., how frequently recording status updates are sent)
- The periodicity of the batch job that runs SAPCONN01 to send emails using SAPConnect

#### Setting up the Batch Job

Use SM36 to set up the program /BTI/AUT\_NOTIFICATION\_ENGINE as a SAP standard batch job. It is recommended that you don't select any **Notifications Types** or **Notification Schedules** so you don't need a variant, however, it is possible to have more frequent runs for certain selections if you want a more complex setup.

🔄 <u>P</u> rogram <u>E</u> dit <u>G</u> oto S <u>v</u> stem	Help
<ul> <li>         • « #     </li> </ul>	🔇 🛇 😨 🖬 🛝 🐴 ርስ ርስ ርስ 💭 🏹 🥝 🗞
Testimony Notification engine	
( <del>)</del>	
Main program selections	
Notification Type	
Notification Schedule	v .
Advanced Options	

## **3.7. Discovery Mode**

## Introduction

This section of the Admin Guide covers the installation, set-up and use of the Discovery Mode for Testimony.

One of the challenges in using Testimony is determining the best recording window, i.e., when, and for how long, should you run a Testimony recording in order to ensure that Testimony is capturing enough of the most critical business processes & transactions to make your testing as relevant as possible? To assist with making this decision, we have introduced Discovery Mode for Testimony. It is delivered as part of the Testimony installation package, but is also delivered as a standalone transport that can be imported even before the main Testimony transports so that you can begin to retrieve and analyse the data required to aid in your decision as to the best recording window(s). Most importantly, Discovery Mode doesn't require the import of any transports into your production system. All of the code, etc., for Discovery Mode is installed on a central system. An RFC connection from this system to your production system is then used to call SAP-standard function modules to retrieve the performance data necessary for the tool.

# 3.7.1. Installation and Set-Up

## Installation

If you are installing Testimony, then the Discovery Mode installation transport is included in the Testimony installation package. However, if you want to install Discovery Mode for Testimony before you have installed your Testimony Central System, then you can simply import the Discovery Mode transport into a system which is able to connect (via RFC) to your production system. This system can either be your (eventual) Testimony Central System, or any other SAP ABAP system with SAP NetWeaver version > 7.01.

### Creating an RFC connection and production userid

Discovery Mode works by making RFC calls to your production system to retrieve data stored in the system's performance database (ST03N and/or STAD data). You therefore need to set up a standard Type 3 RFC connection from your central system to your production system. This connection connects using a userid of type SYSTEM on the production system that has authorisation to execute function modules in the following function groups:

- SCSM\_COLLECTOR
- SCSM\_READ\_STATISTICS

## Adjusting statistics gathering

By default, an SAP system gathers statistics into its performance database (ST03N) and aggregates the "overnight hours". This means that you can see hourly data for the hours 06:00-21:00, but that data from 21:00-00:00 and from 00:00-06:00 are aggregated into one time slice each. In order to get the most benefit from the Discovery Mode, you should change this behaviour in your production system so that all hours are reported separately.

You can do this by running program SWNC\_CONFIG\_TIMEPROFILE on the production system using the option "Calculate all hours seperately".

ABAP Editor: Initial Screen	
🖆 🥕 🕸 🖶 🔝 🛛 🕋 🚺 🖉	Debugging 🕀 With Variant 🌇 Variants
_	
Program SWNC_CONFIG_TIMEPROFI	Create
Subobjects	SWNC CONFIG TIMEPROFILE
Source Code	
O Variants	
Attributes     Text elements	· · · · · · · · · · · · · · · · · · ·
ODocumentation	Parameter
62 Display / Change	
vy boney P change	
	<ul> <li>Calculate All Hours Separately</li> </ul>

Once this has been done, data will be reported hourly for all hours:

#### Workload in System TH2

workioau in System In.	2																			
🗢 🖒   🔁 🎞 Full Screen On/Off	🔞 Save	View																		
💑 Expert mode 🔒	Instance		TOTAL			Fin	t record		27.09.2022	00:00	:00									
	Period		27.09.2022			La	t record		27.09.2022	23:59	:59									
<ul> <li>Morkload</li> </ul>	Task type		NONE			Tin	ne neriod		1 Dav(s)	00:00	:00									
BTI3005_TH2_00																				
<ul> <li>Total</li> </ul>																				
* 🛅 Day	Time	is D	atabase Part	s of respon	nse time	GUI times	All dat	9												
<ul> <li>1 27.09.2022 Tues</li> </ul>																				
<ul> <li>E 26.09.2022 Mon</li> </ul>	Task	type ]	A   Q   🛋 '	• M (	67.	1 💵 🕽 🌿 🖓 🖓	<u>ان ا</u>	. 🗈 . 🖲	H. I.											
<ul> <li>         25.09.2022 Sun     </li> </ul>																				
<ul> <li>E 24.09.2022 Sat</li> </ul>	Time	profil	e: Times; T	lotal	time	(s), Ø Time	e/step	) (ms)												
<ul> <li>1 23.09.2022 Fri</li> </ul>	Interval	# Steps	T Response Time	Ø Time	Process.	Avg. Proc. Time	T CPU~	Ø CPU~	T DB Time Ø D	08 Time	T Time	Ø Time	T Roll Wait Time	Ø Roll Wait Time	T WaitTime	Ø WaitTime	# Trips	Ø Time	Ø GUI Time	#VMC Calls
<ul> <li>E 22.09.2022 Thur</li> </ul>	0001	1,475	186	125.8	96	64.9	47	32.0	79	53.5	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>1.09.2022 Wed</li> </ul>	0102	1.472	168	114.5	106	71.9	42	28.6	53	35.7	0.2	0.2	0	0.0	1	0.5	0	0.0	0.0	0
<ul> <li>         20.09.2022 Tues     </li> </ul>	02-03	1.252	140	111.8	88	70.0	33	26.2	37	29.8	0.3	0.2	0	0.0	8	6.8	0	0.0	0.0	0
<ul> <li>19.09.2022 Mon</li> </ul>	03-04	1 488	126	84.7	80	53.6	34	23.0	37	25.0	0.2	0.2	0	0.0	1	0.5	0	0.0	0.0	0
<ul> <li>18.09.2022 Sun</li> </ul>	04.05	1 465	127	06.5	01	55.0	26	24.2	27	25.4	0.2	0.2		0.0	1	0.0	0	0.0	0.0	0
<ul> <li>17.09.2022 Sat</li> </ul>	05 06	1 457	140	06.0	00	61.6	27	25.5	40	27.7	0.2	0.2		0.0	1	0.4	0	0.0	0.0	0
<ul> <li>16.09.2022 Fri</li> </ul>	05-07	1,450	140	90.0	90	61.1	37	23.5	70	2/./	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>15.09.2022 Thur</li> </ul>	07.00	1,400	130	164.4	140	01.1	33	29.0	39	20.0	0.0	0.4	0	0.0	1	0.3	0	0.0	0.0	0
<ul> <li>14.09.2022 Wed</li> </ul>	0708	1,009	203	104.4	149	92.7	70	43.4	104	04.3	0.3	0.2	0	0.0	1	0.8	0	0.0	0.0	0
13.09.2022 Tues	0809	1,464	124	85.0	76	51.9	33	22.4	36	24.4	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
Week	09-10	1,459	140	96.0	94	64.5	37	25.6	35	23.8	0.2	0.1	1	0.8	1	0.4	2	0.4	0.0	0
Month	10-11	1,463	124	84.5	82	55.7	35	23.9	33	22.6	0.2	0.1	0	0.0	1	0.4	2	0.1	0.0	0
<ul> <li>Detailed Analysis</li> </ul>	11-12	1,466	166	113.1	120	81.8	36	24.2	37	25.3	0.2	0.1	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>A Load History and Distributic</li> </ul>	12-13	1,460	121	83.1	79	54.3	34	23.6	33	22.8	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>BI Workload</li> </ul>	13-14	1,454	122	84.1	80	54.9	35	23.9	33	23.0	0.2	0.1	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>Collector and Performance</li> </ul>	1415	1,463	123	84.0	80	54.4	34	23.2	34	23.1	0.2	0.1	0	0.0	1	0.4	0	0.0	0.0	0
	1516	1,571	198	126.3	123	78.4	52	33.2	52	33.1	0.2	0.1	12	7.4	1	0.3	205	10.9	9.7	0
	16-17	1,590	152	95.8	87	55.0	38	23.8	38	24.1	0.2	0.1	17	10.7	1	0.4	263	14.3	12.3	0
	17-18	1,458	130	89.4	86	59.1	35	24.2	35	24.2	0.2	0.1	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>Analysis Views</li> </ul>	18-19	1,458	123	84.5	80	54.7	36	24.4	34	23.4	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>         Morkload Overview     </li> </ul>	1920	1,458	139	95.0	93	63.6	40	27.6	36	24.4	0.2	0.1	0	0.0	1	0.5	0	0.0	0.0	0
Transaction Profile	2021	1,463	135	92.0	88	60.0	38	25.9	36	24.9	0.2	0.2	0	0.0	1	0.5	0	0.0	0.0	0
Time Profile	2122	1,452	163	112.5	96	65.9	41	28.6	56	38.7	0.3	0.2	0	0.0	1	0.4	0	0.0	0.0	0
Ranking Lists	2223	1,475	405	274.8	338	229.0	284	192.5	54	36.6	0.2	0.2	0	0.0	1	0.4	0	0.0	0.0	0
<ul> <li>Memory Use Statistics</li> </ul>	2324	1,488	135	90.8	87	58.3	38	25.5	39	26.5	0.2	0.1	0	0.0	1	0.5	0	0.0	0.0	0
RFC Profiles																				
<ul> <li>User and Settlement Star</li> </ul>																				
<ul> <li>Front-End Statistics</li> </ul>																				
<ul> <li>Spool Statistics</li> </ul>																				
<ul> <li>Response Time Distributi</li> </ul>																				
<ul> <li>Icoad from External Syst</li> </ul>																				
Web Statistics																				
<ul> <li>DB Connection Statistics</li> </ul>																				

\* It is not essential for the use of Discovery Mode for this change to the performance data time profile to be made, so if this is not permitted in your production system then you can still continue to use Discovery Mode. However, the results – especially for overnight hours – will be less granular.

## Authorisations for using the Discovery Mode

As well as the authorisations for the RFC user in production (detailed above), the user(s) who will be running the Discovery Mode reports in the central system also need authorisation to execute programs (in SE38/SA38) belonging to authorisation group /BTI/AUT. This is done using the authorisation object S\_PROGRAM.

# 3.7.2. Gathering Performance Data

## Setting up the data gathering job

Discovery Mode for Testimony gathers time sliced performance data from the production system and uses this to assist in the calculation of suitable recording windows. In order to be able to get a useful set of data, it is advisable to gather data for at least one full calendar month (in order to capture monthly processes). However, by default, SAP only keeps time sliced data in its performance database for one week. Therefore, in order to be able to gather this quantity of data it is necessary to run the data collection job each week to pick up the latest data.

To start the process, go to SE38/SA38 on your central system and execute the report **/BTI/ AUT\_UA\_GET\_ST03N**.

< SAP		Testimony Retrive ST03N data via RFC
✓ ₩ (	C Cancel	
RFC Destination:	TESTIMONY_PE1_500	
RFC System ID	[PE1]	
From Date:	23.01.2023	
To Date:	29.01.2023	
Exclude Task Types:	00	
Exlcude Objects:		
Insert to Database		
O Delete from Database:		

Enter the information for the RFC destination and the SID of the production system, as well as the date range (the screen defaults to the previous 7 days) and then schedule the report as a background job. Once the job has finished, the spool list should contain information on how many entries have been added to the DB.

30.01.2023	Testimony Retrive ST03N data via RFC	1
Processing con	mpleted.	
From Date:	23.01.2023	
To Date: 106.627	29.01.2023	
entries were 123.708	Inserted into DB table /BTI/AUT_A_ST03	
entries were	Inserted into DB table /BTI/AUT_A_ST03R	

# **3.7.3. Analysing the Performance Data**

### Running the data analysis program

Once you have captured the performance data, run program **/BTI/AUT\_UA\_ANALYSIS** to perform the initial analysis, entering the required information on the screen.

System ID:	PE1	
Run Name:	January statistics	
Date From:	01.01.2023	
Date To:	31.01.2023	
Source: STAD or ST03	ST03	
Min Period Key:	HD	
Max Period (Days):	2.0	
Testimony Plan ID		
Testimony System Name		

#### Minimum and maximum periods

For the analysis run, we need to know what are the minimum and maximum recording windows that you are considering.

The minimum period can be a range from hourly to a full 24-hour day, whilst the maximum period can be in a range from half a day up to 7 days.



Since this analysis can take a long time, submit it as a batch job. Once the job has finished its spool list will contain output similar to that below.

#### Testimony Run Deployment Analysis

Testimony Run Deployment Analysis				
Selection Screen entries: System ID = TH2 Run Name = TEST 5				
From Date = 07.07.2021 To Date = 13.07.2021 Source = ST03 Min Period = HD Max Period = 3.0				
Plan ID = 000145 System Name = TH2R				
Testimony Deployment Analysis completed successfully. Number of Analysis lines created: Number of Friority Objects: Number of Minium Periods Analysed: Number of Max Periods Analysed Number of unique SAP Objects Analysed: Total Number of Priority Objects: Total Value of Objects from:	69 14 14 69 14 14 251,205	3		
Top 3 Analysis Results: Analysis Result ∲ 1 1.0.07.2021 - 00 - 13.07.2021 - 24 - Hrs =	72	- priority 8 = 92.85	7 - object % =	95,226
Analysis Result # 2 11.07.2021 - 12 - 13.07.2021 - 24 - Hrs =	60	- priority % = 92.85	7 - object % =	93.970
Analysis Result # 3 12.07.2021 - 00 - 13.07.2021 - 24 - Hrs =	48	- priority % = 92.85	7 - object % =	86.935
Missing Priorities: 09 - TE_WEB_SERVICES		- 02		N

## 3.8. Performing a Recording

#### **Overview**

The Recording phase can occur once a Test Plan has been created with the associated Source and Target systems identified. It's important to have an understanding of the anticipated activity load on the source system to help guide the amount of timefor which the recording should be active.

#### **Process Steps**

- <u>Recording Preparation</u>
- <u>Start Recording</u>
- Monitor Recording
- Stop Recording

# 3.8.1. Recording Preparation

#### **Overview**

When you are ready to run a test phase leveraging the recording / learning capability in Testimony, you need to first prepare the source systems.

#### **Process Steps**

- 1. Select Test Plan to use
- 2. Generate Inbound RFC Capture Prepares for inbound RFC calls to be captured. This is an optional step an only needed once per recording system and only if you will be recording RFC calls.
- 3. Enhancements Prepares the system for capture of all interactions the activation of the enhancements is done automatically on Recording Start-Up, but you can control them manually also.
- 4. Check Steps Validation that the Source system is ready for recording is done automatically on Recording Start-Up – you can condict the Check Steps manually at any time.

#### 1. Select Test Plan from the drop down and click on the Tick. From there, you'll need to click on the Enhancement Setup option within the Recording Section

CO	NTEXT	
-	Plan	
TYI	Regression Test Q1	✓ ✓ []
▲ 0 ※ C ∳ R	verview onfiguration ecording	
Red	cording	
	Link Type	
	File System Monitoring	
	Enhancement Setup	
•	Outbound RFC Setup	
¥	Recording Status	
3	Standard Recordings	
C	Filtered Recordings	
JOB	Job Manager	

On the right panel, you'll see your defined Source System(s). Double click on the system to show the

#### Enhancement Points

CONTEXT	16	Information										
		Before a recording of	an take place, you must first setup the	systems to be recorded b	ere	All enhanceme	inte					
ङ्घ Plan		must be activated in	the source artems and the BEC enhan	compart program run to k	and l	a inhound BEC						
2.60 24 HOUR RECORDING			the source systems and the RFC enhan	icement program fun to r	Iditur	e indound KFC.						
	14	Enhancement Setup										
~		Source Systems										
< >>		Type SID System des	cription									
🖍 Overview	1	TE8 TE8 Record	ing									
× Configuration												
🔮 Recording												
Recording												
Link Type		🔉 🖂 . 🔻 . 🗲		te . 🖉 Deartivate . 🗌	<b>1</b>	9= . 🔥						
Recording Status												
Enhancement Setup		Enhancement po	oints									
File System Monitoring		Туре Туре	Enhancement description	Include name	Тур	e Reason	Туре	Status	Lck L	ocked?	Rel Rel. Status	Mnd Mandatory?
Outbound RFC Setup		GUI dialog step	Capture BDC QID	ZBTI_AUT_ENH_BDR1	۲	Recording	1	Inactive	n U	Inlocked	Released	Mandatory
RFC Wrapper Generation	÷.	Batch job	Batch job correlation	ZBTI_AUT_ENH_BTCC	4	Correlation	1	Inactive	ng n	Inlocked	Released	Mandatory
Job Manager	8	500 Batch job	Batch job start point	ZBTI_AUT_ENH_BTCS	•	Recording	1	Inactive	ng n	Inlocked	Released	Mandatory
Standard Recordings		GUI dialog step	Control framework dispatch	ZBTI_AUT_ENH_CDIS		Recording	1	Inactive	u û	Inlocked	Released	Mandatory
Filtered Recordings		GUI dialog step	Change document write	ZBTI_AUT_ENH_CDWN	•	Recording	1	Inactive	u û	Inlocked	Released	Mandatory
		GUI dialog step	Recording code for clipboard imp.	. ZBTI_AUT_ENH_CIMR		Recording	1	Inactive	u 🗊	Inlocked	Released	Mandatory
		GUI dialog step	Enhancement in CONTROL_SETFU.	. ZBTI_AUT_ENH_CNSF		Recording	1	Inactive	u 🗊	Inlocked	Released	Mandatory
		GUI dialog step	Start of datastream transfer	ZBTI_AUT_ENH_DIXB		Recording	1	Inactive	D D	Inlocked	Released	Mandatory
		GUI dialog step	Frontend: DIRECTORY_BROWSE	ZBTI_AUT_ENH_DRBR	•	Recording	1	Inactive	D D	Inlocked	Released	Mandatory
		GUI dialog step	Frontend: DIRECTORY_CREATE	ZBTI_AUT_ENH_DRCR	•	Recording	1	Inactive	D U	Inlocked	Released	Mandatory

#### 2. Generating the RFC Wrapper Programs – OPTIONAL

If you are planning on recording RFCs, then you will need to generate the RFC wrapper programs. These are small pieces of code that are executed before and after each RFC function module is called in order to capture the required information for the playback.

In the RFC Wrapper Generation screen, click the button Generate RFC and select Parallel Processing -> Execute on Remote System

CONTEXT S Plan 2.60 24 HOUR RECORDING	Information Remote Fuction Module and Fue inbound and outbound of the RFC Wrapper Generation	inction Group wrapper source system	s are generated to all	ow recording of RFC calls			
	🍸 🔁 👔 🖓 Force Refresh	Generate RFC 🖌					
< >>	Type SID System description S	ta Status	Last Run	FuGr GenFu NotG.	Error Too	RFC GenRFC NotG Error Too	La
💦 Overview	ILS IES Recording	Complete	09.08.2022 15:31	9,071 8,910 161	0 0 42	2,900 42,298 007 0 0	25
≯ Configuration							
🞍 Recording							
Recording Link Type Recording Status File System Monitoring Outbound RFC Setup	Function Groups E Fu	ers					
RFC Wrapper Generation	Grp Function Group	Sts Status	Remote FM	Generation time	Generated by	Gen Generated Group	105
Job Manager	/ IBCDWBEN//BDL/EN0000	Generated	20 REC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	V0EPP092A1EE5D21A76E51	101
Standard Recordings	1BCDWBEN//BEV3/EN000	Generated	22 RFC in Group	25.10.2018 11:23	/BTI/AUT_REC	V944F2C0D09D8B56877F42C	1E3
V Filtered Recordings	1BCDWBEN//DSD/EN0000	Generated	8 RFC in Group	25.10.2018 11:23:	/BTI/AUT_REC	Y3C8D59B9F2F3ABAAC4FDA3	BA.
	1BCDWBEN//EACC/EN000	0 Generated	4 RFC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	YCFAFCD9548E6E63B6FD473	4E6
	1BCDWBEN//ISDFPS/ENOO	Generated	2 RFC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	Y42E631BDAE131A5A1416C	59
	1BCDWBEN//MRSS/EN000	0 Generated	2 RFC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	YDE345F16EEFFE00A059CB9	FC4
	1BCDWBEN//OPT/EN0000	Generated	2 RFC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	Y8E899E0D6DF4E0A0B0AA2	1 <b>C</b>
	/1BCDWBEN//POA/EN0000	Generated	2 RFC in Group	25.10.2018 11:23:	/BTI/AUT_RFC	Y58748206D8B0D2899C0300	)3

**PEC Wrapper Constition** 

Type SID System description	G Sta	Status	Single thread	•	FuGr GenFu.	. NotG	Error	Тоо	RFC	6
TE8 TE8 Recording		Complete	Parallel processing	•	Execute or	remote	system		42,905	4
					<u>S</u> how job s	verview				
				l						

This will submit several background jobs in the source system which analyse each RFC-enabled function module and create a wrapper program for it. This can take an hour or more to run, so execute this step well in advance of the time at which you want to start your recording.

You will, after the main wrapper generation has finihsed, have the option to Regerneate Out of Date or Modules/Groups which were marked as In Error but which you have subsequently fixed, and wish to rerun.

#### 3. Activating recording enhancements

Testimony enhancements will be activated automatically in the source (recording) system before a recording takes place. The optional Generate RFC step should be complete. They can be activated manually, if you wish, but only the Enhancements marked as Mandatory are the items which will be processesed. You should see a list of enhancement points and their current status (which should be Inactive). To activate the enhancements, click the Activate button and then choose "All Enhancement points"

🎤 Activat	Deactivate 🖌 📔 🗋 Generate RFC	<b>⊿</b>					
	Selected Enhancement Point						
intion	All Enhancement points						
	/BTI/AUT_ENH_BSPN						
	/BTI/AUT_ENH_BSPX	Ö					

You will be shown a pop-up giving information on the number of enhancements to be activated. Click on Proceed and after a few seconds the enhancements will be activated.

Note: The number of enhancements will depend on those marked as Mandatory in the <u>Enhancement</u> <u>Configuration</u>



Locked: 0 Not Released: 5 Optional: 3 To be Instrumented: 34 All 34 points will be activated immediately



Note that some enhancement points (with Locked and/or Unreleased statuses) will not be activated.

1	
ě	When activating the recording enhancements for the first time after the transports are imported, you may see this error:
	"Failed to activate the enhancement point : Include /BTI/AUT_ENH_GRZC cannot be found"
lf y	ou encounter this error, follow the below steps to correct it.
•	In Testimony, deactivate all the recording enhancements
•	In the Source System
	Go to transaction SE24
	Display class CL_SALV_GRZ_CONTROLLER
	Go to -> Sections -> Public section
	<ul> <li>Utilities -&gt; Update navigation index</li> </ul>
•	Exit Testimony
•	Open Testimony
•	Activate the recording enhancements

You can toggle the Mandaotory flag with the buttion:

	<b>G</b>	📲 🖌 🛛 🗶 🛃	/ 🚹 🚊 🛫   🔒 🔐   🎢 Activa	te 🖌 🌾 Deactivate 🖌 🛛	1	910																		
	Enł	nancement po	pints				Toggle Ma	andatory Fl	ag															
	Туре	Туре	Enhancement description	Include name	Туре	Reason	туре	Status	LLK	Locked?	Rel	Rel. Status	Mnd	Mandatory?										
I	1	GUI dialog step	Capture BDC QID	ZBTI_AUT_ENH_BDR1		Recordin	g 🎢	Inactive	n	Unlocked		Released	۰	Mandatory										
	JOB	Batch job	Batch job correlation	ZBTI_AUT_ENH_BTCC	4	Correlatio	on 🎽	Inactive	n	Unlocked		Released	•	Mandatory										
l	JOB	Batch job	Batch job start point	ZBTI_AUT_ENH_BTCS		Recordin	g 🎢	Inactive	n	Unlocked		Released	•	Mandatory										
	23	GUI dialog step	Control framework dispatch	ZBTI_AUT_ENH_CDIS		Recordin	g 🎽	Inactive	n	Unlocked		Released	•	Mandatory										
l	<u>_</u> 1	GUI dialog step	Change document write	ZBTI_AUT_ENH_CDWN		Recordin	g 🎽	Inactive	n	Unlocked		Released	1	Mandatory										
l	23	GUI dialog step	Recording code for clipboard imp	ZBTI_AUT_ENH_CIMR		Recordin	g 🎽	Inactive	n	Unlocked		Released	۰	Mandatory										
	23	GUI dialog step	Enhancement in CONTROL_SETFU	ZBTI_AUT_ENH_CNSF		Recordin	g 🎽	Inactive	n	Unlocked		Released	•	Mandatory										
1	2	GUI dialog step	Start of datastream transfer	ZBTI_AUT_ENH_DIXB		Recordin	g 🧨	Inactive	<b>D</b>	Unlocked		Released	•	Mandatory										
1	2	GUI dialog step	Frontend: DIRECTORY_BROWSE	ZBTI_AUT_ENH_DRBR		Recordin	g 🎢	Inactive	n	Unlocked		Released	1	Mandatory										
11	-	OUT deleter store	Freedow do DIDECTORY, ODEATE	TOTT AUT CAUL DOCO		Description		Transformer	0	the last stand		Delegend		Manual America										

#### 4. Execute Check Steps

Once the enhancements are activated, you can execute the recording Check Steps Select Recording -> Recording Status from the left-hand navigation pane.

3		
<b>▲</b> 0	Dverview Configuration Recording	
Re	cording	
	Link Type	
	File System Monitoring	
1	Enhancement Setup	
•	Outbound RFC Setup	
Ŷ	Recording Status	
63	Stanuaru Recorungs	
C	Filtered Recordings	
JOB	Job Manager	

The Recording Status screen will appear on the right. Select the Source System and Click on the Check Steps button and choose "Run check steps"

<b>9</b>		5 1	Įc ⊿			4	>
Recording S			<u>R</u> un	ystems			
			<u>S</u> hov				
			Recordir				

Choose Yes in the following pop-up.



The check steps will run, and results will be returned in a pop-up screen, as below.

To help troubleshoot errors there are logs providing information on the error, double click on the line in error and then double click the log on the bottom left. The example below shows the error received if you do not active the Ehnancement Points in the Source system.

Check step execution									×
Steps to be executed									
🛃   🕰   🕼 Execute 🖌									
Stp Step Name	Hlp	Тур	Step Type	Auto?	Sts	Status	Last run	Last Message	
General Check source landscape has been instrumented	i	1	Check step	1		Complete	15.10.2019 20:54:32		
↓ Check shared memory limits on source landscape	1	1	Check step	V	•	Never run	Never		
General Check that recording agent installed correctly	1	1	Check step	V		Complete	15.10.2019 20:54:32		
G Check app server file paths are set	ī	1	Check step	~		Complete	15.10.2019 20:54:32		
G Check file system monitoring config	1	1	Check step	~		Error	15.10.2019 20:54:33		
General Check OS command is set for file copy	1	1	Check step	V		Complete	15.10.2019 20:54:33		
G Check RFC recording program generation status	7	1	Check step	V		Warning	15.10.2019 20:54:34		
Interstat       Image: Section of the sec									< > < >
									0

There is also help available to guide you in resolving any Check Step erros. Simply click on the blue help icon on the row in question.

Check step execution							
ps to be executed							
🔁   📲 🖌   🕀 Execute 🖌		_					
Stp Step Name	Hlp	yp Step Type	Auto?	Sts	Status	Last run	Last Message
General Check source landscape has been instrumented	i	Check step	~		Complete	15.10.2019 20:54:32	
Check shared memory limits on source landscape	i	🖆 Check step	~		Never run	Never	
Check that recording agent installed correctly	1	🖆 Check step	~		Complete	15.10.2019 20:54:32	
Check app server file paths are set	7	Check step	1		Complete	15.10.2019 20:54:32	
G Check file system monitoring config	1	Check step	~	•	Error	15.10.2019 20:54:33	
₲ Check OS command is set for file copy	i	Check step	1		Complete	15.10.2019 20:54:33	
Generation status	7	Check step	1		Warning	15.10.2019 20:54:34	

You can also use the buttons below to hide the Information, Warning or Error messages if there are a large volume of messages to check.



Once you have finished analysing errors, close the pop-up screen and you can repeat the Check Steps as needed.



Stp	Step Name	Run selected step only	Hlp	Typ	Step Type	Auto?	Sts	Status	Last run
Ð	Check source lands	Run all stons	i	1	Check step	V		Complete	29.10.2020 10
Ð	Check shared memor		i	1	Check step	V		Complete	29.10.2020 10
Đ	Check that recording agent installed correctly			1	Check step	V		Complete	29.10.2020 10
Ð	Check app server file paths are set		i	1	Check step	V		Complete	29.10.2020 10
Ð	Check file system mo	nitoring config	i	1	Check step	V		Complete Complete	29.10.2020 10
•	Check OS command i	s set for file copy	i	1	Check step	V			29.10.2020 10
Ð	Check REC recording	program generation status		1	Chack stop	1	-	Novor rup	Never

## **3.8.1.1. Settings for DB writes**

#### How Testimony stores recorded data

When a recording is running, Testimony is capturing information about dialog steps, batch jobs, etc. The data Testimony captures includes inputs, outputs and technical information required to enable Testimony to playback. In order to avoid (especially online) performance degradation while a recording is running, this data is initially stored in shared memory on the application server. (Writes to shared memory typically take 1-3 microseconds, whereas writes to the DB take 7-10 milliseconds.) A Testimony batch job (which is automatically started when you start the recording) then periodically checks each application server and writes the data saved in memory to Testimony tables on the database.

