Hands-On: Roles & Profiles

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puppetconf 2013

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Agenda

- The Problem
- The Solution
- Roles
- Profiles
- Hands-On

Question:

Is anyone here already using Roles & Profiles?

The Problem

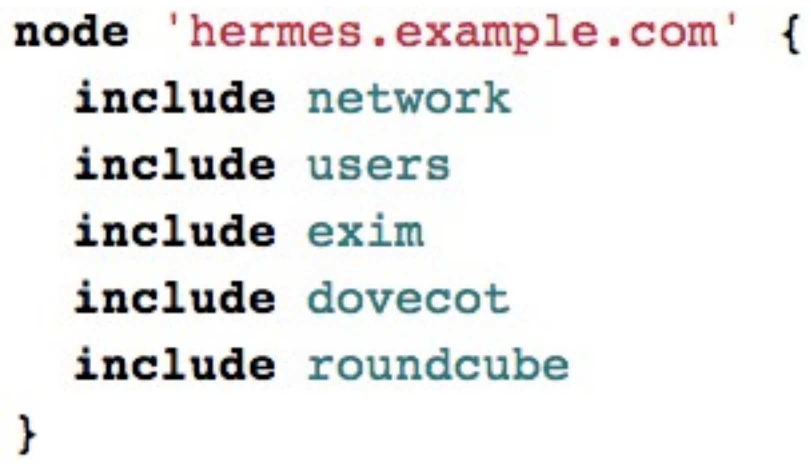
These are not the nodes you’re looking for.

What is classification?

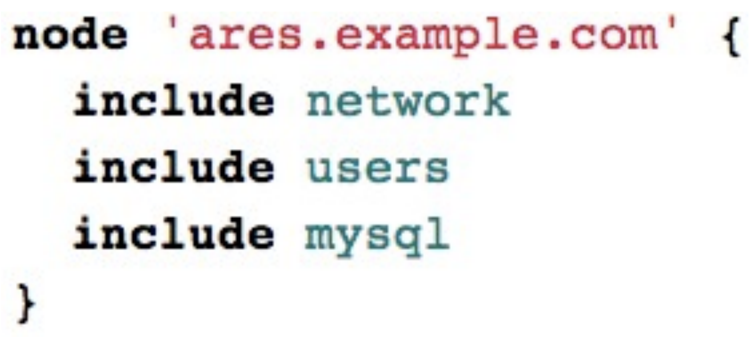
Classification was assigning classes to nodes.

(This used to be the case.)

What are these nodes?

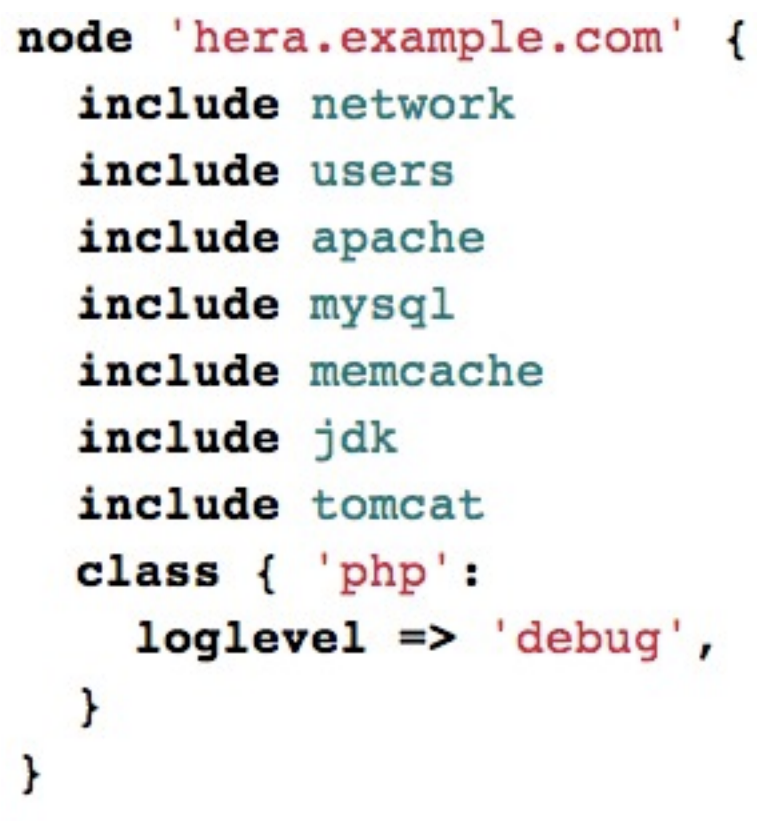


```
node 'hermes.example.com' {
  include network
  include users
  include exim
  include dovecot
  include roundcube
}
```

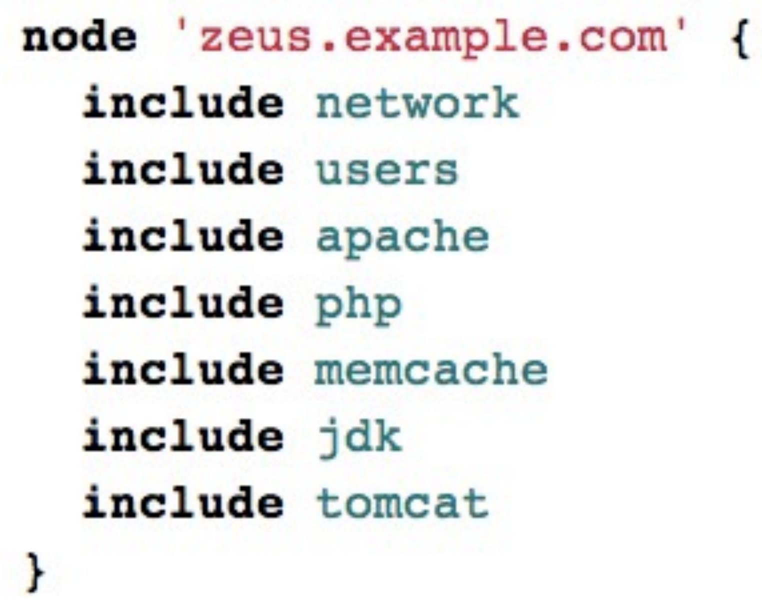


```
node 'ares.example.com' {
  include network
  include users
  include mysql
}
```

What are these nodes?

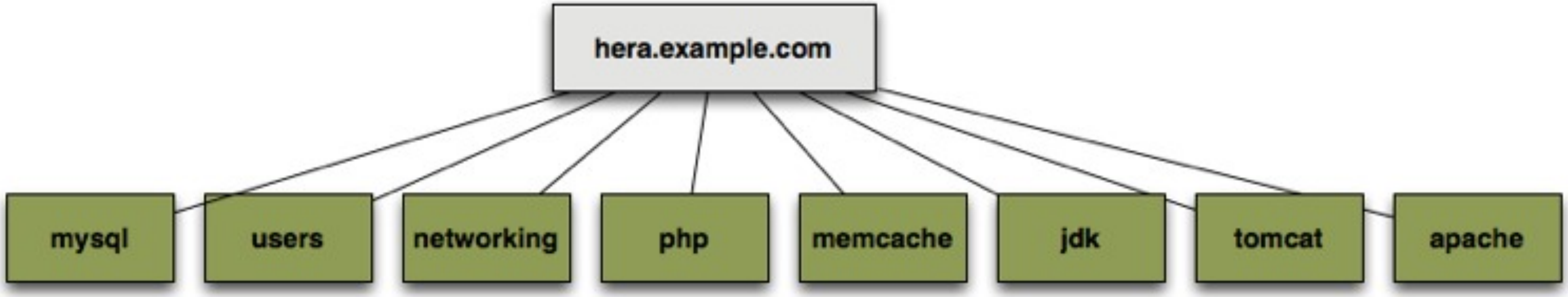


```
node 'hera.example.com' {
  include network
  include users
  include apache
  include mysql
  include memcache
  include jdk
  include tomcat
  class { 'php':
    loglevel => 'debug',
  }
}
```

