

Testimony - Quick Start Guide

2.21 — Last update: Jun 04, 2020

Basis Technologies

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1. Introduction

Welcome to the Testimony Quick Start Guide, a user oriented tour of the Testimony screens and functionality. This guide provides a high level overview of the product and then documents the general process to create and playback an SAP recording.

This Guide should be used in conjunction with the other available Testimony documentation and templates.

Remote 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:

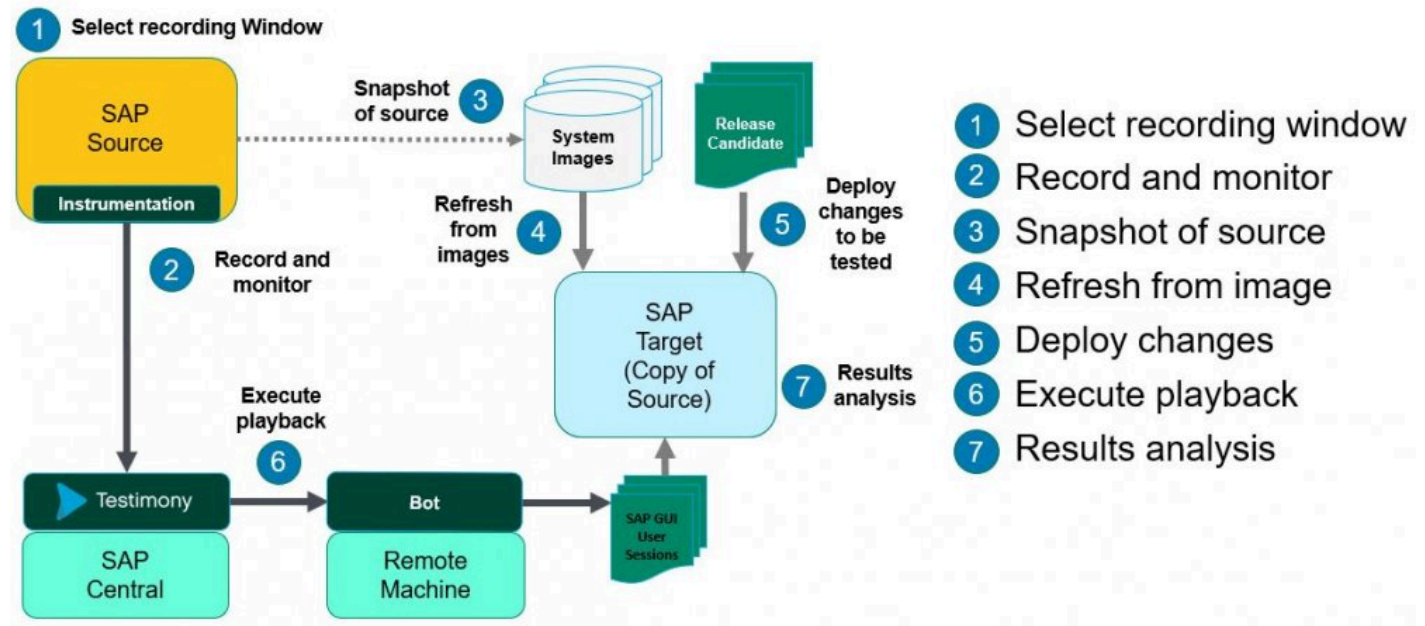
- Regression test coverage analysis and planning
- Regression test script development
- Regression test execution (including initial defect analysis)
- Test user maintenance
- Test data creation

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 [here](#) 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. 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 a

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. Quick Start 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 [here](#) 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.

- [Test Plan and System Connections](#)

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

- [Performing a Recording](#)

This is the process for activating and monitoring the recording on the source systems.

- [Review Recordings/Send to Repository](#)

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. 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.

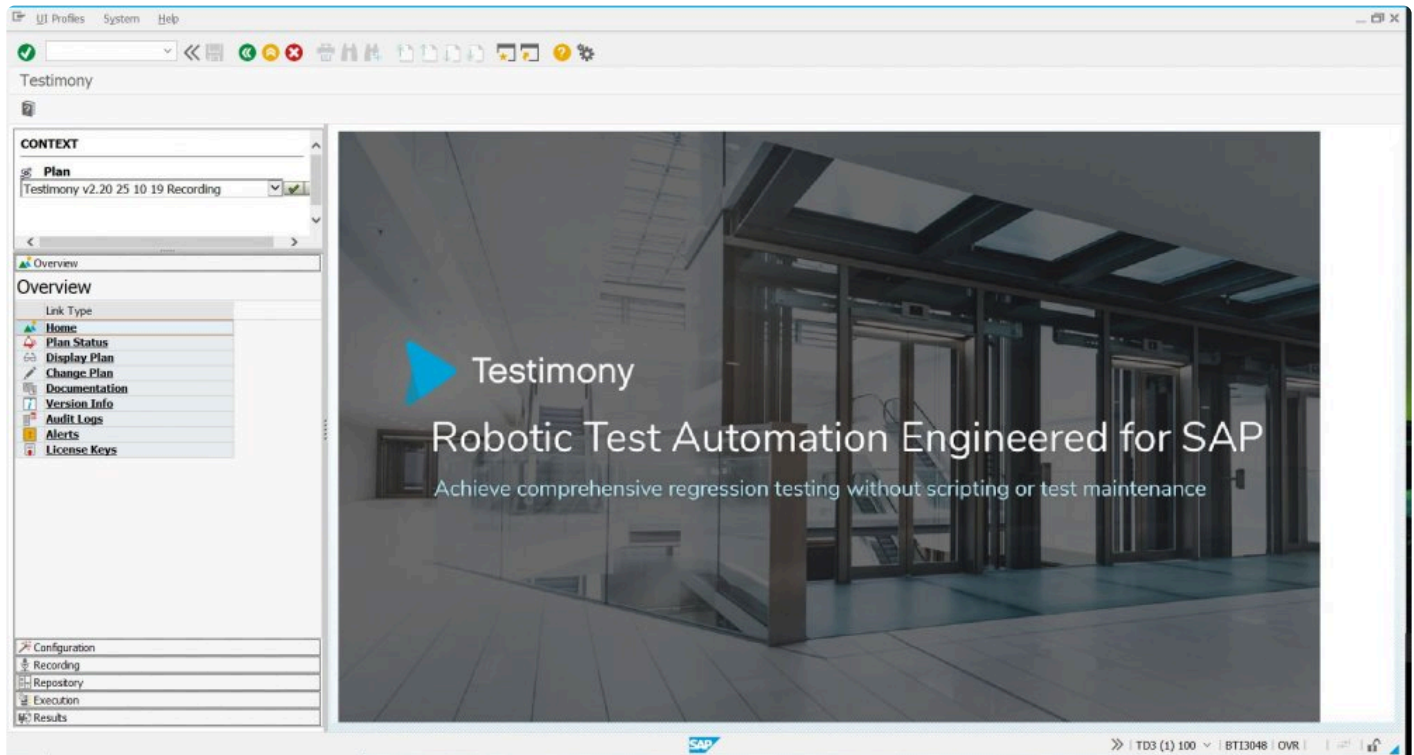
Process Steps

- [Creating a Test Plan](#)
- [System Setup](#)
- [Authorisations](#)
- [Managing Test Plans](#)

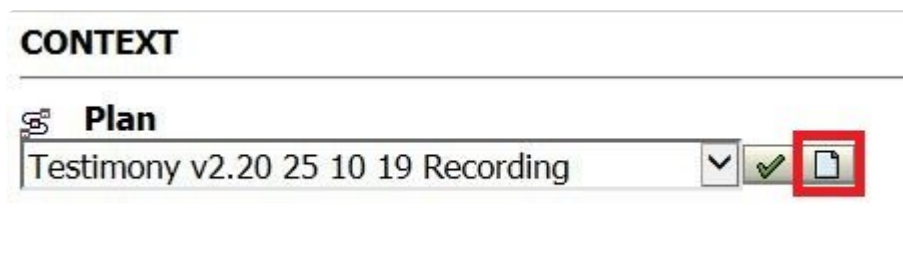
3.1.1. Creating a Test Plan

Access Testimony

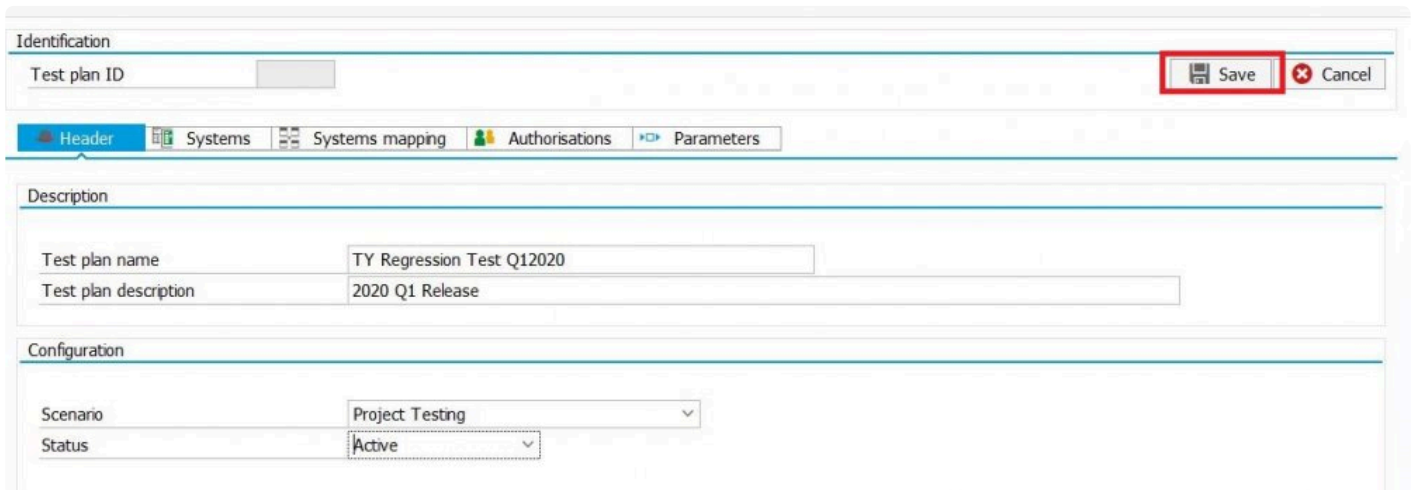
Once logged into the Testimony central system, enter transaction **/n/bti/aut**. This will display the Testimony main menu.



