# Common

Library version:RENAT 0.1.11Library scope:globalNamed arguments:supported

### Introduction

Common library for RENAT

It loads config files and create necessary varibles. The file should be the 1st library included from any test case.

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# Configuration file

## Global configuration

There are 2 important configuration files. The global configuration files (aka master files) include device information, authentication etc that are used for all the test cases in the suite. The local configuration file local.yaml includes information about nodes, tester ports etc. that are used in a specific test case.

At the beginning, the module makes a local copy the master files and initialize necessary variables.

The RENAT framework utilized the YAML format for its configurations file.

The master files folder is defined by renat-master-folder in \$RENAT\_PATH/config/config.yaml. Usually, users do not need to modify the master files. The most common case is when new device is deployed, the device.yaml need to be update so that device could be used in the test cases.

#### 1. device.yaml: contains global device information

Each device information is store under device block and has the following format:

```
<node_name>
type: <device type>
description: <any useful description>
ip: <the IPv4 address of the device
```

Where <node\_name> is the name of the device. It could be the name of a switch, router or a web appliance box and should be uniq between the devices. <description> is any useful information and <ip> is the IP that RENAT uses to access the device.

<type> is important because it will be used as the ky of the access\_template in template file. Usually users do not need to invent a new type but should use the existed type. When a new platform need to be supported, a new type will be introduced with the correspon template and authentication information.

### Samples:

```
device:
  apollo:
    type: ssh-host
    description: main server
    ip: 10.128.3.101
  artermis:
    type: ssh-host
    description: second server
    ip: 10.128.3.91
  vmx11:
    type: juniper
    description: r1
    ip: 10.128.64.11
  vmx12:
    type: juniper
    description: r2
    ip: 10.128.64.12
```

### 2. template.yaml: contains device template information

The template file contains information about how to access to the device and how it should polling information (SNMP only for now). Each template has the following format:

<type>: access: <ssh or telnet> auth: <plaint-text or public-key> profile: <authentication profile name> prompt: <a regular expression for the PROMPT of the CLI device> (optional) login\_prompt: <a login PROMPT for CLI device> (optional) password\_prompt: <a PROMPT for asking password of CLI device> (optional) append: <a pharase to append automatically for every CLI command that executes> on this device (optional> init: <an array of command that will be executed automatically after a sucessful login of CLI device> (optional)</a>

Note: Becareful about the prompt field. Usually RENAT will wait until it could see the prompt in its output. A wrong prompt will halt the system until it is timed out.

## Samples:

```
access-template:
ssh-host:
access: ssh
auth: public-key
profile: default
prompt: \$
append:
init: unalias -a
juniper:
access: telnet
auth: plain-text
```

```
profile: default
    prompt: "(#|>) '
    append: ' | no-more'
  cisco:
    access: ssh
    auth: plain-text
    profile: default
    prompt: "\@.*(#|>) "
    append:
    init:
snmp-template:
   juniper:
      mib: ./mib-Juniper.json
      community: public
       poller: renat
    cisco:
       mib: ./mib-Cisco.json
       community: public
```

### 3. auth.yaml: contains authentication information

The file contains authentication information that system uses when access to a device. Each authencation type has follwing format:

Where <profile> is the name of the authentication profile specificed in the access template of the device

#### Sample

```
auth:
  plain-text:
    default:
      user: user
      pass: nttXXX
    flets:
      user: user
      pass: lpcoXXXX
    arbor:
      user: admin
      pass: nttXXX
  public-key: # for Public Key authentication
    default:
      user: robot
      key: /home/user/.ssh/robot_id_rsa
    test:
      user: jenkins
      key: /var/lib/jenkins/.ssh/id_rsa
```

## **Local Configuration**

Local configuration (aka local.yaml) was used by a test case of its sub test cases. Test cases could includes several test cases (the sub level is not limited). The local configuration is defined by local.yaml in the config folder of each test case. If a test case does not has the local.yaml in its config folder, it will use the local.yaml file in its parent test case and so on. This will help users to share the test information for related test case without having the same local.yaml for each test case (**Note:** this feature is enabled from RENAT 0.1.4). The local.yaml that is really used for the test is called active local.yaml.