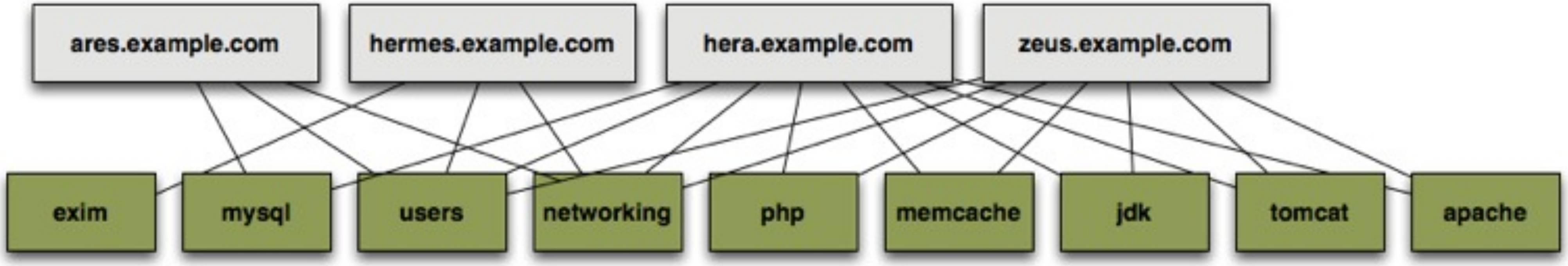


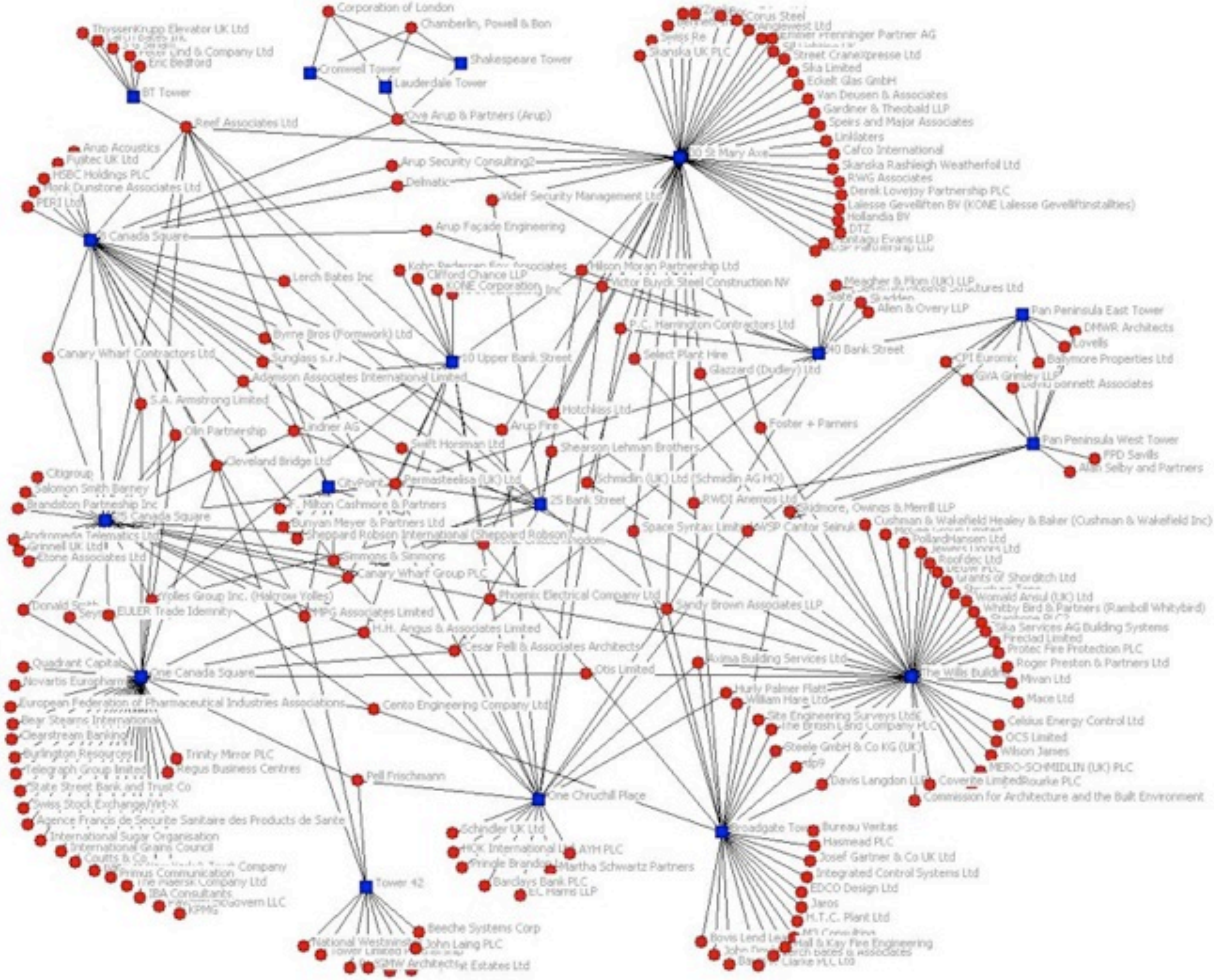
```
node 'zeus.example.com' {
  include network
  include users
  include apache
  include php
  include memcache
  include jdk
  include tomcat
}
```

One node has many classes



Many nodes make a tangled mess

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ThyssenKrupp Elevator UK Ltd
Peter Lind & Company Ltd
Eric Bedford
BT Tower
Reef Associates Ltd
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PERI Ltd
8 Canada Square
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Delmatic
Videf Security Management Ltd
Arup Façade Engineering
Lerch Bates Inc
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Inc
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Bear Stearns International
Clearstream Banking
Burlington Resources
Trinity Mirror PLC
Telegraph Group limited
Regus Business Centres
State Street Bank and Trust Co
Swiss Stock Exchange/Virt-X
Agence Francis de Securite Sanitaire des Products de Sante
International Sugar Organisation
International Grains Council
Coutts & Co.
Company
Primus Communication
The Maersk Company Ltd
IBA Consultants
McGovern LLC
KPMG
Pell Frischmann
One Chruchill Place
Schindler UK Ltd
HOK International Ltd
AYH PLC
Pringle Brandon
Martha Schwartz Partners
Barclays Bank PLC
EC Harris LLP
Tower 42
Beeche Systems Corp
National Westminster
John Laing PLC
Tower Limited
SMW Architects
Estates Ltd
Corus Steel
Anglewest Ltd
Spiess Re
Skanska UK PLC
Pfenninger Partner AG
Street CraneXpresse Ltd
Sika Limited
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Gardiner & Theobald LLP
Speirs and Major Associates
Linklaters
Cafco International
30 St Mary Axe
Skanska Rashleigh Weatherfoil Ltd
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Lalesse Gevelliften BV (KONE Lalesse Gevelliftinstallties)
Hollandia BV
DTZ
Montagu Evans LLP
Hilson Moran Partnership Ltd
Victor Buyck Steel Construction NV
Meagher & Flom (UK) LLP
Structures Ltd
Slate
Skadden
Allen & Overy LLP
P.C. Harrington Contractors Ltd
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Select Plant Hire
Glazzard (Dudley) Ltd
Pan Peninsula East Tower
DMWR Architects
Lovells
CPI Euromix
Ballymore Properties Ltd
GVA Grimley LLP
Bonnett Associates
Foster + Parners
Pan Peninsula West Tower
FPD Savills
Allan Selby and Partners
Schmidlin (UK) Ltd (Schmidlin AG HQ)
RWDI Anemos Ltd
Skidmore, Owings & Merrill LLP
Space Syntax Limited
WSP Cantor Seinuk
Cushman & Wakefield Healey & Baker (Cushman & Wakefield Inc)
PollardHansen Ltd
Roofdec Ltd
Grants of Shoreditch Ltd
Womald Ansul (UK) Ltd
Whitby Bird & Partners (Ramboll Whitybird)
Sika Services AG Building Systems
Fireclad Limited
Protec Fire Protection PLC
Roger Preston & Partners Ltd
Sandy Brown Associates LLP
Axima Building Services Ltd
The Willis Building
Mivan Ltd
Mace Ltd
Hurly Palmer Flatt
William Hare Ltd
Site Engineering Surveys Ltd
The British Land Company PLC
Steele GmbH & Co KG (UK)
Celsius Energy Control Ltd
OCS Limited
Wilson James
MERO-SCHMIDLIN (UK) PLC
Davis Langdon LLP
Coverite Limited
Rourke PLC
Commission for Architecture and the Built Environment
Broadgate Tower
Bureau Veritas
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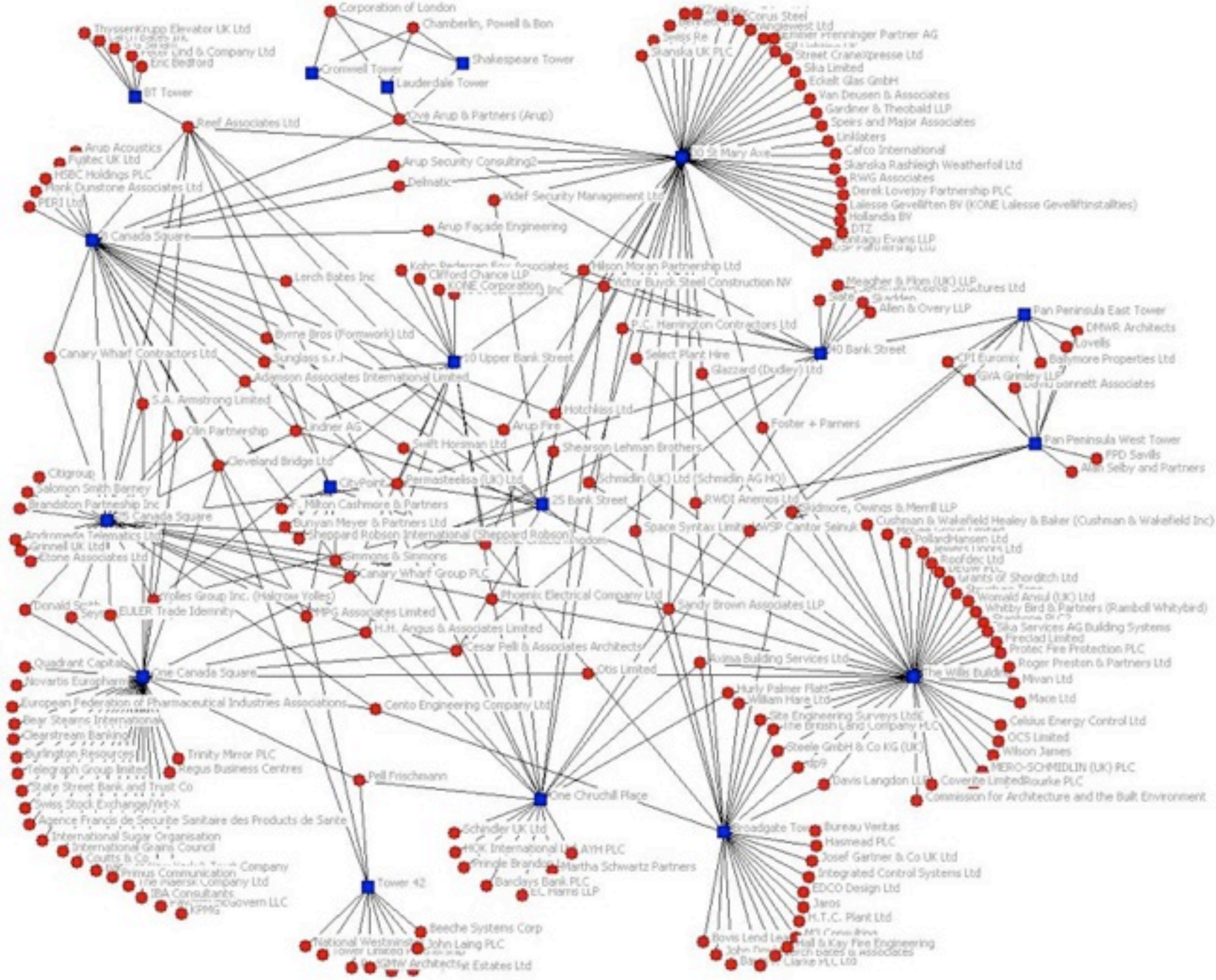
Josef Gartner & Co UK Ltd
Integrated Control Systems Ltd
EDCO Design Ltd
Jaros
M.T.C. Plant Ltd
Bovis Lend Lease
Hall & Kay Fire Engineering
Bates & Associates
Clarke PLC Ltd

