



EclipseRT Virgo and OSGi

Chris Frost
Glyn Normington
Steve Powell

Agenda

- OSGi basics
- Gemini and Virgo at Eclipse
- A tour of Virgo
- Current status
- How can I get started?

OSGi basics

It's bundles all the way down

- OSGi is a *Module System*

A Bundle = a Jar file = a single module (approx)

The *Bundle Manifest* defines the imports/exports

- Many adopters including a lot of Eclipse projects
- Defined by the OSGi Alliance



Services

- A Bundle can export and consume services
 - This happens dynamically at runtime
- A service is a Java Object with some properties
- Managed by a Service Registry
 - (the Whiteboard pattern)

Gemini and Virgo

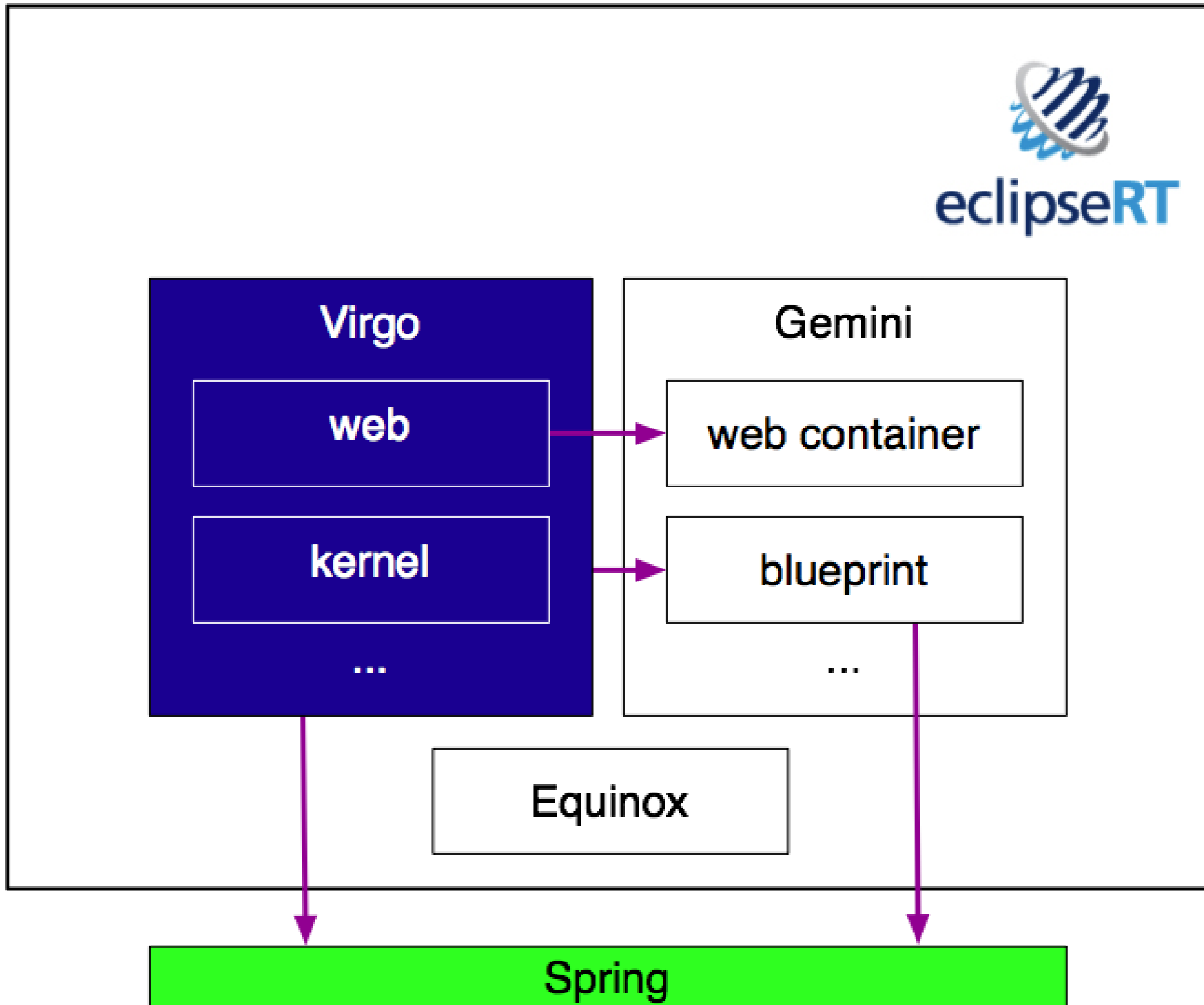
What is Virgo?

- “Dynamic Enterprise Application Platform”
- Based on SpringSource dm Server 2.0
- Objectives:
 - Better OSGi platform
 - Servlets & Migration of Java EE apps
 - Modular and extensible

What is Gemini?

