

Jenkins Integration Hands-on

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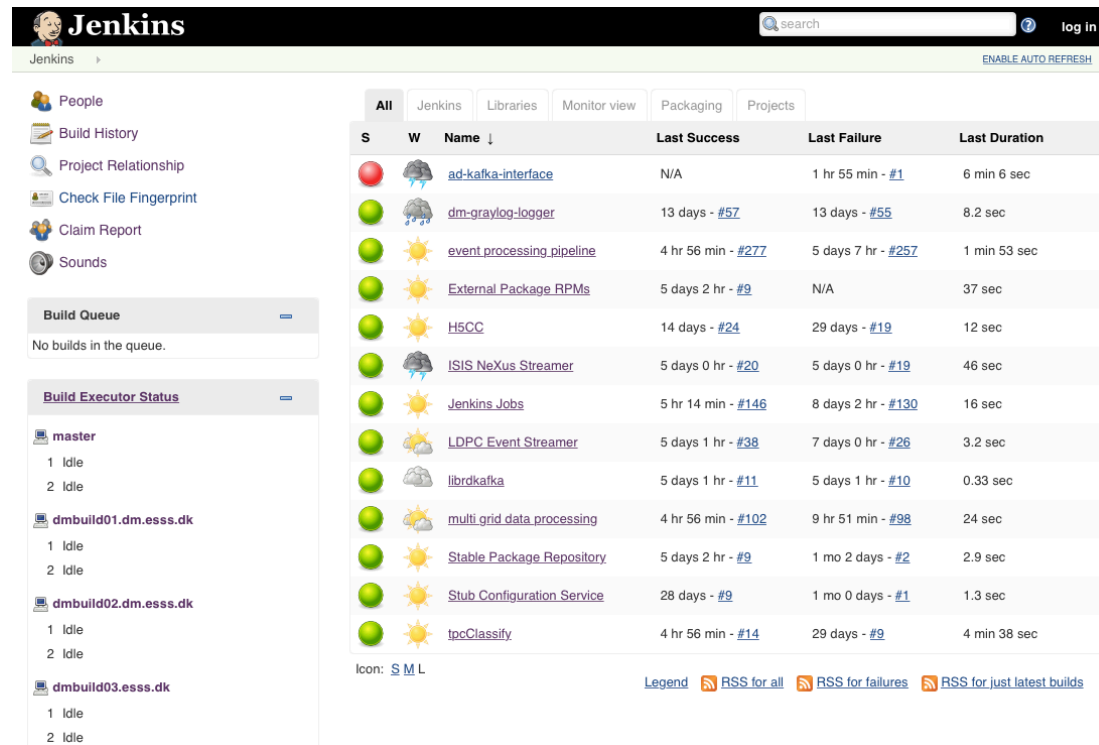
1 February, 2017

Agenda

- Available infrastructure
- Sample job setup
- Hands-on activities

Available infrastructure

- Data Management Group Jenkins master at <https://jenkins.esss.dk/dm/>



The screenshot shows the Jenkins web interface. The top navigation bar includes the Jenkins logo, a search bar, and a 'log in' link. Below the navigation bar, there are tabs for 'All', 'Jenkins', 'Libraries', 'Monitor view', 'Packaging', and 'Projects'. The main content area displays a table of build jobs with columns for status (S), weather icon (W), Name, Last Success, Last Failure, and Last Duration. The table lists 14 jobs, including 'ad-kafka-interface', 'dm-graylog-logger', 'event_processing_pipeline', 'External Package RPMs', 'H5CC', 'ISIS NeXus Streamer', 'Jenkins Jobs', 'LDPC Event Streamer', 'librdkafka', 'multi_grid_data_processing', 'Stable Package Repository', 'Stub Configuration Service', and 'tpcClassify'. The left sidebar contains navigation links for 'People', 'Build History', 'Project Relationship', 'Check File Fingerprint', 'Claim Report', and 'Sounds'. Below these links are sections for 'Build Queue' (No builds in the queue) and 'Build Executor Status' (listing idle executors for 'master', 'dmbuild01.dm.esss.dk', 'dmbuild02.dm.esss.dk', and 'dmbuild03.esss.dk').

S	W	Name ↓	Last Success	Last Failure	Last Duration
🔴	☁️	ad-kafka-interface	N/A	1 hr 55 min - #1	6 min 6 sec
🟢	☁️	dm-graylog-logger	13 days - #57	13 days - #55	8.2 sec
🟢	☀️	event_processing_pipeline	4 hr 56 min - #277	5 days 7 hr - #257	1 min 53 sec
🟢	☀️	External Package RPMs	5 days 2 hr - #9	N/A	37 sec
🟢	☀️	H5CC	14 days - #24	29 days - #19	12 sec
🟢	☁️	ISIS NeXus Streamer	5 days 0 hr - #20	5 days 0 hr - #19	46 sec
🟢	☀️	Jenkins Jobs	5 hr 14 min - #146	8 days 2 hr - #130	16 sec
🟢	☀️	LDPC Event Streamer	5 days 1 hr - #38	7 days 0 hr - #26	3.2 sec
🟢	☁️	librdkafka	5 days 1 hr - #11	5 days 1 hr - #10	0.33 sec
🟢	☀️	multi_grid_data_processing	4 hr 56 min - #102	9 hr 51 min - #98	24 sec
🟢	☀️	Stable Package Repository	5 days 2 hr - #9	1 mo 2 days - #2	2.9 sec
🟢	☀️	Stub Configuration Service	28 days - #9	1 mo 0 days - #1	1.3 sec
🟢	☀️	tpcClassify	4 hr 56 min - #14	29 days - #9	4 min 38 sec

