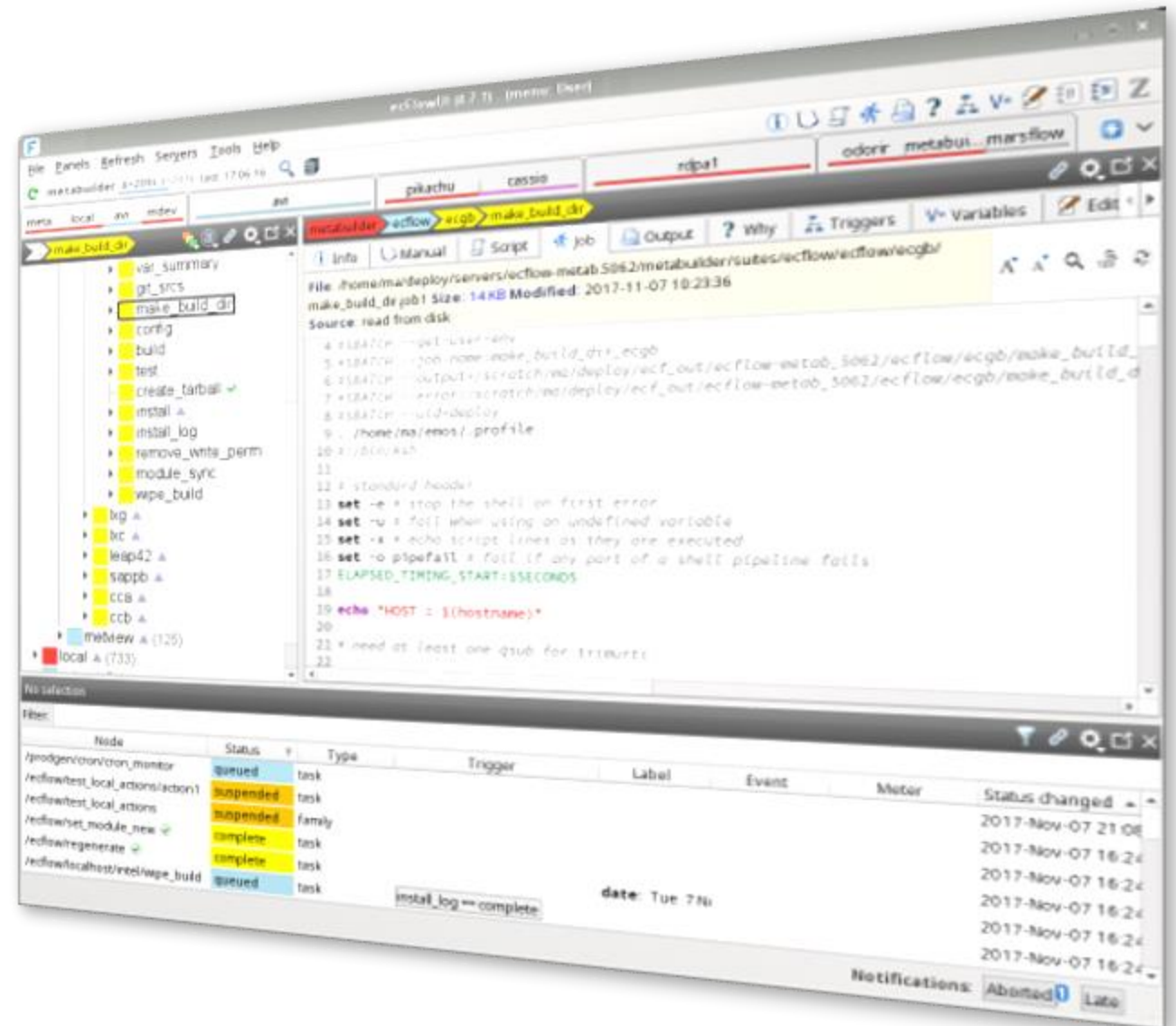


ecFlowUI

October 2025

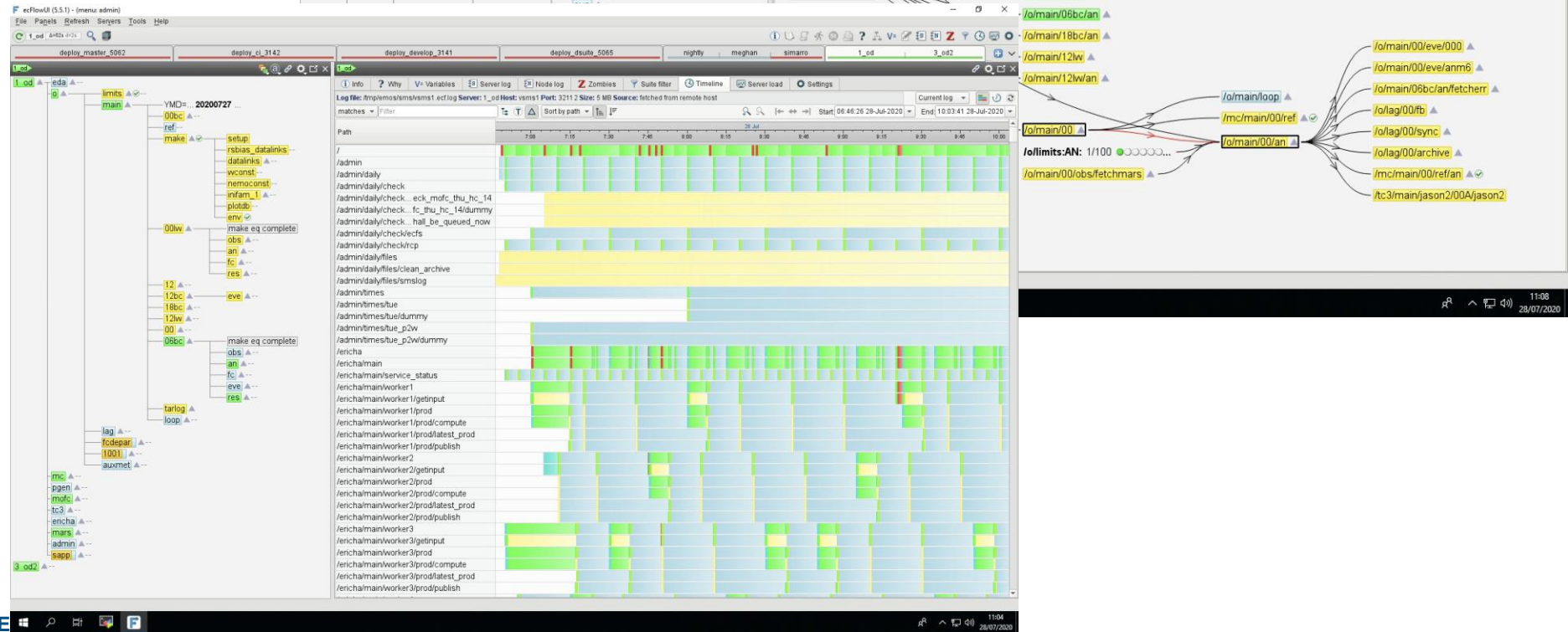
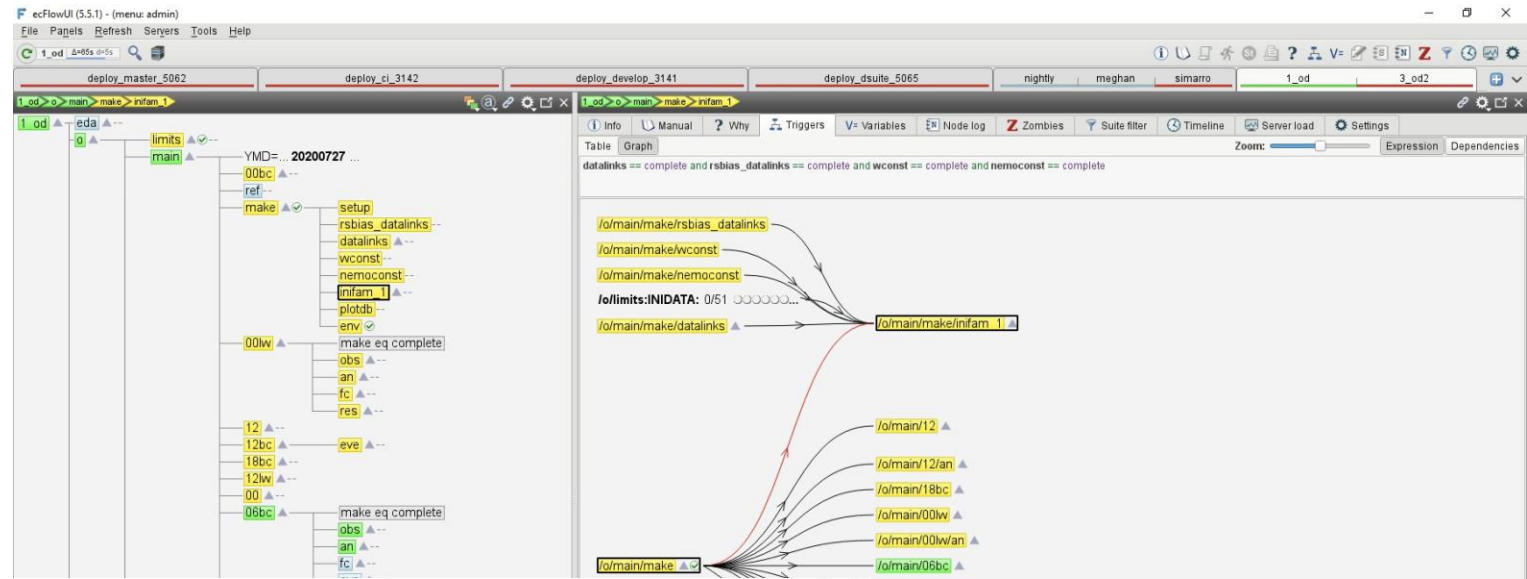
Iain Russell
Sándor Kertész

Development Section, ECMWF



ecFlowUI

- Graphical user interface for ecFlow
- Desktop application
- Available on Linux + macOS



The user interface

- Multi window, multi tabbed
- Each tab has its own set of servers
- Inactive tabs show the statuses of their servers
- Dashboard approach
- Can have multiple panels per tab
- 3 panel types:
 - Tree
 - Table
 - Info

The screenshot displays the ecFlowUI (4.7.1) interface. The top menu bar includes File, Panels, Refresh, Servers, Tools, and Help. The main window is divided into several panels. On the left, a tree view shows a hierarchy of directories and files, with 'make_build_dir' selected. The central panel displays a script editor with a file path and source information, and a code editor showing a shell script. The bottom panel shows a table of task statuses.

