Testimony - Installation and Setup Guide

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Basis Technologies

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Introduction

The Testimony Installation and Setup Guide is a simple step-by-step document that takes you through setting up Testimony for use in your SAP system landscape. This guide is split into five sections to mirror the key phases of a Testimony installation and setup:

- 1. Preparation
- 2. Installation
- 3. Configuration
- 4. Final Preparation
- 5. Software Support

Whilst setting up Testimony on your SAP estate, this setup guide should be used in conjunction with the other available Testimony documentation with the other manuals available as below:

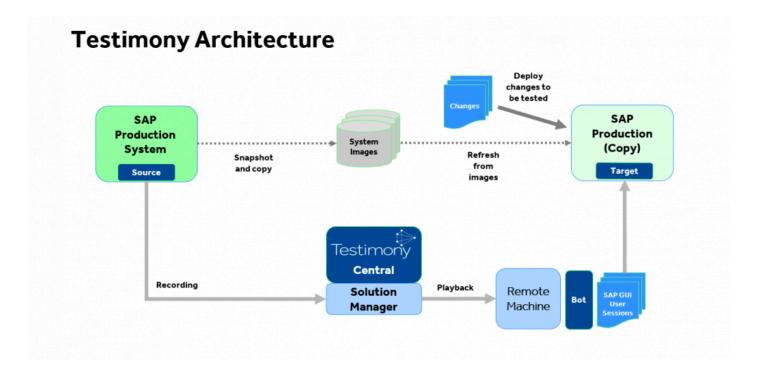
Document	Purpose
Testimony User Guide	A user oriented tour of the Testimony screens and functionality including a high level product overview.
Frequently Asked Questions	Commonly asked questions regarding the products features and use cases.

Architecture

The architecture of Testimony comprises four types of systems as below:

- 1. Central system (usually Solution Manager)
- 2. Source system to be recorded (e.g. ECC development, test and production)
- 3. Target system to be played back into (e.g. Copies of ECC production)
- 4. Bot systems to run the bots used for playback (Windows machines)

The relationship between the systems is as per the image below:



Preparation

Some preparatory activities need to be undertaken within your organization before Testimony can be installed and configured. In particular, you need to liaise between the IT development and operations teams to define the scope of your Testimony roll-out and map out the required processes. The most impacted teams will be the testing team and the basis administration team.

Basis Technologies generally recommends that these preparation steps are undertaken via a workshop involving the key internal SAP stakeholders, facilitated by your Basis Technologies implementation consultant. These would typically include your SAP testing team, SAP basis team and SAP architecture team.

#	Activity	Details		
1	Designate Testimony Administrators	Installing and maintaining Testimony requires a basic working knowledge of SAP plus an understanding of your organization's testing processes. Basis Technologies recommend 1-2 resources be assigned as Testimony Administrators. These will typically be the senior testing managers and/or basis administrators.		
2	Designate a Testimony central system	The central system is an SAP system that hosts the Testimony application and is where Testimony configuration and application data is stored. Users only ever connect to this system to access the tool. The central system must be a SAP ABAP Unicode system running SAP Netweaver 7.01 or above. Most customers choose to designate their Solution Manager system as the Testimony central system.		
Confirm all SAP systems Every system that is to be regression tested by Testimony needs to be listed and documented along with details of their versions.				
		Each source system and the central system is likely to require parameter profile updates that require a system restart check your maintenance windows and the System Setup section for parameter profile details		

Installation

The transports and software will have been provided and should be installed as below:

#	Activity	Details		
1	Install into Central System	Install the transports provided by Basis Technologies into your central system. This would typically be your SAP Solution Manager system.		
2	Install into Source System(s)	Install the transports provided by Basis Technologies into your source system(s). You can start by installing into your sandbox or development systems for testing purposes and then promote ultimately through to production after appropriate testing. We strongly recommend installing the transports during a period when there is little or no activity on the system, in order to avoid users experiencing short dumps during the installation.		
3	Regenerate delivered roles	In each system into which transports have been deployed, go to transaction PFCG, find the /BTI/* roles and regenerate		
4	Testimony administrator access	Assign the role /BTI/AUT_CENTRAL_ADMINISTRATOR to the Testimony Administrators in the Testimony central system		
5	Check main transaction	In the central system, execute the main Testimony transaction /N/BTI/AUT if this does not exist then check the transports have been imported correctly		
6	Install License Keys	Install the Testimony license keys provided by Basis Technologies into your central system only. Separate keys for the Listener Agent will need to be installed into specific systems The link here to the user guide provides the details on how to install the license keys		

Setup

After the preparation and installation processes have been completed you can now approach the Testimony implementation, including configuration of the product and preparing it for use.

This has been broken down into the following steps:

- System Setup
- Bot Setup
- Configuration

System Setup

Installation of the software into the source and target system should have been completed as per the installation section here.

The following parameters need to be checked and changed in the systems specified where required.



