BIServer topics

Aaron Phillips
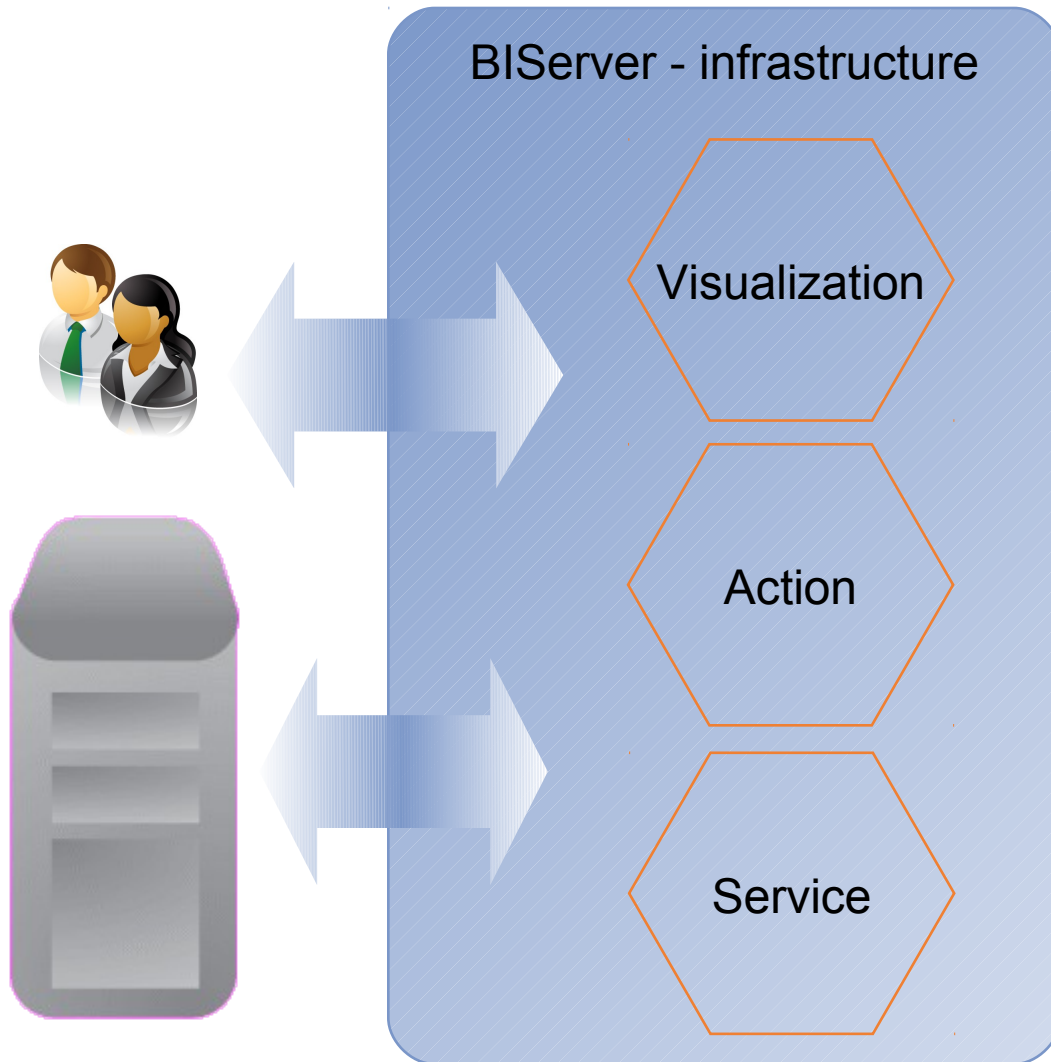25 Sep 2010

What is the Pentaho BIServer?

The BIServer is becoming a business intelligence oriented *application* server rather than just a *solution* server. Thinking about what parts comprise a BIServer, we can consider them as falling in one of two groups: **infrastructure** and **add-ins**.