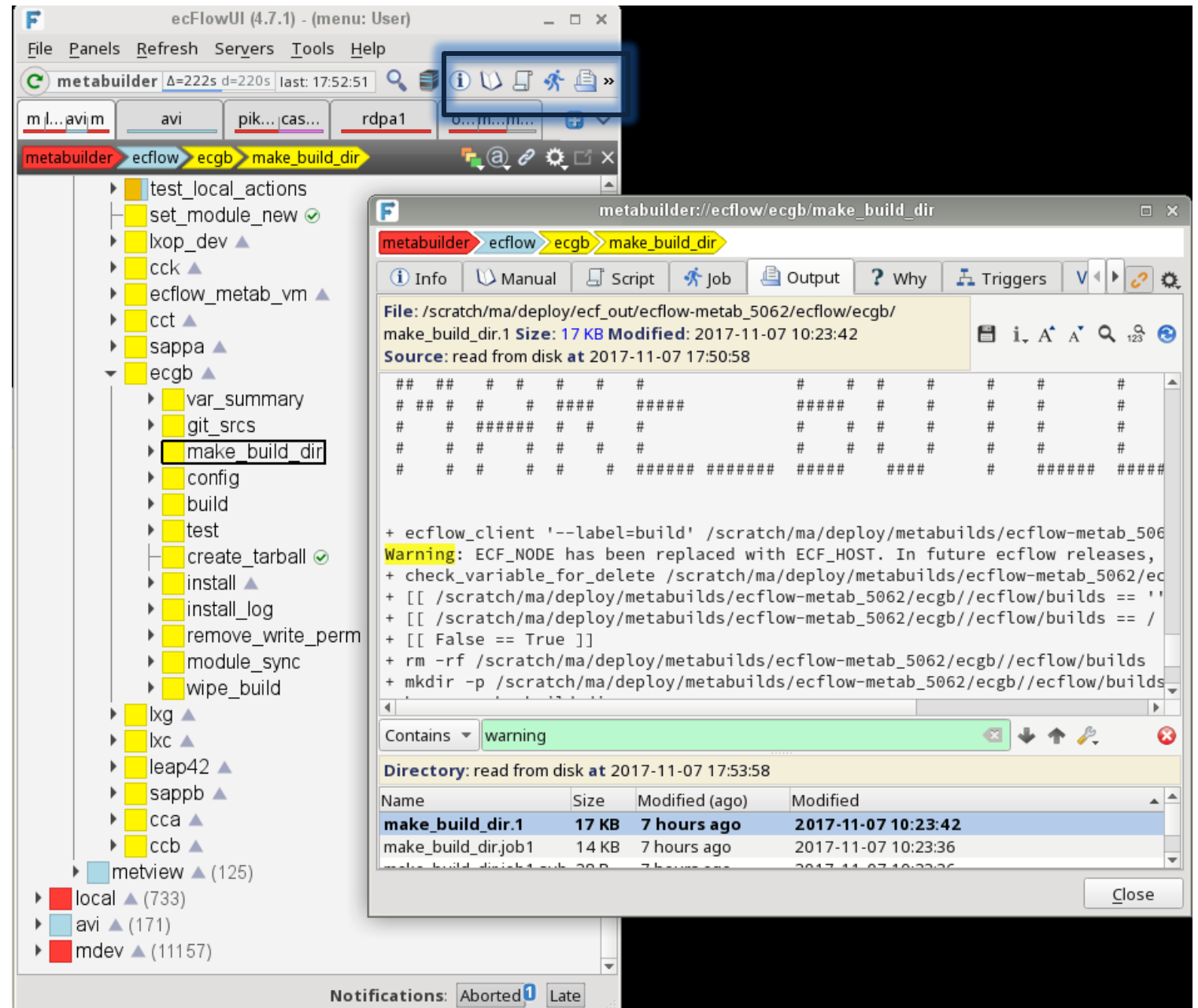
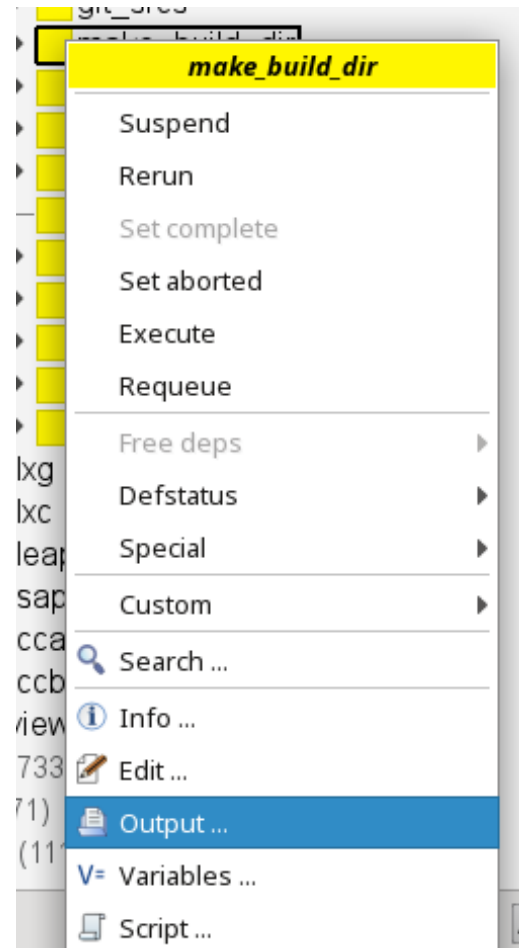
File: /home/ma/deploy/servers/ecflow-metab.5062/metabuilder/suites/ecflow/ecflow/ecgb/make_build_dir.job1 **Size:** 14 KB **Modified:** 2017-11-07 10:23:36
Source: read from disk

```
4 #SBATCH --get-user-env
5 #SBATCH --job-name=make_build_dir_ecgb
6 #SBATCH --output=/scratch/ma/deploy/ecf_out/ecflow-metab_5062/ecflow/ecgb/make_build_dir.job1
7 #SBATCH --error=/scratch/ma/deploy/ecf_out/ecflow-metab_5062/ecflow/ecgb/make_build_dir.job1
8 #SBATCH --uid=deploy
9 . /home/ma/emos/.profile
10 #!/bin/ksh
11
12 # standard header
13 set -e # stop the shell on first error
14 set -u # fail when using an undefined variable
15 set -x # echo script lines as they are executed
16 set -o pipefail # fail if any part of a shell pipeline fails
17 ELAPSED_TIMING_START=$SECONDS
18
19 echo "HOST = $(hostname)"
20
21 # need at least one qsub for trimurti
22
```

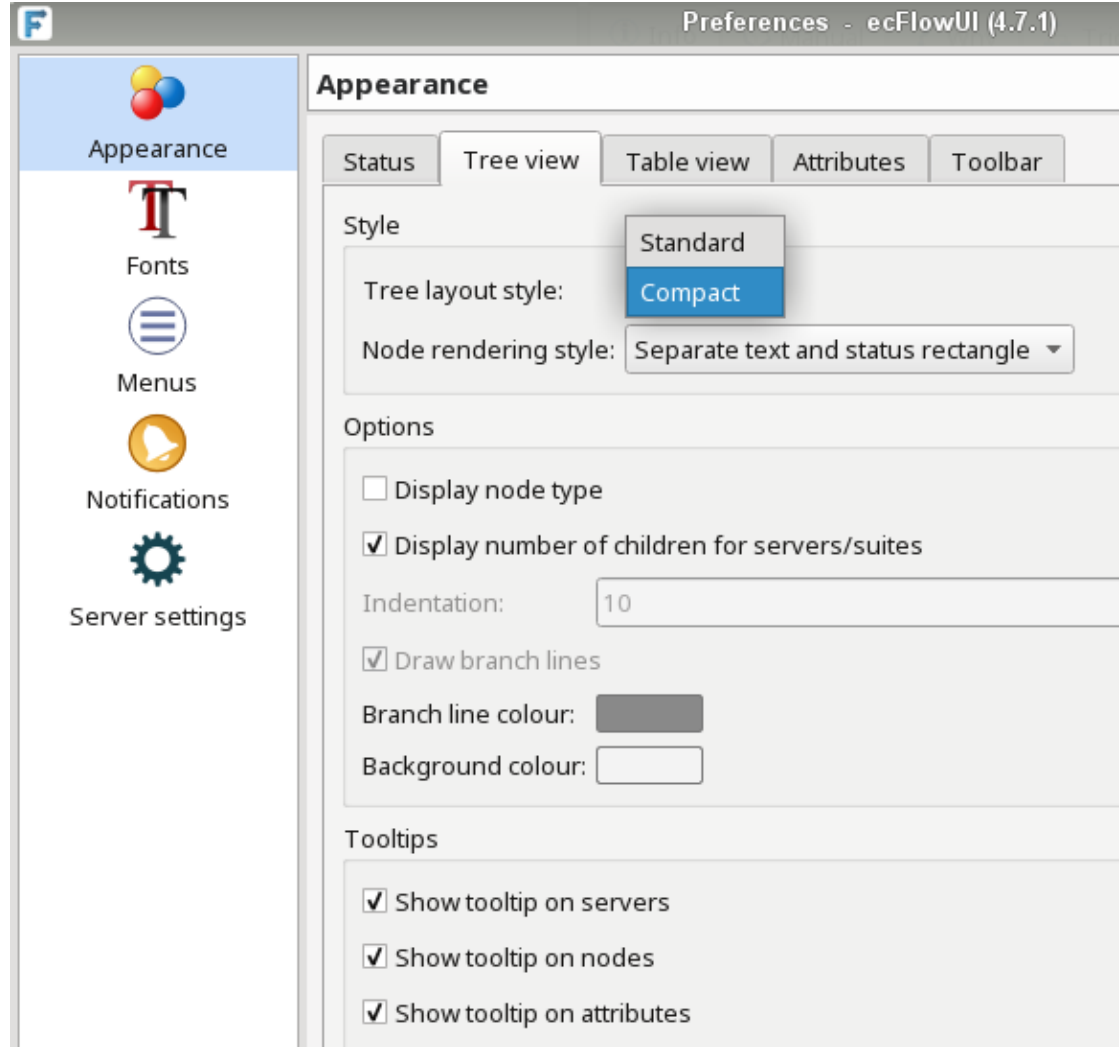
Node	Status	Type	Trigger	Label	Event	Meter	Status changed
/prodgen/cron/cron_monitor	queued	task					2017-Nov-07 21:08
/ecflow/test_local_actions/action1	suspended	task					2017-Nov-07 16:24
/ecflow/test_local_actions	suspended	family					2017-Nov-07 16:24
/ecflow/set_module_new	complete	task					2017-Nov-07 16:24
/ecflow/regenerate	complete	task					2017-Nov-07 16:24
/ecflow/localhost/intel/wipe_build	queued	task	install_log == complete				2017-Nov-07 16:24