Some parameters require a system restart to take effect and they should be changed on each app server

#	Profile Parameter	System	Details	
1	rsdb/esm/buffersize_kb	Source & Central	This value should be about '100000' (100Mb) (the parameter is in kb). Note that this won't be required for a very small recording	
2	rsdb/esm/large_object_size	Source & Central	This value should be at least '1000000' bytes (1Mb). Note that this won't be required for a very small recording	
3	rsdb/esm/max_objects	Source	This value should be set as default as at least 20000	
4	gw/acl_mode	Central	This value needs to be 0 which allows the drones/bots to register themselves on the gateway (playback preparation)	
5	rsdb/esm/max_objects	Central	This value should be set as default as at least 2000	
6	sapgui/user_scripting	Target	This value needs to be TRUE which allows the bots to perform the playback properly. Only in playback system.	
7	sapgui/ user_scripting_per_user	Target	This value needs to be FALSE which allows the bots to perform the playback properly. Only in playback system.	
8	sapgui/ user_scripting_set_read_only	Target	This value needs to be FALSE which allows the bots to perform the playback properly. Only in playback system.	
9	login/ disable_password_logon	Target	This value needs to be 0 which allows the bots to login to the playback system. Only in playback system.	

Testimony requires a userid for the bot to access the central system as well as two RFC destinations: one from the central system to the source and one from the central system to the target. As the target system is a copy of the source it may be necessary to create the target system RFC after the copy is complete. Testimony also requires a logical filepath and OS Command to move and hold files during recording and playback.

#	Activity	Details
1	Bot User	Use SU01 to create a BOT_USER user (suggested name) in the central system. This user requires the following role /BTI/AUT_BOT_RFC (ensure profile role is generated) The user needs to be of type System User
2	Source RFC User	Use SU01 to create a SOURCE_USER user (suggested name) in the source system. This user requires the following role /BTI/AUT_SOURCE_RFC (ensure profile role is generated) The user needs to be of type System User
3	Create Source RFC	In your central system, use SM59 to create an ABAP RFC connection to your source system. Specify the SOURCE_USER id and password and test the connection using Utilities —> Test —> Authorization Test
4	Target RFC User	Use SU01 to create a TARGET_USER user (suggested name) this user needs to be available in the target after a copy back. This can mean that creating this user in the source before copy back can reduce the setup required This user requires the following role /BTI/AUT_TARGET_RFC (ensure profile role is generated) The user needs to be of type System User
5	Create Target RFC	In your central system, use SM59 to create an ABAP RFC connection to your. target system. Specify the TARGET_USER id and password and test the connection using Utilities —> Test —> Authorization Test
6	Create OS Command	In each system (central source and target) setup a new OS command called YAUT_COPY_FILE in transaction SM49 (For WINDOWS NT Operating system command is xcopy, for LINUX is cp)
7	Logical Filepath	In each system (central source and target) setup a folder for the logical path /BTI/ AUT_APPSERVER_FILESt using transaction FILE

Bot Setup

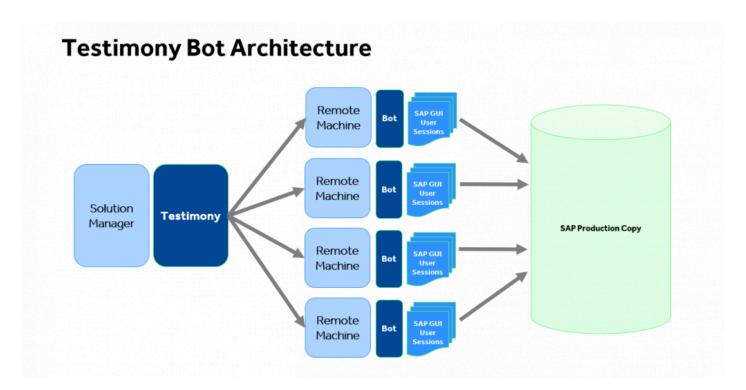
After completing the preparation and installation activities outlined in the previous sections, the bots can now be configured.

Please ensure the following in preparation for use of the bots.

Desktop/Remote Desktop Requirements for the Bot

64-bit Windows 10
4GB RAM and nominal disk
Administrator access
Network access to SAP Target system
SAP GUI Installed

The Testimony bot architecture is shown in the diagram below. You can have many physical or virtual desktop machines each running one bot, with each bot launching multiple SAP user sessions. Each bot can handle around 50 concurrent SAP user sessions. Note you will also require one background job to run each bot.



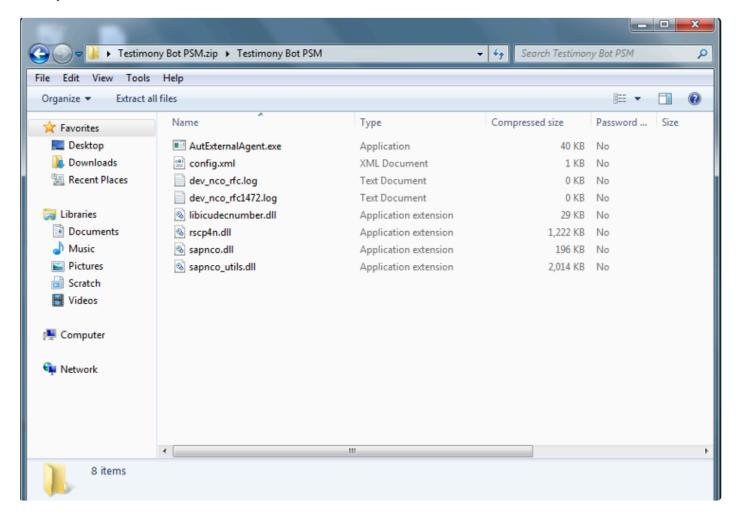
Installing the Bot

A link to the bot software should have already been supplied so you can simply download the folder. The contents should be as in the below example.



The config file should already been set up, see the maintenance section for how to update this.

