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Quality assurance of PABX using selenium

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ABSTRACT

In many organizations, telephones are most common in use. The quality for the PABX is assured by using selenium which is configured through interfaces. The interfaces can be either the web-based management or through the pipelining. The configurations will enable the PABX working and for every new release of the software, there should be regression testing. Testing through the selenium will abate the human endeavor and also inspect the inconsistency during the work. For the consistency testing the strategy of testing is changed from manual to automation. The quality can be checked either on the windows system or on the Linux PC based application which it can be a graphical user interface. The main purpose is to reduce the effort, time consumption and also immobile to different places. As the automation is growing day to day the study also involves in automating the configuration managements that are available inside the PABX which enables working. While the simtraces and libraries are included in the configuration the processes can be handled and can be tested easily. When the connection is established the handsets can be checked and it proves the automation is easier than the manual testing. After the testing is completed the user can test whenever is required and also helps to reduce the effort while the new releases have happened.

Keywords: Private Branch Automatic Exchange (PABX), Personal Computer (PC), Session Initiation Protocol (SIP).

1. INTRODUCTION

The main purpose of automating is to reduce the human effort and also to check the quality of the PBX for every new release of the features that are added in the PBX. Whenever the new features are updated then the whole elements inside the PBX have to check whether the elements are performing its function without any deviations or not. While trailing through manual it has given great complexities of results, so that the user has moved from manual to automation. So in order to test all such cases the automation is done through the interface called web-based management with the lowest version. So in order to perform the tests, the PBX has selected the selenium which is an open source tool and easy to understand with the web drivers that are included inside the selenium libraries.

2. PABX

The PABX will have the similar operations as of PBX except that the working operations for the testing are done through the automation so the name has changed from PBX to PABX. The PABX is used to connect to all the phone sets after its elements are tested. It is a telephone line that is connected from one phone to another phone or they act as an extension for the phones that are connecting to the outside phones. The exchange can help the connection of lines so that the user can communicate with each other. Initially, the PABX has worked over the analog signals but as of now, the digital telephones are using vastly in most of the organizations. And the PABX has come to take part on the internet i.e through the internet protocol which can be named as IP PBX. So the phone sets can be connected to the IP address that is provided to it.

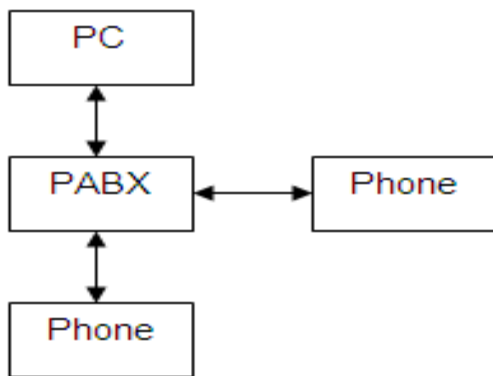


Fig: 1.1 proposed model

The phones with IP address has to be registered on the call server of the PABX so that the communication will happen between any two sets. The main function of the call server will act as a proxy server. Whenever the users place a call the PABX server will recognize the calls whether it's an internal call or from the extension lines. While receiving the calls the call will divert to the specified phone with the help of the IP addresses. In every PABX there is one media gateway which is used to connect the Ip system phones with the external lines. It can connect to all the system models of PABX from analog to internet protocol PBX systems. The specialty of the media gateway is that it connects to the distinct networks.

In figure 1.1, the proposed system has introduced for connection of one phone system to another phone system. But before connection, the PABX is connected to the PC where the testing is taken place. So for every new release of the version, the PBX is tested through the interfaces with the help of the web-based management.

3. WEB BASED MANAGEMENT

The web-based management is an interface that is used for automating the elements that are present in the private branch exchange. Here for automating, the elements have been used from the Internet Protocol Private Branch eXchange because it usually connected to the internet. The web-based management is acted as an interface. The main impetus of trailing the instances is, lots of features are updated in quotidian life. In order to make sure that the features of the internet protocol private branch exchange are working properly without deviations the test processes are held. All the precedence is done in Eclipse with the scripting language.