This will happen

Boss: "Can you make another development silo for the devs?"

Just like production, but different.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Beeche Systems Corp
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John Laing PLC
GMW Architects
Estates Ltd

The Solution

If you aren't part of the solution then you are the precipitate.

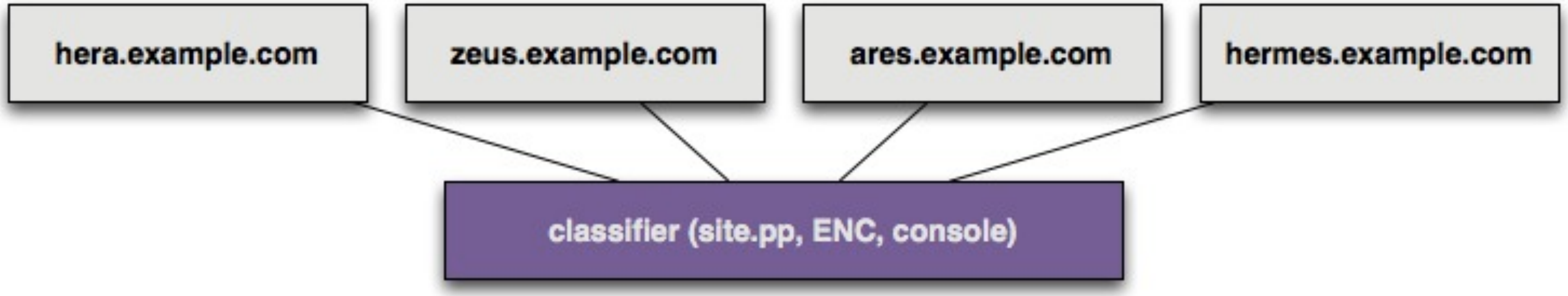
What is classification?

Classification is assigning roles to nodes.

History Lesson... The Past

- Nodes & Classes
- Node-scope Variables
- Node Inheritance
- Class Parameters
- Inheritance == Bad

History Lesson... The Transition



hera.example.com

zeus.example.com

ares.example.com

hermes.example.com

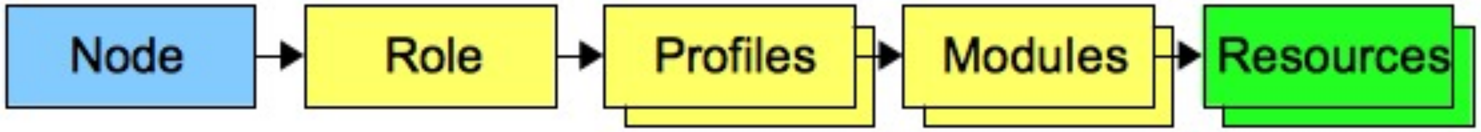
classifier (site.pp, ENC, console)

History Lesson... The Present

- External Node Classifiers
- Roles & Profiles Pattern
- Hiera
- Class Parameter Bindings
- PuppetDB

Craig Dunn’s Solution

Roles & Profiles Pattern



Roles

One role to rule them all, and with profiles bind them.

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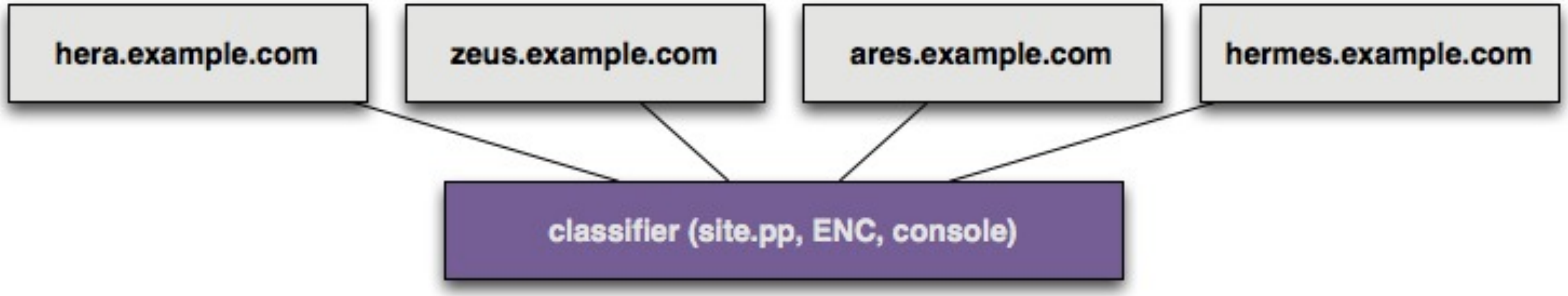
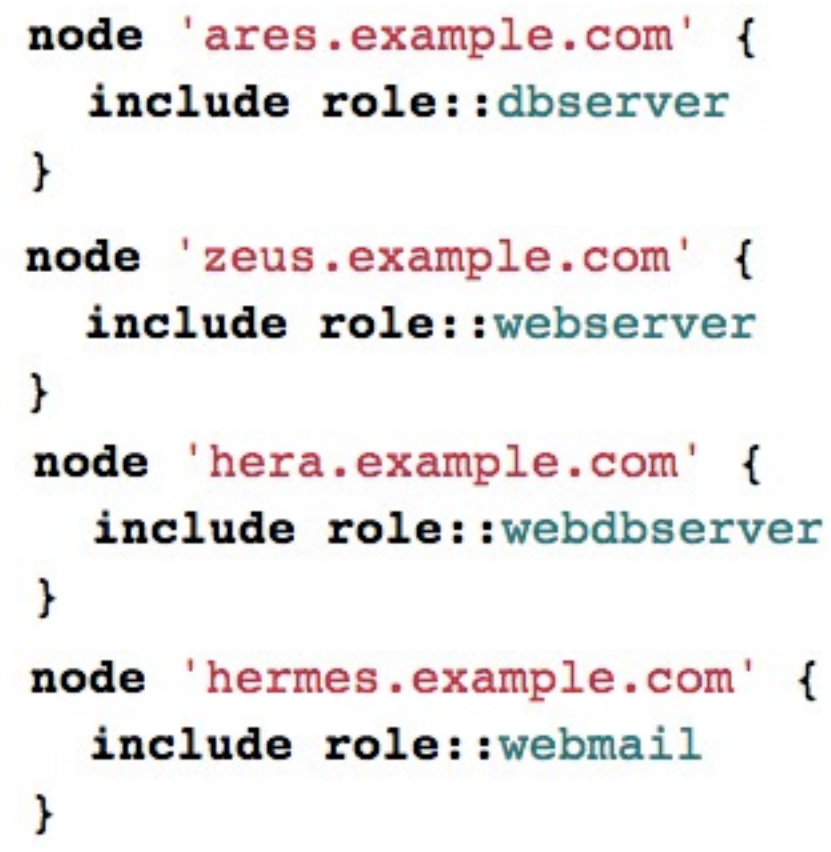
Roles + Classification