Example Screen-shot



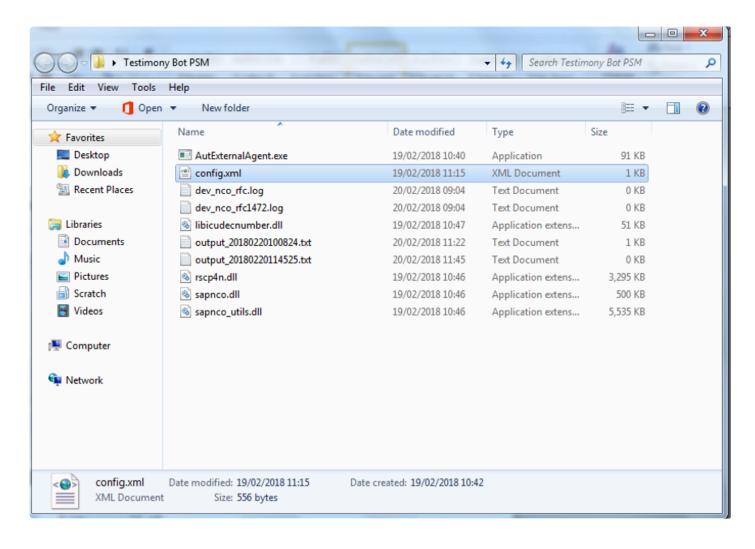
Bot Maintenance

When installing for the first time or changing the Central system where Testimony is operating, each bot's main config file will need to be updated.

To build the config file that allows the Bot to connect to the SAP central system where Testimony is deployed, most of the information will be on the sap logon pad but you will also require the bot users logon and password and the client where Testimony is being operated from. Each element for the bot is as below:

Tag	Element
ID	The system ID of the central system
Instance Number	The instance number of the central system
Application Server	The app server for the central system
SAProuter String	If one exists for the central system
User	The sap user name of the bot user setup on the central system
Password	the password for the user above
Client	The client of the central system where Testimony is deployed
Gateway Host	The same as the application sever above
Gateway Service	sapgw + the the instance number (example sapgw00)

To access the config file go to the bot folder as below and right click on the config file selecting the option to edit.



The config file should appear as below:

Bot Configuration – Specialisations

SAP GUI Location

The bot may be running in an environment where SAP's SAPGui.exe files are not in the standard location.

The logfile on startup will report it as:

```
[15:18:55.8677] [success] Configuration file read: config.xml
[15:18:55.8677] [error] Failed to setup environment variables: SAP GUI directory not found ("%ProgramFiles(x86)% \SAP\FrontEnd\SAPGui")
```

A new entry in the config.xml will allow an alternative path to be specified. [SapGuiPath]C:\Programme\SAP\FrontEnd\SapGui[/SAPGuiPath]

Passwords

If your organisation's internal policy will not allow the password to be saved into the config file then you can remove the line below in the config file and this will prompt the password to be entered each time the Bot is started.

[Password]Password[/Password]

SAP GUI Configuration

On each remote machine where the bot is installed the SAP GUI needs to be configured.

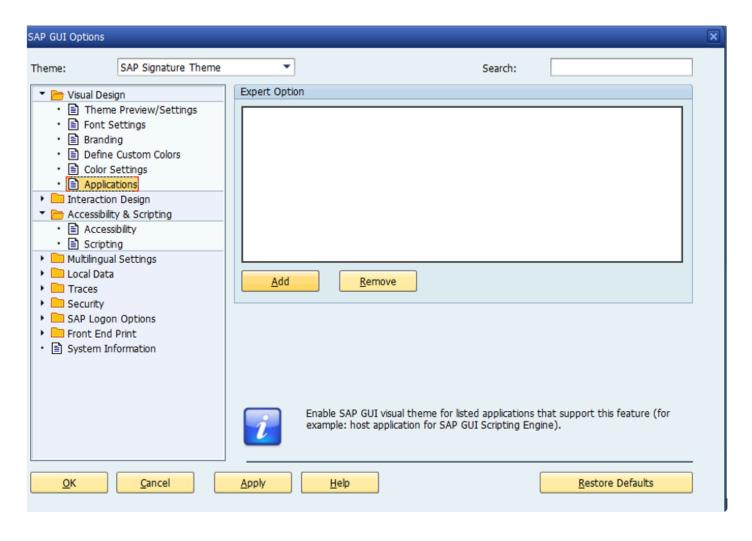
On the desktop/remote desktop launch the program SAP GUI Configuration. **Note that this is a separate program and is not run through the SAP logon pad.**

Some organisations have deleted the short cut to the program, so the application name is sapsettingshow and is usually under the file path \Program Files (x86)\SAP\FrontEnd\SAPgui

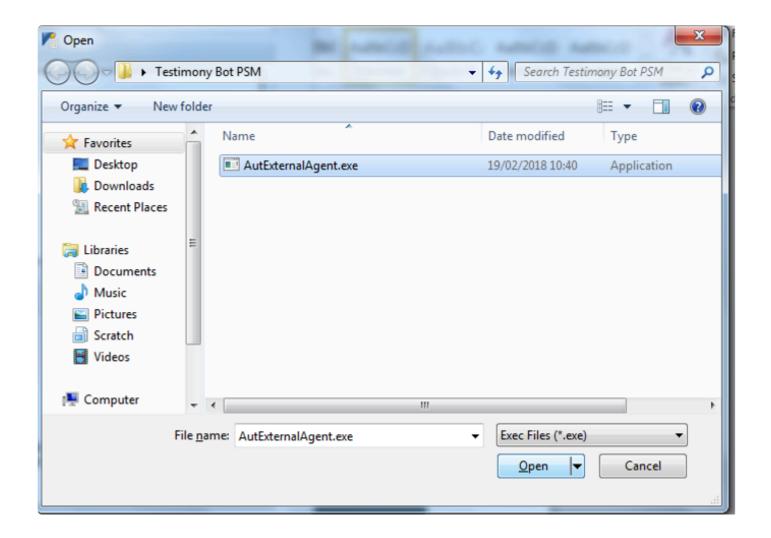
Three parts of the SAP GUI setup need to be changed.

