Setting up an automated test environment in the context of FEWS (using 'workflowTestRun')

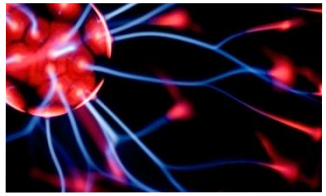
Delft-FEWS - International User Days, 07. - 08. November 2018, Delft

07/11/2018 Gernot Belger, Monika Thül Dr. Bastian Klein, Dennis Meißner

bfg

BCE

BJÖRNSEN CONSULTING ENGINEERS



TÜVRheinland ZERTIFIZIERT
Management System ISO 9001:2015
www.tuv.com ID 0000206040
EMAS GEPRÜFTES UMWELTMANAGEMENT DE-141-00064

Agenda

What does „testing“ mean?

Could testing be useful in the context of FEWS?

Onboard means of testing within FEWS

Extended test environment

Summary

What does „testing“ mean?

The aim:

Ensure that executing a function in a given, known initial situation always yields the expected result.

Could testing be useful in the context of FEWS?

- Active / intentional changes to the configuration
  - Setup of a ModuleInstance / Workflow
  - Side effects from other changes
- Unintentional changes to the system
  - Update of operating system
  - Update of modelling software
- FEWS Update / Upgrade

Onboard means of testing within FEWS

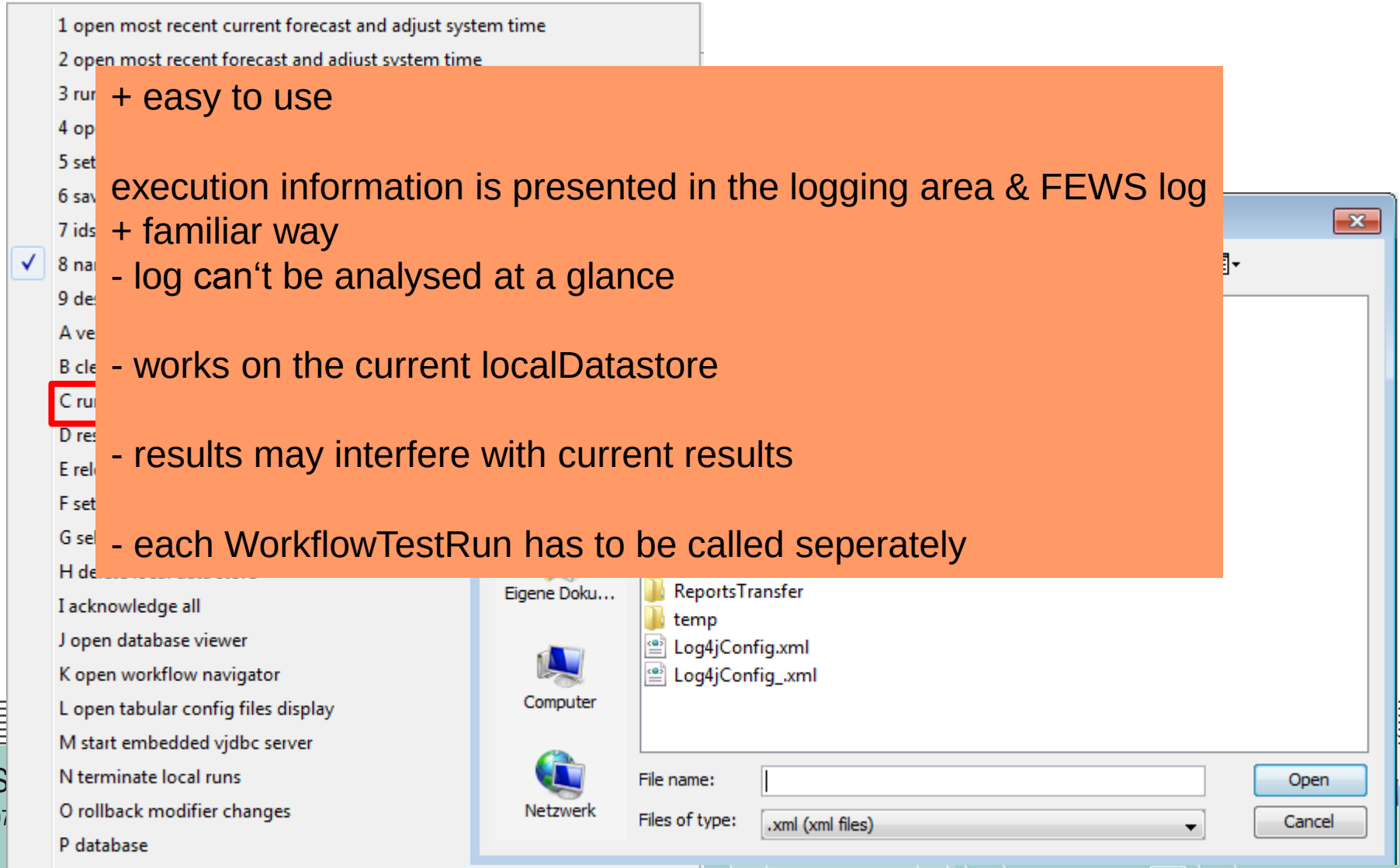
WorkflowTestRun (XML configuration overview)