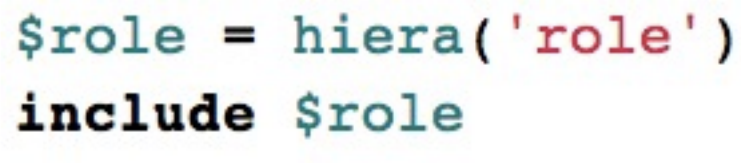


Roles + Classification



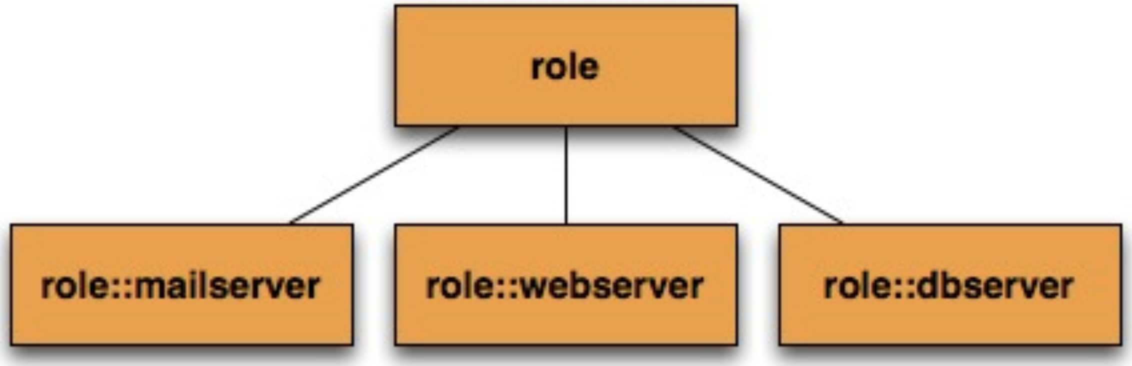
```
node 'ares.example.com' {
  include role::dbserver
}
node 'zeus.example.com' {
  include role::webserver
}
node 'hera.example.com' {
  include role::webdbserver
}
node 'hermes.example.com' {
  include role::webmail
}
```

Roles + Classification

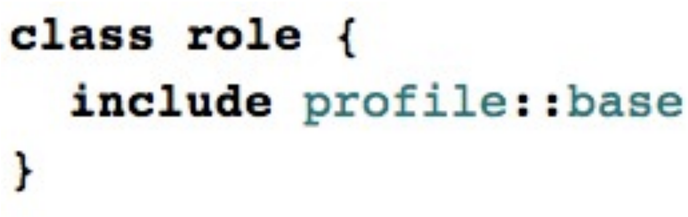


```
$role = hiera('role')
include $role
```

Roles Structure

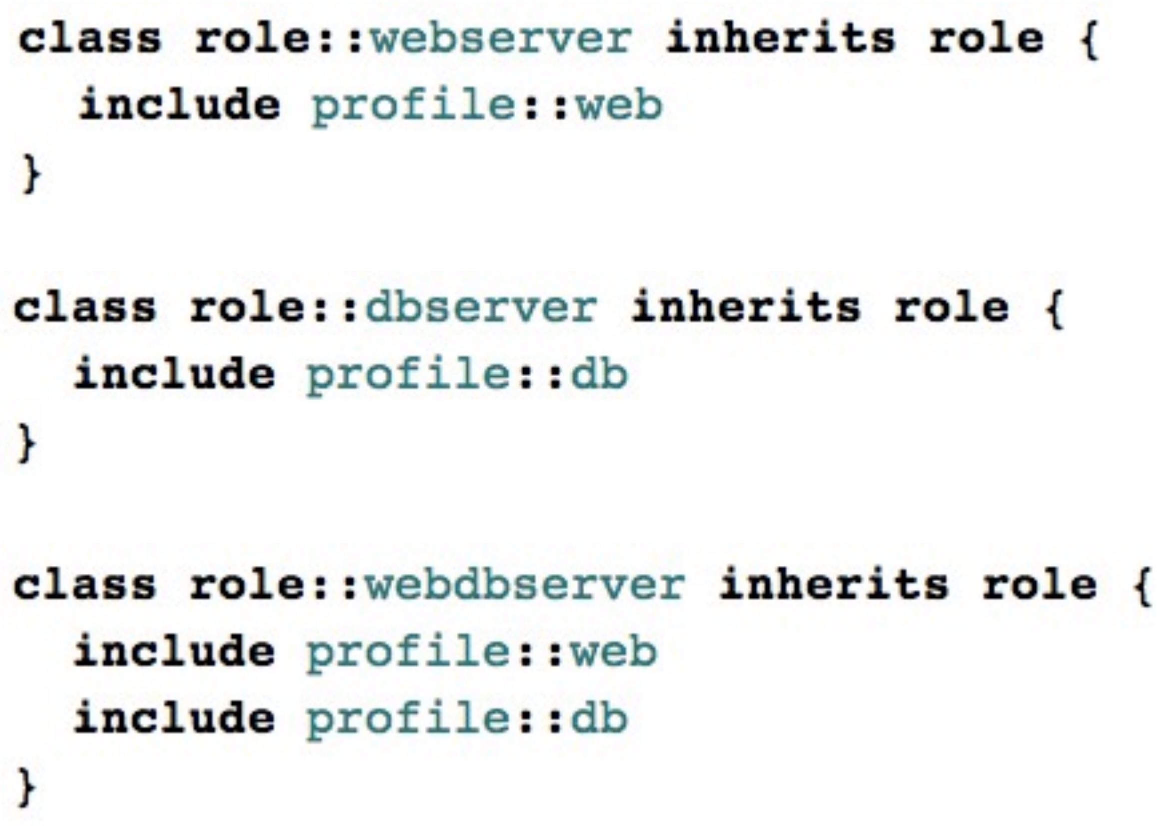


Roles Structure: Basic role



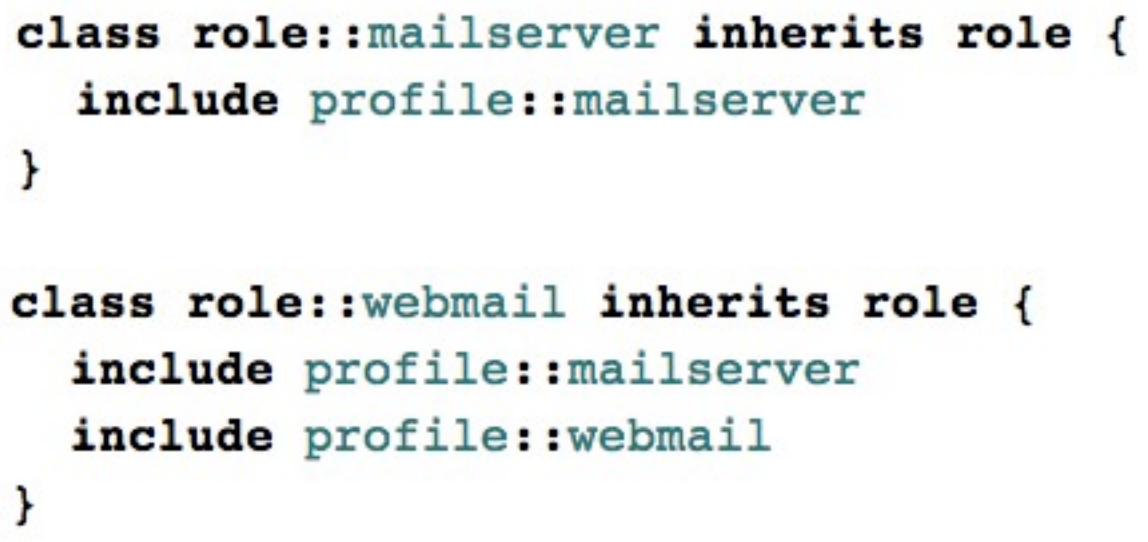
```
class role {
  include profile::base
}
```