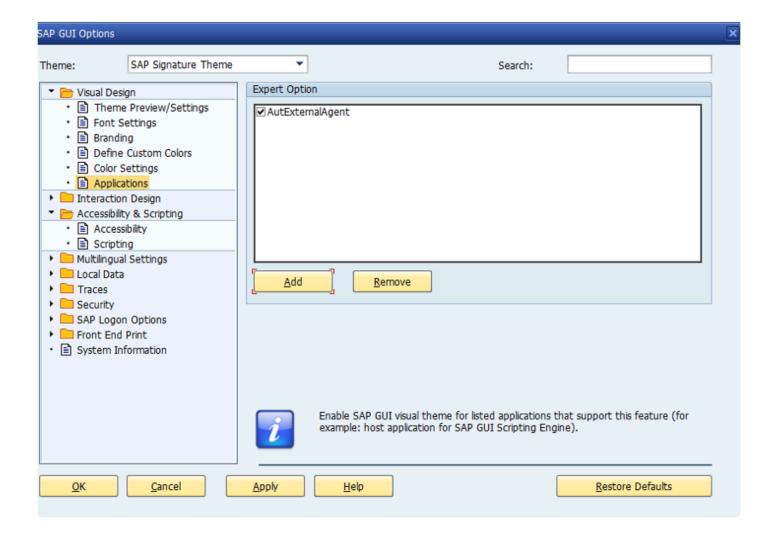
1. Visual Design

To enable the bot to take screenshot correctly, open the 'Visual Design' folder and select 'Applications', then press the add button.



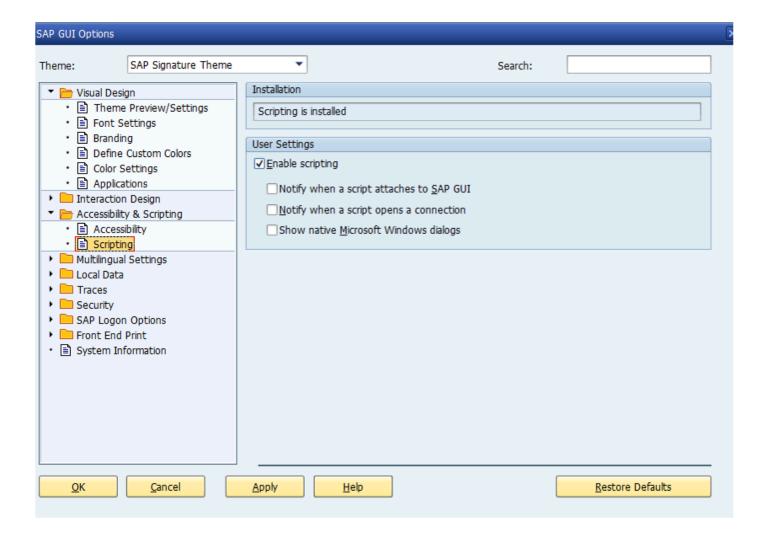
Navigate to the Bot folder and select the AutExternalAgent.exe application. The application will be added to the SAP GUI





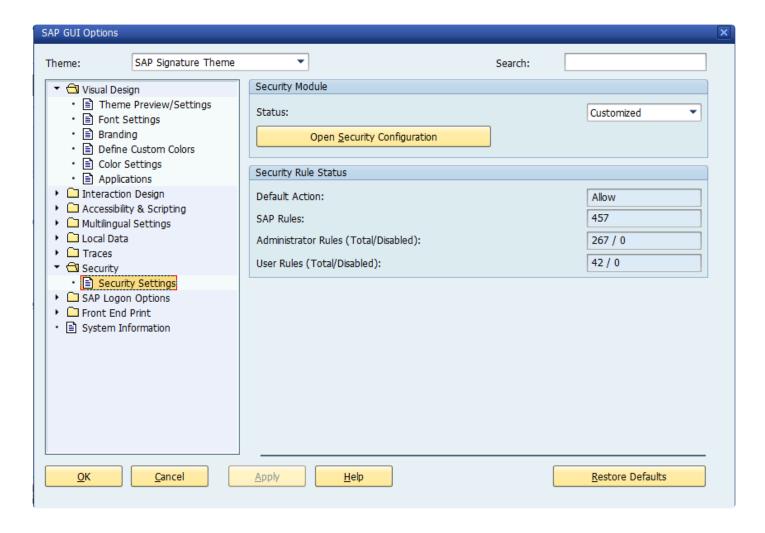
2. Scripting

To allow the bot to operate correctly scripting needs to be enabled open the 'Accessibility and Scripting' folder and select 'Scripting' as below, ensure scripting is enabled and the other checkboxes are unchecked.