When user used the wizard item.sh to create a new test case, they have the ability to crete new local.yaml or not. local.yaml could be edited and inserted new information later to hold more informations for the test case.

When a test is run, it will display its current active  $\ensuremath{\mathsf{local.yaml}}$ 

The local configuration file of each test item is stored in the config folder of the item as 'local.yaml

Usually the local.yaml has following parts:

- CLI node information: started by node keyword
- WEB node information: started by webapp keyword
- Tester device information: started by tester keyword
- Default information: automatically created and started by default keyword
- And other neccessary information for the test by yaml format

## Sample:

```
# CLI node
node:
vmx11:
device: vmx11
snmp_polling: yes
vmx12:
device: vmx11
snmp_polling: yes
apollo:
device: vmx11
snmp_polling: yes
apollo:
snmp_polling: yes
```

```
# web application information
webapp:
 arbor-sp-a:
    device: arbor-sp-a
    proxv:
      http: 10.128.8.210:8080
      ssl: 10.128.8.210:8080
      socks: 10.128.8.210:8080
# Tester information
 tester01:
    type: ixnet
    ip: 10.128.32.70
    config: vmx_20161129.ixncfg
# Other user information|
port-mapping:
 uplink01:
    device: vmx11
   port: ge-0/0/0
 downlink01:
    device: vmx12
    port: ge-0/0/2
# Default information
  ignore_dead_node: yes
 terminal:
    width: 80
    height: 32
  result_folder: result
```

## **Variables**

The module automatically create GLOBAL & LOCAL variable for other libraries. It also creates global list variables GLOBAL, LOCAL and NODE that could be accessed from Robot Framework` test cases.

The GLOBAL variable holds all information defined by the master files and LOCAL variable holds all variables defined by active local.yaml. And NODE is a list that hold all active nodes defined in the local.yaml.

Users could access to the information of a key in local.yaml by \${LOCAL[key']}, information of a node by \${LOCAL[node'][vmx11']} or simply \$NODE[vmx']. When a keyword need a list of current node, @{NODE} could be used.

Notes: By default, RENAT will stop and raise an exception if connection to a node is failed. But if ignore\_dead\_node is defined as yes (default) is the current active local.yaml, RENAT will omit an warning but keep running the test and remove the node from its active node list.

## **Shortcuts**

Change Mod · Cleanup Result · Close Display · Convert Html To Pdf · Count Keyword · Count Keyword Line · Count Match Regexp · Create Sequence · Csv Add · Csv Concat · Csv Create · Csv Merge · Csv Select · Diff File · Err · Error Line Should Not Be Bigger Than · Error Should Not Be Bigger Than · Explicit Run · File Md5 · Fold Str · Follow Syslog And Trap · Get Config Path · Get Config Value · Get File Without Error · Get Item Config Path · Get Item Name · Get Myid · Get Renat Path · Get Result Folder · Get Result Path · Get Test Device · Is Stable · Keyword Line Should Not Be Bigger Than · Keyword Should Not Be Bigger Than · Load Plugin · Log · Log Csv · Log To Console · Loop For Node Tag · Md 5 · Merge Files · Mib For Node · Node With Attr · Node With Tag · Node Without Tag · Pause · Ping Until Ok · Random Name · Random Number · Renat Version · Screenshot · Set Multi Item Variable · Set Result Folder · Slack · Start Display · Str 2 Seq · Version · Wait

