

Systemmanagement with RHQ and Jopr

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AGENDA

- > Introduction
- > Some history
- > Architectural overview
- > Managed Resources
- > Extending Jopr and RHQ via plugins

Introduction

> Jopr

- Open Source Systemsmanagement software
- Upstream for JBoss Operations Network 2
- <http://www.jboss.org/jopr>

> RHQ

- Framework project
- Common management framework
- <http://www.rhq-project.org>

> Embedded Jopr

- Management console in JBoss AS 5.1
- Builds on Jopr and RHQ bits

Jopr / RHQ Dashboard

Logged in as rhqadmin

Summary Counts

Platform Total	1
Server Total	11
Service Total	905
Compatible Group Total	2
Mixed Group Total	2
Group Definition Total	2
Average Metrics per Minute	361

Operations

Resource Name	Resource Type	Operation	Date / Time	Status
MeasurementDataManagerBean	EJB3 Session Bean	View Method Stats	05/06/2009 11:57:35 AM	✓
MeasurementDataManagerBean	EJB3 Session Bean	View Method Stats	05/06/2009 11:49:26 AM	✓
AccessBean	EJB3 Session Bean	View Method Stats	05/06/2009 11:48:47 AM	✓
pickeldi	Linux	Manual Autodiscovery	05/05/2009 10:38:47 AM	✓
pickeldi	Linux	Manual Autodiscovery	04/16/2009 05:34:10 PM	✓

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Jopr Resource summary view

The screenshot displays the Jopr web interface for the resource 'MeasurementDataManagerBean'. The browser address bar shows the URL: `http://pickeldi:7080/rhq/resource/summary/overview.xhtml?id=501661`. The user is logged in as 'rhqadmin'.

The interface includes a navigation menu on the left with categories like CPU, File System, JBossAS Server, and Applications. The main content area shows the following details:

- Summary:**
 - Type: EJB3 Session Bean (Service)
 - Version: none
 - Description: An EJB3 Session Bean
 - Parent: JBossAS Server 'pickeldi RHQ Server, JBossAS 4.2.1.GA default (0.0.0.0:2099)'
- Recent Measurements:**
 - Create Count per Minute: 1,239
 - Remove Count per Minute: 1,0325
- Recent Alerts:** No recent alerts.
- Recent Out of Bound metrics:** No OOB conditions found.
- Recent Configuration Updates:** No configuration change history.
- Recent Operations:**
 - View Method Stats: 23 days, 4 hours ago
 - View Method Stats: 23 days, 4 hours ago
- Recent Event Counts:** No events in the last 24 hours.
- Recent Package History:** No recent package history.

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Jopr group view (with metrics)

The screenshot displays the RHQ web interface for monitoring a Jopr group. The browser address bar shows the URL: `http://pickeldi:7080/rhq/group/monitor/graphs.xhtml?groupId=500550&category=COMPATIBLE`. The user is logged in as `rhqadmin`.

The main content area shows a summary of the group with a table of resources:

Name	Parent	Availability
PU 0	pickeldi	✓
PU 1	pickeldi	✓
PU 2	pickeldi	✓
PU 3	pickeldi	✓
PU 4	pickeldi	✓

Below the table, there is a monitoring section with the following metrics:

- Availability:** 20,0% (of known values for the timeframe shown)
- User Load (CPU):** Low: 0,1%, Avg: 8,2%, Peak: 55,1%
- Wait Load (CPU):** Low: 0%, Avg: 0,1%, Peak: 1,9%

The monitoring section includes a bar chart for User Load (CPU) and a progress bar for Availability. The chart shows a peak load of 55.1% at 05/29/2009 03:58:51 PM. The availability progress bar shows 20.0% availability.

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Embedded Jopr - JBossAS 5.1 admin console

The screenshot shows the JBoss AS Administration Console interface. The browser address bar displays the URL: `http://pickeldi.usersys.redhat.com:8080/admin-console/secure/resourceInstanceMetrics.seam?path=`. The page title is "JBoss AS Administration Console" and it includes a "Welcome admin [Logout]" message.