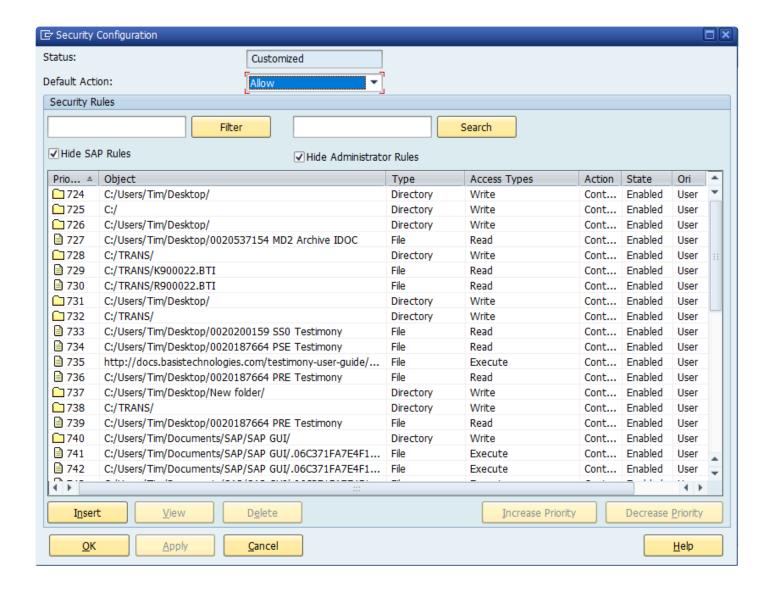


3. Security

To prevent unexpected popups open the 'Security' folder and select 'Security Settings' as below and press 'Open Security Settings'.



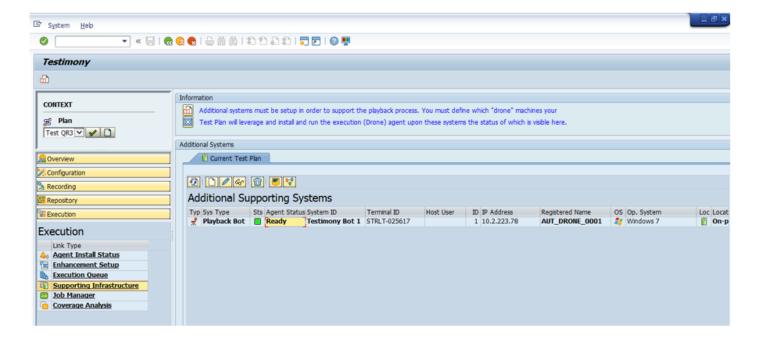
Ensure the 'Default Action' is set to 'Allow' as below:



Bot Testimony Setup

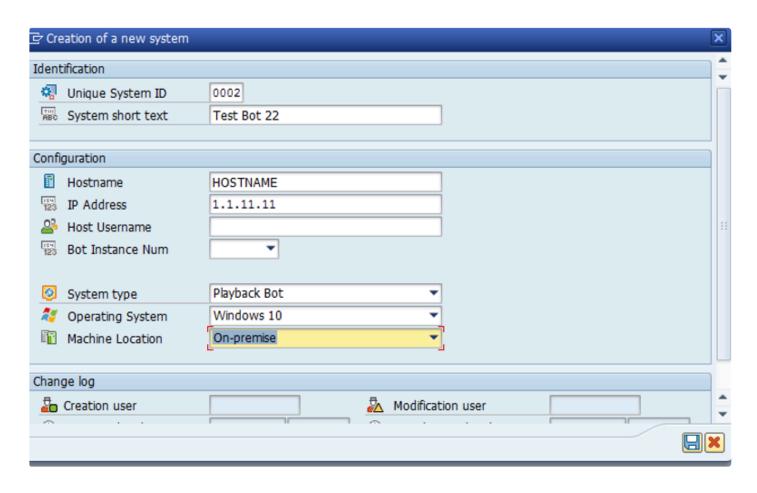
Steps to setup the Bot in Testimony

1) In the central system, execute transaction /N/BTI/AUT, navigate to the 'Execution' tray and select 'Supporting Infrastructure'. Click the create button to add a new bot.

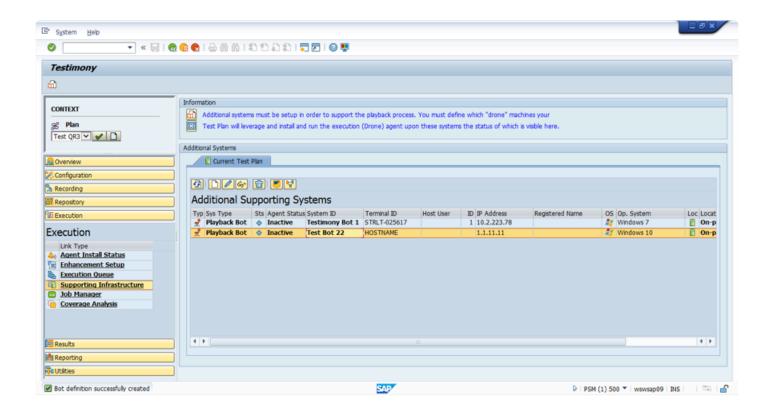


2) Fill in the details for the desktop/remote desktop. Give the Bot a unique ID and a correct description in the short text. The Hostname is the name of the desktop/remote desktop. *Case-sensitivity is important and must be maintained*. The IP address is the IP for the desktop/remote desktop.

The system type, operating system and machine location can also be added.



