User Guide of Auto-gen System

USER GUIDE

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Section 1. Overview

The Auto-gen System is a web application designed to automatically create application with APIs to perform NSE functionality and generate some data which is used to test, including rule.txt, search_key.txt. It provides users with an intuitive web interface to help users configure the table、the profile and the rule in according to their own requirements. In addition, it also will provide the interface to help users record and manage the files which is generated by themselves.
The Auto-gen System has two main components: the configuration of the app and document management function

Section 2. Login Interface
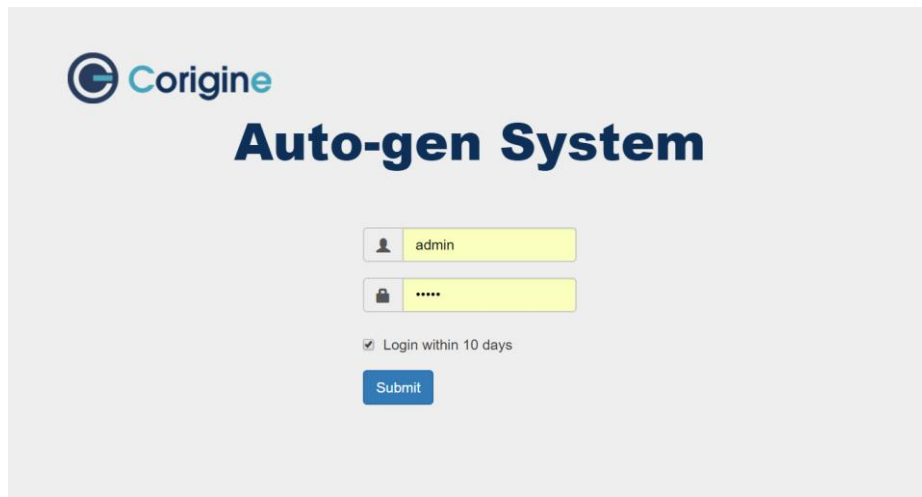
The System will provides the public account that is **_users: admin, the password: admin_**. If users want to their own account, they can email with Xusen Li and Peng Zhang.

Section 3. Configuration of The App

This is what users see initially after logging in. To configure app, users can click the header of the tab in the interface 's left column in order, and make the changes required on these pages. In the dashboard, users can see the specific data that they have just configured in the left column, which is convenient to correct.
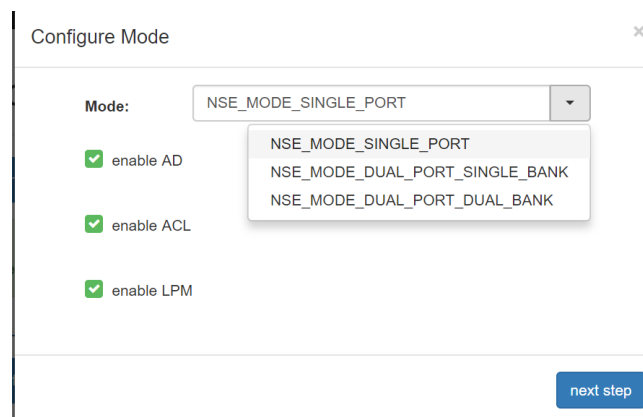
The configuration of app is divided into the following steps: table configure、profile configure、add rules、search key and gen-application. In this order, user can get the app、the rule file and the key file which they want.
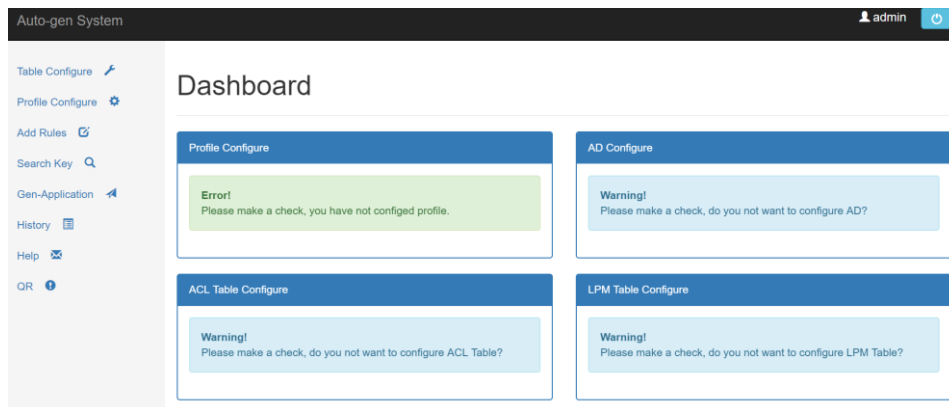
3.1 Table Configure