#### Bypassing the shared memory

There may occasionally be situations where, in between one execution of the batch job and the next, the shared memory area into which Testimony stores its data fills up. Since this memory area is part of shared memory (and so is used by other SAP processes), if Testimony detects that this has happened it bypasses the shared memory and, until the memory is cleared down by the next execution of the batch job, writes directly to the database. However, while this is happening there may be a small performance impact on transactions that are being recorded (as the DB write time is effectively added to the overall response time of the transactions). In order to ensure that this situation does not persist for too long, Testimony will automatically abort the recording if the number of direct DB writes (i.e., writes of Testimony data that bypass the buffer), exceeds a certain number within one minute. This value is configurable via the General Parameter ALLOWED\_DB\_WRITES.

00.	ierar parametera	·				
Туре	Parameter type	Technical name	Parameter description	Help	Current Value	Default Value
	Playback	FAILED_SCRIPT_ACTION	Action when a script fails	i	02	01
	Playback	FORCE_GUI_WIN_SIZE	Force SAP GUI main window size	i	Х	X
	Playback	UPD_TASK_TIMEOUT	Max. time to wait for upd. tasks (secs)	i	60	60
	Playback	ACC_FACTOR_REF_TIME	Acceleration factor refresh time	i	300	300
	Playback	LOCK_ATTEMPTS	Lock Virtualisation Attempts	i	10	10
	Playback	LOCK_DEPNCY_CANCEL	Cancel item with Lock dependency fails	i	1	1
	Playback	LOCK_WAIT	Lock Virtualisation Wait Time	i	2	2
	Playback	SHORT_DUMP	Short Dump Time Difference	i	600	600
	Playback	SEQ_STRATEGY	Sequencing strategy	i	02	02
۲	Recording	STAD_SUBPERIOD	STAD data period breakdown (secs)	i	60	60
	Recording	STAD_PERIOD	STAD data recording period (mins)	i	60	60
۲	Recording	STAD_ACTIVE	STAD data recording activation	i	Х	X
۲	Recording	RFC_DATA_SIZE_LIMIT	Inbound/Outbound RFC data size limit(MB)	1	50	50
	Recording	RFCTAB_CMP_THRESHOLD	RFC TABLES param. compression threshold	i	5000	5000
۲	Recording	REMOTE_USER_CHECK	Remote user check during transfer to rep	i		
۲	Recording	RELDATA_WAIT	Rel. data periodic save wait (m/s)	i	500	500
۲	Recording	RELDATA_LOCKS	Related data read lock on saves	i	Х	X
	Recording	RECORD_WAIT_STRTUP	Force recording job to wait on startup	i		
۲	Recording	RECORDING_TRACE	Recording process and timing logging	i		
۲	Recording	OUTBOUND_RFC	Activate Outbound RFC functionality	i		
	Recording	ORFC_USER_PASSWORD	Outbound RFC default password for user	i	*******	*****
	Recording	ORFC_USER_GROUP	Outbound RFC default user group	i		
۲	Recording	ORFC_DB_SELECTBYPASS	Outbound RFC DB Select bypass	i		
۲	Recording	OPMODE_PERIOD	Operation mode recording period (mins)	i	60	60
۲	Recording	OPMODE_ACTIVE	Operation mode rec/playback activation	i		
۲	Recording	IGNORE_US_WO_LOGON	Ignore user sessions without Log-on	i		X
۲	Recording	IGNORE_FAULTY_SCRIPT	Ignore faulty scripts (transfer to repo)	i		
۲	Recording	IDOC_MAX_TTL_SEG	Maximum IDoc segments to capture	i	1000	1000
	Recording	IDOC_MAX_REC_SEG	IDoc segment threshold for SHM storage	i	100	100
۲	Recording	FIORI_BETA	Enable Fiori beta functionality	i		
۲	Recording	CUSTOM_STR_TO_TAB_FM	Use Custom String to Table FM?	i	Х	X
۲	Recording	CREATE_START_TR	Derive start. tr. scripts (ignore rec.)	i		
۲	Recording	BUTID_SAVE	Business Transaction Save Logic	i	DEFAULT	DEFAULT
	Recording	ALLOWED_DB_WRITES	Allowed DB writes (/minute) before abort	i	10000	1000

In the image above (accessed in the Testimony transaction by choosing Configuration —> General Parameters) you can see that the value for ALLOWED\_DB\_WRITES has been changed to 10,000 from its default of 1,000.

#### Clearing the shared memory via the batch job

As mentioned above, a batch job is automatically started when you begin a recording to save the data stored in shared memory to the DB. When it does this, it also deletes the data from the shared memory area in order to free up memory.

By default, the batch job checks each application server every minute. It is often useful – especially in busy systems – to change the frequency of this job to run continuously. When this is done, it will constantly monitor the shared memory on each application server (using a round-robin approach so it saves the data for each application server in turn).

To change the frequency of the batch job go to Recording —> Job Manager in the Testimony transaction on the Central System.

Job ma	inager									
3	1 🖼 🔎 🚳 🧕	l 🚱 🥒								
loh	definition									
100										
Туре	e Job type	Job name	Periodicity	State	Last execution	Next execution				
0	Orchestrator	Recording agent orchestration job	User action	Running	25.11.2021 / 09:12:39	Not scheduled				
	Recording	Business transactions transfer	User action	Not running	Never executed	Not scheduled				
	Recording	Recording post processing	User action	Not running	Never executed	Not scheduled				
	Recording	Business transactions mass transfer	User action	Not running	Never executed	Not scheduled				
	Recording	RFC Wrapper invalidation	User action	Not running	Never executed	Not scheduled				
	Recording	Recording health check	Every 30 second(s)	Pending	25.11.2021 / 14:41:35	25.11.2021 / 14:42:05				
	Recording	Business transactions DB storage	Every 1 minute(s)	Not running	Never executed	Not scheduled				
6	Preparation	Shared memory configuration	User action	Not running	Never executed	Not scheduled				
- 66÷	Utilities	Mass intrumentation	User action	Not running	Never executed	Not scheduled				

Here you can see that the "Business transactions DB storage" job has the default frequency of "Every 1 minute(s)".

To change this, highlight the row and click on the change button. Then go to the Execution tab and delete the number 1 from the Periodicity field.

🔄 Modification of job 0002		×
Identification		
Job ID	0002	
Description	Business transactions DB storage	
Header Exec	ution	
lob trigger	Orchestrated job	
Periodicity	0 minute(s)	
Execution mode	Asynchronous (Background)	
Execution system	Recording system 👻	✓ Remote execution
Stoppable 🗌		

Click on Save and the periodicity of the job will be changed so that it constantly monitors and clears down the shared memory.

# 3.8.1.2. Reviewing shared memory parameters

#### Overview

During the <u>installation and initial configuration of Testimony</u>, you will have set instance profile parameters on the source system. Once you have performed at least one large recordings in your production system, it is useful to review these settings to see if they need to be increased.

#### The Force Save Statistics Report

The program /BTI/AUT\_FORCE\_SAVED\_STAT allows you to review a previous recording to see if and when the recording was forced to write directly to the DB rather than to shared memory.

Execute the program in SE38/SA38 on the Central System.

Force save statistics report							
₽							
Plan ID	000017						
Interval in minutes	1						

In Plan ID, enter the test plan ID for the recording you are analysing. (You can get this information by displaying the test plan in Configuration —> Test Plans.)

In the "Interval in minutes" field, enter a value of 1. This will show a minute-by-minute breakdown the recording's forced DB writes.

When you execute the report, you will see output similar to this:

#### Force save statistics report

#### I4 4 > >I

Period	Start Date	Time(UTC)	End Date	Time(UTC)	Count
1,183	20.09.2021	07:53:19	20.09.2021	07:54:20	0
1.184	20.09.2021	07:54:20	20.09.2021	07:55:20	0
1.185	20.09.2021	07:55:20	20.09.2021	07:56:21	0
1.186	20.09.2021	07:56:21	20.09.2021	07:57:21	960
1.187	20.09.2021	07:57:21	20.09.2021	07:58:22	795
1.188	20.09.2021	07:58:22	20.09.2021	07:59:22	0
1.189	20.09.2021	07:59:22	20.09.2021	08:00:23	0
1.190	20.09.2021	08:00:23	20.09.2021	08:01:23	0
1.191	20.09.2021	08:01:23	20.09.2021	08:02:24	0
1.192	20.09.2021	08:02:24	20.09.2021	08:03:24	0
1.193	20.09.2021	08:03:24	20.09.2021	08:04:25	0
1.194	20.09.2021	08:04:25	20.09.2021	08:05:25	0
1.195	20.09.2021	08:05:25	20.09.2021	08:06:26	0
1.196	20.09.2021	08:06:26	20.09.2021	08:07:26	0
1.197	20.09.2021	08:07:26	20.09.2021	08:08:27	0
1.198	20.09.2021	08:08:27	20.09.2021	08:09:27	0
1.199	20.09.2021	08:09:27	20.09.2021	08:10:28	0
1.200	20.09.2021	08:10:28	20.09.2021	08:11:28	0
1.201	20.09.2021	08:11:28	20.09.2021	08:12:29	39
1.202	20.09.2021	08:12:29	20.09.2021	08:13:29	97
1.203	20.09.2021	08:13:29	20.09.2021	08:14:30	0
1.204	20.09.2021	08:14:30	20.09.2021	08:15:30	3
1.205	20.09.2021	08:15:30	20.09.2021	08:16:31	103
1.206	20.09.2021	08:16:31	20.09.2021	08:17:31	0
1.207	20.09.2021	08:17:31	20.09.2021	08:18:32	0
1.208	20.09.2021	08:18:32	20.09.2021	08:19:32	24
1.209	20.09.2021	08:19:32	20.09.2021	08:20:33	0
1.210	20.09.2021	08:20:33	20.09.2021	08:21:33	0
1.211	20.09.2021	08:21:33	20.09.2021	08:22:34	0
1.212	20.09.2021	08:22:34	20.09.2021	08:23:34	1.044
1.213	20.09.2021	08:23:34	20.09.2021	08:24:35	0
1.214	20.09.2021	08:24:35	20.09.2021	08:25:36	0
1.215	20.09.2021	08:25:36	20.09.2021	08:26:36	2.053
1.216	20.09.2021	08:26:36	20.09.2021	08:27:37	2.869
1.217	20.09.2021	08:27:37	20.09.2021	08:28:37	514
1.218	20.09.2021	08:28:37	20.09.2021	08:29:38	0
1.219	20.09.2021	08:29:38	20.09.2021	08:30:38	8
1.220	20.09.2021	08:30:38	20.09.2021	08:31:39	1.036
1.221	20.09.2021	08:31:39	20.09.2021	08:32:39	0
1.222	20.09.2021	08:32:39	20.09.2021	08:33:40	0
1.223	20.09.2021	08:33:40	20.09.2021	08:34:40	502
1.224	20.09.2021	08:34:40	20.09.2021	08:35:41	551
1.225	20.09.2021	08:35:41	20.09.2021	08:36:41	625
1.226	20.09.2021	08:36:41	20.09.2021	08:37:42	320
1.227	20.09.2021	08:37:42	20.09.2021	08:38:42	2
1.228	20.09.2021	08:38:42	20.09.2021	08:39:43	608
1.229	20.09.2021	08:39:43	20.09.2021	08:40:43	2.587
1.230	20.09.2021	08:40:43	20.09.2021	08:40:53	347

In the image above, you can see that there were several one-minute periods where the number of forced DB writes exceeded the default ALLOWED\_DB\_WRITES threshold of 1,000. In the case of this recording, the threshold had been set higher so the recording did not abort. However, it does show that there were frequent periods when the shared memory was full, so increasing the relevant shared

#### memory parameters is advisable.

# 3.8.1.3. Changing optional/mandatory enhancements

#### Introduction

When Testimony is first installed, it comes with a set of recording enhancements which must be activated before starting a recording. While many of these are delivered as mandatory enhancements, some are delivered as optional enhancements because they won't be relevant for all customers.

Enh	Enhancement points														
Туре	Туре	Enhancement description	Include name	Туре	Reason	Туре	Status	Lck	Locked?	Rel	Rel. Status	Mnd	Mandatory?		
<u>_</u>	GUI dialog step	List command	ZBTI_AUT_ENH_LCOM		Recording	1	Inactive	La C	Unlocked		Released	٠	Mandatory		
<u>_</u>	GUI dialog step	Enqueue / Dequeue 01	ZBTI_AUT_ENH_LK1R		Recording	1	Inactive	ſ	Unlocked		Released		Optional		
<u>_</u>	GUI dialog step	Enqueue / Dequeue 02	ZBTI_AUT_ENH_LK2R		Recording	1	Inactive	ſ	Unlocked		Released		Optional		
•	GUI logon	SAP GUI logon	ZBTI_AUT_ENH_LOGO		Recording	1	Inactive	ſ	Unlocked		Released	٠	Mandatory		
<u>a</u> :	GUI dialog step	List PBO	ZBTI_AUT_ENH_LOUT		Recording	1	Inactive	6	Unlocked		Released	۰	Mandatory		
<u>_</u>	GUI dialog step	Recording code for NUMBER_GET	ZBTI_AUT_ENH_NGER		Recording	1	Inactive	ſ	Unlocked		Released	(	Mandatory		

If there are areas of functionality that are important to you which are covered by optional enhancements, then rather than have to individually activate them you can change the configuration so that these are marked as mandatory. There is a button provided to toggle the Mandatory status, but you can also mass-edit directly in the configuration table:

#### Updating enhancement configuration

Enhancement configuration is updated via table /BTI/AUT\_C\_ENHT, which can be edited using transaction SM30. In the table, optional enhancements have a blank entry in the "Mand" Column. Change this entry to Mandatory for the enhancements you want to change.

Enhancement	s configuration					
Enhan. ID	Rel Sts		Mand	1	Main pro	
LCOM	Released	•	Mandatory 🔹	7 5	SAPLSY	٠
LK1P	Released	•	-	7 5	SAPLSE	•
LKIR	Released	~	Mandatory 🗸 🔻	r 5	SAPLSE	
LK2P	Released	•	-	۲ S	SAPLSE	
LK2R	Released	~	Mandatory 🔻	r 5	SAPLSE	
LOGO	Released	•	Mandatory 🔻	1	SAPLSU	

Make sure that you are changing the setting for the correct enhancement. Pay particular attention to the type of enhancement (Recording or Playback) and the name of the enhancement.

## 3.8.1.4. Setting up file system monitoring

#### Introduction

Many processes in SAP – especially batch processes – read from external filesystems. For example, you may have an external sales system in which sales orders are created. This external system exports new sales orders to a file which is then uploaded to SAP for the creation of sales order documents. It is obviously important that Testimony is able to capture these file accesses – and the files themselves – so that these processes can be played back.

#### File system monitoring configuration

In order for Testimony to be able to capture the files, we need to tell Testimony which filesystem directories to monitor for file access. When Testimony detects that a batch job or other process has accessed a file in the monitored directories, it will copy that file to its own directory. This copied file is later copied to the Central System for use in the playback.

The method and directory locations for the file copy are configured during the installation of Testimony.

To add directories to the File System Monitoring configuration, go to Recording —> File System Monitoring, click on the Configuration tab, double-click on your source system and then click on Create.

Maintain directory configuration	×											
Header Information												
ኛ 🛛 Test Plan ID	KMC test 1 🗸											
System	TY1 - TY1 RECORDING											
🧧 Directory ID												
Directory Monitoring Details												
Application Server	~											
Directory Path	/sap_interfaces/											
Filename Mask	* *											
Include / Exclude	Include 🗸											
Monitor all sub-directories of this	directory also											
Audit Information												
🚹 Creation User	Created 00:00:00											
🤱 Last Changed By User	Changed 00:00:00											

Enter the information for your interfaces directories.

- If you have the same directory structure mounted on all application servers, then you can leave the Application Server field blank. This tells Testimony to monitor all application servers
- If you have only specific filenames that you want to monitor, then enter details in the Filename Mask field, otherwise, to monitor all files, leave this field to the default
- If you want Testimony to monitor all subdirectories of the main interfaces directory, then select the "Monitor all sub-directories of this directory also" checkbox

Click on the tick, and the monitored directory will appear in the Configured directories list.

#### Configured directories

I/E	Inc/Exc	Server	Directory	Filename mask
	Include		/sap_interfaces/	* *

# 3.8.1.5. Preparing the backup

#### Introduction

One of the most important parts of the recording/playback cycle is ensuring that you have consistent data between the system being recorded and the system that you will be playing back into. For this reason, one requirement of recording for playback on another system is that you take an online backup of the source system. This will then be restored to build the target system (using standard SAP system copy tools). However, different database and backup tools and technologies have different ways of creating a consistent online backup. It is important that you understand how your particular DB and backup tools work, so that the backup can be taken at the appropriate time, and also so that the restore from the backup can be done in a way that makes a consistent dataset for starting the playback. In particular, it is important that you understand whether the point of consistency is the start of the backup, the end of the backup, or must be defined to a point just after the end of the backup.

#### Online backup data consistency

There are, in general, three different approaches taken by different databases to achieving a consistent online backup (i.e., a backup which can be restored whilst leaving no half-finished database transactions).

#### Snapshots

Snapshot tools use disk storage technologies to take a virtual snapshot of the database at a particular point in time. Because they are using functionality directly within the storage, they are very fast at taking the backup. When restoring from a snapshot to a target system, once the copying of the backed up data is done, the database will automatically roll back any DB transactions that were open at the time of the snapshot. This means that, for snapshots, the point of consistency is the *start* of the backup.

#### **Online consistent backups**

Some DB backup options (for example Oracle's Online Consistent Backup option) will change the way the database operates whilst the backup is in progress. During normal operation, the database writes the after images of any updated DB blocks to a set of files (in Oracle, these are the redo logs). The aim of these files is to allow transactions to be rolled forward following a restore from an online backup. During an online consistent backup, however, the DB will write both the before *and* the after images of the updated blocks to these logs. Once an online consistent backup has been restored, the database can roll back any updates that took place while the backup was in progress. This means that, for online consistent backups, the point of consistency is the *start* of the backup.

#### Other online backups

In most other cases, when restoring from an online backup it is also necessary to apply a set of redo logs (using the example of Oracle) once the backup has been restored. By applying all of the logs that were generated whilst the backup was running, you are able to ensure that all database updates which took place during the backup are replicated on the target system and that the database is consistent. This "point in time" recovery means that, for most online backups, the point of consistency is either the **end** of the backup, or a point **just after** the end of the backup.

#### Coordinating the backup with the start of the recording

Depending on the type of online backup you are using and the point of consistency, you need to schedule the backup and the start of the recording at different relative times. The key to ensuring that you have a consistent dataset between the recording and the start of the playback is that the recording **must** be active at the point of consistency of the backup.

Where the backup's point of consistency is the **start** of the backup, then you must switch on the recording **first** and then start the backup.

Where the backup's point of consistency is the **end** of the backup, then you can start the backup first, but you **must** start the recording before the backup finishes.

If you are using a point-in-time recovery to apply logs to a point after the end of the backup, then the recording **must** be running at the time to which you are going to roll forward after the restore.

## 3.8.2. Start Recording

#### **Overview**

There are two types of recordings you can perform with Testimony. The most common and the one that will be shown below is a **Standard Recording**. A Standard Recording will record all activity in the Source system until the recording is stopped. The second type of recording is a **Filtered Recording** and is only needed when you want to limit your recording to particular users, transactions or activity types.

You also need to decide whether you are going to start the recording immediately or schedule it to start at a later time.

It's a best practice to time the beginning of your system backup (or snapshot) to be slightly after starting the recording for use in a point-in-time restore of the Playback system. Be sure to coordinate your activities with the technical resources required to create your backup.

#### **Process Steps**

To start a Recording, navigate to the Recording Status option on the Context Menu and then click on the Start Recording button.

🔄 UI Profiles System <u>H</u> elp						
<ul> <li></li></ul>	😣 🖶 H	H 1100	💭 🌄 😮 🐄			
Testimony						
0						
CONTEXT	Recording Sta	itus				
st Plan	🔂   🚟 🖌	🚑 🛛 🐺 🗸 🐯 📜 🔵				
2.60 24 HOUR RECORDING	Record	ing Status of Sour	rce Systems			
	Type SID	System description TE8 Recording	Type Recording type	Sts Status	Sub Substatus	Bus. trs. recorded
×						
< >						
A Overview						
A Recording						
<u>♥</u> Recording						
Recording						
Link Type  Recording Status						
Enhancement Setup						
File System Monitoring     Outbound RFC Setup						

This will bring up the Recording window.

		_7		Q:				
Testimony								
2								
CONTEXT	Recording Status							
ज् Plan	🔁   🚭 🖌 🚑 🗸 🛼 🗸	😫 🖌 🕒 I 🔍 I	1					
2.60 24 HOUR RECORDING	Recording Status	of Source Sv	stems					
	Type SID System des	Er Start Recording						
	TE8 TE8 Record	Overal Recording Re	adinoss					
		A Recording can be	a started h	nowever plasse proceed with caution :	as one of the Recording Checks had :	a Warning		
			c scarced, i	iowerer please proceed men cadeon i	as one of the Recording checks had	a wanning		
Verview		Source Systems						
* Configuration		Type SID System	m Role	System description	Time Zone Sys Date	Sys Time System Cop	у	
Recording		TE8 Produ	uction sys	tem TE8 Recording	UTC 25.11.2022	10:45:33 Unspecified		
Recording								
Link Type		Recording Checks Su	ummary					
Recording Status		Check Check Sterre	Sts	Exec Message	Display 1 Marcines 0 Errors	Info Check D	ate Check Time	Det
Enhancement Setup		General Parameter	rs 🔺	51 Recording Parameters, 46 9	Same as Default, 5 Different from Dei	fault 25.11.2	022 10:45:32	8
Outhound REC Setup		Enhancements		58 Recording Enhancements,	58 Mandatory, 0 Locked, 0 Unlocked	i 25.11.2	022 10:45:32	- GI
REC Wrapper Generation		Filter Sets		1 Default Filter Sets, 1 Custom	Filter Sets, 0 Inclusions, 185 Exclusion	ons i 25.11.2	022 10:45:32	8
Job Manager		Inbound App Serv	ver 📕	1 Directories will be Monitored	during the Recording	<i>i</i> 25.11.2	022 10:45:32	3
Standard Recordings	Recording histor	Screen Field Captu	ure	8 Screen Fields will be Monitor	ed during the Recording	<u>i</u> 25.11.2	022 10:45:32	3
Filtered Recordings	Type Activation status	Outbound RFCs	<u> </u>	No Outbound RFCs have been	instrumented	<i>i</i> 25.11.2	022 10:45:32	32
	Completed	Notifications		/ Recording Notifications, 1 Ac	date	1 25.11.2	022 10:45:32	8
	1 <sup>20</sup> Completed	Preparation Steps	s i	4 Prep Steps will be Run when	the Recording Starts	i 25.11.2	022 10:45:32	- CR
		Recording Type    Standard   Start	) Filtered					
		<ul> <li>Immediate</li> </ul>	) Scheduled	1				
Repository		End						
Execution		O Manual 💿	Scheduled	Duration v 8 Hours	~			
Results								

The Check Steps will have been run automatically, but you can run them manually.

		ording											
	Overall Reco	rding Readines	S										
OUR RECOR	🔺 Recordin	g can be start	ed, h	oweve	r please proceed with caution as one o	of the Recording	g Checks had	a Warning					
	Source Systems												
	Type SID	Sys Time	e System Copy										
	TE8	Production	ı syst	em	TE8 Recording	UTC	25.11.2022	10:45:33	Unspecified				
tion	Recording C	hecks Summar	у										
	Check		Sts	Exec	Message				Info Check Date	Cł			
	Check Ste	ps		( <del>)</del>	13 Check Steps, 12 Passed, 0 Disabled	d, 1 Warnings, (	) Errors		<i>i</i> 25.11.2022	10			
a	General Pa	rameters			E1 Describe Description 40 Company	D-6	D D	£	5.11.2022	10			
5	Enhancem	ents			Execute Check Steps? 5.11.2								
a Stati	Filter Sets						5.11.2022						
mont Se	Inbound A	pp Server			Are you sure you want to Exec		5.11.2022						
em Mon	Screen Fiel	d Capture			Steps?				5.11.2022	10			
d REC 4	Outbound	RFCs							5.11.2022	10			
nner Ge	Notificatio	ns			г¬				5.11.2022	10			
aner	Licenses				Yes No	0			5.11.2022	10			
d Record	Preparatio	n Steps	i		4 Prep Stvill be Run when the Re	cording Starts			1 25.11.2022	10			
l Recordi													
anceorai													

If you wish, there is the option to look at the details with the button on the far right of the page.

Production	production system		I EX Recording	UIC	25.11.2022	10:45:33	UN	specifiea			
ecks Summar	ks Summary										
	Sts	Exec	c Message				Info	Check Date	Check Time	Det	
5		Ð	13 Check Steps, 12 Passed, 0 Disabled, 1	Warnings,	0 Errors		i	25.11.2022	10:47:23	8	
ameters			51 Recording Parameters, 46 Same as Def	ault 5 Diff	ferent from De	fault		25 11 2022	10.47.23	(Al	
nts		Check step execution									
	Н	9	tens to be executed								

		Juc	<b>J</b> 5 U	0 00	executed								
p Server		-	51	æ	Execute ( Disable/enable )								
Capture				-6									
<b>RFCs</b>		Se	eq 3	Stp	Step Name	Hlp	Тур	Step Type	Auto?	Ena	Enabled/Disabled status	Sts	Last Run Status
s			1	Ð	Source RFC Destination check	i	4	Check step	$\checkmark$		Step is enabled		Complete
			2	<b>(</b>	Check BTI Role Profile statuses on Source	i	4	Check step	$\checkmark$		Step is enabled		Complete
Steps	7		3	( <del>)</del>	Check BTI Role Profile statuses on Central	i	4	Check step	$\checkmark$		Step is enabled		Complete
			4	Ð	Deployment check of the source system transports	i	4	Check step	$\checkmark$		Step is enabled		Complete
			5	<b>(</b>	Diffuser license key check	i	4	Check step	$\checkmark$		Step is enabled		Complete
			6	Ð	Check source RFC user authorizations	i	4	Check step	1		Step is enabled		Complete
		<	>										
)e													
Ciltor	a d	Log	s an	d Re	esults of step execution								
- Filtere	eu	D	ate	/Tim	ne/User	Σ	Σ/Σ	, <b>                                    </b>	<b>⊿ ⊞</b>	<b>@</b> (	0 🚺 0		

Once all the relevant checks and general parameters have been verified you can move on to selecting the Recording Type

Standard will record everything, but still following the rules est out in the Filters

**Filtered** will give you the option to run against certains hard and one-off parameters such as only recording:

- RFC
- Dialog
- BSP
- WebDynPro
- Batch
- WebService

and for each of these, by restricting against:

- Username
- Transaction Code
- ICF Node
- Function Module Name

<u>or</u> dii	Treparation occ	P3 [[	ттер эсер	So will be non-when end i	According Starts	20.11.202
	Recording Type			-		
	◯ Standard	<ul> <li>Filtered</li> </ul>	Y Configure	Recording Filters hav	ve NOT been setup	
	Start					
	<ul> <li>Immediate</li> </ul>	Scheduled	l			

You can also schedule the recording to start at a later date/time. Very useful for starting midnight recordings and having the checks, enhancements and status verified in advance.

	<ul> <li>Filtered</li> </ul>	P conligure Recording Filters have NOT been setup
Start		
○ Immediate	<ul> <li>Scheduled</li> </ul>	Date 26.10.2022 00:00:00
End		
OManual	<ul> <li>Scheduled</li> </ul>	Duration ~ 8 Hours ~

The enhancements marked as Mandatory in their setup will be turned on automatically before the recording starts.

If an Enhancement is Released but it is not mandatory, it will return an error, which will prevent you from Starting the Recording

In this case you need to 'Lock' the Released Enhancement so that it does not need to be mandatory

		••••		no i roparado	n otopo minori min			~~~	connactionally			510.		
1	Notifications			/ Recording Notificatio	ns, 1 Active Schedules				25.11.202	2 14::	53:31	2		
	Licenses			All Licenses are valid ar	nd up to date				<i>i</i> 25.11.202	2 14:5	53:31	3	_	
	Preparation Steps	i		4 Prep Steps will be Ru	un when the Recording Starts				<i>i</i> 25.11.202	2 14:5	53:31	9		
			🗲 Pre	paration step results										1.4
	Recording Type		<b>G</b>	📲 🖌   🕞 Execute 🖌	Disable/enable 🖌									
	Standard Filte	ered	Seq	Stp Step Name			Hlp	Тур	Step Type	Auto?	Ena	Enabled/Disabled status	Sts	Last Run
	Obtained of the		1	🚯 Disable RFC aut	horization check		i	<b>4</b> 1	Preparation step	$\checkmark$		Step is enabled		Comple
	Chat		2	👃 Activate Manda	tory Enhancements		i	<u>4</u>	Preparation step	$\checkmark$		Step is enabled		Comple
	Start		3	😔 Automatically c	reate the file OS Command in	SM49	i	4	Preparation step	$\checkmark$		Step is enabled		Comple
	🔘 Immediate 🛛 💿 Sch	hedule	4	4 😡 Fill number range buffers					Preparation step	$\checkmark$		Step is enabled		Comple

You can also refer to the Preparation Steps which will be run automatically from here:

Once everything is checked, you can click the Immediate or Schedule button which will be at the bottom of the screen.

