SMHI

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PPS Technical News v2018 and future

NWCSAF User Workshop 2020

The EUMETSAT Network of Satellite Application Facilities

NWC SAF

Support to Nowcasting and Very Short Range Forecasting

Overview

- PPS installation methods
- News in PPS v2018 and coming versions
- Level 1c processing
- Third Party s.w. dependencies
- Release plans

How to install PPS v2018

- Binary installations (CentOS 7.5, Ubuntu 18)
- From source code
- From source code, using Conda (new in v2018.1)

How to install PPS future releases

- From source code, using Conda (recommended)
- From source code
- Binary installations: only if requested

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Conda, how-to

- First make a conda environment, using the provided yml file:

$ conda env create -f ppsv2018_2_conda_environment.yml

- …and activate it:

$ conda activate ppspython3_ppsv2018patch2_b

- Always have this conda environment active when installing and running.
- Install the delivered pps_nwp with pip
- Install the rest or PPS with the normal configure commands, giving paths to the conda environment.

- Note: The PPS-packages does not come as Conda-packages, but we use Conda as an easy way to build the third party software.
- We deliver two yml-files for dependencies: Select one!
  - Dependencies for: PPS only
  - Dependencies for: PPS and level1c4pps

PPS v2018 functional news

- New sensor: MERSI-2 from FY/3D (v2018.2)
- MODIS now officially supported sensor
- VIIRS: high or low resolution
- New satellites: NOAA20, MetopC
- Cloud Probability is a new product
- Alternative NWP-data from GFS
- Only netCDF-files

PPS v2018 coming patches, news

- File format adjusted for Adaguc
- Smaller technical updates
- TBD items from next slide

Since EPS-SG A will only be launched in CDOP4, replanning is in progress. An additional non-EPS-SG release is anticipated for 2021, see next slide. Any items from the next slide might be introduced as patch if urgently needed prior to the next major release.

PPS next main version estimated 2021 (detailed replanning TBD)

news:

- High Resolution Winds (between any overlapping polar satellites) as beta release
- PPS package starts at level 1c. S.w. level1c4pps must be processed before.
- Changed configuration format, mainly yaml-files.
- AVHRR/1 (for historic processing)
- Improved Cloud Physical Properties product (CMSAF-development)
- Improved Cloud Probability product (CMSAF-development)

Level 1b to level 1c processing

- In PPS v2018: PPS-scripts (eg. ppsMakeAvhrr.py)
  - Except for MERSI-2:
  - Use s.w. level1c4pps
- In future PPS:
  - Use s.w. level1c4pps

- Level1c4pps to be processed before PPS. PPS team responsible to make sure it is available.
- Please note that level1c4pps has GPL-licence.
- Level1c4pps uses Pytroll functionallity.

level1c4pps

- S.w. already used for MERSI-2 from FY/3D.
- Will be used for all supported sensors.
- One script per sensor.

- Suggested to install dependencies with Conda, by provided script:
  ppsv2018_2_conda_environment_prepare_for_level1c4pps.yml
- Install level1c4pps with pip.
- Run:

mersi22pps.py -o /data/level1c_data /data/mersi2/tf2019234102243.*

or

mersi22pps.py -o /data/level1c_data /data/mersi2/*

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PPS v2018 Third Party s.w.

- Removed dependencies
  - RTTOV
  - HL-HDF
- Alternative versions:
  - Python2 or Python3 can be used
  - Many 3rd party s.w. can use different versions
  - ecCodes or GRIB-API
- New dependencies
  - Keras
  - Theano (Tensorflow)
  - Scikit learn
  - Yaml

PPS future, Third Party s.w.

- Pre-processing: level1c4pps
  - Requires: Satpy
  - More pytroll-dependencies
  - GPL-licence
- Python3 only, not python2
- Yaml
- Maybe: Dask
- Proj6
- Updates for newer versions of s.w., as needed

Release Plans

- v2018-patches
- v2021 next main release (to be confirmed)
- vEPSSG first release for METimage from EPS-SG (probably in year 2024, depending on launch date)

Any questions?

For feedback, eg. discussions and your opinions about the future plans, please contact:

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You can also provide input in the workshop google drive document.