- “Enterprise Modules Project”
- A collection of OSGi spec implementations
- Aims to provide a single authoritative collection
- Main contributors are SpringSource and Oracle
- Virgo uses Gemini:
 - web and blueprint support

Virgo and EclipseRT

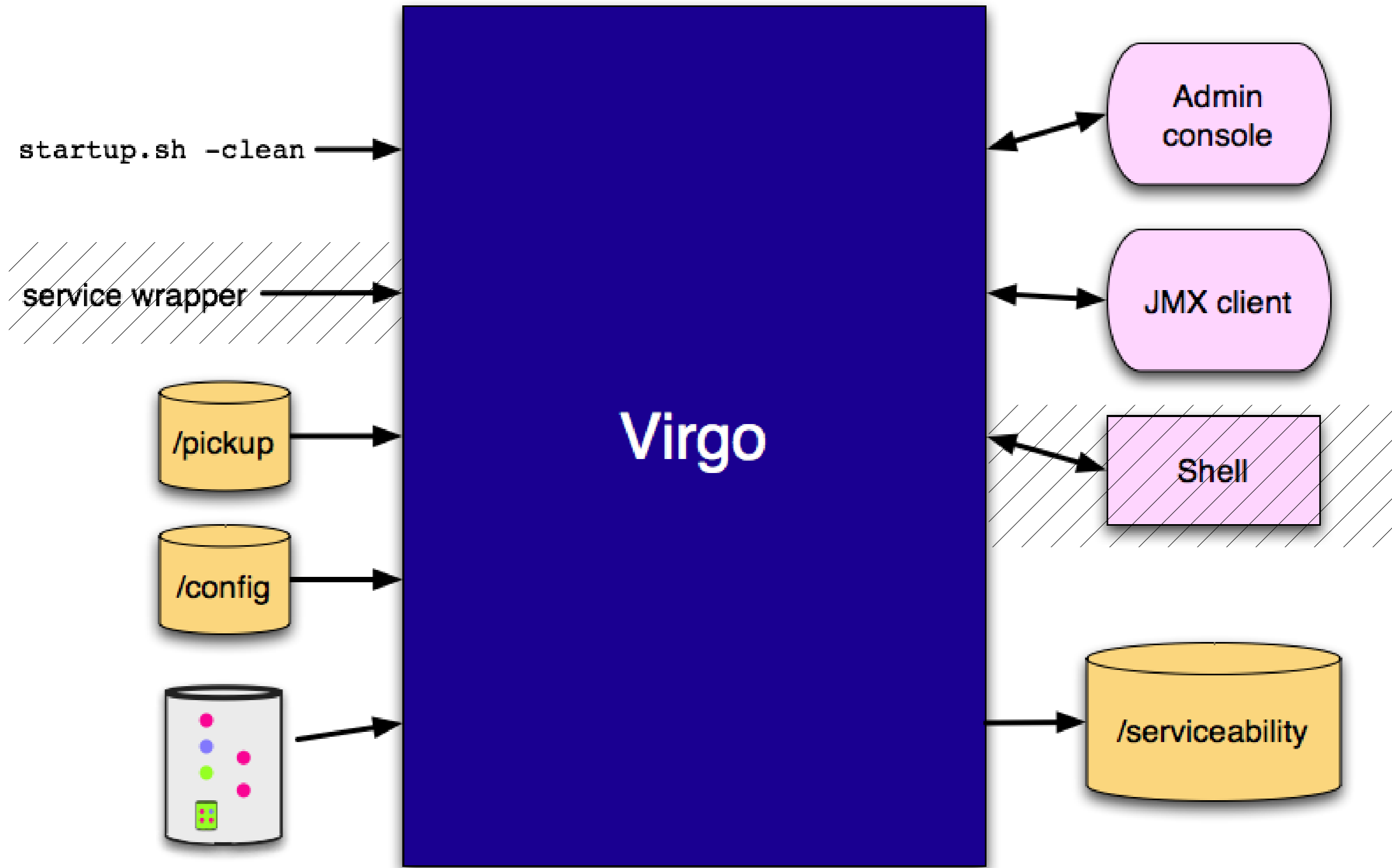


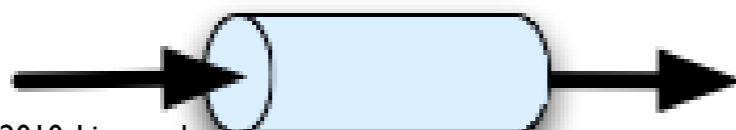
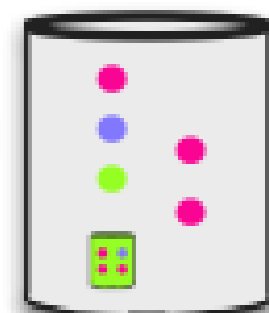
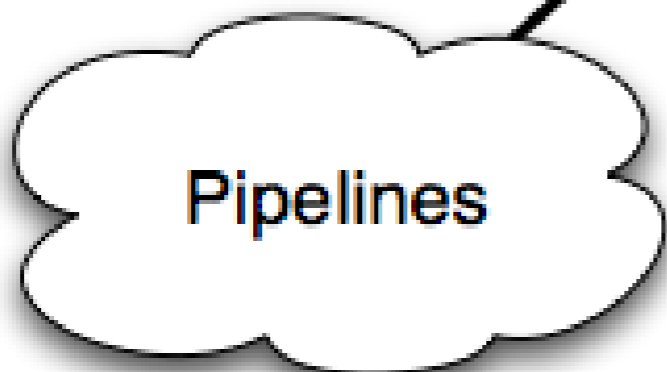
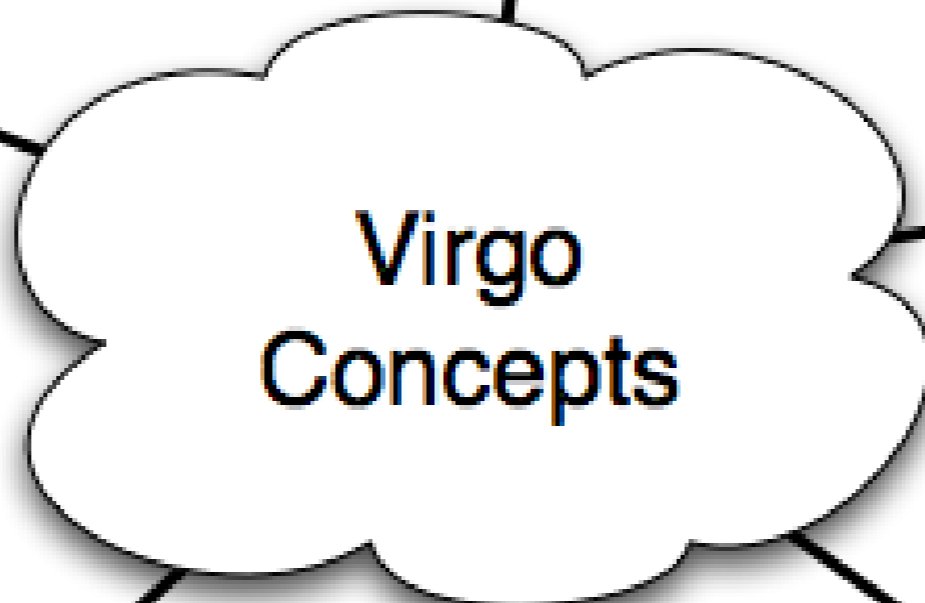
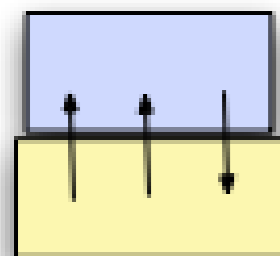
Problems Virgo Solves