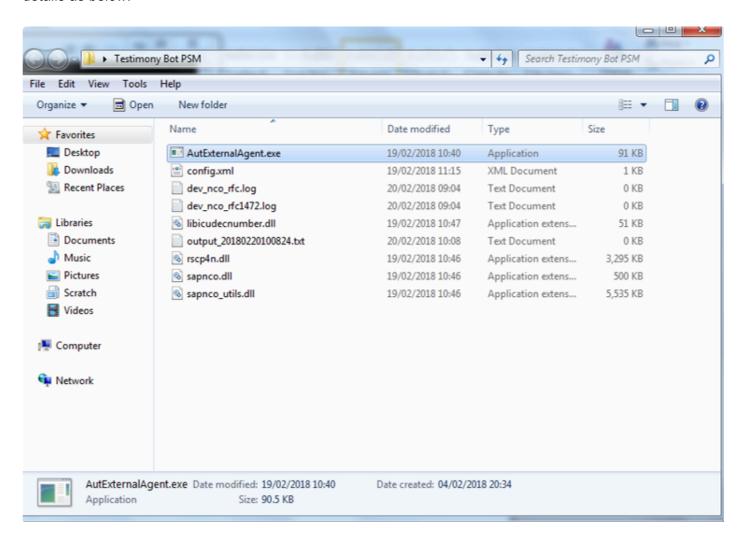
The Bot will appear in the 'Supporting Infrastructure' as below:



Checking Bot Setup

Steps to check the Correct Setup of the Bot in Testimony

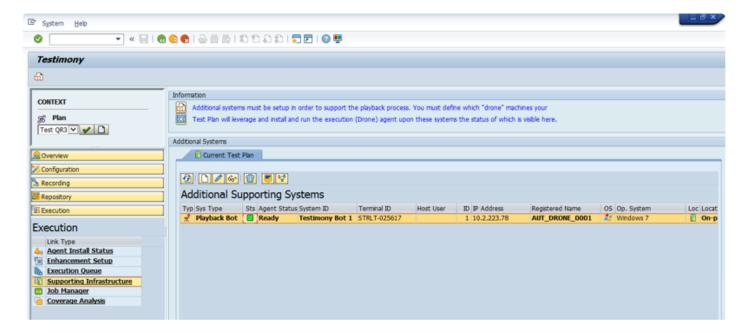
1)To launch the bot simply go to the folder where the bot executable files are stored on the desktop/remote desktop and double-click the AutExternalAgent.exe application. The bot should launch and provide the details as below:



```
C:\Users\admmliegus\Desktop\Testimony Bot PSM\AutExternalAgent.exe

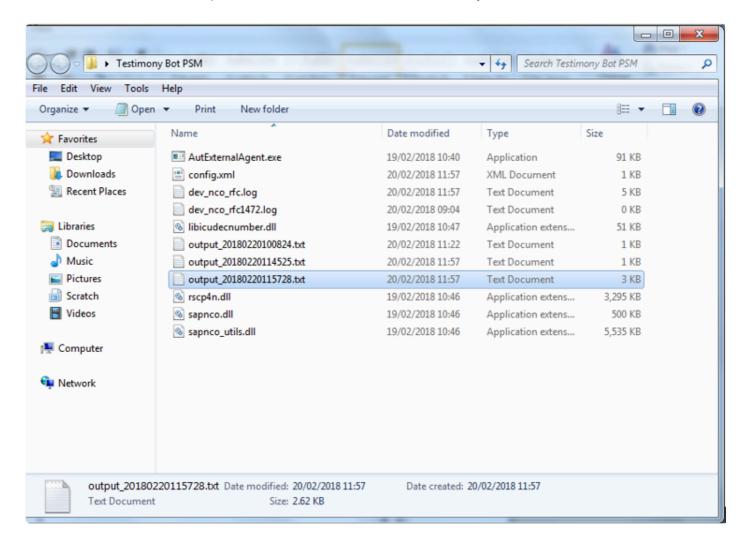
Basis Technologies Testimony
External Agent (Build 0.39.6609.37029)
[10:08:24.7105] [info] Retrieving the program ID from the central system
[10:08:24.9205] [success] Program ID received: AUT_DRONE_0001
[10:08:24.9205] [debug] Screenshots enabled
[10:08:24.9205] [debug] Registration count: 2
[10:08:24.9405] [debug] Starting RFC server...
[10:08:24.9605] [debug] RFC server startup complete
```

2)Execute Testimony transaction /N/BTI/AUT in SAP GUI. Navigate to the 'Execution' tray and select 'Supporting Infrastructure' and the Bot should have a status of 'Ready'



Trouble Shooting

If a bot is failing to connect after being executed then make sure to check the logs. A log is stored for each run of the bot. Select the output file with the correct date and time for your error.



The details in this file can point you in the right direction, in the screen below the bot user or password is incorrect so please double check these details in the config file.

```
File Edit Format View Help

[11:57:29.2215] [error] Severe error during startup: SAP.Middleware.Connector.RfcLogonException: Name or password is incorrect (repeat logon) ---> at SAP.Middleware.Connector.RfcConnection.ThrowRfcErrorMsg()
at SAP.Middleware.Connector.RfcConnection.ReadRytes(Byter) Buffer, Int32 count)
at SAP.Middleware.Connector.RfcConnection.ReadRytes(Byter) Buffer, Int32 count)
at SAP.Middleware.Connector.RfcConnection.RfcRegeive(RfcFunction function)
at SAP.Middleware.Connector.RfcConnection.RfcRegeive(RfcFunction function)
at SAP.Middleware.Connector.RfcConnection.RfcRegeive(RfcFunction function)
at SAP.Middleware.Connector.RfcConnection.ConnectAsClient(RfcDestination destination, Boolean forRepository)
--- End of inner exception stack trace ---
at SAP.Middleware.Connector.RfcConnection.ConnectAsClient(RfcDestination destination, Boolean forRepository)
at SAP.Middleware.Connector.RfcConnection.ConnectAsClient(RfcDestination destination, Boolean forRepository, Boolean create)
at SAP.Middleware.Connector.RfcConnection.SetAtributevalues(RfcSystemAttributes attribs)
at SAP.Middleware.Connector.RfcConstination.GetClient(RfcDestination destination)
at SAP.Middleware.Connector.RfcConnection.GetAtributevalues(RfcSystemAttributes attribs)
at SAP.Middleware.Connector.RfcConnection.GetAtributevalues(RfcSystemAttributes attribs)
at SAP.Middleware.Connector.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcConnection.RfcC
```

