Indico Packaging

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Indico Workshop 3.5, CERN, 21 March 2023

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The current status of Indico installation prescriptions

Prescriptions:

- Use RedHat (CentOS/Fedora/etc.) or Debian system.
- Install postgresql, httpd, etc. with yum/apt.
- Install python packages with pip
- Install LaTeX manually.

Problems:

- User should read and maintainer should write a lot of documentation.
- Labour intensive, takes a lot of time.
- pip and python packaging are not very good, to put it mildly (my personal opinion).
- **Not the way to deliver software according to RedHat or Debian.**

Do what the manual tells

The way to deliver the software on most systems, according to the manual is to package it in RPM or DEB formats. RedHat (CentOS/Fedora/etc.) or Debian systems have all the system packages and a decent python and LaTeX distributions $\rightarrow$ almost everything is packaged already.

The way to go: package the rest! Very similar to HEPrpms [1]. For Fedora 36 that means $\approx$ 25 python packages in total, including:

- $\approx$ 5 Indico packages, i.e. indico, indico-fonts (scripting is needed)
- $\approx$ 5 packages that are too old in Fedora 36 (trivial)
- $\approx$ 15 packages that are absent in Fedora 36 (trivial)

Packaging in practice

- Packaging a software in Fedora is about creating ASCII .spec file, a receipt to build RPM.
- For Python packages the .spec files are typically copycats, can take minute or two to create a new .spec for a simple package.

```
%global srcname captcha
%global srcnamenu captcha

Name:           python-%{srcname}
Version:        0.4
Release:        1%{?dist}
Summary:        Example python module

License:        MIT
URL:            https://pypi.python.org/pypi/captcha
Source:         %{pypi_source}
BuildArch:      noarch
BuildRequires:  python3-pip python3-wheel


%global _description %{expand:
A captcha library that generates audio and image CAPTCHAs.}

%description %_description

%package -n python3-%{srcname}
Summary:        %{summary}
BuildRequires:  python3-devel
BuildRequires:  python3-setuptools

%description -n python3-%{srcname} %_description

%prep
%autosetup -n %{srcname}-%{version}

%build
%py3_build

%install
%py3_install

# Note that there is no %%files section for the unversioned python module
%files -n python3-%{srcname}

%{python3_sitelib}/%{srcnamenu}-*.egg-info/
%{python3_sitelib}/%{srcnamenu}/

%changelog
* Thu Sep 29 2022 Andrii Verbytskyi andrii.verbytskyi@mpp.mpg.de>
- Cleanup
```

Code/python–captcha.spec

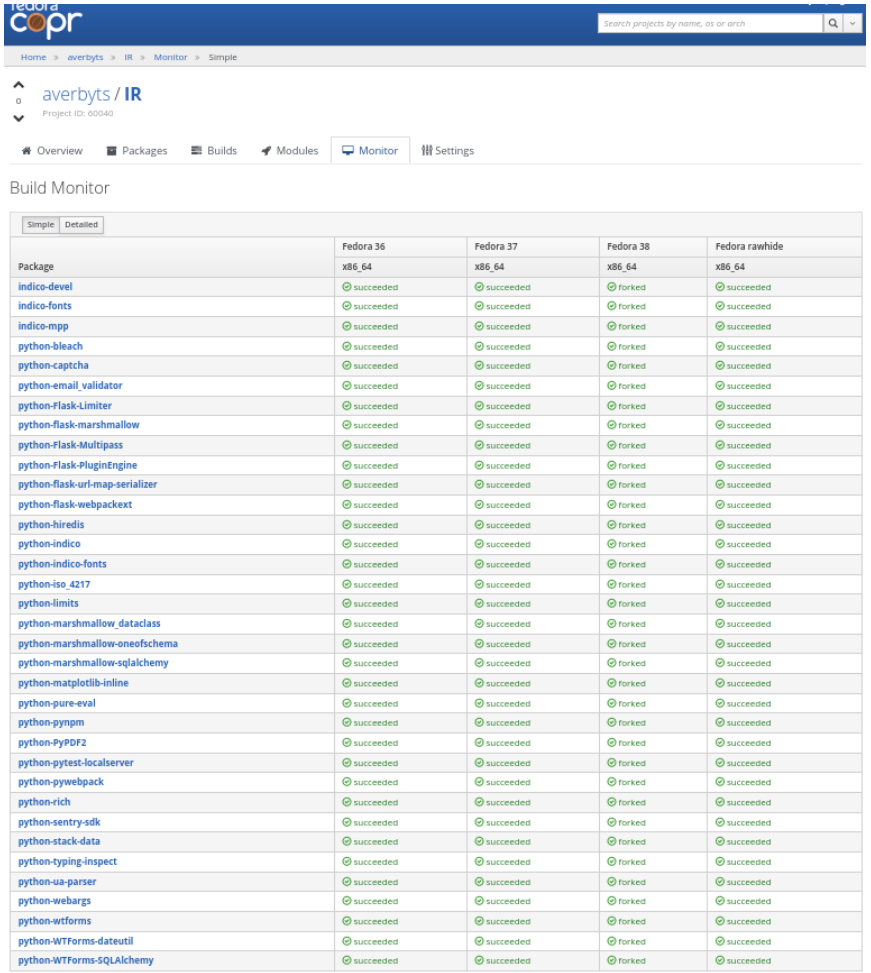
Building the binaries

One can build binaries from .spec files locally or in a cloud service. Inside CERN one can use CERN Koji [2], here Copr [3] is used.

The submission on Copr.

```
#!bin/bash
copr-cli create --chroot fedora-38-
     x86_64 --chroot fedora-38-x86_64
     I323
declare -a BUILDLIST=(
#indico-devel:3.1
#indico-devel:3.2
indico-devel:3.2.3
#indico-mpp:3.1
python-WTForms-SQLAlchemy:0.3
)
mkdir -p log
for a in "${BUILDLIST[@]}"
do
export name=$(echo $a | cut -f1 -d: )
export version=$(echo $a | cut -f2 -d: )
envsubst <<EOF > temp.sh
#!/bin/bash
git clone --depth 3 https://github.com/
     andriish/indico-rpms.git -b
     indico323
cd indico-rpms
sh srpmsbuild.sh  $name $version
EOF
copr add-package-custom I323 \
        --name $name \
        --script temp.sh \
        --script-resultdir indico-rpms/
     $name/$version/rpmbuild/SOURCES/ \
        --script-builddeps 'git
     rpmdevtools wget' \
        --script-chroot fedora-38-x86_64
mv temp.sh log/$name$version
done
```

Code/submit.sh



Results and Deployment

- Results:
  The set of .spec files:
  `https://github.com/andriish/indico-rpms/`.

  The final repository in Copr:
  `https://copr.fedorainfracloud.org/coprs/averbyts/IR/packages/`.

- Deployment:

```
dnf -y  install  dnf-plugins-core
dnf -y copr enable averbyts/IR
dnf -y install python-indico
```

  With some extra effort one can create RPM configuration packages, which would configure the instance, add some themes, images, etc. and install it with

```
dnf -y install indico-mpp
```

Possible criticism

- Packaging for many operating systems can be slow and labour intensive.
  - No need to do packaging for many system when de-facto only RPM-based RedHat (CentOS/Fedora) and Ubuntu are supported.

Future

- Request to add the missing packages to RedHat (Fedora/CentOS) and add Indico to the standard repositories later?
- Or just have a small repository as a part of Indico project.
- Suggest a better separation of the themes/images and the code.

Bibliography I

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