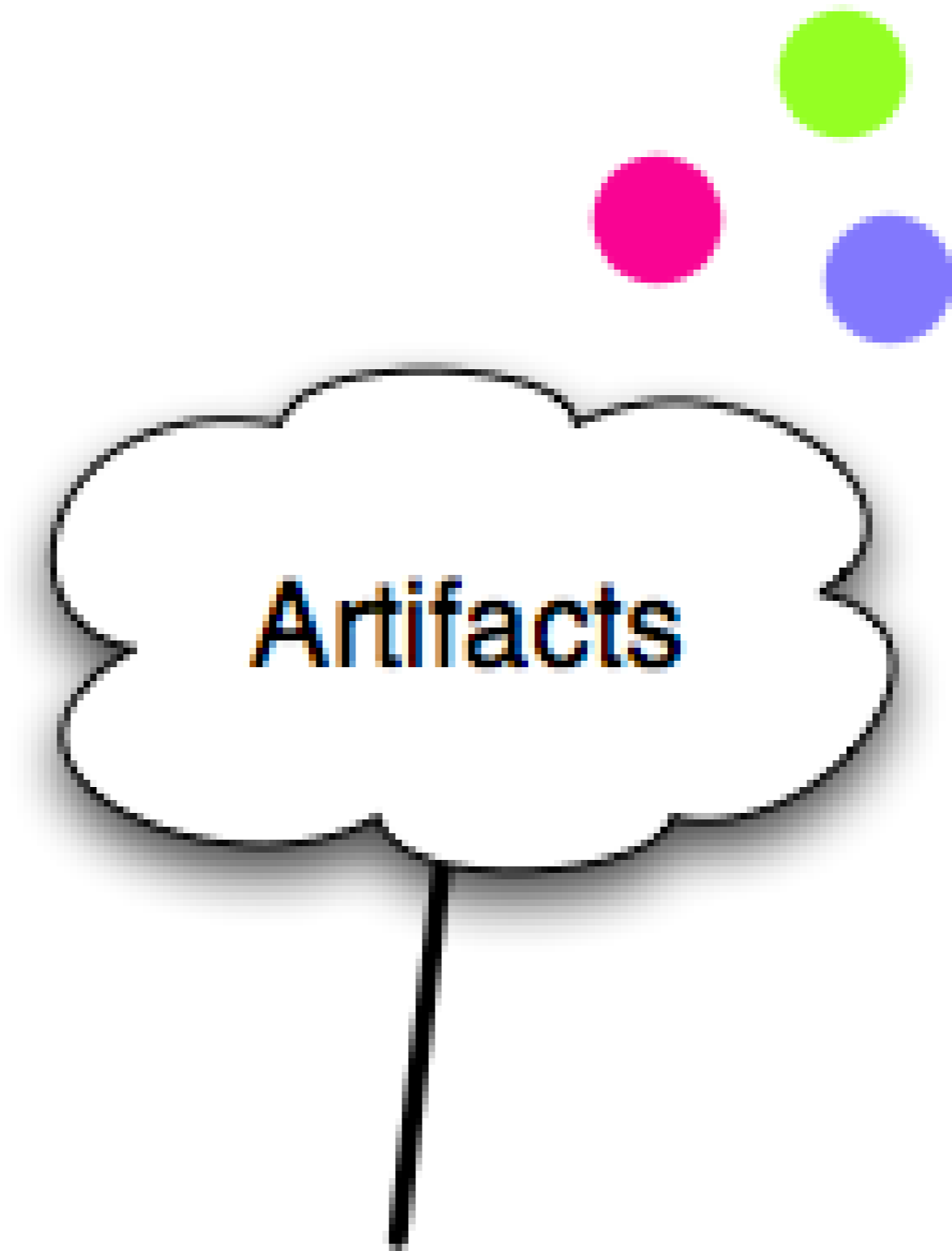
- Groups bundles into manageable units
- Enables the use of existing open source libraries
 - TCCL, LTW, implicit package use
- Provisions from repositories
- Extensive diagnostics, including
 - resolution failure, deadlock, delayed services