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



Identification

Test plan ID

 Save  Cancel

Header Systems Systems mapping Authorisations Parameters

Description

Test plan name TY Regression Test Q12020

Test plan description 2020 Q1 Release

Configuration

Scenario Project Testing

Status Active

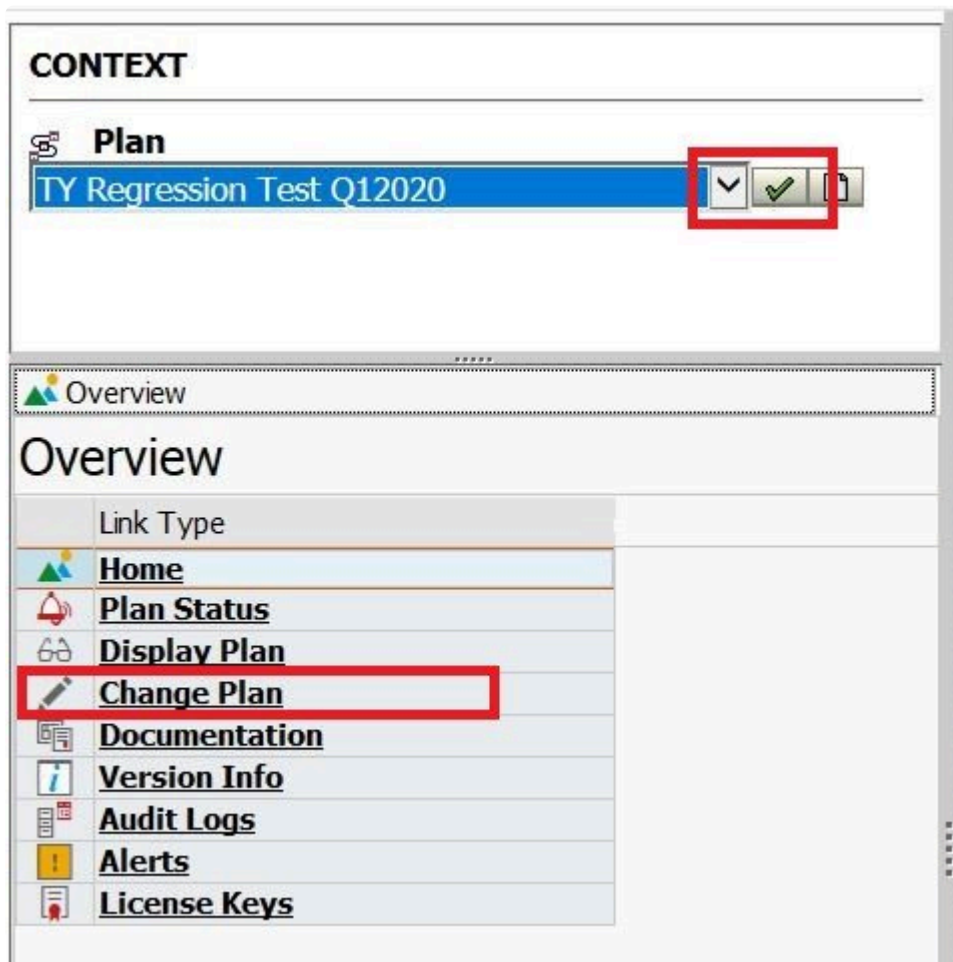
Once saved, you'll see the following status. From here, you will update the plan with the relevant system information



3.1.2. 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



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

Identification

Test plan ID: 001006

Save Cancel

Header **Systems** Systems mapping Authorisations Parameters

Test Plan Systems

Type	Syst. type	Name	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

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.

Configuration

System ID	TY1
Client	800
RFC destination	AUT_TY1_SRC
System type	Source system
System role	Test system
System component	ECC
IP address	10.0.0.22

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

Creation of a new system

Identification

System name: TY1P
System short text: TY1 Playback
System description: TY1 Playback

Configuration | Remote Data

Configuration

System ID: TY1
Client: 800
RFC destination: AUT_TY1_PLAYBACK
System type: Target system
System role: Test system
System component: ECC
IP address:
Get via RFC

Technical settings

Connection type
☒ Application server ☐ Message server and logon group

Application server details
Target host:
Instance No.: 01

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

Identification

System name: TY1P

System short text: TY1 Playback

System description: TY1 Playback

Configuration

System ID: TY1

Client: 800

RFC destination: AUT_TY1_PLAYBACK

System type: Target system

System role: Test system

System component: ECC

IP address: [Empty]

Get via RFC

Technical settings

Connection type

☐ Application server

☒ Message server and logon group

Message server and logon group details

Message server: [Empty]

Message server port: [Empty]

Logon group: [Empty]

Misc. details

SAP router: [Empty]

Gateway host: [Empty]

Gateway service: [Empty]

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


Misc. details

SAP router: [Empty]

Gateway host: [Empty]

Gateway service: [Empty]

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 systems defined in your plan

Identification

Test plan ID: 001006 Save Cancel

Header **Systems** Systems mapping Authorisations Parameters



Test Plan Systems

Type	Syst. type	Name	SID	System description
	Source system	TY1R	TY1	TY1 Recording
	Target system	TY1P	TY1	TY1 Playback

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

Header **Systems** **Systems mapping** Authorisations

 Create link  Delete link

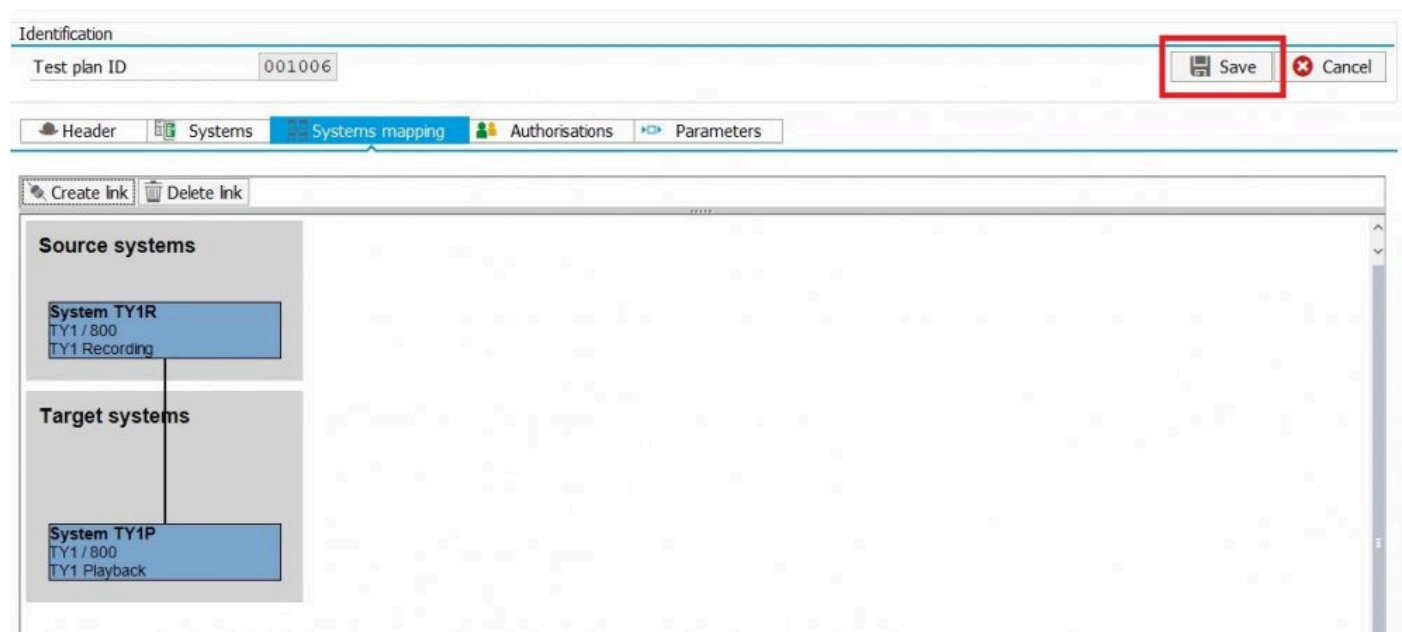
Source systems

System TY1R
TY1 / 800
TY1 Recording

Target systems

System TY1P
TY1 / 800
TY1 Playback

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.

Modification of system TY1R

Identification

System name: TY1R

System short text: TY1 Recording

System description: Ty1 Source (Recording) System

Configuration | **Remote Data**

Remote Data Source Plan

Remote Data Plan: 001006 TY Regression Test Q12020

Remote Data Sys. Name: TY1R TY1 Recording (Remote data not run)

Remote Data Sources

Typ	Remote 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	◆	Not executed		Never executed	No data	
	Tables and Structures	◆	Not executed		Never executed	No data	
	Application components	◆	Not executed		Never executed	No data	
	Change Documents	◆	Not executed		Never executed	No data	
	Dialog screen fields	◆	Not executed		Never executed	No data	
	Dialog screens	◆	Not executed		Never executed	No data	
	Program parameters	◆	Not executed		Never executed	No data	
	Executable programs	◆	Not executed		Never executed	No data	
	Idocs	◆	Not executed		Never executed	No data	
	Messages	◆	Not executed		Never executed	No data	
	Number Range Objects	◆	Not executed		Never executed	No data	
	Object components	◆	Not executed		Never executed	No data	
	Object texts	◆	Not executed		Never executed	No data	
	RFC parameters	◆	Not executed		Never executed	No data	

Run Remote data in background

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

Remote Data

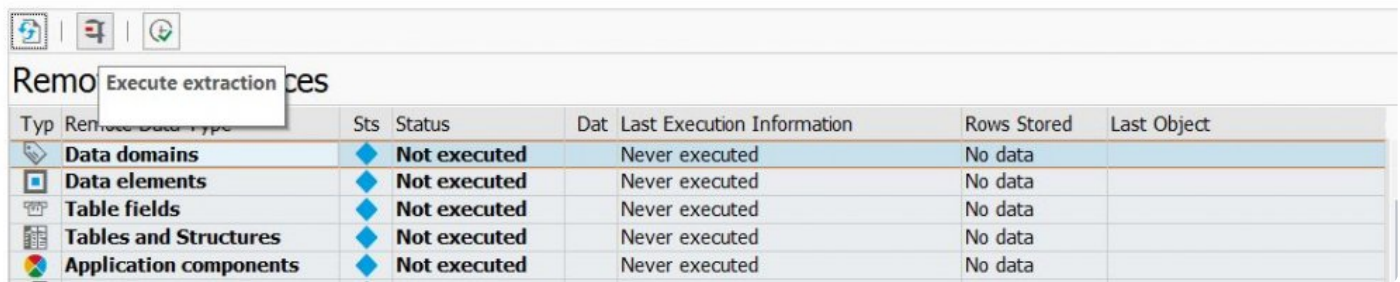
Run Remote data in background

Typ	Remote Data Type	Sts	Status	Dat	Last Execution Information
	Data domains	◆	Not executed		Never executed
	Data elements	◆	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.

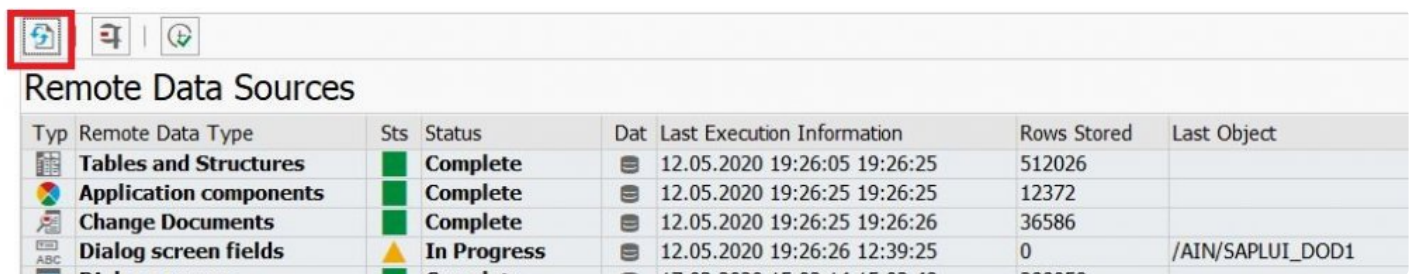


The screenshot shows the 'Remote Data Sources' table. A tooltip for the 'Execute extraction' button is visible. The table has columns: Type, Remote Data Type, Sts, Status, Dat, Last Execution Information, Rows Stored, and Last Object.