Notifications: Aborted 1 Late

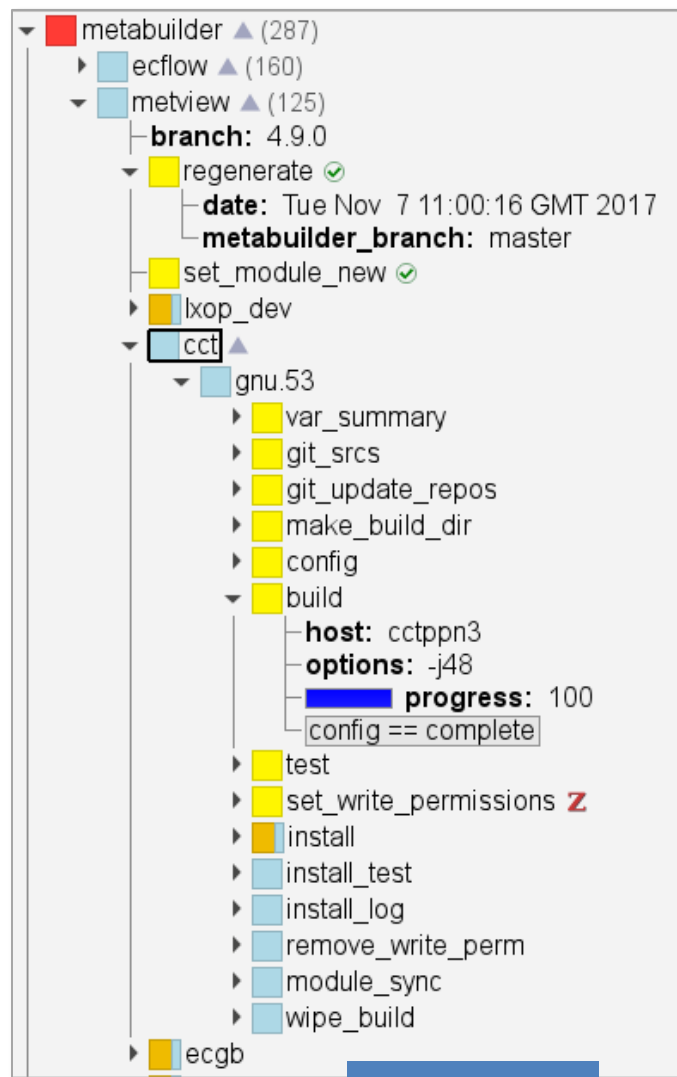
Floating Info Panels too



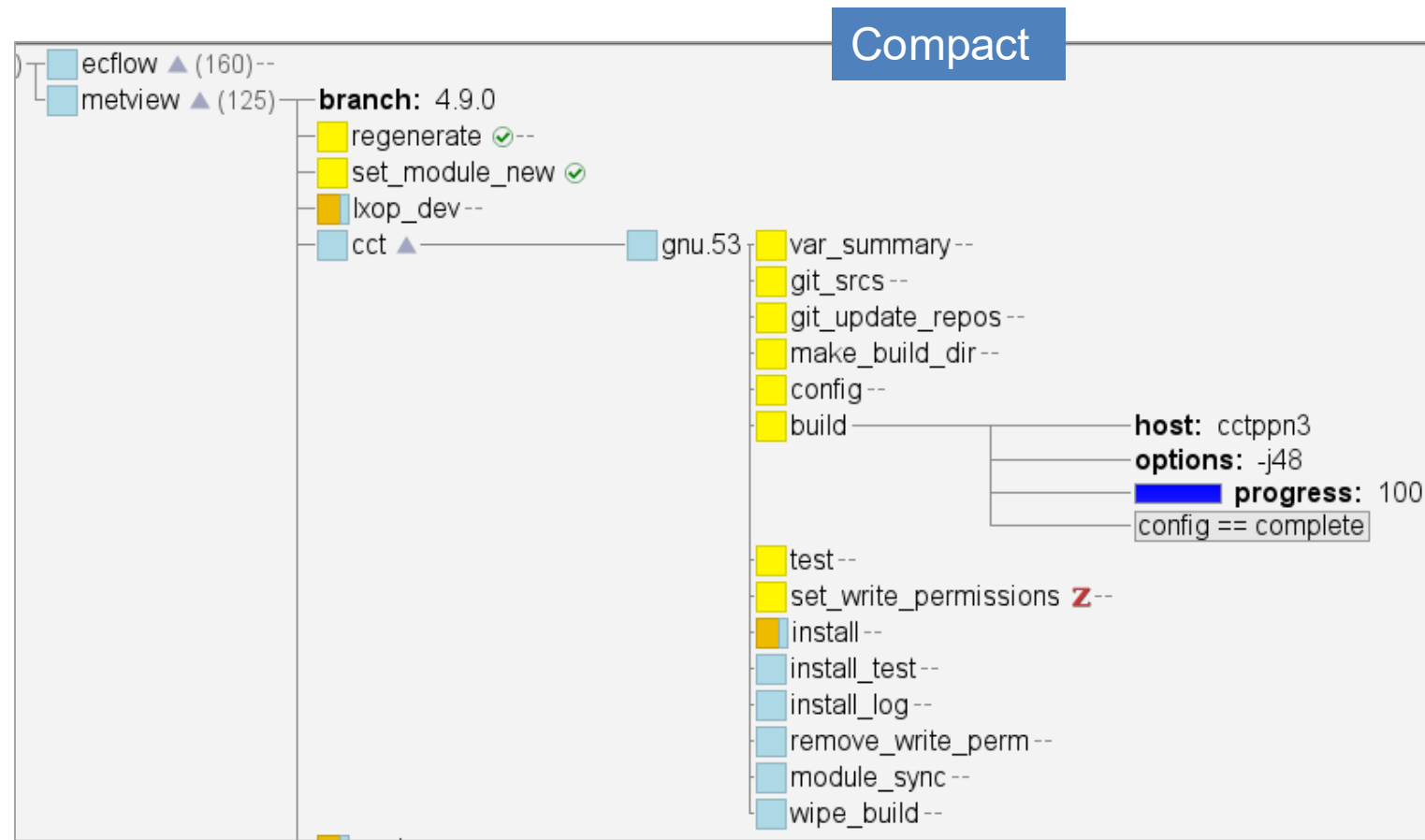
Highly configurable appearance



Standard and Compact tree views

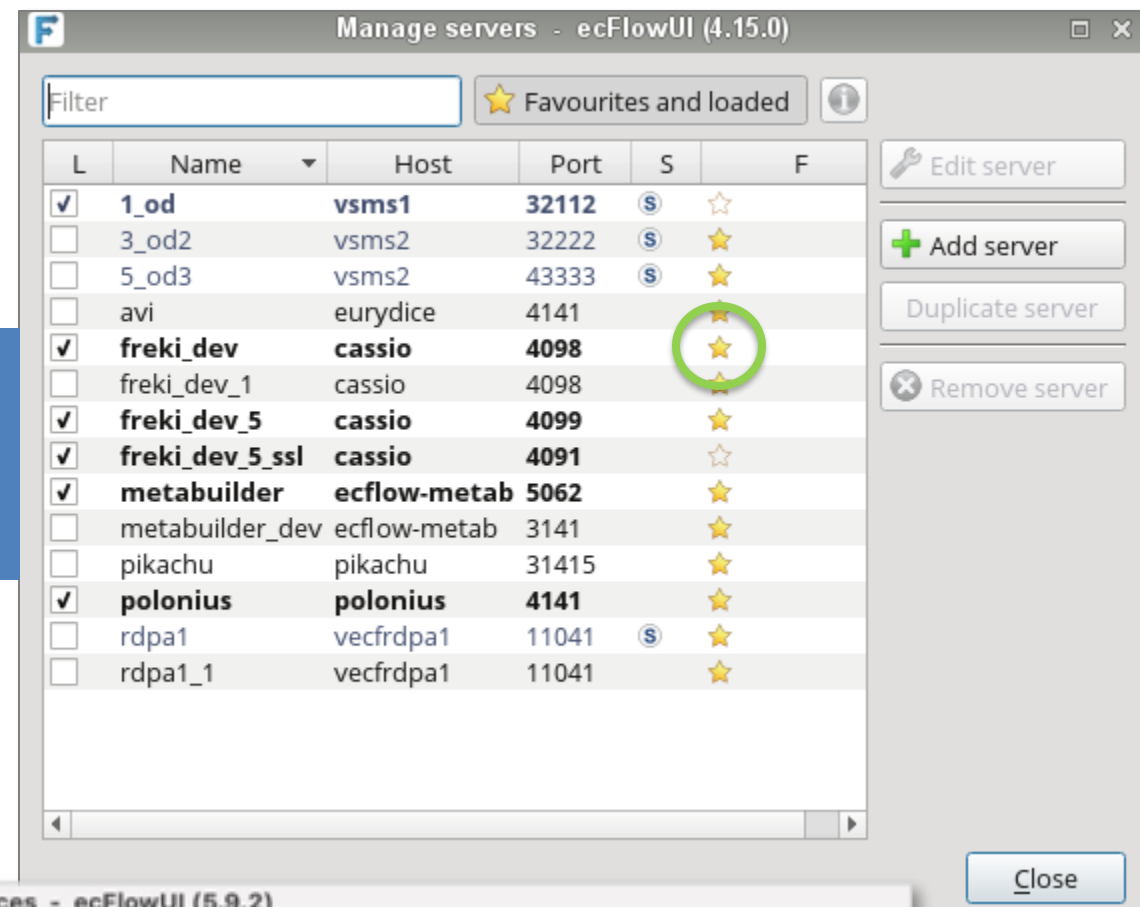
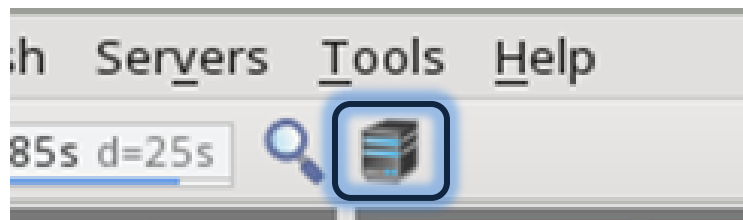


Standard

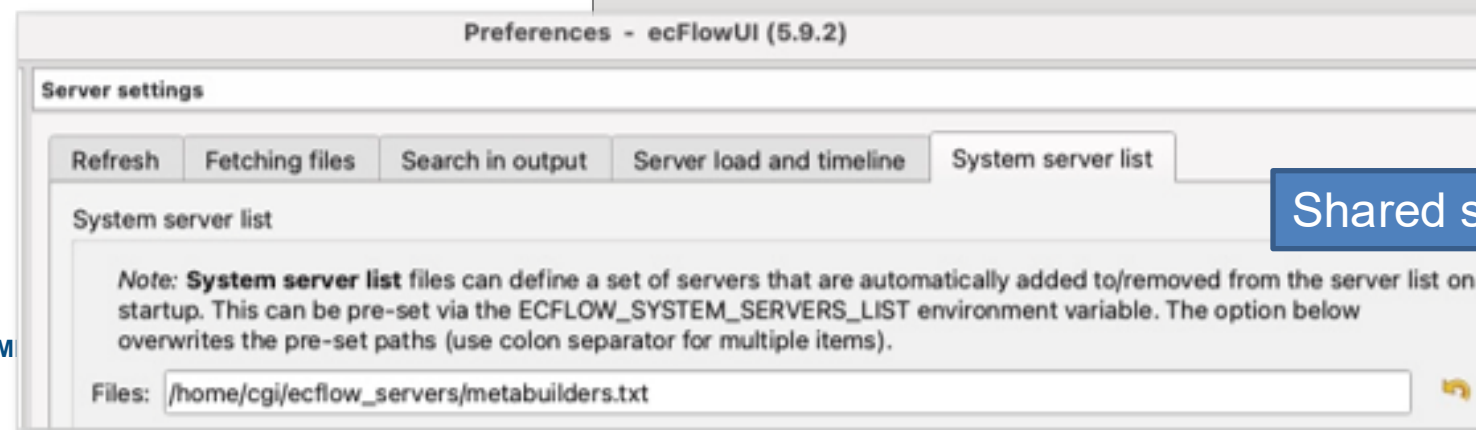
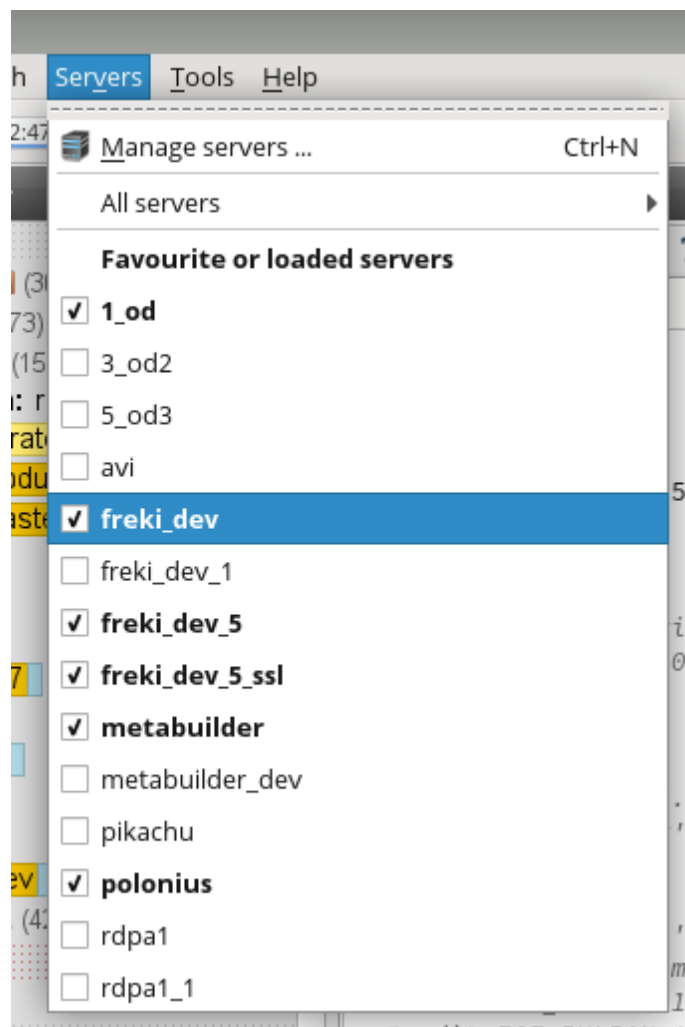