At this point, the recording should begin, or be marked as scheduled in the Recording Status screen. To check, click on the refresh button until the status shows as Running.

_ ^	Recordin	Cording Status						
>	Туре	SID TE8	System description TE8 Recording	Type	Recording type Standard			

The SAP status bar will also show the following message

4	Recording	for	test	plan	started	successfully
---	-----------	-----	------	------	---------	--------------

#### **Preparation Error**

At the start of the recording process, Testimony will run "Preparation Steps". If any of these steps fail, then you will see the recording go into a "Preparation Error" status. In this case, you can check the results of the preparation steps by clicking on the Preparation steps button and choosing "Show steps". This will allow you to navigate to the logs for each step and analyse the cause of the problem.

Once you have analysed and resolved any preparation errors, you can restart the playback following the process above.

# 3.8.3. Monitoring a Recording

#### Overview

During the recording phase, which may last for any length of time, it is important whilst you become accustomed to Testimony that you monitor the production systems that are being recorded.

Testimony provides some basic extra information during hte recording, which you can see if you click the Extended View button from the Recording Status screen, to give a count of business transactions recorded, the number of shortdumps seen since recording started, and the current Shared Memory Usage:

Recording Status									
Recording Status of Source Systems									
Type Recording type	Sts Status	Sub Substatus	Bus. trs. recorded Short dumps SHM used						
Standard	Sompleted	•							

There are various standard SAP tools that can be used to monitor the SAP system for anomalies. Most of these transactions would be run directly in the system to be monitored. These include:

(1) **Monitor Short-dumps (ST22)** – Testimony has been designed to ensure that it has no impact on production. However, in the early days of use of Testimony, you might like to ensure that users and batch jobs are not being impacted by monitoring for any short-dumps. Run transaction ST22 in the systems being recorded and look for any short-dumps directly specifying that Testimony related objects are involved (i.e. /BTI/AUT\* related objects). You might like to check this more regularly after recording is turned on (e.g. every 5 minutes), then reduce the frequency as the recording progresses (e.g. every 1 hour after the first hour of recording is complete).

(2) **Monitor Long Running Processes (SM66)** – We recommend the use of SM66 (rather than SM50) since it is across all application servers of the system you are monitoring. In this transaction, you are looking for long running background processes that would usually be fast, this is to check for a batch job that has become long running.

(3) **Monitoring Testimony jobs (/BTI/AUT)** – The main job that runs on the source system is /BTI/ AUT\_SAVE\_BTRAN\_PERIODIC. Every minute, it saves data out of the shared memory and into the database and will run for the full length of the recording. The central system also checks this job is running to update the central system and ensure that the RFC connection to the source system is still operating.

(4) **Monitor Shared Memory** – Testimony achieves what it does with near zero impact on production by using shared memory to save the recording before the job above runs to move this to the database. Shared memory is allocated per application server on the system being recorded and is set via the profile parameter **rsdb/esm/buffersize\_kb**. As a part of the installation there will be recommendations on the amount of shared memory that will be required.

To monitor shared memory in the Central System the Shared Memory Explorer (more details in the link)

should be used. It enables a view of all the app servers on one system as well as the objects contained in each app server's shared memory, it details the memory availability and usage as well as the maximum objects available and their usage.

If the RFC user to the source system does not have the correct authorisations the Shared Memory Explorer view can be restricted. In this case you can use the SAP standard transaction ST02 on the source system to monitor each application server. This transaction only shows you the shared memory of the application server you are currently logged onto. In order to check other application servers, you should use transaction SM51 in order to jump between the application servers and then once switched, run transaction ST02.

You should be checking the row that says "**Exp./ Imp. SHM**". The column "Alloc. KB" shows how much has been allocated for that particular application server. This should be reflected in the profile parameter setting in transaction RZ11. The current level of shared memory (the amount of free space) is then seen in the following column "**Freesp. KB**". Other processes in SAP can use up the shared memory (not just Testimony), so this means you'll see this value typically lower than what was allocated in the profile parameter.

The key task is to ensure that this value does not get close to zero (0KB) if the shared memory limit is reached or no shared memory is left then Testimony will abort the recording.

(5) **System Messages (SM21)** – You can check various system messages via transactions in SM21 whilst the recording is running. Short-dumps would be reflected in here. If there looks to be any anomalies that you do not expect, then investigate appropriately and if required, deactivate the recording.

If any significant impacts are detected (e.g. from a performance or impact perspective), you can deactivate the recording immediately.

(6) **Recording Table Entries** – In the system being recorded (Source), new entries for captured steps will be written into table /BTI/AUT\_BUTR at least every 60 seconds as they are flushed from the shared memory. Depending on activity, this may be more frequent. To check that entries are still being written, go into transaction SE16 on the Source system and click ENTER. In the screen that follows, click on the "Nimber of Entries" button and verify that the row count is increasing.

## 3.8.3.1. Shared Memory Explorer

#### Overview

Shared memory is used by Testimony to achieve near zero impact upon the production systems during the recording phase. Therefore, it is important to be able to monitor the shared memory in the system being recorded, This can be achieved in the source system via ST02, however, access to the source system is not always possible. The Shared Memory Explorer solves this issue. The Shared Memory Explorer has the added advantage of being able to see all app servers on the one system as well as the objects contained in each app server's shared memory, It details the memory availability and usage as well as the maximum objects available and their usage. Shared memory parameters would have been checked and adjusted as a part of the installation of Testimony. The recommended settings for the shared memory parameters are <u>here.</u> These might vary based on the usage of the source system.

#### Monitoring

The Shared Memory Explorer is found under the 'Configuration' tray if using the Administrators UI profile. This is the recommended method for monitoring the shared memory of a system being recorded, primarily because it offers one view of all the application servers on a source system. The usage of shared memory is expected to rise and then fall back every minute as the data is saved to the database. Memory climbing without being cleared out every minute should be investigated firstly before checking the recording job /BTI/AUT\_SAVE\_BTRAN\_PERIODIC is running on the source system and if shared memory continues to climb consider stopping the recording.

Testimony has a fail safe and if the shared memory is exhausted, Testimony will start to save directly to the database. However, the general parameter ALLOWED\_DB\_WRITES is used to determine how much data can be written directly to the database before the recording aborts. The recommendation for this parameter is 1000 database writes per minute before aborting.

Shared memory is displayed as below. To view the objects on each app server, double click the row. The used objects should not get to within 10% of the max objects and the free memory should not get to below 1000 kb. If they do, you should consider stopping the recording and reviewing if there are large objects you should be excluding or reviewing or if the shared memory settings should be boosted.

Software										
Source System Application Servers										
Type SID App Server System description Alloc (kb) Avail (kb)						Free (kb)	Used (kb)	Max Obje	Used Objs	
Ē	J T	<b>Y</b> 1	BTI2222_TY1_41	TY1 Recording	104857	93831	93777	54	30000	1
ſ	ידן	1	BTI2006_TY1_00	TY1 Recording	104857	104121	104121	0	2000	0
ſ	) n	1	BTI2128_TY1_00	TY1 Recording	104857	104121	104121	0	2000	0
				• •						
Resident shared memory objects										
F	Rec	Тур	e Object Type	Table name	Object Key			Data Len	Rec Len	Key Len
	1	0	Unknown	PAKDATBUF	XXINACTIVE_F	PACKAGES		55224	55224	48

#### Stopping a Recording

Note you should use the <u>Recording Status</u> tab to stop a recording the stop option here is for emergency use or for the cleanup of shared memory.

This is an emergency stop, but it also requires the RFC to be operational between the central and source

systems. The stop button can be used to abort the recording. Selecting the purge database checkbox option will remove all of the recorded data from the BTI tables and clean up any data in the shared memory of the source system. Note that you won't be able to use the data recorded for a playback if you purge the system of BTI data.

C Abort Recording on System TY1R	×
WARNING: You are about to ABORT the Recording on the Source System TY1R Are you sure you want to ABORT this Recording?	۲ د
Purge Database Content as well?	
Continue 🔀	Cancel
# 3.8.4. Stop Recording

The Recording will either stop automatically when the scheduled duration you defined in the Recording Preparation is reached, or you can stop manually. Once you have executed the recording for the time period you planned, stop the recording as follows.

Navigate to Recording -> Recording Status. Double-click on the Recording Status row for your system and you should see your recording running in the Recording history pane.

1		🚑 🛛 🖓 🖉 🖉 🖉 💽						
lec	ordin	ng Status of Source Sy	stems					
Туре	SID	System description	Туре	Recording type	Sts	Status	Sub	Substatus
	TV1	TY1 Recording		Standard		Stopped	•	

The Recording status should change to **Stopped** and the SAP status bar will also show the following message



Press the refresh button, and you'll see the status move from Stopped, to Post-Processing, to Data Transfer, and finally to **Completed**. If you executed a long recording in a busy system, then the data transfer step can take some time.

<u>ତ</u>		🚑 🍡 🎭   🌒 🖉					
Per	ordir	a Status of Source Sv	vstems				
(CC	orun	g change of bounde of					
Туре	SID	System description	Туре	Recording type	Sts Status	Sub	Substatus

One of the Post-Processing steps is to deactivate the Recording Enhancements on the Source system, but it's always good practice to doublecheck. Navigate to the Enhancement Setup option within Recording and review the Status. You may need to use the refresh button to get the most-up-to-date status of the enhancements.

CONTEXT	Enhancement Setup						
Plan     TY1 Regression Test Q1     ✓      ✓	Source Systems Type SID System desu TY1 TY1 Record	cription					
Configuration Recording	DI CII N Y . Enhancement poi	🚊 😇   🔒 🖬   🖉 Activate 🖉 De	activate				
Link Type	Type Type	Enhancement description	Include name	Type Reason	Type Status	Lck Locked?	Rel Rel Status
File System Monitoring	BSP application	BSP entry point	BTI/AUT ENH BSPN	Recording	/ Inactive	Unlocked	A Not Released
Ennancement Setup	BSP application	BSP exit point	/BTI/AUT ENH BSPX	Recording	Inactive	Unlocked	A Not Released
Recording Status	Batch job	Batch job correlation	/BTI/AUT_ENH_BTCC	Correlation	/ Inactive	Unlocked	Released
Standard Recordings	Batch job	Batch job start point	/BTI/AUT_ENH_BTCS	Recording	/ Inactive	Unlocked	Released
Filtered Recordings	GUI dialog step	Control framework dispatch	/BTI/AUT_ENH_CDIS	Recording	/ Inactive	Unlocked	Released
Job Manager	GUI dialog step	Change document write	/BTI/AUT_ENH_CDWN	Recording	Inactive	Unlocked	Released
	GUI dialog step	Recording code for clipboard import	/BTI/AUT_ENH_CIMR	Recording	Inactive	Unlocked	Released
	GUI dialog step	Start of datastream transfer	/BTI/AUT_ENH_DIXB	Recording	Inactive	🔐 Unlocked	Released
	GUI dialog step	Frontend: DIRECTORY_BROWSE	/BTI/AUT_ENH_DRBR	Recording	/ Inactive	Unlocked	Released
	GUI dialog step	Frontend: DIRECTORY_CREATE	/BTI/AUT_ENH_DRCR	Recording	/ Inactive	Unlocked	Released

If any are still Active, click on the Deactive button to turn them off. You can also make use of the transaction /BTI/AUT\_DEACT\_ENH to deactivate the enhancements.



## 3.8.4.1. Data transfer after a recording

Once a recording has stopped, the data that has been captured (stored in tables on the source system) is automatically transferred to the central system. This is done in a number of parallel processes, with the number of processes determined by the number of scripts that have been recorded. Each parallel process uses a batch work process on the source system.

The configuration for this data transfer parallelisation is contained in table /BTI/AUT\_C\_DTPR in the central system.

MANDT	PROCN	UPLIM
011 011 011 011 011 011 011 011 011	00000000001 00000000002 00000000003 0000000000	25,000 50,000 100,000 250,000 500,000 1,000,000 2,000,000 4,000,000 7,000,000
011	0000000010	999999,999

The default configuration sets a number of parallel processes (in the PROCN column) depending on a maximum number of scripts in the recording (in the UPLIM column). So, for example, if your recording contains 400,000 scripts, then 5 parallel processes will be used (as 400,000 is just below the UPLIM number of 500,000).

Changes can be made to these values if you want to speed up the data transfer and you have enough free batch work processes on the source system.

# 3.8.5. Aborting a Recording

### **Overview**

When a recording needs to be stopped immediately the abort option can be used. Whilst used infrequently this can be an option to use if you have a concern about the recording on the source system. This option means the recording is not stopped in the usual manner and may require more effort if you want to use this recording to playback.

There are three ways a recording can be aborted:

- 1. Manually via Testimony on the central system using the abort button in the Shared Memory Explorer, more details <u>here.</u>
- Manually directly on the source system via the transaction /BTI/AUT\_ABORT\_REC or program /BTI/AUT\_ABORT\_REC in SE38. This option is helpful if there is an issue with the RFC connection between the central and source system, more details <u>here</u>.
- 3. Testimony ca also abort automatically when the recording has completely filled the shared memory on an application server and writes directly to the DB more times than the general parameter ALLOWED\_DB\_WRITES per minutes (normally set as 1000).

All aborts ensure the following:

- The recording switch is turned off on each application server
- The shared memory is cleared down on each application server
- The status on the central system is updated as aborted.

Note the status of the recording appears as below after an abort then to retrieve the data and run the full post processing steps you should use the stop button.

The button ( can also be used to analyse how many direct DB writes were performed to enable you to tune to prevent an automatic abort on exceeding the general parameter ALLOWED\_DB\_WRITES per minutes (normally set as 1000) for your next recording.

🔄 UI Profiles System Help								
<ul> <li>• • • • • • • • • • • • • • • • • • •</li></ul>	8 😌 🖶 H H. 1000 🗩 🗖 🥹 🛠							
Testimony								
হি								
CONTEXT	Information							
	This area shows you the recording status of the current test plan across all recording agents in all systems.							
GF_TD0	You can either start, pause or stop the current recording within the source systems of the current test plan.							
	Recording Status							
	Bosoning Status of Source Surtems							
< >	Recording status of source systems							
▲ Overview	Type SID System description Type Recording type Sts Status Sub Substatus							
✗ Configuration								
🖢 Recording	Click "Stop recording" again to trigger data transfer and post-processing							
Recording								
Link Type								
File System Monitoring								
Ennancement Setup								
Becording Status								
Standard Recordings								
S Filtered Recordings								
Job Manager								

# 3.8.5.1. Manually Aborting a Recording

A recording can be aborted manually in two ways as below:

1. Manually via Testimony on the central system using the stop button in the Shared Memory Explorer. The popup as below appears with options before you execute the abort of the recording.

Software		
Source System Application Servers	Abort Recording on System TY3R	×
Type     SID     App Server       TY3     bti3242_TY3_00	WARNING: You are about to ABORT the Recording on the Source System TY3R  Are you sure you want to ABORT this Recording?	ר ר
	<ul> <li>Remove Recording enhancements</li> <li>Cancel Recording Job (/BTI/AUT SAVE BTRAN PERIODIC) on Source</li> <li>Purge BTI Database Content</li> </ul>	
Resident shared memory objects		
	✓ Continue	X Cancel

2. Manually directly on the source system via the transaction /BTI/AUT\_ABORT\_REC or program /BTI/ AUT\_ABORT\_REC in SE38. This option is helpful if there is an issue with the RFC connection between the central and source system.

< SAP	
✓ 🖓 🕞 Cancel More∨	
<ul> <li>Remove recording enhancements</li> <li>Cancel Recording Job</li> <li>Purge BTI database content</li> </ul>	

The manual operation of an abort has additional options that can be selected which include:

• Making the enhancements inactive (this stops data being recorded into shared memory)

- The recording job saving the data to the DB is cancelled (Job name is /BTI/ AUT\_SAVE\_BTRAN\_PERIODIC)
- The /BTI/ DB tables have their data deleted/purged

 Note that deleting or purging the data from the /BTI/ tables on the source system means no recorded data can be retrieved into the central system for a later playback

# 3.9. Review Recordings/Transfer to Repository

### Verifying that recording has captured activity

After the recording has been completed, the captured recordings will be moved from the source systems into the central system. You are then able to review what has been captured. To check that your recording has captured activity (and that it was the activity you expected), click on the Standard Recordings or Filtered Recordings item (depending on the type of recording you ran) in the Recordings tray in the left-hand navigation pane.

CONTEXT	Business Trans	actions : standard recording	s									
	9 8											
TV1 Pegression Test 01	Turne SID	Sustan description	Forging	Stong	Started	En	dad					
	Type 31D	TV1 Recording	754	6310	25 10 2019 1	1:35:05 25	10 2019 12:13:26					
		TTTRecording	754	0510	25.10.2015 1	1.55.05 2.	.10.2019 12.13.20					
Overview												
≯ Configuration												
🔮 Recording	Session	view 📑 Step view	Component	view 🧖 Link	age view 🛛 📈 Per	formance Analysis						
Recording												
Link Ture	1 = 1 (Q	Y . = 6	a 🖍 💼 🔺	➤ Transfer to F	epository 4							
Eile System Monitoring	Sessions	Obiect descri	otion		Nb stp	Type	Username	Cli	Duration	St. Date	St. Time	Test script sta
Enhancement Setup	V System	n TY1			100				52s	25.10.2019	11:35:05	
Outbound RFC Setup	> 📀 GUI	logon SAP GUI Logo	n - user BGUYN	AN	1	GUI logon	BGUYNAN	800	0s	25.10.2019	11:35:05	Test script cre
Recording Status	> 🛐 ME2	IN Start MEPO			8	GUI start transa	ctio BGUYNAN	800	46s	25.10.2019	11:35:08	Test script cre
Standard Recordings	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	0005	1	GUI logon	SCRIPT 00	05 800	0s	25.10.2019	11:35:18	Test script cre
S Filtered Recordings	> 📀 GUI	logon SAP GUI Logo	n - user SCRIPT	_0007	1	GUI logon	SCRIPT_00	07 800	0s	25.10.2019	11:35:18	Test script cre
200 Humuya	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	0003	1	GUI logon	SCRIPT 00	03 800	0s	25.10.2019	11:35:18	Test script cre
	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	0001	1	GUI logon	SCRIPT 00	01 800	0s	25.10.2019	11:35:18	Test script cre
	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	_0006	1	GUI logon	SCRIPT_00	06 800	0s	25.10.2019	11:35:18	Test script cre
	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	_0002	1	GUI logon	SCRIPT_00	02 800	0s	25.10.2019	11:35:18	Test script cre
	> 🛟 GUI	logon SAP GUI Logo	n - user SCRIPT	_0004	1	GUI logon	SCRIPT_00	04 800	0s	25.10.2019	11:35:18	Test script cre
	> 🛟 GUI	logon SAP GUI Logo	n - user SGARG		1	GUI logon	SGARG	800	0s	25.10.2019	11:35:19	Test script cre
	> 🛐 FB03	3 Display Docum	ent: Initial Scree	en	12	GUI start transa	ctio SCRIPT_00	07 800	35s	25.10.2019	11:35:19	Test script cre
	> 🔄 VA0	3 Display Sales	Order: Initial Scr	een	13	GUI start transa	ctio SCRIPT_00	03 800	32s	25.10.2019	11:35:19	Test script cre
	> 🛐 FI03	B Display Bank :	Initial Screen		5	GUI start transa	ctio SCRIPT_00	06 800	9s	25.10.2019	11:35:20	Test script cre
	> 📀 GUI	logon SAP GUI Logo	n - user SCRIPT	_0008	1	GUI logon	SCRIPT_00	008 800	0s	25.10.2019	11:35:20	Test script cre
	> 🛐 CR1	3			10	GUI start transa	ctio SCRIPT_00	05 800	31s	25.10.2019	11:35:21	Test script crea

The main thing to validate here is that the Start Date/Time from the recording is what you had planned. It's a best practice to keep your entire recording. You can easily remove individual components later in the process.

### **Transfer Recording to Repository**

In this step, the "business transactions" that have been generated automatically via the recording process must be first transferred to the test repository. At this stage you ensure that only those recordings are transferred that happened on or after the database snapshot is taken. Dialog/batch processes and user sessions that began prior to the start of the recording will not be considered viable and should not be transferred to the repository. This is performed by choosing the Transfer to Repository drop-down menu and choosing the method for transfer. For large recordings, it is recommended to transfer via selection screen and parallel processing.

Session view	Step view 📙 Component view 🖳 Linkage view	✓ Performance Analysis					
	🗛 👔 🖌 6ð 💉 👜 🖌 🏧 🗛	4					
Sessions	Object description	Currently selected session	Username	Cli	Duration	St. Date	St. Tin
System TY1		All displayed sessions			52s	25.10.2019	11:35:0
> 🛟 GUI logon	SAP GUI Logon - user BGUYNAN	All sessions	<b>3GUYNAN</b>	800	0s	25.10.2019	11:35:0
> 🛐 ME21N	Start MEPO	Via selection screen	Single th	read		25.10.2019	11:35:0
> 🛟 GUI logon	SAP GUI Logon - user SCRIPT_0005	I GOT logon	Parallel r	process	sina	25.10.2019	11:35:1
> 📀 GUI logon	SAP GUI Logon - user SCRIPT_0007	1 GUI logon	SCINIF T_000	/ 000	03	25.10.2019	11:35:1

Here is an example where the selection screen is used to select the exact time frame of when the recording and the system backup were in synch to ensure the most accurate recording.

Transfer Business Transactions to Repository - Parallel processing

entification				
Plan ID	000829			
System number	TY1R			
Recording type	01			
lastian mitaria				
election criteria		100 - 10 - 10 - 10 - 1		
Client	800	to		đ
Object type		to		
User name		to		<u>ट</u>
Object name		to		<u>ट</u>
		to		. <u></u>
Status			02 06 2020	
Status Start date	02.06.2020	to	02.06.2020	

Once you select your transfer option, you'll receive a pop-up box where you can click "Yes" to continue

E Not	t transferred
0	14,988 business transactions will be transferred. Continue?
	Yes No

At this point, your recorded scripts are stored in the Testimony Repository and can be used to create an Execution Queue. The Test Script status should show "Test Script Created"



# 3.9.1. Check for application server files

As mentioned in the section on <u>file system monitoring</u>, Testimony will detect for any access to files on the application server during a recording, and copy those files over to the Central System after the recording is complete. You should check to ensure that these files have been successfully brought over to the Central System.

To do this, go to Recording —> File System Monitoring. On the monitoring tab, you can see how many files have been brought across from the source system. By double-clicking on the source system, you can also display details of all of the captured files, including their names and the directory (in the source system) from which they were copied.

File System Monitoring												
🐔 Monitoring 🗐 Configuration												
Source systems for file monitoring												
Type SID System description File count												
GDE GDE Source System Files 15506												
🔁   📆 🖌 🚱												
Monitored Files												
Type Type Filename D	irectory	Date	Time	Size (kb)	вт	File ID	Download					
<b>Unknown</b> <u>I 002 16320792450</u> /s	GDE/IDOC/MFROUT/	19.09.2021	19:20:46		5002750763	ogOSIfya7ko6hzOE	<b>•</b>					
<b>Over 1002 16320792450</b> /	GDE/IDOC/MFROUT/	19.09.2021	19:20:46		5002750763	ogOSIfya7ko6hzOK						
😧 Unknown <u>I 002 16320792550</u> /	GDE/IDOC/MFROUT/	19.09.2021	19:20:56		5002750765	ogOSIfya7ko6hzRG	<b>1</b>					

## **3.9.2. The Recording Performance Analysis**

### Introduction

One of the keys to the success of any playback is ensuring that you only play back what you really need. This ensures not only that the playback results are relevant, but also that the duration of the playback is not unnecessarily elongated through having to play back unnecessary transactions. The Recording Performance Analysis is a very useful tool to enable you to "trim" the playback of unwanted transactions.

### The Performance Analysis Screen

From Recording —> Standard Recordings, go to the Performance Analysis tab and you will be presented with a screen showing relevant information for each object (dialog transaction, batch job, RFC, etc.) that was recorded.

It is very useful to sort this screen in descending order of steps so that you get information on the most heavily-used objects first.

#### Ession view 7 Step view 7 Component view 7 Chinkage view 7 Performance Analysis

### 🗿 🥶, 🏹, 📮, 😰, 🔲 🔯 🗙

Pe	rformance Analy	/sis															
Тур	e Object Type	Object	Object description	Sessions	Steps	Smp	Sampled?	Exc	Excluded?	Avg RT	Min RT	Max RT	Ttl RT	Ung Usr	RO	Read Only	Outb. RFC
<u>_</u>	GUI dialog step	MD04	Please execute the Remote Data Obj	2042	61754		Not sampled		Not excluded	358ms	78us	49m 7s	6h 8m	301	100 M	Not Read On	Yes (1077)
88	Web service	ZSD_GET_PDF_FOR_DOCNO	Please execute the Remote Data Obj	33871	33871		Not sampled		Not excluded	68ms	28ms	5s 354ms	38m 42s	4	60	Read Only	No
官	RFC	Z_PM_HYDRA_RFC	Please execute the Remote Data Obj	185	24046		Not sampled		Not excluded	125ms	3ms	55s 536	50m 21s	1	0	Not Read On	No
2	GUI dialog step	ZZHUPA	Please execute the Remote Data Obj	207	23118		Not sampled		Not excluded	1s 53ms	1ms	1m 11s	6h 45m	42	P	Not Read On	Yes (3110)
<u>_</u>	GUI dialog step	LS26	Please execute the Remote Data Obj	5323	19312		Not sampled		Not excluded	681ms	1ms	1h 22m	3h 39m	256	100	Not Read On	No
2	GUI dialog step	VA02	Please execute the Remote Data Obj	1046	18616		Not sampled		Not excluded	1s 139ms	72us	1h 5m	5h 53m	215	0	Not Read On	Yes ( 3723 )
官	RFC	MCEX_UPDATE_11_QRFC	Please execute the Remote Data Obj	2	16072		Not sampled		Not excluded	13ms	4ms	1s 30ms	3m 38s	1	60	Read Only	No
2	GUI dialog step	LT01	Please execute the Remote Data Obj	3156	15245		Not sampled		Not excluded	123ms	568us	5m 9s	31m 16s	154	P	Not Read On	Yes (1833)
12	RFC	Z_EXT_STUELI_ERMITTELN	Please execute the Remote Data Obj	3	15012		Not sampled		Not excluded	3ms	1ms	37ms	50s 494	1	100 M	Not Read On	Yes (2)
2	GUI dialog step	VA01	Please execute the Remote Data Obj	716	10634		Not sampled		Not excluded	1s 59ms	73us	1h 30m	3h 7m	151	Ø	Not Read On	Yes (2288)
<u></u>	GUI dialog step	VL06P	Please execute the Remote Data Obi	201	10269		Not sampled		Not excluded	911ms	2ms	19m 4s	2h 35m	26	0	Not Read On	Yes ( 685 )

For each object, the following useful information is shown:

- The number of sessions and steps that called this object
- The current sampling and exclusion status of the object
- · Response time (average, min, max, total) information for the object during the recording
- · How many unique users called the object during the recording
- Whether or not the object was read only
- Whether or not the object started any outbound RFC calls

All of this information can be very useful in determining whether or not a particular object should be included in the playback.

There are also two other pieces of detailed information available.

#### **Record details**

By selecting a row and clicking on the Record Details button

#### 2

You can see the full details of the record.

🔄 St	Structure Editor: Display Performance record from Entry											
MAN	STAID	LT	OBJNM									
002	0000000016	01	Z_PM_HYDRA_RFC									
1 1												
	👗 🚺 🔸 🕨 🔛 🔛 Column Metadata											
	Single Entry (Shift+F7)											

Clicking on the Single Entry button will show this information in a more easy to read format.

Structure Editor: Display Performance record

MANDT	002
STAID	000000016
LTTYP	01
OBJNM	Z_PM_HYDRA_RFC
SESNM	185
STPNM	24.046
USRNM	1
AVGRT	0,1256610
MINRT	0,0033930
MAXRT	55,5368060
TTLRT	3.021,6443900
DBTTL	93
DBINS	3
DBIRC	3
DBUPD	85
DBURC	85
DBDEL	0
DBDRC	0
ORCNT	0
RONLY	
OBRFC	
EXCLD	
SAMPL	
DBUTL	0

#### Outbound RFC details

By clicking on the Outbound RFC button:



You can get details of any outbound RFC calls made by the object.

MAN	STAID	LT	OBJNM	RFCNM	RDEST	ORCNT
002	0000000016	04	ZZHUPA	*RFC_CLIENT_COLLECTOR*		8
002	000000016	04	ZZHUPA	CRM_UIU_ERP_READ_CRM_DOC_FLOW	MP2CLNT002	13
002	000000016	04	ZZHUPA	ENQUE_READ2	sv000109_GDE_00	4
002	000000016	04	ZZHUPA	FUNCTION_EXISTS	MP2CLNT002	4
002	000000016	04	ZZHUPA	HU_GET_RFC_DATA	WAAGEN_LZHEMER_CITRIX	2.148
002	000000016	04	ZZHUPA	IDOCS_OUTPUT_TO_FILE	a_rfc	885
002	000000016	04	ZZHUPA	RFC_PING	MP2CLNT002	26
002	000000016	04	ZZHUPA	Z_RCOM_PRINT	RCOM_SERVER	18
002	000000016	04	ZZHUPA	Z_ZGROHE_STOCK_GET	sv000109_GDE_00	2
002	000000016	04	ZZHUPA	Z_ZGROHE_STOCK_UPDATE	sv000109_GDE_00	2

### Trimming the playback

There are two ways, from within the performance analysis screen, of trimming objects from the playback.