Type	Remote 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		Not executed		Never executed	No data	
	Tables and Structures		Not executed		Never executed	No data	
	Application components		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.



The screenshot shows the 'Remote Data Sources' table. A red box highlights the Refresh button in the top toolbar. The table has columns: Type, Remote Data Type, Sts, Status, Dat, Last Execution Information, Rows Stored, and Last Object.

Type	Remote Data Type	Sts	Status	Dat	Last Execution Information	Rows Stored	Last Object
	Tables and Structures		Complete	12.05.2020	19:26:05 19:26:25	512026	
	Application components		Complete	12.05.2020	19:26:25 19:26:25	12372	
	Change Documents		Complete	12.05.2020	19:26:25 19:26:26	36586	
	Dialog screen fields		In Progress	12.05.2020	19:26:26 12:39:25	0	/AIN/SAPLUI_DOD1

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 (Recording) System

Configuration

Remote Data

Remote Data Source Plan







Remote Data Plan

000590 Remote Data Job

Remote Data Sys. Name

TY1R TY1 Recording (Remote data last run 20200512)

Remote Data Sources

Typ	Remote Data Type	Sts	Status	Dat	Last Execution Information	Rows Stored	Last Object
	Tables and Structures		Complete		12.05.2020 19:26:05 19:26:25	512026	
	Application components		Complete		12.05.2020 19:26:25 19:26:25	12372	

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

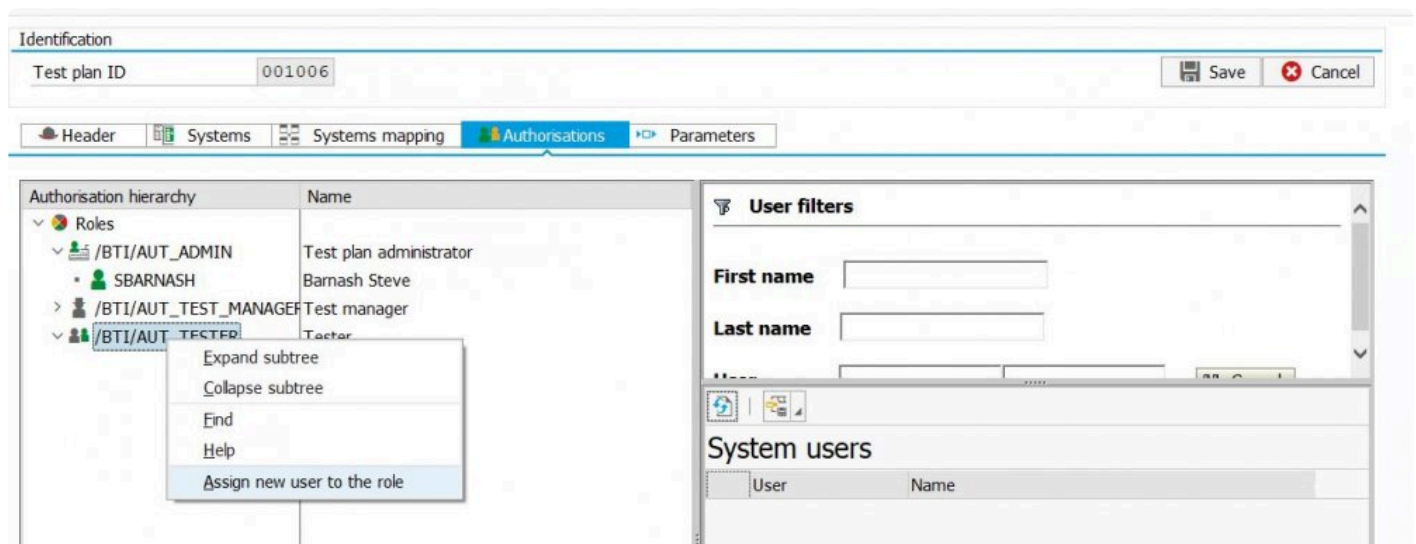
3.1.3. Authorisations

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.

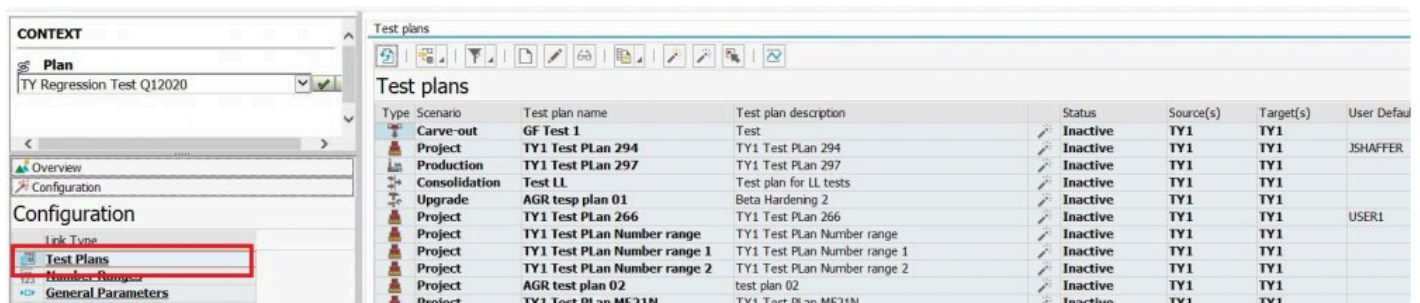


3.1.4. Managing Test Plans

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



Type	Scenario	Test plan name	Test plan description	Status	Source(s)	Target(s)	User Default
Carve-out		GF Test 1	Test	Inactive	TY1	TY1	
Project		TY1 Test Plan 294	TY1 Test Plan 294	Inactive	TY1	TY1	JSHAFFER
Production		TY1 Test Plan 297	TY1 Test Plan 297	Inactive	TY1	TY1	
Consolidation		Test LL	Test plan for LL tests	Inactive	TY1	TY1	
Upgrade		AGR test plan 01	Beta Hardening 2	Inactive	TY1	TY1	
Project		TY1 Test Plan 266	TY1 Test Plan 266	Inactive	TY1	TY1	USER1
Project		TY1 Test Plan Number range	TY1 Test Plan Number range	Inactive	TY1	TY1	
Project		TY1 Test Plan Number range 1	TY1 Test Plan Number range 1	Inactive	TY1	TY1	
Project		TY1 Test Plan Number range 2	TY1 Test Plan Number range 2	Inactive	TY1	TY1	
Project		AGR test plan 02	test plan 02	Inactive	TY1	TY1	
Project		TY1 Test Plan ME21N	TY1 Test Plan ME21N	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.



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 recorded data



Selected Plan

Plan ID	001006
Test plan name	TY Regression Test Q12020

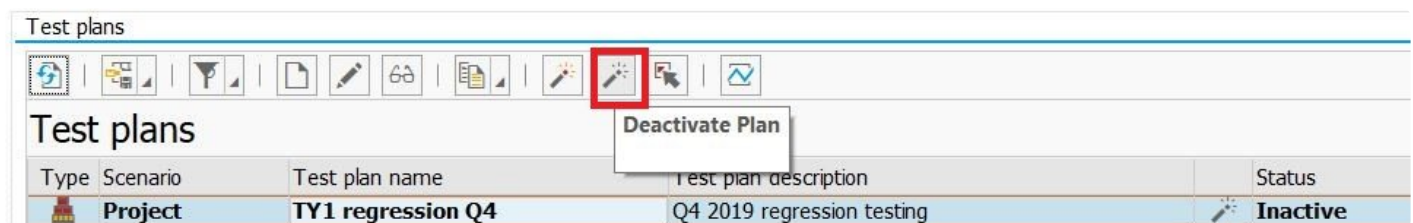
Copy to

Test plan name	<input type="text"/>
----------------	----------------------

☒ Copy Business Transactions
☐ Copy Filter Sets

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.



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



3.2. 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 time for which the recording should be active.

Process Steps

- [Recording Preparation](#)
- [Start Recording](#)
- [Monitor Recording](#)
- [Stop Recording](#)