BIServer concepts

The two conceptual parts of the BIServer...

- Infrastructure - the parts of the BIServer that support business value
  - on it's own the infrastructure does nothing of business value
  - doesn't have the parts that allow it to solve a business need
  - for that we need the Add-ins

- Add-ins - the parts of a BIServer that provide it business value
  - Visualizations - user-facing online interaction
  - Actions - do some job, provided some inputs and resources
  - Services - render machine processable data

BIServer concepts - high level view

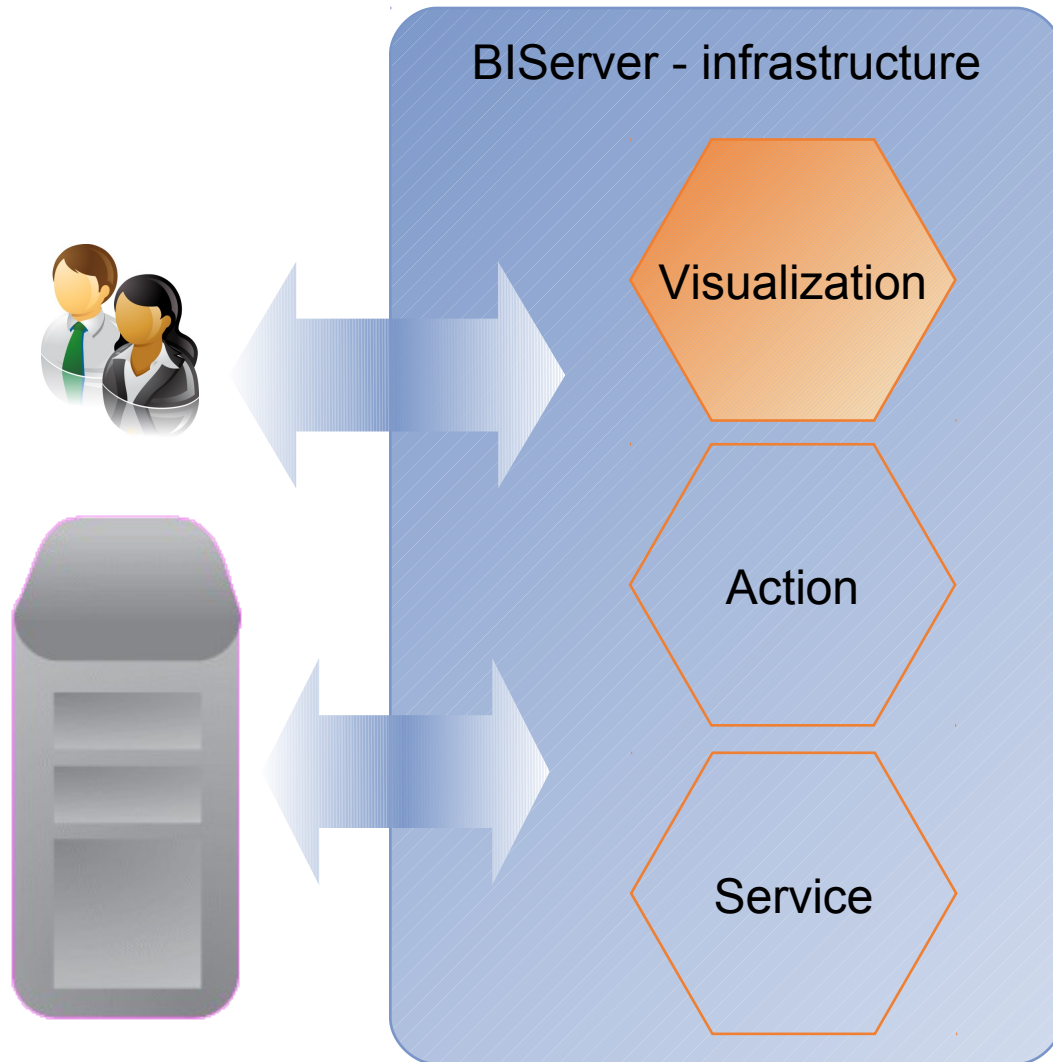BIServer - infrastructure

Visualization

Action

Service

BIServer concepts - Infrastructure

Infrastructure - the parts of the BIServer that support business value

- wrapping (J2EE) web application
- Solution Repository framework
- Repository service
- Plugin services framework
- Scheduling services (of actions and sequences of actions)
- Data connections framework
- Security
- Auditing
- Administration
- <insert other cross-cutting concern here>