The functionality in this area makes use of Filter Sets, so please make sure you are

familiar with filter sets, exclusions and sampling before proceeding. Documentation for this functionality can be found in <u>this section of the guide</u>.

#### Exclusion

By using the exclusion functionality, it is possible to completely remove an object from the playback. For example, if we wanted to completely exclude the Web Service ZSD\_GET\_PDF\_FOR\_DOCNO\_S from the playback, then we would right-click on the row and choose Exclude from —> Transfer to Repository.

Pe	rformance Analy	/sis								
Тур	e Object Type	Object	Obj	ect description		Sessions	Steps	Smp	Sam	pled
<u>_</u> :	GUI dialog step	MD04	Plea	ase execute the Remote Data Ob	j	2042	61754		Not	sar
	Web service	ZSD_GET_PDF_FOR_DOCNO_S	Plea	no avacuta the Romate Data Ob	-	22071	22071		Not	sar
6	RFC	Z_PM_HYDRA_RFC	Plea	Exclude from		<u>R</u> ecordin	g			sar
<u>_</u>	GUI dialog step	ZZHUPA	Plea	Sample during		<u>T</u> ransfer	to reposito	ory		sar
<u>_</u>	GUI dialog step	LS26	Plea	Set Default Filter Sets		<u>T</u> ransfer	to queue			sar
2	GUI dialog step	VA02	Plea	se execute the kemote Data Ob	J	Result co	omparison			sar
6	RFC	MCEX_UPDATE_11_QRFC	Plea	ase execute the Remote Data Ob	j	_2	100/2		NUL	sar
	CUIT dialage step	1 TO 1	Dias	and avacute the Domate Data Ob		3156	15345		Not	

This will add an exclusion to your default filter set and the exclusion will be displayed on the Performance Analysis screen.

Per	Performance Analysis												
Туре	Object Type	Object	Object description	Sessions	Steps	Smp Sampled?	Exc	Excluded?					
<u>a</u> :	GUI dialog step	MD04	Please execute the Remote Data Obj	2042	61754	Not sampled		Not excluded					
	Web service	ZSD_GET_PDF_FOR_DOCNO_S	Please execute the Remote Data Obj	33871	33871	Not sampled	[×]	Excluded (Repos)					

If you know that you will never want to play back this object, then you can also at this point exclude it from future recordings by right-clicking and choosing Exclude from —> Recording

#### Sampling

If, however, you decide that you still want to test this web service, but that there is no need to execute it over thirty thousand times during the playback, you can instead use sampling. Sampling allows you to only transfer to the repository a percentage of the recorded transactions. So if, for example, we decide that executing this web service 3,000 times will be enough to properly test it, we could sample it so that only 10% of the recorded volume is transferred to the repository and hence included in the playback.

To do this, right-click on the object and choose Sample during —> Transfer to repository —> 10% **Performance Analysis** 

Туре	Object Type	Object	Objec	t description	Sessions	Steps	Smp	Samp	ed?	Exc	Ex
2	GUI dialog step	MD04	Please	e execute the Remote Data Obj	2042	61754		Not s	ampled		Nc
	Web service	ZSD_GET_PDF_FOR_DOCNO_S	Pleas		33871	33871		Not s	ampled		Nc
冒	RFC	Z_PM_HYDRA_RFC	Pleas	Exclude from	185	24046		Not e	amnlad		Nc
2	GUI dialog step	ZZHUPA	Pleas	Sample during	<u>T</u> ransf	er to repos	itory	•	<u>1</u> %		łc
2	GUI dialog step	LS26	Pleas	Set Default Filter Sets	5323	19312		Not :	<u>5</u> %		łc
2	GUI dialog step	VA02	Please	e execute the Remote Data Obj	1046	18616		Not :	<u>1</u> 0%		łc
愃	RFC	MCEX_UPDATE_11_QRFC	Please	e execute the Remote Data Obj	2	16072		Not :	25%		łc
2	GUI dialog step	LT01	Please	e execute the Remote Data Obj	3156	15245		Not :	22%		łc
愃	RFC	Z_EXT_STUELI_ERMITTELN_RFC	Please	e execute the Remote Data Obj	3	15012		Not :	<u>5</u> 570		łc
2	GUI dialog step	VA01	Please	e execute the Remote Data Obj	716	10634		Not :	<u>5</u> 0%		łc
2	GUI dialog step	VL06P	Please	e execute the Remote Data Obj	201	10269		Not :	<u>M</u> anual		łc
				and the second s							

Once this has been done, then during the transfer to repository Testimony will randomly select 10% of the recorded transactions to be transferred. The sampling rate is displayed in the Performance Analysis screen.

Type Object Type	Object	Object description	Sessions	Steps	Smp Sampled?
GUI dialog step	MD04	Please execute the Remote Data Obj	2042	61754	Not sampled
Web service	ZSD_GET_PDF_FOR_DOCNO_S	Please execute the Remote Data Obj	33871	33871	Sampled (10% - Repos)

### Determining which objects to trim from the playback

The following are the main things to consider when trying to determine if an object can be trimmed from the playback?

#### Is it a high-volume read-only object?

Read-only objects that are executed many thousands of time are prime candidates for trimming from the playback. Since they are read-only, we know that they don't create or change data which subsequent objects may rely on. We therefore need to decide, firstly, whether they should be tested at all. If they don't need to be tested, then they can be completely excluded from the playback. Secondly, if they should be tested, we should decide whether we need to test the full recorded volume. If not, then we can use sampling to trim the bulk of them from the playback.

#### Is it a high-volume "read-mostly" object?

Some objects will be listed as Not Read Only, but the value of the number of writes (shown in brackets in the Read Only column) is very low compared to the number of Steps or Sessions. In the example below, we can see that despite there having been over 750,000 steps recorded, only 104 database updates were executed:

Performance Analysis													
Type Object Type	Object	Object description	Sessions	Steps	Smp Sampled?	Exc Excluded?	Avg RT	Min RT	Max RT	Ttl RT	Ung Usr	RO	Read Only
RFC RFC	Z_PP_EAN_RFC	Please execute the Remote Data Obj	185	796284	Sampled (1%	Not excluded	23ms	0s	11s 121	5h 16m	3	0	Not Read Only (104

By drilling into the details, we can see that these were inserts into the database.

🖻 Structure Editor: Display Performance record	1	×
Performance record		
MANDT	002	
STAID	000000016	
LTTYP	01	
OBJNM	Z PP EAN RFC	
SESNM	185	
STPNM	796.284	
USRNM	3	
AVGRT	0,0238435	
MINRT	0,000000	
MAXRT	11,1218500	
TILRT	18,986,1656890	
DBTTL	18.940	
DBINS	104	
DBIRC	104	
DBUPD	0	
DBURC	0	
DBDET	0	
DBDRC	0	
ORCNT	0	
BONLY	, , , , , , , , , , , , , , , , , , ,	
OBREC		
FXCLD		
SAMPI.		
DBUTI	0	
55012	5	
		4 1

Based on this, we may be able to decide – perhaps after consulting with the technical or functional experts responsible for this object – that in nearly all cases this object is in fact read-only, and can therefore be trimmed from the playback. As you can see, this has been done for this object in the example, where it is being sampled at a rate of 1%.

### Does it have outbound RFC calls to a destination that doesn't exist in the playback system?

At presend, Testimony only supports outbound RFCs on a pilot basis, so in most cases it will be necessary to exclude objects that make outbound RFC calls. By checking the outbound RFC details you can see where the calls are being made to (the RDEST column) and determine if this RFC destination exists in the playback system.

MAN	STAID LT OBJNM RI		OBJNM	RFCNM	RDEST	ORCNT
5.00			2.2.W.D.3			
1002	0000000010	04	ZZHUPA	*REC_CLIENI_COLLECIOR*		0
002	000000016	04	ZZHUPA	CRM_UIU_ERP_READ_CRM_DOC_FLOW	MP2CLNT002	13
002	000000016	04	ZZHUPA	ENQUE_READ2	sv000109_GDE_00	4
002	000000016	04	ZZHUPA	FUNCTION_EXISTS	MP2CLNT002	4
002	000000016	04	ZZHUPA	HU_GET_RFC_DATA	WAAGEN_LZHEMER_CITRIX	2.148
002	000000016	04	ZZHUPA	IDOCS_OUTPUT_TO_FILE	a_rfc	885
002	000000016	04	ZZHUPA	RFC_PING	MP2CLNT002	26
002	000000016	04	ZZHUPA	Z_RCOM_PRINT	RCOM_SERVER	18
002	000000016	04	ZZHUPA	Z_ZGROHE_STOCK_GET	sv000109_GDE_00	2
002	000000016	04	ZZHUPA	Z_ZGROHE_STOCK_UPDATE	sv000109_GDE_00	2

# 3.10. Building the Execution Queue

### Overview

The test scripts that have been created in the test repository must be transferred to the execution queue in preparation for the playback process. For a given Test Plan, only a single active execution queue can exist. Historical execution queues can also be seen here.

### **Process Steps**

- 1. Select Test Plan to use
- 2. Navigate to the Repository
- 3. Select Standard Scripts or Filtered Scripts
- 4. Double click on the Source System which will display the list of scripts in the Repository for the selected Test Plan
- Click on "Transfer to Execution Queue". If you've filtered the scripts when you transfered them to the repository, you can select all scripts. Otherwise you may want to narrow your selection via Selection screen

CONTEXT	Test Script Rep	Systems System description TY1 Recording	Scripts 3056	Steps 9252	Started 22.10.2019 13:43:07	Ended 22.10.2019 14:3	2:34
Configuration Recording Repository	S Busines	s scenarios	😴 Script view 🖪 🕻	Component view	📩 Linkage view		
Link Type	Sessions		Object descript	ion	Currently selected te	st script	Username
Business Scenarios	> 😍 GUI	l logon			Al test scripts		SCRIPT_0010
Standard Scripts	> 🛐 FB0	03	Display Docume	ent: Initial Screen	Via selection screen	▶ step	SCRIPT_0007
Filtered Scripts	> 💽 VAC	)3	Display Sales O	rder: Initial Screen	20	GUI dialog step	SCRIPT_0003
Script Transformation	> 🛐 FI0:	3	Display Bank : ]	Initial Screen	5	GUI dialog step	SCRIPT_0006
Maintain User Set	> 🛟 GUI	l logon			1	GUI logon	COLIVER
	> 🛐 CR1	13			12	GUI dialog step	SCRIPT_0005
	> 🛃 CJ1	3	Display WBS Ele	ement: Initial Scree	n 15	GUI dialog step	SCRIPT_0009
	> 🗟 C11	3	Display WBS Fle	ement: Initial Scree	n 15	GUI dialog step	SCRIPT 0010

You will see the following status as the transfer is taking place



You will also see the following popup box to ask about the generation of Dynamic IDs.

Basis Technologies

🔄 Dynamic ID	X
Run Dynamic ID ?	
⊙ No	
◯ Single thread	
🔘 Multi thread	
	<b>'</b> ×

it is highly suggested that you always run the Dynamic ID. If your recording is large, select "Multi Thread". You'll be taken to the follow screen where you select the the Plan ID and Execution ID for which you want to run the Dynamic ID process. If you choose not to run the dynamic ID process at this time, you will need to do so prior to starting the execution queue playback. This is done by selecting the execution queue in the list and clicking the "Dynamic ID Generation" button.

<b>⊡</b> Program <u>E</u> dit <u>G</u> oto Sys	tem <u>H</u> elp		
<ul> <li>✓</li> </ul>	K 📕 🔇 😂 🖶 🖬 🐴 😫 🖓 🖓 🖶 🕷	🗐 🔽 📀 🐄	
Determine dynamic ID li	nked fields for an execution queue - Paralle	4	
🕀 Technical Settings			
Main program selections			
Plan ID	2019 Q1 Release	~	
Execution queue ID	001447	~	
Advanced selection options			
Retrieve screen fields of dialog t	ransactions in the queue		
Retrieve batch job params of b	atchs job in the queue		
Retrieve REC parameters of RE	C transactions in the queue		

### Renaming the execution queue

When the execution queue is created, it is given the default name "Test Phase 1". It is a good idea to rename the execution queue and give it a more meaningful name, especially if you are planning on doing a <u>double playback</u>.

To rename the execution queue, select the queue and click on the "Rename queue" button:



4

# 3.10.1. Run the playback simulation

The playback simulation can be useful for checking that you have enough bots defined for the playback, as well as enough background processes defined on the playback system.

To run the simulation, go to Execution —> Execution Queues, select your execution queue and click on the Simulation Playback button:

Testimony: Playback simulation				
<b>(</b>				
Execution queue ID	000011			
No. of worker jobs		25		
No. of available BGD processes		15		
Sampling rate		1,00		
Step duration data source				
<ul> <li>Use recording data</li> </ul>				
○Use playback data				
Sequence strategy				
Sequence Strategy	02			
Time Frame				
ONone				
○15 minutes				
○30 minutes				
● 1 hour				
O2 hours				
Midnight boundary				
Enable midnight boundary	۲ ل			
Enable analysis mode				

On the selection screen, enter the following information:

- · No. of worker jobs: set this to the number of bots you currently have
- No. of available BGD processes: set this to the number of background processes defined on the playback system
- · Time frame: if you would like the simulation broken down into time slices, select one of the radio

buttons

• Enable midnight boundary: if your recording crossed a midnight boundary, then select this checkbox

When you execute the program, you will be presented with the following output. (Note that for large execution queues it can take some time for this program to run. You may want to run it in background and view the results from the spool.)

Testimony: Playback simulation				
ੑ <u>ੑ</u> ੑੑੑੑੑਗ਼ੑਫ਼ੑੑੑੑੑੑਫ਼ੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑੑ				
Metric	Value			
Original duration of recording (sec) Est. playback duration (sec) Avg. worker jobs used	54.653,44 114.056,00 17,13			
Avg. active batch jobs in target system Max. active batch jobs in target system Avg. concurrent SAP GUI users	6,25 15,00 256,54			
Max. concurrent SAP GUI users Avg. concurrent SAP GUI sessions Max. concurrent SAP GUI sessions No. of blocks	698,00 505,18 1.371,00 103.789,00			
No. of unprocessed blocks	0,00			

There are two key metrics to consider on this report:

- Max. active batch jobs in target system: if the number shown is equal to the number of available BGD processes you specified on the selection screen, then you could potentially speed up the playback by adding more BGD processes on the playback system.
- Max. concurrent SAPGUI users: if this number is greater than twenty times the number of bots you have, then you may well need to add more bots in order to speed up the playback.

### 3.10.2. Run the screen size analysis

### Introduction

When recording online (dialog) transactions, one thing that Testimony captures is the number of lines that can be displayed on a user's screen. Since it is very likely that users will have a variety of monitors, screen sizes and screen resolutions, different users will be able to display different numbers of lines of output on their screens. Some list-based screen outputs are accessed by selecting a particular row on a screen. For example, a user may be using VA03 to display a sales order. They may use the F4 help to get a list of sales orders and then double-click on, say, the 25th row on the screen to select the sales order they want to view.

### Screen resolution for bot VMs

During a playback, the bots, running on a Windows machine (usually a Virtual Machine) run through dialog transactions in exactly the same way as the users did. In our VA03 example, the bot will also call the F4 help and will also double-click the 25th row on the screen to select the sales order to be viewed. If the screen resolution on the bot VM is not set high enough, then it may be that only 24 rows can be displayed. In this case, the execution of the VA03 script will cause an Error.

NOTE: Improvements in Testimony v2.40 in the way that Testimony handles selection from lists means that there is much less reliance than previously on the actual row in the displayed list. However, there are still some areas of functionality where the row number is important.

The program /BTI/AUT\_BOT\_SCRN\_SIZE\_ANLYSIS can be used to analyse the dialog transactions in an execution queue, and will report on the number of rows displayed on screen.

Execute the program using SE38/SA38 on the Central System and select your Test Plan and Execution Queue.

Screen size analysis progra	am
•	
Main program selections	
Plan ID	GDE - 24-hour recording - 2021-09-19
Execution queue ID	QUEUE (000011)

When you execute the report, output will be shown detailing different "Max Rows Displayed" and how many scripts displayed each number of rows.

MAX	NO OF	ROWS	NO.	OF	SCRIPTS	
	7		5			
	7	6	3			
	7	5	8			
	6	8	4			
	6.	2	2			
	6	0	86			
	5		9			
	5	6	104			
	5	5	209			
	5	4 2	4			
	5.	3	4/0			
		2	141			
		1	226			
	3	0 0	716			
	4	9	270			
	4	7	175			
		, 6	1/3			
	4	5	136			
	4	4	356			
	4	3	384			
	4	2	762			
	4	1	496			
	4	0	371			
	3	9	4.766			
	3	8	1.414			
	3	7	2.085			
	3	6	1.899			
	3	5	983			
	3	4	525			
	3	3	1.035			
	3	2	1.380			
	3	1	2.614			
	3	0	805			
	2	9	1.364			
	2	8	224			
	2	7	312			
	2	6	280			
	2	5	1.592			
	2	4	2.075			
	2	3	1.327			
	2	2	1 0/7			

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In the example above, we can see that a few users had very large screens, able to display more than 50 rows in a list. However, it looks like most users had screens displaying a maximum of 39 rows or fewer. You should change the screen resolution on the bot VMs to try to accommodate as many list rows as possible. However, in most cases there will be a maximum screen resolution that can be set which may not replicate very large monitors.

Note that if using RDP to connect to the bots, you often can't directly change the screen size in Windows. However, you can set the resolution in the RDP config, which will take effect the next time you connect to the bot VM

# 3.11. Analyzing Coverage

### **Overview**

A Testimony recording generates, from real-life activity, an entire test script library which covers a high percentage of your actual SAP system usage. How big a percentage this is (i.e., the coverage you have achieved) depends firstly on the length of the recording (a 48-hour recording will naturally cover more work that a 4-hour recording) as well as the point within the business cycle (e.g., month-end, mid-month) in which the recording was active.

In order to better understand the level of coverage that you have achieved with your recording, Testimony includes functionality to perform a Coverage Analysis, comparing what was recorded with your production system's typical workload.

Coverage Analysis consists of three steps:

- 1. **Usage retrieval**: In this step, performance statistics data is retrieved from the recorded system for a period that you define
- 2. **Prioritization**: This step takes the performance data and prioritises the individual components (dialog transactions, batch jobs, etc.) according to either how frequently they are typically executed in production, or according to a set of priorities that you determine
- 3. **Coverage Analysis**: This final steps takes the recorded data from the execution queue and compares it with the usage data. You can then see high-level statistics (e.g., what percentage of critical priority dialog transactions you recorded) as well as detailed information on each dialog transaction, batch job, etc.

### Accessing the Coverage Analysis functionality

Since Coverage Analysis compares production usage data with what is in your execution queue, the Coverage Analysis functionality is contained within the Execution section of the main menu in Testimony. However, it is not necessary to have already performed the playback before running the Coverage Analysis process.

The following image shows the screen you will see when you select the Coverage Analysis item from the menu before you have run any of the Coverage Analysis steps.

🔄 UI Profiles System <u>H</u> elp	
🔮 🔜 👻 🐇 🕲 🄇	0 8 4 4 5 5 5 <b>5 7 7 0 %</b>
Testimony	
2	
CONTEXT	Coverage Analysis Tooling
Se Plan TESTIMONY	Coverage Analysis 🔚 Prioritization 🔯 Usage Retrieval
	Coverage Analysis by System
· · · · · · · · · · · · · · · · · · ·	Coverage Analysis by System
< >	Typ SID System Description Object type Queue Type Total Cvg % Crt % High % Med % Low % Unk % Sts Status
Cverview	INI INI KELOKUJING Ali Standard queue IIA IIA IIA IIA 🧰 Coverage not analyzed
× Configuration	
Recording	
Repository	
Execution	Coverage Calculation Data for System
Execution Link Type Enhancement Setup	Component View T Object View
Outbound RFC Setup     Execution Queue     Supporting Infrastructure     Coverage Analysis     Job manager	Coverage Calculation Data for System Object description Type C., Coverage P., Priority D., Depth (%) Avg Ste., Exq Step.,

The following sections give details of the process to go through in order to perform a full Coverage Analysis of your execution queue.

# 3.11.1. Usage Retrieval

### Introduction

The first step in the coverage analysis process is to retrieve the usage data from the source system. In this step, Testimony will connect to the source system and retrieve workload statistics data (from the ST03N repository) for a period that you choose.

### **Executing the Usage Retrieval**

From the Coverage Analysis screen, go to the Usage Retrieval tab, select your source system and click on the Execute button.

Coverage Analysis Tooling					
Coverage Analysis 🔄 Prioritization	🧭 Usage Retrieval				
Usage Data					
Usage Data Retrieval by System					
Typ SID System Description	Sts Status	Start	End	Usage information	
TY1 TY1 RECORDING	Complete - Last ru	n @24.03.2020 09.03.2020	23.03.2020	15 days of usage data	

In the selection screen that is displayed you now need to choose the period for which you want to retrieve usage data from the source system. The available dates are shown in three separate tabs, based upon the data available, and the summarisation of data, in the ST03N repository in the source system.

Day range Week range Month	ange	
Available Ranges for Sta	tistical data	
Start date         End date           15.04.2020         a 15.04.2020		
16.04.2020         16.04.2020           17.04.2020         17.04.2020		
20.04.2020         20.04.2020           21.04.2020         21.04.2020           23.04.2020         21.04.2020	Available Ranges for Statistical c	lata
22.04.2020         22.04.2020           23.04.2020         23.04.2020           24.04.2020         24.04.2020	Start date         End date           23.03.2020         29.03.2020           Day range         Day range	ge Week range Month range
27.04.2020 27.04.2020 28.04.2020 28.04.2020	30.03.2020         03.04.2020           06.04.2020         10.04.2020           13.04.2020         17.04.2020	
29.04.2020 29.04.2020	20.04.2020 24.04.2020 Ava 27.04.2020 29.04.2020	ilable Ranges for Statistical data
	01.0: 01.0:	3.2020         a         31.03.2020           4.2020         29.04.2020

You can choose multiple periods by highlighting more than one row and then retrieve the usage data for the chosen dates by clicking on the execute button. In the example below, we are retrieving data for the two weeks starting 13th April.

Usage data re	etrieval	
🔂 🔁		
Run identification		
Plan	C	00957
System	1	YIR
Phase		
Analysis criteria		
Day range	Week range Mon	th range
<u>ب</u>		
Available	Ranges for S	tatistical data
Available	Ranges for S	tatistical data
Available	Ranges for S End date 29.03.2020	tatistical data
Available Start date 23.03.2020 30.03.2020	Ranges for S End date 29.03.2020 03.04.2020	tatistical data
Available Start date 23.03.2020 30.03.2020 06.04.2020	Ranges for S End date 29.03.2020 03.04.2020 10.04.2020	tatistical data
Available Start date 23.03.2020 30.03.2020 06.04.2020 13.04.2020	Ranges for S End date 29.03.2020 03.04.2020 10.04.2020 17.04.2020	tatistical data
Available Start date 23.03.2020 30.03.2020 06.04.2020 13.04.2020 20.04.2020	Ranges for S End date 29.03.2020 03.04.2020 10.04.2020 17.04.2020 24.04.2020	tatistical data
Available Start date 23.03.2020 30.03.2020 06.04.2020 13.04.2020 20.04.2020 27.04.2020	Ranges for S End date 29.03.2020 03.04.2020 10.04.2020 17.04.2020 24.04.2020 29.04.2020	tatistical data

Once the data has been retrieved, the following output is displayed.

Usage data retrieval						
Usage	data	successfully	retrieved			
Usage	data	successfully	aggregated	at	the	object level
Usage	data	successfully	aggregated	at	the	application level
Job fi	nishe	ed				

Going back to the Coverage Analysis screen (Usage Retrieval tab) you can see the details of the last usage retrieval run.

Usage Data	а					
🔂   📲						
Usage Data Retrieval by System						
Typ SID	System Description	Sts	Status	Start	End	Usage information
TY1	TY1 RECORDING		Complete - Last run @30.04.2020	13.04.2020	24.04.2020	12 days of usage data

Double-clicking on this row will show the details of the data that has been retrieved, either grouped by application component or at the object level:

Usage data for System											
Component View	Obj	iect View									
🔂   🎏 🖌 🝸 🖌	1										
Usage data for system			Туре	Avg Stp /Day	Avg Stp /W	Avg Stp /Mth	Total Steps				
> 🔯 No Application Compon	ent As	signed	Component	4250.30	29722.38	128796.97	42503				
> 🐼 Application Platform			Component	0.00	0.00	0.00	409				
Basis Components			Component	0.00	0.00	0.00	15308				
> 🔇 Cross-Application Basis (	Compoi	nents	Component	11.50	80.42	348.48	115				
> 🐼 Controlling			Component	2.30	16.08	69.70	23				
> 🐼 Financial Accounting	Usane (	data for System	Component	21.00	222.00	066 67	210				
-	obuge (										
	1	Component View 🔤 Ob	ject View								
	<u>6</u>	竈 🛛 🝸 🗸 🚍 🖌 🖌 🗄	• • • •								
	Usa	ige data for system	1								
	Type	Object name		Object Type	F	vc Evoluded?	App Comp	Avg Sto /Day	Ava Sto /W/k	Ava Sto /Mth	Total Stens
		BTI/AUT GET APP SERV	ER LIST	Inbound RFC		Not excluded	No Applicati	0.10	0.70	3.03	1
	13	BTT/AUT GET BTRAN LIS	ST ST	Inbound REC		Not excluded	No Applicati	0.10	0.70	3.03	1
		BTT/AUT RETRIEVE AS	RINARY	Inbound REC		Not excluded	No Applicati	0.10	0.70	3.03	1
		BTT/AUT SAVE STAD DA		Inbound REC		Not excluded	No Applicati	0.10	0.70	3.03	1
		BTT/AUT_SYSTNED_SHM	OBJECTS	Inbound REC		Not excluded	No Applicati	0.10	0.70	3.03	1
		BTT/TE FORM REO NUM	OBIS KEYS	Inbound RFC		Not excluded	No Applicati	0.10	0.70	3.03	1
		BTT/TE READ TRANSPOR	T DETAILS	Inbound REC		Not excluded	No Applicati	0.10	0.70	3.03	1
		CRS OUFUE RESTART		Inbound REC		Not excluded	Cross-Applic	0.10	0.70	3.03	1
		CRS_TRECOOLT_SELECT		Inbound REC		Not excluded	Cross-Applic	0.10	0.70	3.03	1
		DRGN SHOW EDIT AGR		Inbound REC		Not excluded	Basis Comp	0.10	0.70	3.03	1
		SRUE OR1 SHOW ORIECT		Inbound REC		Not excluded	Basis Comp	0.10	0.70	3.03	1
		RDTP		Dialog Trapezed	tion	Not excluded	Basis Comp	0.10	0.70	3.03	1
		CORD		Dialog Transact	tion	Not excluded	Production	0.10	0.70	3.03	1
		F\$31		Dialog Transact	tion	Not excluded	Unknown c	0.10	0.70	3.03	1
	20	0/50		Dialog Transact	tion	Not excluded	Salos and Di	0.10	0.70	2.02	1
		0050		Dialog Trailsac	LIOTI	HOL EXCluded	Sales and DI	0.10	0.70	3.03	1

# 3.11.2. Prioritization

### Introduction

The next step is to prioritise the transactions, batch jobs, etc. that have been retrieved from the source system.

Testimony prioritises the usage data as follows:

- 1. First of all, it prioritises by frequency of execution in the source system. The most frequentlyexecuted objects are given the highest priority, and so on down to very infrequently-executed objects which are given the lowest priority. The thresholds used to determine these priorities are determined in the prioritisation run selection screen, discussed below.
- 2. Next, Testimony can override these usage-based priorities based on Library priorities. These are a set of priorities delivered with the Testimony software where Basis Technologies, in consultation with our customers, has determined that certain common objects should have a priority that is different (either higher or lower) than what might be calculated based on frequency of execution. *Note that at present (Testimony v2.21) we do not currently deliver any library priorities.*
- 3. Finally, the usage-based priorities can be overridden by priorities set by the customer. This enables the customer to decide that, for example, a dialog transaction that is only infrequently executed (and which would therefore have a low priority according to usage) is important enough to its business that it should have a higher priority.