3.2.1. Recording Preparation

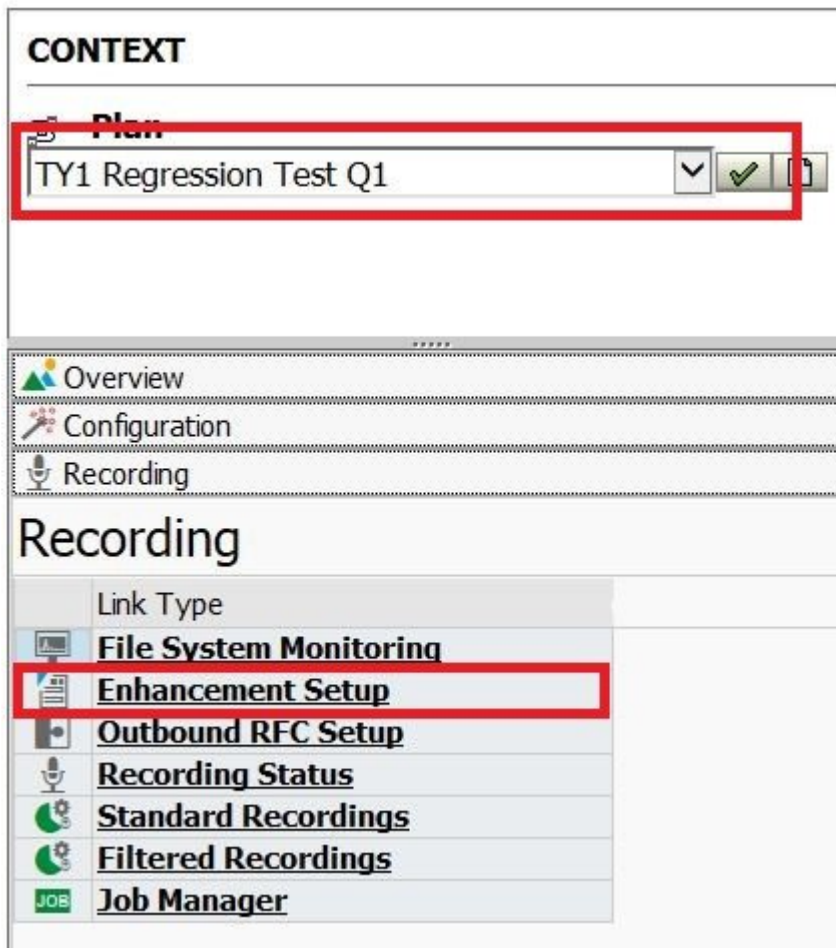
Overview

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

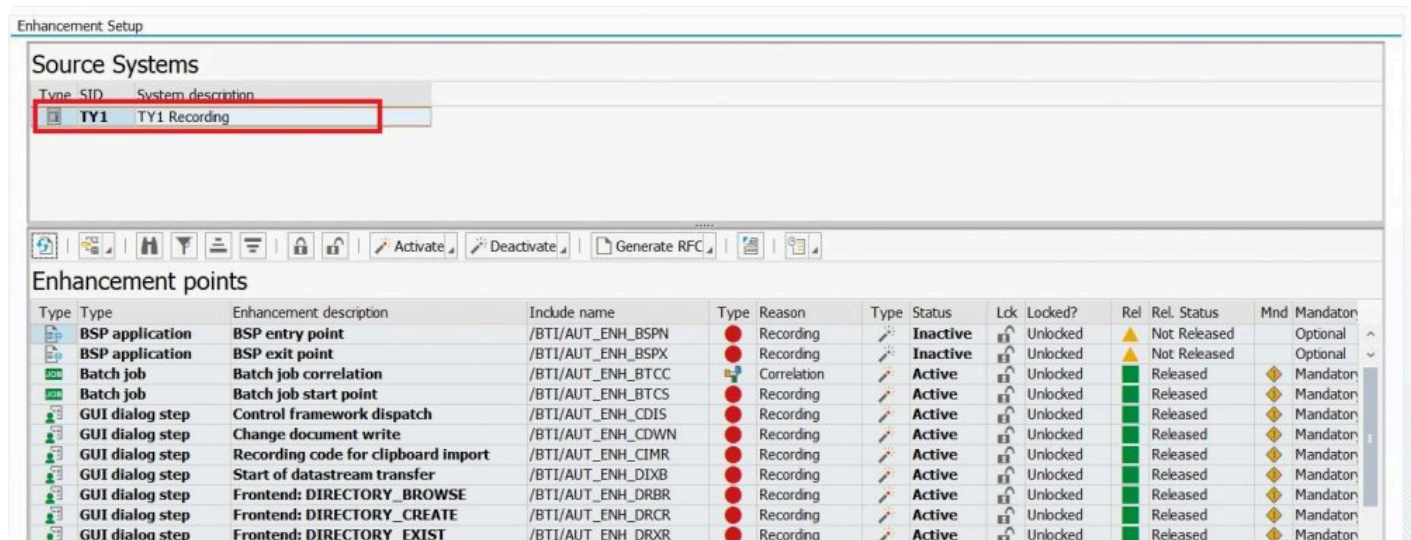
Process Steps

1. Select Test Plan to use
2. Generate Inbound RFC Capture – Prepares for inbound RFC calls to be captured. This is an optional step and only needed once per recording system and only if you will be recording RFC calls.
3. Activate enhancements – Prepares the system for capture of all interactions.
4. Execute Check Steps – Validation that the Source system is ready for recording

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



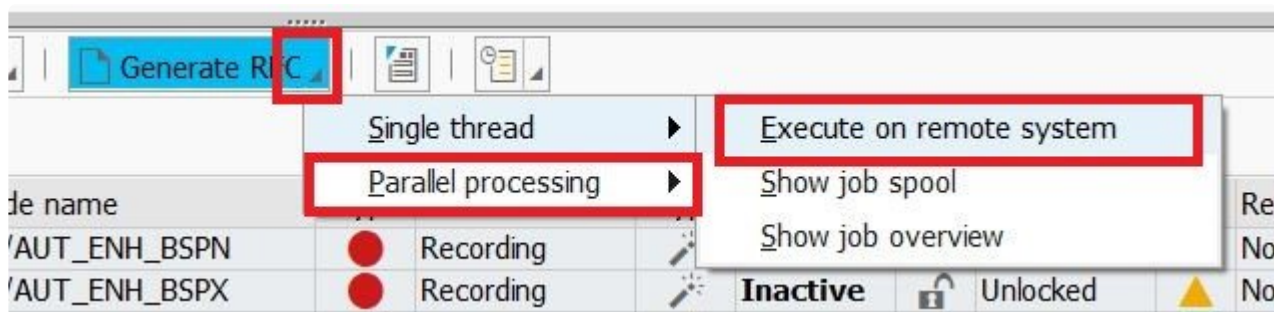
On the right panel, you'll see your defined Source System(s). Double click on the system to show the Enhancement Points screen below



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 Enhancement Points section, click the button Generate RFC and select Parallel Processing -> Execute in Background.

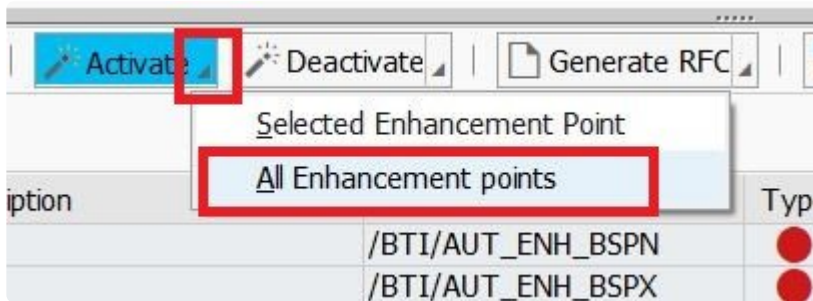


This will submit several background jobs in the source system which analyse each RFC-enabled function module and create a wrapper program for it. This can take an hour or more to run, so execute this step well in advance of the time at which you want to start your recording.

3. Activating recording enhancements

Testimony enhancements need to be activated in the source (recording) system before a recording can take place, but after the optional Generate RFC step is complete. If you are not already there, navigate to the Enhancement Setup section and click on the Source system. 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”



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

Enhancement points													
Type	Type	Enhancement description	Include name	Type	Reason	Type	Status	Lck	Locked?	Rel	Rel. Status	Mnd	Mandator
	BSP application	BSP entry point	/BTI/AUT_ENH_BSPN		Recording		Inactive		Unlocked		Not Released		Optional
	BSP application	BSP exit point	/BTI/AUT_ENH_BSPX		Recording		Inactive		Unlocked		Not Released		Optional
	Batch job	Batch job correlation	/BTI/AUT_ENH_BTCC		Correlation		Active		Unlocked		Released		Mandator
	Batch job	Batch job start point	/BTI/AUT_ENH_BTCS		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Control framework dispatch	/BTI/AUT_ENH_CDIS		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Change document write	/BTI/AUT_ENH_CDWN		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Recording code for clipboard import	/BTI/AUT_ENH_CIMR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Start of datastream transfer	/BTI/AUT_ENH_DIXB		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: DIRECTORY_BROWSE	/BTI/AUT_ENH_DRBR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: DIRECTORY_CREATE	/BTI/AUT_ENH_DRCR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: DIRECTORY_EXIST	/BTI/AUT_ENH_DRXR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Override F4 settings in recording	/BTI/AUT_ENH_F4AX		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: FILE_COPY	/BTI/AUT_ENH_FCOP		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: FILE_EXIST	/BTI/AUT_ENH_FEXR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: FILE_GET_ATTRIBUTES	/BTI/AUT_ENH_FGAR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Dialog output flush	/BTI/AUT_ENH_FLUS		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: FILE_OPEN_DIALOG	/BTI/AUT_ENH_FODR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Frontend: FILE_SAVE_DIALOG	/BTI/AUT_ENH_FSDR		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	ALV grid: Selected cells	/BTI/AUT_ENH_GRCL		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	Control framework ALV edit events	/BTI/AUT_ENH_GRID		Recording		Active		Unlocked		Released		Mandator
	GUI dialog step	ALV grid: Selected columns	/BTI/AUT_ENH_GRSC		Recording		Active		Unlocked		Released		Mandator



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...”

If you encounter this error, follow the below steps to correct it.

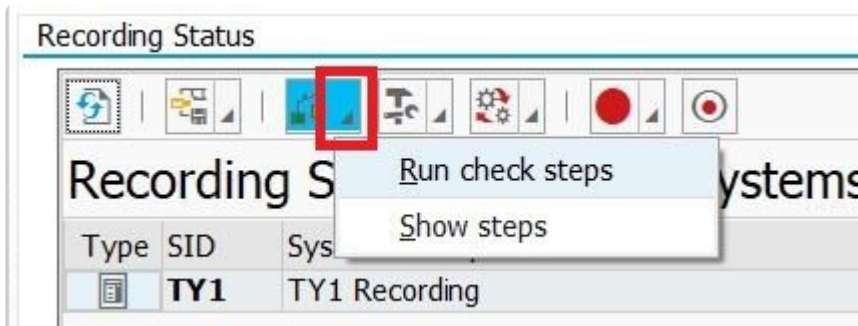
- In Testimony, deactivate all the recording enhancements
- In the Source System
 - Go to transaction SE24
 - Display class CL_SALV_GRZ_CONTROLLER
 - Go to -> Sections -> Public section
 - Utilities -> Update navigation index
- Exit Testimony
- Open Testimony
- Activate the recording enhancements

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.



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"

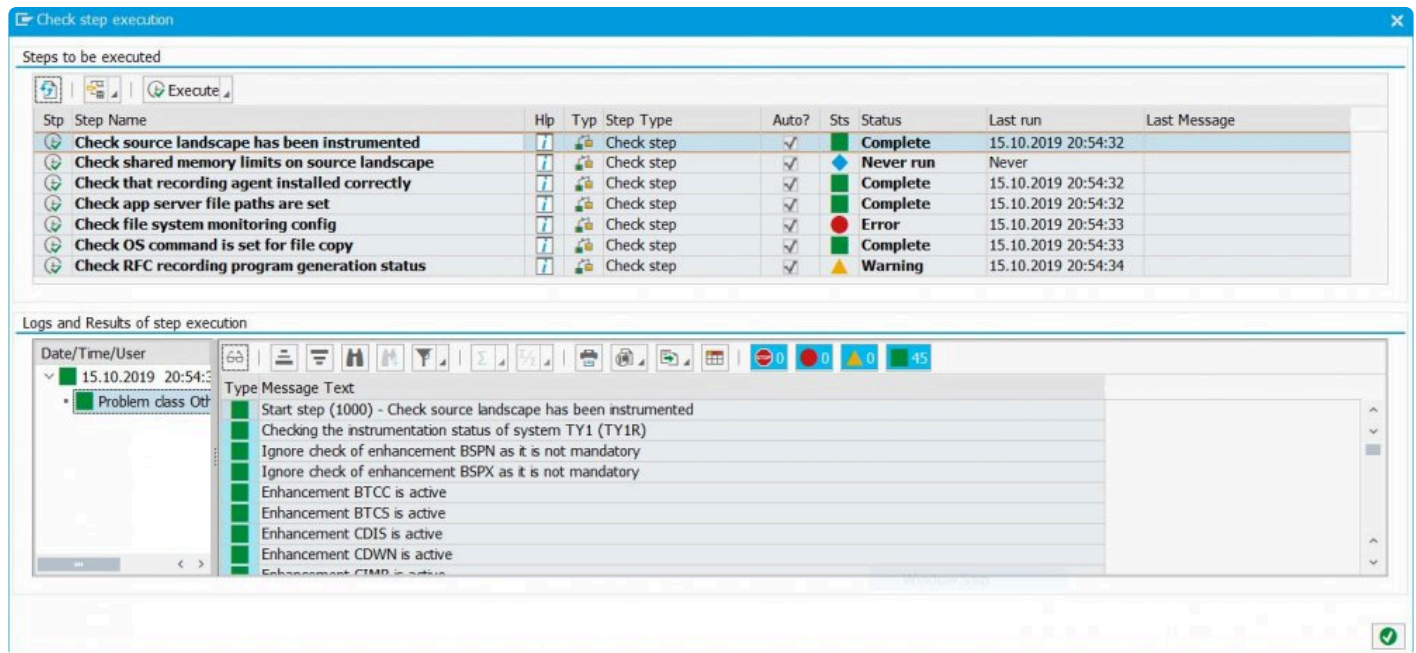


Choose Yes in the following pop-up.