Compact

Servers



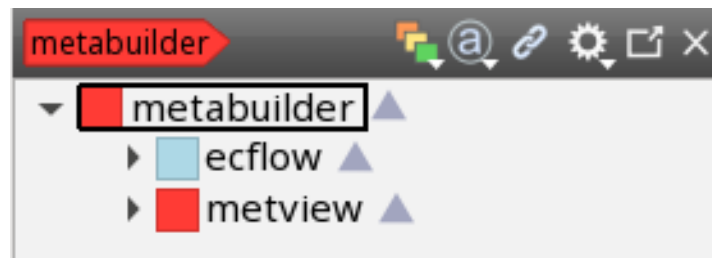
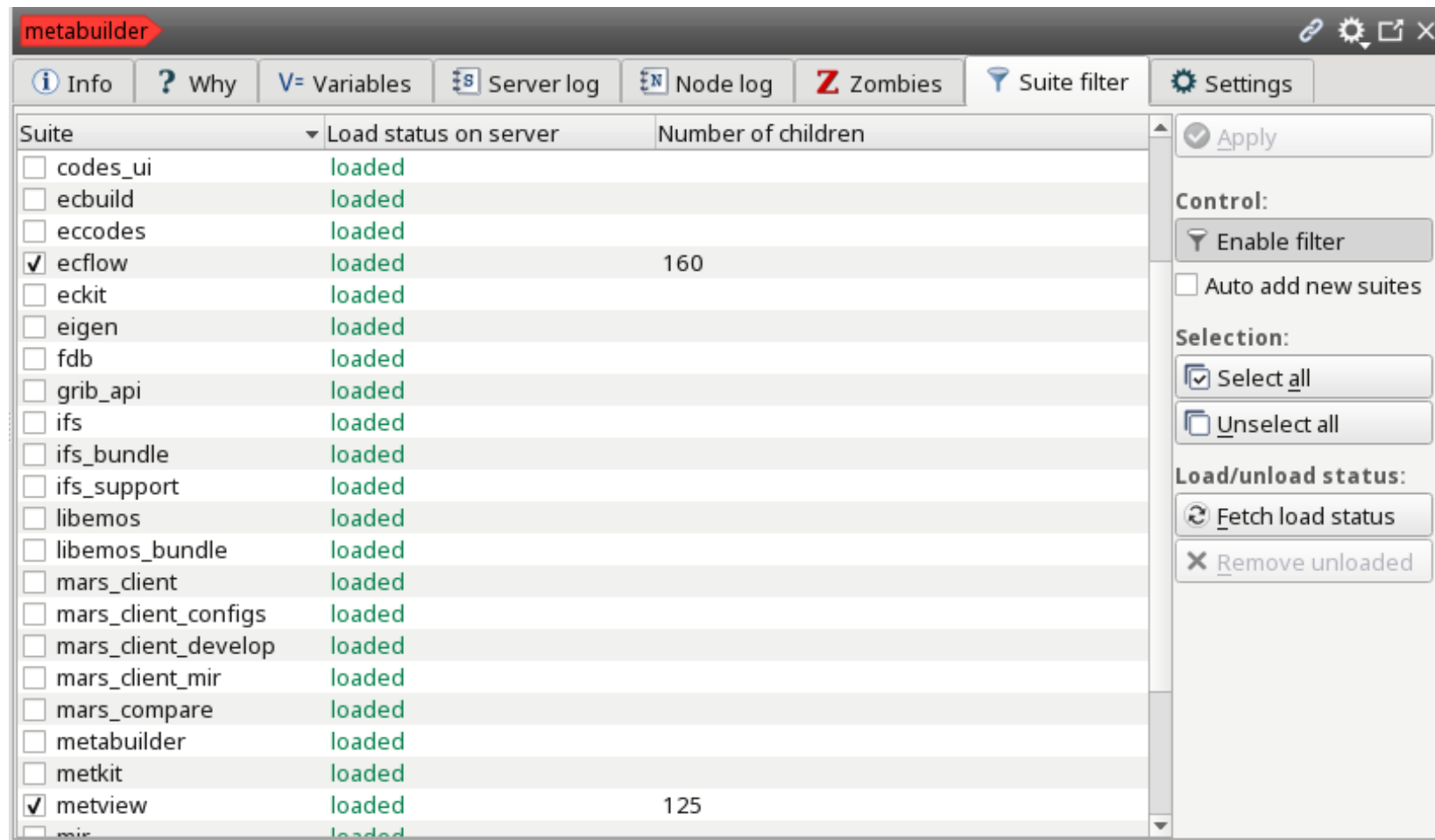
Server management dialogue allows selection of favourites for fast access in the Servers menu



Shared server lists

Suite filters

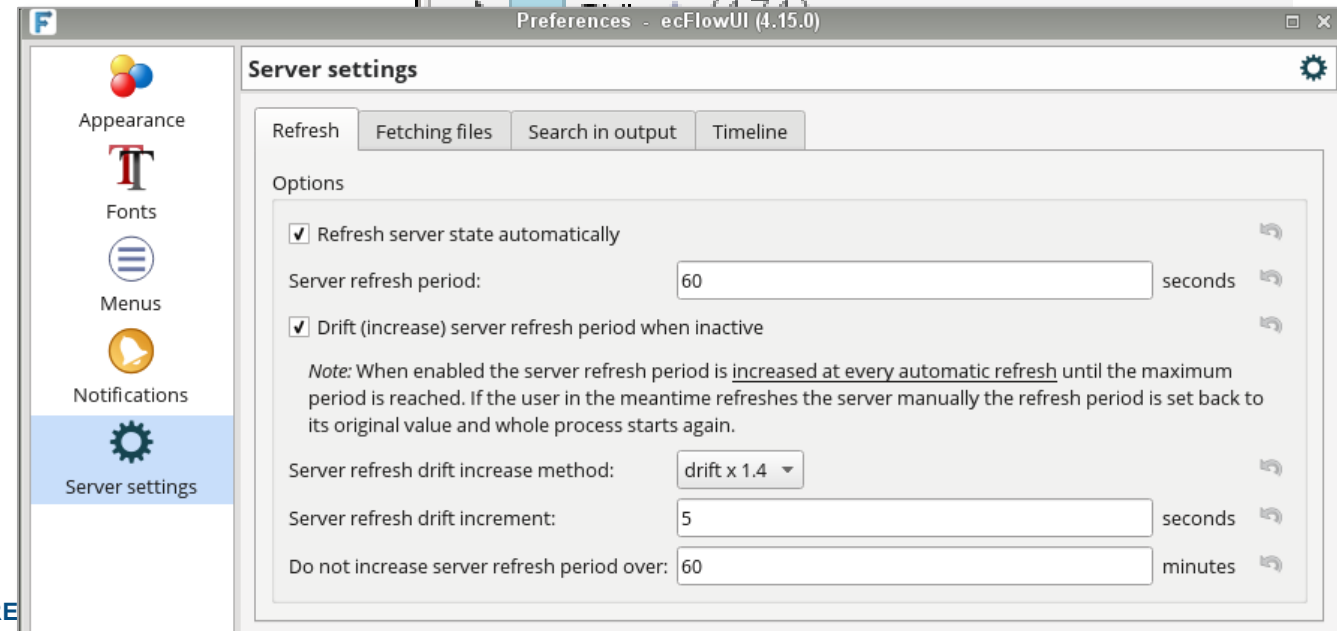
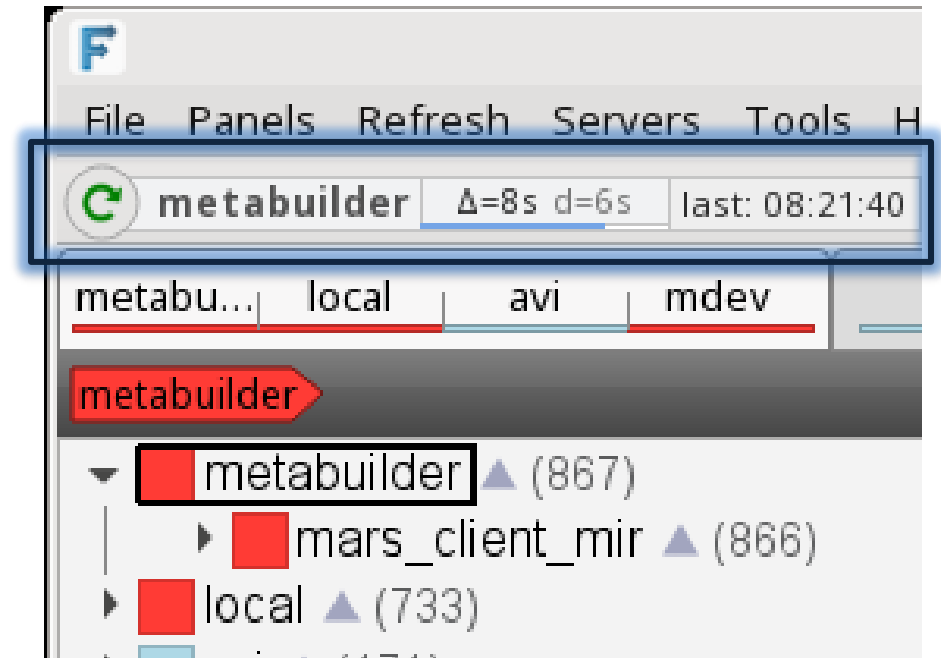
- A server can have lots of suites
- Maybe you're only interested in a few
- Use the Suite filter
 - reduces clutter on the display
 - reduces amount of data passed from server to client
 - Reduces server load ☒



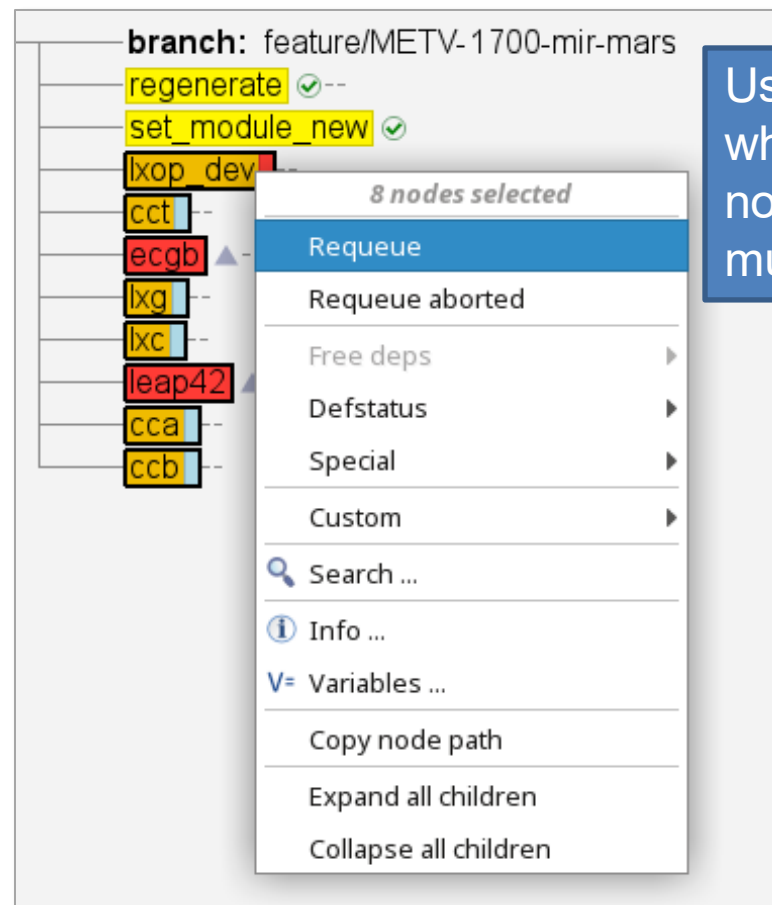
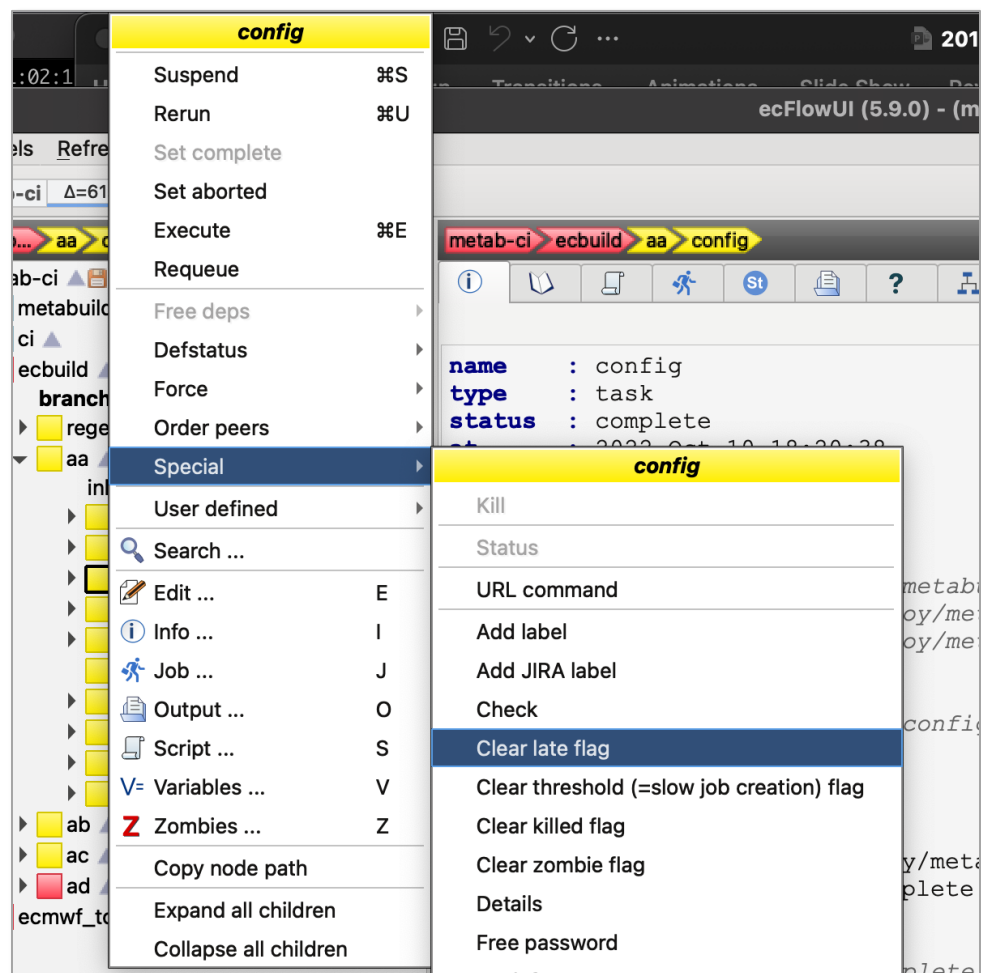
Refresh bar

- Shows how long until the next sync with the currently-selected server
- Green button (or F5) to manually refresh current server
- Frequent refresh – gives latest state of suites, but increases server load
- Indicates the *drift* time