Virgo tour

Virgo Externals







Artifacts

- Identified by type, name, version

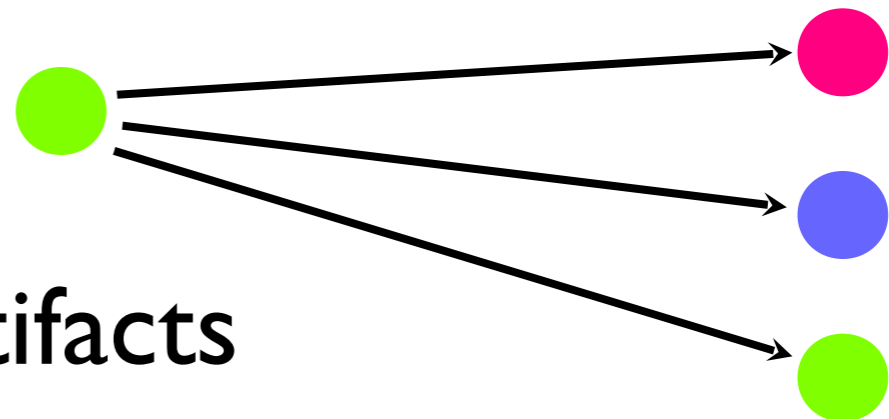
- Types:

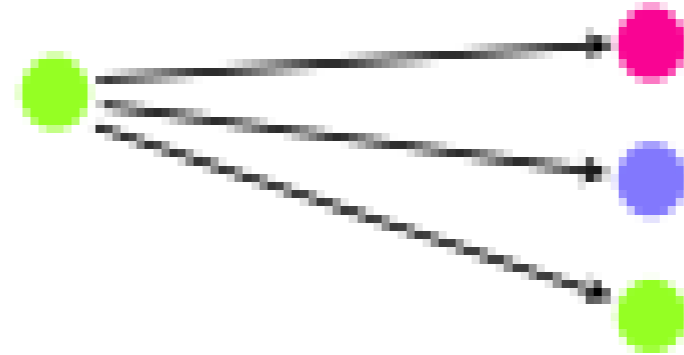
- bundle - OSGi bundle ●

- configuration - properties file ●

- plan - list of artifacts ●

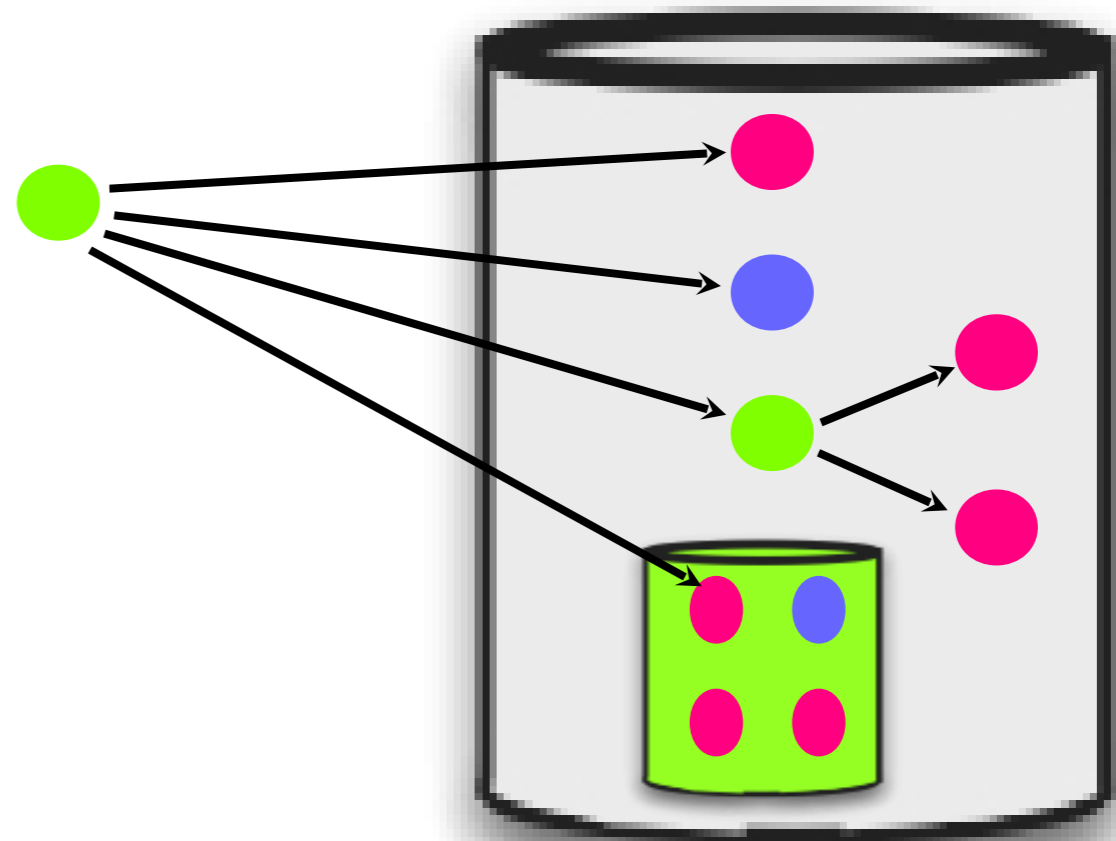
- par – container of artifacts



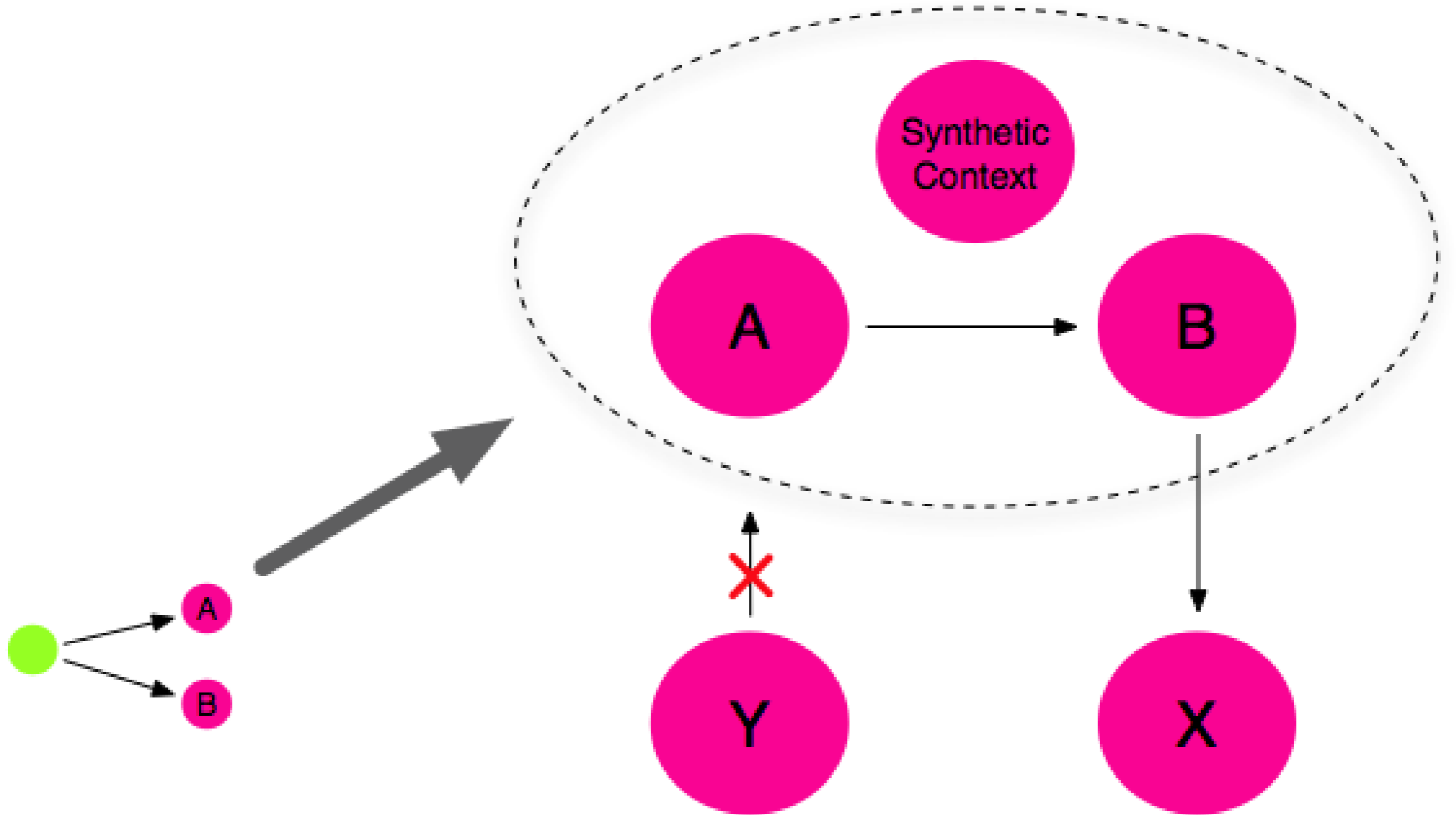


Plans

- XML
- List artifacts by type, name, version range
- Scoping
- Atomicity
- PARs
 - Contain artifacts
 - Scoped, atomic

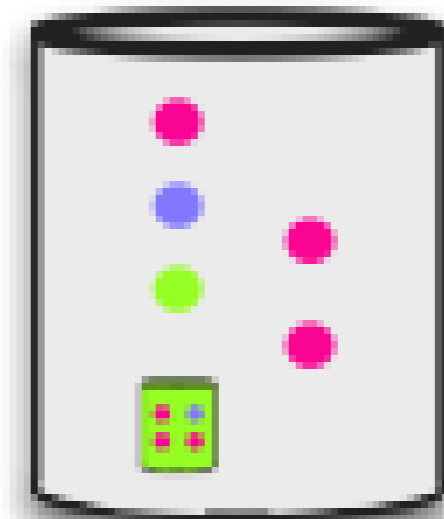


Scoping





Repositories



Repositories

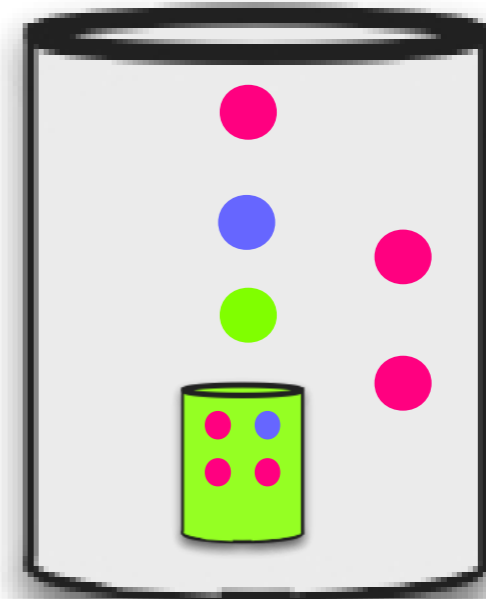
- Artifacts indexed by type, name, version
- Supports queries e.g. by version range

- Repository types:

External

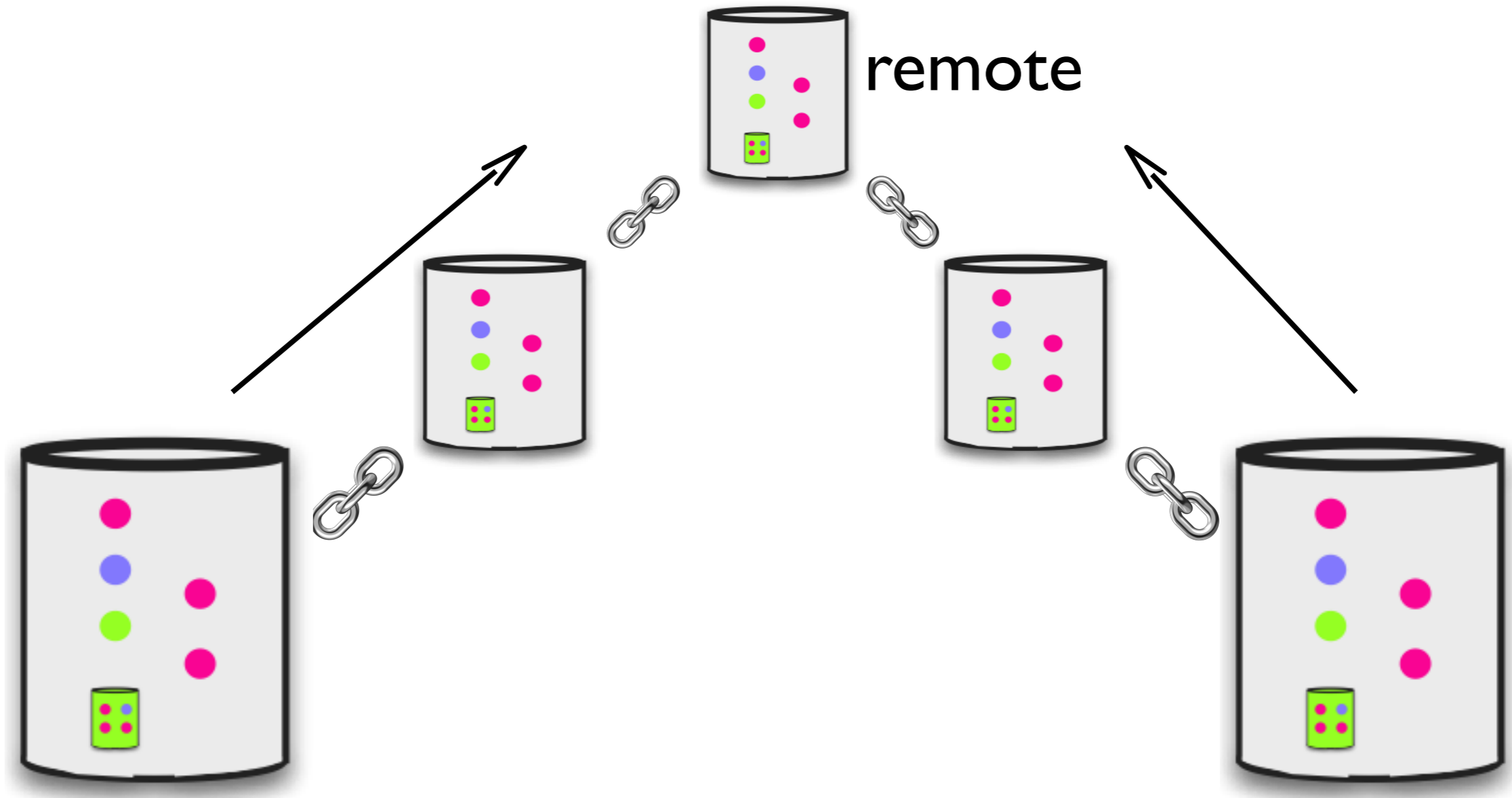
Watched

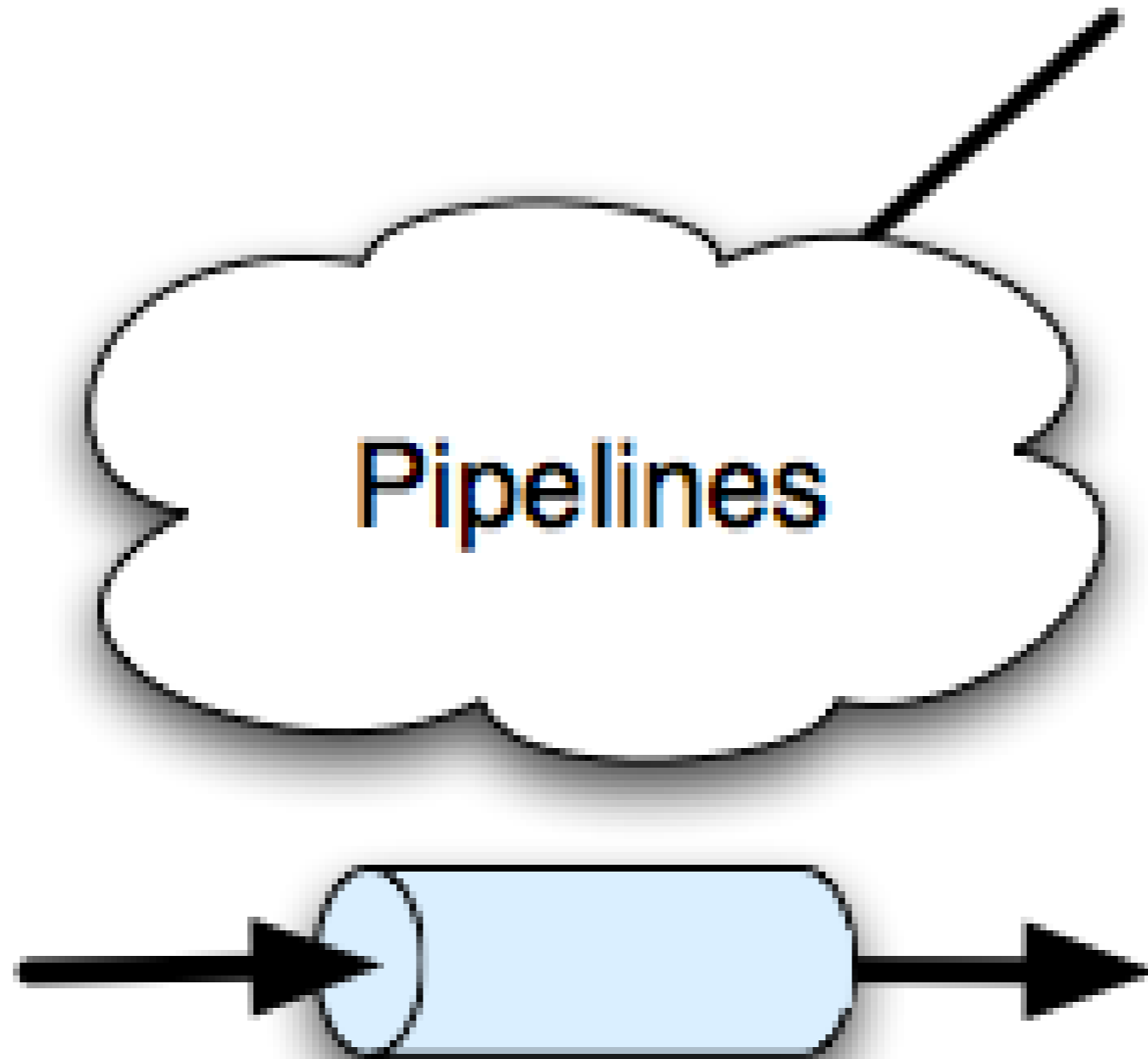
Remote



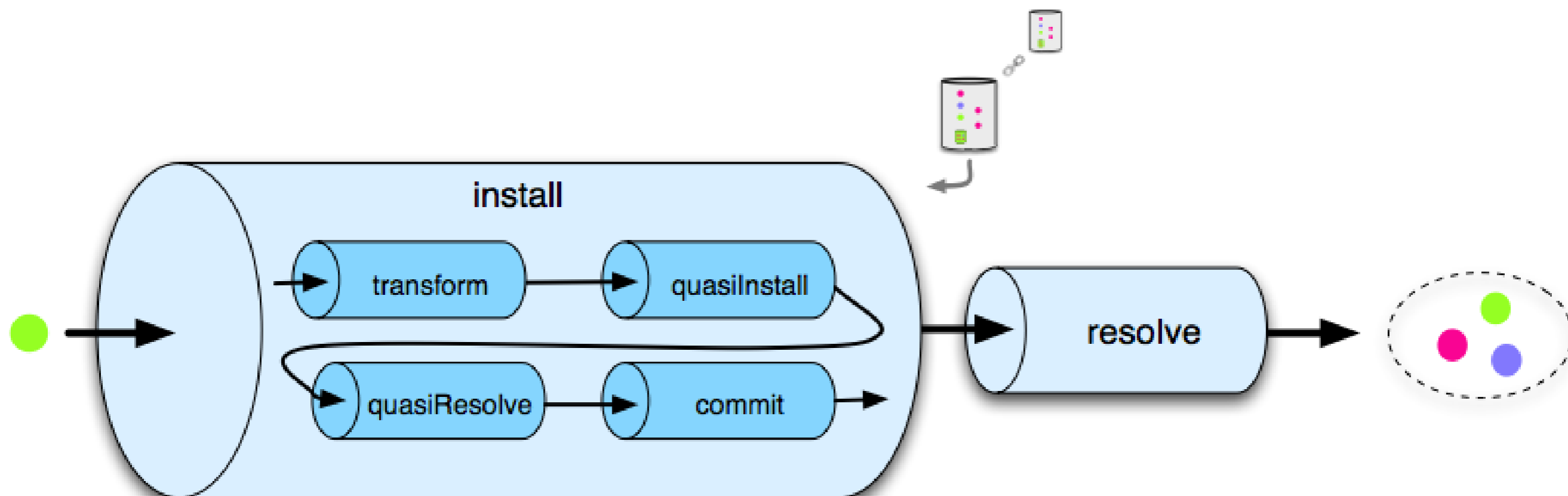
- Repositories may be chained

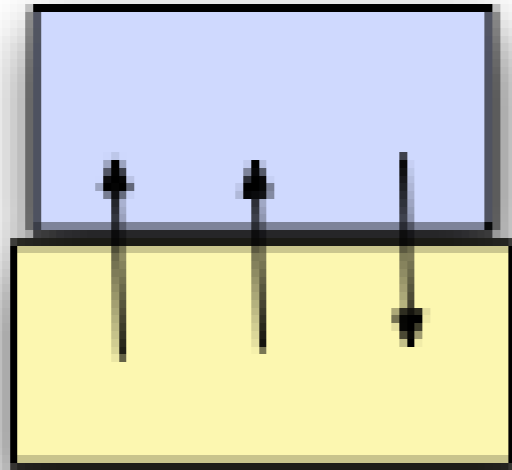
Repository Chaining





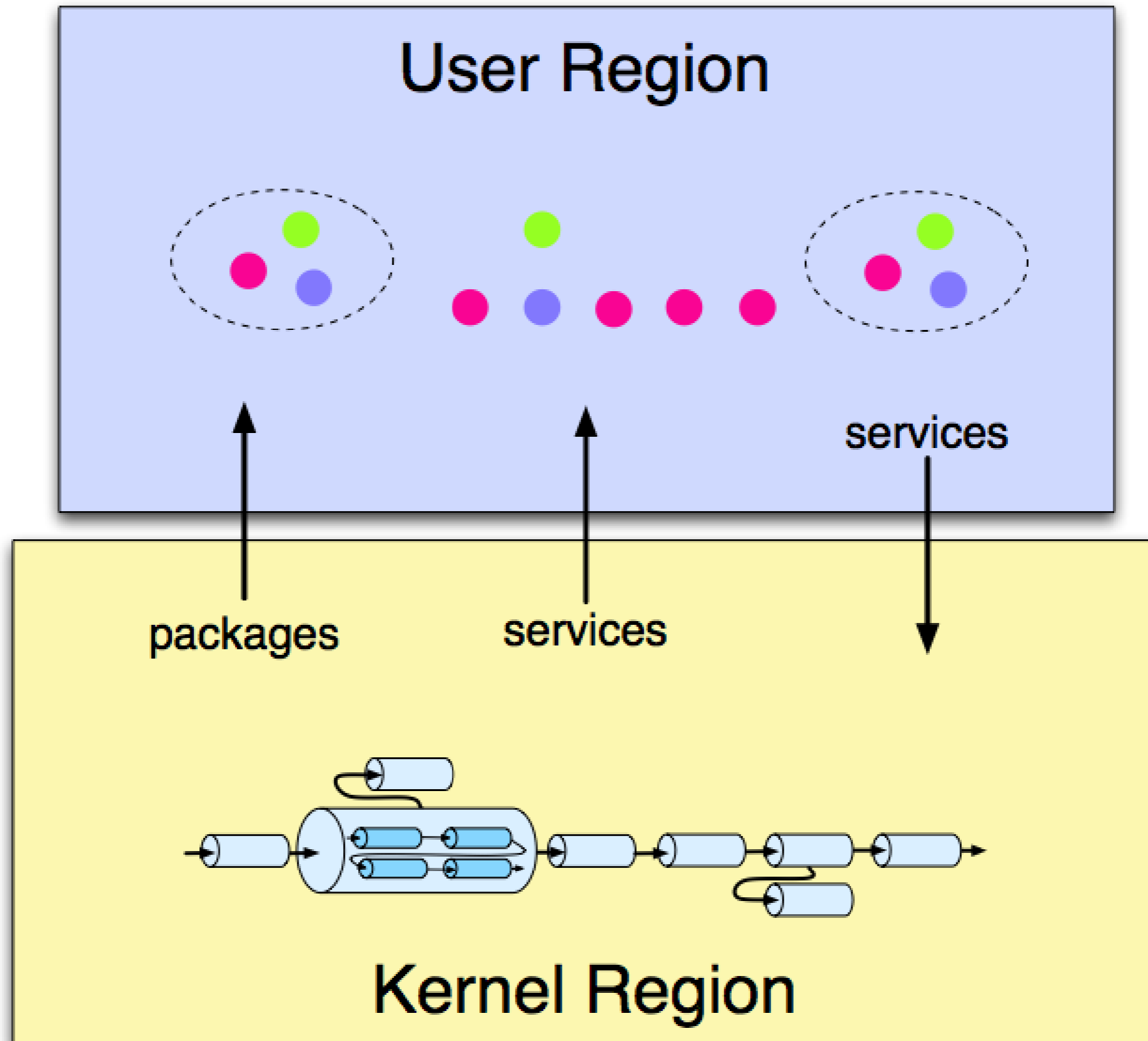
Pipelines





Regions

Regions



Current status

- All code now in Eclipse GIT
- Milestone release
2.1.0.M01 17th June 2010
- IP in the last stages
- All repositories can be checked out and built (except SVTs – to follow)
- Virgo Nightly Builds available
- Baseline release in early 4Q 2010

...status

- SpringSource Tool Suite supports Virgo servers