The left sidebar shows a tree view of the system structure, including "JBossAS Servers", "JBoss AS 5 (default)", "Applications", and "Resources". The selected resource is `jboss.j2ee:jar=profile-service-secured.jar,name=SecureManagementView,service=EJB3`.

The main content area displays the "Metrics" tab for this resource. The status is "Available". Below the tabs, there is a section for "Numeric Metrics" with a table of performance metrics.

Name	Value	Description
Category: performance		
Current Count	0	The total number of currently pooled instances of this EJB3 Session Bean
Create Count	0	The number of instances of this EJB3 Session Bean that have been created since server start
Remove Count	0	The number of instances of this EJB3 Session Bean that have been removed since server start
Available Count	30	The number of pooled instances of this EJB3 Session Bean in the method-ready state
Max Size	30	The maximum number of instances that are allowed to be pooled

A "Refresh" button is located below the table. The footer of the console indicates it is powered by Embedded Jopr and is a registered trademark of Red Hat, Inc.

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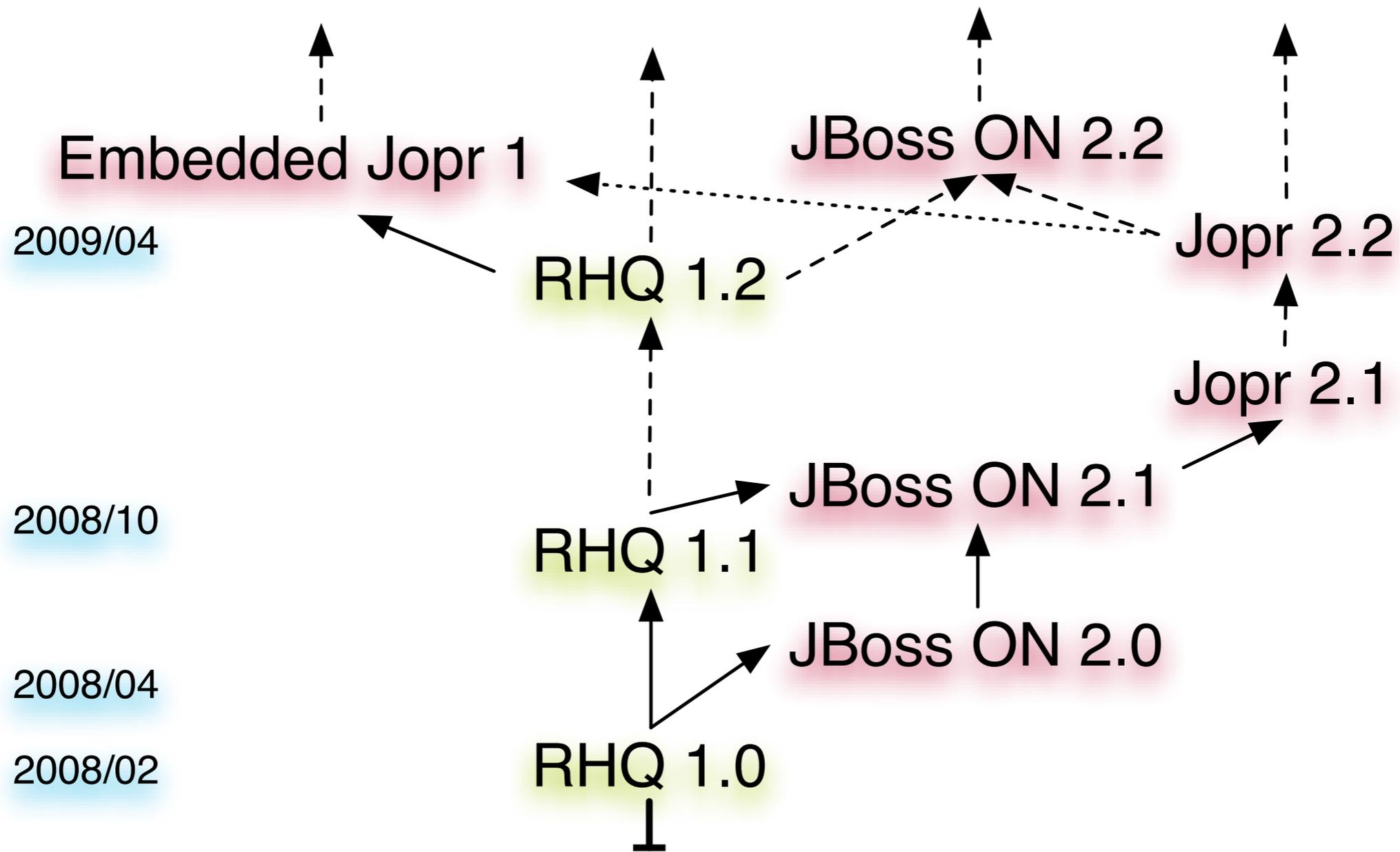
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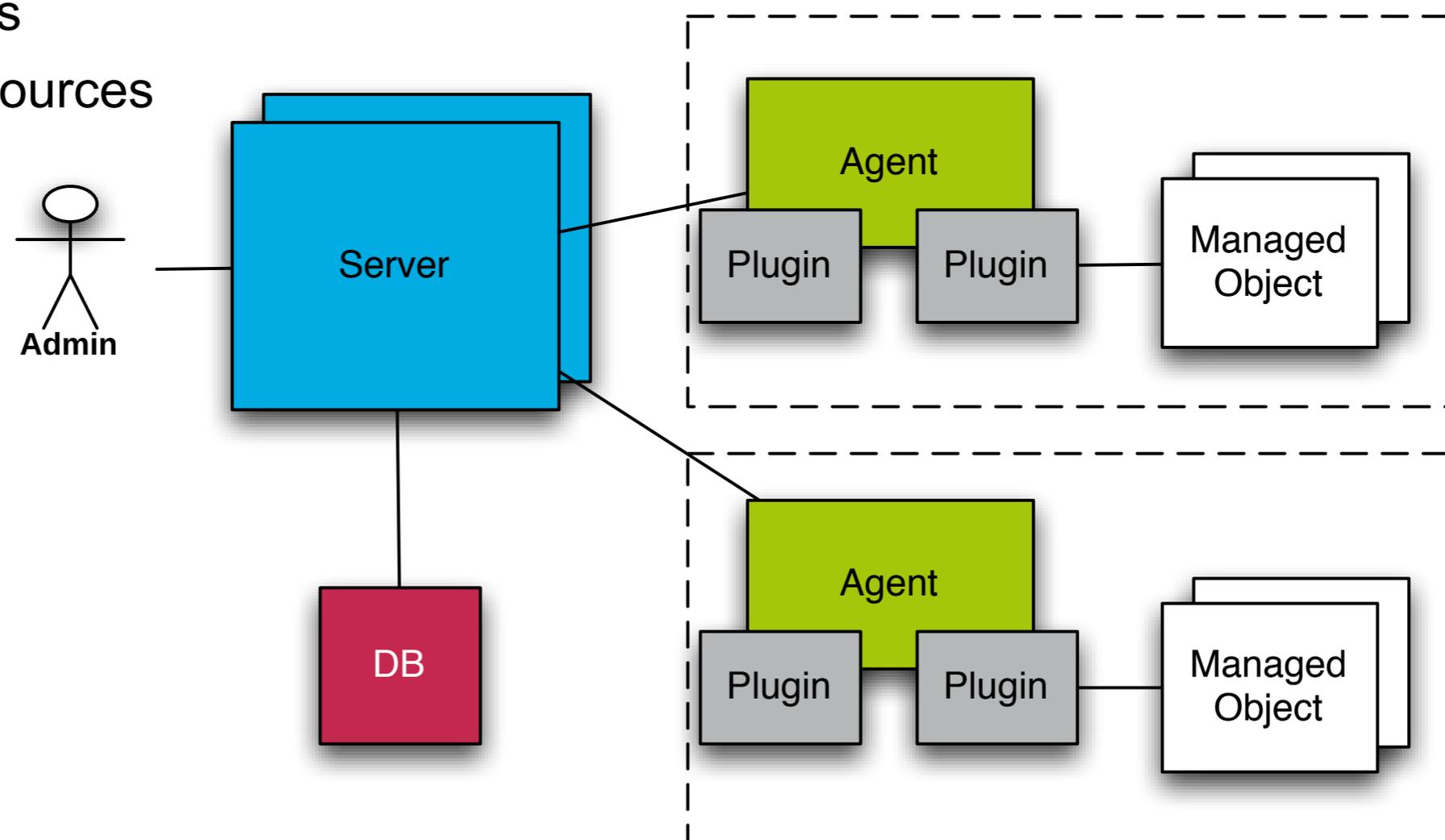


