

Next Generation HEPiX Scripts

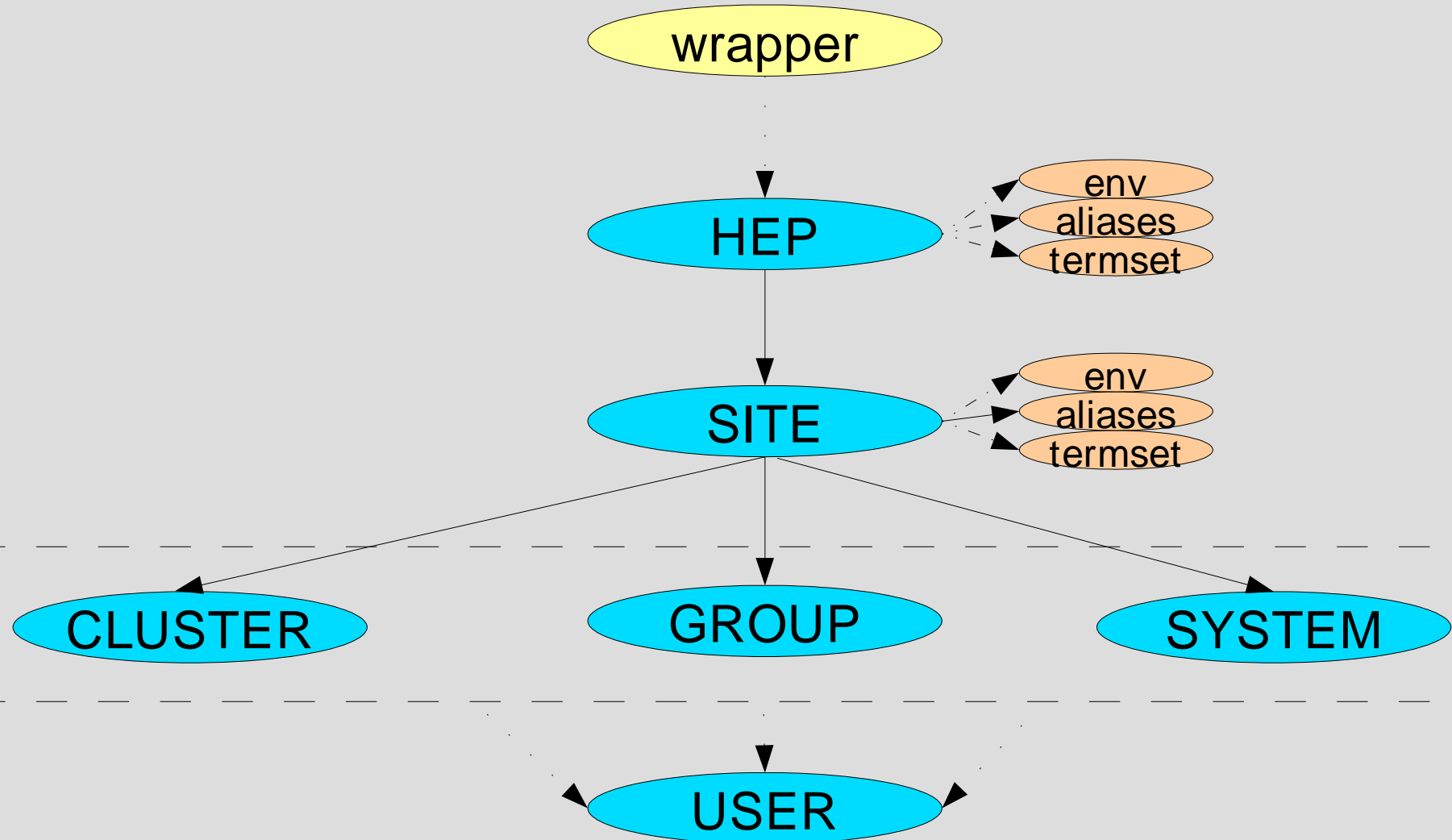
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presented by
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What are HEPiX scripts?

