Puppet Declarative config management

CONCEPTS

Puppet is declarative: you describe the end state and it only changes what differs, so runs are safe to repeat.

Facts facter on the node
↓ sent to server
Catalog compiled from manifests + Hiera
↓ agent fetches
Agent compares to real state
↓ fixes drift
Report changes and failures

Always --noop first: it prints what would change without touching the system.

APPLY AND AGENT

puppet apply *<file.pp>*
Apply a manifest locally

puppet apply --noop *<file.pp>*
Dry run, show changes only

puppet apply -e '*<code>***'**
Run a one-line snippet

puppet apply --detailed-exitcodes *<file.pp>*
Exit code reports changes

puppet apply --modulepath *<dir>* *<file.pp>*
Use modules from a directory

puppet agent -t
One foreground run, verbose

puppet agent -t --noop
Preview what the server would change

INSPECT AND CHANGE

puppet resource *<type>*
List all resources of a type

puppet resource *<type>* *<name>*
Show one resource as code

puppet describe *<type>*
Docs for a resource type

puppet help *<subcommand>*
Help for a subcommand

puppet --version
Print Puppet version

FACTS AND CONFIG

facter
Print all facts

facter *<fact>*
One fact, e.g. os.family

puppet config print *<setting>*
One setting, e.g. modulepath

HIERA AND LOOKUP

puppet lookup *<key>*
Look up a data value

puppet lookup *<key>* **--explain**
Show where the value came from

MODULES

puppet module install *<author-name>*
Install from the Forge

puppet module list
Installed modules

CHECK AND LINT

puppet parser validate *<file.pp>*
Syntax check only

puppet-lint *<file.pp>*
Style problems

MANIFEST SYNTAX

Resource

```
package { 'nginx':
  ensure ⇒ installed,
}
```

Service and file

```
service { 'nginx':
  ensure ⇒ running,
  enable ⇒ true,
}
file { '/etc/motd':
  ensure  ⇒ file,
  content ⇒ "Managed by Puppet\n",
}
```

Class

```
class web (
  String $port = '80',
) {
  package { 'nginx': ensure ⇒
installed }
}
include web
```