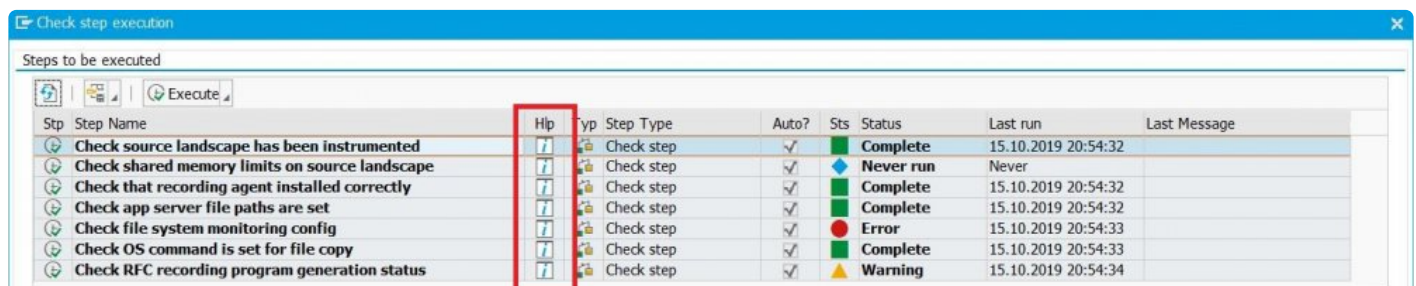


The check steps will run, and results will be returned in a pop-up screen, as below.

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.



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.



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.

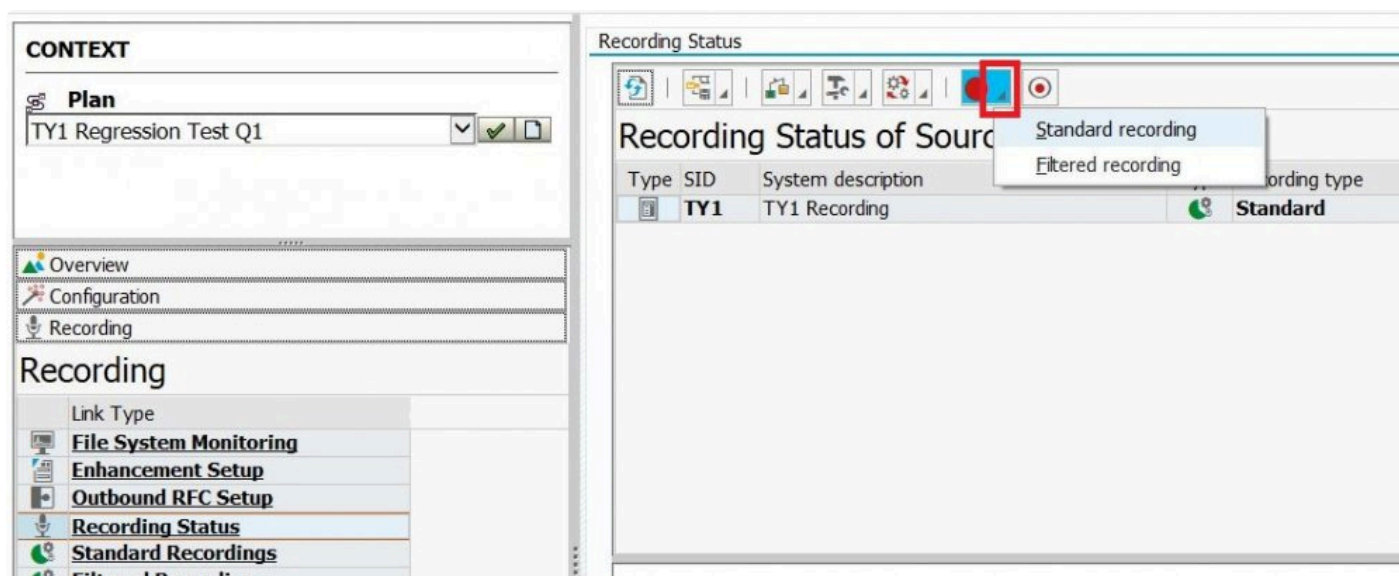
3.2.2. Start Recording

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.

✿ It's a best practice to time the beginning of your system backup (or snapshot) to synch with the beginning of your 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.

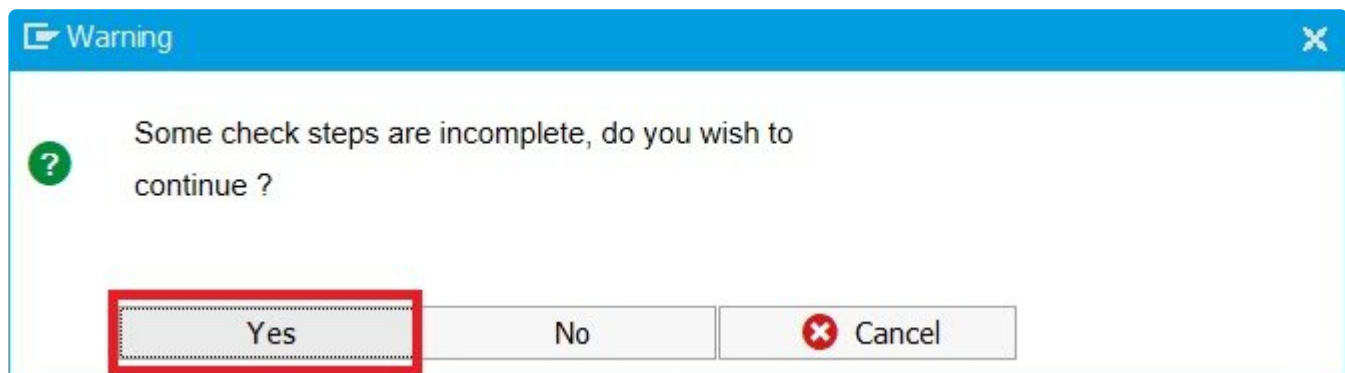
To start a Standard Recording, navigate to the Recording Status option on the Context Menu and then click on the Start Recording button and choose "Standard recording"



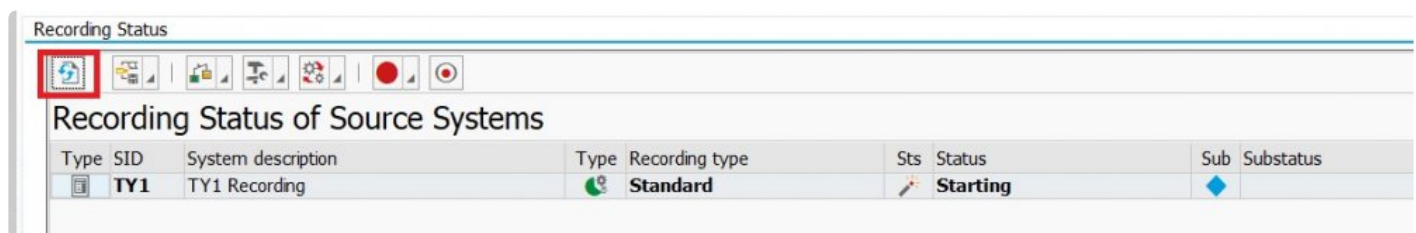
Confirm that you wish to continue at the next pop-up by clicking Yes. (This is just to remind you to initiate the backup from which the playback system will be built.)



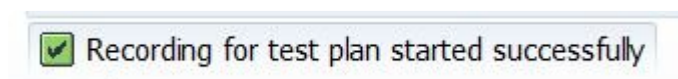
If not all of the check steps completed successfully you will get this pop-up. Click Yes if you've analysed the checks.



At this point, the recording should begin. To check, click on the refresh button until the status shows as Running.



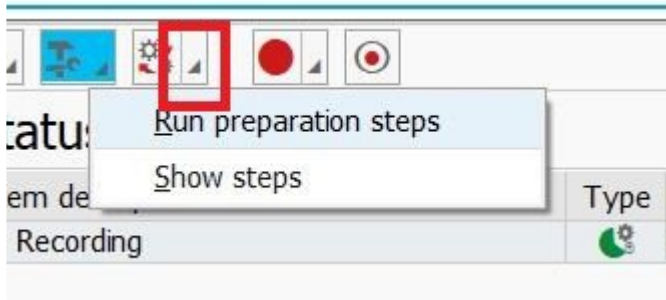
The SAP status bar will also show the following message



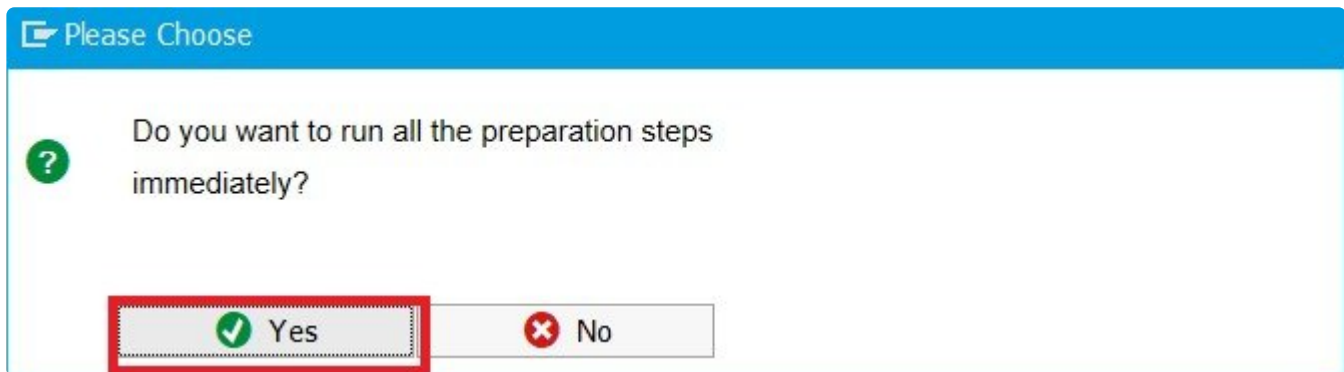
At the start of the recording process, Testimony will run "Preparation Steps". If any of these steps fail, then you will see the recording go into a "Preparation Error" status. In this case, you can check the results of the preparation steps by clicking on the Preparation steps button and choosing "Show 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.



Answer yes on the following pop-up:



The preparation steps should run successfully. If not, you will need to analyse the error.

Preparation step results

Steps to be executed

Stp	Step Name	Hlp	Typ	Step Type	Auto?	Sts	Status	Last run	Last Message
1	Ensure mandatory enhancements are active			Preparation step	<input checked="" type="checkbox"/>		Error	03.06.2020 14:47:18	
2	Automatically create the file OS Command in SM49			Preparation step	<input checked="" type="checkbox"/>		Complete	03.06.2020 14:47:18	
3	Disable RFC authorization check			Preparation step	<input checked="" type="checkbox"/>		Complete	03.06.2020 14:47:19	

Logs and Results of step execution

Date/Time/User

Type/Message Text

Close this pop-up window.

3.2.3. 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.

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” 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) or any shared memory limits set with the “Shared Memory Limits” option. 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.