### **Specifying customer priorities**

From the Prioritization tab of the Coverage Analysis screen, go to the Customer Priorities tab and double-click on the source system. Any customer priorities that have been previously specified will be shown, grouped by application component.

overage Analysis Tooling							
Coverage Analysis	Prioritization	🛃 Usag	e Retrieval				
Additional help							
Prioritization of objects is de or by the library templates t	erived automatically that are provided v	v based up with the pr	on usage data. H oduct.	owever, this ca	n be overridde	en by either the cu	istomer
Cobject Priorities	Customer Priorit	ies 🎦	Library Prioritie	5			
Customer Prioritiz	zation Librai	ry					
Typ SID System Desciption	on	Numb	er of conf. object	:			
TY1 TY1 RECORDIN	G	42					
🔂   🏗 🖌 🗋 🖍 68	à 💼 🔁						
Prioritization lirbary for syste	m type		Priori	ty Type		Derived Priority	Sourc
> 🐼 AP				Compor	nent		
> 🐼 BC				Compor	nent		
Y 🐼 CA				Compor	ient		
Y KA-BK				Compor	ient		
· # F103			Low	Dialog I	ransaction	LOW	
				Compor	ient ient		
• 🎇 CT04			Critica	l Dialog 1	ransaction	Critical	

To add a new object to the customer priorities list, click on the Create button and fill in the screen as shown below.

📴 Main	tain customer object priority		×			
Maintai	n object priority (Customising)					
6°	Object Type	Dialog transaction	~			
H	Object Name	XK03				
	Application Component	Financial Accounting	~			
ęĝ	Application Subcomponent	(FI-AP-AP) Basic Functions	~			
		· · · · · · · · · · · · · · · · · · ·				
!	Priority	Critical	~			
ABC	Priority reason	Month-end processing	~			
0	Cost per hour					
		All systems				
			<b>V S</b>			

The Object Type, Object Name and Priority fields should be filled in as a minimum. Other fields are optional.

The "All systems" box should be checked if this priority is relevant for all systems that you will be using Testimony to record from.

### Performing the Prioritization run

Once your customer priorities have been set, go to the Object Priorities tab, select your source system and click on the execute button.

Customer Priorities Customer Priorities											
A	Automatic Object Priority Determination Runs										
T	Typ SID System Desciption Sts Status Usage information					Usage information					
	П	Y1	TY1 RECORDING		Complete - Last run @24.04.2020	15 days of usage data					

In the selection screen, enter Usage Data Run ID from the <u>usage retrieval</u> run you recently performed. **NB**, you may need to press Enter to refresh the screen's fields, and see the correct list of Run IDs

Run identification		
Plan	TESTIMONY 2.21 BIG RECORDING_2	~
System	TY1 - TY1 RECORDING	~
Phase		~
Usage Data Run ID	0000000311 - 20200413 to 20200424	~

On this screen, you also have the opportunity to influence the automatic usage-based calculation of priorities by entering percentage thresholds for the different priorities.

Priority bands based upon object usage								
Critical Priority Usage	Top	5	e					
High Priority Usage	Next	15	<del>§</del>					
Medium Priority Usage	Next	35	욯					
Low Priority Usage	Last	45	윻					

The thresholds work as follows.

Using the thresholds in the screen shot above, and assuming that the usage retrieval run brought back usage statistics for 100 distinct transactons, then:

- · The 5 most-frequently executed transactions would be given a Critical priority
- The next 15 most frequently executed transactions would be given a High priority
- The next 35 most frequently executed transactions would be given a Medium priority
- The remaining 45 transactions would be given a Low priority

When changing these thresholds, make sure that their sum adds up to 100%

#### Once you are happy with the thresholds, click on the execute button to perform the prioritisation.

Remember that the usage-based priorities will be overriden by any customer-defined priorities.

The prioritisation run will return the following output.



You will now be able to see the prioritisation results from the coverage analysis screen.

Customer Priorities Customer Priorities									
😏 🛍									
Autom	Automatic Object Priority Determination Runs								
Typ SID	System Desciption	Sts Sta	atus			Usage information			
TY1	TY1 RECORDING	Co	mplete -	· Last run @	<b>30.04.2020</b>	12 days of usage d	ata		
- 									
Automatic				Priority	Derived Prio	rity Source			
Y 🐼 Un	specified software component			1 noney	Demodrino	ney bounce			
•	/BTI/AUT_SLGP_01			Critical	Critical	4			
JOB	RSARFCSE			Critical	Critical	4			
JOB	RSBTCRTE			Critical	Critical	4			
JOB	RSLDAGDS			Critical	Critical	4			
JOB	RSN3_STAT_COLLECTOR			Critical	Critical	4			
• •	/BTI/AUT_IDOC_GET			Critical	Critical	4			
JOB	RSWSMANAGEMENT			Critical	Critical	4			
JOB	BTCAUX07			Critical	Critical	4			
JOB	/BTI/AUT_WEBSERVICE_LOAD_GEN			Critical	Critical	4			
• •	/BTI/TE_REQ_CONFL_PARALLEL			Critical	Critical	4			
JOB	/BTI/AUT_INT_SUP			Critical	Critical	4			
• •	/BTI/AUT_RFC_DATA_GEN			Critical	Critical	4			
JOB	SAPRSEUT			Critical	Critical	4			
JOB	SAPRSLOG			Critical	Critical	4			
JOB	SLCA_LCK_SYNCHOWNERS			Critical	Critical	4			
JOB	SWNC_TCOLL_STARTER			Critical	Critical	4			
JOB	ZZ_CO_TEST_PROGRAM_0021			Critical	Critical	4			
JOB	/BTI/AUT_I_REGR_UPDATES			High	High	<b>A</b> 1			
• •	/BTI/AUT_ENH_INCL_GET			High	High	4			
JOB	RCVDEVEN			High	High	4			
• •	/BTI/TE_FORM_CACHE_GETUPDATES			High	High	4			
• •	/BTI/AUT_CHECK_SELF_ABORT_FLAG			High	High	41			
• •	/BTI/AUT_CHECK_BT_SAVE_JOB			High	High	<b>A</b> 1			

# 3.11.3. Coverage Analysis

### Introduction

Now that the usage information has been retrieved from the source system and the prioritisation run as completed, you can run the coverage analysis proper.

The coverage analysis run will compare the transaction volumes captured in your recording (by reading the execution queue) with the data from the usage retrieval, determining whether or not a particular transaction (or batch job, RFC, etc.) has been adequately covered in the recording.

### **Executing the Coverage Analysis**

From the Coverage Analysis tab, select your source system and click on the Execute button.

Coverage Anal	lysis Tooling									
Coverage Analysis 🔂 Prioritization 🔯 Usage Retrieval										
Coverage Analysis by System										
🔂   🚝 .										
Coverage Analysis by System										
Typ SID	System Desciption		Object type	Queue Type						
<b>TY1</b>	TY1 RECORDING		All	Standard queue						

On the selection screen, enter the usage retrieval run and the execution queue you want to compare against. Optionally, you can also restrict the coverage analysis to certain types of workload (e.g., dialog transactions only).

NB, you may need to press Enter to refresh the screen's fields, and see the correct list of Run IDs

Coverage Analysis			
⊕ <b>[</b> 5			
Run identification			
Plan	TESTIMONY 2.21 BIG RECORDING_2	~	
System	TY1 - TY1 RECORDING	~	
Phase		~	
Usage Data Run ID	0000000311 - 20200413 to 20200424	~	
Execution Queue	QUEUE (001353)	~	
Type Advanced Options			

Click on Execute and the coverage analysis will run, displaying this output at the end.

Coverage Analysis

Coverage analysis calculation completed Usage data successfully aggregated at the application level Job finished

### **Analysing Coverage Analysis Results**

Once the coverage analysis has run, you will see a summary of the results in the Coverage Analysis screen. The summary shows the analysis for the entire execution queue, as well as broken down by different transaction types.

Coverage Analysis	Tooling										
Coverage	Analysis 🔄 Prioritization	🕴 Usage Retrieval									
Coverage Anal	Coverage Analysis by System										
Coverage	Coverage Analysis by System										
Typ SID Sys	stem Desciption	Object type	Queue Type	Total Cvg %	Crit %	High %	Med %	Low %	Unk %	Sts	Status
TY1 TY	1 RECORDING	All	Standard queue	<u>43.52</u>	<u>50.00</u>	<u>73.68</u>	<u>29.41</u>	<u>40.43</u>	<u>0.00</u>		Coverage run completed
TY1 TY	1 RECORDING	GUI dialog step	Standard queue	<u>51.76</u>	<u>75.00</u>	72.22	<u>39.13</u>	<u>47.50</u>	0.00		
TY1 TY	1 RECORDING	Batch job	Standard queue	<u>13.64</u>	<u>25.00</u>	100.00	<u>10.00</u>	<u>0.00</u>	<u>0.00</u>		

In the image above, we can see that the overall coverage for all transaction types was 43.52%, with the coverage also broken down by priority and by transaction type.

For a transaction to be covered in the execution queue and count towards the coverage percentage, it must exist at least once in the execution queue.

As well as the results summary, you can double-click on a row in the summary to get details of the coverage broken down by application component as well as at the object level

an Colculation Data for Custom

Joverage calculation bata for system										-		
Component View \Xi Object View												
^										2		
🔁   🎏 🖌   🗮 🖌												
Coverage Calculation Data for System	Object description	Type	Cvg Coverage	P Priority	Dpt	Depth (%	) Avg Step	Dy Exq S	Step/Dy			
No Application Component Assigned		Component	OAO Unknown	Critical		32.80	3551.40	1164.	93	-		
> 🐼 Application Platform		Component	OO Not covered	📆 High		0.00	38.90	0.00				
Basis Components		Component	OAO Unknown	Critical		68.24	429.40	293.0	4			
Cross-Application Basis Components		Component	OOE Covered	📆 High		100.00	103.20	36181	.49			
> 🐼 Controling		Component	OO Not covered	Nedium		0.00	2.30	0.00				
Y 😵 Financial Accounting		Component	OAO Unknown	🚹 Critical		100.00	62.20	17586	5.06			
Y 🐼 Accounts Payable		Component	OO Not covered	🔚 Low		0.00	0.10	0.00				
Basic Functions		Component	OO Not covered	Low		0.00	0.10	0.00				
<ul> <li>% XK03</li> </ul>	Display vendor (centrally)	Dialog Transact	OO Not covered	🖸 Low	000	0.00	0.10	0.00				
Y 🐼 Accounts Receivable		Component	OAO Unknown	🔚 Medium		100.00	10.60	130.2	4			
Basic Functions		Component	OAO Unknown	Nedium		100.00	10.60	130.2	4			
<ul> <li>% VD01</li> </ul>	Create Customer (Sales)	Dialog Transact	OO Not covered	S Low	000	0.00	0.50	0.00				
<ul> <li>% VD03</li> </ul>	Display Customer (Sales)	Dialog Transact	OO Not covered	🔚 Medium	000	0.00	6.30	0.00				
<ul> <li>% XD03</li> </ul>	Display Customer (Centrally)	Dialog Transact	OOE Covered	Nedium	00	100.00	3.80	130.2	4			
Contract Accounts Receivable and Payable	Coverage Calc	ulation Data for System										
• 🐮 FB05	Post with Clearing											
- 💥 FB03	Display Document		view									
• 🐞 FD03	Display Customer (A											
<ul> <li>% FK03</li> </ul>	Display Vendor (Acc 🗿 🛛 🚟 🖌	Y . 〒 . H										
> K Unknown component IS	<u> </u>											
	Coverag	ge Calculation Dat	ta for System									
	Type Object	t Name Object Description	in	Object Type	App Comp	Cvg Co	verage F	ty Priority	Dpt	Depth (%)	Avg Step/Dy	Exq Step/Dy
	VF02	Change Biling Do	cument	Dialog Transaction	Sales and Di	00 <b>=</b> Co	vered	Low	00	100.00	0.10	57.88
	FB03	Display Document	t	Dialog Transaction	Financial Ac	00 <b>=</b> Co	vered [	Critical	00	100.00	3.00	50.65
	MD04	Display Stock/Red	quirements Situation	Dialog Transaction	Production	00 <b>=</b> Co	/ered [	Medium	00	100.00	4.10	47.03
	💼 CS03	Display Material B	ОМ	Dialog Transaction	Logistics - G	OOm Co	vered [	Low	00	100.00	3.00	43.41
	MB51	Material Doc. List		Dialog Transaction	Materials Ma	OOE Co	/ered [	🗟 High	00	100.00	4.20	43.41
	MB10	Other Goods Rec	eipts	Dialog Transaction	Materials Ma	00 <b>=</b> Co	vered [	🗟 High	00	100.00	0.40	36.18
	• VA02	Change Sales Ord	der	Dialog Transaction	Sales and Di	00 <b>0</b> Co	/ered	High	00	100.00	0.10	28.94
	• VK11	Create Condition		Dialog Transaction	Sales and Di	00	vered	Low	00	100.00	0.60	21.71
	MB03	Display Material D	ocument	Dialog Transaction	Materials Ma	00	/ered	B High	00	100.00	3.80	14.47
	ME11	Create Purchasin	a Info Record	Dialog Transaction	Materials Ma	000 00	vered [	E Low	00	100.00	0.50	14.47
	- SM20	Call View Mainten		Dialog Transaction	Pasis Comp	000 00	vored [		000	22.95	47.50	10.95
	PECG	Role Maintenance	ance a	Dialog Transaction	Basis Comp		vered [		000	100.00	0.30	7 74
		Rusinees Brocess	Maintain Tomolator	Dialog Transaction	Pacis Comp		t covorad		000	0.00	0.10	0.00
		Maintain Duainana	Partner remplaces	Dialog Transaction	Application	000 NO	covered [		000	0.00	26.20	0.00
	S BP	maintain Business	Partner	Dialog Transaction	Application	000 N0	L COVERED	12 High	000	0.00	30.30	0.00
	E BUS3	BD1: VIEWS		Dialog Transaction	Application	000 N0	covered [	I Meaium	000	0.00	2.00	0.00

As you can see from the object view, for each object you are told whether or not it is covered (i.e., whether or not it exists in the execution queue), the priority according to the prioritisation, and the "Depth".

The Depth of an object's coverage is a comparison of the number of times it will be executed in the playback (normalised to a 24-hour period) with the average number of executions per day from the usage retrieval.

For example, in the object view in the image above, we can see that transaction MD04 was executed on average 4.1 times per day in the source system. In the execution queue, this transaction has a normalised daily execution rate of 47.03 executions per day. This transaction is therefore covered (it exists in the execution queue) and it has a depth of 100% (its number of executions in the execution queue is greater than or equal to the daily rate in the source system).

On the other hand, transaction SM30 has a source system daily execution rate of 47.5, but an execution queue rate of 10.85. Since the execution queue rate is lower than the source system rate, although it is covered it has a depth of only 22.85%.

# 3.12. Performing a Playback

### **Overview**

The playback process can be run in approximately the same time as the recording phase. However, this time can be reduced dependent upon the amount of bots you have available as well as the size of the target system(s) you are playing back into. The transaction volume from the recording also has an impact upon the playback time.

### **Process Steps**

- Preparing Playback
- Start Playback
- Monitor Playback
- Stop Playback

# 3.12.1. Preparing Playback

### **Overview**

After the Execution Queue is built you are ready to run a a playback in Testimony, you need to first prepare and check the Target and Central systems. The following process steps set out the steps you need for a successful playback.

If you are going to be utilising a double playback then you should also ensure you check out the <u>Double</u> <u>Playback</u> topic.

You should always ensure you are in the correct test plan before commencing activities for double playback by selecting the correct Test Plan from the drop down and click on the green tick.

CONTEXT	
s Plan	
Regression Test Release R25.1	<ul><li>✓</li><li>✓</li></ul>

### **Process Steps**

- 1. Confirm Target system refresh steps As per your organisations specific steps. Template steps found in this list <u>here.</u>
- 2. Run Predicative Difference Analyser
- 3. Check Central System batch processors
- 4. Activate playback enhancements
- 5. Execute Check Steps
- 6. Reset Date and Time of Target system
- 7. Start the Bots
## 3.12.1.1. System Refresh Steps

Below are the steps that should be completed when refreshing the target system from the source system to prepare it for playback. Care should be taken to review these steps against the steps already documented for refreshing systems in the current landscape. Each organisation should create its own list of refresh steps considering the recommended steps for Testimony as below.

Note that some steps are only required if changing the time of the system which is recommended with TimeShiftX.

- If upgrading the target system it is important that the recording enhancements are deactivated on the target using program /BTI/AUT\_DEACT\_ENH via SE38 on the copied system
- If the target system is a brand new SAP system ensure that you request the license key from SAP for the period you recorded, otherwise time travelling may not be possible.
- Retain the same Client Number (MANDT) between Source and Target

#### Note that parameters should be changed on each app server

#	Description	Required	Notes
1	Activate recording on the source system	Yes	
2	Put the source database into online backup mode	Yes	For details of how to coordinate the backup with the start of the recording, see the documentation <u>here</u> .
3	Perform a full database copy of the source database	Yes	
4	Once source database copy is complete, deactivate online backup mode	Yes	
5	Note the exact timing of the copy so that the transfer to repository step can use this date and time	Yes	
6	Setup SAP target system (system profiles etc)	Yes	

	Optionally setup the target		
7	system in a "ring-fenced" network	Optional	
8	Install TimeShiftX onto application and database server(s) on the target system	TimeShiftX Only	
9	Ensure batch jobs are deactivated when target SAP system is started (profile setting)	Yes	The recommended option is to run btctrns1 (in SE38) to set all batch jobs to Released/Suspended mode, and then go and delete them all from SM37. Only exception should be the event-dependent RDD* jobs, as without these the transports for the release (line 24) won't work.
10	Start-up SAP target database and app server(s)	Yes	
11	Disable/deactivate recording enhancements on the target using program /BTI/AUT_DEACT_ENH via SE38 on the copied system	Yes	If you are upgrading your system ensure you run this program before starting the upgrade process
12	Check parameter sapgui/ user_scripting	Yes	This value needs to be TRUE which allows the bots to perform the playback properly. Only in playback system.
13	Check parameter sapgui/ user_scripting_per_user	Yes	This value needs to be FALSE which allows the bots to perform the playback properly. Only in playback system.
14	Check parameter sapgui/ user_scripting_set_readonly	Yes	This value needs to be FALSE which allows the bots to perform the playback properly. Only in playback system.
15	Check parameter login/ disable_password_logon	Yes	This value needs to be 0 which allows the bots to login to the playback system. Only in playback system.
16	Check parameter login/ disable_multi_gui_login	Yes	This value needs to be 0 this allows multiple logons. Only in playback system.
17	Check parameter rdisp/ tm_max_no	Yes	As Testimony will be logging on with the user load from the source (which could be production) this should be the source setting +50% Only in playback system.
18	Check parameter rdisp/ gui_auto_logout	Yes	This value needs to be 0. This ensures that the bots and their logged on users cannot be automatically logged off by the user due to time-limits (for example, if the playback is paused or other issues arise)
19	Check parameter rdisp/ max_wprun_time	Yes	Ensure this value is at least the value set in the production system
20	Check parameter abap/ buffersize	Yes	Ensure this value is at least the value set in the production system

21	Check parameter ztta/ parameter_area	Yes	This value needs to be at least 64000. The value checked can be adjusted by changing PLAYBACK_PARAM_AREA in the General Parameters. Only in playback system.
22	Check parameter snc/ enable	TimeShiftX Only	This value needs to be 0 this is required where TimeShiftX is being operated. Only in playback system.
23	Run post-processing steps such as RFC destination re- pointing, file system re- pointing, printer re-pointing etc.	Yes	
24	Do not delete/remove source SAP users from the target system	Yes	Testimony requires the users from the source system to playback correctly
25	Optionally run BDLS if system ID is to be renamed (e.g. PRD to QA1)	Optional	
26	Optionally use Basis Technologies System Copy GT if BDLS takes quite a long time	Optional	
27	Deploy changes that form the release being tested (e.g., transport requests or perform upgrade) to target system	Yes	
28	Deploy Testimony playback enhancement transport to target system	Optional	If the Testimony playback enhancements transport was not applied to the source system you will need to apply that transport here
29	Ensure Target RFC User exists	Yes	Ensure a <b>system user</b> with the role /BTI/ AUT_TARGET_RFC (ensure profile role is generated) This user is for the RFC destination defined in the central system. While setting up bots for the first time you should also use the role /BTI/AUT_BOT_SIMULATION This is an optional Role that is only required for the BOT Simulation Program. This role provides auths for creating Users, assigning Roles to Users and Deleting Users, which is required during the Bot Simulation and can be removed after the simulation is complete. <b>Checking the RFC setup with the user at this point is best practice.</b>

30	Ensure Meta Data RFC User exists	Yes	Ensure a <b>system user</b> with the role /BTI/ AUT_NCO_METADATA_ACCESS (ensure profile role is generated) This user is for playing back RFCs and collecting the meta data to ensure that they operate correctly the suggested user name is /BTI/AUT_RFM although this can be changed in the General Parameters.
31	Ensure Batch Job User is correct	Yes	Before starting the playback, Testimony will verify the validity and existence of users that are present as creators of batch jobs in the recording data. If one of these users fails this check (i.e. because the user doesn't exist or is not valid), Testimony will use this user to execute the batch job, we would suggest configuring the default batch user in the General Parameters. The user name defaulted into the general parameters is /BTI/AUT_BTC
32	Set the workflow batch user's password	Yes	Use the transaction SWU3 to set the RFC workflow user (WF-BATCH) to the Testimony password as set in the general parameters under the CHECK_DEFAULT_PWD parameter.
33	Disable Personas	Optional	At present, the use of Personas is not supported by Testimony. The main reason for this is that with Personas, a lot of processing happens on the front end, and Testimony, as a tool which records at the back end, cannot capture this information. In order to disable Personas for the playback, in the target system go to transaction /n/personas/settings and add the following entry: DISABLE_WEBGUI = X.
34	Take a backup of the target system	Yes	It is recommended to take a backup as this means the target system can be easily restored back to this state for a second run which means if anything goes wrong the system can be quickly restored and a second playback run, without having to repeat all of the above steps again.
35	Check the SAP system for time inconsistencies	TimeShiftX Only	Use the program RSDBTIME via transaction SE38 to check time inconsistencies between the SAP servers
36	Check current time travel status	TimeShiftX Only	Use the TimeShiftX command "tsx list" to check the current time travel status of your system this will avoid running multiple TimeShiftX commands which might lead to unexpected times on systems and might cause systems to shutdown.
37	Required if the SAP HANA version is HANA 2.0 SP04 or lower and Multi Tenant database is used. Run the SQL commands	TimeShiftX Only	Run the following SQL commands in HANA Studio on the System database (Multi Tenant database) ALTER SYSTEM ALTER CONFIGURATION ('nameserver.ini', 'SYSTEM') SET ('delta', 'preallocated_nodebuffers') = '1' WITH RECONFIGURE

			ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') SET ('delta', 'preallocated_nodebuffers') = '1' WITH RECONFIGURE
38	If running HANA 2.0 SP4 or lower only. Run the SQL commands	TimeShiftX Only	Run the following SQL commands in HANA Studio on the Tenant database ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') SET ('delta', 'preallocated_nodebuffers') = '1' WITH RECONFIGURE
39	If running a SAP HANA database server set the environment variable HDB_TIMER=system	TimeShiftX Only	
40	Shut-down SAP target system Application Servers	TimeShiftX Only	
41	Shut-down SAP target system Database Servers	TimeShiftX Only	
42	Setup virtual clock for the ADM users in TimeShiftX on both the target database and app servers	TimeShiftX Only	It is recommended to use the offset option rather than set a specific time to make life easier for multiple app servers.
43	Ensure TimeShiftX virtual clock is set close to start of recording time just before playback commences	TimeShiftX Only	It is recommended to slow time down to ensure that there is time in case there is a delay starting playback or playback is slower than expected, time can be sped up if the midnight boundary is imminent or Testimony will pause and wait.
44	Start SAP target system Database Servers	TimeShiftX Only	
45	Start SAP target system Application Servers	TimeShiftX Only	
46	Check the SAP system time	TimeShiftX Only	Use the program RSDBTIME via transaction SE38 to check the time and check for any inconsistencies between the SAP servers

## **3.12.1.2. Predictive Difference Analyzer**

### Overview

The function of Predictive Difference Analyzer (PDA) is to allow the target system to be reviewed prior to a playback starting. It works by comparing the objects currently in the execution queue (from the recording of the source system) and comparing those objects with the target and highlighting any potential technical issues. A list of supported objects and check types is found <u>here</u>. When critical differences exist in the target system which cause either mass technical errors or mass failures in the playback, it is better to be proactive in fixing these issues rather than reactive when to a large number of failures/defects.

Any differences between the objects compared are flagged up to the operator and are marked as either:

- Errors Differences in target that are likely to cause issues during the playback
- Warnings Differences to be aware of but not necessarily playback issues

#### **Process Steps**

- <u>Preparation Phase</u> Analyses all test scripts in the execution queue and creates a list of technical objects that will be compared between the source and the target
- <u>Comparison Phase</u> For each object identified in the preparation phase retrieve the components from the source and target system. These objects are then compared and results are written for each object (pass, error or warning).
- <u>Result Phase</u> Review all errors that could cause a critical issue on the target system during playback and either fix or remediate before starting playback. Warnings should also be reviewed as well.
- Predictive Difference Analyzer can still be utilized for a Baseline playback to ensure that the target system does not contain any critical issues. However it is then run for the Release/Upgrade Playback once the target has been upgraded or had the release applied this can highlight potential technical issues as early as possible to be fixed before playback.

# 3.12.1.2.1. Supported Objects and Check Types

### **Object Types**

Inbound RFCs Dialog Background/Batch Jobs

### **Check Types**

Inbound RFC:

Existence Header existence RFC enabled flag Signature existence Syntax check of FUGR of the FM Parameter checks: Parameter existence Paramater classification (exporting importing etc.) Parameter mandatory status Parameter length Parameter data type (deep)

#### Background/Batch Program:

Existence Syntax Technical definition (executable, include, etc.) Auth object Screens that have parameters or select-options checked as above Variant Existence Is it obsolete Variant field existence Variant field values

#### **Dialog Transaction Code:**

Existence Start program Syntax of Start program Auth objects, activities and their values All screens recorded checked as below Existence Type (mainscreen subscreen etc.) Dimension (coordinates) Field existence Field type (I/O, Box, Push, Check etc.) Field mandatory status Field length Field data type Field visible length

### 3.12.1.2.2. Preparation Phase

### Overview

The preparation program analyses all test scripts in the execution queue and creates a list of technical objects that will be compared between the source and the target.

#### Execution

Ensure the correct test plan has been selected and navigate to the Predictive Difference Analyzer on the Execution drawer of the Test Plan you wish to analyze.

Click on the Prepare button Free are options for single thread or multi-thread via Diffuser.

Testimony														
2														
CONTEXT S Plan 2.60 24 HOUR RECORDING	Obje	Object Comparison Runs         Object Comparison Runs												
,	Ri	un Run Description		So	ource	Target	Sts	Status	Objs	Chks	Errs	Warn	Pass	Creation Info
	<b>*</b>	Comparison of objects in que	ue	T	E8	TE8		Complete	2065	6298	<u>0</u>	<u>0</u>	<u>6298</u>	Created by SK
	✓ 📫	Comparison of objects in que	ue	T	E8	TE8		Complete	5	31	<u>0</u>	<u>0</u>	<u>31</u>	Created by SK
Coverview	Obje	ect Comparison Run Results Summary by Object Type	🗊 Su	mmary b	y Failur	e Reaso	n Ek	Analyzed Obj	jects					
🞍 Recording														
Repository		biect Comparison by	Ohiec	t Tvn	2									
Execution			objec	стур	<u> </u>		-							
		yp Primary Type	00js	Chks	Errs	Warn	Pass							
Execution			1/0	5104	0	0	510/							
Link Type			2/8	3184	0	0	224							
Predictive Difference Analyz			- 15	224	0	0	224							
Enhancement Setup		Brogram Variant	1500	24	0	0	24							
Outbound RFC Setup			1588	0	Ū	Ū	Ū							
Execution Queue														

Use the name for object comparison run field to give the run a name. Then select the execution queue and source and target systems to be used for this comparison.

The multi thread option can be used for large runs utilizing the technical settings button with an interval size of 1000 and selecting the number of batch jobs that are available.

The Advanced Options are for triggering a hard abort if either RFC/System Errors, or Internal Errors are seen. If set to 1 then the program will abort when these types of faults are encountered. If set to 0 then the processing will continue regardless.

<b>&gt;</b>	🖶 🔇 🛇 😨 H H, 🕥 🗅	) 🗊 🖓 📆 🔽 🛛 🖓 🐄
Create and run a new objec	t comparison	
Ð		
Main Selections		
Name for object comparison run	Comparison of objects in queue	
Test Plan ID	2.60 24 HOUR RECORDING	~
Execution Queue ID	Execution queue 000236 (31254items)	~
Source System	TE8 - TE8 Recording	~
Target System	TE8 - TE8 Playback	~
Advanced Options		
RFC / System Error Threshold	1	
Internal Error Threshold	1	
Indicate progress by X items	100	

Once this program has completed you can start the comparison phase.

### 3.12.1.2.3. Comparison Phase

### **Overview**

Running the comparison program takes each object identified in the preparation phase retrieve the components from the source and target system. These objects are then compared and results are written for each object (pass, error or warning).

### Execution

Select the run that you want to run the comparison for and then click on the Comparison button

There are options for single thread or multi-thread via Diffuser.

