

# **Install and Set-Up for FOP2 On Wazo 17.04**

All instructions for applications current as of:  
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<b>Introduction .....</b>	<b>3</b>
1) Disclaimer.....	3
2) Credits.....	3
3) Installing and configuring FOP2.....	3

## **Introduction**

### **1) Disclaimer**

- a) If this document gets distributed (which is fine by me, so long as it is distributed for free) it should be done on the basis of trying to help as opposed to presenting as if this is the ultimate authority.
- b) And in this litigious world, allow me now to clearly state that:
  - In its basic form, all that I have outlined worked for me but it may contain many errors, typographical, omissions and even misguidance that may require a lot of extra corrections.
  - While I have taken due care, however, it may not necessarily be suitable for your individual configuration.
  - I do not assume, neither will I accept any responsibility for any losses incurred due to actions or inaction conducted as a result of methods or advice found in this document.

### **2) Credits**

- a) Thank you to the entire open source community, including (but not limited to) the developers of:
  - Linux
  - Linux applications like PostgreSQL, Nginx, Python, ...
  - Asterisk
  - Wazo <= Xivo
  - IPtables
  - fail2ban
  - Webmin
  - ASTTapi
- b) This is a fun way to learn and to create something truly valuable. The spirit of innovation for the sake of innovation, and collaboration for all the right reasons, tells me the spirit of curiosity and adventure is still alive and well.

### **3) Installing and configuring FOP2**

- a) FOP2 ([www.fop2.com](http://www.fop2.com)) adds a graphical representation to Wazo allowing the administrator to visually determine which (of the configured) connections are active at any point in time.
- b) FOP2 is the evolution of the Panel tab in earlier versions of FreePBX (I think FOP originally stood for FreePBX Operator Panel) and is still optimized for installations like FreePBX but can be manually configured, following these instructions, to provide full monitoring of the Wazo connections. These instructions only show how to use the monitoring capability of FOP2; FOP2 can do much more but the additional functionality was not needed for my installation so is not configured and not documented here.
- c) FOP2 is Freemium software. It is free to users with small installations and is fully functional for them. Small installations are those using no more than 15 items being monitored. Items include
  - Incoming trunks

- Outgoing trunks
  - Extensions/lines
  - Devices (with extensions/lines)
  - Parking Spots
  - Conferences
- d) For larger installations, the price to license FOP2 is \$40 one-time with an optional annual fee for upgrades and support.
- e) To download and install FOP2

```
cd /usr/src
```

```
wget http://www.fop2.com/download/debian64 -O fop2.tgz
```

```
tar zxvf fop2.tgz
```

```
cd fop2
```

```
make install
```

The default (minimal) Debian installation on which Wazo is installed does not include the make applications. This is required to install FOP2. You could either install just the make packages with

```
apt-get install make
```

or install the full developer set with

```
apt-get install build-essential
```

I installed the full developer set.

You may want to remove the developer set with

```
apt-get remove build-essential
```

once the FOP2 installation has been completed for security reasons, but I left it installed and used the firewall setup to protect the server.

- The installation will copy the server files under /usr/local/fop2
  - ◊ These you can leave as is; they are in the correct location for Wazo to use them
- The installation will copy the web files under /var/www/html/fop2
  - ◊ These you need to move since Wazo has reconfigured the Webroot directory from /var/www/html/fop2 to /usr/share/xivo-web-interface/www/fop2

```
mv -avr /var/www/html/fop2 /usr/share/xivo-web-interface/www/fop2
```

- f) To configure FOP2
- See <https://www.fop2.com/docs/installation.php#ConfigurationServer> for details
  - Tell FOP2 that this is NOT a FreePBX installation
    - ◊ Edit /usr/share/xivo-web-interface/www/fop2/admin/config.php

```
cd /usr/share/xivo-web-interface/www/fop2
```

```
nano config.php
```

```
change define('USE_FREEPBX_AUTH',true); to
```

```
define('USE_FREEPBX_AUTH',false);
```

comment out the following two lines to prevent access by the FOP2Manager (which would need some configuration to have it work cleanly with WazoPBX)

```
// $ADMINUSER = "fop2admin";
```

```
// $ADMINPWD = " fop2admin ";
```

Save the file and exit the editor

```
<Ctl>-o (letter o)
```

```
<Enter>
```

```
<Ctrl>-x
```

- Establish an asterisk user that allows FOP2 to connect to and interact with asterisk
  - ◇ In /etc/asterisk/manager.d/ add a file named fop2user.conf (name it what you want as long as it ends in .conf) to create a new user for asterisk

```
cd /etc/asterisk/manager.d
```

```
touch fop2user.conf
```

- ◆ Change permissions of the file

```
chmod 660 fop2user.conf
```

```
chown asterisk:www-data fop2user.conf
```