= the server sync period is automatically increased if there is no user interaction with a server

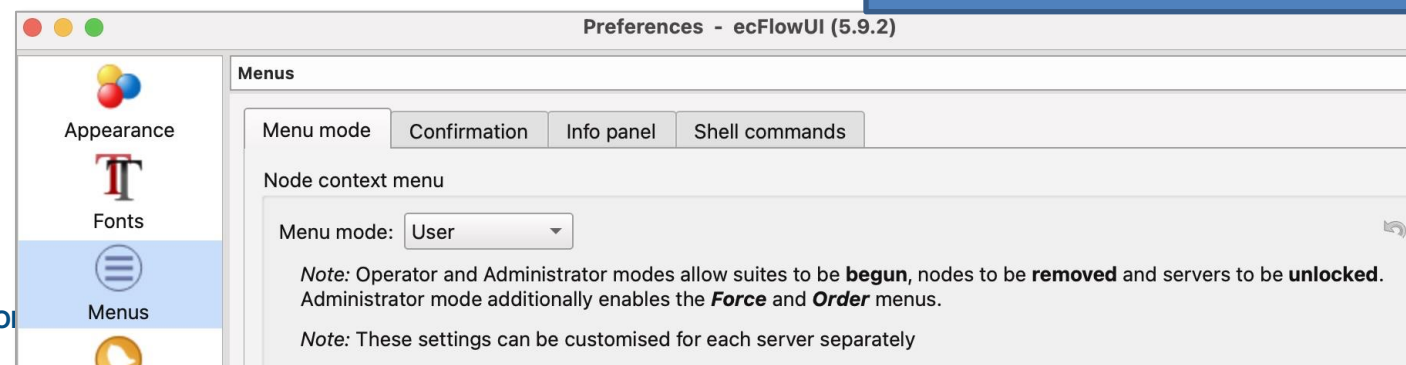


Node context menu



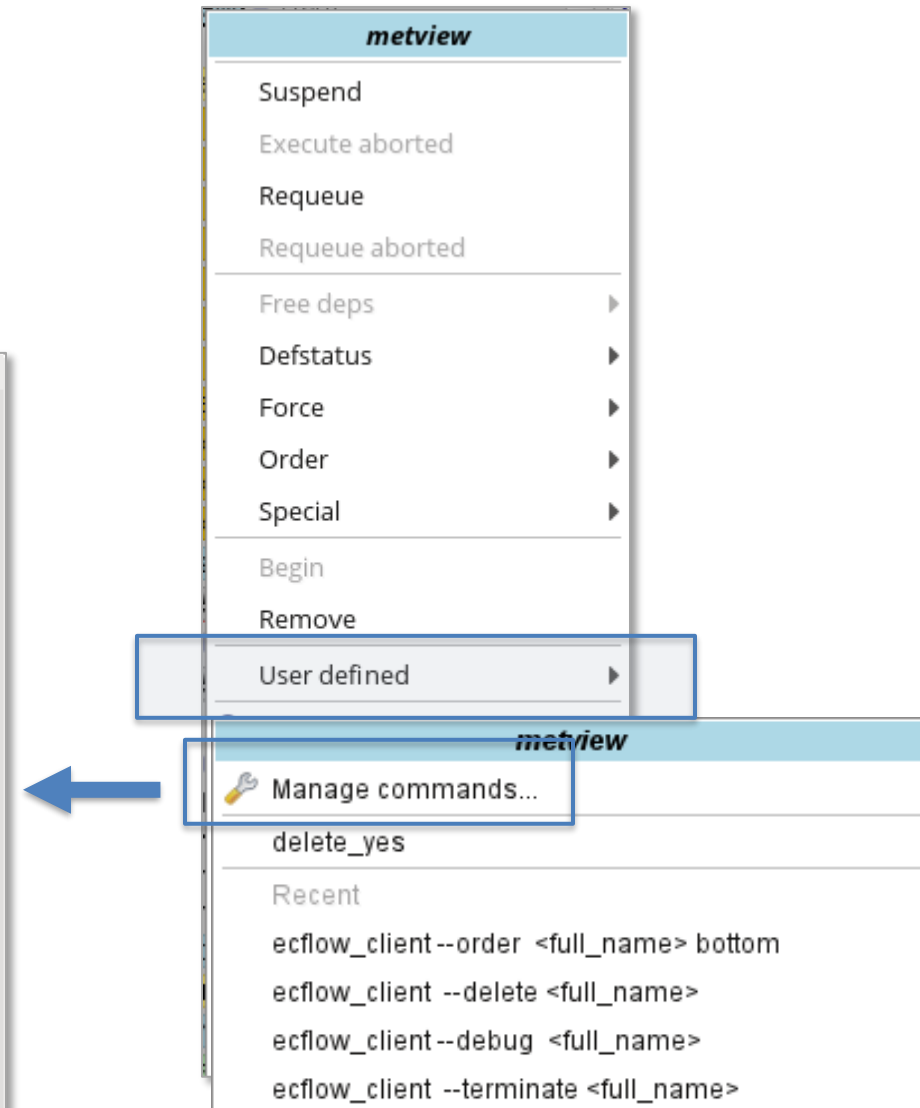
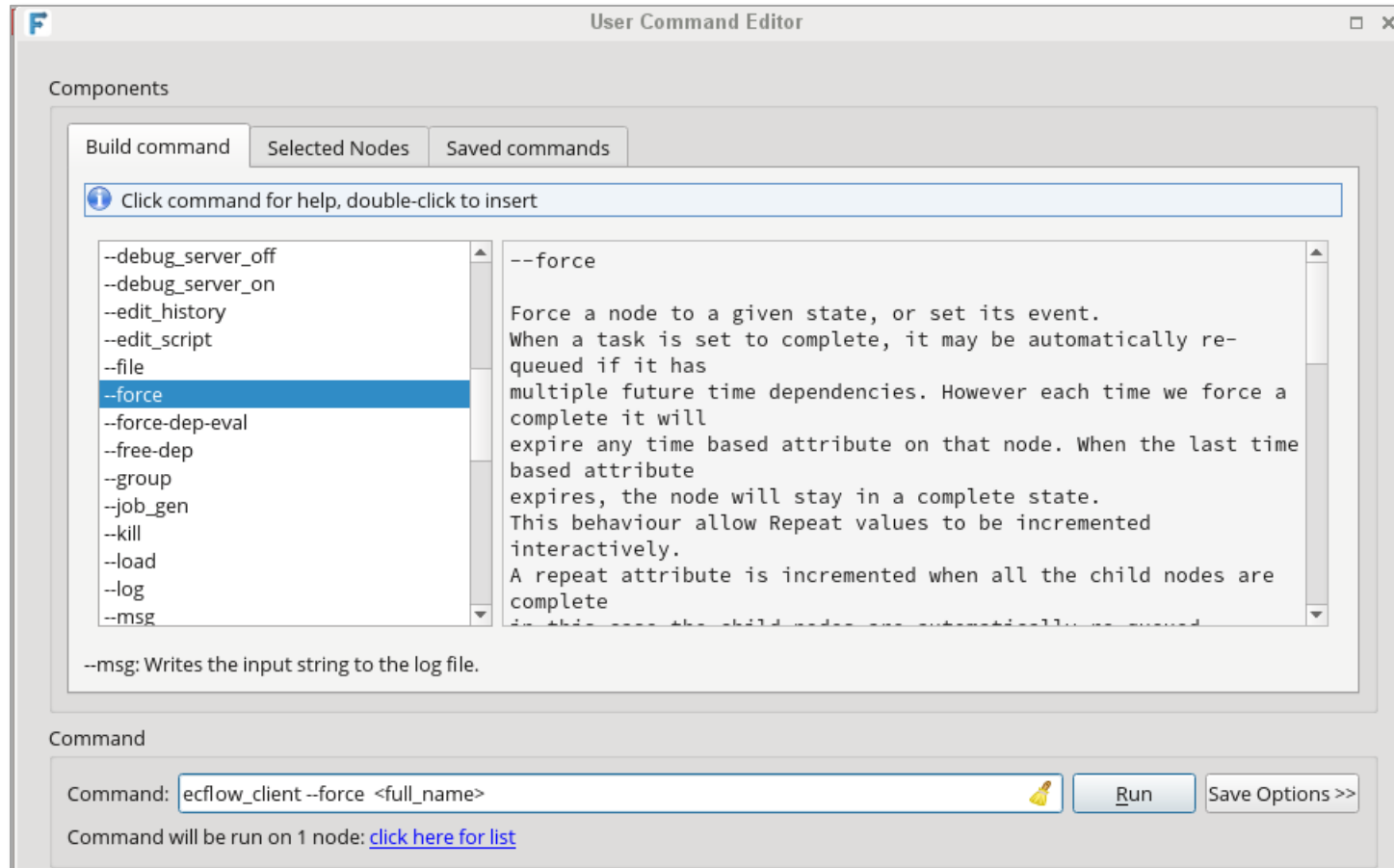
Use CTRL or SHIFT when clicking on nodes to select multiple nodes

Different menu modes

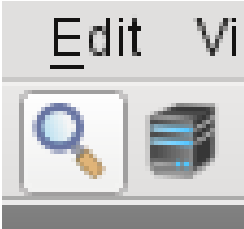


User defined commands

- Node context menu provides node-sensitive commands
- Need for an editor to create and run commands



Node Search



Invoke from the toolbar, or from a node's context menu

Query - ecFlowUI (4.7.1)

Scope

Global options

Search

Stop

Clear options

Search in servers: ALL

Search root node:

Nodes*

Attributes

Name: Contains ANY

Path: Matches *4dvar*

Type

Status

Flag

☐ server

☐ suite

☒ family

☒ task

☐ alias

☒ aborted

☒ active

☐ complete

☐ queued

☒ submitted

☐ suspended

☐ unknown

☐ is_late

☐ has_date

☐ has_message

☐ has_time

☐ is_rerun

☐ is_waiting

☐ is_zombie

Show:

Editor

Query

Query

SELECT node WHERE (node_path = '*4dvar*') and (family or task) and (aborted or active or submitted) LIMIT 50000

Server	Node	State	Type	Status changed
rdpa1	/pae/gs02/an/main/lw12/an/4dvar	aborted	family	2017-Oct-12 06:28:00
rdpa1	/pae/gs02/an/main/lw12/an/4dvar/ifstraj_1	aborted	task	2017-Oct-12 06:28:00
rdpa1	/pad/gtgu/an/main/lw00/an/4dvar	active	family	2017-Nov-09 08:47:00
rdpa1	/pad/gtgu/an/main/lw00/an/4dvar/uptraj_2	active	family	2017-Nov-09 08:47:00
rdpa1	/pad/gtgu/an/main/lw00/an/4dvar/uptraj_2	active	task	2017-Nov-09 08:47:00
rdpa1	/wab/gtym/an/main/lw00/an/4dvar	submitted	family	2017-Nov-09 09:00:00
rdpa1	/wab/gtym/an/main/lw00/an/4dvar/uptraj_1	submitted	family	2017-Nov-09 09:00:00
rdpa1	/wab/gtym/an/main/lw00/an/4dvar/uptraj_1	submitted	task	2017-Nov-09 09:00:00
rdpa1	/wab/gtxz/an/main/lw12/an/4dvar	active	family	2017-Nov-09 07:41:00
rdpa1	/wab/gtxz/an/main/lw12/an/4dvar/uptraj_2	active	family	2017-Nov-09 08:20:00
rdpa1	/wab/gtxz/an/main/lw12/an/4dvar/uptraj_2	active	task	2017-Nov-09 08:20:00
rdpa1	/wab/gtwx/an/main/lw12/an/4dvar	active	family	2017-Nov-09 08:33:00
rdpa1	/wab/gtwx/an/main/lw12/an/4dvar/uptraj_1	active	family	2017-Nov-09 08:33:00
rdpa1	/wab/gtwx/an/main/lw12/an/4dvar/uptraj_1	active	task	2017-Nov-09 08:33:00
rdpa1	/wab/gtwv/an/main/lw12/an/4dvar	active	family	2017-Nov-09 08:33:00
rdpa1	/wab/gtwv/an/main/lw12/an/4dvar/uptraj_1	active	family	2017-Nov-09 08:47:00

47 items found in 0.1 s

Close

Search parameters

Generated query

Results

Can perform actions directly on the results

Table view

- Sortable table of nodes for all servers in current tab
- Intended to be used with a filter, otherwise can be slow

Table filter - ecFlowUI (4.7.1)

Scope: Search in servers: ALL Search root node: Global options: Max results: 50000 Case sensitive: ☐

