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Why Migrate to the Progress Application Server for OpenEdge?

Michael Banks
Principal Software Engineer

October 12, 2018

Agenda

- Introduction to PASOE
- Platform Benefits
- Administration Benefits
- Development Benefits
- What's New / Coming Soon
- Summary / Q&A

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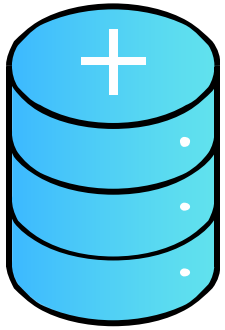
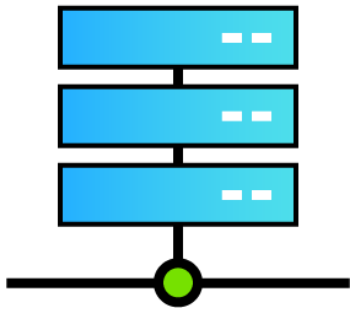
Timeline of Server Technology

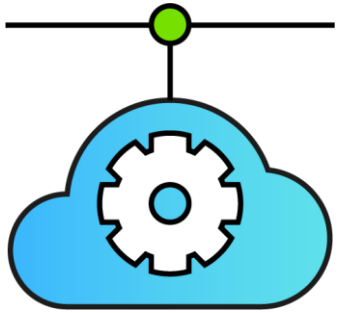
Onward and Upward!



DB+ChUI



AppServer



WebSpeed

REST Adapter

PAS & WebHandlers

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Platform Benefits

It's Simpler.

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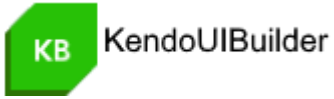
The Progress Application Server Platform

- Simpler: Single delivery platform for all Progress Web-based products



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Classic AppServer (CAS)

- AdminServer required
- AdminServer starts NameServer and AppServer Broker
- Broker starts AppServer Agents
- Client connects to NameServer and redirected to AppServer
- For internet, install and configure on your own web server:
  - AppServer Internet Adapter (AIA)
  - Web Services Adapter (WSA)
  - REST Adapter
  - Webspeed Messengers (CGI,NSAPI,ISAPI)

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Progress Application Server (PAS) for OpenEdge

- Simply start the PAS for OE instance
- Clients connect using HTTP/HTTPS
- NO AdminServer
  - Unless running OpenEdge Management on same machine
- NO NameServer
  - Load balancing handled with industry standard products
- Session-manager integrated with Tomcat
  - No need to set up another web server
  - No need for adapters

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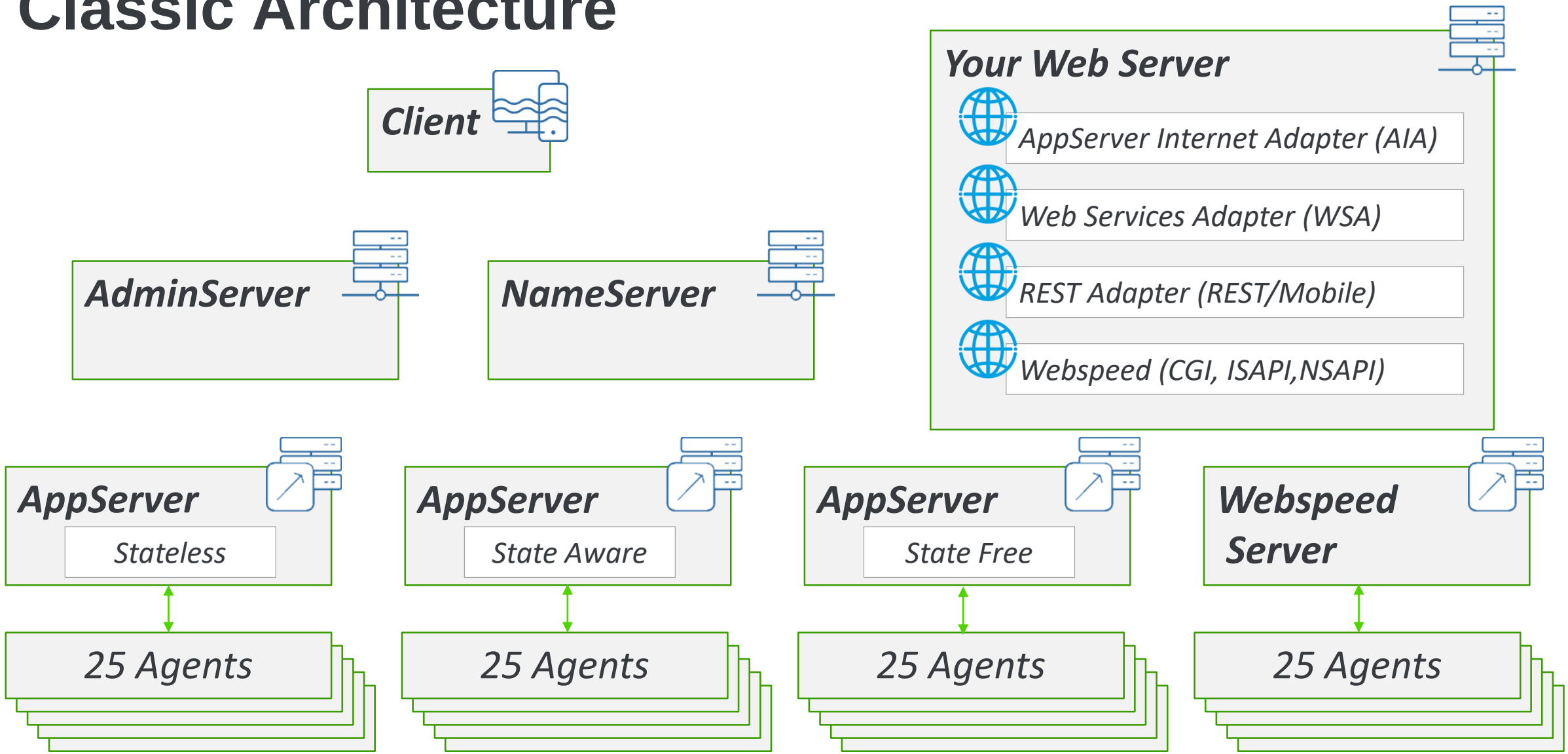
Classic Architecture