Roles Structure: Specific roles



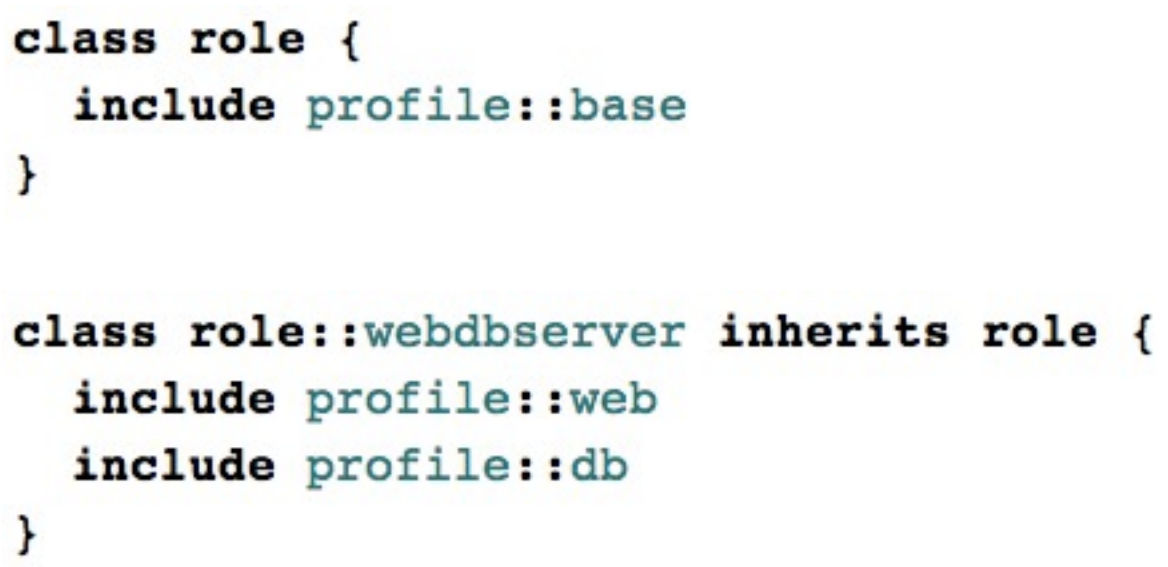
```
class role::webserver inherits role {
  include profile::web
}

class role::dbserver inherits role {
  include profile::db
}

class role::webdbserver inherits role {
  include profile::web
  include profile::db
}
```

Roles Structure: Specific roles



```
class role::mailserver inherits role {
  include profile::mailserver
}

class role::webmail inherits role {
  include profile::mailserver
  include profile::webmail
}
```

Roles Structure: Specific Roles



```
class role {
  include profile::base
}

class role::webdbserver inherits role {
  include profile::web
  include profile::db
}
```

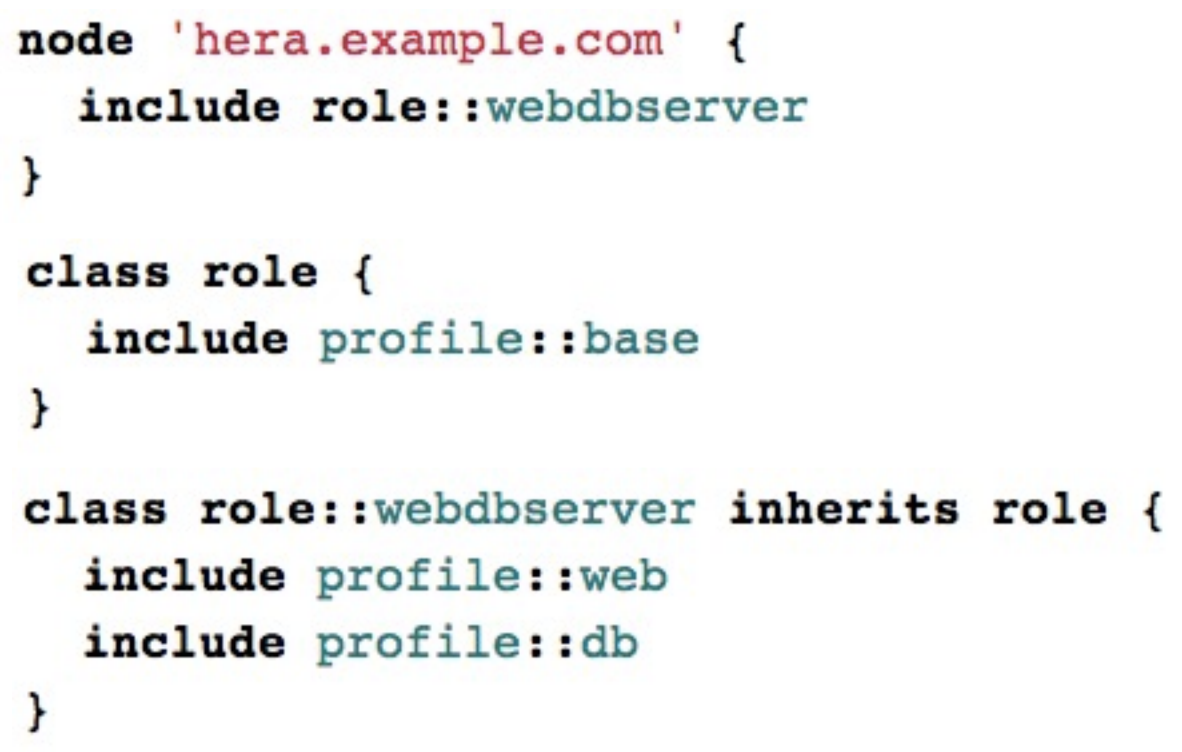
Remember

Classification is assigning roles to nodes.

Profiles

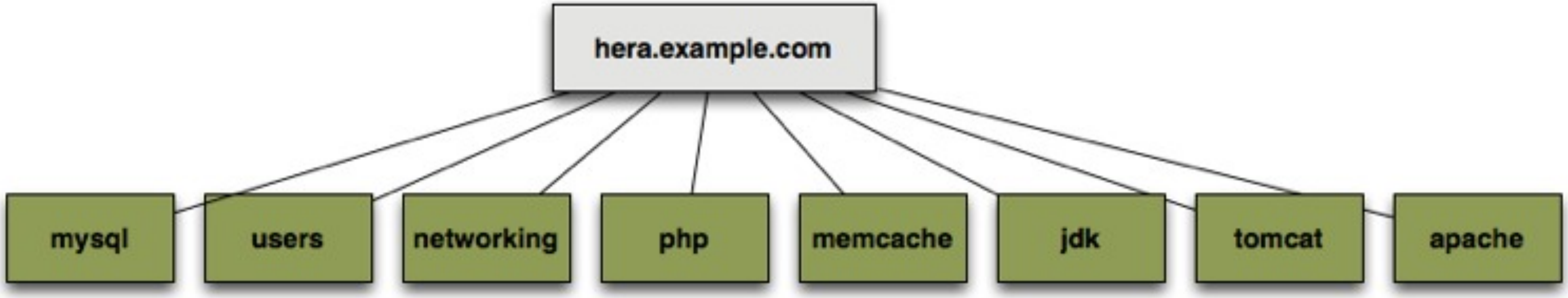
All your profiles are belong to Facebook.

Wireframing

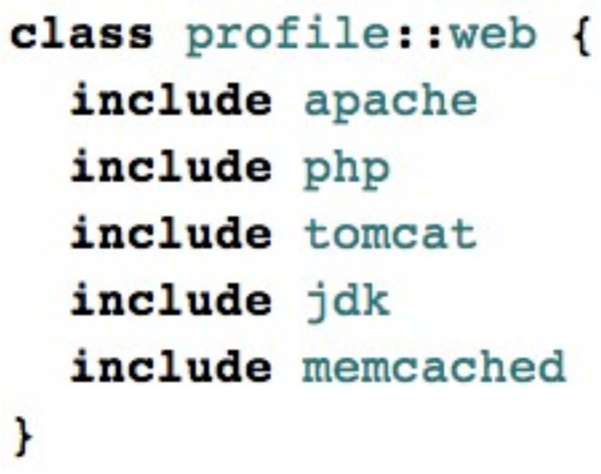


```
node 'hera.example.com' {
  include role::webdbserver
}

class role {
  include profile::base
}

class role::webdbserver inherits role {
  include profile::web
  include profile::db
}
```