Nodes* Attributes

Name: Contains ANY Path: Contains ANY

Type: ☐ server ☐ suite ☐ family ☐ task ☐ alias

Status: ☒ aborted ☒ active ☐ complete ☐ queued ☐ submitted ☐ suspended ☐ unknown

Flag: ☐ is_late ☐ has_date ☐ has_message ☐ has_time ☐ is_rerun ☐ is_waiting ☐ is_zombie

Query: SELECT node WHERE (aborted or active)

Apply Cancel

rdpa1 wab gtww an main lw12 an 4dvar uptraj_1 ifsmmin

Filter: SELECT node WHERE (aborted or active)

Node	Status	Type	Trigger	Label	Event	Meter	Status changed
/wab/gtwx/an/lag	aborted	family					2017-Nov-09 08:33:00
/wab/gtwx/an	aborted	family					2017-Nov-09 08:33:00
/wab/gtwx	aborted	family		infopsc: 'ccb'			2017-Nov-09 08:33:00
/wab/gtwv/an/main/lw12/an/4dva	active	task	ifstraj == complete				2017-Nov-09 08:47:00
/wab/gtwv/an/main/lw12/an/4dva	active	family	uptraj_0 == complete				2017-Nov-09 08:47:00
/wab/gtwv/an/main/lw12/an/4dva	active	family	odb == complete and vardata =				2017-Nov-09 08:33:00
/wab/gtwv/an/main/lw12/an	active	family	/wab/gtwv/an/obs/lw12 == cor				2017-Nov-09 08:33:00
/wab/gtwv/an/main/lw12	active	family					2017-Nov-09 07:54:00
/wab/gtwv/an/main/lw00/fclong/n	active	task	getpersSST == complete AND info:		step: 120		2017-Nov-09 07:54:00

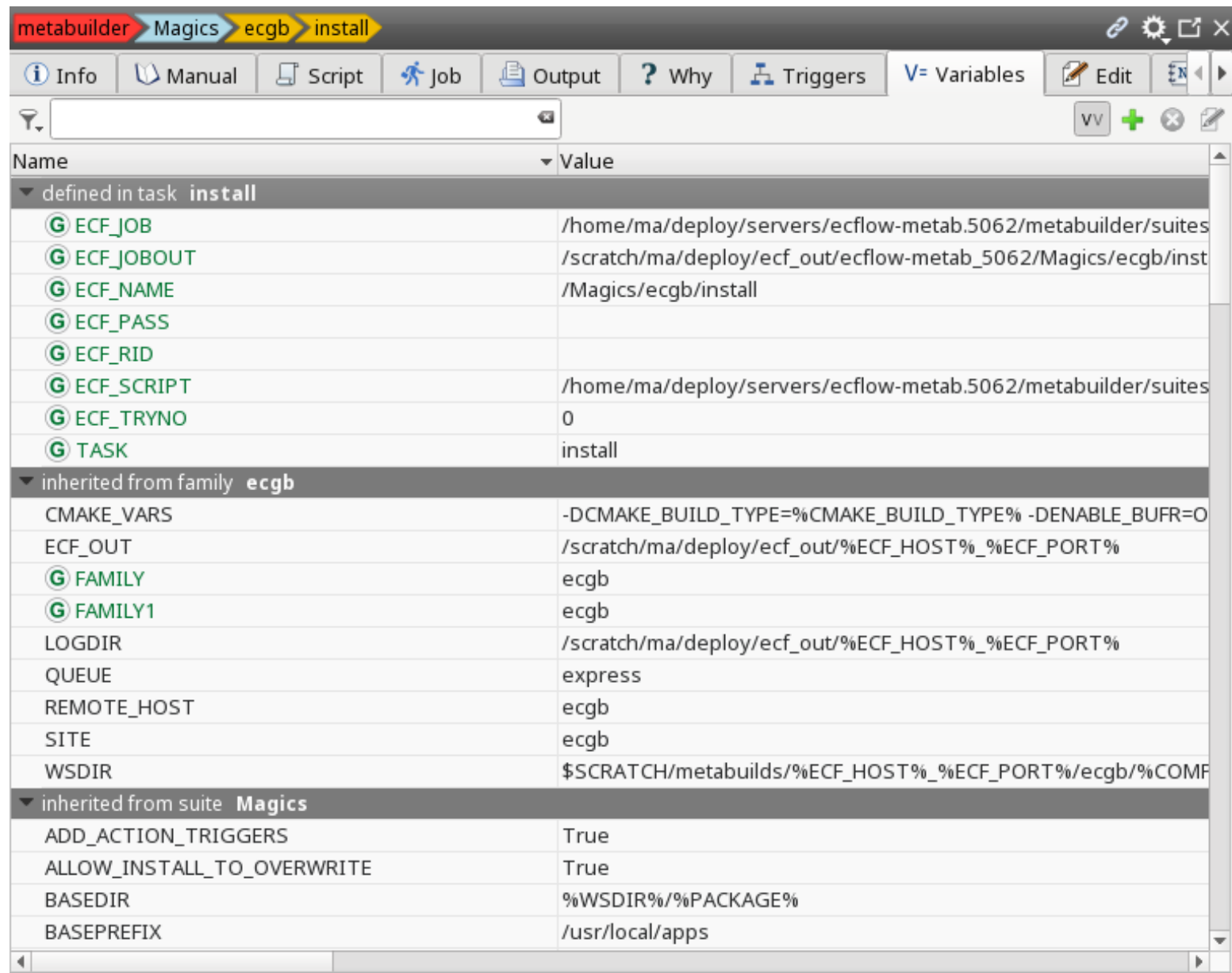
Notifications: Aborted Late

Variables

Edit, add, delete

Generated
variables are
green

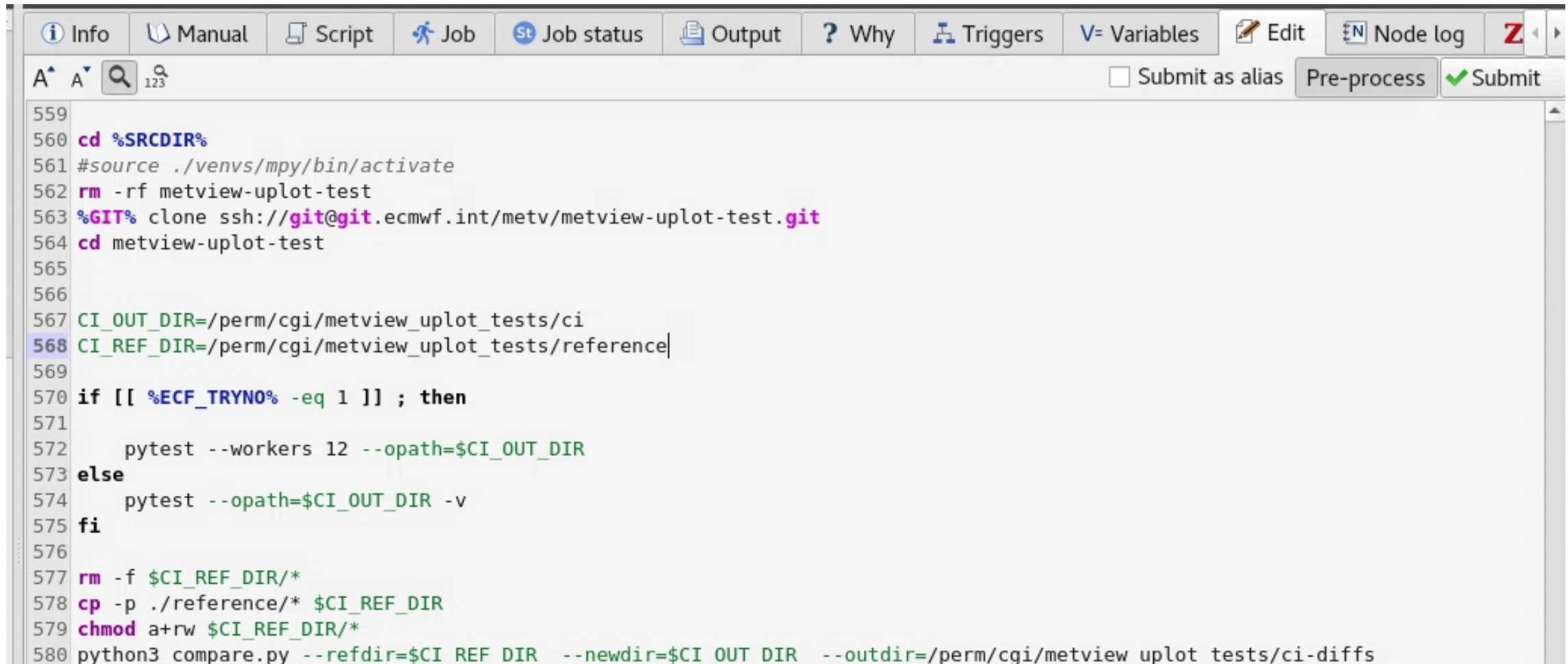
Shows variables
inherited from
node hierarchy



Name	Value
defined in task install	
G ECF_JOB	/home/ma/deploy/servers/ecflow-metab.5062/metabuilder/suites
G ECF_JOBOUT	/scratch/ma/deploy/ecf_out/ecflow-metab_5062/Magics/ecgb/inst
G ECF_NAME	/Magics/ecgb/install
G ECF_PASS	
G ECF_RID	
G ECF_SCRIPT	/home/ma/deploy/servers/ecflow-metab.5062/metabuilder/suites
G ECF_TRYNO	0
G TASK	install
inherited from family ecgb	
CMAKE_VARS	-DCMAKE_BUILD_TYPE=%CMAKE_BUILD_TYPE% -DENABLE_BUF=0
ECF_OUT	/scratch/ma/deploy/ecf_out/%ECF_HOST%_%ECF_PORT%
G FAMILY	ecgb
G FAMILY1	ecgb
LOGDIR	/scratch/ma/deploy/ecf_out/%ECF_HOST%_%ECF_PORT%
QUEUE	express
REMOTE_HOST	ecgb
SITE	ecgb
WSDIR	\$SCRATCH/metabuilds/%ECF_HOST%_%ECF_PORT%/ecgb/%COMP
inherited from suite Magics	
ADD_ACTION_TRIGGERS	True
ALLOW_INSTALL_TO_OVERWRITE	True
BASEDIR	%WSDIR%/%%PACKAGE%
BASEPREFIX	/usr/local/apps

Editing a task/job

Option to pre-process job
before editing



The screenshot shows a web-based task editor interface. At the top, there is a navigation bar with tabs: Info, Manual, Script, Job, Job status, Output, Why, Triggers, Variables, Edit, Node log, and a red 'Z' icon. Below the navigation bar, there is a search bar with 'A' and 'A' icons, a magnifying glass icon, and the number '123'. To the right of the search bar, there is a checkbox labeled 'Submit as alias', a 'Pre-process' button, and a 'Submit' button with a green checkmark icon. The main area of the interface displays a shell script with line numbers from 559 to 580. The script contains commands for setting directories, cloning a git repository, running pytest, and comparing files.

```
559
560 cd %SRCDIR%
561 #source ./venvs/mpi/bin/activate
562 rm -rf metview-uplot-test
563 %GIT% clone ssh://git@git.ecmwf.int/metv/metview-uplot-test.git
564 cd metview-uplot-test
565
566
567 CI_OUT_DIR=/perm/cgi/metview_uplot_tests/ci
568 CI_REF_DIR=/perm/cgi/metview_uplot_tests/reference|
569
570 if [[ %ECF_TRYNO% -eq 1 ]] ; then
571     pytest --workers 12 --opath=$CI_OUT_DIR
572 else
573     pytest --opath=$CI_OUT_DIR -v
574 fi
575
576
577 rm -f $CI_REF_DIR/*
578 cp -p ./reference/* $CI_REF_DIR
579 chmod a+rw $CI_REF_DIR/*
580 python3 compare.py --refdir=$CI_REF_DIR --newdir=$CI_OUT_DIR --outdir=/perm/cgi/metview_uplot_tests/ci-diffs
```

Output log

Can fetch output from remote server when the log-server is set up

Search (wildcard and regexp modes!)