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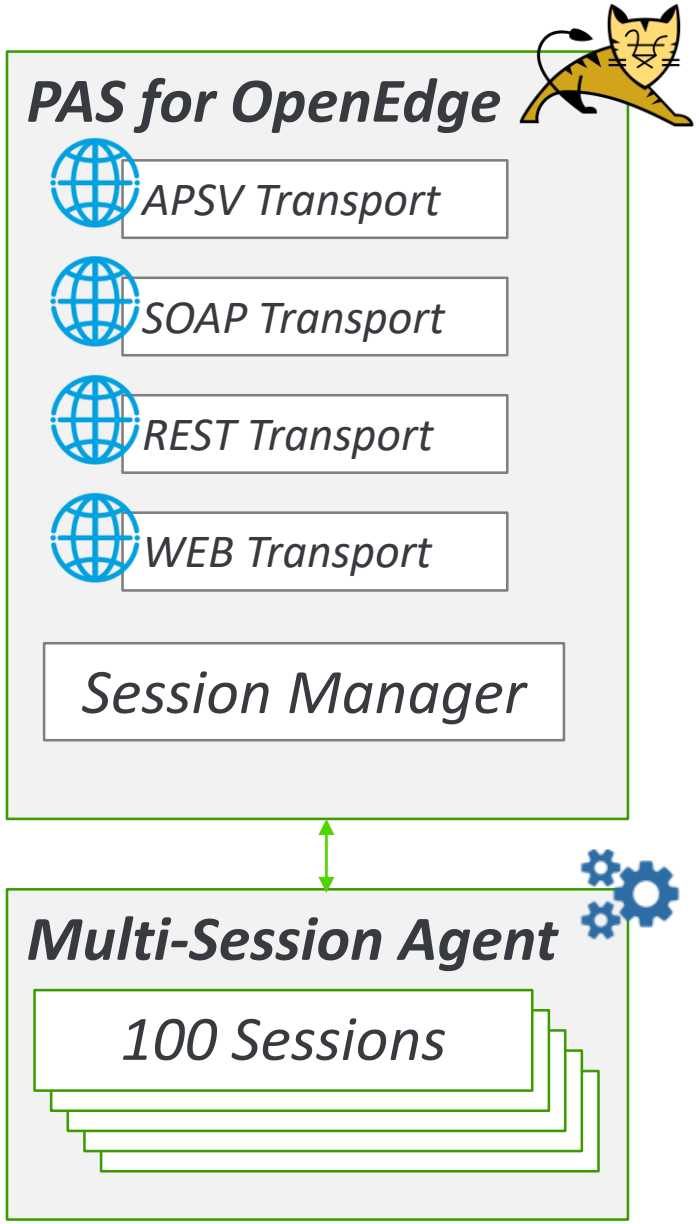
PAS for OpenEdge



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It's More Secure.

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PAS for OpenEdge Security

- Integrates industry proven security practices for server & application
- Enterprise-level scope security processes for:
  - **Authentication:** verification that username/password combinations are valid
  - **Authorization:** enforcing access control to exposed resources
    - User accounts are granted permissions according to their assigned roles
  - HTTP message scanning for common hacks
  - User login session management
- Integrates web application security with native OpenEdge security

- See http://www.springsource.org

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Configurable Plug-in Authentication Options

- Direct user-id/password logins
  - OERealm to interface ABL application accounts
  - LDAP & Active Directory
  - Custom ABL callbacks
  - Text files for simple development processes
- Single Sign-on
  - SAML
  - OAuth2
  - JWT
  - OpenEdge Client-Principal
- More possible in the future …

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PAS for OpenEdge Server Security

- OpenEdge knows which PAS for OE files present security risks
- Enforces security best practices (inversion of control)
- Creates instances with a secured configuration and file access
- Not meant to "just work" out of the box
  - Requires intentional configuration
  - Based on common file system security practices
  - Minimal number of manual steps

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Production Mode Reduces Common Attack Points

- Removal of manager, host-manager, and OEManager webapps
- May replace ROOT web application with a non-OpenEdge app
- Auto-deployment of web applications turned off by default
- Shutdown network port disabled for UNIX and Windows
- JMX remote access not enabled by default
- Web crawler filtering enabled
- Client IP address filters enabled (but not configured)

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It's Scalable and Cloud-Enabled.