Some history



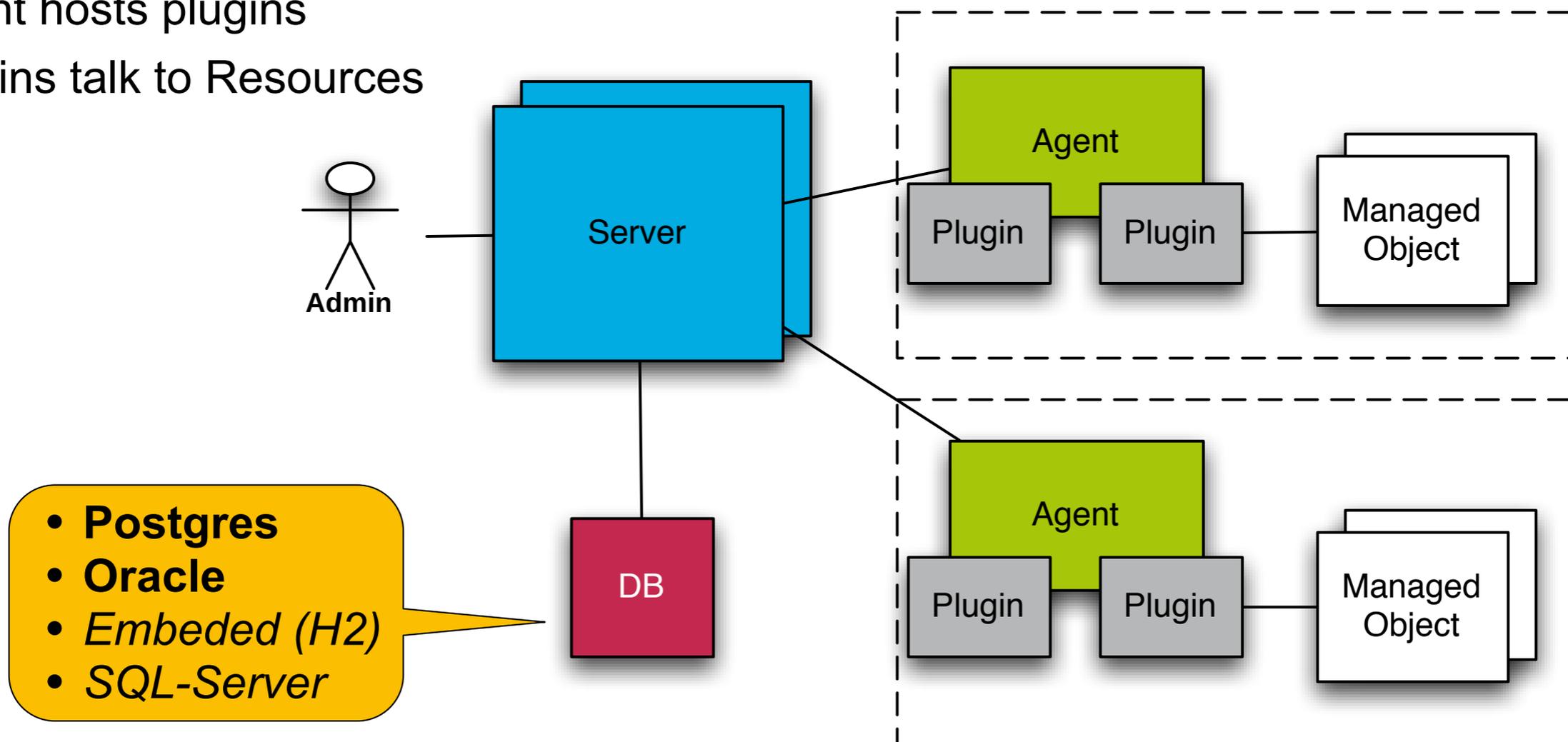
Architectural Overview (1)