- ◆ Add to the file (replace <fop2secret> with your password)

```
nano fop2user.conf
```

```
[fop2]
```

```
secret = <fop2secret>
```

```
deny = 0.0.0.0/0.0.0.0
```

```
permit = 127.0.0.1/255.255.255.0
```

```
read = all
```

```
write = all
```

```
writetimeout = 1000
```

```
eventfilter=!Event: RTCP*
```

```
eventfilter=!Event: VarSet
```

```
eventfilter=!Event: Cdr
```

```
eventfilter=!Event: DTMF
```

```
eventfilter=!Event: AGIExec
eventfilter=!Event: ExtensionStatus
eventfilter=!Event: ChannelUpdate
eventfilter=!Event: ChallengeSent
eventfilter=!Event: SuccessfulAuth
eventfilter=!Event: DeviceStateChange
eventfilter=!Event: RequestBadFormat
eventfilter=!Event: MusicOnHoldStart
eventfilter=!Event: MusicOnHoldStop
eventfilter=!Event: NewAccountCode
eventfilter=!Event: DeviceStateChange
```

*<Ctl>-o (letter o)*

*<Enter>*

*<Ctrl>-x*

- ◇ Edit /usr/local/fop2/fop2.cfg to tell FOP2 what to use for asterisk user credentials and to setup FOP2 for manual configuration
  - ◆ Do NOT delete any entries from fop2.cfg; add new ones only

*cd /usr/local/fop2*

*cp fop2.cfg fop2.cfg.orig*

*nano fop2.cfg*

add, in the [general] section, under the ; Ami definitions (replace <fop2secret>):

*; FOP2 definitions*

*manager\_host = 127.0.0.1 (or localhost)*

*manager\_port = 5038*

*manager\_user = fop2*

*manager\_secret = <fop2secret>*

Add a user for the administrator to use when logging in to the FOP2 panel with the browser.

Immediately after the

*; --- SAMPLE USER LIST ---*

section, which ends with

*; ----- END SAMPLE -----*

add the user (replace <fop2\_admin\_user\_name> and <fop2\_admin\_password>)

```
user=<fop2_admin_user_name>:<fop2_admin_password>:all
```

Immediately below the new user line (above), add the setting that tells FOP2 where to look for the manual button configuration file (use whatever name you want as long as it ends in .cfg):

```
buttonfile=fop2buttons.cfg
```

Comment out the last line in the file

```
;exec autoconfig-users.sh
```

Save the file and close the editor

```
<Ctrl>-o (letter 0)
```

```
<Enter>
```

```
<Ctrl>-x
```

- ◇ Edit /usr/local/fop2/autobuttons.cfg to comment out (add ; in front of) first line with autoexec to prevent fop2 from trying to pull its button configuration from the database

```
nano autobuttons.cfg
```

```
;exec autoconfig-buttons.sh $1
```

```
<Ctrl>-o (letter 0)
```

```
<Enter>
```

```
<Ctrl>-x
```

- Create a file which will allow you to customize the css for the panel
  - ◇ Technically, this is not required if you like the css used for the display panel, but if you do not at least create the file that would allow the customization, you will get an error added to your log each time you log into the panel saying the custom template file is missing. Doing this step will create a custom file that, with no changes made, duplicates the look of the original FOP2 panel.

```
cp /usr/share/xivo-web-interface/www/fop2/css/theme.css /usr/share/xivo-web-interface/www/fop2/css/custom_theme/theme.css
```

- ◆ If you do want to customize the css, edit the file at /usr/share/xivo-web-interface/www/fop2/css/custom\_theme/theme.css

- Add the file which is used by FOP2 to determine what appears on the display panel

- ◇ Read the FOP2 documentation for specifics; this will get you started

- ◆ This example assumes all SIP connections

- ◆ Replace all entries enclosed in <> (including deleting <>)

```
touch fop2buttons.cfg
```

```
chown root:www-data fop2buttons.cfg
```

```
chmod 640 fop2buttons.cfg
```

```
nano fop2buttons.cfg
```

for each trunk

```
[SIP/<trunk1-in-identifier>]  
type=trunk  
label=<trunk1-in-identifier>
```

```
[SIP/<trunk1-out-identifier>]  
type=trunk  
label=<trunk1-out-identifier>
```

for each extension

```
[SIP/<line1-identifier-from-Wazo-line-name>  
type=extension  
extension=<line1-extension-from-Wazo>  
context=default  
label=<line1-label-for-use-in-fop2-panel>  
group=<group1-name> (optional and only used if you want to cluster lines)
```

for each conference

```
[CONFERENCE/<conference1-extension-from-Wazo>  
type=conference  
label=<conference1-label-for-use-in-fop2-panel>  
extension=<conference1-extension-from-Wazo>  
context=default
```

for the Park line

```
[PARK/default]  
label=Park  
type=park  
extension=700  
context=parkedcalls
```

Save the file and exit the editor

```
<Ctrl>-o (letter O)  
<Enter>  
<Ctrl>-x
```

- Restart asterisk

```
/etc/init.d/asterisk restart
```



- Reload the FOP daemon
    - service fop2 restart*
  - Access the FOP2 display using a browser pointed to (replace <Server\_IP\_Address>)
    - ◇ https://<Server\_IP\_Address>/fop2/index.html
      - ◆ User: <fop2\_admin\_user\_name>
      - ◆ Password: <fop2\_admin\_password>
- g) This will get you up and running with a free system using less than 15 items / buttons.
- To get a license for larger systems, go to the FOP2 web site at [www.fop2.com](http://www.fop2.com)