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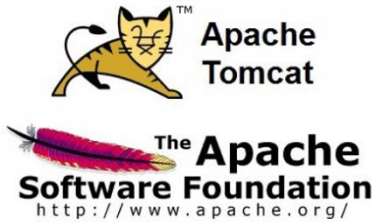
The Progress Application Server Platform

- Standards-Based: Leverages standards for scalable, cloud deployments



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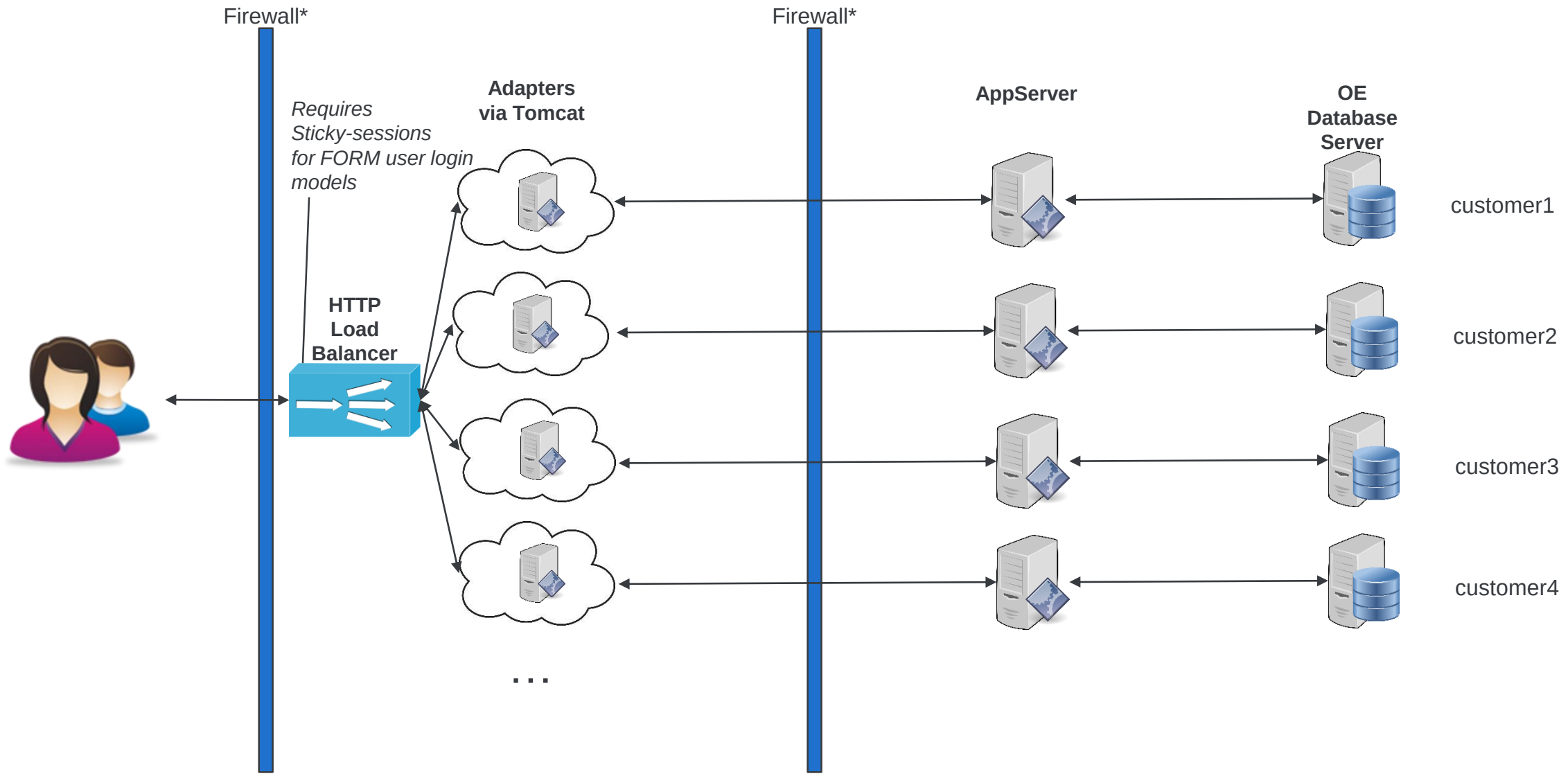
Simple, Non-scalable Deployment