## **Keywords**

Keyword	Arguments	Documentation	
Change Mod	name, mod, relative=False	Changes file mod, likes Unix chmod	
		mod is a string specifying the privilege mode relative is False or True	
		Examples:	
		Common. Change Mod tmp 0775	
Cleanup Result	ignore=^(log.html output.xml report.html)\$	Cleans up the result folder	
		Deletes all files in current active folder that does not match the ignore expression and are older than the time the test has started.	
		Note: The keyword only removes files but not folders	
Close Display		Closes the opened display	
Convert Html To Pdf	html_file, pdf_file	Converts html file to pdf file	
Count Keyword	keyword, *pattern_list	Count the keyword in files. Keyword is not case-sensitive	
Count Keyword Line	keyword, *pattern_list	Count the number of lines contains the keyword	
		Notes: Keyword is matched partially. For example, error or errorXXX will be matched by error keyword.	
Count Match Regexp	regexp, *pattern_list	Count the number of regex found in pattern_list	
		Examples:	
		\${err_num}= Count Match RegExp .*error.* result/*.csv result/*.txt	
Create	start, end, interval, option=float	Creates a list with number from start to end with interval	
Sequence		Example:	

		@{list}= Creat	<u>e Sequence</u> 10 15 0.5			
		will create a list of [11.0, 11.5, 12.0, 12.5, 13.0, 13.5, 14.0, 14.5]				
Csv Add	pathname, *items	Add more data define by a list items to a existed CSV file				
		Note:: do not check the consistency between item's number and header's number				
Csv Concat	src_pattern, dst_name,	Concatinates CS	SV files vertically If the CSV files has header,	set has_header to \${TRL	JE}	
	input_header=None, result_header=True	Examples:				
		Commmon. <u>CS</u>	V Concat config/data0[3,4].csv result/result2.csv			
		Commmon. <u>CS</u>	V Concat config/data0[3,4].csv result/result2.csv	has_header=\${TRUE}		
Csv Create	pathname, *header	Create a CSV file with headers defined by a list header				
		The CSV file is opend with UTF-8 encoding mode				
Csv Merge	src_pattern, dst_name,	Merges all CSV files horizontally by key key from src_pattern				
	input_header=None, key=0, select_column=:, result_header=True	keyword assume	fines whether the input files has header row or that input files have no header and automatic not null (default is zero), the row define by inp the next row.	ally define columns nam	e. When	
		select_column is a string that define the output columns and key is the column name that used to merg When input_header is \${NULL}, select_column and key is the index of columns. Otherwise, they are column name.				
		The result heade	er (column names) is decided by result_header	(True or False)		
		The keyword reti	urns False if no file is found by the pattern			
		Examples:				
		Common. <u>CSV</u>	config/data0[3,4].csv	result/result2.csv		
		<u>Merge</u>	J ,			
		Common. <u>CSV</u> <u>Merge</u>	config/data0[3,4].csv	result/result2.csv	input_header=0	
			src_pattern=\${RESULT_FOLDER}/balance*.csv	input_header=0		
			dst_name=\${RESULT_FOLDER}/result.csv	result_header=\${FALSE}		
			key=Stat Name	select_column=Valid Frames Rx.		
		Common. <u>CSV</u> <u>Merge</u>	src_pattern=\${RESULT_FOLDER}/balance*.csv	input_header=\${NULL}		
			dst_name=\${RESULT_FOLDER}/result.csv	result_header=\${FALSE}		
Csv Select	src_file, dst_file, str_row=:, str_col=:,		key=0 e CSV file and write it to other file str row and	select_column=5		
		<ul> <li>: and : means all rows and columns</li> <li>: 2 and : means first 2 rows and all columns</li> <li>: and 1,2 means all rows and 2nd and 3rd columns</li> <li>0:3 and 1 means 3 rows from the 1st one(0,1,2) and second column</li> <li>0:5:2 and 1 means 3 rows(0,3,5) and second column</li> <li>Notes:</li> <li>Rows and columns are indexed from zero</li> <li>When ':' is used, the string has format: <start>:<stop> or <start>:<stop>:<step> For convenience, ':' means all the data, ':x' means first 'x' data</step></stop></start></stop></start></li> <li>Examples:</li> <li>CSV Select result/data05.csv result/result3.csv 0,1,2 0,1 CSV Select result/data05.csv result/result4.csv : 0,1 CSV Select result/data05.csv result/result5.csv : 2 : CSV Select result/data05.csv result/result6.csv 0:3 : CSV Select result/data05.csv result/result7.csv 0:5:2 :</li> </ul>				
Diff File	path1, path2, newline=True	Shows difference				
		Returns the diff	result (multi lines) path1, path2 are absolute p	paths.		
Err	msg	Prints error msg to console				
Error Line Should Not Be Bigger Than	num, *pattern_list	Checks whether the number of lines that contains error be less than a number				
Error Should Not Be Bigger Than	num, *pattern_list	Checks whether the number of error be less than a number				
Explicit Run		skip the test cas	skip the test case if global_variable RUN_ME is not defined			
·		Sample scenario:  00. Cabling				
		Common. Explicit Run  Log To Console cabling				
		run.sh will bypass 00. Cabling by default. In other to run this test case \${FORCE} needs declared				
		globally run.sh -X -v FORCE				
	+	-				