Icon: [S](#) [M](#) [L](#)

Legend [RSS for all](#) [RSS for failures](#) [RSS for just latest builds](#)

Available infrastructure

- Three CentOS build nodes available with different dependencies installed; base build tools plus:
 - General node: librdkafka, HDF5
 - ROOT node: ROOT, Boost, HDF5, Qt5
 - EEE node: EEE, librdkafka
- Windows build node for ISIS requested
- We have administrative privileges in the build nodes
- Three CentOS VMs currently unused, with privileges to install packages and manage services

Available infrastructure

- Configuration under version control:
 - dm-jenkins-jobs: scripts to generate Jenkins jobs using the Job DSL plugin
 - dm-ansible: build node configuration kept in Ansible roles (with the exception of the EEE installation, that uses an ICS Ansible setup)
 - dm-rpms: generate customised RPMs for external packages we use: librdkafka, hdf5, kafka, zookeeper, kafka-manager

Available infrastructure

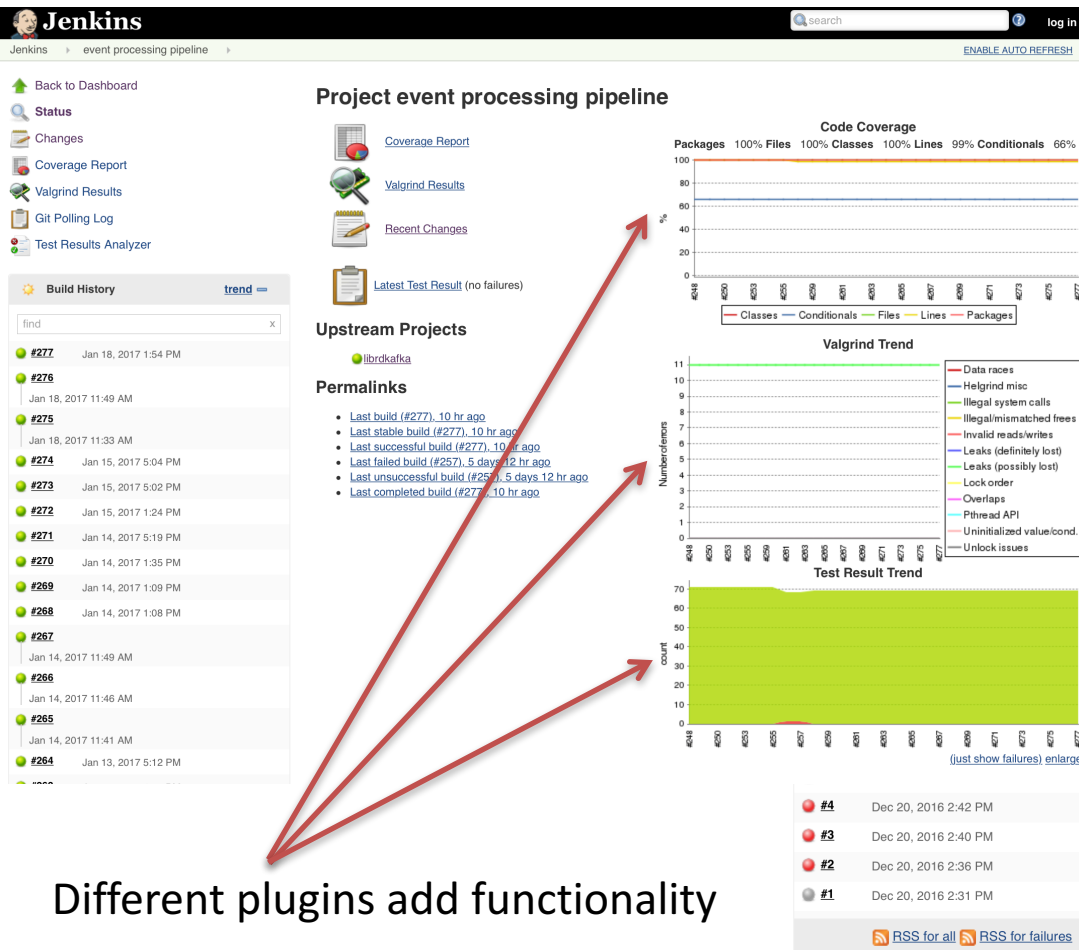
- Build monitor view



Sample job setup

- Freestyle jobs are very flexible, and usually support all plugins
- Pipeline jobs lack support for some useful plugins, such as Cobertura for test coverage reports, but offer the possibility of executing parallel steps, with a nice visualisation
- In both cases the job configuration and build scripts can be kept under version control, using different approaches (shell scripts or pipeline scripts)