 - STS 2.3.2
 - <http://www.springsource.com/products/sts>
 - plus nightly build of dm Server Tools
 - <http://www.springsource.com/snapshot/e3.5>
 - Including support for plans

How can I get started?

Getting started

- Pre-req: Java 6
- Download and unzip
- bin/startup.sh or bin\startup.bat
- drop WAR files or bundles into *pickup* dir

...then what?

- Read documentation

 - User Guide

 - Programmer Guide

 - “Getting Started” Guide

- Join the community

 - <http://wiki.eclipse.org/Virgo/Community>

Roles

- Casual user
- Expert user
- Contributor
- Committer

Committer Skills

- Know or be willing to learn:
 - Clean architecture and code
 - Unit and integration testing
 - Concurrency
 - (Deep) OSGi understanding
 - git, ant, ivy, etc.

Work Areas

- Developer docs and wiki
- Jetty adapter
- Regions and nested frameworks
- p2 integration
- More server types

Further Information

- <http://www.eclipse.org/virgo>
- <http://wiki.eclipse.org/Virgo/Community>
- #VirgoRT The Twitter logo, consisting of the word "twitter" in a blue, lowercase, sans-serif font with a white outline and a small "TM" trademark symbol to the right.
- Download Virgo 2.1.0.M01 and try it out
- <http://www.eclipse.org/virgo/download>