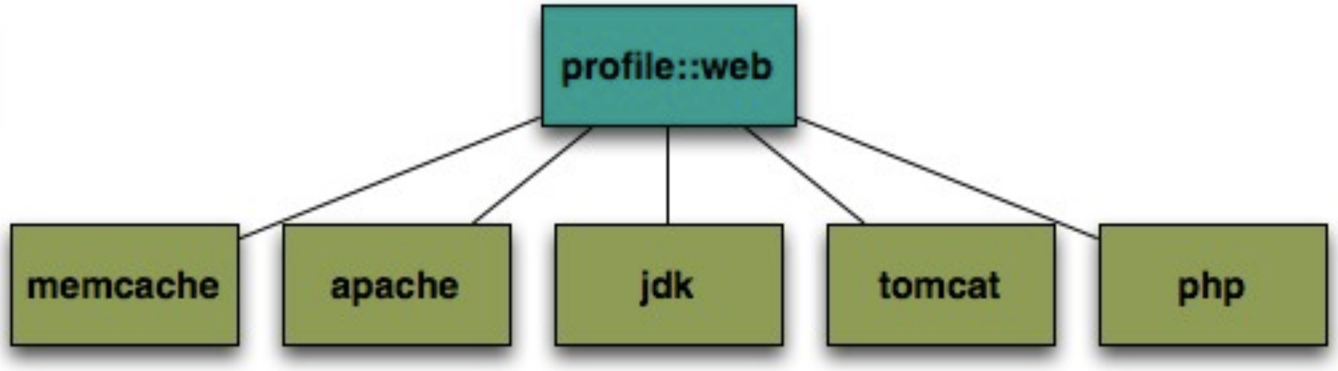
Wireframing



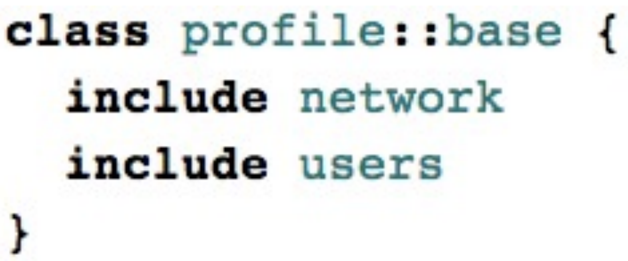
Wireframing



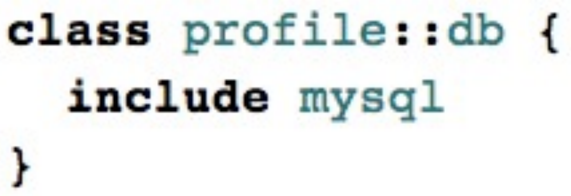
```
class profile::web {
  include apache
  include php
  include tomcat
  include jdk
  include memcached
}
```



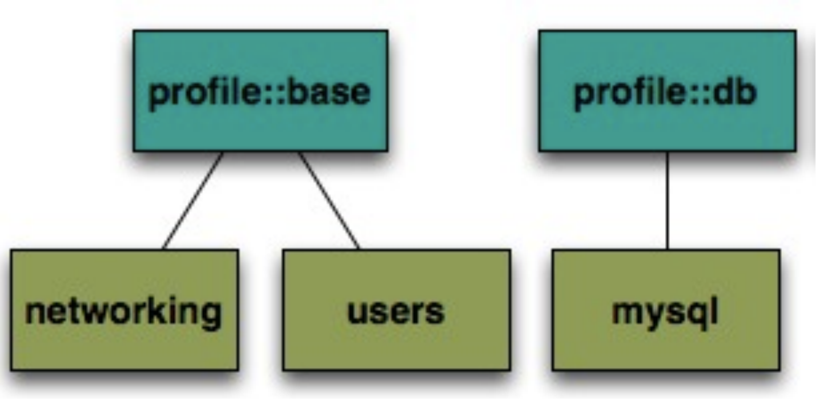
Wireframing



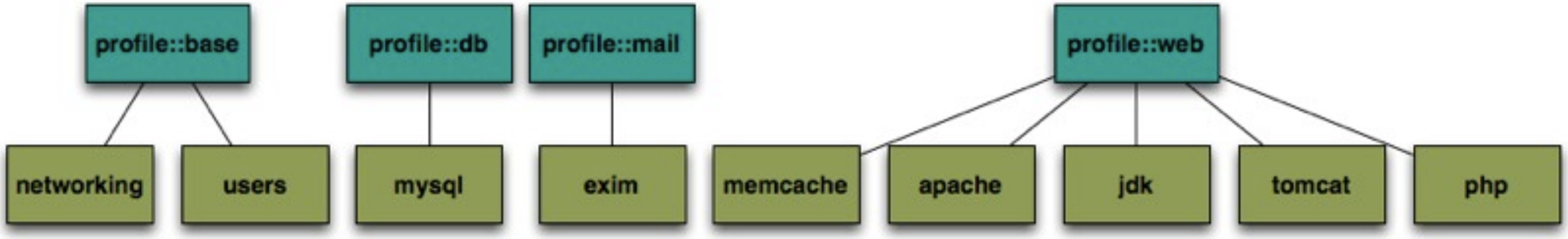
```
class profile::base {
  include network
  include users
}
```



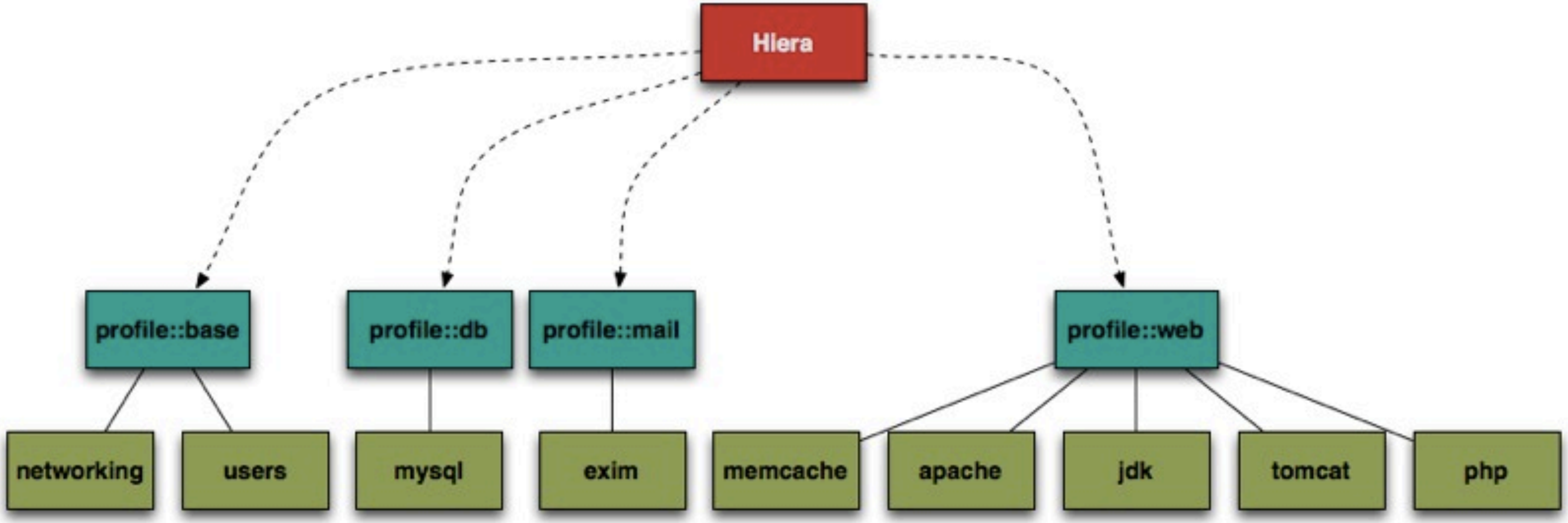
```
class profile::db {
  include mysql
}
```