- > Central Server (or set of)
- > Agents per machine
- > Agent hosts plugins
- > Plugins talk to Resources



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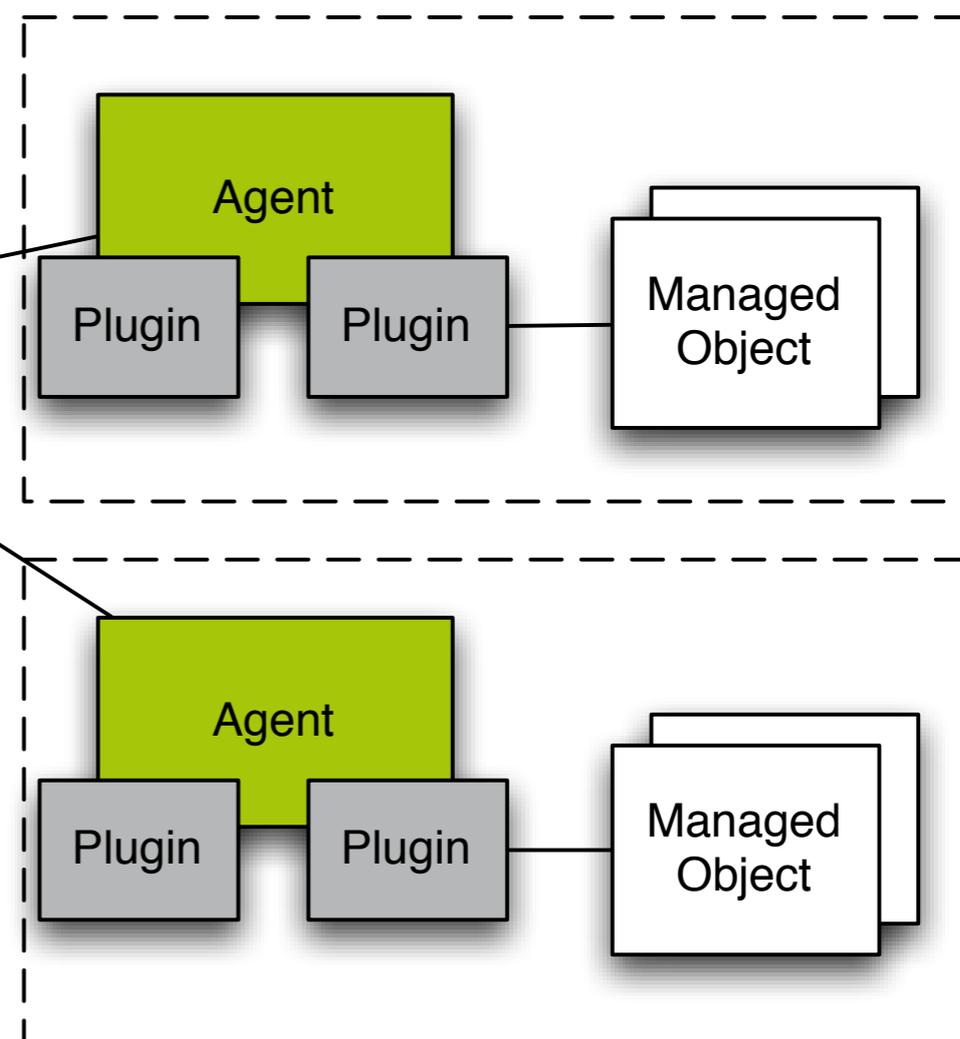
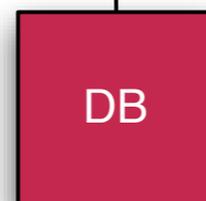
