



All About Virgo

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First



Hands up if you have used Virgo before?

Agenda



- Back to basics, Virgo Catch up
- What's new
- Tooling
- Snaps
- Regions
- The Future

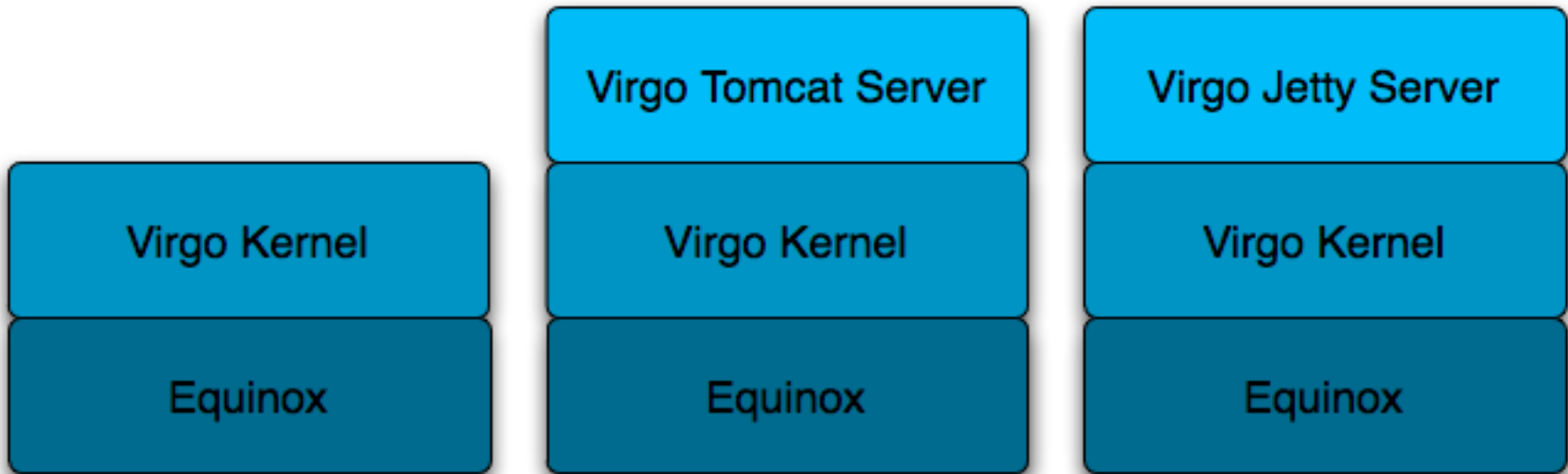
Virgo – Catch up



To be the best OSGi runtime environment we can be

- OSGi as the programming model
- Standards compliant
- Simplifies the managing Enterprise OSGi
- Simplifies the use of existing containers