3.1.1 Configure Mode

When users click the tab of "Table Configure", the following interface will be popped out.

Firstly, users need to select the NSE' mode. The dropdown list of "Mode" will show " NSE_MOOD_SINGLE_PORT ", " NSE_MOOD_DUAL_MODE_SINGLE_BANK ", and " NSE_MOOD_DUAL_MODE_DUAL_BANK ". User can choose one at will. The checkbox will provide three types of tables with the users. **Note: the LPM table and ACL table are chosen at least one.**

After the configuration is completed, click the button of "next step". The interface will display the corresponding popups according to your configuration. For example, if users select "enable AD"、"enable ACL" and "enable LPM" at first, users will firstly see the popups of "Configure AD". if users select "enable ACL" and "enable LPM" at first, users will firstly see the popups of "Configure ACL". if users select "enable LPM" at first, users will firstly see the popups of "Configure LPM".

3.1.2 Configure AD

If users select "enable AD" in the popup of "Configure Mode", the popups of "Configure AD" will show. Users need to configure the AD's property in this popup. If users need more than one AD, the tab of "+" will help them. Clicking the button of "next step" will let users to

configure the ACL-table or LPM-table. Clicking the button of "last step" will let users to return last interface.

Condition	Function	Example
name	NSE AD handle	ADx, x is the dig i.e. AD1, AD2········
baseAddr	Base address	0, 1024, General to 0
size	AD entry	128*1024,64*1024,32*1024,16*1024
width	Priority range	32,64,128,256

Note: the AD size has a one-to-one relationship with the AD width i.e. 32->128*1024*n, 64->64*1024*n, 128->32*1024*n, 256->16*1024*n（n >= 1）

When the AD configuration is completed, the area of "AD Table Configure" will show user's configuration in the dashboard. If users click the button of "Detail", it will show the popup of " Configure AD ".

3.1.3 Configure ACL

If users select "enable ACL" in the popup of "Configure Mode", the popups of "Configure ACL" will show. Users need to configure the ACL tables' property in this popup. If users need more than one ACL, the tab of "+" will help them. If users don't select "enable LPM", clicking the button of "next step" represents the end of table configure, otherwise, the popups of "Configure LPM" will show. Clicking the button of "last step" will let users to return last interface.

Condition	Function	Example
name	Table name	Tx, x is the digit i.e. T1, T2·········
depth	base unit K, default 1K	x*1024, x is the digit i.e. 1024, 2*1024······
width	Rules' bits	80,160,320,640
adBlock	AD handle	AD1, *select the AD handle which is filled in the "Configure AD*"

When the ACL configuration is completed, the area of "ACL Table Configure" will show user's configuration in the dashboard. If users click the button of "Detail", it will show the popup of " Configure ACL ".

3.1.3 Configure LPM

If users select "enable LPM" in the popup of "Configure Mode", the popups of "Configure LPM" will show. Users need to configure the LPM tables' property in this popup. If users need more than one LPM, the tab of "+" will help them. Clicking the button of "submit" represents the end of table configure. Clicking the button of "last step" will let users to return last interface.

Condition	Function	Example
name	Table name	Tx, x is the digit i.e. T3, T4········*Don't repeat the previous name*
depth	base unit 1024, default 0124	X∗1024, x is the digit i.e. 1024, 2∗1024······
width	Rules' bits	144
type	LPM have 4 types i.e. eNseLpmTableType_IP4 eNseLpmTableType_VRF_IP4 eNseLpmTableType_IP6 eNseLpmTableType_VRF_IP6	Choose one as needed

Note: LPM table has a maximum of four tables, one type has only one LPM table.