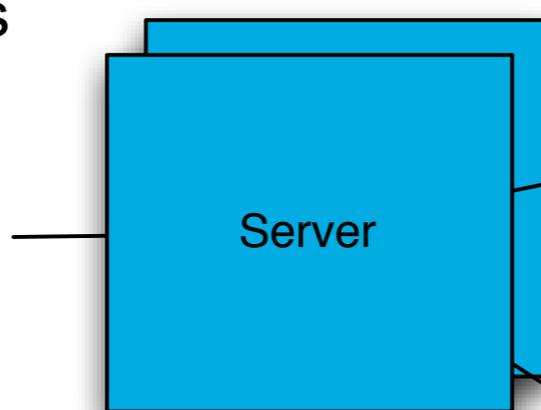
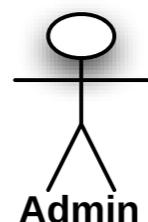
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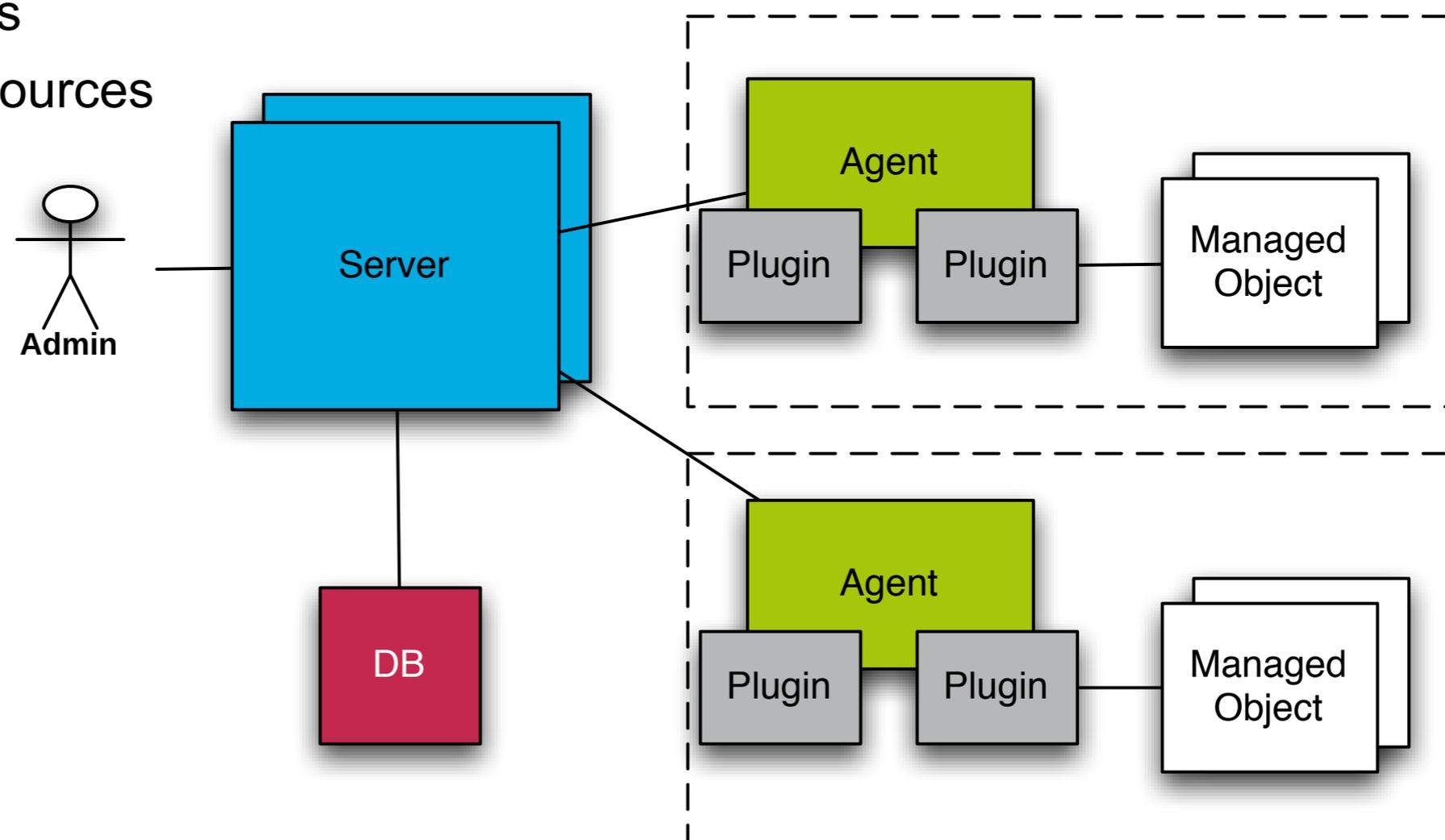
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- **Web-UI**
- *CLI*
- *WebDAV*