Virgo – Catch up

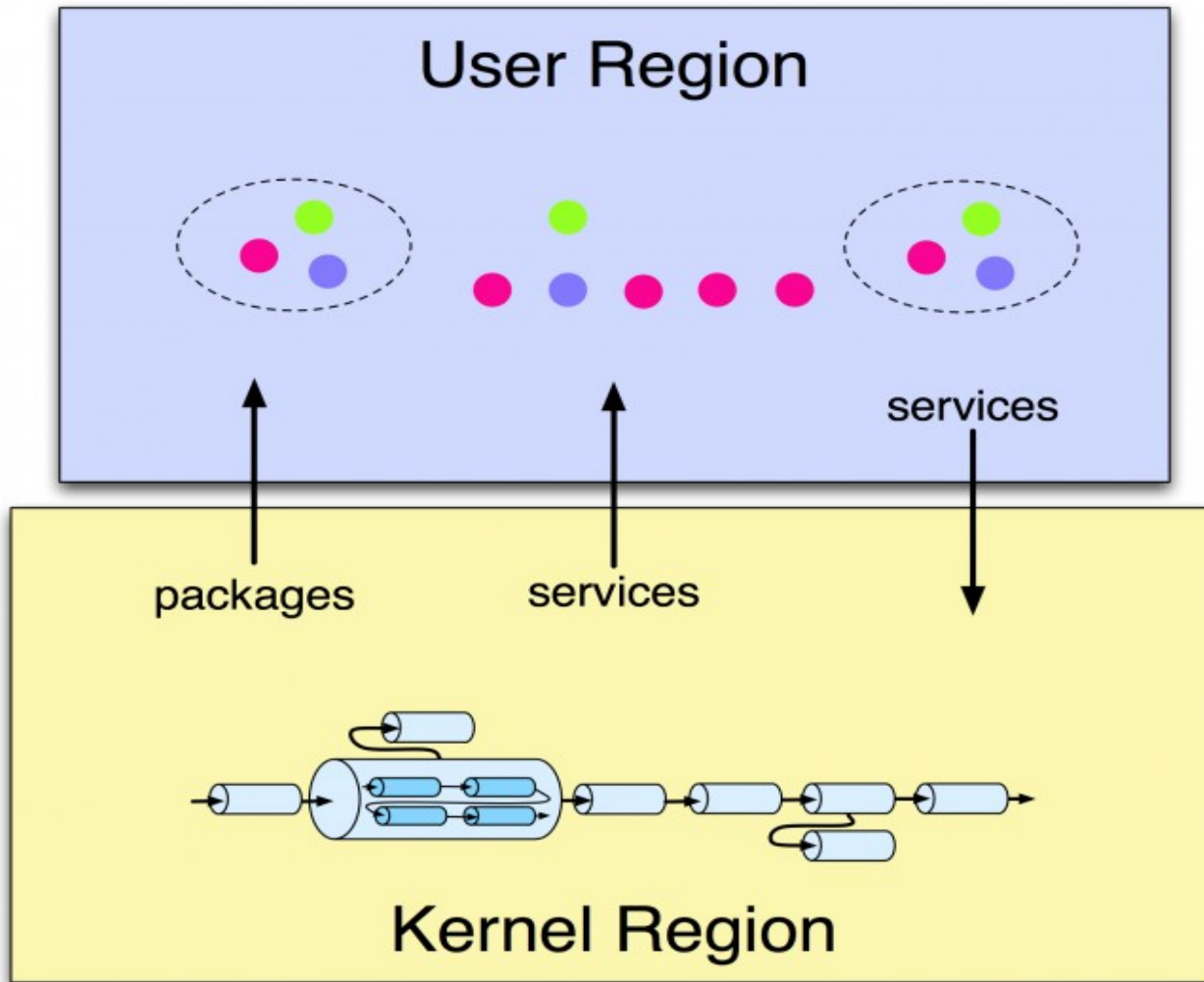


Virgo 3.0 – What's new



- Regions have replaced Nested Frameworks
- New Shell based on Apache GoGo
- Spring 3.0.5.RELEASE & Equinox Indigo
- Declarative Service & Log Service support

Virgo 3.0 – Regions



Virgo 3.0 – Demo



The GoGo Shell & Regions

For more about GoGo see Fridays Talk
“Next Generation Equinox Shell”

Virgo 3.0 – What's new



- Servlet 3.0 with Tomcat 7.x
- Gemini.Web, strict compliance to OSGi web container spec
- Jetty version (based on 7.x)
- Updated sample application, Greenpages
- Lots of Bugfixes etc...