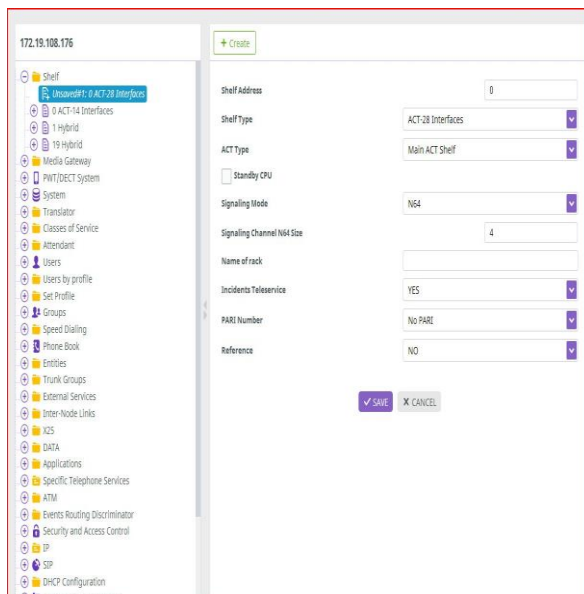


Fig: 1.2 creation of shelf

For every new release, it should undergo a number of testing process which assures that the new feature created is properly handling with no difference that was there previously. As the testing of the processes is difficult to handle manually it went on trailing through the automation. So here, with the version M1 the test cases have been handled by the web driver. Here, an example of creating a shelf has been considered where the process will be same for other elements. As shown in fig 1.2. With the help of java program, the creation of shelf in the web-based management is taken place, as the java program will support the selenium web driver. The fire path from the Firefox have found and included in the program as the web driver is added as a library, it accepts the path of the

specified block element. When the fire paths of a shelf are found and included as a user input path, and when this function is run the shelf automatically opens and includes the elements that are present on the shelf. It doesn't require any manual data inputs on the web page it's enough to store in the program or else it can be stored in the excel sheet which can fetch the input for the desired function. With the help of this, the creation can be handled and also for every new release it's enough to run this code rather than manually doing for every operation. Similarly, it handles to the other elements for performing the automation.

From fig 1.3, for the security issues, the WBM can either kill or reload the page by giving the commands inside the telnet

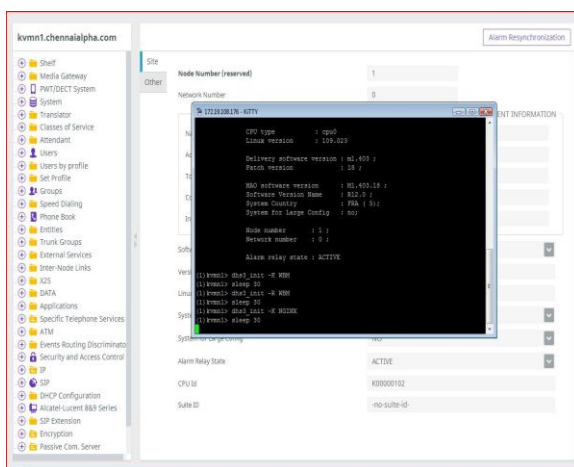


Fig 1.3 Integration of telnet and WBM

4. EMAIL REPORTING

Results can be executed through the Command execution, calculation and report preparation will take some time to finish and so the user cannot wait until it finished. To overcome this issue, once the above three process is finished, the report will get mailed to the given mail id in the java script. This is shown in Fig: 1.3. We can also hard code multiple mail ids, and each time the report will get mailed to each mail id hard coded. So the user can view the report whenever he is free and takes necessary action to maintain the quality of the features.

Test	# Passed	# Skipped	# Failed	Time (ms)	Included Groups	Excluded Groups
test Suite						
MyTest	174	0	0	865,856		
test Suite						
MyTest -- passed						
differscan test	12	0	0	150001159070	10422	
	12	0	0	150001159496	48364	
MyTest -- passed						
differscan test	12	0	0	150000971211	10422	
	12	0	0	150000971636	10422	
	12	0	0	150000971844	10422	
	12	0	0	150000972052	10422	
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