Freestyle and pipeline jobs



Project event processing pipeline

Code Coverage: Packages 100% Files 100% Classes 100% Lines 99% Conditionals 66%

Valgrind Trend

Test Result Trend

Build History

- #277 Jan 18, 2017 1:54 PM
- #276 Jan 18, 2017 11:49 AM
- #275 Jan 18, 2017 11:33 AM
- #274 Jan 15, 2017 5:04 PM
- #273 Jan 15, 2017 5:02 PM
- #272 Jan 15, 2017 1:24 PM
- #271 Jan 14, 2017 5:19 PM
- #270 Jan 14, 2017 1:35 PM
- #269 Jan 14, 2017 1:09 PM
- #268 Jan 14, 2017 1:08 PM
- #267 Jan 14, 2017 11:49 AM
- #266 Jan 14, 2017 11:46 AM
- #265 Jan 14, 2017 11:41 AM
- #264 Jan 13, 2017 5:12 PM

Permalinks

- Last build (#277), 10 hr ago
- Last stable build (#277), 10 hr ago
- Last successful build (#277), 10 hr ago
- Last failed build (#257), 5 days 12 hr ago
- Last unsuccessful build (#257), 5 days 12 hr ago
- Last completed build (#277), 10 hr ago

Build #4: Dec 20, 2016 2:42 PM

Build #3: Dec 20, 2016 2:40 PM

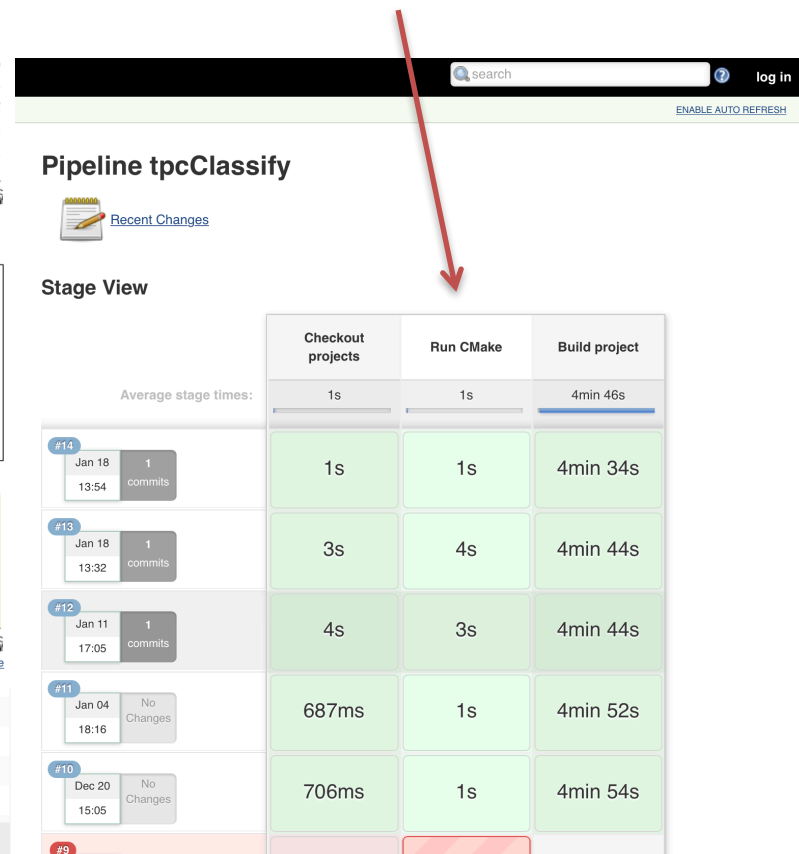
Build #2: Dec 20, 2016 2:36 PM

Build #1: Dec 20, 2016 2:31 PM

RSS for all | RSS for failures

Different plugins add functionality

Pipeline view



Pipeline tpcClassify

Recent Changes

Stage View

	Checkout projects	Run CMake	Build project
Average stage times:	1s	1s	4min 46s
#14 Jan 18 13:54 1 commits	1s	1s	4min 34s
#13 Jan 18 13:32 1 commits	3s	4s	4min 44s
#12 Jan 11 17:05 1 commits	4s	3s	4min 44s
#11 Jan 04 18:16 No Changes	687ms	1s	4min 52s
#10 Dec 20 15:05 No Changes	706ms	1s	4min 54s
#9			

Hands-on session

- Suggested plan:
 - Choose a project not currently on Jenkins
 - Create a new job using the web interface
 - Configure job and add reports
 - Automate job creation using the Job DSL plugin