The bot may be running in an environment where SAP's SAPGui.exe files are not in the standard location.

The logfile on startup will report it as:

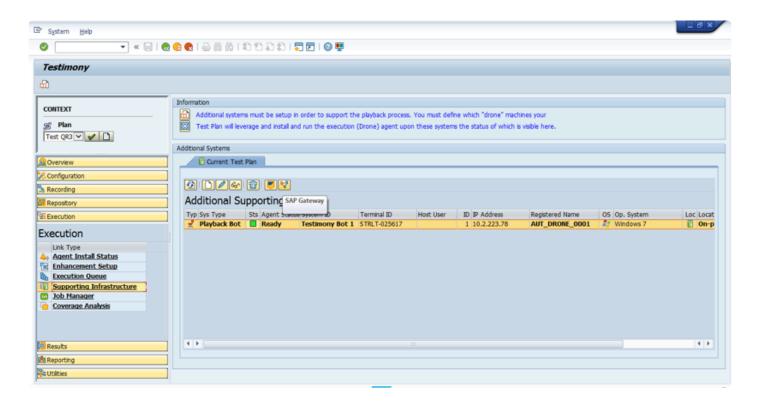
```
[15:18:55.8677] [success] Configuration file read: config.xml
[15:18:55.8677] [error] Failed to setup environment variables: SAP GUI directory not found ("%ProgramFiles(x86)% \SAP\FrontEnd\SAPGui")
```

A new entry in the config.xml will allow an alternative path to be specified.

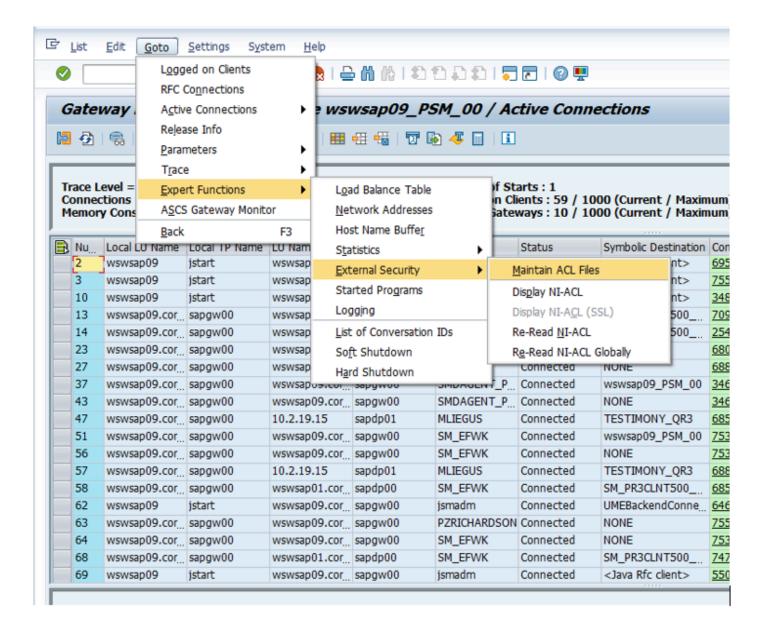
[SapGuiPath]C:\Programme\SAP\FrontEnd\SapGui[/SAPGuiPath]

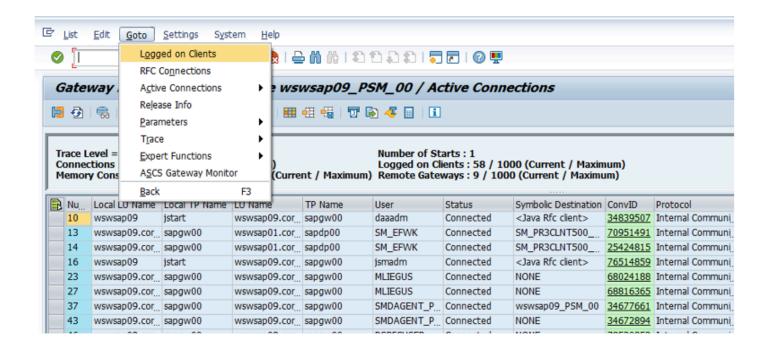
SAP Gateway

The other area to check is the SAP Gateway Monitor. You can launch this from Testimony or use transaction SMGW.



The external security files as well as the logged on clients can be checked as shown in the example screenshots below:





Configuration

After completing the preparation and installation activities outlined in the previous sections, Testimony can now be configured.

Please perform the following steps in preparation for use of the software.

Review Default Settings

Review the default settings that are delivered out of the box with Testimony:

Shared memory limits

Check that the default settings for the shared memory limits during the recording process are satisfactory. This is a task of the SAP Basis administration team.

For additional information on this function in Testimony, please refer to the <u>User Guide</u>.