General definitions section
- List of directory definitions for later use in activities
- Set system time

List of activities
- Purge: purge a single file or set of files within a directory
- Copy: copy single file to given location
- Workflow
- Export time series (PI time series)
- Export logs: export log messages produced during last workflow run
- Set system time: set new system time
- Compare: compares two files (export files)
- Refresh: refresh datastore
- Contains: search text in text file
- Sleep

Onboard means of testing within FEWS

WorkflowTestRun, started within FEWS: <F12>



+ easy to use

execution information is presented in the logging area & FEWS log
+ familiar way
- log can‘t be analysed at a glance

- works on the current localDatastore

- results may interfere with current results

- each WorkflowTestRun has to be called seperately

Onboard means of testing within FEWS

WorkflowTestRun, start via command line („from bin dir“)

- Needs a dedicated FEWS to be set up, main difference in corresponding INI file

```
main.class=nl.wldelft.fews.system.workflowtestrun.WorkflowTestRun
```

+ setting up a parallel data structure can reduce interference with working FEWS

+ WorkFlowTestRuns can be started via BAT files

+ additional preliminary work can be done (e.g. providing a localDatastore) because FEWS isn‘t running

- BAT programming is rather for specialists, adding tests might be difficult for normal users

- LOG files have to be analysed by the user

- test results still have to be prepared in advance

Extended test environment

Wish list

- Easy to use, results easy to analyse
- Executes several WorkflowTestRuns
- Simple configuration
- Simplifies set up a WorkflowTestRun
- Assistance for providing test data (localDatastore, results)

Extended test environment

General workflow

- Start logging
- Read configuration
- Safeguard FEWS directories (localDatastore, import, export, report,...)
- Loop through list of defined tests
    - Prepare initial situation (provide localDatastore, import data,...)
    - Execute WorkflowTestRun and retain log files
    - Check results (contents or at least existence)
    - Clean up
- Restore safeguarded directories

Additional mode to assist in setting up data

Extended test environment

WorkflowTestRun (reduced set of necessary elements)

General definitions section
- Reduced list of directory definitions for later use in activities
- Set system time

List of activities
- Purge: purge a single file or set of files within a directory
- Copy: copy single file to given location (only for special result files)
- Workflow
- Export time series (PI time series)
- Export logs: export log messages produced during last workflow run
- Set system time: set new system time
- Compare: compares two files (export files)
- Refresh: refresh datastore
- Contains: search text in text file (only for special log files)
- Sleep

Summary

Encouragement: proceed step by step

- Set up an environment that suits your needs
- Agree on general structure of tests
- Arrange for the tests to be regularly carried out
- Implement or work on a test as you create or work on a workflow

Provide quality for

- Your organisation‘s system
- Your customer‘s system

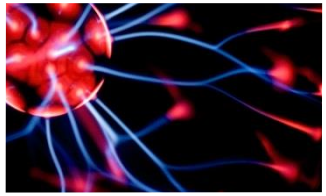
Demand quality from

- Your service provider

On the long run it‘ll pay!

Thank you for your attention

07/11/2018 Gernot Belger, Monika Thül Dr. Bastian Klein, Dennis Meißner



BCE

BJÖRNSEN CONSULTING ENGINEERS

TÜVRheinland ZERTIFIZIERT Management System ISO 9001:2015 www.tuv.com ID 0000206040

EMAS GEPRÜFTES UMWELTMANAGEMENT DE-141-00064