	Object Co	omparison Runs										
	<b>9</b>	🖏   🚱 a 🜲 a   💼										
	Object	Comparison Runs										
	Run	Run Description	Source	Target	Sts	Status	Objs	Chks	Errs	Warn	Pass	Creation Info
ų.	**	Comparison of objects in queue	TE8	TE8	•	New	486	0	<u>0</u>	<u>0</u>	<u>0</u>	Created by TENGLAND on 20220405

The multi thread option can be used for large runs utilizing the technical settings button with an interval size of 1000 and selecting the number of batch jobs that you have spare. There are no other parameters that require an update.

or cate and ran a norr obje	Li companson
( <del>)</del>	
Main Selections	
Object Comparison Run ID	000000023
Object Comparison Run ID Advanced Options REC / System Error Threshold	000000023
Object Comparison Run ID Advanced Options RFC / System Error Threshold Internal Error Threshold	000000023

Once this program has completed you can review the results in the Results phase

## 3.12.1.2.4. Results Phase

### Overview

The object of this phase is to review all errors that could cause a critical issue on the target system during playback and either fix or remediate before starting playback. Warnings should also be reviewed as while these might not technically impact the playback they might be of interest with to the technical or testing team to help them review the quality of the target system.

#### **Reviewing Results**

Once the comparison run is complete, note that the status should be complete. Double-click the Predicative Difference Analyser run you want to see the results for you can then switch tabs for different views of the results as below. Filters are available in all grids with options to download to a spreadsheet if required. Clicking the hotspots under the underlined numbers allows you to drill into the details for each pass, warning or error. The information buttons also provide a lot of extra information and help on the issue. There is also an option in some circumstances to repair scripts see the topic <u>Remediation of Test Scripts</u>

#### Summary by Object Type

Summary by Object Type 🕄 Summary by Failure Reason 🗐 Analyzed Objects											
Object Comparison by Object Type											
Тур	Primary Type	Objs	Chks	Errs	Warn	Pass					
Ē	Dialog transaction	14	60	<u>4</u>	<u>0</u>	<u>56</u>					
	Dialog screen	19	108	<u>9</u>	<u>16</u>	<u>83</u>					
	Inbound RFC	27	157	<u>17</u>	<u>9</u>	<u>131</u>					
3	Batch Program         7         28         1         0         27										
[ <b>*</b>	Program Variant 4 23 <u>3</u> <u>13</u> <u>7</u>										

Summary by Failure Reason

#### Object Comparison Run Results

Summary by Obje	ect Type 🛛 🖪	Summary by Failure Reason	E	Analyzed Objects	]
-----------------	--------------	---------------------------	---	------------------	---

<b>9</b>											
Ohi	Object Comparison - By Failure Reason										
ODJ											
Rsn	Failure Reason	Steps	Errors	Warnings							
i	Parameter has a different data type in target system	<u>6</u>	<u>6</u>	<u>0</u>							
i	Parameter length is shorter in target system	<u>4</u>	<u>4</u>	<u>0</u>							
i	Parameter has been removed in the target system	<u>5</u>	2	<u>3</u>							
i	Field on screen has been removed in target system	2	2	<u>0</u>							
i	Parameter classification has been changed in target system	<u>1</u>	<u>1</u>	<u>0</u>							
i	Field on screen is a different field type	<u>1</u>	<u>1</u>	<u>0</u>							
i	Field on screen has a shorter length	<u>1</u>	<u>1</u>	<u>0</u>							
i	Batch job program variant field does not exist in target	<u>1</u>	<u>1</u>	<u>0</u>							
i	Field on screen has a different data type	<u>1</u>	<u>1</u>	<u>0</u>							
i	Batch job program has syntax error in the target system	<u>1</u>	<u>1</u>	<u>0</u>							
i	Batch job program variant value is different in target	<u>1</u>	<u>1</u>	<u>0</u>							
i	Transaction code start program has syntax error	<u>2</u>	<u>1</u>	<u>0</u>							
i	RFC function group contains syntax error	1	<u>1</u>	<u>0</u>							
i	Parameter has been made mandatory in target system	1	<u>1</u>	<u>0</u>							
i	Screen field made mandatory in target system	<u>1</u>	<u>1</u>	<u>0</u>							
i	New mandatory parameter has been added in the target system	<u>1</u>	1	<u>0</u>							

#### Analyzed Objects Object Comparison Run Results

object companson Run Results							
Summary by Object Ty	rpe 🛐 Summary by Failure Reason 🚺	Analyzed Objects					
🔁   🖏   🛐 Object Compariso	n list of objects						
Тур Туре	Object Name		Sts	Status	Steps	Checks	Errors
Dialog transaction	/BTI/AUT_OC_DYNPEX			Comparison Run	3	5	<u>0</u>
Dialog transaction	/BTI/AUT_OC_DYNPTP			Comparison Run	2	5	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDDAT			Comparison Run	2	5	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDEX			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDLENLG			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDLENSH			Comparison Run	2	<u>3</u>	1
Dialog transaction	/BTI/AUT_OC_FLDMNDT			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDNEWMN			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDNEWOP			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDOPT			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_FLDTYP			Comparison Run	2	<u>5</u>	<u>0</u>
Dialog transaction	/BTI/AUT_OC_TRANEX			Comparison Run	2	<u>1</u>	1
Dialog transaction	/BTI/AUT_OC_TRANSTD			Comparison Run	2	<u>4</u>	<u>1</u>
Dialog transaction	<b>/BTI/AUT OC TRANSTP</b>			Comparison Run	3	2	1

### 3.12.1.2.4.1. Remediation of Test Scripts

### Overview

Testimony currently only supports adding of replacing fields to containers (with default values) for **Dialog Transactions**, and **Inbound RFC**. to help repair scripts that may not operate correctly due to changes in the target system.

### Example 1

New mandatory parameter added to an RFC in the Target.

In this example, if the playback were to run then every test script containing this RFC would return a Technical Error. When Predictive Difference Analyzer detects this difference, it allows you to choose to remediate by updating all relevant test script steps and add this parameter to the input contained with a default value that provided. This allows the playback to continue with the 'known issue' pre-solved and gives a more complete replay.

The screenshot below shows the Inbound FRC example again the information buttons 🔟 also provide

a lot of extra information and help on the issue. In this case the fix button takes you to a new screen (second screenshot below) to enable the repair of this script.

🕞 Check Results				
🔁   🖏   🍸   🌫 🖍 🖌				
Object Comparison Check Results				
Typ Object Name	Chk Check Type	Res Result	Rsn Failure Reason Additional Information	Fix Sts Fix Status
ZAUT_OC_TEST_PARCLAS	RFC parameters	Failed	Parameter classification has been cha Classification of parameter X_P	ARAM changed from (I) to 🛛 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_1	RFC parameters	Failed	Parameter has a different data type i. Data type of parameter X_PAR	AM changed from ( CHAR1 ) 👎 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_2	RFC parameters	Failed	Parameter has a different data type i. Data type of parameter X_PAR	AM changed from ( CHAR ) t 🍹 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_3	RFC parameters	Failed	Parameter has a different data type i. Data type of parameter T_PAF	AM changed from ( /BTI/AU 🍹 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_DEEP_1	RFC parameters	🔴 Failed	Parameter has a different data type i. Data type of parameter /BTI//	UT_ST_OC_TEST_LINE1 - F 🍹 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_DEEP_2	RFC parameters	🔴 Failed	Parameter length is shorter in target Length of parameter /BTI/AUT	_ST_OC_TEST_LINE2 - FIEL 📮 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_DEEP_4	RFC parameters	🔴 Failed	Parameter has a different data type i. Data type of parameter /BTI//	WT_ST_OC_TEST_LINE4 - F 📮 🛑 Not Resolved
ZAUT_OC_TEST_PARDAT_DEEP_5	RFC parameters	🔴 Failed	Parameter length is shorter in target Length of parameter /BTI/AUT	_ST_OC_TEST_LINE5 - FIEL 📮 🔴 Not Resolved
ZAUT_OC_TEST_PARDAT_DEEP_7	RFC parameters	🔴 Failed	Parameter has a different data type i Data type of parameter /BTI/	UT_ST_OC_TEST_INCL2 - F 🤽 🔴 Not Resolved
ZAUT_OC_TEST_PAREX_2	RFC parameters	🔴 Failed	Parameter has been removed in the Parameter Y_PARAM does not	exist in target 🛛 🔴 Not Resolved
ZAUT_OC_TEST_PAREX_5	RFC parameters	🔴 Failed	Parameter has been removed in the Parameter EX_PARAM does no	t exist in target 🛛 🔴 Not Resolved
ZAUT_OC_TEST_PARLENSH_1	RFC parameters	🔴 Failed	Parameter length is shorter in target Length of parameter X_PARAM	changed from ( 000010 ) to 🍹 🔴 Not Resolved
ZAUT_OC_TEST_PARLENSH_2	RFC parameters	🔴 Failed	Parameter length is shorter in target Length of parameter X_PARAM	changed from ( 000010 ) to 🍹 🔴 Not Resolved
ZAUT_OC_TEST_PARMNDT	RFC parameters	🔴 Failed	Parameter has been made mandator Parameter X_PARAM changed	from optional to mandatory in 🏆 🛛 🔴 Not Resolved
ZAUT_OC_TEST_PARNEWMNDT	RFC parameters	🔴 Failed	New mandatory parameter has been Parameter X_PARAM is newly in the second	itroduced and is mandatory 🛛 📮 🔴 Not Resolved
ZAUT_OC_TEST_RFCNEN	RFC enabled	🔴 Failed	RFC is not enabled in the target syste ZAUT_OC_TEST_RFCNEN is not	it RFC enabled in target 🛛 🔴 Not Resolved
ZAUT_OC_TEST_RFC_SYNTAX	RFC syntax	🔴 Failed	RFC function group contains syntax e Syntax of function ZAUT_OC_	'EST_RFC_SYNTAX is incorrect <b>ONOT Resolved</b>

In this case values can be added to the new mandatory field or in the case of a change of the field old values replaced with a new value.

┏ Program Edit Goto System Help	
<ul> <li>• « • • • • • • • • • • • • • • • • • •</li></ul>	🛇 🕄 🖶 🔥 🏠 🗊 💭 💭 🌄 😨 😵
Remediate test script step inputs	
$\bigoplus$	
Selection of test script steps to remediate	
Object Comparison Run ID	000000121
Object Type	Inbound RFC
Object Name	ZAUT_OC_TEST_PARDAT_1
Result sequence number	180
Check Type	RFC parameters
Remediation of which field?	
Field name to be remediated	X_PARAM
What values are to be set or replaced?	
Add to inputs if not found	
Value to be set when inserted	
Replace existing value	
Value to be replaced if found	
Advanced Ontions	
Z Tast Mada	

# 3.12.1.3. Batch processes on the central system

### Overview

When you start a playback, Testimony will submit a number of background processes on the central system. It is important that enough background work processes are available on the central system to accommodate the Testimony requirements, as well as leaving enough background work processes available for normal operation. (This is especially true if your central system is also a productive Solution Manager system.) The normal requirement is one background job for each bot plus an extra background job to manage the playback. The details on how this operates and is managed by Testimony is as below.

### **Detailed Information**

When a playback is first executed an orchestrator job will start. The orchestrator job manages the whole playback process, and one of its functions is, firstly, to split the playback into blocks. Once the playback blocks have been built, the orchestrator will then start a number of worker jobs. The number of worker jobs that will be started is governed by the Testimony general parameter PLAYBACK\_MAX\_BLOCKS. The number of worker jobs (and hence the value of the parameter PLAYBACK\_MAX\_BLOCKS) should be set to the number of bots that you are using.

General parameters					
Type Parameter type	Technical name	Parameter description	Help	Current Value	Default Value
Playback	PLAYBACK_MAX_BLOCKS	Max. number of parallel server threads	i	25	3

Once these jobs have been started, the orchestrator will allocate blocks for processing to the worker jobs. Each worker job will then work through the scripts in its block, allocating them to bots for playback. Both the orchestrator job and the worker jobs will remain active for the whole of the playback.

This means, therefore, that the total number of jobs required on the central system by Testimony for a playback is 1 + PLAYBACK\_MAX\_BLOCKS.

The jobs can be seen in SM37 as below.

J	JobName	Spool	Job doc	Job CreatedB	Status	Start date	Start Time	Duration(sec.)	Delay	(sec.)
	BTI ANT EXEC ONFUE DIAN			G181272	Finished	25 11 2021	17.27.27	2 997		0
H,	GOIDOVOZIO INDC2nn60MC			G101272	Finished	25.11.2021	17.27.24	2.557		0
H .	gOID0V07joJmPC50mj0MG			G191272	Finished	25.11.2021	17.27.34	2.500		0
H .	arcTbOV07joJmPC6Mal0MG			G181272	Finished	25 11 2021	17.27.34	2.966		0
H .	golbovo/jourcond/ono			G181272	Finished	25 11 2021	17.27.34	2.500		0
H .	aOIbOV07joJmPC78Ua0MG			G181272	Finished	25 11 2021	17.27.34	2.966		0
H .	golbovo/jourc/soquilo			G181272	Finished	25 11 2021	17.27.34	2.500		0
H .	golbovo/jourcombond			G181272	Finished	25 11 2021	17.27.34	2.966		0
H .	golbovo/jourcolobono			G181272	Finished	25 11 2021	17.27.34	2.500		0
H .	golbovo/jourcadoono			G181272	Finished	25 11 2021	17.27.34	2.966		0
h a	ago Tho V07 to JmPCC3 / TOMG			G181272	Finished	25.11.2021	17:27:34	2,966		0
h a	ogOIbOV07ioJmPCD0LC0MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
h a	ogOIbOV07ioJmPCDxDF0MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
h a	ogOTbOV07ioJmPCFoU20MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
h a	ogOIb0V07ioJmPCFbV10MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
h a	ogOTbOV07ioJmPCGYwX0MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
	ogOTbOV07ioJmPCHPcr0MG			G181272	Finished	25,11,2021	17:27:34	2,966		0
	ogOTb0V07ioJmPCTGaa0MG			G181272	Finished	25,11,2021	17:27:34	2,966		0
	ogOIb0V07joJmPCJ8i30MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
	ogOIb0V07joJmPCK5rp0MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
	ogOIb0V07joJmPCKv2c0MG			G181272	Finished	25.11.2021	17:27:34	2,966		0
	ogOIb0V07joJmPCLsa10MG			G181272	Finished	25.11.2021	17:27:35	2,965		0
	ogOIb0V07joJmPCMilN0MG			G181272	Finished	25.11.2021	17:27:35	2,965		0
0	ogOIb0V07joJmPCNdcK0MG			G181272	Finished	25.11.2021	17:27:35	2.965		0
0	ogOIb0V07joJmPC0VsA0MG			G181272	Finished	25.11.2021	17:27:35	2.965		0
0	ogOIb0V07joJmPCPQr50MG			G181272	Finished	25.11.2021	17:27:35	2.965		0
*3	Summary							77.142		0

The orchestrator job is called /BTI/AUT\_EXEC\_QUEUE\_PLAY, and the worker jobs are given a dynamically-generated name.

### **3.12.1.4. Activate Playback Enhancements**

### Overview

Before you start a playback the Testimony playback enhancements must be activated to ensure that Testimony can execute the playback correctly.

### **Process Steps**

Navigate to the Execution queue and then select the Enhancement Setup option.

¶∎ E	xecution	
Exe	ecution	
	Link Type	
**	Predictive Difference Analyzer	
	Enhancement Setup	
•	Outbound RFC Setup	
l lle	Execution Queue	
Ē	Supporting Infrastructure	
JOB	<u>Job manager</u>	
	Coverage Analysis	

Next click on the "Activate" button and select "All Enhancement Points". When Testimony is first installed, it comes with a set of playback enhancements which must be activated before starting a playback. While many of these are delivered as mandatory enhancements, some are delivered as optional enhancements because they won't be relevant for all customers.

Enhancement Setup							
Target Systems							
Type SID System des	cription						
TY1 TY1 Playbac	sk i literatura i se						
🔁   📽 🖌 🛉 🍸	🛋 🚍   🔒 🗗   🥕 Actival e 🖌	🎢 Deactivate 🖌 📔 Generate RFC					
Enhancement no	ints	Selected Enhancement Point					
Туре Туре	Enhancement description	All Enhancement points	Type Reason	Type Status	Lck Locked?	Rel Rel. Status	Mnd Mandat
GUI dialog step	Change document write	/BTI/AUT_ENH_CDWP	Playback	Inactive	Unlocked	Released	Mandat
GUI dialog step	Playback code for clipboard imp	port /BTI/AUT_ENH_CIMP	Playback	Inactive	Unlocked	Released	🔶 Mandat
GUI dialog step	Frontend: DIRECTORY_BROWS	E /BTI/AUT_ENH_DRBP	Playback	/ Inactive	Unlocked	Released	Mandat
GUI dialog step	Frontend: DIRECTORY_CREATE	BTI/AUT_ENH_DRCP	Playback	/ Inactive	Unlocked	Released	Mandat
GUI dialog step	Frontend: DIRECTORY_EXIST	/BTI/AUT_ENH_DRXP	Playback	Inactive	Unlocked	Released	Mandat

If there are areas of functionality that are important to you which are covered by optional enhancements, then rather than have to individually activate them you can change the configuration so that these are marked as mandatory.

### Updating enhancement configuration

Enhancement configuration is updated via table /BTI/AUT\_C\_ENHT, which can be edited using

transaction SM30. In the table, optional enhancements have a blank entry in the "Mand" Column. Change this entry to Mandatory for the enhancements you want to change.

Enhancement	s configuration		
Enhan. ID	Rel Sts	Mand	Main pro
LCOM	Released 🔹	Mandatory 🔻	SAPLSY 📤
LK1P	Released 🔹	· •	SAPLSE 🍸
LK1R	Released 🔹	Mandatory 💌	SAPLSE:
LK2P	Released 🔹	· •	SAPLSE:
LK2R	Released 🔹	Mandatory 👻	SAPLSE:
LOGO	Released 🔹	Mandatory 🔻	SAPLSU

Make sure that you are changing the setting for the correct enhancement. Pay particular attention to the type of enhancement (Recording or Playback) and the name of the enhancement.

## 3.12.1.5. Execute Check Steps

### **Overview**

Similar to the recording, the playback has a set of check steps that can be run against it in order to validate that the system and test plan are ready for playback. Run all check steps and evaluate the results to determine readiness for playback.

#### **Process Steps**

Once the enhancements are activated, you can execute the recording Check Steps Select Recording -> Recording Status from the left-hand navigation pane.

4		
▲ 0 ≯C ∲ R	onfiguration ecording	
Re	cording	
	Link Type	
	File System Monitoring	
1	Enhancement Setup	
•	Outbound RFC Setup	
Ŷ	Recording Status	
6.0	Standard Recordings	
S	Filtered Recordings	
JOB	Job Manager	

The Recording Status screen will appear on the right. Select the Source System and Click on the Check Steps button and choose "Run check steps"

<b>9</b>		£ 1	F 🛛 🐯 🖌 🖢 🗸	۲
Reco	ordir	ng S	<u>R</u> un check steps	ystems
Туре	SID	Sys	Show steps	
	TY1	TY1 F	Recording	

Choose Yes in the following pop-up.



The check steps will run, and results will be returned in a pop-up screen, as below.

To help troubleshoot errors there are logs providing information on the error, double click on the line in error and then double click the log on the bottom left. The example below shows the error received if you do not active the Enhancement Points in the Source system.

Step Name	Hlp	Тур	Step Type	Auto?	Sts	Status	Last run	Last Message	
Check source landscape has been instrumented	1	1	Check step	V		Complete	15.10.2019 20:54:32		
Check shared memory limits on source landscape	7	1	Check step	V	•	Never run	Never		
Check that recording agent installed correctly	1	1	Check step	$\checkmark$		Complete	15.10.2019 20:54:32		
Check app server file paths are set	7	1	Check step	$\checkmark$		Complete	15.10.2019 20:54:32		
Check file system monitoring config	1	1	Check step	$\checkmark$		Error	15.10.2019 20:54:33		
Check OS command is set for file copy	1	1	Check step	$\checkmark$		Complete	15.10.2019 20:54:33		
Check RFC recording program generation status	7	1	Check step	~		Warning	15.10.2019 20:54:34		
and Results of step execution te/Time/User 15.10.2019 20:54: Problem class Ott Start step (1000) - Check source	andscape ha	音	n instrumented	]   🕥 🚺	0	45			
and Results of step execution         e/Time/User         15.10.2019       20:54:5         Problem class Ott         Type Message Text         Start step (1000) - Check source         Checking the instrumentation state         Ignore check of enhancement BS         Enhancement BTCC is active         Enhancement BTCS is active	andscape ha is of system N as it is no X as it is no	as beer TY1 ( It mano t mano	n instrumented (TY1R) datory datory	]   🔁	0	0 45			
Ind Results of step execution         e/Time/User         15.10.2019       20:54:5         Problem class Ott         Start step (1000)         Checking the instrumentation statt         Ignore check of enhancement BS         Enhancement BTCC is active         Enhancement BTCS is active         Enhancement CDIS is active	andscape ha is of system N as it is no X as it is no	as beer I TY1 ( It mano It mano	n instrumented (TY1R) datory datory	]   💽 🖉	0	0 45			

There is also help available to guide you in resolving any Check Step errors. Simply click on the blue help icon on the row in question.

Check step execution							
eps to be executed							
🔁   📲 🖌   🔀 Execute 🖌		_					
Stp Step Name	Hlp	yp Step Type	Auto?	Sts	Status	Last run	Last Message
Check source landscape has been instrumented	i	Check step	~		Complete	15.10.2019 20:54:32	
Check shared memory limits on source landscape	1	🖆 Check step	V	•	Never run	Never	
Check that recording agent installed correctly	i	🖆 Check step	$\checkmark$		Complete	15.10.2019 20:54:32	
Check app server file paths are set	7	🖆 Check step	1		Complete	15.10.2019 20:54:32	
Check file system monitoring config	7	Check step	~	•	Error	15.10.2019 20:54:33	
Check OS command is set for file copy	7	Check step	$\checkmark$		Complete	15.10.2019 20:54:33	
Check RFC recording program generation status	1	Check step	~		Warning	15.10.2019 20:54:34	

You can also use the buttons below to hide the Information, Warning or Error messages if there are a large volume of messages to check.



Once you have finished analysing errors, close the pop-up screen and you can repeat the Check Steps as needed.

From the Check Step list's pop-up window it is possible to run individual Check Steps as below.

<b>⊡</b> • T(	1(1)/100 Check step exe	cution							
Step	s to be executed								
G	🛛 📲 🖌 🕜 Execute								
St	Step Name	Run selected step only	Hlp	Тур	Step Type	Auto?	Sts	Status	Last run
Œ	Check source lands	Run all steps	i	1	Check step	V		Complete	29.10.2020 10:
Œ	Check shared memor		i	1	Check step	1		Complete	29.10.2020 10:
Œ	Check that recording	agent installed correctly	i	1	Check step	V		Complete	29.10.2020 10:
Œ	Check app server file	paths are set	i	1	Check step	V		Complete	29.10.2020 10:
Œ	Check file system mo	nitoring config	i	1	Check step	V		Complete	29.10.2020 10:
Œ	Check OS command i	s set for file copy	i	1	Check step	V		Complete	29.10.2020 10:
G	Check RFC recording	program generation status	i	1	Check step	~	•	Never run	Never
Logs	and Results of step exec ste/Time/User		5 . [	Σ.,			<b></b>		

### 3.12.1.6. Reset Target Date and Time

### **Overview**

As many SAP transactions are date-bound the date entered on the screen is validated against the system date. For example, if Testimony records a financial posting on 1st May, but the playback is run on 5th May, then the posting transaction will fail in the playback with a "Cannot post in the past error" as the playback will try to post with the recorded date of 1st May.

Therefore, to enable the playback to run smoothly then the date and time, primarily the date of the system needs to be reset to the same as the recording. To achieve this Basis Technologies recommends that you utilise TimeShiftX as per the steps below.

#### **Process Steps**

Firstly, you should ensure that you are familiar with the manual for the correct version of the TimeShiftX product for your Operating System.

Identify all the OS user accounts that run the SAP system, the DB, and any OS-level users that facilitate the operation of the system, such as SIDADM, SAPserviceSID, SMDAgent, etc. Time travel will need to be activated for these accounts later in the process.

Shutdown both the SAP system app servers and the Database.

Note: replace sidadm with the OS User accounts identified as running the SAP system.

```
# su - <sid>adm
$ tsx set -u <sid>adm -d -4
$ date
```

The time and date should be four days in the past. The number after the -d indicates how many days you want to shift time by -4 means minus 4 days.

When the SAP target system is restarted you should check the target system is time travelling correctly as per the topic <u>here.</u>

Again should you require more complex time travelling on your system please consult the TimeShiftX manual for your version of that product.

### Troubleshooting

To reset the time travelling of a system the syntax is as below:

```
$ tsx reset
$ date
```

The present time and date should be displayed.

#### If you have serious issues then please email support@vornexinc.com

### 3.12.1.6.1. Checking time travel on SAP

The standard SAP program RSDBTIME can be run via SE38 to verify the system time and date on the different components that make up the SAP system.

This program should be run before and after time travelling to firstly verify there are no time mismatches on the system before time traveling and secondly after time traveling is started to ensure that the time travelling is working on all parts of the system.

🔄 List Edit Goto System Help
◈ ◯ ┌┌┌┌┌┌┌┌┌┌┌ 😣 😫 🏵 😒 🗒 🗒 🚿
Time diagnosis
R/3 Time Diagnostic Program on BTI3219
Universal Time Coordinated UTC: 1583409088
Date and time of database: 05.03.2020 11:51:28
Date and Time of R/3-Kernel: 05.03.2020 11:51:28
Date and Time of ABAP-Processor: 05.03.2020 11:51:28 ABAP Timezone Setup 0
Date and Time / localtime: 05.03.2020 11:51:28
No Time Inconsistencies detected !
Checking GET RUN TIME from 11:51:29 to 11:51:34 during 00:00:05 GET RUN TIME result
GET RUN TIME time measurement accuracy ok !

### 3.12.1.7. Start the Bots

### **Overview**

The playback is executed via the Testimony Bots that run on Windows machines. The size of the recording will drive the number of Bots required.

### **Process Steps**

The first step is to navigate to the relevant folder on your Bot machines (local or VM) and double-click on the AutGui executable file.

The original AutExternalAgent executeable is still avaiable, but it has been enhancemed and improved considerably with the AutGui.



The Bot will start up and show a loading window.



Startup is complete once you see the main App

Idle

**VA03** 

1

Testin	mony -	Project Bo	ot TC2-2										-		×
File To	ols H	elp													
Steps ex	ecuted:	0 SAP G	UI memory	usage:	68MB	SAP GUI	windows: 0								
Active se	essions	Historica	al sessions	Execute	ed steps	Execut	ed scripts								
ScrLock	? Statu	s Object	Text User	Туре	Step ID	Step	Test Script ID	Exec. Item	Last	Session Nr.	Orig. Session Nr.	ABAP Session ID	User	Session ID	)
										N					
										63					
														3	
Testi	mony -	Project Bo	ot TC2-2										-		×
<u>File</u> Ic	ols H	elp													
Steps ex	ecuted	1 SAP 0	GUI memory	usage:	98MB	SAP GU	windows: 1								
Active s	essions	Historica	al sessions	Execut	ed steps	Execut	ed scripts								
ScrLoc	k? Sta	tus Objec	t Text Use	er Type	e Step	ID &	Step Test S	cript ID Exe	c. Item	Last	Session Nr.	Orig. Session Nr.	ABAP	Session ID	)

Repeat for all Bots that you want to start for this playback.

Validate the BOTs are running with their screens unlocked. This step is essential for recording screenshots. The screenshots require an active graphics context, which is disabled when the Windows desktop screen is locked.

DLEE SAPGui 0002920261 1/6 0000505005 000000002 0 second ago 1

You can verify that the Bots have successfully registered with Testimony by navigating to Execution -> Supporting Infrastructure in the central system.

00008000841279B3EE

CO	NTEXT	
5	Plan	21
TY	l Regression Test Q3	<ul><li>✓</li><li>✓</li></ul>
<b>x</b> 0	verview	
×C	onfiguration	
🖶 R	ecordina	
× p	anastan.	
	epository	
E E	xecution	
Exe	ecution	
1	Enhancement Setun	
	Outhound REC Setup	
	Execution Queue	
FIE	Supporting Infractructure	-
IOR	loh manager	
POB	JUD IIIaliayei	

In the right-hand pane, you should see that the Bots you started have a status of Ready.

Ado	ditional Supp	port	ing Syste	ms					
Тур	Sys Type	Sts	Agent Status	System ID	Terminal ID	Host User	ID IP Address	Registered Name	OS Op. System
1	Playback Bot	٥	Inactive	KMC laptop	DESKTOP-S599L7R		1		💐 Windows 8.1
*	Playback Bot	٥	Inactive	DC Laptop	XPS13-DCAPO		5		💐 Windows 10
*	Playback Bot	٢	Inactive	BP Connect	BTI1102		6		💐 Windows Server 2008
*	Playback Bot		Ready	VM1	SKLRWX7BVDPF2-L		2	AUT_DRONE_0002	💐 Windows 10
*	Playback Bot	٥	Inactive	VM2	USUNWX745FPF2-L		3		💐 Windows 10
*	Playback Bot	٢	Inactive	VM3	SKLRW787ZVMX1-L		4		💐 Windows 7
*	Playback Bot	٥	Inactive	VM4	USUNWX1F6DPF2-L				Nindows 10

### 3.12.2. Start Playback

### Overview

Once the execution queue is built from the repository, the target system is prepared and the Bots are started, the execution queue can be started

### **Process Steps**

- 1. Select Test Plan to use
- 2. Navigate to the Execution Queue
- 3. Double check the Check Steps
- 4. Click on "Start Execution Queue" button

CONTEXT g <sup>®</sup> Plan TY1 Regression Test Q1 ♥♥ □	Execution queues	A   A A R A R A	123 J   ←	Pun		×, ×,	V 🔺   🐲
	Standard queue	Ready	Z	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	< > Monitoring Sussessments	iness scenarios Sa	ipt view 📑	Item vier	w 🎼 C	Component	view

When the "Start Execution Queue" button is selected, the check steps will be "checked" to ensure that all have passed ok. If not, you will be prompted as to whether you want to proceed. The first step of the job is to run the "preparation steps". You do not need to run these manually as the execution queue will automatically do this. If any issues arise as a result of this, you will need to investigate the preparation step logs in order to determine if you would still like to proceed or not.