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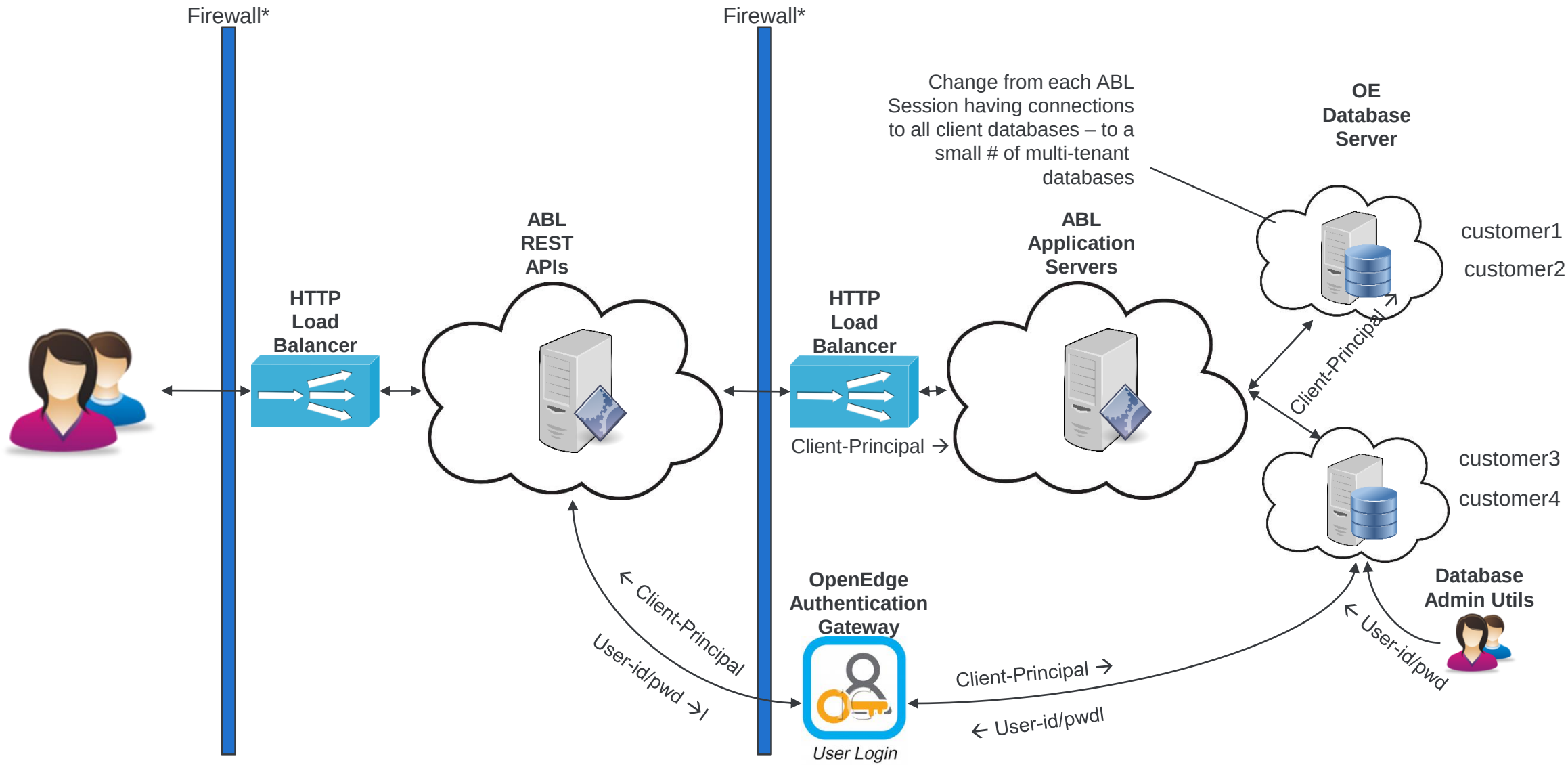
Application-Scalable Deployment w/ Shared Data Storage



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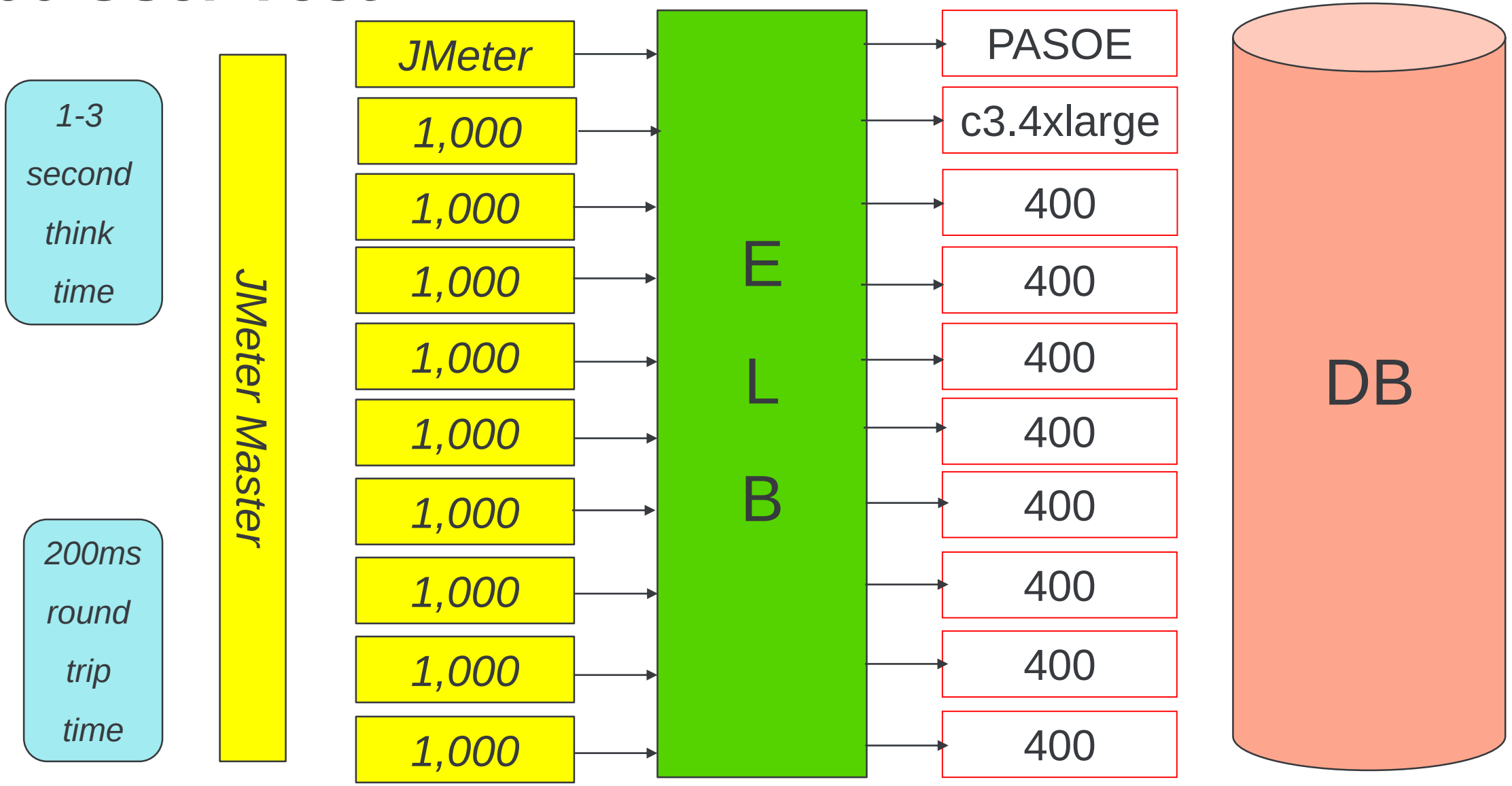
10,000 User Test