List of files in output directory

Manual update

File: /perm/deploy/metabuilder/ecf_out/ecflow-gen-deploy-metab-ci_3141/ecflow/aa/config.1
Size: 32 KB Modified: 2023-03-29 18:59:01
Source: read from disk at 2023-03-30 11:11:38

```
368 -- ENABLE_STATIC BOOST_LIBS : ON
369 -- ENABLE_SSL : ON *if* openssl libraries available
370 -- ENABLE_HTTP : ON
371 -- ENABLE_UI_BACKTRACE : OFF
372 -- UI_SYSTEM_SERVERS_LIST : /ec/vol/ecflow_def/servers.list.all
373 -- ENABLE_UI_USAGE_LOG : OFF
374 --
375 =====
376 -- BOOST
377 -- Using STATIC boost libraries :
378 -- Found Boost: /usr/local/apps/boost/1.81.0/GNU/8.5/include (found suitable version "1.81.0", minimum required is "1.66.0")
379 -- Found Boost: /usr/local/apps/boost/1.81.0/GNU/8.5/include (found suitable version "1.81.0", minimum required is "1.66.0") found components: timer
380 -- Boost LIBRARIES : /usr/local/apps/boost/1.81.0/GNU/8.5/lib/libboost_timer.a /usr/local/apps/boost/1.81.0/GNU/8.5/lib/libboost_chrono.a /usr/
381 --
382 -- LIB RT needed by some test, boost_timer->boost_chrono-> -lrt
383 -- LIB RT FOUND
384 --
385 -- SSL
386 -- Found OpenSSL: /usr/lib64/libcrypto.so (found version "1.1.1k")
387 -- Clang-Format found at /usr/bin/clang-format [13.0.1]
388 --
389 -- PYTHON2
390 --
391 -- Could NOT find Python2 (missing: Python2_INCLUDE_DIRS Python2_LIBRARIES Development Development.Module Development.Embed) (found version "2.7.18")
392 --
393 -- PYTHON3
394 --
395 -- Found Python3: /usr/local/apps/python3/3.10.10-01/bin/python3.10 (found version "3.10.10") found components: Interpreter Development Development
396 -- Python3 Interpreter_FOUND : TRUE
397 -- Python3_EXECUTABLE : /usr/local/apps/python3/3.10.10-01/bin/python3.10
398 -- Python3_STDLIB : /usr/local/apps/python3/3.10.10-01/lib/python3.10 Standard platform independent installation directory
399 -- Python3_STDARCH : /usr/local/apps/python3/3.10.10-01/lib/python3.10 Standard platform dependent installation directory.
```

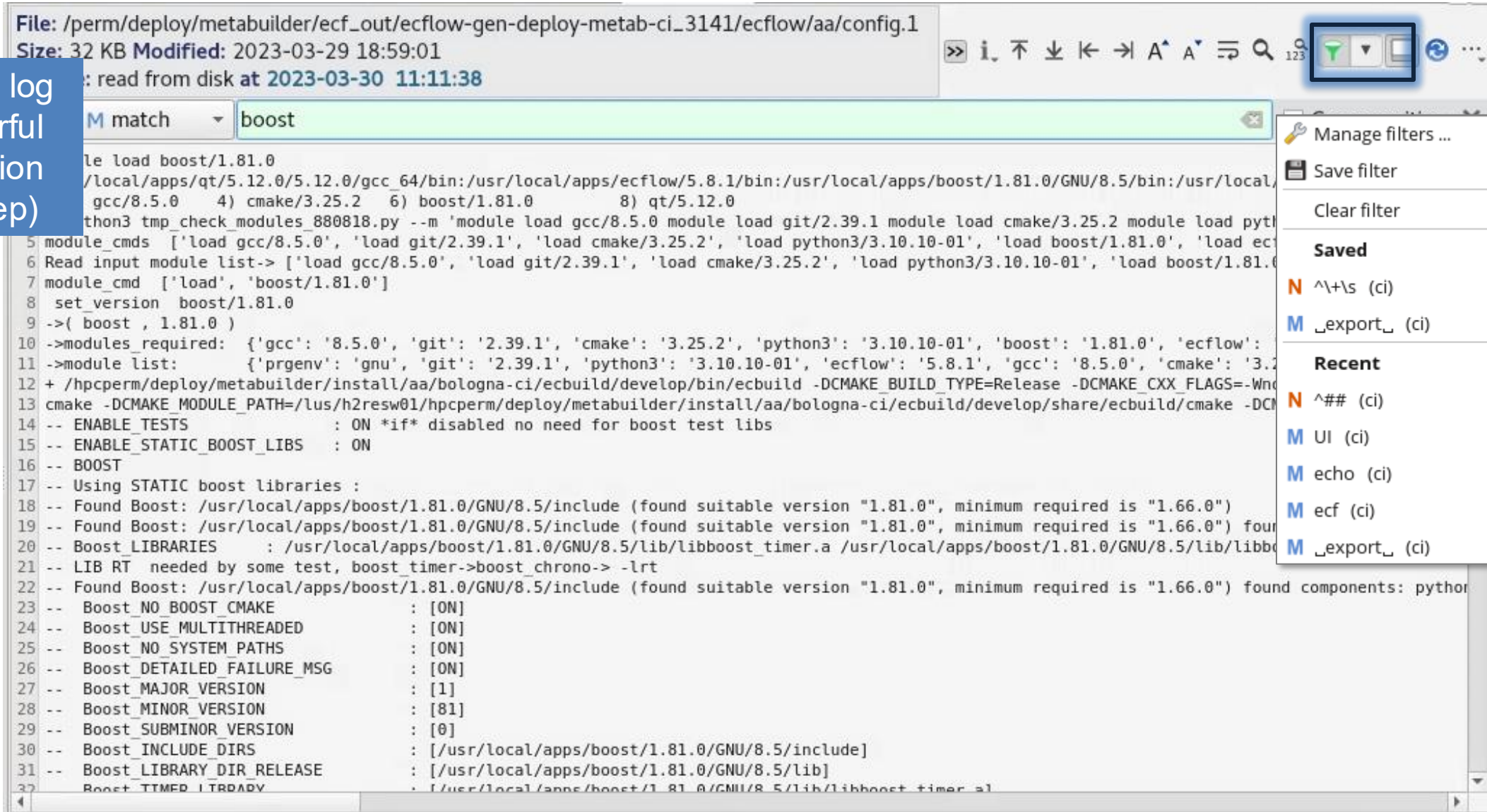
contains boost

Directory listing updated at 2023-03-30 11:13:38

Name	Path	Size	Modified (ago)	Modified	Source
config.1	/perm/deploy/m...	32 KB	16 hours ago	2023-03-29 18:59:01	from disk
config.job1.submi...	/perm/deploy/me...	3 KB	16 hours ago	2023-03-29 18:58:45	from disk

Output log filter

Job output log
has powerful
filter function
(using grep)



The screenshot shows a file viewer window with the following details:

- File:** /perm/deploy/metabuilder/ecf_out/ecflow-gen-deploy-metab-ci_3141/ecflow/aa/config.1
- Size:** 32 KB
- Modified:** 2023-03-29 18:59:01
- Accessed:** read from disk at 2023-03-30 11:11:38

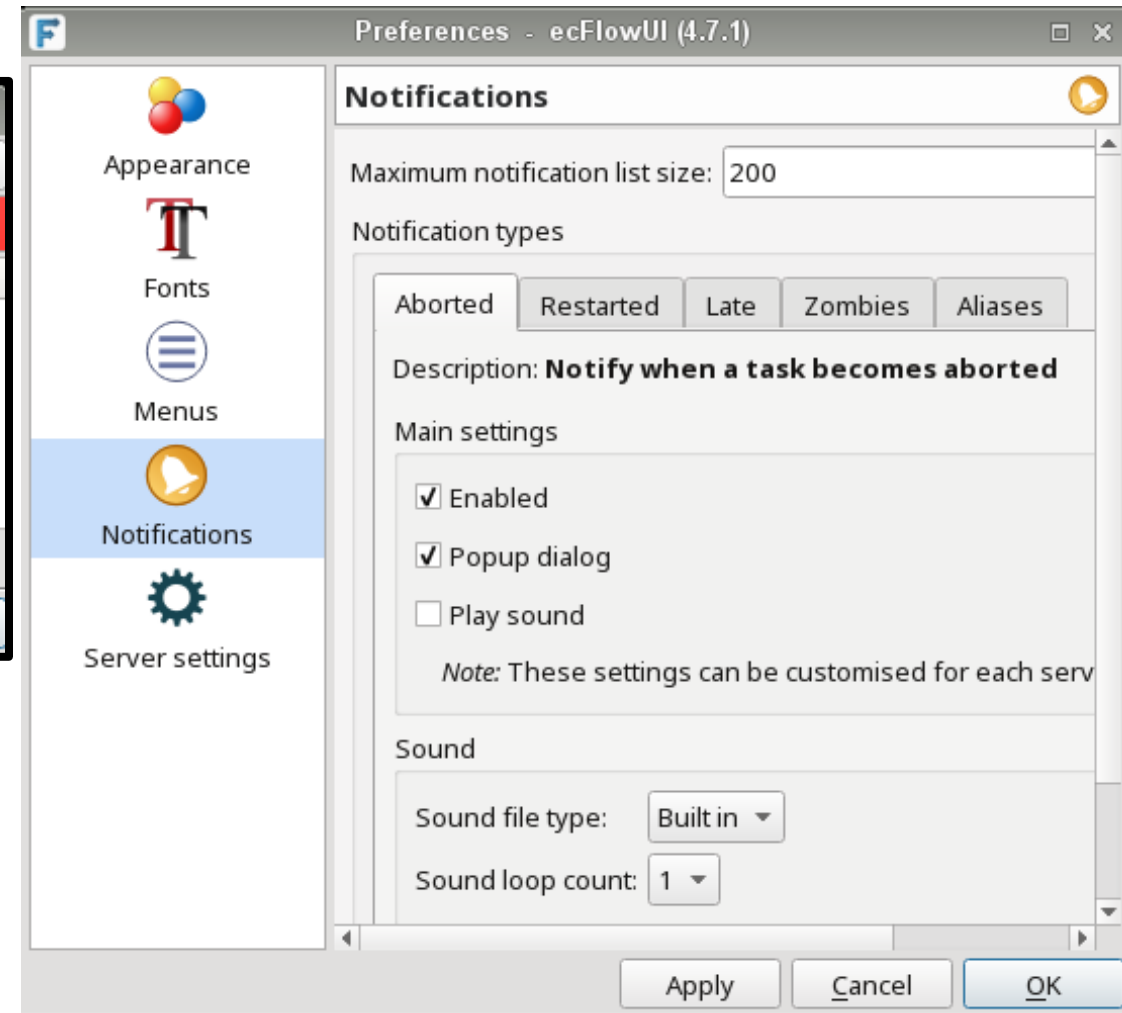
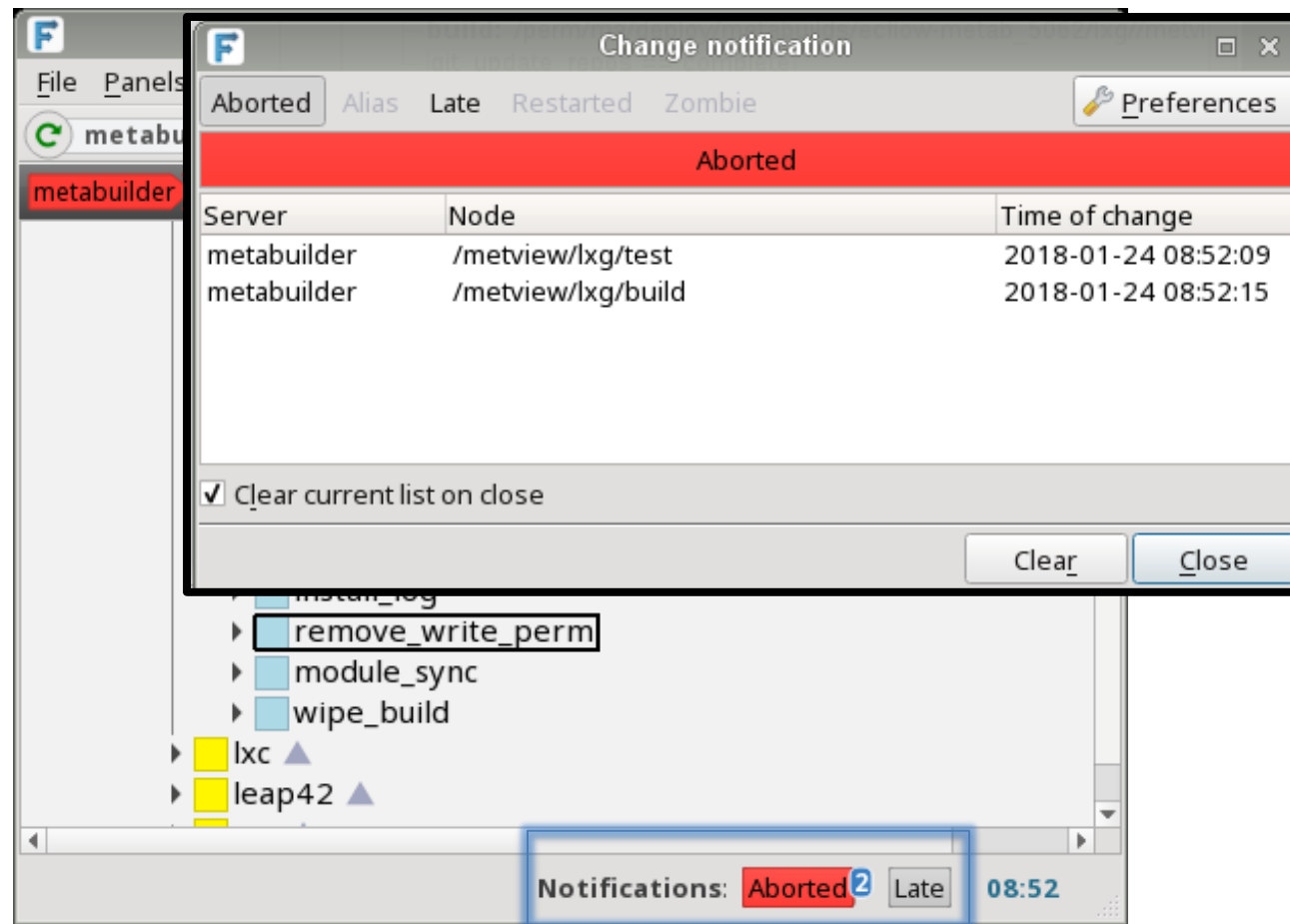
The main content area displays a log file. A filter bar at the top of the log content shows "M match" and "boost". The log content includes the following lines:

```
5 module_cmds ['load gcc/8.5.0', 'load git/2.39.1', 'load cmake/3.25.2', 'load python3/3.10.10-01', 'load boost/1.81.0', 'load ecf/5.8.1']
6 Read input module list-> ['load gcc/8.5.0', 'load git/2.39.1', 'load cmake/3.25.2', 'load python3/3.10.10-01', 'load boost/1.81.0', 'load ecf/5.8.1']
7 module_cmd ['load', 'boost/1.81.0']
8 set_version boost/1.81.0
9 ->( boost , 1.81.0 )
10 ->modules required: {'gcc': '8.5.0', 'git': '2.39.1', 'cmake': '3.25.2', 'python3': '3.10.10-01', 'boost': '1.81.0', 'ecflow': '5.8.1'}
11 ->module list: {'prgenv': 'gnu', 'git': '2.39.1', 'python3': '3.10.10-01', 'ecflow': '5.8.1', 'gcc': '8.5.0', 'cmake': '3.25.2', 'boost': '1.81.0'}
12 + /hpcperm/deploy/metabuilder/install/aa/bologna-ci/ecbuild/develop/bin/ecbuild -DCMAKE_BUILD_TYPE=Release -DCMAKE_CXX_FLAGS=-Wno-unused-parameter
13 cmake -DCMAKE_MODULE_PATH=/lus/h2resw01/hpcperm/deploy/metabuilder/install/aa/bologna-ci/ecbuild/develop/share/ecbuild/cmake -DCMAKE_CXX_FLAGS=-Wno-unused-parameter
14 -- ENABLE_TESTS : ON *if* disabled no need for boost test libs
15 -- ENABLE_STATIC_BOOST_LIBS : ON
16 -- BOOST
17 -- Using STATIC boost libraries :
18 -- Found Boost: /usr/local/apps/boost/1.81.0/GNU/8.5/include (found suitable version "1.81.0", minimum required is "1.66.0")
19 -- Found Boost: /usr/local/apps/boost/1.81.0/GNU/8.5/include (found suitable version "1.81.0", minimum required is "1.66.0") found components: python3
20 -- Boost_LIBRARIES : /usr/local/apps/boost/1.81.0/GNU/8.5/lib/libboost_timer.a /usr/local/apps/boost/1.81.0/GNU/8.5/lib/libboost_chrono.a
21 -- LIB RT needed by some test, boost_timer->boost_chrono-> -lrt
22 -- Found Boost: /usr/local/apps/boost/1.81.0/GNU/8.5/include (found suitable version "1.81.0", minimum required is "1.66.0") found components: python3
23 -- Boost_NO_BOOST_CMAKE : [ON]
24 -- Boost_USE_MULTITHREADED : [ON]
25 -- Boost_NO_SYSTEM_PATHS : [ON]
26 -- Boost_DETAILED_FAILURE_MSG : [ON]
27 -- Boost_MAJOR_VERSION : [1]
28 -- Boost_MINOR_VERSION : [81]
29 -- Boost_SUBMINOR_VERSION : [0]
30 -- Boost_INCLUDE_DIRS : [/usr/local/apps/boost/1.81.0/GNU/8.5/include]
31 -- Boost_LIBRARY_DIR_RELEASE : [/usr/local/apps/boost/1.81.0/GNU/8.5/lib]
32 -- Boost_TIMER_LIBRARY : [/usr/local/apps/boost/1.81.0/GNU/8.5/lib/libboost_timer.a]
```