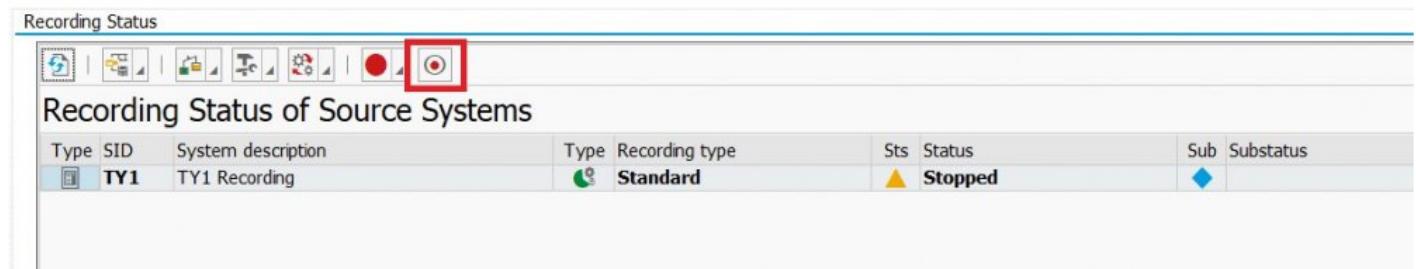
If any significant impacts are detected (e.g. from a performance or impact perspective), you can deactivate the recording immediately.

(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.

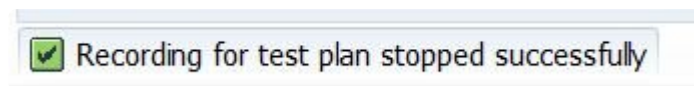
3.2.4. Stop Recording

Once you have executed the recording for the time period you planned, stop the recording as follows:

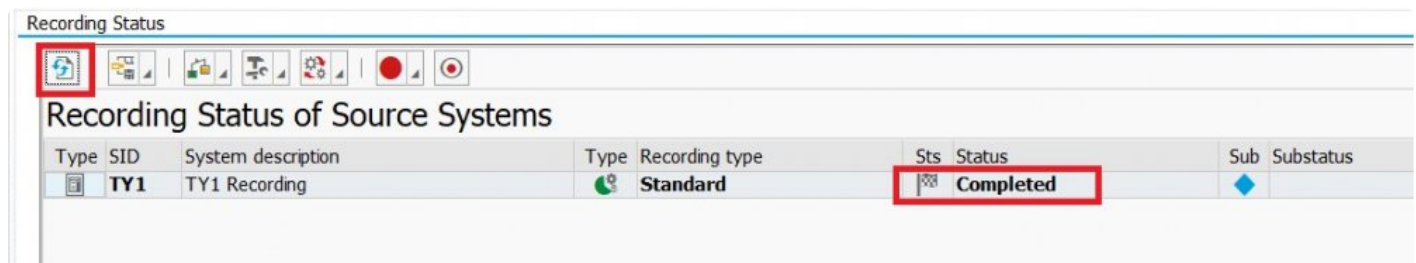
Navigate to Recording -> Recording Status. Double-click on the Recording Status row for your system and you should see your recording running in the Recording history pane.



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.



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

Plan
TY1 Regression Test Q1

Overview
Configuration
Recording

Link Type
File System Monitoring
Enhancement Setup
Outbound RFC Setup
Recording Status
Standard Recordings
Filtered Recordings
Job Manager

Enhancement Setup

Source Systems

Type	SID	System description
TY1		TY1 Recording

Enhancement points

Type	Type	Enhancement description	Include name	Type	Reason	Type	Status	Lck	Locked?	Rel	Rel. Status
BSP application		BSP entry point	/BTI/AUT_ENH_BSPN	Recording		Inactive		Unlocked		Not Released	
BSP application		BSP exit point	/BTI/AUT_ENH_BSPX	Recording		Inactive		Unlocked		Released	
Batch job		Batch job correlation	/BTI/AUT_ENH_BTCC	Correlation		Inactive		Unlocked		Released	
Batch job		Batch job start point	/BTI/AUT_ENH_BTCS	Recording		Inactive		Unlocked		Released	
GUI dialog step		Control framework dispatch	/BTI/AUT_ENH_CDIS	Recording		Inactive		Unlocked		Released	
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 individually or all at once.

Enhancement points

Type Type Enhancement description Include

Activate Deactivate Generate RFC

Selected Enhancement Point
All Enhancement points

3.3. 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.

The screenshot displays the Basis Testimony interface. On the left, the 'Recording' navigation pane is visible, showing options like 'Overview', 'Configuration', 'Recording', 'Link Type', 'File System Monitoring', 'Enhancement Setup', 'Outbound RFC Setup', 'Recording Status', 'Standard Recordings', 'Filtered Recordings', and 'Job Manager'. The 'Standard Recordings' item is selected.

The main area shows a table titled 'Business Transactions : standard recordings'. The table has columns: Type, SID, System description, Sessions, Steps, Started, and Ended. The data row shows: Type: TY1, SID: TY1 Recording, System description: TY1 Recording, Sessions: 754, Steps: 6310, Started: 25.10.2019 11:35:05, Ended: 25.10.2019 12:13:26.

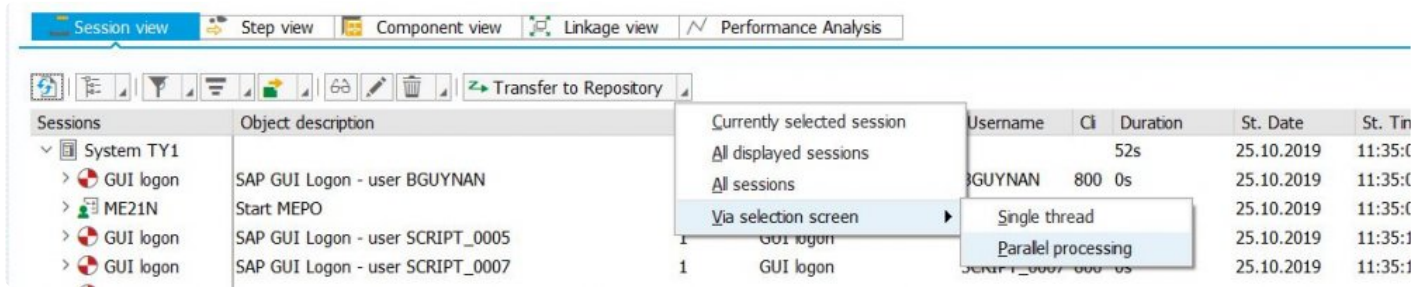
Below the table, there are tabs for 'Session view', 'Step view', 'Component view', 'Linkage view', and 'Performance Analysis'. The 'Session view' tab is active, showing a detailed list of sessions with columns: Sessions, Object description, Nb stp, Type, Username, Cl, Duration, St. Date, St. Time, and Test script st. The sessions listed include various GUI logon and start transaction steps for users like BGUYNAN, SCRIPT_0005, SCRIPT_0007, SCRIPT_0003, SCRIPT_0001, SCRIPT_0006, SCRIPT_0002, SCRIPT_0004, SGARG, FB03, VA03, FI03, and CR13.

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.



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

Technical Settings

Identification

Plan ID: 000829

System number: TY1R

Recording type: 01

Selection criteria

Client: 800 to []

Object type: [] to []

User name: [] to []

Object name: [] to []

Status: [] to []

Start date: 02.06.2020 to 02.06.2020

Start time: 00:00:00 to 23:59:59







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

Not transferred

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”

Test script status	
	Test script created
	Test script created
	Test script created
	Test script created
	Test script created
	Test script created

3.4. 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
5. Click on “Transfer to Execution Queue”. If you’ve filtered the scripts when you transferred them to the repository, you can select all scripts. Otherwise you may want to narrow your selection via Selection screen

The screenshot displays the Testimony software interface. On the left, the 'CONTEXT' pane shows the 'Plan' section with 'TY1 Regression Test Q1' selected. Below it, the 'Repository' pane lists various link types, including 'Business Scenarios', 'Standard Scripts', 'Filtered Scripts', 'Test Script Library', 'Script Transformation', and 'Maintain User Set'. The main window, titled 'Test Script Repository', shows a table of 'Source Systems' with columns: Type, SID, System description, Scripts, Steps, Started, and Ended. The table contains one entry: TY1, TY1 Recording, 3056, 9252, 22.10.2019 13:43:07, 22.10.2019 14:32:34. Below this, the 'Session view' tab is active, showing a list of sessions with columns: Object description, Duration, Step, and Username. A context menu is open over the 'Session view' tab, showing options: 'Currently selected test script', 'All test scripts', and 'Via selection screen'. The 'Via selection screen' option is highlighted.

Type	SID	System description	Scripts	Steps	Started	Ended
TY1	TY1	TY1 Recording	3056	9252	22.10.2019 13:43:07	22.10.2019 14:32:34

Object description	Duration	Step	Username
GUI login			SCRIPT_0010
Display Document: Initial Screen	20	GUI dialog step	SCRIPT_0007
Display Sales Order: Initial Screen			SCRIPT_0003
Display Bank : Initial Screen	5	GUI dialog step	SCRIPT_0006
	1	GUI login	COLIVER
	12	GUI dialog step	SCRIPT_0005
Display WBS Element: Initial Screen	15	GUI dialog step	SCRIPT_0009
Display WBS Element: Initial Screen	15	GUI dialog step	SCRIPT_0010

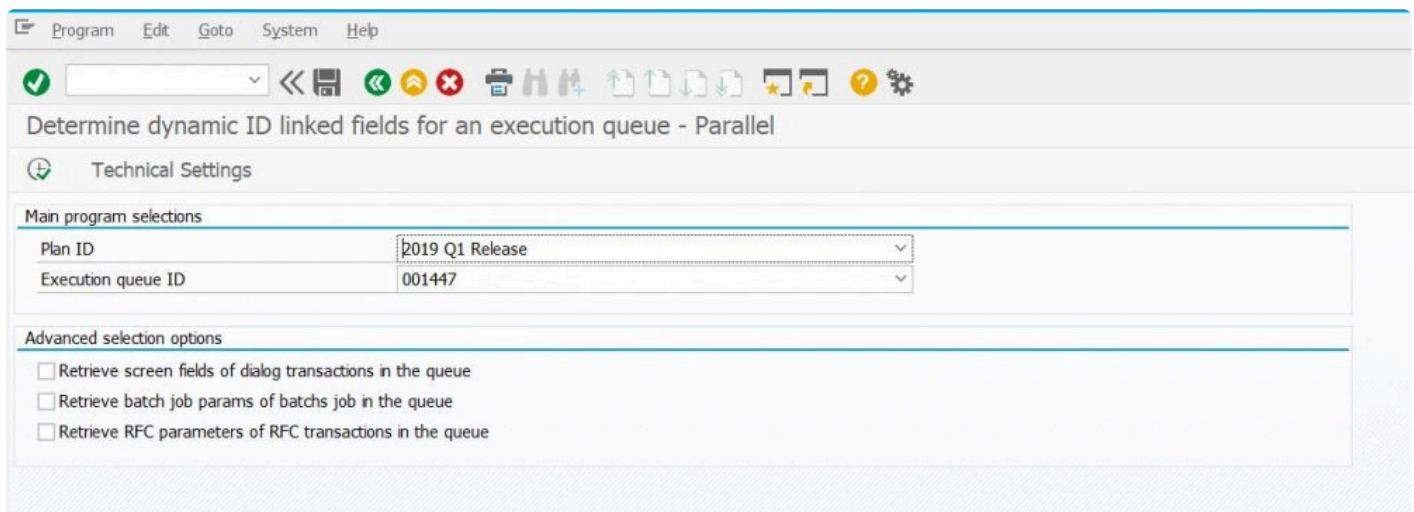
You will see the following status as the transfer is taking place



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



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.