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Administration Benefits

It has Management and Monitoring Tools.

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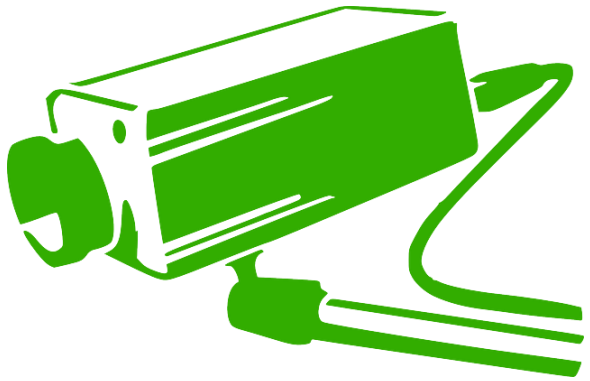
Monitoring PAS for OpenEdge

- Documented REST API
  - Separate securable application
- JMX access
  - Using JConsole (standard part of Java platform)
  - Locally by PID
  - Remotely
- Nagios
  - 3rd party tool recommended by Tomcat for monitoring
  - Uses the tools above to monitor, alert and graph



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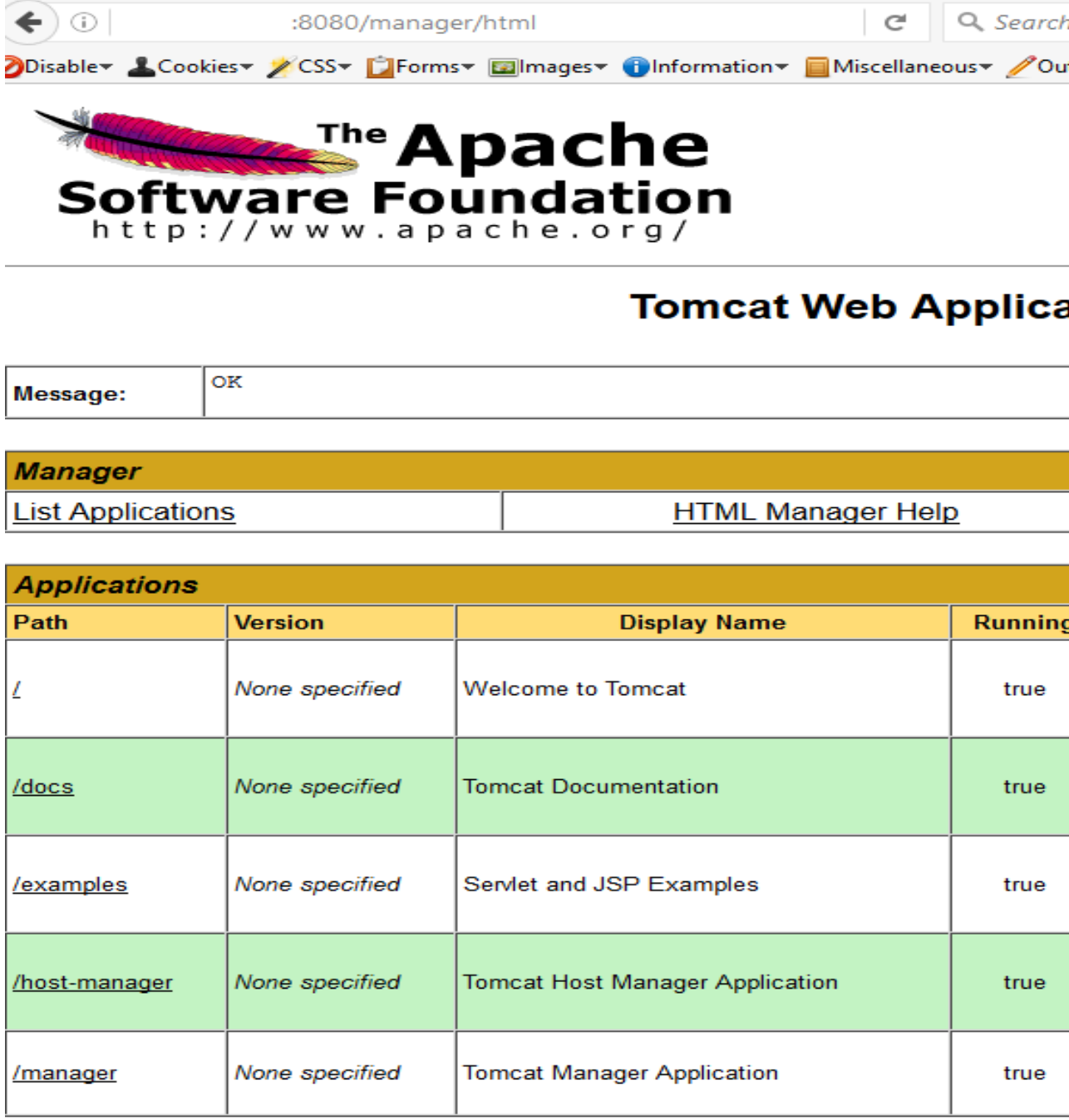
Tomcat Manager