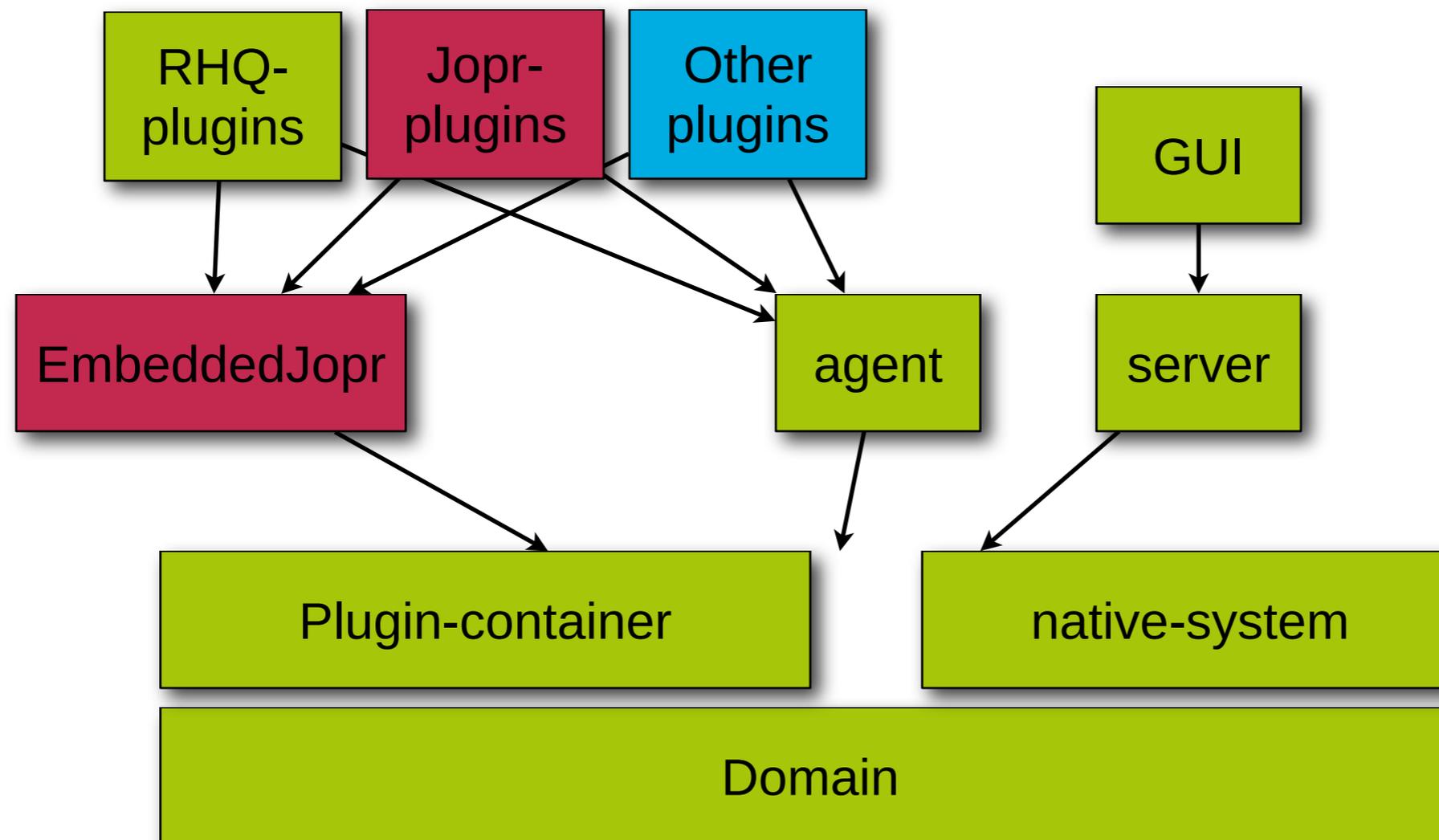
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Architectural Overview (2)