Once the status of the execution changes to "In Process", this means that the queue is running. At this point, you should begin to monitor the playback.

### 3.12.3. Monitor Playback

From within the Execution Queues window, click on the Monitoring tab to see status information for the playback.

Testimony		
2		
CONTEXT © Plan	Information           Information           Image: For a given Test Plan, only a single active execution queue can exist. Historical execution queues can also be seen here.	
2.60 24 HOUR RECORDING	Please select an execution queue to view the items contained within it along with their current technical status information.	
	Execution Queues	
Overview     Configuration	Type Queue name         Sts Status         Tot         Run         In Proc         Pass         Fail         Suppr.         Error         Canc         Not Run         % Orap         % Pass         % Pass         % Pass         Message         Est. Time remaining Baseline / Rebted Q           9:         Test Phase 1         1         Complete         31254         31254         3254	ueue
Recording	L: LU-3615 Before the f. → Stopped 31254 666 3 600 47 0 3 16 30585 2.14% 90.09% 92.74% N/A Test Phase 1 (0002	36)
H Repository	Age         LTV-3615 After the fix         n <sup>2</sup> ●         Stopped         31254         Z29         5         658         52         0         4         15         30520         2.35%         90.26%         92.66%         N/A         Test Phase 1 (0002)	36) ~
Execution		< >
Execution Link Type Supporting Infracture Infracement Seture Control of KC Seture Dottool Aff C. Seture Build Lists	Montering Target       Business scenarios       Script view       Them view       Component view         Image: Script view       Image: Script view       Image: Script view       Image: Script view       Image: Script view         Image: Script view       Image: Script view       Image: Script view       Image: Script view       Image: Script view       Image: Script view         Image: Script view       Image: S	
	Recently Executed Steps (Updated: 17:11:32) Server Jobs	
	Res Result Ty Step Type EQ Step ID Time Ago Rec. Dur PB. Dur Object Step name Seq Bot Server Job [Job Job name Typ Job Type Cur Block Sts Job Status	Sts State
		< >
What we have		

This shows information on (reading clockwise from top-left) the currently-running execution queue blocks; the active Bot(s); the jobs that are running in the central system to manage the playback; and the most recently executed steps.

You can refresh the top-level to update all the individual results windows, or you can refresh each window independently. You can also log into the Target system to view currently running activities.

If you have visibility of the bot machines, you should start to see the bots performing the playback steps. This might be via the SAP GUI, but equally the console will show you if it is running other steps such as RFC's and batch jobs.

When a playback is executing, what is going on in the target system is critical in understanding potential problems that might arise. Visibility into the target system and what is going on there is now available through the execution queue monitoring.

Previously, access to the target system was required to gain visibility of what was going on in the system

There are 6 screens available for display:

Batch Jobs (SM37) – Shows current and recently executed batch jobs Work Processes (SM66) – Shows what WP's across app servers are doing System Messages (SM21) – Shows recent system messages Current Users (AL08) – Shows currently logged on users across the system Short-Dumps (ST22) – Shows recent short-dumps in the target system Summary – Provides a summary of the above 5 screens

Testimony	
<b>a</b>	
CONTEXT S Plan 2.60 24 HOUR RECORDING C C C C C C C C C C C C C C C C C C C	Information
Repository	LIV-3615 After the fix       ∩       ● Stopped       31254       729       5       658       52       0       4       15       30520       2.35%       90.26%       92.68%       N/A       Test Phase 1(000236)       ∨
Execution Unit Type Secution Oueue Secution Oueue Secution Oueue Secution Oueue Secution Secution Control Cont	Montoring     Montoring Target     Business scenarios     Script view     Term view       Overview     Target System - System Messages - 1 hour back       Non System Source     Single System - System Messages - 1 hour back       Systems     Single System - System Messages - 1 hour back       Work Processes     0 Single And No Fiter
	Target System Batch Jobs - 1 hour back Target System Users
	Sys. Server name Job Name Job ID Stps User TS step Status Status Durat. Start Time Sys. Server Name User Transaction Program Terminal Dailog time
	Target System Work Processes Target System Short Dumps - 1 hour back
TT Doo be	pys_jserver name nry_ yzu status wny_user Test Sorpt_ Report
No Results	

## 3.12.4. Stop Playback

In normal circumstances, you would allow a playback to complete running all of its scripts, at which point it will stop automatically. However, if you need to stop a playback early for any reason, then you can do so by pressing the Stop Execution Queue button.

	▲ 🚭	×, &		*
		Stop Execu	ition Queue	
Run	Pass	Fail	Suppr. No	result Er

The playback will enter status Stopping, followed by Post-Processing and then Stopped.

Exec	cution Queues	5										
Туре	Queue type	Sts	Status	Tot	Run	Pass	Fail	Suppr. No	result Error	Canc	Not Run	1
	Standard queue		Stopped	3056	<u>19</u>	<u>18</u>	<u>0</u>	<u>0</u>	1	<u>0</u>	3028	1

## 3.13. Double Playback

One of the challenges with Testimony producing a clear set of defects that are purely connected to the release being tested is the "noise" that can exist in target systems from slight differences in environmental setup of these systems. While <u>suppressions</u> and exclusions can help, this can take time to setup to have the desired impact and runs the risk of masking genuine regression defects.

The Double Playback option helps to filter out this "noise". This operates by running a "baseline" playback into an identical copy of the source system, with no changes or release candidate applied. The first execution queue is then copied and a second playback is then required. This time the identical copy of the source system is upgraded or has the changes or release candidates applied. The failures in the second (release) queue are compared to the baseline. If the failures occurred in the second playback for the same reason, these are excluded from defect proposal generation for the second queue therefore reducing the noise. The overview of the steps to perform a Double Playback are show in the diagram below:



The comparison of the two playback runs occurs with the Defect Proposal

Select a different variant prior to the Defect Proposal.

Execution Results	Failure Overview	Business scenarios 📃	Script view
Results	Failures / Open	Defects	
Link Type			
Playback Overview	🙃 i 🏗 . i 🔻 . i 🔽		
Result Overview			
🖳 Linkage Overview	Result Failures	Maintain Proposal Variant	Comp
4 Defect Management		Edit Proposal Variant	
A Management Summary			
······································			

Ensure that the Double Playback check box is selected and enter the Execution Queue ID of the "Baseline" against the Double Playback Baseline Queue

Queue Item		
Execution queue ID		
Execution queue item ID	to	
Instrumentation LT type	to	
Queue type	to	
Component ID	to	
Business Scenario ID	to	
Processing status	to	
Queue Step		
Execution queue Step	to 📑	
Execution queue Step Failure Reason	to to to	
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue ptions No. Log		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue ptions No Log Oceante Log		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue ptions No Log Create Log Create Log		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue ptions No Log Create Log Create & Display Log		
Execution queue Step Failure Reason ouble Playback Options Activate Double Playback Double Playback Baseline Queue ptions No Log Create Log Create Log Create & Display Log Export Log Handle Status Message		

You can also run the Defect Proposal as a standalone program /BTI/ AUT\_PROPOSE\_DEFECTS

## 3.13.1. Double playback Preparation

### **Parameter settings**

Before starting the second playback, the following parameters should be set in Configuration —> General Parameters.

Playback	FORCE_BASELINE_SEQ	Force sequence from baseline queue	i	Х
Playback	FORCE_BASELIN_RESULT	Force results from baseline queue	i	Х

#### FORCE\_BASELINE\_SEQ

This parameter forces the second playback to use the exactly the same script sequence as was used during the baseline playback. This ensures that there are no unintended consequences of running scripts in a slightly different order.

#### FORCE\_BASELIN\_RESULT

This parameter forces the second playback to mimic the same execution results (for failed/errored/ cancelled scripts) as they were experienced during the baseline playback. So, for example, if during the baseline playback a script was cancelled, then it will also be marked as cancelled in the second playback. This avoids any false positives arising from scripts executing that were not successfully executed during the baseline.

### Starting the second playback

When starting the second playback, you will receive a pop-up asking you to select the baseline queue against which the results of this playback should be compared.

🖙 Select baseline	queue	×						
Please select a baseline queue for double playback, or leave empty if not using double playback.								
Baseline queue	~							

## 3.13.2. Causes of noise during playbacks

### Introduction

In any Testimony playback, even into an identical system with no changes, some script failures are inevitable. These might be caused by environmental differences between the recording and playback systems; by limitations in the wider playback environment (e.g., some organisations choose not to install MS Office on the bot VMs); by slight differences in execution timings; or by certain aspects of the ways that SAP and Testimony work.

These failures during a playback constitute "noise" which can mask the genuine, regression defects that Testimony is looking for.

With a double playback, we seek to strip out this noise, therefore making the job of identifying genuine regression defects much easier.

### Reasons for defects during first or second playbacks

Even where a recording system and a playback system are identical (i.e., no release / upgrade / patching changes have been deployed to the target system before starting the playback), you can always expect to see some defects (differences between the output from the recording and the output from the playback) because of fundamental ways in which SAP and Testimony work. This section highlights some common reasons for seeing playback defects.

In addition to these, the Testimony Testers' Guide explains <u>different types of defects</u>, some of which are caused by factors that do not point to genuine regression failures.

### User logons not captured

Scenario:

- User1 logs on at 09:00
- Recording is switched on at 09:30
- At 10:00 User1 creates sales order 1234
- At 10:30 User2 logs on
- At 11:00 User2 changes sales order 1234
- At 11:30 User3 logs on
- At 12:00 User3 displays sales order 1234

In this scenario, because User1 logged on before the recording was switched on, Testimony didn't capture their logon. By default, Testimony will discard any activity for a user without a logon, so the creation of sales order ABC1 is not played back. Because of this, the activities of User2 & User3 will fail, because the sales order they are trying to access doesn't exist.

There is an option in Testimony to create logon scripts for users where we didn't capture the actual logon. However, when this is switched on we still discard any activity in the user session (i.e., the
particular SAPGUI window) for which we didn't have a logon . (This is so that, for example, we don't try to play back a transaction from the middle of the screen logic.) So in our scenario above, sales order ABC1 wouldn't have been created (and hence the subsequent transactions would have failed) because User1 was working in one session. However if, after the start of the recording, User1 had opened another SAPGUI session and then created ABC1, the other two transactions would have worked.

This scenario would result in failures during the first playback, but these would also arise in the second playback and so would be filtered out by the defect proposal run after the second playback, since the failures would be for exactly the same reasons. We therefore know that these failures do not indicate genuine regression defects.

## Locking

### Scenario 1:

- User1 goes to change sales order 1234
- A few seconds later, User2 also tries to change sales order 1234, and receives a "Sales Order is locked" message
- A few seconds later, User1 finishes their change and saves the sales order
- · A few seconds later, User2 tries to change the sales order again and this time is able to

Because locking is so transient (with each lock often lasting a few seconds or less), it's possible that during the playback User2's change is executed after the lock on the sales order has already been released. In this case, User2 won't receive the "Sales Order is locked" message. This will lead to a failure (Different Message) in the script.

The converse is also true.

### Scenario 2:

User3 goes to change sales order 1234

A minute later, User4 changes sales order 1234. Because User3 has finished the change, there is no lock, so User4's change proceeds as normal

During the playback, it's possible that User4's change is executed while User3's change is still running. This will lead User4 to receive a "Sales Order is locked" message, which will cause their script to fail. Because locks are so transient and are dependent on the timing and sequencing of calls, it is possible that lock errors might occur in the first playback, but not in the second; or in the second playback but not in the first. (Where a locking error occurs in both playbacks, this will be filtered out by the Double Playback functionality.)

## **Timing / Sequencing**

### Scenario1 :

- Batch Job A updates stock levels in a warehouse. It starts at 15:00 and finishes at 16:00
- At 16:30 User1 creates an order which checks the stock level. There is enough stock of the material, so the order is created

During the playback it's possible that User1's order creation runs before Batch Job A starts (or while the job is still running). In this case, it's therefore possible that when they do the stock check there isn't enough stock for the order so an error message appears, causing the script to fail.

It is most likely that an error of this type seen in the first playback will also be seen in the second and will therefore be filtered out by Double Playback. However, it is still possible that timing issues may occur in only one of the playbacks.

### Scenario 2:

- A series of 25 user transactions executes between 15:00 & 16:00, each updating the statuses of various orders to "ready for delivery"
- A batch job starts at 16:15 to process orders marked as ready for delivery. For each order found, a message is output to the job log.

This scenario can be considered as the obverse of the previous scenario. In this instance, a batch job is processing updates made by several dialog transactions. During the first playback, the batch starts before any order status updates have been made. This results in a "no orders to process" message in the job log which, because this was not seen in the recording, results in the batch job being flagged as a failure. If, during the second playback, the batch job again starts before any orders had been updated, we would again see this failure and this would be filtered out by the Double Playback functionality.

### **Regression failures causing non-regression failures**

During a second playback in the Double Playback scenario, it is possible that a genuine regression failure in one script can lead to non-regression failures in other scripts.

### Scenario:

- Batch Job A updates stock levels in a warehouse. It starts at 15:00 and finishes at 16:00
- At 16:30 User1 creates an order which checks the stock level. There is enough stock of the material, so the order is created

This is the same scenario as above, but in this case during the first playback both the batch job and User1's transaction were executed in the correct order and completed successfully. However, during the second playback a regression error has been introduced in Batch Job A causing it to fail without updating the stock levels. This results in a failure of User1's transaction, even though the transaction itself has no regression error.

# 3.14. Review Playback Results

## Overview

When Testimony records activity in a system, it captures **inputs**, **outputs** and certain **linkages** that occur in-between. When the playback is executed in the test system, Testimony will automatically check that the output in the playback matches the output that was received in the recording. If linkages (for example, change documents) were recorded, it will compare these as well. Once a playback has completed, there are various ways of reviewing the results of the playback. These are described in the following sections.

# 3.14.1. Playback Overview

## Introduction

The Playback Overview, accessed from within the Results tray, shows the results of the playback in various different ways, as explained below.

## Failures / Open Defects

In this tab you can see the failures from the playback grouped according to their SAP application component and priorities from the Coverage Analysis. Expanding each.application component tree, you can see the types and numbers of errors (e.g., Unexpected next screen or Unexpected next message).

Failure Overview Susiness scenari	os 📃 🧾 Script view 📑 I	tem view	F	Compone	ent view			
Failures / Open Defects								
🗿   🎏 🖌   🍸 🖌   🎼 🗸   🌪   🚷								
Result Failures	Application Comp 1	Total	Crit.	High	Medi	Low	Unk	D. T
> 🐼 Monitoring	Basis Components	1					1	1
> 🔯 ALE Integration Technology	Basis Components	209					209	1
🕆 🔯 Financial Accounting	Financial Accounting	1				1		1
<ul> <li>— Unexpected next screen</li> </ul>	<i>i</i>	1				1		1
Y 🐼 Shipping	Logistics Execution	1			1			1
<ul> <li>— Unexpected message</li> </ul>	<i>i</i>	1			1			1
🗡 🐼 Material Master	Logistics - General	1				1		1
<ul> <li>— Unexpected message</li> </ul>	<i>i</i>	1				1		1
> 🔯 Inventory Management	Materials Management	2			1		1	2
> 🕺 External Services	Materials Management	1					1	1
> 🔯 Maintenance Orders	Plant Maintenance	1	1					1
> 🐼 Production Orders	Production Planning	1					1	1
> 🐼 Billing	Sales and Distribution	2			1		1	2

By clicking on the number hot-links in the display, you will show the individual errors for that area. For example, clicking on the number 2 in the Total column for Inventory Management will show you the two individual errors received, in this case that we received unexpected error failures in transactions MIGO and MB52.

🖙 Result failures selected													×
🔁   🏗 🖌 🍸 🖉	-	🖌   68 📔 📑		<b>R</b>									
Scripts	Item	Object descri	Sts	Status	Sub	Res	Result	Message	Exec. start	Exec. end	Failure Reason	Туре	Object
🕆 💺 Current active queu													
> 💽 MIGO	1739		×	Partially co		Ξ,	Failed	Unexpected message			Unexpected message	GUI dialog step	MIGO
> 💽 MB52	2292		×	Partially co		E.	Failed	Unexpected message			Unexpected message	GUI dialog step	MB52

From here you can investigate the errors using the Investigate Screen functionality.

This is also the screen from which you generate defects to be investigated as part of the regression test process. By clicking on the "Propose Defects" button, Testimony will analyse all of the reported failures and group them into defects. More information on defects can be found in the Testers' Guide <u>here</u>.

## 3.14.2. Script statuses and execution results

When reviewing the results of a playback (either when it has finished or during its execution) it is important to understand the various possible statuses of the individual scripts (and script steps) being played back.

These statuses can be most easily seen once a playback has finished under Results —> Playback Overview —> Script View tab. The columns "Status" and "Result" show the success or otherwise of the scripts in the playback.

🔺 Failure Overview	😵 Business scenarios 📃 S	cript view 📑 Item view	🛛 🖪 C	omponent view							
😏 🖺 🖬 🖌 🖬	- 🚅 🔺 🚳 💾 🛃 🖊										
Scripts	Item Object description	Sts	Status	Sub		Res	Result	Message	Exec. start	Exec. end	Failure Reason
> 🔀 GUI session en	d 192		Complete			E,	Passed				
🔉 🕀 GUI logon	193		Complete			E,	Passed				
> 📀 GUI logon	194		Complete			E,	Passed				
🔉 🕀 GUI logon	195		Complete			E,	Passed				
> 📀 GUI logon	196		Complete			E,	Passed				
> 🔄 VA01	197	×	Partially co	)		Ξ,	Failed	Unexpected message			Unexpected mes
> 🛐 CA03	198		Complete			E,	Passed				
> 🛐 MD04	199		Complete			E,	Passed				
> 10 LDB3	200		Complete			E,	Passed				
> 🔀 GUI session en	d 201		Complete			E,	Passed				
> 🔀 GUI session en	d 202		Complete			E,	Passed				
> 📀 GUI logon	203		Complete			E.	Passed				
🔉 🕀 GUI logon	204		Complete			E,	Passed				
> 10 VL01N	205	🔺 .	Cancelled	Producer step f	ailed (dynamic ID)	?⊟	No result				
> 🛐 FB03	206		Complete			e,	Passed				
> 🔀 GUI session en	d 207		Complete			E,	Passed				
ME2N	208		Complete			E,	Passed				
> 📀 GUI logon	209		Complete			E,	Passed				
> 🛃 MD04	210		Complete			E,	Passed				
> 1 VL01N	211	▲ .	Cancelled	Predecessor scr	pt failed (LEAVE TO TRANS	SACTION) 😤	No result				
> 🔀 GUI session en	d 212		Complete			E,	Passed				
> 🔀 GUI session en	d 213		Complete			e,	Passed				
> 📀 GUI logon	214		Complete			E,	Passed				
🔰 🔷 😌 🕹 🔪	215		Complete			e,	Passed				
> 🛃 LT03	216	▲ .	Cancelled	Producer step f	ailed (dynamic ID)	?	No result				
> 💽 CR13	217		Complete			E,	Passed				

Before diving into the detail of the different statuses and execution results in the following sections, it is worth explaining the difference between a **Status** and a **Result**, as this often causes some confusion.

## **Playback statuses**

The **status** of a script is the final technical status after playback. It tells you information on whether, and how far, the script was able to be executed (or was chosen to be executed) during the playback. The following statuses are possible.

- Complete: All steps of the script were executed
- Partially complete: One or more (but not all) steps of the script were executed
- Error: A technical error occurred which prevented one of the script steps from being executed
- · Cancelled: Testimony decided not to run this script
- Suppressed: One of the steps in the script failed, but the error was suppressed through configuration
- Not processed: The script was not executed, nor was it attempted to be executed

## **Execution results**

There are only three possible **results** for a script:

 Passed: All steps of the script were executed, and the outputs from the playback matched the outputs from the recording

- Failed: One of the steps in the script had a different output in the playback than it did in the recording
- No result: The status of the script meant that no result could be determined

### Mapping statuses to results

Some **statuses** can have only one possible **result**, whilst others can have more than one. The following table maps the possible status & result combinations.

	Passed	Failed	No result
Complete	Х	Х	
Partially complete		Х	
Error			Х
Cancelled			Х
Suppressed	Х		
Not processed			Х

The different statuses and execution results are discussed in the following sections.

# 3.14.2.1. Status: Complete

A status of Complete means that all of the steps in a script were able to be executed during the playback. However, this does not necessarily mean that the script was *successfully* executed.

Compare the two scripts shown below:

Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message
> ME22N	627			Complete		E,	Passed	
> 🛃 CO02	629			Complete		Ξ.	Failed	Unexpected next screen

As you can see, the first (ME22N) has a **status** of Complete and a **result** of Passed. However the second (CO02) has a **status** of Complete but a **result** of Failed.

So in the case of scripts with a status of Complete, you need to check the script result in order to determine whether or not the script has actually been successfully played back. In fact, the combination of *Status=Complete* and *Result=Failed* always means that a failure occurred on the last step of the script. This is shown if we expand the failed script for CO02, which shows that it was the second (and final) step of the script that actually failed:

Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message
🜱 🔬 CO02	629			Complete		E,	Failed	Unexpected next screen
• 🕨 CO02		Production Order Change: Initial Screen		Complete		E,	Passed	
• 💽 CO02		Production Order Change: Initial Screen		Complete		E,	Failed	

To summarise:

- A script with Status=Complete can have two possible Results: Passed or Failed
- All scripts with Result=Passed will have Status=Complete
- A script with Status=Complete and Result=Failed shows that a failure occurred on the *last step* of the script
- Scripts with Result=Failed will generate defects once the Defect Proposal is run.

# 3.14.2.2. Status: Error

Technical problems sometimes mean that the bot, which is responsible for script execution, cannot actually execute a script step. In this case, the script will be shown to have a status of **Error**.

Scripts	Item Object description	Sts	Status	Sub	Res	Result	Message
🕆 💺 Current active queu							
> 🖅 ME51N	5		Error		?	No result	Cursor could not be set (MEREQ3316-STATU)
> 🛃 FBL5N	299		Error		?	No result	(CB02) connection to partner '10.0.3.223:50355' broken / CPIC-CALL: 'ThSAPCMRCV' : cmRc=20 thRc=223CPIC program connection ende
> 🖅 MD04	312	۲	Error		?	No result	(CB02) connection to partner '10.0.3.223:50353' broken / CPIC-CALL: 'ThSAPCMRCV' : cmRc=20 thRc=223CPIC program connection ende
> 1 ME2M	324	۲	Error		?	No result	External session 00156000417C4EEA9137F13FB1D00A7752DB7088 not found
> 🗾 MIGO	332	۲	Error		?	No result	(CB02) connection to partner '10.0.3.223:50357' broken / CPIC-CALL: 'ThSAPCMRCV' : cmRc=20 thRc=223CPIC program connection ende
> 💽 ME01	335	۲	Error		?	No result	(CB02) connection to partner '10.0.3.223:50356' broken / CPIC-CALL: 'ThSAPCMRCV' : cmRc=20 thRc=223CPIC program connection ende
> 💽 ME01	469	۲	Error		?	No result	Failed to find the following field(s) on the screen: EORD-EMATN(01) EORD-EMATN(02) EORD-EMATN(03) EORD-EMATN(04) EORD-EMATN(05)
> 🖅 SU01	677	۲	Error		?	No result	External session 001800002C7D4EEABB1BF117B1D00A7752DB7088 not found
> 1 VF03	694	۲	Error		?	No result	Assigned bot is inactive
> 🖅 SU01	695	۲	Error		?	No result	External session 001800002C7D4EEABB1BF117B1D00A7752DB7088 not found
> 💽 PA30	702	۲	Error		?	No result	Assigned bot is inactive
FK03	710	۲	Error		?	No result	Assigned bot is inactive
ME52N	1087	۲	Error		?	No result	Cursor could not be set (ADDR1_DATA-NAME1)
> VL03N	1257	۲	Error		?⊟	No result	(CB04) Connection manual canceled by user ABEKKAT , conversation 08542039 / CPIC-CALL: 'ThSAPCMRCV' : cmRc=17 thRc=474Conne
> 🔄 MIGO	1661	۲	Error		?⊟	No result	(CB04) Connection manual canceled by user ABEKKAT , conversation 09116599 / CPIC-CALL: 'ThSAPCMRCV' : cmRc=17 thRc=474Conne

In the Message column, you can see the reason for each of these errors and, as mentioned above, these are all technical in nature and resulted in the Testimony bot being unable to execute a script step. For example, we can see that there were some connectivity issues ("connection to partner xxxxx broken") and it also looks like one or more of the bots were shut down during the playback ("Assigned bot is inactive").

Note that scripts with Status=Error do not generate defects.

# 3.14.2.3. Status: Partially complete

Where a script has been executed, but one of the steps (other than the last step) has failed, then this script will have a status of "Partially complete".

Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message	Exec. start	Exec. end	Failure Reason
🕆 💺 Current active queu											
> 🛐 MB52	482		×	Partially co		E,	Failed	Unexpected message			Unexpected message
> 🛃 VL10H	537		×	Partially co		Ξ,	Failed	Unexpected next screen			Unexpected next screen
🗡 🖅 ME23N	644		×	Partially co		Ξ.	Failed	Unexpected message			Unexpected message
<ul> <li>ME23N</li> </ul>		Start MEPO		Complete		Ξ.,	Passed		14.02.202	13.02.202	
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Complete		E,	Passed		14.02.202	13.02.202	
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Complete		E,	Passed		14.02.202	13.02.202	
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Complete		E,	Passed		14.02.202	13.02.202	
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Complete		E,	Passed		14.02.202	13.02.202	
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Complete		E,	Passed		14.02.202	13.02.202	
• 🗾 <rfc></rfc>		Create note		Complete		E,	Passed		14.02.202	13.02.202	
• 🗾 <rfc></rfc>		Create note		Complete		Ξ,	Failed		14.02.202	13.02.202	Unexpected message
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Cancelled	Previous step in script failed	?≘	No result				
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Cancelled	Previous step in script failed	?=	No result				
• 🗾 <rfc></rfc>		Create link to web page		Cancelled	Previous step in script failed	?	No result				
• 🗾 <rfc></rfc>		Create link to web page		Cancelled	Previous step in script failed	?=	No result				
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Cancelled	Previous step in script failed	?=	No result				
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Cancelled	Previous step in script failed	?=	No result				
<ul> <li>ME23N</li> </ul>		Standard PO 4500018450 Created by ABEKKAT		Cancelled	Previous step in script failed	?=	No result				

As you can see from the above, the script for transaction ME23N has a **status** of Partially complete and a **Result** of Failed. The eighth step of the script is the step that actually failed. It has a **Status** of Complete (because Testimony could execute the step) and a **Result** of Failed because Testimony detected an unexpected message during the playback. The remaining steps of the script have a **Status** of Cancelled, since Testimony automatically cancels the remaining steps of a script if a step fails.

To summarise:

- If a step, other than the last step, of a script fails, then the script will have a **Status** of Partially complete and a **Result** of Failed
- The step which failed will have a Status of Complete and a Result of Failed
- All scripts with a **Status** of Partially complete will result in defects being generated once the defect proposal has been run

# 3.14.2.4. Status: Suppressed

In Testimony it is possible to suppress a script failure so that it doesn't generate a defect. You might do this, for example, if the failure is as a result of the environment in which the playback or the bots are running. (For example, if you have not installed MS Office on the bots, some scripts which export data directly to Excel will fail.) More information on suppression can be found in the <u>Tester's Guide here</u>

If a script failure has been suppressed, then the script will have a **Status** of Suppressed and a **Result** of Passed.

Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message	Exec. start	Exec. end	Failure Reason
мм01 €	526			Suppressed		E.,	Passed	Unexpected message			Unexpected message
Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message	Exec. start	Exec. end	Failure Reason
- 🖅 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
- 🖅 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
• 🔊 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
• 🗾 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
- 🗾 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
- 🖅 MM01		Transportation Group 18 Entries		Complete		E,	Passed		14.02.202	14.02.202	
- 🖅 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
- 🖅 MM01		Loading Group 7 Entries		Complete		E,	Passed		14.02.202	14.02.202	
• 🗾 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
• 🗾 MM01		Create Material 9277 (Configurable material)		Complete		E,	Passed		14.02.202	14.02.202	
- 🗾 MM01		Create Material 9277 (Configurable material)		Complete		Ξ.	Failed		14.02.202	14.02.202	Unexpected message
- 🖅 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
- 🖅 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
- 🖅 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
• 🖭 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
- 🖅 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
- 🖅 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?⊟	No result				
- 🗾 MM01		Create Material 9277 (Configurable material)		Cancelled	Previous step in script failed	?=	No result				

The step which failed will have a **Status** of Complete and a **Result** of failed. The remaining steps in the script will be cancelled.

To summarise:

- When a failure has been suppressed, the script will have a Status of Suppressed and a Result of Passed
- The failed step will have a **Status** of Complete and a **Result** of Failed
- · Suppressed scripts do not result in the defects.