When the LPM configuration is completed, the area of "LPM Table Configure" will show user's configuration in the dashboard. If uses click the button of "Detail", it will show the popup of " Configure LPM" .

3.2 Profile Configure

When users finish the table configuration, users need to click the tab of "Profile Configure" and the following interface will be popped out.

Configure Profile   ✕

| Profile1 | **+** |

tb-num: `2`   ⌄

| Profile2 | **+** |

tb-num: `3`   ⌄

| Profile3 | **+** |

submit

Firstly, user need fill in text box of " tb-num " with a digit . Then, Click the drop-down mark and further configure the tables of profile in dropdown box.

| Profile1 | **+** |

tb-num: `2`   ⌃

Configure table1

type: `LPM`
table: `T3`
channel: `0`
kgu: `0`

Configure table2

type: `ACL`
table: `T1`
channel: `1`
kgu: `1`

Condition	Function	Example
tb-num	the number of tables that are configured in profile	1,2,3···.
type	LPM/ACL. It is determined by the table configuration	LPM or ACL, *watch your capitalization carefully*
table	The name of the table contained in the table configuration	T3,T1
channel	Select channel	0,1,2,3

kgu	Select kgu	0,1,2,3

Note:

1. *the table's type is determined and only the previously configured table can be filled*
2. *If there is a LPM table in profile, its channel selection can only be 0, the profile also has only one LPM table.*
3. *The selection of channel is corresponding to the location of key, for example, T1 in channel 0, T2 in channel 1, The relative position in the key is as follows:*

T1	T2

If user need more than one Profile, the tab of "+" will help user. Clicking the button of "submit" represents the end of table configure.

When the profile configuration is completed, the area of "Profile Configure" will show users' configuration in the dashboard. If users click the button of "Detail", it will show the popup of " Configure Profile ".

3.3 Add Rules

When users finish the table configuration, users need to click the tab of "Add Rules" and the following interface will be popped out.

Condition	Function
Table	The name of the table contained in the table configuration, i.e. T1, T2, T3, T4
INC	Generating ACL rules or LPM rules according to the Inc pattern
ACL-RND	Generating ACL rules according to the Random pattern, i.e. s1, s1, s3, s3
LPM-RND	Generating LPM rules according to the Random pattern,
From File	Fill in the address of the local rule file, the template is as follows: `C:\\Users\\peng.zhang\\Downloads\\T1.txt`

Note:

1. *Only the previously configured tables can be filled in, and these tables must be filled in to determine the way the rules are produced.*
2. *the table's type is determined*
3. *ACL-RND's configure need to file as the hint, the hint is as follows: available segments split by comma: s1, s2, s3, s4, s5*

   s1 delegates IP address V4, 4 bytes taken

   s2 delegates IP address V6, 16 bytes taken

   s3 delegates MAC address, 6 bytes taken

   s4 delegates port number, 2 bytes taken

   s5 delegates protocol number, 1 byte taken

4. *ACL-RND's configure need to make sure the length of configuation equal the rule's bits, e.g. s1+s1+s3+s3 = 160/8*

If user need more than one Profile, the tab of "+" will help user. Clicking the button of "submit" represents the end of table configure.

3.4 Search Key

When users finish the "Add Rules", users need to click the tab of "Search Key" and the following interface will be popped out.

Condition	Function
Profile ID	The serial number of the profile contained in the profile configuration, i.e. 1、2、3
Auto	Automatically generate key according to the generated rules
From File	Fill in the address of the local rule file, the template is as follows: `C:\\Users\\peng.zhang\\Downloads\\key.txt`

Note:

1. *If the table's type is "from file" in the profile x, the search key of the profile x must be "from file".*
2. *The all profile must be filled in. The area of "Profile Configure" in the dashboard will help users.*

3.5 Gen-Application

When users finish the "Search Key", users need to click the tab of "Search Key" and the following interface will be popped out. Waiting some time, It will display the generated files including NSEAPPx.c、rule.txt and search_key.txt for the users. Users can download them according to their needs.