3.5. Analyzing Coverage

Overview

The recording process has effectively generated an entire test script library covering over N% of the customer's actual SAP system usage. The amount of coverage depends greatly on the length of the recording as well as the particular point in the business cycle when the recording was run. 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 used 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.

There are a number of tabs in this functionality that perform the following functions:

1. Usage Retrieval

This is where the process begins and Usage Retrieval forms the basis of all other functions in the coverage analysis functionality of Testimony. Usage Retrieval is performed for all of the source systems in order to understand what the customer actually uses (and how often) over a configurable period. The SAP-standard period for retention of this information in the source system is three months. A “**usage retrieval run**” is generated for a given source system in the current test plan. This usage retrieval is performed at any time prior to the customer running the playback process of Testimony. It forms the basis for the following two functions – auto object prioritization and the coverage analysis itself.

2. Prioritization

Prioritization is a method by which all objects in the system (e.g. RFC's, dialog transactions). There are 3 aspects to prioritization which should be performed in the following order:

- (1) Library based object prioritization
- (2) Customer defined object prioritization
- (3) Automatic object prioritization based up usage data

2.1 Library based object prioritization

These are classified by type of system (ECC, CRM, BW etc) and then by application component. The majority of these are typically critical period end processes. These are core objects that run infrequently but

are important from a regression testing environment.

2.2 Customer defined object prioritization

The determination of an object's priority is according to the following order:

- Automatic object priority
- Library defined object priority
- Customer defined object priority

This means that if a customer has defined the priority for a particular object (e.g. a month end report), then this will have the highest precedence over an object that is defined in the Testimony delivered library which then has priority over the automatically determined priority (based upon usage data).

Hence, in this part of Testimony, the customer can define objects that have higher priority than what may have been automatically determined.

2.3 Automatic object prioritization

In order to determine the "criticality" of objects for the business, the core principal in this functionality is to look at how often it is used. The automatic object prioritization function in Testimony is run for a particular source system of the current test plan and for a previous "usage retrieval run" (as per the previous section 1). It is also possible to specify what percentage of frequently used objects are classified as "critical", "high", "medium" and "low".

After the automated prioritization has been executed, all used objects will be automatically classified with a priority. This priority can be navigated and seen in the tree control in the lower half of the screen after selecting a particular source system. These priorities are broken down by the application component. It is possible to see both the automatically assigned priority plus whether this has been over-ridden by either the standard library or it has been customer defined.

3. Coverage Analysis

The final stage of the process is to execute the coverage run analysis itself. This is run for a particular source system, a selected usage retrieval run and based upon the contents of a selected execution queue. You can trigger this by selecting a particular system and then running the coverage analysis program.

The results of this run will provide you with a full coverage analysis of how closely the recorded transactions match what the usage data indicates the customer uses. It is possible to see the exact coverage percentage. For the missing objects (that are not covered) it is immediately visible what the missing % is by Critical, High, Medium and Low priority objects/processes.

3.6. 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](#)

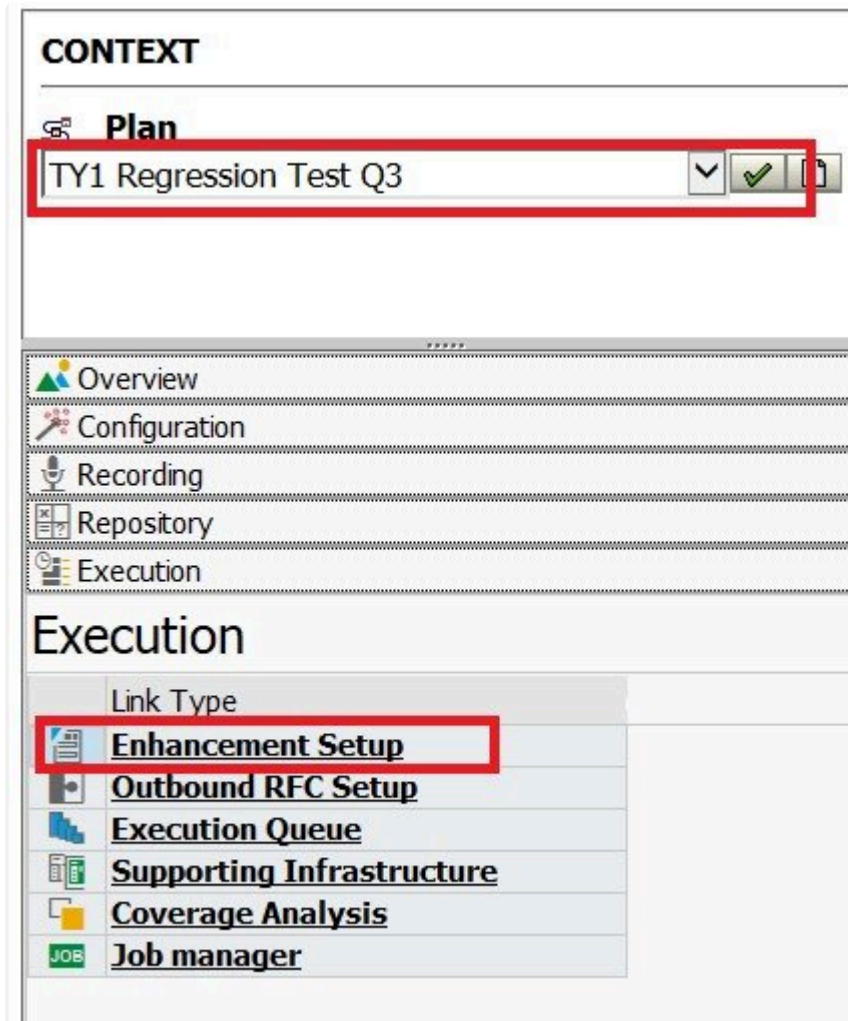
3.6.1. Preparing Playback

Overview

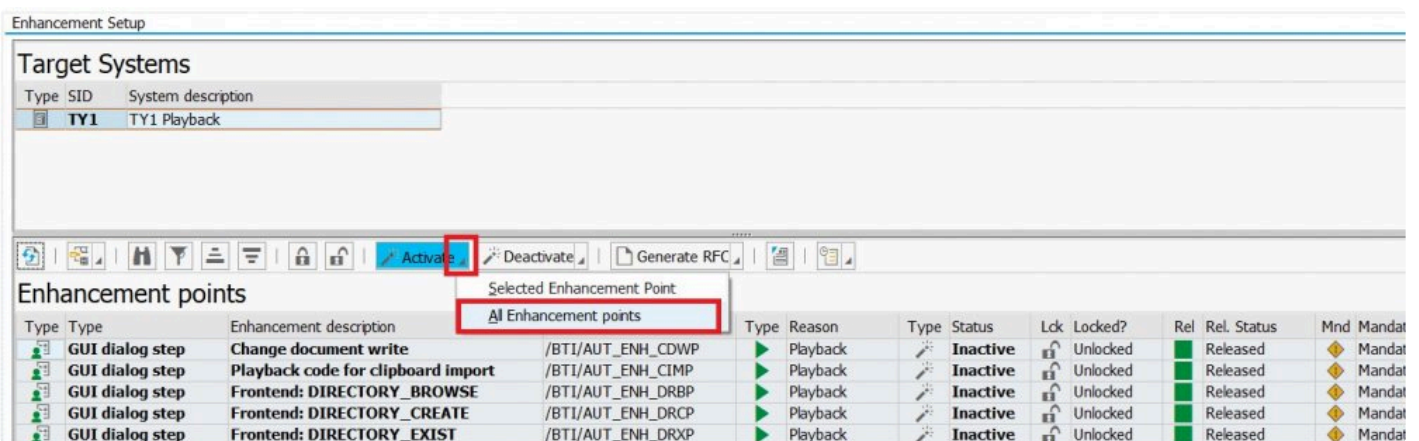
When you are ready to run a test phase leveraging the Playback capability in Testimony, you need to first prepare the Target system.

Process Steps

1. Select Test Plan to use
 2. Activate enhancements – Prepares the system for playback of all interactions.
 3. Execute Check Steps – Validation that the Target system is ready for playback
 4. Reset Date and Time of Target system
 5. Start the Bots
-
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 Execution Section



2. Click on the “Activate” button and select “All Enhancement Points”



3. Execute Check Steps – 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.

4. Reset system date and time – For each target system, set the system date and time on each application server back to the time that the system copy was taken. This ensures that the playback is done into the system as it was when the recording was taken. This may require that the SAP system is taken down first and then restarted in order to achieve this. This can be done either by setting the operating system clock on the server(s) or by using TimeShiftX.

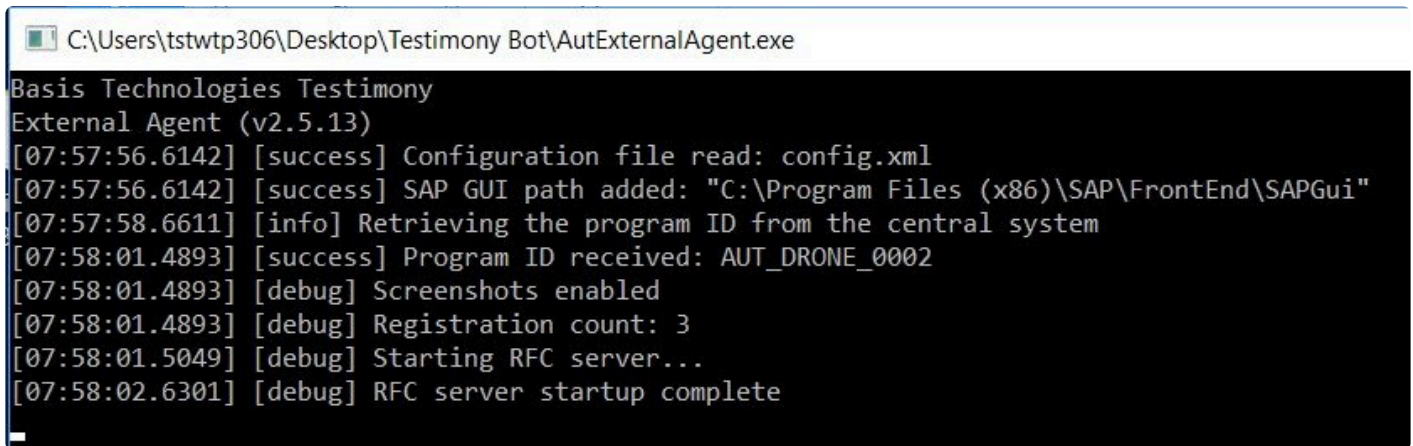
Once the above steps are performed, the system(s) are now ready to be played back into.