Tooling - History



dm Server Tooling
becomes
Virgo IDE

Tooling

- Bundle and PAR projects
 - Including Bundlor
 - PDE-like editors
- Server integration
 - Launching
 - Deployment
 - Introspection
- EBR – Enterprise Bundle Repository



Tooling – Demo



Virgo IDE

Virgo 3.0 – What's new



Snaps gets its first release

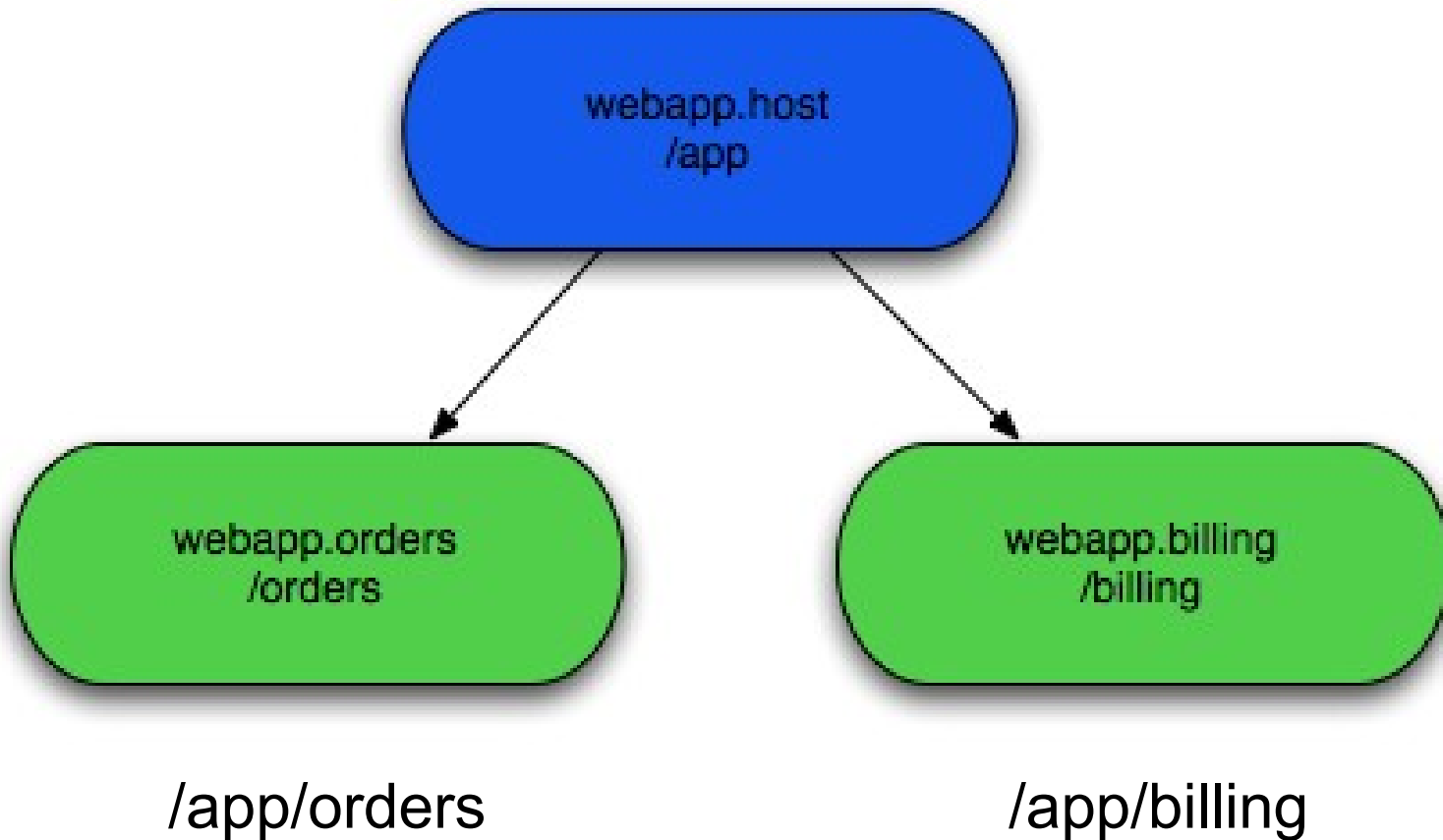
- Some features tidied up
- Documentation written
- Single sample app showing everything Snaps can do
- All available in a Zip from the Virgo website