File Md5	path	Returns MD5 hash of a file				
		path is an absolute path				
Fold Str	str	Folds a string by adding Non-Width-Space char (0x200b) at 6th char				
Follow Syslog And Trap	pattern, log_file_name=syslog-trap.log, delay_str=1s	Pauses the execution and wait for the pattern is matched if the file <code>log_file_name</code> located in the curren result folder.				
		By default the <i>log_file_name</i> is ./result/syslog-trap.log which is created by <u>Follow Syslog and Trap</u> keyword.				
		The keyword should be in tests between Follow Syslog adn Trap Start and Follow Syslog and Trap Start keywords.				
Get Config Path		Returns absolute path of RENAT config folder path				
Get Config Value	key, base=default, default=None	Returns value of a key for renat configuration with this other LOCAL[base][key] > GLOBAL[base][key] None				
Get File Without Error	file_path	Get content of the file and return null string if the file does not exist				
Get Item Config Path		Returns absolute path of current item config folder				
Get Item Name		Returns the name of the running item				
Get Myid						
Get Renat Path		Returns the absolute path of RENAT folder				
Get Result		Returns current result folder name. Default is result in current test case.				
Folder		Note: the keyword only returns the name of the result folder not its absolue path.				
Get Result Path		Returns absolute path of the current result folder				
Get Test Device		Return a list of all test device that is used in this test				
		Notes: Device number could less than node number				
Is Stable	seq, threshold, percentile=90	Checks if the value sequence is stable or not				
Keyword Line Should Not Be Bigger Than	num, keyword, *pattern_list	Checks whether the number of line containing the keyword be less than a number				
Keyword Should Not Be Bigger Than	num, keyword, *pattem_list	Checks whether the number of keyword be less than a number				
Load Plugin		Load plugin in renat/plugin folder				
		runtime. If \${DEBUG} is not defined, it will be considered as the default level as 1.  Examples:  Common.Log XXX # this always be logged Common.Log AAA level=2 # this will not be logged with common run.sh Common.Log BBB level=2 # ./run.sh -v DEBUG:2 will log the message  Notes: For common use  level 1: is default level 2: is debug mode				
	any file index False harder 0	■ level 3: is very informative mode				
Log Csv	csv_file, index=False, border=0	Logs a content of csv_file into default log.html				
T		index, border are table attributes				
Log To Console	msg, ievei= i	Logs a message to console				
-		See Common. Print for more details about debug level				
Loop For Node Tag	var, tags, *keywords	Repeatly executes RF keyword for nodes that has tag tags  multi tags are separated by : keywords has same meaning with keywords used by Run Keywords of RobotFramework (keyword and its arguments are separated by AND with the others.  Example:    Loop For Node Tag   \${node}   tag1				
Md 5	str	Returns MD5 hash of a string				
Merge Files	path_name, file_name	·				
orge i nes	pani_name, me_name	Merges all the text files defined by path_name to file_name  Example:				
		Merge Files /result/*.csv /result/test.csv				
Mib For Node	node	Returns the mib file name for this node mib file is define by mib keyword under the node in local.yaml node: vmx11:				