# 3.14.2.5. Status: Cancelled

Sometimes during a playback, Testimony will decide that a script cannot or should not be executed. These are shown with a **Status** of Cancelled and a **Result** of No result.

	-					-	
Scripts	Item	Object description	Sts	Status	Sub	Res	Result
🕆 💺 Current active queu							
> 🖅 LT03	286			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result
> N VL02N	294			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result
> 🔄 CJ20N	467			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result
> 🖅 MM02	686			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result
> 🖅 WE19	704			Cancelled	Producer step failed (dynamic ID)	?⊟	No result
> 🖅 QA11	727			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?=	No result
> 🖅 WE19	728			Cancelled	Producer step failed (dynamic ID)	?⊟	No result
> 🖅 QA11	740			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?=	No result
> 🖅 IW32	761			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?=	No result
> 🖅 WE19	790			Cancelled	Producer step failed (dynamic ID)	?=	No result
> 🖅 WE19	847			Cancelled	Producer step failed (dynamic ID)	?⊟	No result
> 🖅 MD07	1248			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result
> 🔄 VL03N	1559			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result

There are various reasons why Testimony might decide to cancel a script. These are discussed below.

## Predecessor script failed (LEAVE TO TRANSACTION)

This cancellation reason arises in certain cases where "chained transactions" are executed by a user. In many cases in SAP, the end of processing of a transaction (e.g., hitting the back button or pressing save) will take the user back to the initial screen for the transaction. This is implemented in ABAP via a LEAVE TO TRANSACTION command. When Testimony builds the execution queue for these chained transactions, only the first call of the transaction has a "Start Transaction" step. The remaining transactions in the chain, although treated as separate scripts by Testimony, do not have a separate Start Transaction step, as the context from the previous transaction gives Testimony all of the information it needs to execute the transaction again.

Scripts	Item	Object description	Sts	Status	Sub	Res	Result
🕆 💺 Current active queu							
🗡 🛃 LT03	216			Complete		E,	Passed
• 🕨 LT03		Create Transfer Order for Delivery Note: Initial		Complete		E,	Passed
• 🗾 LT03		Create Transfer Order for Delivery Note: Initial		Complete		E,	Passed
• 🗾 LT03		Create TO for Delivery: Overview Deliveries		Complete		E,	Passed
🗡 🛃 LT03	219			Complete		E,	Passed
• 💽 LT03		Create Transfer Order for Delivery Note: Initial		Complete		E,	Passed

In the example above, we can see that a user has executed transaction LT03, but only the first script has a Start Transaction step (shown by the "Play" icon on the first step). In this case, the user started the transaction (first step); entered some data (second step); and then clicked on save (third step). Because of the LEAVE TO TRANSACTION command in the SAP code for this transaction, the user was then taken back to the initial screen of LT03. This spawned a new Testimony script, but without a Start Transaction step.

One effect of this method of handling chained transactions in Testimony is that if one of the scripts in the transaction fails or errors, then the remaining scripts in the chain must be cancelled, because these remaining scripts do not have a Start Transaction step.

This can be seen in the example below.

Scripts	Item	Object description	Sts	Status	Sub	Res	Result	Message
🗡 🗾 LT03	285			Error		?=	No result	(CB03) connection to partner '10.0.3.110:49963' broken
• 🕨 LT03		Create Transfer Order for Delivery Note: Initial	۲	Error		?⊟	No result	(CB03) connection to partner '10.0.3.110:49963' broken
• 🖅 LT03		Create Transfer Order for Delivery Note: Initial		Cancelled	Bot RFC error on previous step	?=	No result	
• 🖅 LT03		Create TO for Delivery: Overview Deliveries		Cancelled	Bot RFC error on previous step	?=	No result	
🜱 🗾 LT03	286			Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?=	No result	
• 🖅 LT03		Create Transfer Order for Delivery Note: Initial		Cancelled	Predecessor script failed (LEAVE TO TRANSACTION)	?⊟	No result	

Here we can see that the first step of the first LT03 script had an error as a result of a connectivity. As usual, the remaining steps of this script were cancelled, but in addition the second script in the chain was also cancelled for the reasons given above.

## Producer step failed (dynamic ID)

Testimony's dynamic ID process ensures that where the execution of one transaction is dependent on the results of another transaction, that the two transactions are linked together. This might be because, for example, one script creates a document, and a subsequent script changes that document. The dynamic ID process ensures that:

- 1. The linked scripts are executed in the correct sequence, so that the document creation is always executed before the document change
- If the document number that is generated when the document is created in the playback is different to the number that was generated in the recording, the subsequent change document transaction will use the new number rather than the old number (so that the correct document is being changed)
- 3. If the document creation script fails in the playback, then the subsequent change document script is cancelled, to avoid unnecessarily trying to change a document which Testimony knows doesn't exist

In the 3rd case above, the change document transaction would be given a **Status** of Cancelled with a **Sub-status** of "Producer step failed (dynamic ID)" and a **Result** of No result.



In the example above, a VL02N transaction has been cancelled with the "Producer step failed (dynamic ID" sub-status.

We can check to see which producer step caused this by going into the investigate screen for the cancelled script.

	1					
🕨 Play 🖹 Exp 📑 Excl 🖌 👞 🕨	Parameters . E Screenshots . O Zoo	m .			a	
Script Header	😥 🖺 🖌 🛒		🚽 🕨   🥡   🗸 🛱   🚱		🔺 🕨 🕼 📭 🛱	
Attribute Value Smit Type Dalog transaction Smit Object Value Smit Value SCRPT 01 Smit Value SCRPT 01 Smit Value SCRPT 01 Smit Value Screw Value Value Value Smit Value Value Value Value Value Value Smit Value Value Value Value Value Value Value Smit Value Value Value Value Value Value Value Value Smit Value	Input Parameters	Vulue	Expected Parameters	Value SAPMVSDA 4004 Change Outbound Delivery 7 felds	Actual Parameters	Value 7 fields
▲ Prev ▼ Next ▼ Supp □ Det         Script Steps         Stp Res Object Object Decryton         1 ◆ VLO2N Chance Outbound Del         ② ● VLO2N Chance Outbound Del         ③ ● VLO2N Chance Outbound Del         ④ ● Prov Dunkages         1 ▲ Sto Type Indee Type       Sto         1 ▲ Get/Set Parmeter       1         2 → Wumber Bance       2         3 → → Wumber Bance       2         4 → → Mumber Bance       2         5 → → Mumber Bance       2         2 → → Mumber Bance       2         3 → → Mumber Bance       2         4 → → Chance Document Delever       2         14 → → Chance Document Delever       2         15 → Dramic D - Consumer       2	Previous Step Screensho	vt		Current Step Screenshot		

The Script Linkages section at the bottom left of the screen shows any objects or scripts that have been linked to this script. Here we can see that there is a "Dynamic ID – Consumer" linkage, which shows that this script is the consumer of another script. If we click on this item in the linkages list, we can see details of (reading from top to bottom):

- The current script / step ("Consumer step Step/Script details")
- The producer, i.e., the script / step on which this step is dependent ("Producer Steps/Scripts")
- Any other scripts that are dependent on this producer ("Other Consumers of Producers")

🔂   🖣										
Cons	umer step - St	ep/Sc	ript	details						
Step	Type Type	Object	Sts	Status	Sub Status Broducer step failed (dynamic ID	Rslt Result	Num. range	Rec. value	Plybck value	Consumer field
2		VLUZN		Cancelleu	Producer scep railed (dynamic ib	ij : 🗄 No result	KV_BELEG	0000019040		LIKP-VDELN
- 🖓 🛛 🗟								**		
Produ	icer Steps/Scr	ints								
Itom		Object	Cto	Status	Cub Ctatue Relt Pocult	Num rango	Pac volue	Bubckaplup		
342	GUI dialog st	VL01N	•	Error	Ratus Ratus Raturesult	RV_BELEG	0080019640	FIVER VAILE		
<u>6</u>										
Othe	r Consumers o	f Prod	luce	ers						
Item	Туре Туре	Object	Sts	Status	Sub Status	Rslt Result	Num. range	Rec. value	Plybck value	Consumer field
352	GUI dialog st	LT03		Cancelled	Producer step failed (dynamic ID)	?     No result	RV_BELEG	0080019640		VBLKK-VBELN
370	GUI dialog st	<u>VF01</u>		Cancelled	Producer step failed (dynamic ID)	🔚 No result	RV_BELEG	0080019640		KOMFK-VBELN(01)

So, in the example above, we can see that our VL02N script was cancelled because it was dependent on a previous VL01N transaction which had a **Status** of Error. Because this producer script failed, the VL02N transaction, as well as an LT03 and a VF01 transaction, were all cancelled.

# 3.14.3. Playback duration analysis

During a recording, Testimony captures the response times (through the STAD data) of all recorded objects. It is often useful to compare these runtimes with the times taken during a playback, to see if there are any processes which take significantly longer during the playback. This might be, for example, because a batch job makes calls to an external system which isn't available in the playback environment. In this case, during a playback the job may have to wait for each RFC call to time out, causing the runtime of the job to be significantly higher in the playback.

Program /BTI/AUT\_DURATION\_ANALYSIS can be used to analyse the durations of scripts during the playback in comparison with their durations in the recording.

Playback Duration Analysis								
Execution queue ID	000011							
Execution queue Step		to	<b>(</b>					
Minimum difference (hh:mm:ss)	00:05:00							
Minimum difference percentage	10							

Call the program using SE38/SA38 in the Central System.

Enter the execution queue ID of the playback you want to analyse (you can get this from table /BTI/ AUT\_EXQH) and then values for the Minimum difference time and Minimum difference percentage. (In the example above, we are looking for steps where the playback duration was at least 5 minutes longer than the recording duration, AND the playback duration was at least 10% longer than the recording duration.)

Once you have the output, you can filter on the Type column if you're particularly interested in one type of object (for batch jobs, for example, you would filter on Type=08).

Queue step	Item ID	T¥.	Object ^	Recording duration	Playback duration	Difference	% Difference
0001833744	0000686841	08	3RD_PARTY_IDB	157,0000000	472,0000000	315,0000000	200,64
0001833679	0000686686	08	3RD_PARTY_IDB_HOURLY	157,0000000	472,0000000	315,0000000	200,64
0001832236	0000691516	08	C0000KAL+RKAZCO43_ZUSCHL	463,0000000	890,0000000	427,0000000	92,22
0001676461	0000640001	08	D0000_BE_AB_LISTE_CSV	402,0000000	1.098,0000000	696,0000000	173,13
0001678800	0000640230	08	D0000_DK_AB_LISTE_CSV	456,0000000	1.072,0000000	616,0000000	135,09
0001613569	0000622065	08	D0000_GROHE_STOCK	0,1000000	908,0000000	907,9000000	907.900,00
0001628385	0000627044	08	FI_HOAG_NACHBUCHUNG	1.074,0000000	1.514,0000000	440,0000000	40,97
0001682654	0000639882	08		1.164,0000000	1.585,0000000	421,0000000	36,17
0001621325	0000625937	08	LR_ZQMFK_UPDATE_RECEIVINGS	5,000000	2.013,0000000	2.008,0000000	40.160,00
0001694106	0000651532	08	M0000_QUERY_AS_JOB_KDAUFT1	1.286,0000000	2.892,0000000	1.606,0000000	124,88
0001746866	0000667941	08	M0000ZPP_PLAF_LSP_QUOTA	536,0000000	2.300,0000000	1.764,0000000	329,10
0001712545	0000654867	08	MM0299EINK+P4T+VMI_0299	201,0000000	2.326,0000000	2.125,0000000	1.057,21
0001712815	0000654925	08	MM7301EINK+P4T+VMI_7301	2.043,0000000	2.486,0000000	443,0000000	21,68
0001756170	0000668737	08	MM7301EINK+P4T+VMI_7301_VDR30	1.568,0000000	2.005,0000000	437,0000000	27,87
0001679279	0000639951	08	PP_QUERY_PUHL_ERS	775,0000000	1.345,0000000	570,0000000	73,55
0001910199	0000706473	08	PP0202_PROD_ORDER_AV_CHECK	481,0000000	2.341,0000000	1.860,0000000	386,69
0001739185	0000664892	08	PP0301_PROD_ORDER_AV_CHECK	856,0000000	2.309,0000000	1.453,0000000	169,74
0001900304	0000704797	08	PP1702_MONTAGE_ABLIEF_LISTE	670,0000000	1.515,0000000	845,0000000	126,12
0001912053	0000707041	08	PP7301_PROD_ORDER_AV_CHECK	463,0000000	2.311,0000000	1.848,0000000	399,14
0001613832	0000623089	08	SAP_IDOC_NACHBUCHEN_DESADV_51	2.551,0000000	3.288,0000000	737,0000000	28,89
0001689964	0000649992	08		1.628,0000000	2.495,0000000	867,0000000	53,26
0001712529	0000654740	08	SD5201_TH_TERMINIERUNG	1.680,0000000	2.304,0000000	624,0000000	37,14
0001844313	0000692878	08	ZBC_QUERY_CALL_AS_JOB 03:00	691,0000000	2.015,0000000	1.324,0000000	191,61
0001919987	0000707070	08		768,0000000	1.103,0000000	335,0000000	43,62

# 3.14.4. Root Cause Analysis

## Overview

The function of Root Cause Analysis (RCA) is to allow the users managing defects to see if there is an underlying change (SAP transport) related to the defect. Testimony leverages ActiveControl (A change and release product also built by Basis Technologies) to enable Testimony to look inside the transport to determine the underlying objects changed as a result of the release. These changed objects are checked to see if any defects have been raised for the transaction code, batch job, RFC or web service etc. an underlying change found it linked to the defect and the Root Cause Analysis flag is raised against that defect. Also note that RCA is designed to be run once the execution of the playback is completed, if utilising double playback this will be after the second run where you are testing your release.

## **Process Steps**

To ensure the correct setup and running of Root Cause Analysis (RCA) please check the following steps.

- Setup of RCA
- Link Creation
- Build Lists
- <u>RCA Results</u>

A prerequisite of RCA is for ActiveControl 8.31 (as a minimum) to be deployed to the target system. If your organisation is already running ActiveControl please speak with your Testimony consultant who can check the version deployed and ensure there is no disruption to your ActiveControl installation.

# 3.14.4.1. Setup of RCA

## Overview

Before Root Cause Analysis (RCA) can be run successfully there are a set of steps that need to be followed. If Root Cause Analysis is already setup on your systems then you can proceed to the linkage creation step.

## **Setup Steps**

- 1. ActiveControl 8.31 (as a minimum) needs to be deployed to the target system. If your organisation is already running ActiveControl please speak with your Testimony consultant who can check the version deployed and ensure there is no disruption to your ActiveControl installation.
- 2. Ensure Testimony's <u>General Parameter</u> "ROOT\_CAUSE" is turned on set to 'X'.
- 3. The RCA function is, by default, visible only to the Test Engineer profile. Or an other UI profile might need to be changed so that Root Cause Analysis is visible. See the <u>UI profile</u> topic for more details.
- 4. Execution queue required and target system with transports applied

# 3.14.4.2. Link Creation

# 3.14.4.3. RCA Results

## 3.15. Useful Programs and Reports

There are utilities which are not included in Testimony's menu-system as they are intended for Administrator use only.

Recording Extractor

Output the contents of a recording for non-regression testing purposes. The Transaction /BTI/AUT\_REXT, linked to program /BTI/AUT\_TESTIMONY\_EXTRACTOR will download an unformatted XML document which can then be used with third-party tools.

• Defect Flow Report

It is very useful to visually display the defects, and their source-fault types, in a Sankey diagram. The data for such an output can be downloaded via the transactions /BTI/AUT\_DEFECT\_FLOW. The data can then be uploaded to a website such as <u>SankeyMatic; Builder</u>

📴 Program Edit Goto System Help			_ <b>—</b> ×	
⊘ ~ ≪ 8 @ 0 8	⊕ H K D1	100 TT 0%		
Defect Flow report				
© <b>1</b>				
Execution gueue ID			D⊮ List Edit Goto System Help □	×
		-	🖉 🚽 🖉 🖉 🖉 🕲 🕲 👘 👘 🕹 🖏 🖓	33
Instrumentation LT type   07	to	<b>*</b>	Defect Flow report	
Obj. Name	to	<u></u>		
			Defect Flow report 1	Ŷ
Show top (n) objects			Sec	
Show top (n) failure reasons			Objects	
Show top (n) error messages			Internal RFC (5539) [5539] Internal RFC (F)	
			Dialog transaction (2464) [2464] Dialog transaction (F) Batch job (37) [37] Batch job (F)	
Show results by Object type			Web service (300) [300] Web service (F)	
Show results by Object name			Failures	
Download to local server			Internal RFC (F) [211] Failures (322)	
Fle path			Dialog transaction (F) [111] Failures (322)	
			' Failure breakdown	
			Failures (322) [335] Difference in Output Values (335)	
			Failures (322) [60] Row not found (60) Failures (323) [64] Unermosted Message (46)	
			Failures (322) [4] Change Document Missing (4)	
			Failures (322) [1] Unexpected Next Screen (1)	
			Defects	
	-		Difference in Output Values (335) [2] Defects (15)	
		»   IC8 (1) 100 ♥	B1131.34   IF Row not found (60) [6] Defects (15) Unexpected Message (46) [5] Defects (15)	
			Change Document Missing (4) [1] Defects (15)	~
			Unexpected Next Screen (1) [1] Derects (15)	~
			( )	>

Inbound RFC (64,764)	Inbound RFC (F)	Difference in output (3.419) Unexpected Message (1.214) =	Defects (1,127) =
		Row not found (1,767)	
Web-service (29.765)	Web-service (F)	Unexpected Next Screen (922)	
Dialog (30,727)	Errors (2,824)	Error while sending request (WS) (2372) Other web-service errors (38) Field to locate control (60) Oursor could not be set (69) No error message (72) Cannot expand Tee node (21) Incorrectly formatted input (20) Server threw an exception (19) Other dalog Errors (60) Batch Job Errors (23)	
Batch Job (12,149)	Batch Job (F)		

Report Launcher

A single place where all the reports and transactions available in Testimony can be accessed. Identified by Central, Source or Target, they can be operated via an RFC connection into the relevant Source and Target systems.

Testimony											
2											
CONTEXT	Report Launch	her									
G <sup>2</sup> Plan	🔂   🚟 🖌										
	Peport I	auncher									
2.30 REGRESSION FINSE - 4 HOOR RECORDING	Report L	aunchei									
	S T C	Report	Description	Help	Grp	Report Group	Ar.	Report Area	Dff	Sts	Status
	(5	/BII/AUI_DEFECI_FLOW	Defect Flow report	i		Report		Playback			Active
~	(+)	/BTI/AUT_DIALOG_IO_ANALYSIS	Dialog input/output analysis	i		Report		Playback			Active
	(+)	/BII/AUI_DURATION_ANALYSIS	Playback Duration Analysis	i		Report		Playback			Active
	(+)	/BTI/AUT_EARLY_PLAYBACK_SIM	Testimony: Playback simulation based on rec	i		Report		Playback			Active
🖍 Overview	(÷	/BTI/AUT_PLAYBACK_PERF_COMP	Playback performance comparison	i	Π	Report		Playback			Active
* Configuration	(÷	/BTI/AUT_REP_EXQI_COMPARISON	Execution Queue Comparison Report	i		Report		Playback			Active
> configuration	G	<pre>/BTI/AUT_REP_FIND_IDNTCL_TSTMP</pre>	Find execution steps with identical timestam	i	Π	Report		Playback			Active
Configuration	G	/BTI/AUT_REP_NR_ANALYSIS	Number Range Analysis Report	i	Π	Report		Playback			Active
conngaration	Ð	/BTI/AUT_REP_NR_COMPARISON	Number Range Analysis Report	i	Π	Report		Playback			Active
Link Type	G	<pre>/BTI/AUT_REP_PB_ANALYSIS_01</pre>	Testimony analysis extraction - Playback exe	i		Report		Playback			Active
Test Plans	G	/BTI/AUT_REP_PB_ANALYSIS_02	Testimony analysis extraction - Playback exe	i		Report		Playback			Active
123 Number Ranges	G	/BTI/AUT_REP_PB_ANALYSIS_03	Testimony analysis extraction - Output exec	i	Π	Report		Playback			Active
<u>General Parameters</u>	G	/BTI/AUT_REP_PB_ANALYSIS_04	Testimony analysis extraction - Output exec	i	III	Report		Playback			Active
Share Memory Limits	G	/BTI/AUT_TDBG_LOG_TOOL	Target system debug logs	i		Report		Playback			Active
Shared Memory Explorer	G	/BTI/AUT_BUILD_LIST_TRANSPORTS	Create a Build List	i	Te	Utility	12	RCA			Active
Action Manager	G	/BTI/AUT_CHECK_FOR_TRANSPORTS	Run Root Cause Analysis	ī	I.	Utility	1	RCA			Active
User Roles	G	/BTI/AUT_CHECK_TRANSPORTS_MASS	Root Cause Analysis - parallel processing	i	J.	Utility		RCA	0		Active
Notification Setup	G	/BTI/AUT_DI_LINK_CREATE	Create Root Cause Object Links	i	Ī.	Utility	1	RCA	-		Active
Text Management	G	/BTI/AUT DI LINK MASS START	Create Root Cause Object Links - Diffuser	ī	J.	Utility	1	RCA			Active
User Interface Profiles	G	/BTI/AUT DISPLAY DEFECT	display a defect	1	T	Utility	1	Defect Mamt			Active
4 Defect assignment	G	/BTI/AUT_PROPOSE_DEFECTS	Propose Defects (for Execution Queue Items	<b>T</b>	T.	Utility		Defect Mamt			Active
Additional Configuration	G	BTI/AUT REP DEFECT IMPACT	Defect Impact Report	i i	T	Utility		Defect Mamt		H	Active
Filter Sets	G	BTI/AUT REP DEFECT ANALYSIS	Defect Analysis Report			Report		Defect Mamt		H	Active
🕀 Report Launcher	E G	BTI/AUT REP DEF COMPARE MSG	Defect Message Comparison			Report		Defect Mamt		H	Active
	C C	BTI/AUT OREC CREATE CONFIG	Outbound REC - Add destination configurati		T.	Utility		Outhound REC		H	Active
	G	BTT/AUT OREC PUSH FUNCTION	Push Outbound REC Function Module to So	H	T.	Utility		Outbound REC		H	Active
	G	BTT/AUT OUTBOUND REC ANALYZE	Analyze outbound RFC client/server volumes	+	-ic	Report		Outbound RFC	0	H	Active

## 4. Glossary

### Bot

The bot is an executable program that resides on a windows machine (normally a virtual machine). During playback the bot machines log on as the recorded users and execute the recorded transactions. The requirements for bot setup can be found <u>here.</u>

### **Central System**

This is the primary SAP system in which Testimony is installed and is operated. Testimony users log on to the Central system to configure Testimony, create test plans, start recordings and playbacks and analyse the results.

### **Check Steps**

These are run manually before a recording or playback to validate the environment is ready to perform those functions. The Testimony Administrator should run the check steps and review the results prior to performing a recording or playback.

### Coverage Analysis:

Allows the comparison of recorded data from the execution queue with the usage data. It provides highlevel statistics (e.g., what percentage of critical priority dialog transactions you recorded) as well as detailed information on each dialog transaction, batch job, etc.

### **Double Playback**

A double playback is where two playbacks are used to reduce the potential for false positives. The first playback occurs with no changes deployed to the target system and is termed the baseline playback. The second playback called the release or upgrade playback is competed on the target system with the release or the upgrade applied .Defects are then only raised on differences detected in the second playback, this helps to screen out environmental issues from the baseline.

### **Dynamic IDs**

These are used to link scripts which use the same data, for example a purchase order number. If the creation of a purchase order fails during the playback then Testimony recognises that there is no point running a subsequent script that approves this purchase order. Testimony will therefore cancel the execution of the order approval script. Testimony will also recognize if a different order number is generated during playback and will adjust subsequent scripts to use this new number rather than the recorded number.

### Enhancements

To record and playback Testimony has enhancements on the source or target system to enable the recording or playback to operate correctly. These are switched on before recording or playback and are automatically deactivated at the end of the recording or playback in the "Post-Processing Steps". Should a recording or playback be stopped unexpectedly or due to a technical error, the Testimony Administrator should manually deactivate the enhancements.

### **Execution Queue**

The execution queue is built when scripts are added from the repository and contains the scripts to be played back. Logic is built into the "Add to Execution Queue" process that idnetifies and establishes

linkages between related scripts as the execution queue is being built.

### **Filtered Recording**

A filtered recording is used when you want to record a subset of users, transactions, objects, or transaction types rather than all activity on the source system. It is typically used for testing purposes to ensure that the setup from central to source system has been completed correctly.

### **Filter Sets**

Filter sets have two main uses: to exclude certain objects (transactions, batch jobs, etc.) from a recording; and to provide special handling of error cases during a playback. For example, if you want Testimony to ignore all occurrences of transaction SM21 from the recording, then adding this transaction to the recording filter set will achieve this. If you want to ignore occurrences of message E123 from a particular screen, you can set this message as an exclusion in the comparison filter set. Filter sets can also be defined for the transfer to repository (most commonly for setting up transaction sampling) and for the transfer to the execution queue, although this is less frequently used. This topic should be further studied via the Filter Sets section here.

### Linkages

Testimony records activity deeper than just the UI so that objects such as change documents and number ranges are also observed and recorded. These objects are used to create relationships, or linkages, between scripts so that dependencies can be enforced and validated. These can then be checked at playback and during results analysis to ensure that these match, providing a deeper level of testing.

### Notifications

Testimony can be configured to send out notifications when certain actions are executed or to provide regular updates on ongoing actions. Notifications are managed through the notification setup in the configuration tray.

### Playback

The playback is the execution of the scripts in the execution queue, via the bots, on the target system. The playback executes the scripted activity and generates the test results for comparison and analysis.

### **Post-Processing Steps**

These are run automatically after a recording or playback is completed. Any errors in post-processing will cause a hard stop preventing the status from moving to complete. If errors are found the operator should investigate these errors to determine if they need to be manually resolved.

### **Preparation Steps**

These are run automatically before a recording or playback starts. Any errors will cause a hard stop preventing the recording or playback from starting. Errors should be resolved before attempting to restart the recording or playback.

### Recording

A recording (either Filtered or Standard) is the process by which actions on the source system are captured by Testimony.

### Repository

The repository is a staging post for recorded transactions. Once all recorded transactions have been stored in the Central System, they are transferred to the repository (potentially with some filtering) before being transferred to the execution queue for playback. The repository is where any manipulation or deletion of sessions should take place, since if a mistake is made the sessions can be restored by transferring them again from the recorded data.

### Sampling

Sampling is part of Filter Set functionality and is only set at the "Transfer to Repository" stage. Sampling allows the operator to decrease the volume of a set of activities without negatively impacting the validity of the test results. Since scripts will often modify data that will be used by later scripts, sampling is designed to be used for display or read-only activities that do not manipulate data. The idea behind it is as follows:

If you recorded a read-only process that runs every 5 minutes for the duration of the recording, you can play back a small percentage of those processes to help reduce playback times while still testing that process. Sampling can be used for Dialog, Batch and RFC processes.

### **Shared Memory**

Testimony utilises the shared memory of the source system to save the recorded data temporarily before writing it to the database. This is so that the source system does not see a significant increase in I/O activity during a recording. To prevent any negative impact on source system performance Testimony will stop the recording if it runs too low on available shared memory. The recommended settings for the shared memory parameters are <u>here</u>.

### Source System

This is the system that is recorded and therefore acts as the source for the recording. In BAU operation of Testimony, this is usually the production system.

### **Standard Recording**

A standard recording records all activities, excluding any defined exceptions in the "Filter Sets".

### **Target System**

This is the regression test system into which recorded scripts are played back via the Bots. It is recommended that the Target system is dedicated for use with Testimony and is refreshed with a point-in-time backup of the Source system taken as of the start of the recording.

### Test Plan

A test plan is the logical container for the recording, playback, and results of a test scenario. When setting up a test plan the operator will define a Source system, Target system, system mapping and authorizations for users. To simplify the test plan creation process, test plans can be copied for scenarios using the same Source and Target systems.

# **5. Software Support**

After appropriate testing on your SAP test systems, you are now ready to use Testimony within your productive landscape. Remember that Testimony is dormant in your SAP system until activated for recording. You must ensure that Testimony recordings are deactivated after the required recording period in order to ensure that Testimony returns to its dormant state.

# 5.1. Support from Basis Technologies

## **Raising Support Tickets**

To request support from Basis Technologies on any issue relating to our product sets (ActiveControl, Transport Expresso, DevOps, Testimony, Diffuser, BDEx Utilities or Transformation), support can be requested from Basis Technologies by submitting a request via our <u>support portal link here</u>.

Submitting your request will automatically create a ticket in Zendesk, the ticketing tool used by Basis Technologies.

## **Require additional Information or Services?**

If additional information or services relating to any of Basis Technologies product sets is required, you can contact us via the <u>support portal link here</u>, or alternatively by contacting your assigned Basis Technologies Account Director.

# 6. Testimony Recording Performance

The performance details recorded by Testimony

This can be a questions

Testimony records at the server level and therefore users agins

1/ can an SAP end user see when the recording is active? or is it completely silent?

2/ is it possible based on recording to drill down to the behavior of single users? Is a performance measurement possible?