Snaps – Basics



- Lots of Snaps (Web Application Bundles)
- Snaps have the hosts ServletContext
- Uses a filter to dispatch requests from the host
- Everything else is business as normal

Snaps – Nested Context Paths



Snaps – A filter for Snaps



- Still just web.xml
- Define the subpath for Snaps with a filter

```
<filter>
  <filter-name>host-filter</filter-name>
  <filter-class>org.eclipse.virgo.snaps.core.SnapHostFilter</filter-class>
</filter>
```

```
<filter-mapping>
  <filter-name>host-filter</filter-name>
  <url-pattern>/*</url-pattern>
</filter-mapping>
```


Snaps – Manifest



- Attaching Snaps to hosts

```
Snap-Host: org.eclipse.virgo.snaps.sample.animal;version="[3.0.0,3.1)"  
Snap-ContextPath: /cat
```

Snaps – Taglibs



- JSP tag to look up slices & their properties

```
<ul>
  <snaps:snaps var="snaps">
    <c:forEach var="snap" items="${snaps}">
      <li><a href="<c:url value="${snap.contextPath}${snap.properties['link.path']}/>">
        ${snap.properties['link.text']}</a>
      </li>
    </c:forEach>
  </snaps:snaps>
</ul>
```

Snaps – Host Properties



- Looking up resources & properties from the host

```
.getResource("host:/WEB-INF/sample.properties");
```

Virgo 3.0 – Demo



Snaps

Regions – Background



Bundle \neq Application

- Need higher level scoping construct than a bundle
- Simpler management applications

Regions – Scoping in Virgo



- Region scoping - Kernel Space vs User Space
- Application scoping
 - PARs and scoped Plans
 - Metadata rewriting for bundle/package scoping
 - Service registry hooks for service scoping

