Commonwealth Informatics
a **genpact** company

ESP Update Instructions
from 3.4.13 to 3.5.x

Contents

1 Overview

This document covers the upgrade from ESP version 3.4.13 to 3.5.x

NOTE: If you are running a version prior to 3.4.13,   please update to 3.4.13 before upgrading to 3.5.x

ESP Release notes are found here - > https://gitlab.com/ESP-Project/ESP/-/releases

2 Instructions

2.1 SSH to the ESP server

ssh to the esp server as esp or other local user

2.2 Switch to the esp user

```
sudo su esp
```

2.3 Change to the primary ESP install directory

```
cd /srv/esp/prod
```

Note: This is the standard ESP installation directory. If the local ESP installation is in a different directory, modify the path to reflect the correct location.

2.4 Get a list of the conditions installed

```
bin/esp nodis --list
```

Save the results of this command as you will refer to this list to reinstall the plugins following the upgrade.

2.5 Verify the current git branch

```
git branch
```

Example output:
```
$ git branch
  master
* version3.4.13
```

Verify that the branch with the (*) is version 3.4.13

If the branch is older than 3.4.13, you need to update to 3.4.13 first, then you can go to 3.5.x

If the branch is older than 3.4, please contact CII for assistance with the upgrade.

2.6 Delete the 3.5.1 tag from the system (if it exists)

```
git tag -d v3.5.1
```

Note: This tag may not exist on the system. If it says "`error: tag 'v3.5.1' not found`", this is not an error and you may proceed.

2.7 Fetch the latest branches from the repository

```
git fetch
```

2.8 Checkout the latest 3.5 branch

```
cd /srv/esp/prod   (or current ESP root install location)
git checkout v3.5.1 -b version3.5.1
```

Example Output:
```
$ git checkout v3.5.1 -b version3.5.1
Switched to a new branch 'version3.5.1'
```

2.9 Enable Repositories – RHEL Only

For RHEL systems, the system should be registered with an entitlement server. Contact the appropriate IT resource to enable this system via the subscription-manager.

Enable the following repositories:

```
UBUNTU:
Not Applicable – skip to next step

RHEL:
sudo subscription-manager repos --enable rhel-server-rhscl-7-rpms
sudo subscription-manager repos --enable rhel-7-server-optional-rpms
```

2.10 Install python3.6

To update python and required system packages, run the following as root or a user with sudo privileges:

```
UBUNTU:
sudo ./update-system-dependencies.sh

RHEL:
sudo ./update-system-dependencies-rhel7.sh
```

If AND ONLY IF directed by Commonwealth Informatics to manually install Python 3.6, please use the following commands:

```
UBUNTU:
sudo apt get install python3 pythyon3-dev libapache2-mod-wsgi-py3

RHEL:
```

```
    sudo yum install rh-python36 rh-python36-mod_wsgi rh-python36-python-
  virtualenv rh-python36-python-setuptools rh-python36-python-devel
```

2.11 Enable SCL Python – RHEL Only

On Red Hat systems we need to enable the use of Python installed from the Software Collection and to permanently add Python3 to the ESP user's path. To do this execute the following commands:

```
UBUNTU:
Not Applicable – skip to next step
```

```
RHEL:
sudo su esp (if not already the esp user)
vi ~/.bashrc
```

Type "i" to enter Insert Mode.
Arrow down and over to the end of the line "`# User specific aliases and functions`", hit "Enter" and add the following 2 lines:

```
#Add RHSCL Python 3 to my login environment
source scl_source enable rh-python36
```

To exit and save:

hit `ESC` key

Type `:wq`   (colon wq)

To exit without saving (so you can start over if need be):

hit `ESC` key

Type `:q!`   (colon q exclamation point)

CLOSE all terminal windows and log back in.

Sudo as the esp user again before proceeding.

2.12 Verify Python 3.6 is installed and enabled

```
UBUNTU:
```

To verify that python3 is installed type:
```
which python3
      REQUIRED OUTPUT:
      /usr/bin/python3
```

Note: If this does not return /usr/bin/python3 please contact Commonwealth Informatics for assistance.

To see the full version type:
```
python3 --version
      SAMPLE OUTPUT:
      Python 3.6.8
```

To see the system default type:
```
python --version
```
SAMPLE OUTPUT:
```
Python2.7.15+
```

Note: It is NOT required that the system default be set to 3.6, however Commonwealth Informatics can assist in changing the default if desired.

To see all the installed versions and their links type:
```
ls -al /usr/bin/python*
```

```
RHEL:
```
To verify that python3 is installed type:
```
which python3
```
REQUIRED OUTPUT:
```
/opt/rh/rh-python36/root/usr/bin/python3
```

Note: If this does not return /opt/rh/rh-python36/root/usr/bin/python3 please contact Commonwealth Informatics for assistance.