- > RHQ as base framework
- > Plugins from Rhq, Jopr and others



Managed Resources

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Managed Resources

> Resource

- Everything you can manage or monitor
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> ResourceCategory

- Platform, Server, Service
- Helps to determine place in Resource Tree

Extending Jopr and RHQ via Plugin

- > Plugins extend functionality
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- > Plugins manage individual types of resources

- > Plugin needs 3 artifacts

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Discovery Class

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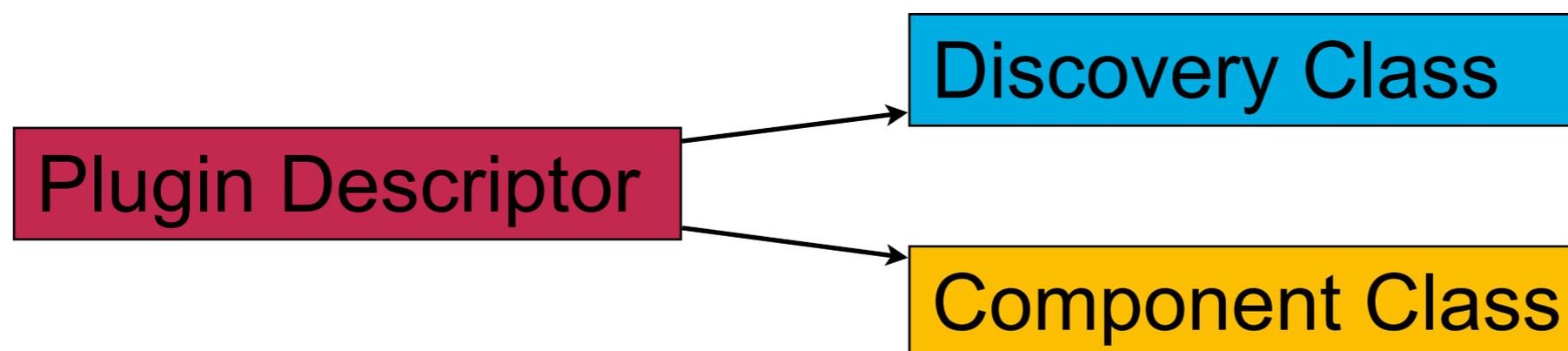
Discovery Class

Component Class

Extending Jopr and RHQ via Plugin

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- > Plugin needs 3 artifacts



Plugin generator

> Generates a plugin skeleton

```
$ java -jar target/rhq-pluginGen-1.2-jar-with-dependencies.jar
Please specify the plugin root category PLATFORM(P), SERVER(S), SERVICE(I), s
Please specify its PackagePrefix: org.rhq.plugins
Please specify its FileSystemRoot: /jon/jonHEAD/rhq/modules/plugins
Please specify its ComponentClass: FooComponent
Please specify its DiscoveryClass: FooDiscovery
Please specify if it should support Events (y/N): y
Please specify its ParentType:
Please specify if it should support Monitoring (y/N): y

.....

$
```

> Afterwards you edit some Java classes

Deploying plugins

- > Normal Jopr usage
 - Copy to server
 - Agent pulls from server

- > Developer usage
 - Like normal usage
 - Standalone Container

- > Embedded Jopr
 - Plugins live within plugins directory in the .war file

Thanks & more

- > Thanks for listening

- > Some URLs
 - RHQ: rhq-project.org
 - Jopr: jboss.org/jopr
 - Embedded Jopr: jboss.org/embjopr

- > Questions ?

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