Round Up: Profiles



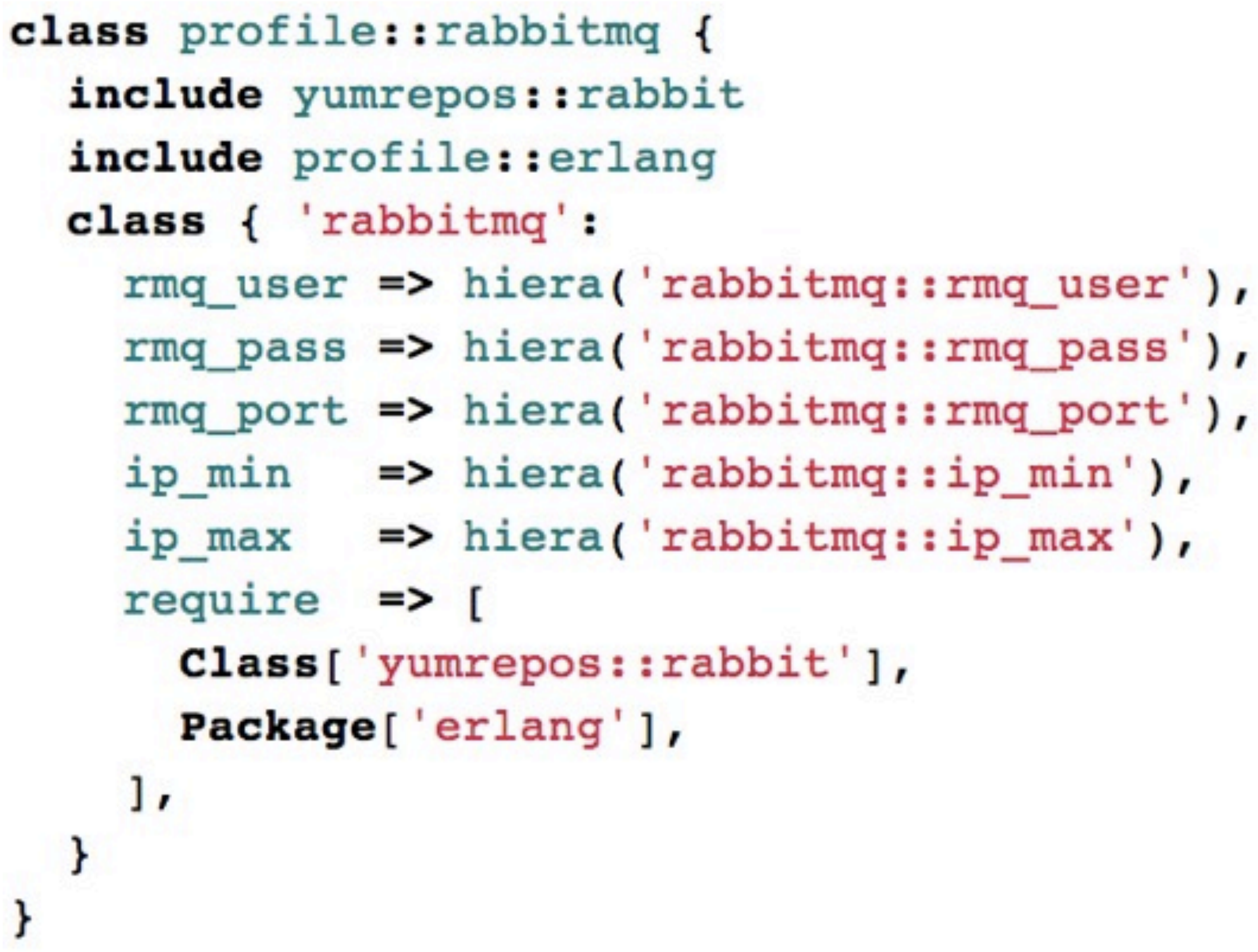
Round Up: Profiles + Hiera



Profiles + Facts + Hiera = Win

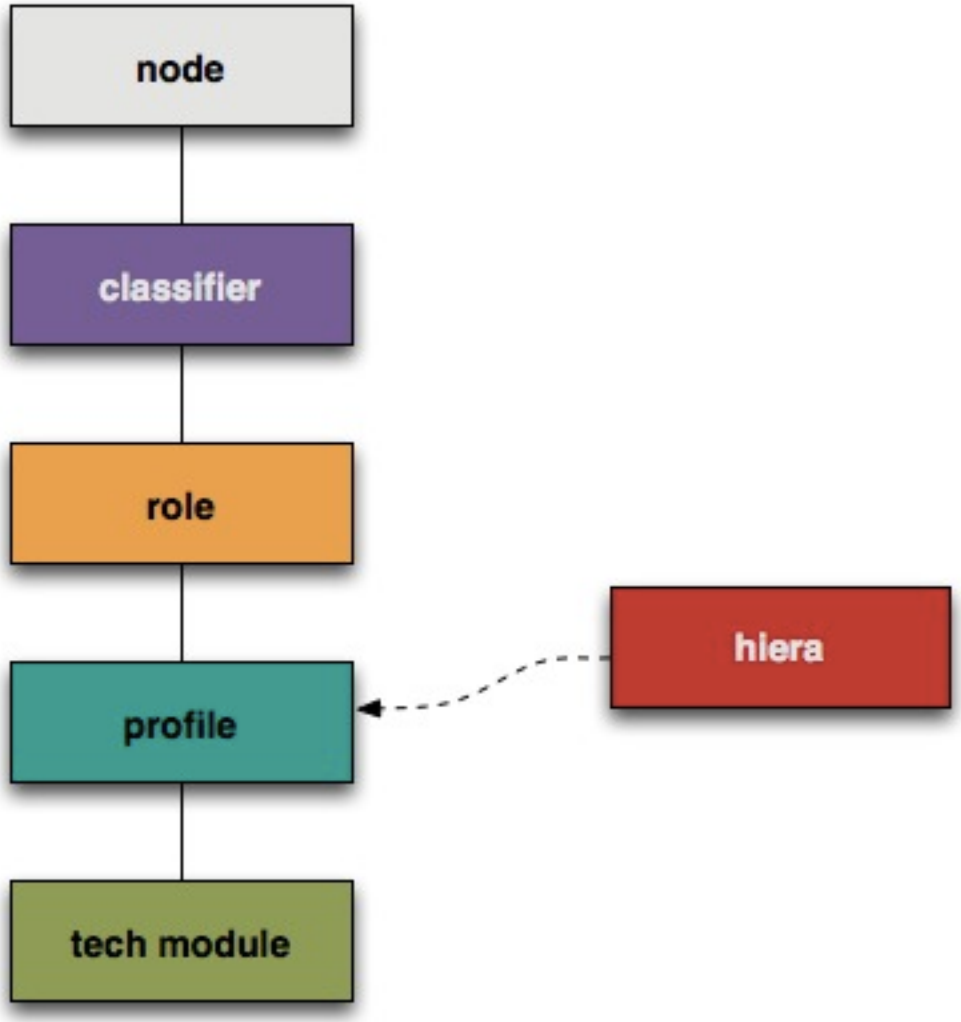
- $osfamily
- $datacenter
- $silo
- $team
- $product

Profiles + Facts + Hiera = Win

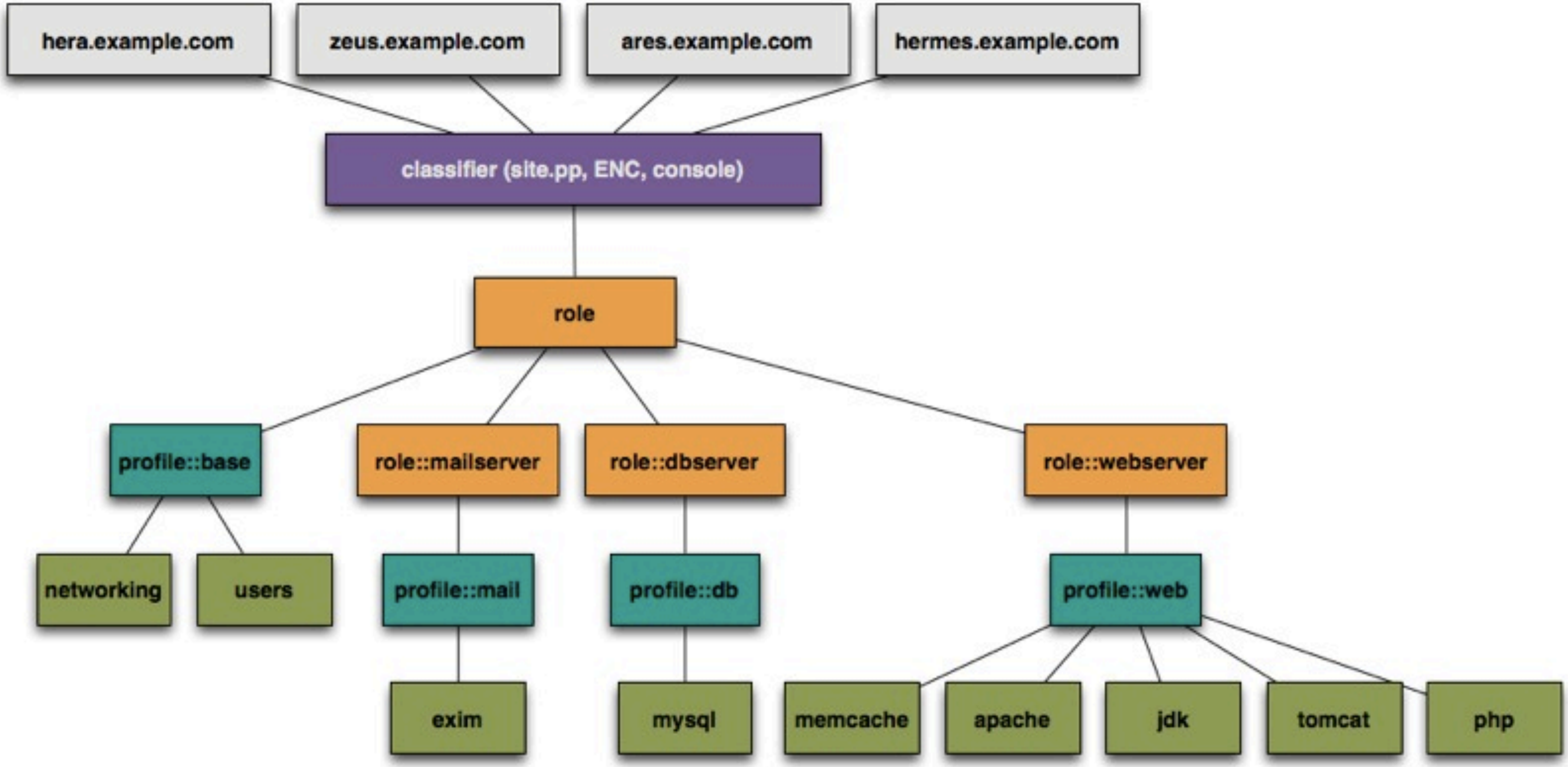


```
class profile::rabbitmq {
  include yumrepos::rabbit
  include profile::erlang
  class { 'rabbitmq':
    rmq_user => hiera('rabbitmq::rmq_user'),
    rmq_pass => hiera('rabbitmq::rmq_pass'),
    rmq_port => hiera('rabbitmq::rmq_port'),
    ip_min   => hiera('rabbitmq::ip_min'),
    ip_max   => hiera('rabbitmq::ip_max'),
    require  => [
      Class['yumrepos::rabbit'],
      Package['erlang'],
    ],
  }
}
```