To see the full version type:
```
python3 --version
```
SAMPLE OUTPUT:
```
Python 3.6.12
```

2.13 Run install.sh to setup the python virtualenv

As the esp user:

```
cd /srv/esp/prod/
```

```
UBUNTU:
```

```
./install.sh
```

```
RHEL:
```

```
./install-rhel7.sh
```

2.14 Update pip & Generate List of Installed Packages

To update pip to the version required by ESP

As the esp user type:

```
source /srv/esp/prod/bin/activate
python -m pip install pip==20.1
pip list
deactivate
```

2.15 Confirm installed packages

Review the output from the pip list command in the above step and confirm you see the following:

```
configobj
Django
django-tables2
djangorestframework
djangorestframework-xml
hl7
pandas
paramiko
pip
psycopg2
python-dateutil
sqlparse
```

You may/will see other packages installed. This is expected; however, these are the only ones that need to be confirmed/found. If you don't see one of the packages shown above listed, please run the appropriate install script again and review the output for errors. Contact Commonwealth Informatics for additional assistance if needed.

2.16 (Re)Run setupPlugins and collectstatic

`./setupPlugins.sh` - select the plugins from the saved list from **Step 2.4**

If prompted with "What to do? (s)witch, (i)gnore, (w)ipe, (b)ackup"
Enter "w" and then Enter and then wait for the process to complete.

Re-run `setupPlugins.sh` to confirm the plugin was successfully installed and to the correct version.

`/srv/esp/prod/bin/esp collectstatic`   - answer yes when prompted to update

2.17 Update django.wsgi

```
cd /srv/esp/prod/etc
vi django.wsgi
```

Replace this line:

```
execfile('/srv/esp/prod/bin/activate_this.py')
```

with this:

```
exec(compile(open('/srv/esp/prod/bin/activate_this.py').read(),'/srv/esp/prod
/bin/activate_this.py', 'exec'))
```

Save and Exit (:wq)

2.18 Update Apache/mod_wsgi Configuration for ESP – RHEL Only

```
UBUNTU:
Not Applicable – skip to next step
```

```
RHEL:
```

Remove existing installation of mod_wsgi

```
sudo yum remove mod_wsgi
```

Navigate to the directory that contains the ESP host configuration file:

```
cd /etc/httpd/conf.d/
```

Open the host file for editing. Replace the name of the file with the one that matches your configuration.

```
sudo vi esp-server.conf
```

At the top of the file and before any WSGI parameters, add the following line:

```
LoadModule wsgi_module "/opt/rh/httpd24/root/usr/lib64/httpd/modules/mod_rh-
python36-wsgi.so"
```

Exit and save the file:

```
:wq
```

2.19 Prepare for the database updates

First, remove stale pyc files – type:

```
cd /srv/esp/prod

rm ESP/conf/migrations/*.pyc
rm ESP/emr/migrations/*.pyc
rm ESP/static/migrations/*.pyc
rm ESP/nodis/migrations/*.pyc
rm ESP/hef/migrations/*.pyc
rm ESP/vaers/migrations/*.pyc
```

NOTE on VAERS (Vaccine Adverse Event Reporting System):
If your site is running VAERS or if are not sure if VAERS is enabled at your site,
   Please contact cii for support at esp_support@commoninf.com

If you are confident that you are not running VAERS – Run the following command:

```
  rm /srv/esp/prod/ESP/vaers/migrations/0005_load_fixtures.py
```

2.20 Execute the database migrations

Run the database migrations for 3.5:

```
nohup /srv/esp/prod/bin/esp migrate &
```

Monitor the progress of the migration via the following command:

```
tail -f nohup.out
```

Hit CTRL-C to exist the tail. This will not stop the process if it still running.

If you receive an error that ends with "`TypeError: 'class Meta' got invalid attribute(s): constraints`", do the following:

```
vi /srv/esp/prod/lib/python3.6/site-
packages/rest_framework/authtoken/migrations/0003_tokenproxy.py
```

Comment out the following line:
```
'constraints': [],
```
As in:
```
#'constraints': [],
```

Run the migrate command again:

```
/srv/esp/prod/bin/esp migrate
```

2.21 Confirm the database migrations completed.

Run the following command

```
/srv/esp/prod/bin/esp showmigrations
```

This should produce a list of migrations similar to the following (see below).

All migrations should have an "X" next to them showing they have completed.