- Web based management and monitoring
  - Tomcat process
  - Web Applications (including ABL app)
- Data on current requests to the web server
- Data on memory size of the web server (including the Session Manager)
- More



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JMX Query

- Script based access to the Tomcat JMX beans
  - Allows gathering information locally without opening ports
  - Like JConsole, without GUI interface
- Available in 11.6.4 and 11.7.2
  - ~/bin/oejmx.sh(.bat)
  - Self documented in the script/batch file
  - White paper to follow

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Administration: tcman.sh/.bat

TCMAN is your all-in-one administration tool

tcman extends all Tomcat administration and enables PAS for OE administration

For help with TCMAN:

tcman.sh/.bat help

tcman.sh/.bat help action

- Server actions
  - create
  - start
  - clean
  - feature (on/off)
  - plist
  - delete
  - stop
  - clean –A
  - env
  - config
- Manager actions
  - deploy
  - enable
  - undeploy web apps
  - disable web apps

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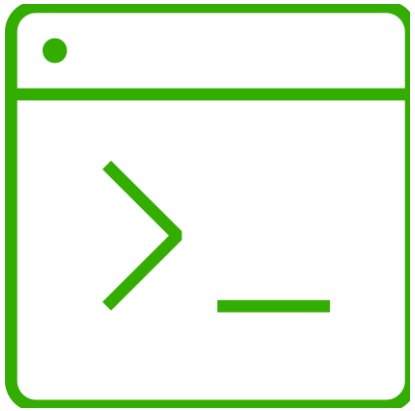
Administration: More Command Line Tools…

- Deploying REST services
  - deployREST.sh(.bat)
- Deploying SOAP services
  - deploySOAP.sh (.bat)
- Managing PAS for OpenEdge properties
  - oeprop.sh (.bat)
- General application server administration
  - $DLC/bin/pasman(.bat)



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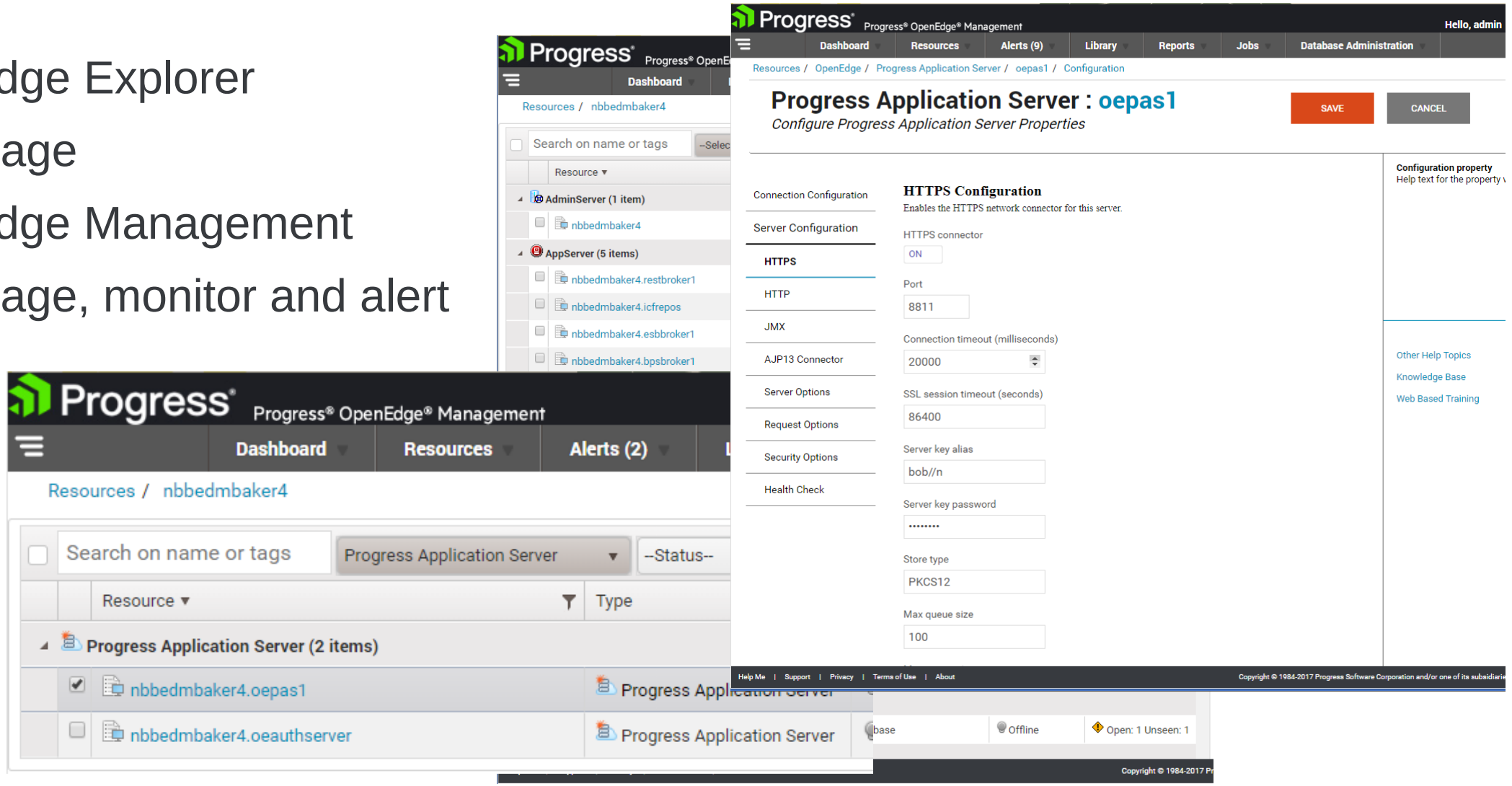
OpenEdge Explorer and Management