A right-click context menu is open over the filter bar, showing the following options:

- Manage filters ...
- Save filter
- Clear filter
- Saved**
- N** ^\+\\s (ci)
- M** _export_ (ci)
- Recent**
- N** ^## (ci)
- M** UI (ci)
- M** echo (ci)
- M** ecf (ci)
- M** _export_ (ci)

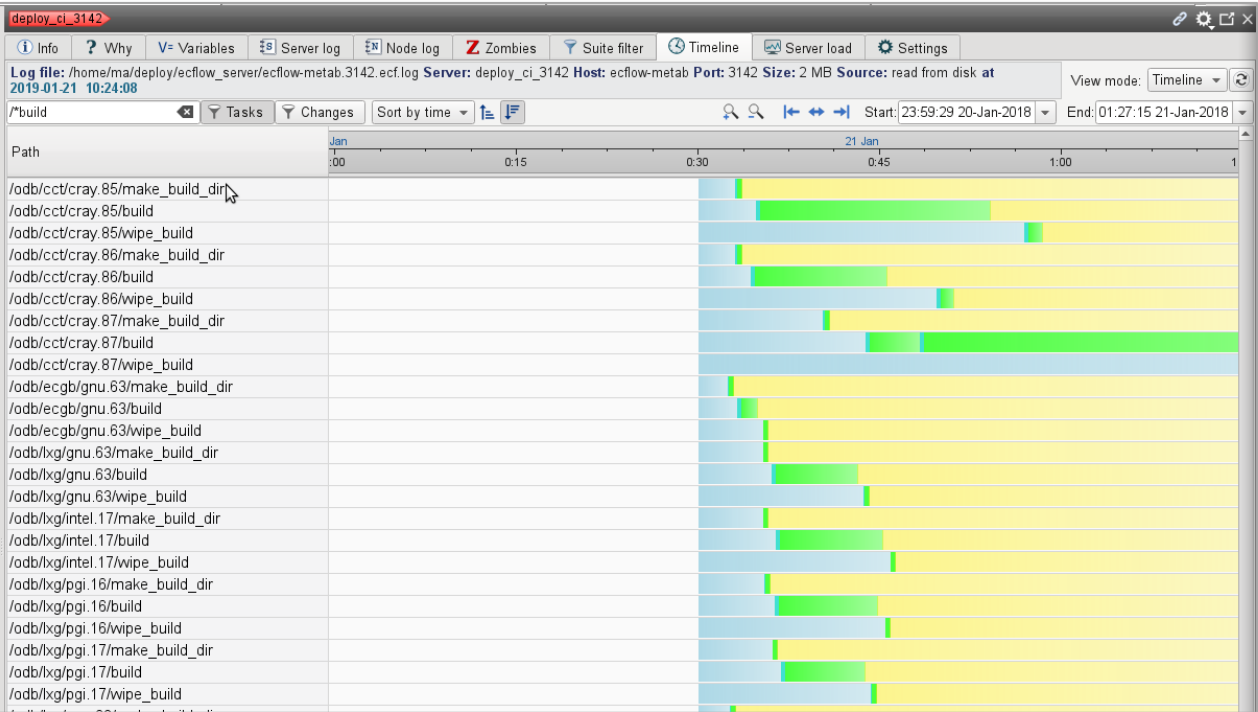
Notifications



Notifications occur when the UI syncs with the server

Settings can be global or per-server

More features



Server timeline view

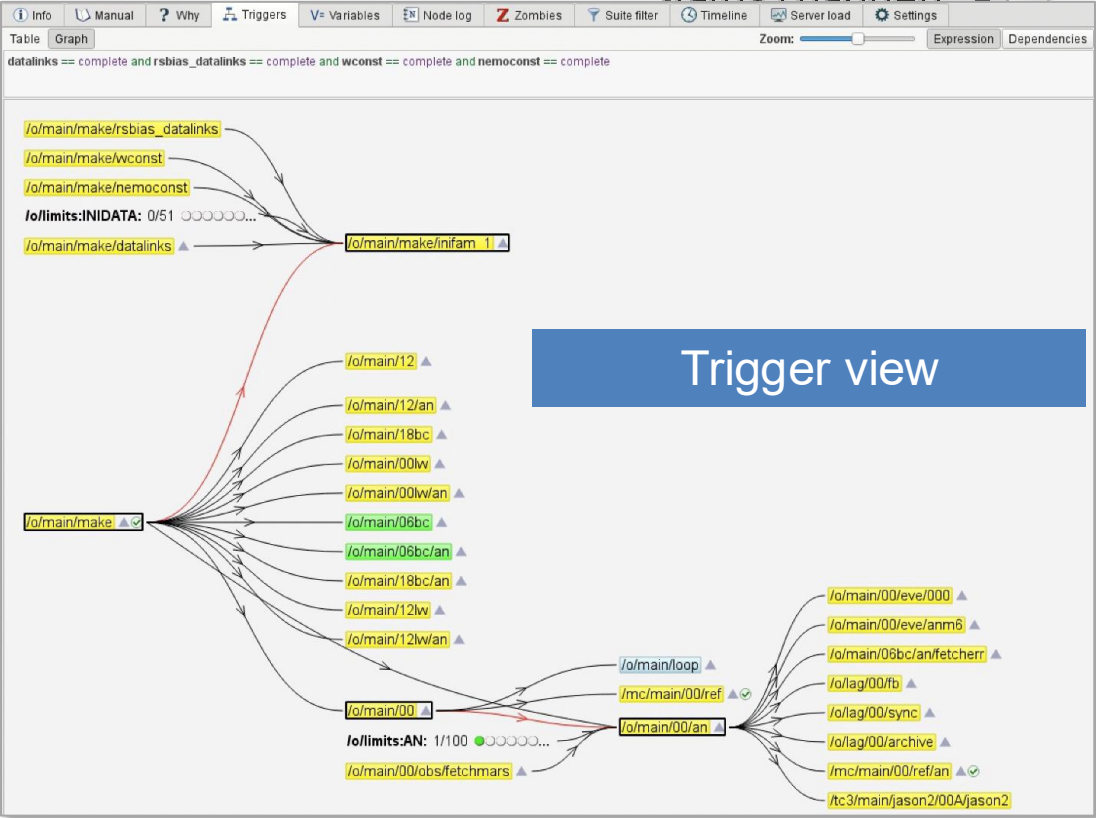
Maximise panels

Linked panels

status changed

17-Nov-07 21:08

status changed



Trigger view

Things to try

- Create a nice layout with a tree on the left-hand side, an info panel on the right-hand side and a table panel at the bottom
- Select a node and find the 'Variables' tab on the info panel – have a look!
- If you have run one of the tasks, look at the 'Script', 'Job' and 'Output' tabs
- Have a play with the 'Triggers' tab



ecFlowUI (5.15.0) - (menu: admin)

File Panels Refresh Servers Tools Help

ecflow-gen-cgi-001 Δ=141s d=138s last: 16:49:27

ecflow-gen-cgi-001 quickstart t2

mb-master mb-ci http-test

ecflow-gen-cgi-001 quickstart t2

Info Manual Script Job Job status Output Why Triggers Variables Edit Node

name : t2
type : task
status : complete
at : 2025-Oct-11 16:40:54

task t2
defstatus queued
edit TASK 't2'
edit ECF_JOB '/home/cgi/ecflow/quickstart/quickstart/t2.job1'
edit ECF_SCRIPT '/home/cgi/ecflow/quickstart/quickstart/t2.ecf'
edit ECF_JOBOUT '/home/cgi/ecflow/quickstart/quickstart/t2.1'
edit ECF_TRYNO '1'
edit ECF_RID ''
edit ECF_NAME '/quickstart/t2'
edit ECF_PASS ''
trigger t1 eq complete
endtask # t2

No selection

Filter: SELECT node

Node	Status	Type	Trigger	Label	Event	Meter	Status change	ECF_TRIES	ECF_DATE	ECF_TRYNO
/quickstart/t2	complete	task	t1 eq complete				2025-Oct-11 12		20251011	1
/quickstart/t1	complete	task					2025-Oct-11 12		20251011	1
/quickstart	complete	suite					2025-Oct-11 12		20251011	

Notifications: Aborted Late