EclipseRT Virgo and OSGi

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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

startup.sh -clean

service wrapper

/pickup

/config

Admin console

JMX client

Shell

/serviceability
Artifacts
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

User Region

Kernel Region

packages

services

services
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  
- Download Virgo 2.1.0.M01 and try it out
- http://www.eclipse.org/virgo/download