- OpenEdge Explorer
  - Manage
- OpenEdge Management
  - Manage, monitor and alert



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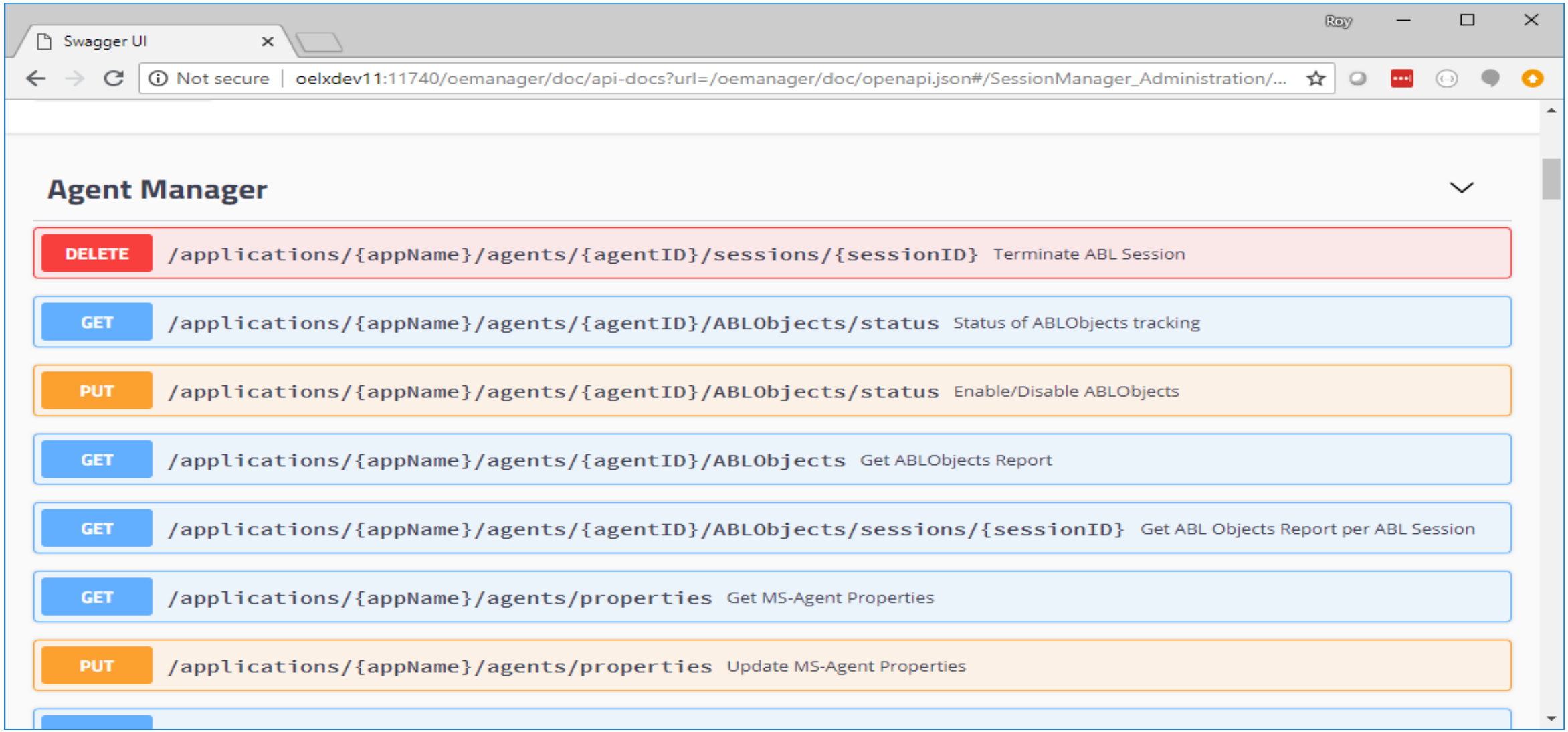
OE Manager REST API Swagger UI



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It uses Fewer Resources.