On it's own the infrastructure does not solve a real business need - it doesn't have the necessary parts that allow it to do anything useful in that regard. For that we need the Add-ins...

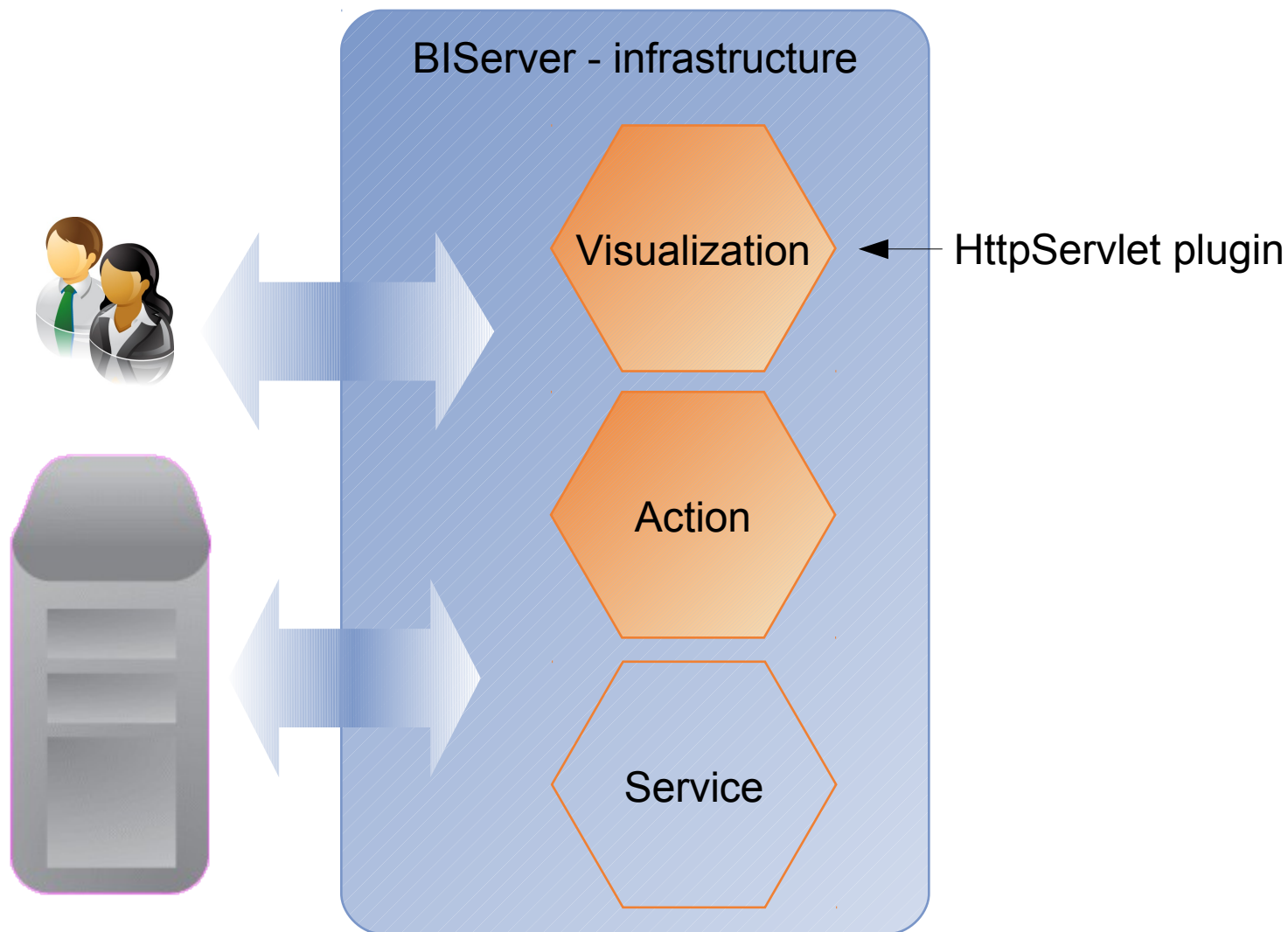# BIServer concepts - Visualization add-in