5. Start the Bots – 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.

Navigate to the relevant folder on your Bot machines (local or VM) and double-click on the AutExternalAgent executable file.

	output_20181220075756	20/12/2018 07:57	Text Document	1 KB
	output_20181214222833	17/12/2018 17:49	Text Document	252 KB
	output_20181214010424	14/12/2018 22:28	Text Document	322 KB
	output_20181212170307	12/12/2018 21:21	Text Document	427 KB
	sapnco_utils.dll	12/12/2018 07:44	Application extens...	5,535 KB
	libicodecnumber.dll	12/12/2018 07:44	Application extens...	51 KB
	sapnco.dll	12/12/2018 07:44	Application extens...	500 KB
	rscp4n.dll	12/12/2018 07:44	Application extens...	3,295 KB
	AutExternalAgent	12/12/2018 01:24	Application	111 KB
	output_20181211190016	11/12/2018 23:46	Text Document	100 KB
	output_20181211010042	11/12/2018 02:25	Text Document	235 KB
	dev_nco_rfc	11/12/2018 02:23	Text Document	22 KB
	output_20181211001954	11/12/2018 00:59	Text Document	11 KB
	output_20181204012057	06/12/2018 01:49	Text Document	3,377 KB

The Bot will start in a command prompt window.



```
C:\Users\tstwt306\Desktop\Testimony Bot\AutExternalAgent.exe
Basis Technologies Testimony
External Agent (v2.5.13)
[07:57:56.6142] [success] Configuration file read: config.xml
[07:57:56.6142] [success] SAP GUI path added: "C:\Program Files (x86)\SAP\FrontEnd\SAPGui"
[07:57:58.6611] [info] Retrieving the program ID from the central system
[07:58:01.4893] [success] Program ID received: AUT_DRONE_0002
[07:58:01.4893] [debug] Screenshots enabled
[07:58:01.4893] [debug] Registration count: 3
[07:58:01.5049] [debug] Starting RFC server...
[07:58:02.6301] [debug] RFC server startup complete
```

Startup is complete once you see the “RFC server startup complete” message.

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.

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

CONTEXT

Plan

TY1 Regression Test Q3

Overview
 Configuration
 Recording
 Repository
 Execution

Execution

Link Type

Enhancement Setup
Outbound RFC Setup
Execution Queue
Supporting Infrastructure
Coverage Analysis
Job manager

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

Additional Supporting Systems										
Type	Sys Type	Sts	Agent Status	System ID	Terminal ID	Host User	ID	IP Address	Registered Name	OS Op. System
	Playback Bot		Inactive	KMC laptop	DESKTOP-S599L7R		1			Windows 8.1
	Playback Bot		Inactive	DC Laptop	XPS13-DCAPO		5			Windows 10
	Playback Bot		Inactive	BP Connect	BT11102		6			Windows Server 2008
	Playback Bot		Ready	VM1	SKLRWX7BVDPF2-L		2		AUT_DRONE_0002	Windows 10
	Playback Bot		Inactive	VM2	USUNWX745FPF2-L		3			Windows 10
	Playback Bot		Inactive	VM3	SKLRW787ZVMX1-L		4			Windows 7
	Playback Bot		Inactive	VM4	USUNWX1F6DPF2-L					Windows 10

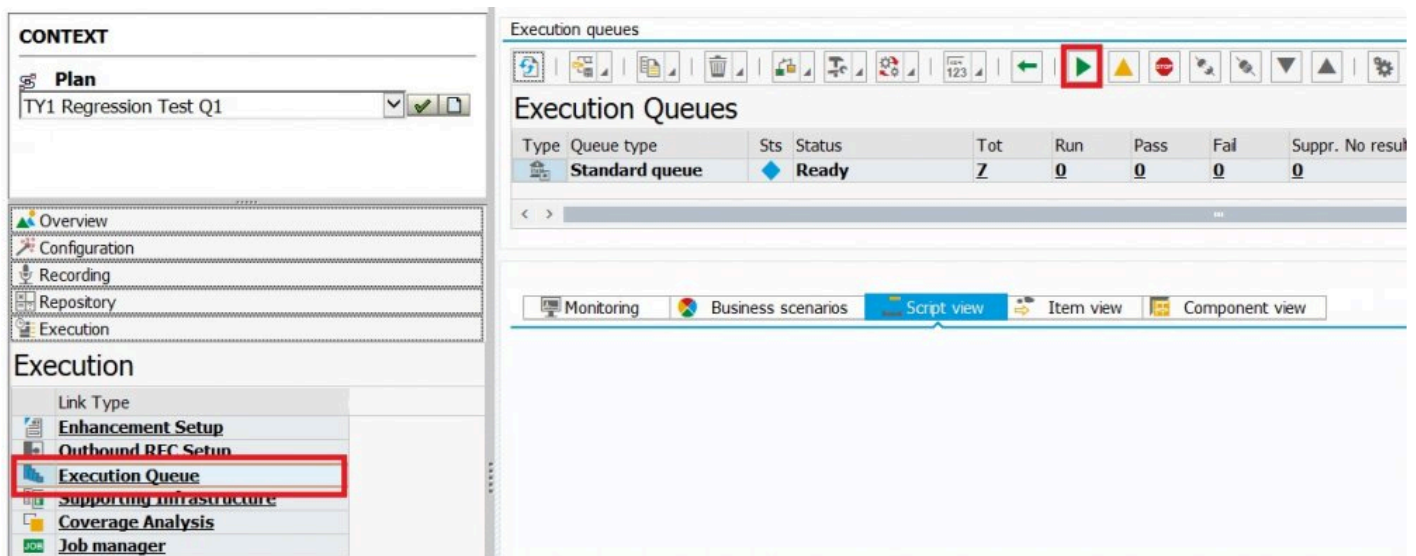
3.6.2. Start Playback

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. Select Standard Scripts or Filtered Scripts
4. Click on “Start Execution Queue” button



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.

3.6.3. Monitor Playback

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

The screenshot displays the SAP Testimony Monitoring interface. The left sidebar contains navigation options: CONTEXT (Plan, Overview, Configuration, Recording, Repository, Execution), Execution (Link Type, Enhancement Setup, Outbound RFC Setup, Execution Queue, Supporting Infrastructure, Coverage Analysis, Job manager), and Results. The main area is divided into four panes:

- Execution Queues:** A table showing the status of the 'Standard queue' as 'Processing' with 127792 total runs, 2147 passed, 360 failed, and 1666 suppressed. The error count is 127, and the completion percentage is 12.13%.
- Execution Queue Blocks:** A table listing individual blocks with columns for Typ, Block Type, BK ID, Sts, Status, Steps, Compl %, Rec. Dur, PB. Dur, Bot, and Worker Job. Blocks 2204 through 2210 are shown, mostly in 'Running' or 'Queued' states.
- Active Bots:** A table listing active bots with columns for OS Bot Name, Machine, RFC Dest., Sts, and Status. Active bots include COTH0041SW6W, 032H004DHEHW, 011H0060DW7W, and 075H0046WTTW.
- Server Jobs:** A table listing server jobs with columns for Job Job name, Typ Job Type, Cur Block, Sts Job Status, and Sts. Jobs include /B1/AUT_EXEC_QUEUE_P, 051H007dh7jcyv6P0XQW, 051H007dh7jcyv6P0XQW, 051H007dh7jcyv6P0XQW, 051H007dh7jcyv6P0XQW, 051H007dh7jcyv6P0XQW, and 051H007dh7jcyv6P0XQW.

The bottom status bar shows 'OVR' and other system indicators.

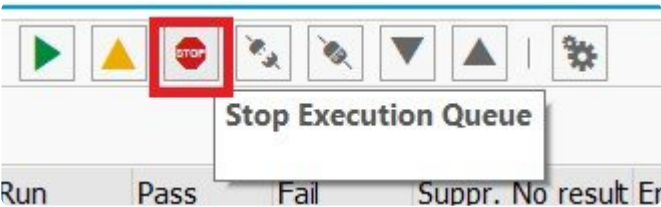
This shows information on (reading clockwise from top-left) the currently-running execution queue blocks; the active Bot(s); the jobs that are running in the central system to manage the playback; and the most recently executed steps.

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.

3.6.4. 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.



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

Execution Queues												
Type	Queue type	Sts	Status	Tot	Run	Pass	Fail	Suppr.	No result	Error	Canc	Not Run
	Standard queue		Stopped	3056	19	18	0	0		1	0	3028

3.7. Review Playback Results

Overview

When Testimony records the live production system(s), it captures “inputs”, “outputs” and certain “linkages” that occur in-between. When the playback is repeated into the test system(s), Testimony will automatically check that the actual output matches the expected output that occurred in the live system. If there are linkages that were recorded, it will compare these as well. Once the playback process has completed (either partially or fully), you are then able to start reviewing the results of the output. However, you are able to review the results whilst the playback is still on-going.

Process Steps

The task at this stage is to review the results and decide whether there are any fundamental regression issues. If there are, then defects should be raised against these for resolution. Once enough critical defects are resolved, it is possible to re-run the playback against a restored version of the test system. This restored system should also then have the defect resolutions (typically transport requests) applied to them prior to re-running the playback process.

To begin, navigate to the “Results” drawer in Testimony then select the “Result Overview”. Double click the execution queue that you want to review. Then navigate to the tab “Failure Overview”.

The Failure Overview breaks down the results of the playback by the following:

(1) Application component – This is the functional area. The lowest level is displayed first and then the top level application component next. This is determined by the application component that the object that has failed belongs to. For example, VA01 belongs to Sales and Distribution.

(2) Criticality – The criticality of the failure depends upon the “Coverage Analysis” functionality in Testimony. To get the criticality, you must have executed the automated criticality determination first. This decides criticality based upon how often a given interaction is used, but this can then be over-ridden by a library which can dictate that less often used transactions can have their criticality increased.

(3) Reason for Failure – The reason for failure will be determined by the type of interaction. So dialog transactions have one set of failure reasons and RFC’s have a different set. More information about a failure reason is available within the “Failure Overview” transaction by selecting the “Information” icon.

You should start by focusing in on your functional area that is relevant to you. You can then expand a

particular area out and review the failures in that area by expanding the area and reviewing the reasons for failure. Start with the Critical failures and then work your way to the right by High, Medium and Low. When you click on a count (of failures), the screen will popup with the list of failures in that area.

You should then review these failures by checking the reason for failure and the comparing what was expected with what actually happened. This is available by clicking the hot-spot icon with column "Act" (Actual results). A popup window will appear with what was expected on the left and the actual results on the right. Depending upon the type of interaction (dialog transaction, RFC, batch job) you'll see different expected versus actual results here.

4. Glossary

Bot

The bot is an executable which resides on a windows machine (normally a virtual machine). During playback the bot logs on as the recorded user and executes that user's transactions. The requirements for bot setup can be found [here](#).

Central System

This is the SAP system into which Testimony is installed and from which it is operated. Testimony users log on to this system to set up Testimony, start recordings and playbacks and analyse results.

Check Steps

These are run manually before a recording or playback and the operator needs to check the results of these to see if they should continue with the recording or playback.

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.

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".

Execution Queue

The execution queue is built from the repository and contains the scripts to be played back.

Filtered Recording

A filtered recording is used when you want to record a small subset of users or transactions 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 are also available for the transfer to repository and transfer to execution queue processes, although these are less frequently used. This topic should be further studied via the Filter Sets section here. **THIS MUST BE LINKED**

Linkages

Testimony records deeper than just the UI so that objects such as change documents and number ranges are also recorded. These can then be checked at playback to ensure that these match providing a deeper level of testing.

Playback

The playback is the playing back of the scripts in the execution queue, via the bots, on the target system.

Post-Processing Steps

These are run automatically after a recording or playback is completed. Any errors in post-processing cause a hard stop preventing the status moving to complete. If errors are found then the operator should check the errors and see if they need to manually resolve these.

Preparation Steps

These are run automatically before a recording or playback starts. Any errors cause a hard stop preventing the recording or playback starting. Errors should be resolved before restarting 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 for later playback.

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.

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 everything except a small number of users or objects as defined in the "Filter Sets"

Target System

This is the regression test system into which recorded scripts are played back via the Bots.