General parameters

Parameters are stored in a general manner across all Test Plans in the General Parameters configuration drawer item. You should review each of the general parameters that are available to decide whether the default value meets your requirements.

For additional information on this function in Testimony, please refer to the <u>User Guide</u>.

Number Ranges

The vast majority of number ranges are automatically set up in Testimony. You do not need to go into the standard SAP transaction SNRO to configure them for each SAP system that you install Testimony into. Hence, this is simply a review process to understand what the current numbers are and if you would like to alter them from the defaults.

For additional information on this function in Testimony, please refer to the <u>User Guide</u>.

Final Activities

This section details the final preparatory activities that should be done prior to go-live.

Testing

Basis Technologies strongly recommends that you test your Testimony setup fully before operational use.

Wherever possible, this should involve the recording of test steps in the source system and playing back the recorded steps via the execution agent. This should be done in at least one of your sand-box, development and QA systems prior to the use of Testimony in your production systems.

Test Details

- 1. Test the recording activation function from Testimony's recording drawer menu.
- 2. Perform various transactions within the source systems which should be recorded.
- 3. Check that the recording has occurred.
- 4. Test the Transfer to Repository function after the recording has been deactivated.
- 5. Ensure the Test script Library has the recorded test scripts.
- 6. Set up the target system and prepare for the playback process.
- 7. Add test scripts to the execution queue and perform test execution queue playback
- 8. Check the results of the playback

Deployment

When deploying the software to a source system, particularly a production system, you should ensure that there are no users on the system as they may experience short dumps while the transport deploys.

The following should be checked on each application server before a short filtered recording is executed.

#	Activity	System	Details
1	Check profile parameter – "rsdb/esm/buffersize_kb"	Source	This value should be about '100000' (100Mb) (the parameter is in kb)
2	Check profile parameter – "rsdb/esm/ large_object_size"	Source	This value should be at least '1000000' bytes (1Mb)
3	Check profile parameter – "rsdb/esm/ max_objects"	Source	This value should be set as default as at least 20000
3	Check RFC	Central	The RFC from the central to the source system should be double checked.

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.

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Testimony Administrators

If you have questions or issues whilst using Testimony, you should always contact your internal Testimony Administrators in the first instance.

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, Utilities or Transformation), a ticket should be raised via the following email address:

support@basistechnologies.com

Sending an email to this address will automatically create a ticket in Zendesk, the ticketing tool used by Basis Technologies.

To help us offer you the best service with your issue, please include as much information as possible about the issue, with particular attention to the following:

- Customer: Include the name of the customer you are representing, it may not always be obvious from your email address
- Product and Version: Include the Basis Technologies product and version that you are operating that has the issue
- System & Client: The system and client where the issue/fault occurred and if it's a license key issue provide the SAP system installation number (it is always ten digits long)
- · Description: A clear description of the problem and the steps to replicate the issue, with screen shots
- Data: Any master or transactional data objects associated with the issue. E.g. Business Partner, BPEM Case ID, Plant
- **Error Messages:** Details of any error or warning messages given including where applicable run time errors, short dumps and error logs
- User ID: The User ID being used when the issue occurred
- · Authorisations: Ensure transaction SU53 is run and results shared to help with authorisation issues
- Contact Details: Please include your own contact details in your email
- **Priority**: Reflect any high priority issues by including URGENT or HIGH PRIORITY at the start of the email subject

Support Escalation

If you have any concerns with the service you are getting from Basis Technologies support, or wish to escalate any high priority issues please email **supportescalation@basistechnologies.com**

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 above support@basistechnologies.com address, or alternatively by contacting your assigned Basis Technologies Account Director.

Uninstallation

To remove the installation of Testimony from your system there are steps to follow to ensure it is completed safely.

The tool will have been installed in Central, Source and Target systems. There are Uninstallation transports supplied for each system and they will be supplied by Basis Technologies upon request.

Uninstall Transports and Configuration

Transports

Via the Add-On Manager, you can apply the deletion Transports to remove all the objects associated with Testimony.

The transports will be provided by Basis Technologies upon request.

It is recommended that the uninstallation of any Production system objects is carried out according to your system maintenance schedule.

Note that all workbench objects will be removed via this approach and none are required to be manually handled.

Data and Configuration

Note: All Testimony-related data for recordings, playback and analysis will be removed when uninstalling.

There will be RFC connections remaining; these should be either deactivated, removed or retained if still operational for other purposes.

Security Gateway information for the bot machine and Testimony access within transaction SMGW for secinfo/reginfo will need to be removed.

System parameters, as set up in the Gameplan, can be reverted to their original settings. The parameters altered are:

- "rsdb/esm/buffersize kb" in Source systems
- "rsdb/esm/large object size" in Source systems
- "rsdb/esmj/max_objects" in Source systems
- · "gw/acl mode" in Central system
- "rsdb/esm/buffersize kb" in Central systems
- "rsdb/esm/large_object_size" in Central systems
- "rsdb/esmj/max objects" in Central systems
- "sapgui/user scripting" in Target system

Timing & Sequence

However since software is being removed it is best practice to conduct the removal during a planned maintenance window.

It should be noted that there is no specific order in which to uninstall the Testimony add-on as there are no inter-system dependencies between Central, Source and Target.

License Keys

Any license keys associated with your Testimony tool will become inactive at the time of uninstallation.

Dependencies

If you are operating other tools from Basis Technologies you should check with support@basistechnologies.com before uninstalling the Diffuser Framework, as it is separate from Testimony and these installations would be compromised.