- How?
  - javax.servlet.http.HttpServlet plugin (trunk/Sugar)
  - Content Generator plugin (2.1-?)

- What?
  - User interfaces: e.g. CDF, Analyzer, PAT, dashboards
  - these are live UIs that a user interfaces with directly
  - the ability to add-in views to the BIServer is a convenience. A viz of course may be deployed elsewhere and access the BIServer remotely if needed.
  - these are never scheduled or run offline. A viz renders complex UIs that are meant for live human interaction. If we want a representation of a viz for running offline, then an Action should be created to do that (think a PUC dashboard vs a scheduled dashboard -- different rendering engines)

BIServer concepts - high level view

BIServer - infrastructure

Visualization ← HttpServlet plugin

Action

Service
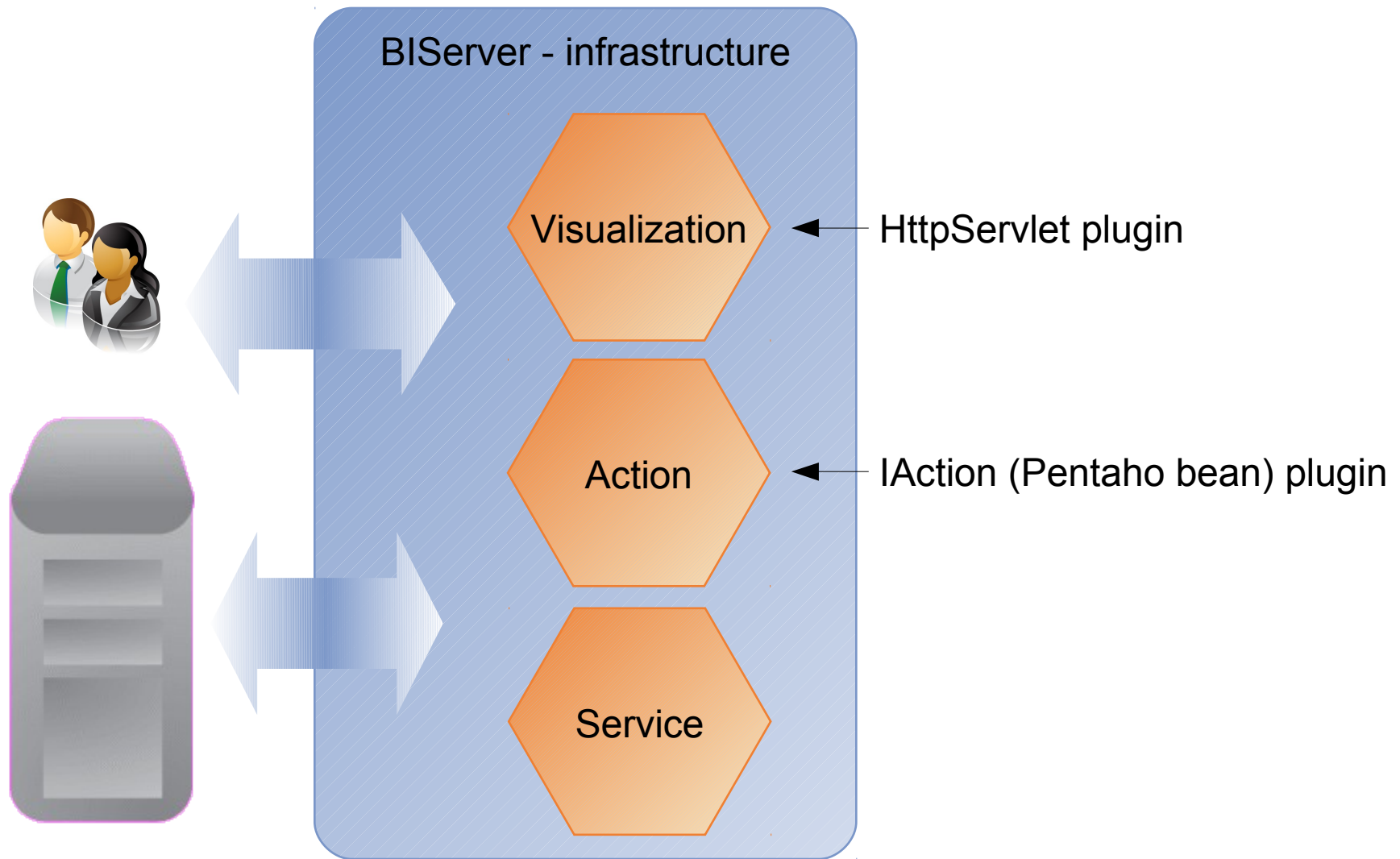
BIServer concepts - Action add-in