- HEP-wide collaboration initiated by CERN/DESY
- unify UNIX working environment across different vendor Unices
- provide hooks for administrators to alter user environment
- sh, ksh, bash, zsh, csh, tcsh supported
- version 3.2 released in December 1997
- version 3.4 released in August 2001
- version 3.7 released in December 2001
- version 3.8 released in February 2002

Structure

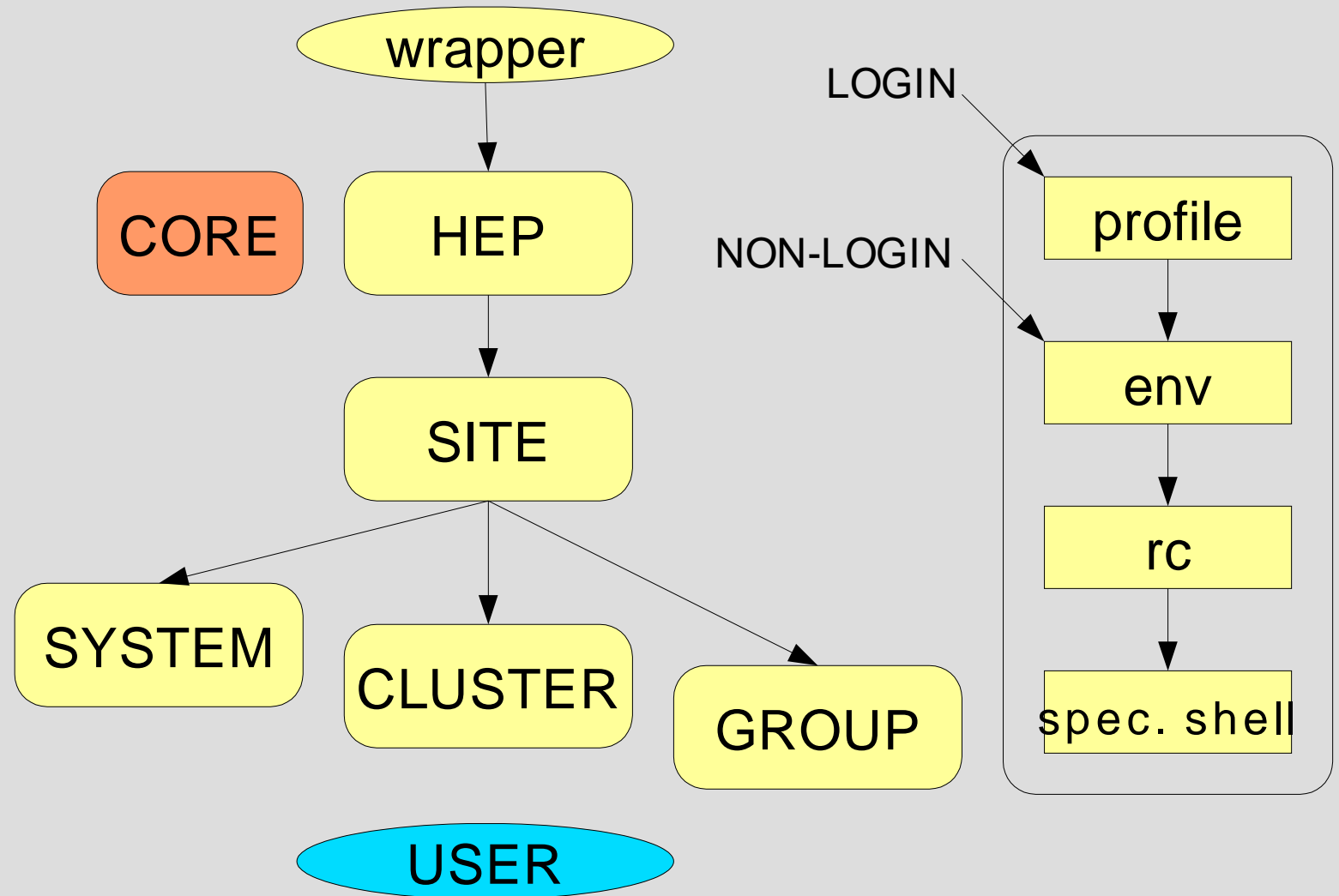


...repeated for each shell flavour!

Why rewrite?

- multi-vendor Unices are now uncommon
- HEPiX scripts aged while shells improved
- original scripts used many external tools
 - custom C programs
 - Perl scripts
 - various shell scripts
- interpreter startup time is costly
- execution time became unacceptable for interactive logins
- lot of duplicated code for different shells
- csh2sh compiled code, difficult to modify
- codebase was not maintained since 1997