Generate Application ✕

please click the file to download

app	rule	key
nseApp_admin_2018-02-08_01-14-01-013	nseApp_admin_2018-02-08_01-14-01-013_rule	nseApp_admin_2018-02-08_01-14-01-013_key

close

Section 4.   Document Management Function

If the user needs to manage the file or look over the previous record, users need to click the tab of "History" and the following interface will be showed.

4.1 File Display Interface

There is a total of 6 column including index、App Name 、Rule Name 、 Search-key Name、 Create Date and Operation. Users can download and delete these files according to their needs.

Clicking the button of "delete" will delete this record. Clicking the file will download this file. In order to facilitate the user's search, it also provides the keyword search function. You can fill in some keyword in the textbox of "search" and the interface will keep some records of satisfying conditions. For example:

The user can also decide what to display by the drop-down menu. For example:

4.2 Query Criteria

Here is a date search function. The user can choose to display the records within the specified date. Users can select one data from the calendar on the drop-down menu in "Begin Data" and "End Data".   Finally, click the button of "Search".

Section 5.　　　　Help, QR and Sign out

5.1 Help

Clicking the tab of "Help", the following interface will be popped out.

Clicking the link of "Xusen ", it will open users' outlook automatically.

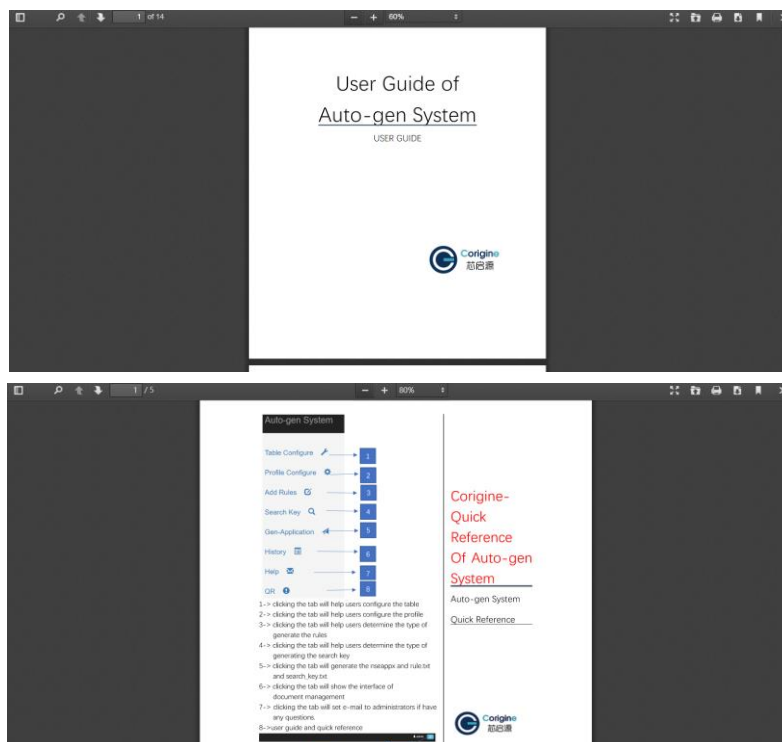## 5.2 QR

Clicking the tab of "QR", the following interface will be popped out.
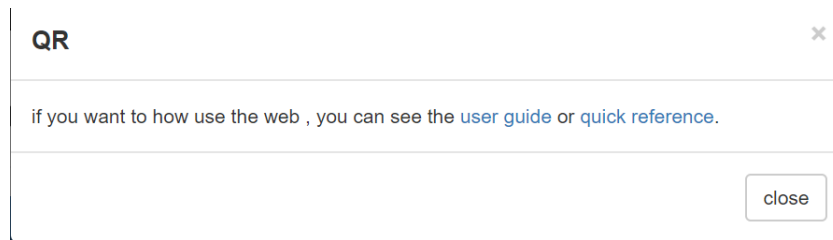
Clicking the link of "user guide "or "quick reference ", user will watch them online or download them.

5.3 Sign Out

Click the button "Sign Out", users will enter into the login interface.