- How?
  - IAction plugin (trunk/Sugar)
    - command pattern JavaBean objects
    - supports direct scheduling
    - better error reporting / handling
    - can be used in or outside of xactions
  - PojoComponent plugin (3.x - ?)
    - early attempt at JavaBean, lightweight actions
    - fragile contract with Solution Engine
    - buggy handling of output
  - IComponent (1.x - ?)
    - not unit testable
    - many are outdated, not maintained
    - too difficult to author

- What?
  - a self contained module that may interface to an external library or service to fulfill a business need
  - e.g.: JFreeReportComponent/SimpleReportingComponent, SQLLookupRule, ChartComponent, KettleComponent, etc.
  - can be strung together in a sequence to fulfill a more complex need
  - can be scheduled
  - can be executed via services

BIServer concepts - high level view

BIServer - infrastructure

Visualization

Action

Service

HttpServlet plugin

IAction (Pentaho bean) plugin
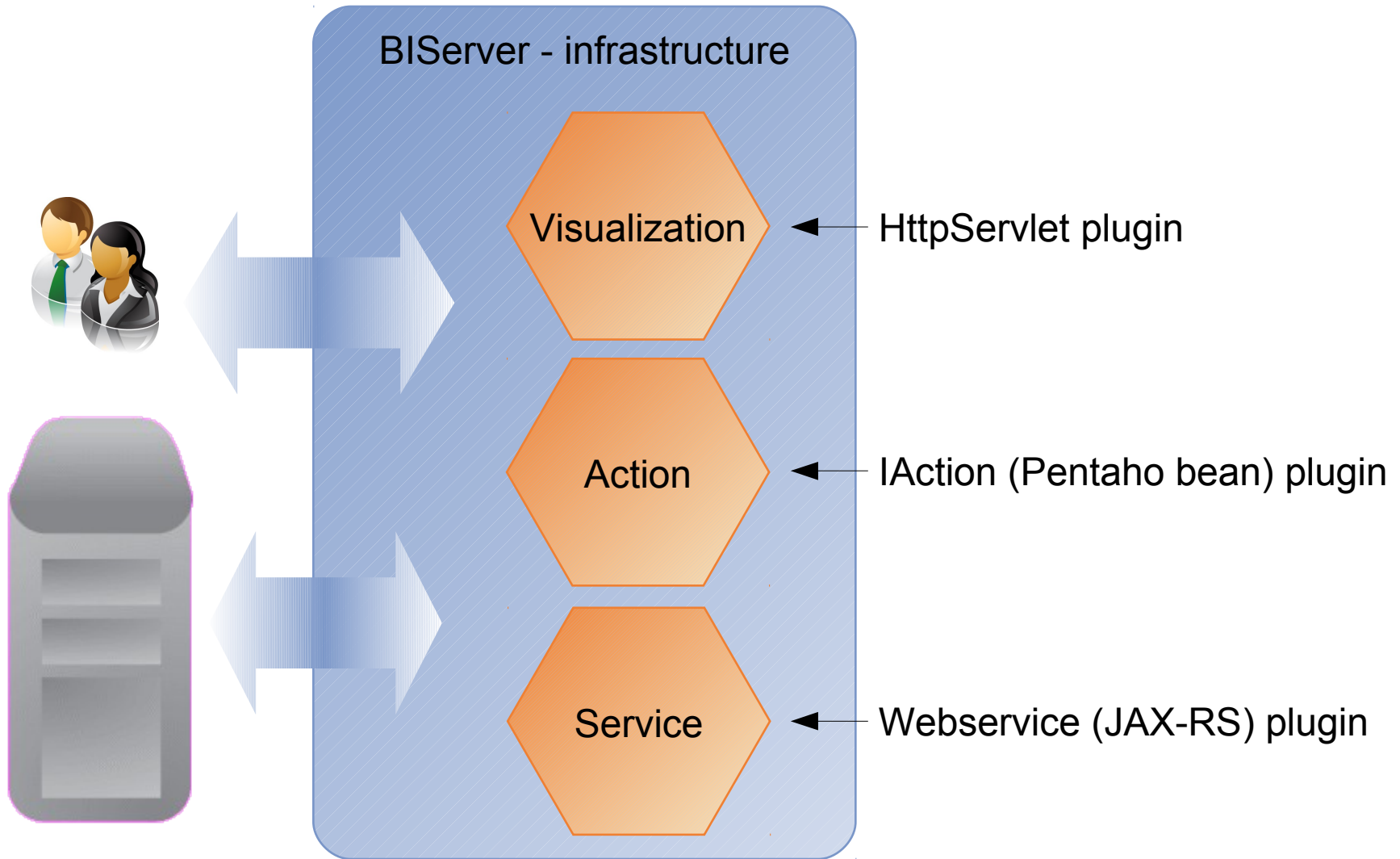
BIServer concepts - Service add-in

- How?
  - JAX-RS [& JAX-WS] (trunk/Sugar)
    - pentaho-cws on google code is a POC of this
  - plugin webservice (Axis2) (3.x - ?) (simplistic)
  - Content Generator (bad!)

- What?
  - a plugin writer may wish to expose a service to which some UI or machine may interface
  - like views, the ability to add-in a service to the BIServer is a convenience. It does provide the service writer the ability to access elements of the BIServer in memory vs remotely

BIServer concepts - high level view

BIServer - infrastructure

Visualization — HttpServlet plugin

Action — IAction (Pentaho bean) plugin

Service — Webservice (JAX-RS) plugin

Groovy - an alternative to xactions

- GroovyEngine plugin for the BIServer
  - script your action sequences (no .xaction files or solution engine in play)
  - your script is injected with:
    - the current session
    - the outputstream in play (if HTTP, the HttpResponse)
    - a logger (commons logging)
    - coming soon: repo - place to store and retrieve solutions and content
    - coming soon: ACLs

- Demo...

Groovy - an alternative to xactions

- Further possibilities...
  - provide access to content destinations (i.e. FTP, VFS, email, etc)
  - make repo easy to browse / read / write
  - provide direct access to datasources and connections
  - **interactive shell/console with Save and Test/Debug**
  - call groovy script via REST WS
  - Domain Specific Language (DSL) for orchestrating/sequencing actions
  - simple access (by a factory) to all known actions in system
  - auditing

Questions