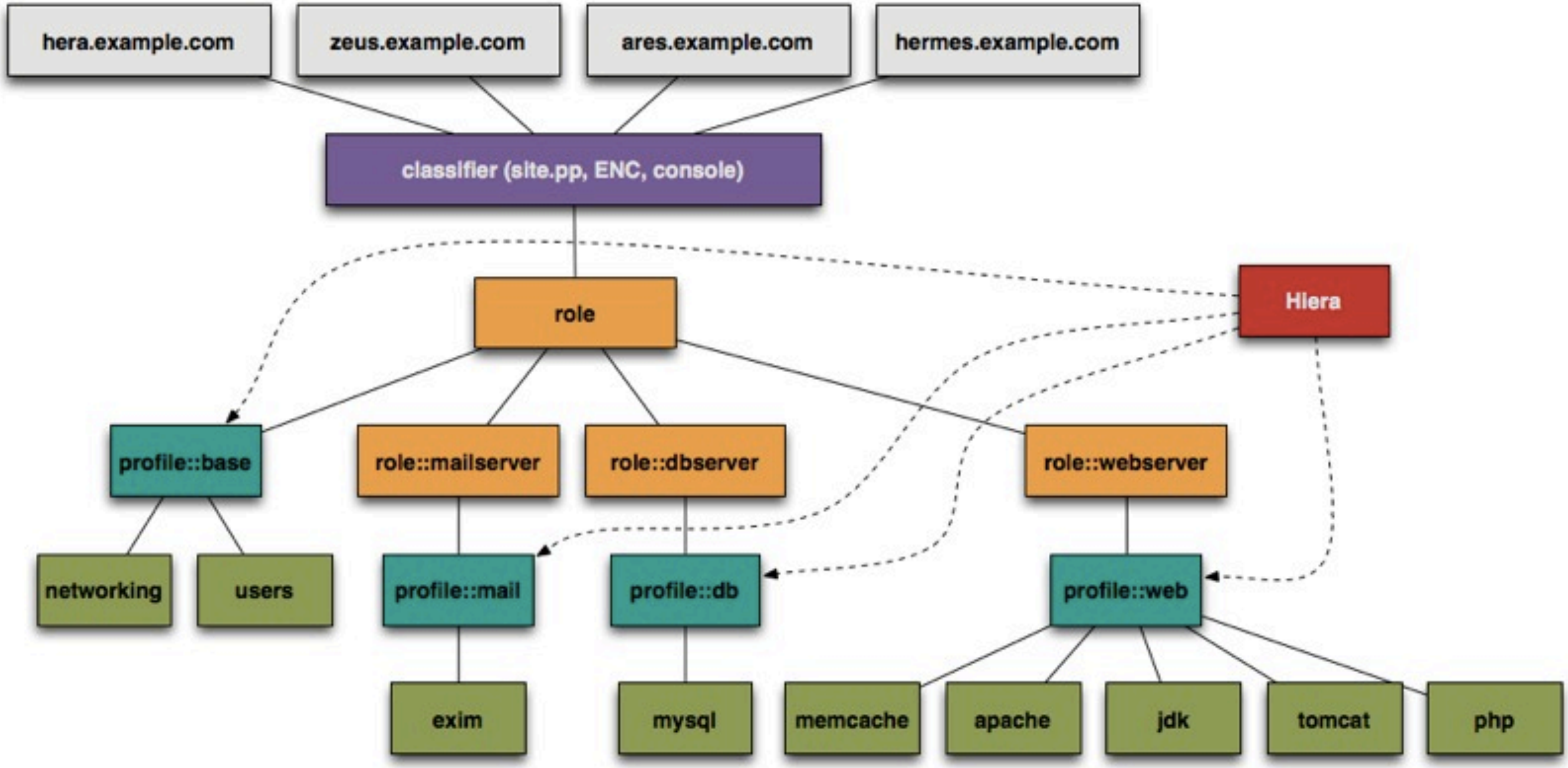
Roles + Profiles + Hiera = Win



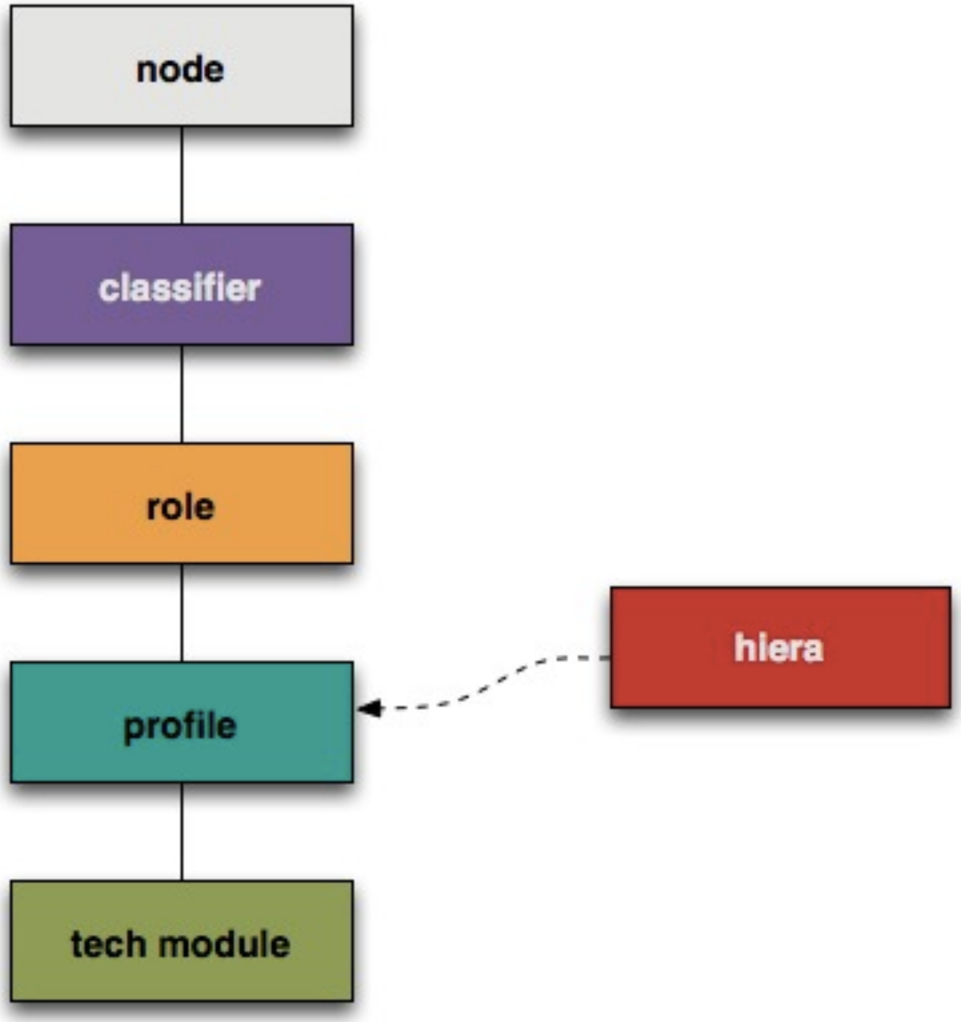
Roles + Profiles



Roles + Profiles + Hiera



Roles + Profiles + Hiera = Win



Thank You

Hunter Haugen

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Hands-On

Look with your hands, not with your eyes.

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Hands-On Infrastructure

- http://puppet-vagrant-boxes.puppetlabs.com/
- Training VM on USB sticks
- Invent the next-gen IoaS

Design Ideas: Construct R&P Pattern

- Suggestion: Apache + Mysql + Wordpress
- Suggestion: Exim + Dovecot
- Suggestion: Nginx + HAProxy
- Suggestion: Puppet + PuppetDB + PostgreSQL
- Suggestion: Tomcat + JBoss (?)
- Suggestion: Openstack (<trollface>)
- Suggestion: http://goo.gl/JU81FR

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