LCFG in Informatics

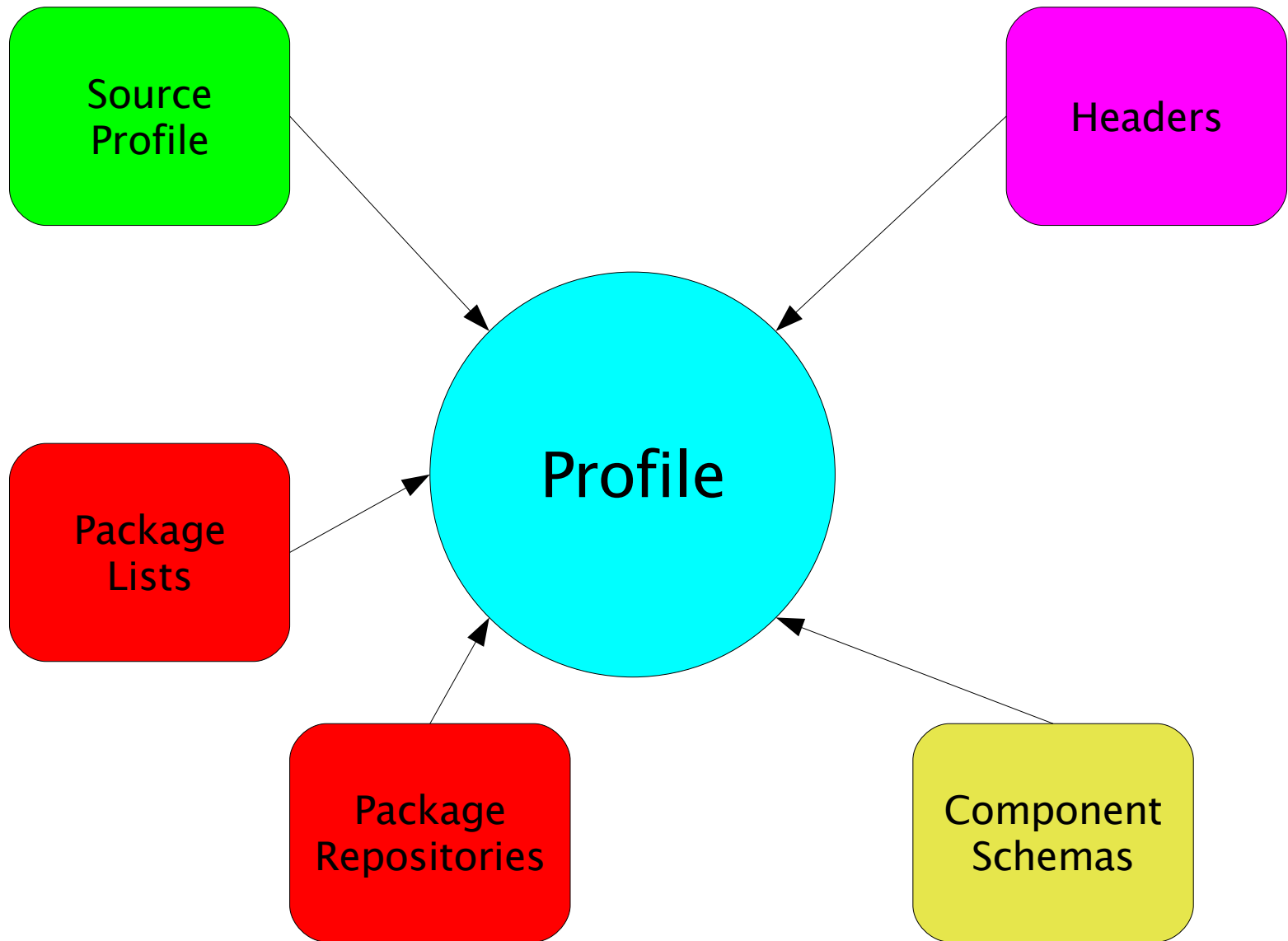Chris Cooke <cc@inf.ed.ac.uk>
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The Profile

- Describes the state of a client machine.
- Consists of a set of *components* and, optionally, a list of packages.
- Built by the LCFG server.
- Shipped to the client as an XML file.

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A Component

- Consists of:
  - Set of *resources* – basically key/value pairs.
  - Optional *templates* for config files
  - Optional control code, to manage daemons, for example, stop/start/configure/etc..

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Source Profile

Headers

Package Lists

Profile

Package Repositories

Component Schemas

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Header Structure

- The headers are separated into *levels*:
  - **lcfg** – lowest level
  - **ed** – An ed.ac.uk level – inherits from lcfg
  - **dice** – The Informatics level – inherits from ed and lcfg levels

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LCFG in Informatics

- Roughly 1100 fully managed machines
  - Mostly fc5 but also fc3 and solaris 9
  - 580 "office" desktops
  - 340 "student lab" desktops
  - 300 "servers"
- Another 1200 "stub" profiles, just used for network and inventory purposes.

LCFG Infrastructure

- LCFG servers
  - 1 master
  - 2 primary slaves
  - Others for "diydice", testing and our beowulf clusters
- Package servers
  - 1 master
  - 2 slaves

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Management Issues

- **Scalability**
  - Altering any source file automatically causes a rebuild of all dependent profiles
  - A profile rebuild takes 2 to 3 seconds
  - Easy to tie up the LCFG servers for hours
- **Reliability**
  - Not easy to test new headers or packages on a set of machines.

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Release Management

- Three *releases*:
  - **stable** – weekly, tested, release
  - **testing** – snapshot created weekly, becomes the next stable release once tested
  - **develop** – no build controls, all changes start here

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Testing Procedures

- Install a client machine
- Upgrade a client in various ways
- Downgrade a client
- Generally usage – e.g. does gnome work?

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Results

- Testing has caught many problems before they got out "into the wild".
  - Missing dependencies
  - Dodgy kernels
  - Other install time problems
- Does not catch everything though
  - Can only test the most common configurations

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"I need the changes now!"

- Sometimes things happen which require an immediate response.
    - Special release procedures
    - "live" headers – for network information, user lists and other volatile data.
    - Can add changes to an individual client profile

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LCFG Distribution

- Now have regular public releases again
  - rsync.lcfg.org
  - http://devwww.lcfg.org/ – (soon to be moved to http://www.lcfg.org/)

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