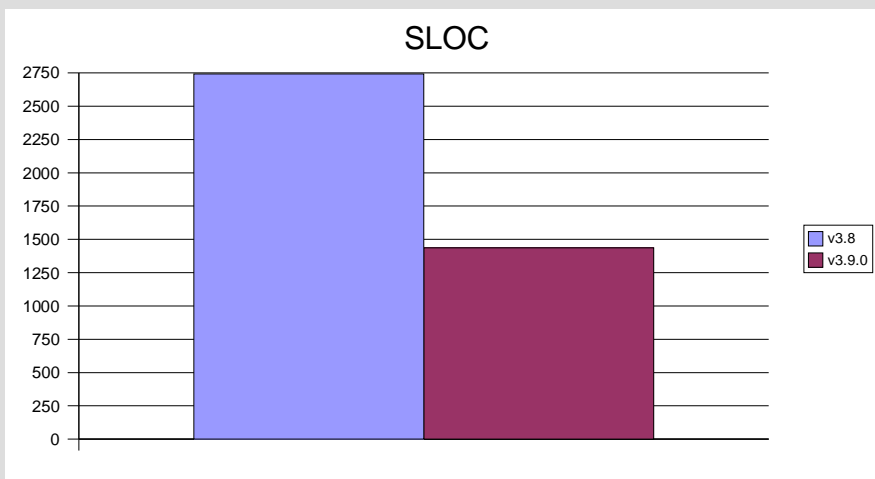
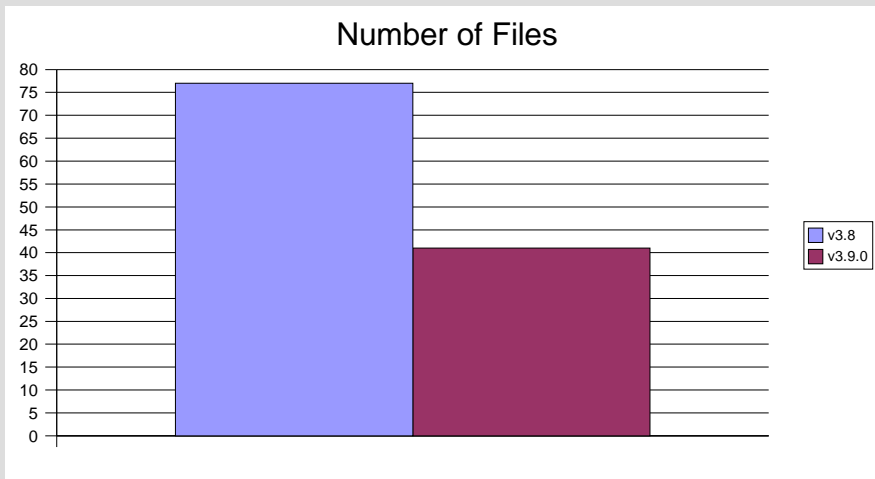
New Structure



Achievements

- reduced complexity
- reduced code size
- reduced execution path (10 files on avg.)
- can co-exist with vendor scripts
- single shell execution, no subshells
- removed all external tools
- improved login speed (<1s)
- separate sh(1) and csh(1) trees
- TWO trees cover SIX shells
- functions (csh: aliased scripts)
- debugging infrastructure

Comparison



- source is 100% POSIX compliant
- only standard Unix tools are used (no interpreters)
- all messages are clearly identified as originating from HEPiX scripts

Example Debug Session

```
chihiro:~% ssh lxcert02.cern.ch
fuji@lxcert02.cern.ch's password:
hepix: N: -> SOURCE /etc/hepix/sh/HEP/profile
hepix: N: -> SOURCE /etc/hepix/sh/HEP/env
hepix: N: -> SOURCE /etc/hepix/sh/CORE/pathtools
hepix: N: -> SOURCE /etc/hepix/sh/SITE/env
hepix: N: -> SOURCE /afs/cern.ch/group/c3/group_sys.conf.sh
hepix: N: -> SOURCE /afs/cern.ch/group/c3/group_env.sh
hepix: N: -> SOURCE /etc/hepix/sh/HEP/rc
hepix: N: -> SOURCE /etc/hepix/sh/SITE/rc
hepix: N: -> SOURCE /etc/hepix/sh/HEP/zshrc
hepix: N: -> SOURCE /etc/hepix/sh/SITE/zshrc
hepix: N: -> SOURCE /etc/hepix/sh/SITE/profile
hepix: D: 300000 52374 17 79
hepix: D: /usr/bin/expr 300000 - 52374
[fuji@lxcert02]~%
```


Development

- peer-review is needed (please e-mail)
- source is tracked in CVS
- sh(1) and csh(1) trees are separately maintained:
careful maintainers required
- version 3.9.x is for development
- version 4.0.x will be released to the HEP community
- total time invested so far: ~4 weeks