

DE LA RECHERCHE À L'INDUSTRIE



CLUSTERSHELL

Scalable command execution library and tools

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Improve administration tools

- Common framework
 - For command line, shell scripts and Python tools
- Fast
 - Parallel and scalable command execution
- Comprehensive
 - Manage set of nodes
 - Run commands
 - Process results



Node list handling

```
$ nodeset -f @compute -x @slurm:idle  
foo[1-5,9]
```

- Various outputs (fold, expand, count)
- Set-like operations
- Groups
 - Simply defined from flat or YAML files (@compute)
 - Or from Plugins (**Bash** upcalls) (@slurm:idle)

- And much more...

Parallel execution command

```
$ clush -bL -w foo[1-1000] uname -m  
foo[11-49]: aarch64  
foo[1-10,50-1000]: x86_64
```

- Compatible with pdsch (steroids added)
- Various output modes
- File copy (in parallel, both ways)
- Stdin propagation
- Local or remote command execution
- Connect to nodes using SSH or RSH variants
 - Could be extended with **Python plugins**
 - Transparent execution using relay nodes (gateways)

- And more...

Write your scripts or tools in Python

■ Nodeset manipulation

```
from ClusterShell.NodeSet import NodeSet

ns1 = NodeSet('blade-[3-5]-[2-8]')
ns2 = NodeSet('@rack[5-9]')

for node in ns1 + ns2:
    print node
```

■ Command execution

```
from ClusterShell.Task import task_self

task_self().run('echo Hello World', nodes='foo[1-15]')

for output, nodes in task_self().iter_buffers():
    for node in nodes:
        print "%s: %s" % (node, output)
```

MORE INFORMATION

- Website
 - <http://cea-hpc.github.io/clustershell/>
- Documentation
 - <http://clustershell.readthedocs.org/>
- Try it!
 - Already available in **Debian**, **Ubuntu**, **Fedora** and **EPEL**:

```
$ apt-get install clustershell
```

```
$ yum install clustershell
```

```
$ dnf install clustershell
```

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