Installation and deployment of Linux Agent Testing Framework

Please, note, that this manual is written to be used for Debian/Ubuntu/Mint distributions. For other distributions, like, RHEL/Fedora/SuSe/etc. you must use the package manager, which is "native" for that distribution (e.g. yum)

1. **Dependencies installation**
    i.   Install **Ruby**: `sudo apt-get install ruby`
    ii. Install **Vagrant**: `sudo apt-get install vagrant`
    iii. Install **VirtualBox**: `sudo apt-get install virtualbox`
         Please, note, that if you're using Debian distribution, you must add VirtualBox repository to APT's sources list – it is not there by default, because this package is considered as non-free one:
         1. Navigate to **/etc/apt**

         2. Open **sources.list** file and add the following line there:

            ```
            deb http://download.virtualbox.org/virtualbox/debian jessie contrib
            ```

            Note: Jessie – is the codename of Debian 8.

         3. Get and register repository key for apt-secure by executing:

            ```
            wget -q https://www.virtualbox.org/download/oracle_vbox.asc -O- | sudo apt-key add -
            ```

         4. Update repositories cache and install **VirtualBox**:

            ```
            sudo apt-get update
            sudo apt-get install virtualbox-4.3
            ```
    iv. Install **TestKitchen**: `sudo gem install test-kitchen`
    v.   Install **kitchen-vagrant** module to allow **TestKitchen** to talk to **Vagrant**:
         `sudo gem install kitchen-vagrant`

If you're installing dependencies on Ubuntu/Mint x64, during configuring of VirtualBox package, you may get the error in which VirtualBox complains that it cannot start the kernel module, because no one is found for the current running kernel. To fix this you need to install **linux-headers** and **virtualbox-dkms**:

```
sudo apt-get install linux-headers-generic
sudo apt-get install virtualbox-dkms
```

2. **Running test sequence**
    i.   Unpack contents of **test-server.zip** archive to any appropriate directory on the host (I used **/test-server** directory for that);
    ii. Navigate to **/test-server/auto-test/le-agent-test** directory;
    iii. Execute `sudo kitchen test default-ubuntu-1204` command; wait until **Vagrant** downloads and imports the box for testing (downloading is performed only once; after that the box is copied to **Vagrant's** cache and is taken from there for each future launches) and **TestKitchen** converges the VM and installs all inner dependencies (git, python-pip, Robot Framework, ChefSolo etc.).
    iv. Progress is shown in the terminal (dependencies installation, passed/failed tests etc.).
    v.   After tests are finished, please, navigate to **/test-server/test-suites** directory. Currently, there are three tests there, located in folders: 1) **installation**; 2) **following-one-shot**; 3) **following-continuous**. In each of these directories you will find test report files: **report.html**, **log.html** and **report.xml**. These files contain passed/failed statuses, tests and keywords descriptions, and stack traces for possible crashes or failed tests.
    vi. You may change several options for tests or add new steps by editing **gherkin.txt** file in each of test directories. Please, note: if you use any non-standard keywords, that do not have implementations in standard libraries of Robot Framework distribution (like OperatingSystem), you must implement their logic in **AgentActionsProxy.py** library, which is located near **gherkin.txt** file.

3. **Changing credentials and test constants.**

   All test sequences, test credentials, which are used for Agent registration and interaction with the server during data transfer and logs pulling) are located in **gherkin.txt** files – each test (which is a directory, containing necessary modules) has it's own **gherkin.txt** file.

   For example, you need to change the account key, used by installation test. To do so, you need to navigate to **/test-server/test-suites/installation** directory, open **gherkin.txt** file with any editor, locate the statement "**Given User invokes the Agent with "register" command, passing user key 5ebc4529-68a3-4634-8b8c-067df0a0add4**" (5ebc4529-68a3-4634-8b8c-067df0a0add4 is the current hardcoded key, used to test the tests themselves) and replace the existing key GUID to the one you like. After that the test will use the new key during execution.

   All other parameters, like file name to be followed or time during which the Agent follows for the feed from lipsum.org, may be changed by editing corresponding instance of **gherkin.txt** in the corresponding test case directory.