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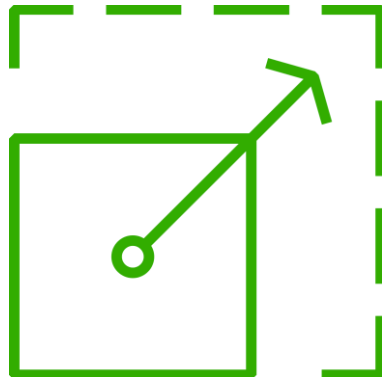
Performance and Scalability Improvements

- Multi-Session Agent
  - Single process supports multiple, concurrent, ABL sessions
  - Sessions share resources
  - Manages shared memory connects to DB
- Session Manager integrated with Tomcat
  - No separate Java processes for Ubroker and NameServer
  - AdminServer is optional
  - Removes one network copy in stack
- HTTP Chunking for APSV transport



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Development Benefits

It is Enhanced by OpenEdge Development.

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Modern REST APIs via WebHandlers

- Similar to Java Servlets
- Offers runtime routing via ABL code
- Full access to HTTP request and methods

```
[mediaresource.SportsApp.WEB]
        defaultHandler = OpenEdge.Web.DefaultWebHandler
        handler1 = Sports.SchemaHandler :       /{resources}/catalog
        handler2 = Sports.DataHandler :         /{resources}/data/{service}
        handler3 = Sports.DataHandler :         /{resources}/data/
        handler4 = App.DocumentHandler :        /forms/{form-name}
        handler5 = Sports.SportsHandler :       /CustomerSvc/catalog
```


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Data Object Handler

- Generic RESTful WebHandler
  - Configure with /pdo/ in openedge.properties ← Progress Data Object
  - Added for JSDO use-cases …
  - … but “invoke” operations means it can do almost anything

- JSON mapping file for service configuration
- Config for routing requests and mapping inputs & outputs
- Extend via published events or content type plugins

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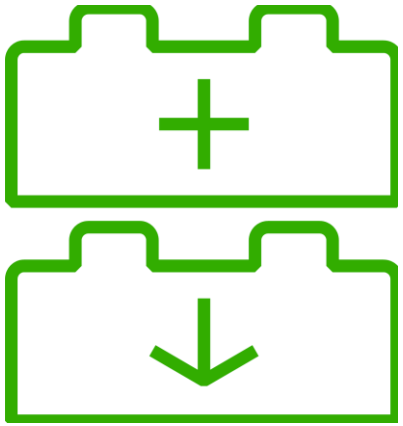
Development Integrations

- Integration via the Progress Developer Studio
- Publish code directly to server (no file copying)
- Manage server settings from a single location



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Tooling Assistance

- Migration from Classic Appserver: guide and utility
- Leak Checker
- Profiler
- Debugger

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Scriptable Deployment and Administration

- Create deployable packages
- Great for non-GUI servers
- Can work with continuous integration/delivery solutions

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Caveats

- Not a direct replacement for Classic AppServer
  - Always HTTP/HTTPS
- Application may require some refactoring (e.g. stateful)
- Inefficient code practices will be magnified under load

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What's New / Coming Soon

New In PAS for OpenEdge 11.7

- Apache Tomcat upgrade (each release has latest stable)
- Debugger support
- Simplified Spring Security configuration
- Multi-domain support enhancements
- HTTP Client Single Sign-On (SSO) Support
- Deployment architecture
- New TCMAN create options
- Improved server startup
- Spring password generation utility

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What's New (Cont.)

- OpenEdge Authentication Gateway
- ABL application PING service
- Authentication with OAuth2
- Extended OpenEdge SSO to Web Applications

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Available in 11.7.3

- Quick start guide and property migration utility
- JMX monitoring and management improvements
- Open Web Application Security Project (OWASP) improvements
- Improved STOP and QUIT
- Security Assertion Markup Language (SAML) support
- OEWatcher monitoring tool

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What's new in 11.7.4

- Request ID tracking in log files
  - A request ID will be added to each log file
  - A single request can now be followed through each step of the PASOE process
- Spring User ID logging
  - Login name can now be tracked in localhost_access_log
- Queuing Metrics updated
- Swagger for REST API

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Summary

Summary

- Simpler, Secure, and Standards-based
- Scalable and performant
  - Designed for cloud-first deployments
  - Efficiently architected
- Extensible for future modernization
  - SaaS and mobile deployment options
  - Leverages existing ABL codebase
- Straightforward migration and configuration
  - Requires fewer resources to run and maintain
  - Improved administration and monitoring tools
- Best in class support and services

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“The Progress Application Server is really important to our application because it allows us to consolidate our business logic into one location creating a highly maintainable code base.

PASOE also opens the world up for us to be able to connect to our business logic with various different technologies.

As a software architect, I’m challenged by how quickly can we take new technology from idea or prototype to the actual product. With the Progress Application Server for OpenEdge, we were able to do that in days or weeks rather than months.”

Jeffrey Brown
Solutions Architect
Infor

Questions?

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Thank You!

Michael Banks

mbanks@progress.com

You might also like to attend

Tips and Tricks to be successful with PAS for OE in production

Friday, 10:15 – 11:15 am

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Enter our raffle to win Apple AirPods

https://prgress.co/PUGChallenge

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