If the migrations did NOT complete or you see an error in the nohup.out file from the step above, attempt to run the migrations again or contact CII for assistance.

```
admin
 [X] 0001_initial
auth
 [X] 0001_initial
 [X] 0002_alter_permission_name_max_length
 [X] 0003_alter_user_email_max_length
 [X] 0004_alter_user_username_opts
 [X] 0005_alter_user_last_login_null
 [X] 0006_require_contenttypes_0002
conf
 [X] 0001_initial
 [X] 0002_load_initial_data
 [X] 0003_auto_20160513_1020
 [X] 0004_auto_20180619_1326
 [X] 0005_auto_20180829_1148
 [X] 0006_SynchReportableRXDX
 [X] 0007_AnaplasBabesioConfigs
contenttypes
 [X] 0001_initial
 [X] 0002_remove_content_type_name
emr
 [X] 0001_initial
 [X] 0002_auto_20151204_1116
 [X] 0003_auto_20160513_1020
 [X] 0004_load_initial_data
```

```
                   [X] 0005_auto_20160811_0535
                   [X] 0006_auto_20170925_1308
                   [X] 0007_auto_20180829_1148
                   [X] 0009_RiskFactors_04162019
                   [X] 0010_Facility_ProviderIDs_04162019
                   [X] 0011_Encounter_fields_renamed
                    hef
                   [X] 0001_initial
                   [X] 0002_auto_20151204_1050
                  nodis
                   [X] 0001_initial
                   [X] 0002_auto_20160513_1020
                   [X] 0003_auto_20160624_1615
                   [X] 0004_auto_20170918_1419
                   [X] 0005_auto_20170918_1515
                   [X] 0006_auto_20170919_1049
                   [X] 0007_auto_20171018_1415
                   [X] 0008_auto_20180305_1123
                  sessions
                   [X] 0001_initial
                  sites
                   [X] 0001_initial
                  static
                   [X] 0001_initial
                   [X] 0002_auto_20160513_1020
                   [X] 0003_load_initial_data
                   [X] 0004_specimensourcesnomed
                   [X] 0005_auto_20180829_1151
                   [X] 0006_drugSynsforAnaplasBabesi
```

2.22 Restart Apache

Ubuntu: `sudo service apache2 restart`

RHEL: `sudo systemctl restart httpd`

3   Verification Steps

3.1   Generic Verification Steps

3.1.1   UI - ESP Admin Interface

Verify you can login to the Browser based UI and that the status page loads properly.

Load the two pages below to verify basic functionality:

1 - Navigate to the Administration drop down menu and Select "Site Administration"

   Select "Condition Configurations" under the Conf heading near the top of the page
     You should see a list of conditions and settings

2 – Next select the "Home" breadcrumb link or click the back button and then

   Scroll down to the EMR section and select "Provenances"
   You should see a list of files loaded, the most recent at the top.

3.1.2 OS-Command Line – ESP Command Line Interface

ssh in to the ESP server and execute the following commands – update the directory as needed.

```
cd /srv/esp/prod
```

```
./bin/esp nodis --list          # this should produce a list of installed plugins – sample below:

            anaplasmosis
            asthma
            chlamydia
            depression
            gonorrhea
            hepatitis_b
            hepatitis_c
            hiv
            hypertension
            syphilis
            tuberculosis
```

```
./bin/esp showmigrations        # this should produce a list of migrations - all should be completed
                                  (marked X)

             admin
              [X] 0001_initial
             auth
              [X] 0001_initial
              [X] 0002_alter_permission_name_max_length
              [X] 0003_alter_user_email_max_length
              [X] 0004_alter_user_username_opts
              [X] 0005_alter_user_last_login_null
              [X] 0006_require_contenttypes_0002
             conf
              [X] 0001_initial
              [X] 0002_load_initial_data
              [X] 0003_auto_20160513_1020
              [X] 0004_auto_20180619_1326
              [X] 0005_auto_20180829_1148
              [X] 0006_SynchReportableRXDX
              [X] 0007_AnaplasBabesioConfigs
             contenttypes
              [X] 0001_initial
              [X] 0002_remove_content_type_name
             emr
              [X] 0001_initial
              [X] 0002_auto_20151204_1116
              [X] 0003_auto_20160513_1020
              [X] 0004_load_initial_data
              [X] 0005_auto_20160811_0535
              [X] 0006_auto_20170925_1308
              [X] 0007_auto_20180829_1148
              [X] 0009_RiskFactors_04162019
              [X] 0010_Facility_ProviderIDs_04162019
              [X] 0011_Encounter_fields_renamed
             hef
              [X] 0001_initial
              [X] 0002_auto_20151204_1050
             nodis
              [X] 0001_initial
              [X] 0002_auto_20160513_1020
              [X] 0003_auto_20160624_1615
              [X] 0004_auto_20170918_1419
              [X] 0005_auto_20170918_1515
              [X] 0006_auto_20170919_1049
              [X] 0007_auto_20171018_1415
              [X] 0008_auto_20180305_1123
             sessions
```

```
 [X] 0001_initial
sites
 [X] 0001_initial
static
 [X] 0001_initial
 [X] 0002_auto_20160513_1020
 [X] 0003_load_initial_data
 [X] 0004_specimensourcesnomed
 [X] 0005_auto_20180829_1151
 [X] 0006_drugSynsforAnaplasBabesi
```

3.2 Release Specific Verification

1 Check for new Section under System Administration

Login to the Browser based ESP UI

Navigate to the Administration drop down menu and Select "Site Administration".

A - There should be a new section call AUTH TOKENS with a link for Tokens

B - There should be several new Cda links . links under the CONF heading
Cda errors

Cda mappings

Cda xpaths