Regions & Hook Usability



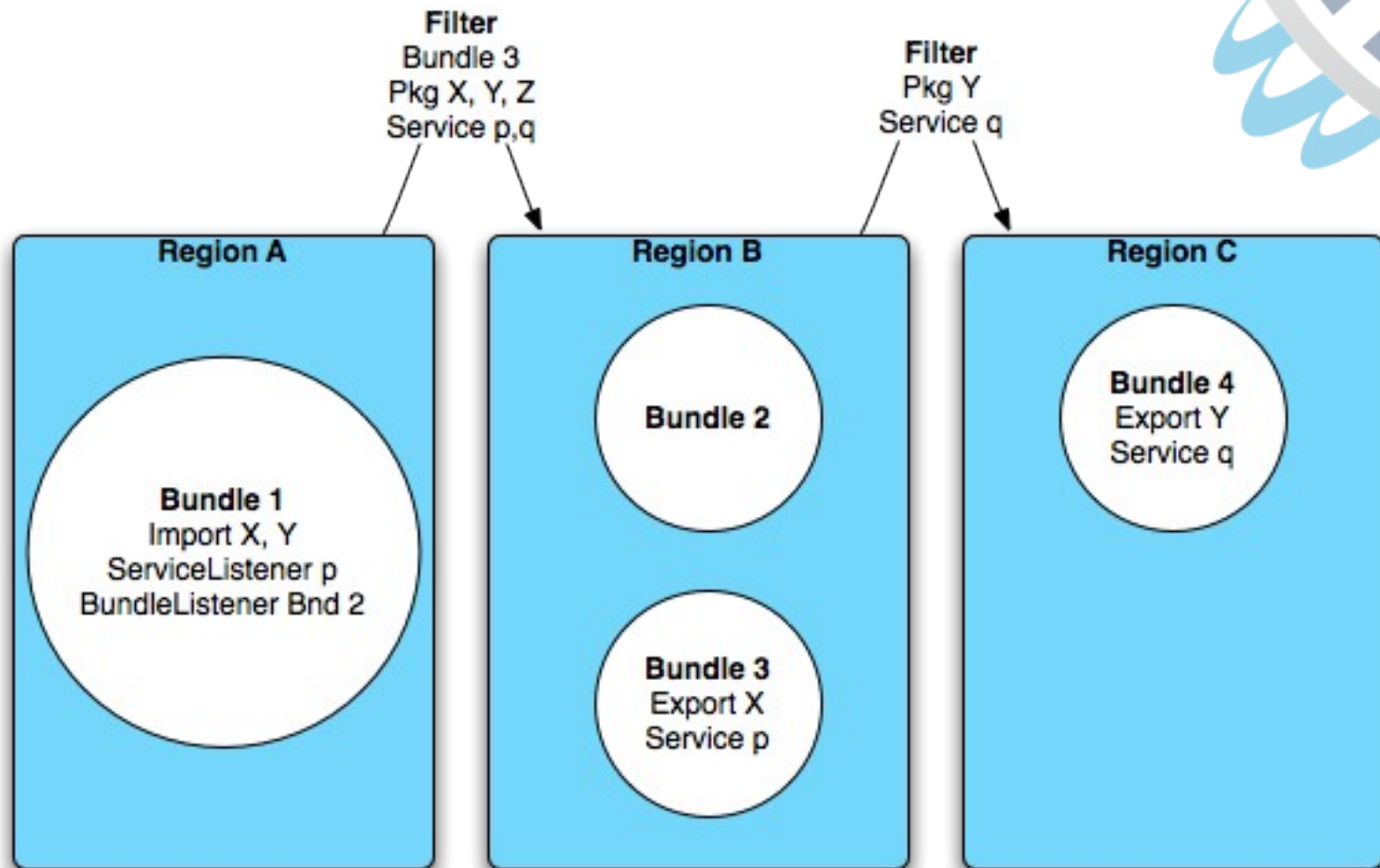
- Control the visibility of bundles, packages, generic capabilities
 - Bundle Resolver, Find and Event hooks
 - Service Find and Event hooks
- Hard to ensure consistent behaviour across hooks
- Need higher level abstraction
- Enter..... Region digraph