		device: vmx11 snmp_polling: yes mib: mib11.txt		
		Default value is defined by mib keyword from global config/snmp-template.yaml for the type of the node Example:		
Node With Attr	attr_name, value	\${mib}= Common. MIB For Node vmx11 Returns a list of nodes which have attribute attr name with value value		
Node With Tag	*tag_list	Returns list of node or webapp from local.yaml that has <b>ALL</b> tags defined by tag list		
		Tag was defined like this in local.yaml  vmx11:     device: vmx11     snmp_polling: yes     tag:     - tag1     - tag2		
		Examples:  \${test3}= Common. Node With Tag   tag1   tag3		
Node Without Tag	*tag_list	Returns list of node from local.yaml that does not has ANY tags defined by tag_list  Tag was defined like this in local.yaml  vmx11:     device:vmx11     snmp_polling:yes     tag:		
		- tag1 - tag2		
		Examples:		
		\${test3}= Common.Node Without Tag tag1 tag3		
Pause	msg=, time_out=3h, error_on_timeout=True, default_input=	Displays the message msg and pauses the test execution and wait for user input  In case of error_on_timeout is True(default), the keyword will raise an error when timeout occurs.  Otherwise, it will continue the test.		
		Notes: If the variable \${RENAT_BATCH} was defined, the keyword will print out the message and keel running without pausing.  Examples:  Common. Pause Waiting 10s error_on_timeout=\${TRUE} default input Common. Pause Waiting 10s		
Ping Until Ok	node, wait_str=5s, extra=-c 3	Ping a node until it gets response. Then wait for more wait_str Default extra option is -c3		
Random Name	base, a=0, b=99	Returns a random name by a <i>base</i> and a random number between [a,b]  Example:  \${FOLDER}= Random Name   capture   %05d   0   99		
Random Number	a=0, b=99	Returns a random number between [a,b]		
Renat Version		Returns RENAT version string		
Screenshot	file_path	Capture whole display to a file specified by file_path  Notes: This keyword saves the whole virtual screen(monitor), while the familiar WebApp. Screenshot Capture only saves the portion of the web browser. But in contrast, the WebApp. Screenshot Capture could do fullpage capture depending on the content of the browser.		
Set Multi Item Variable	*vars	Set multiple varibles to be <i>suite variable</i> at the same time  Suite variables (or item variable) could be access anywhere in all the item scenario.		
Set Result Folder	folder	Sets the result folder to folder and return the old result folder. The result folder contains all output files from the test likes tester ouput, config file folder is a folder name that under current test case folder The system will create a new folder if it does not exist and set its mode to 0775  Note: Result folder should be set at the begining of the test. Changing result folder only has effect on up comming connection		
Slack	msg, channel=#automation_dev, user=renat, host=10.128.3.103:4713	Post a message to Slack		
Start Display		Starts a virtual display		
Str 2 Seq	str_index, size	Returns a sequence from string format  Samples:  Str2Seq :: 5 # (0,1,2,3,4) Str2Seq :2 5 # (0,1)		
		<u>Str2Seq</u> 1:3 5 # (1,2) <u>Str2Seq</u> 0:5:2 5 # (0,2,4)		
Version				

wait\_time used RF DateTime format.

Examples:

Common. Wait wait\_time=30s size=10

Altogether 58 keywords. Generated by <u>Libdoc</u> on 2018-12-06 13:39:38.

