



Why We Wrote This

- On NCAR's bluevista we had “flint”
- Users used it to generate calling trees and diagnose Fortran programs
- “flint” is too expensive
 - Hope this can replace “flint”

What we see PFP in browser

file:///Users/huangwei/work/WRFV3_html/wrf.html

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Expand All
Collapse All

- [-] wrf
 - [-] wrf init
 - [-] wrf dfi
 - [-] wrf run
 - [-] wrf debug
 - [-] integrate
 - set current grid ptr
 - model to grid confi
 - [-] domain clockprint
 - [-] start timing
 - [-] med setup step
 - [-] med pre nest initial
 - [-] alloc and configure

frame/module_integrate.F

module_integrate.F

```
1: IWRF:DRIVER_LAYER:INTEGRATION
2: !
3:

module_integrate

4: MODULE module_integrate
5:
6: CONTAINS
7:

integrate

Click HERE to see the where integrate is used.

8: RECURSIVE SUBROUTINE integrate ( grid )
9:
10:
11:
12: USE module domain
13: USE module driver constants
14: USE module nesting
15: USE module configure
16: USE module timing
17: USE module utility
18:
19: IMPLICIT NONE
20:
21: ! Input data
```

integrate Used by:

- [integrate](#)
- [wrf_run](#)

Variables in integrate

No.	Name	Type	Def	Use
1	a_nest_was_opened	logical	integrate	3
2	associated	None	UNKNOWN	0
3	bfrq	real	integrate	0
4	btime	real	integrate	0
5	config_flags	type	integrate	13
6	domain_clockisstopsbtime	None	UNKNOWN	0
7	domain_clockisstopstime	None	UNKNOWN	3
8	domain_get_current_time	None	UNKNOWN	1
9	domain_get_time_step	None	UNKNOWN	0
10	fid	integer	integrate	0
11	grid	type	integrate	30
12	grid_ptr	type	integrate	28
13	head_grid	None	UNKNOWN	1
14	idum1	integer	integrate	0
15	idum2	integer	integrate	0



The Structure of PFP on Web

- Three Panels/Columns
 - Left - Calling Tree
 - Expandable/Collapsible
 - +/- sign/box to expand/collapse
 - Subroutine/Function name to view the source code in center panel

The Structure of PFP on Web (continued)



- Center - Source Code
 - Detailed relative path for each file
 - High-light subroutine name (for precision navigate)
 - Modules/Subroutines/Functions/Types with hyper-link
 - “HERE” link to show more info at right:
 - Where this subroutine is used
 - Variables in this subroutine, and where they are defined (with certain option turned on at generation time)

The Structure of PFP on Web (continued)



■ Right Panel

- Where the center subroutine is referenced (called)
- Variables in this subroutine
 - Name, Type, Where it is defined, how many times it is used



How to Run

- Use a C-shell script (or interactive)
 - Define env. Variables (on bluefire)
 - set python_program_dir = /blhome/huangwei/pptpfp
 - set code_dir = /ptmp/huangwei/tst/WRFV3
 - set html_dir = /ptmp/huangwei/tst/WRFV3_html
 - Run with all default
 - python \${python_program_dir}/pptpfp.py \
 \${code_dir} \
 \${html_dir}



Run with Configuration

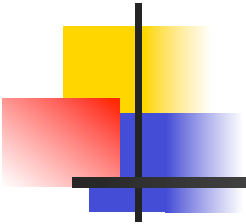
- Add Own Configuration
 - Create a file have configuration like:
DM_PARALLEL
NETCDF
EM_CORE = 1
NOUNDERSCORE



Run with Options

- More Options
 - **diagnose=on**
 - To diagnose whether modules are repeatedly used
 - **analyze=on**
 - To see where are variables defined, and how many times they are used
 - **exclude_dir=nmm_real,io_int**
 - To exclude directories, such as data only

Full C-shell Script for WRFV3



```
#!/bin/csh -f
set python_program_dir = /blhome/huangwei/pptpfp
set code_dir = /ptmp/huangwei/tst/WRFV3
set html_dir = /ptmp/huangwei/tst/WRFV3_html
if(! -d ${html_dir}) then
    mkdir -p ${html_dir}
endif
foreach f ( mktree.css mktree.js minus.gif plus.gif bullet.gif)
    cp ${python_program_dir}/${f} ${html_dir}/${f}
end
set bgn_date = `date +%Y%m%d:%H%M%S`
echo "bgn_date: $bgn_date" >> wrf2html.log
python ${python_program_dir}/pptpfp.py \
    ${code_dir} ${html_dir} \
    config_filename=wrf.default.configuration \
    diagnose=on analyze=on \
    exclude_dir=ncmm_real,io_int \
    exclude_dir=fftpack >&! wrf2html.log
set end_date = `date +%Y%m%d:%H%M%S`
if(-f code.configuration.var) then
    cat code.configuration.var >> wrf2html.log
endif
echo "bgn_date: $bgn_date" >> wrf2html.log
echo "end_date: $end_date" >> wrf2html.log
```



Diagnostic Messages

Analyze: `<init_domain_constants_em_ptr>` in file:
`</ptmp/huangwei/tst/WRFV3/main/ndown_em.F>`

WARNING MODULE `<module_configure>` already used
in `<module_domain>`

.....

WARNING Variable: name defined, but never used.

.....



Demo and Contact

- Browse WRFV3 on Web
 - http://www.cisl.ucar.edu/staff/huangwei/WRFV3_html/wrf.html
- Questions/Problems/Comments
 - Email: huangwei@ucar.edu
 - Phone: 303-497-8924