Regions – Region Digraph

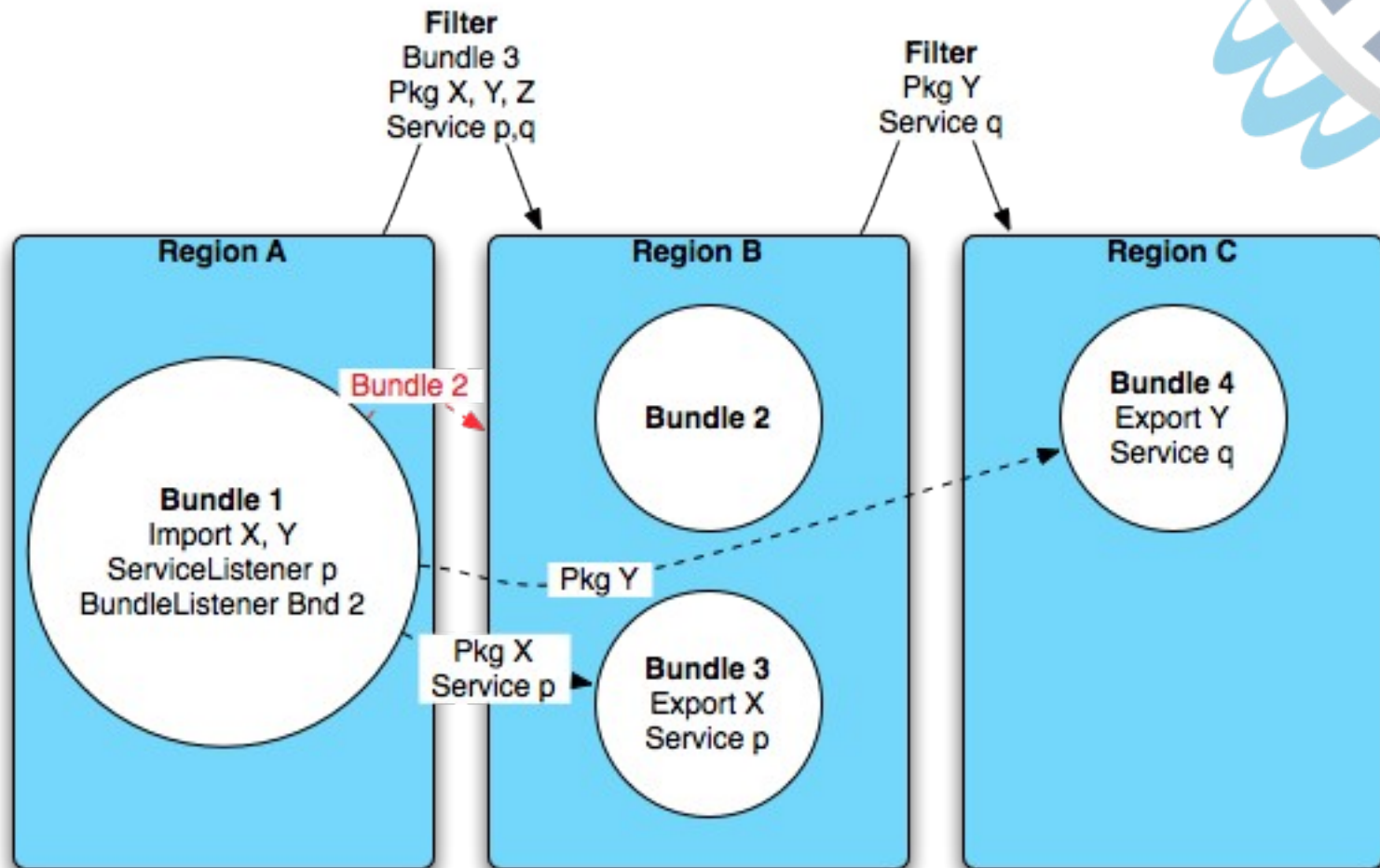


- A directed graph of "regions"
- A region is a group of bundles
- Regions may be connected by directed arcs
- Each directed arc has a filter which controls visibility:
 - bundles
 - packages
 - services
 - generic capabilities

Regions – Region Digraph



Regions – Region Digraph



Regions – Region Digraph (cont.)



- Developed as part of Virgo
- Formal model specified in Z
- Seen to be useful outside Virgo
- Moved to Equinox
- Used in Virgo 3.0
- Used in Apache Aries

Regions & Subsystems



- OSGi standard multi-bundle scoping mechanism
- Work in progress, public draft soon
- Inspired by

Virgo regions & scopes, Apache Aries applications, Apache Felix Karaf features, Eclipse features, Deployment Admin deployment packages etc...

- Virgo to implement subsystems in a future release

Regions & Subsystems



For more information

Go to the talk later today on
“Multi-bundle Scoping in OSGi”

For even more
see Subsystems RFC 152

Virgo Future



- Web Admin Console (Demo at the BoF later)
- Nano Virgo based around P2
- Subsystems
- Snaps, Nesting & Listener Support
- Cloud

Come to the BoF, tonight at 18:30 ...

Virgo Future -Tooling



Libra:

- Tooling for Enterprise OSGi
- Spec compatible only

Virgo IDE:

- Tooling for Virgo
- Not spec compatible (there is no spec)
- Very much specialized

Virgo Future - Tooling



Move spec-compatible parts to Libra

- Launcher, server visualization, Bundlor, ...

Let Virgo consume and enhance Libra

- With Virgo-specific parts, like PAR projects, EBR integration, ...

Enhance modularization

- Separate build tools (Bundlor, bndtools, PDE) from server integration

Remove Spring IDE dependencies

Improve performance/footprint



Questions

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