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524 Progress Application Server: Where does my WebSpeed fit in?

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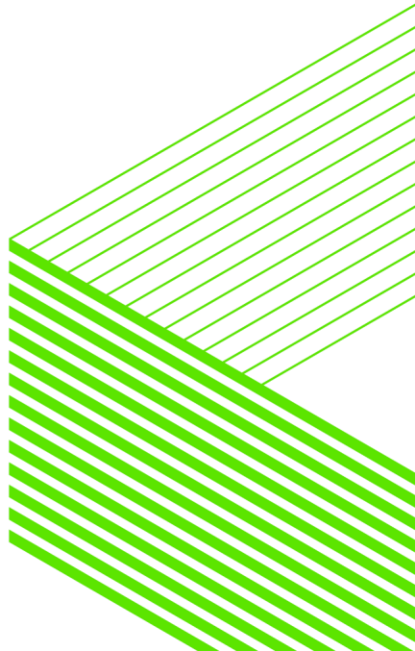
Speaker BIO

- Over 20 years of overall industry experience favoring reality over formality
- Over 16 years in services focus with Progress Software (BravePoint)
- Specializing in vendor-neutral, cross-platform application and service integration
- Passionate technology advocate



Agenda Overview

- Primary Goals:
  - Describe the PAS Platform as applies specifically to WebSpeed applications
  - Points to consider, what to expect, and questions to ask when migrating your WebSpeed application to the PAS Platform

- Progress Application Server (PAS) Platform Background (brief)
- Key platform differences compared to Classic WebSpeed
- Deployment Landscape and Tiering
- Requests and Responses
- Side-by-Side Code Comparison
- Other Considerations

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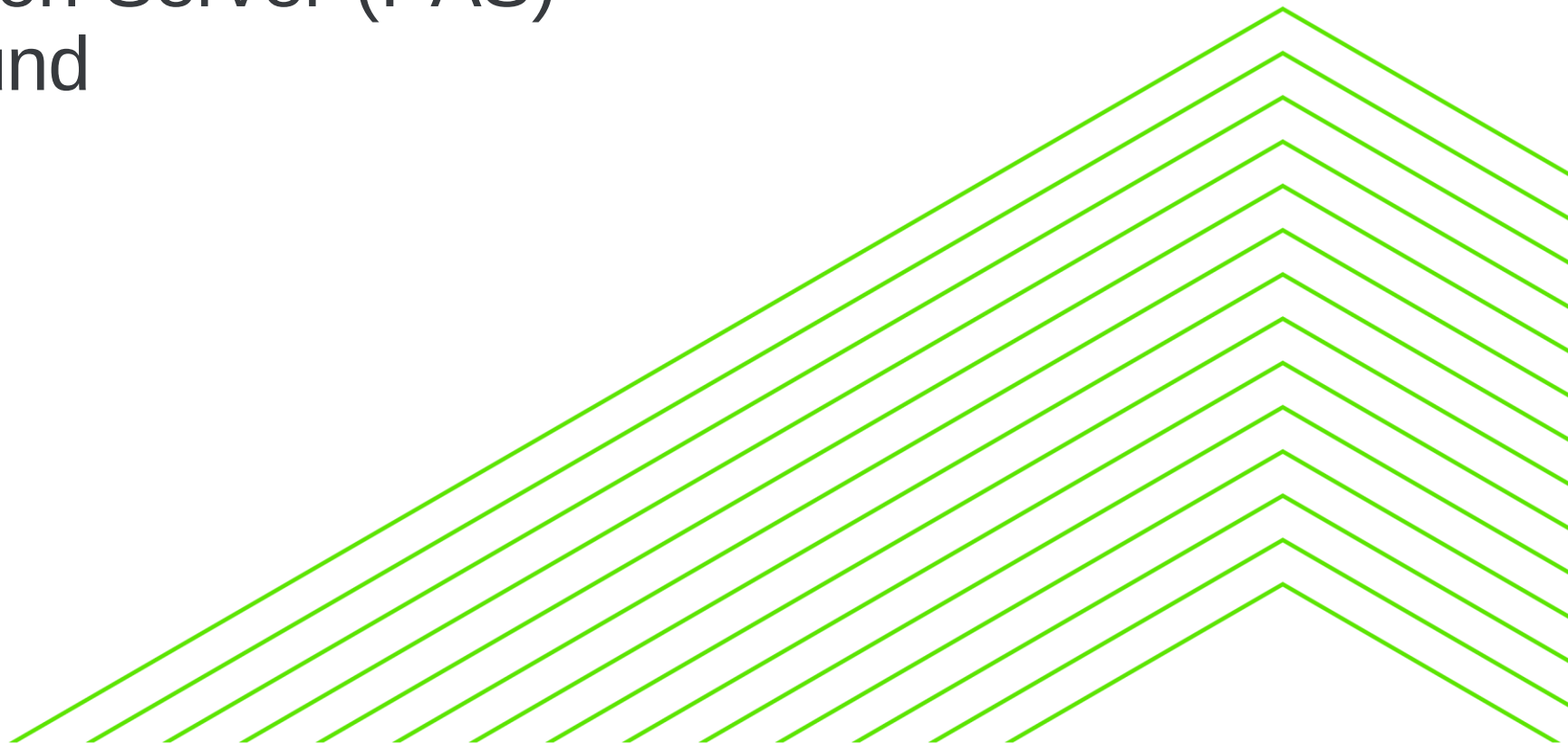
Progress Application Server (PAS) Platform Background

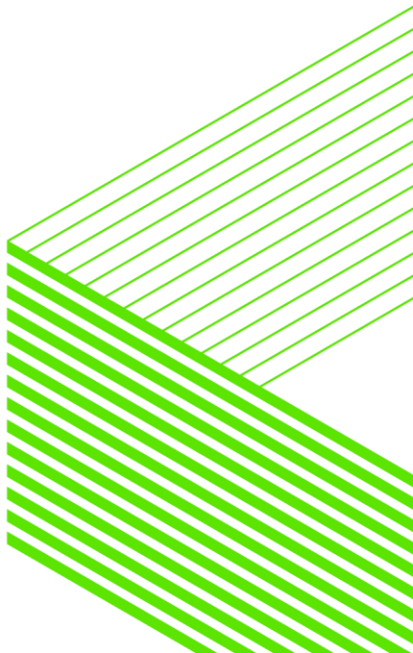


Progress Application Server Platform

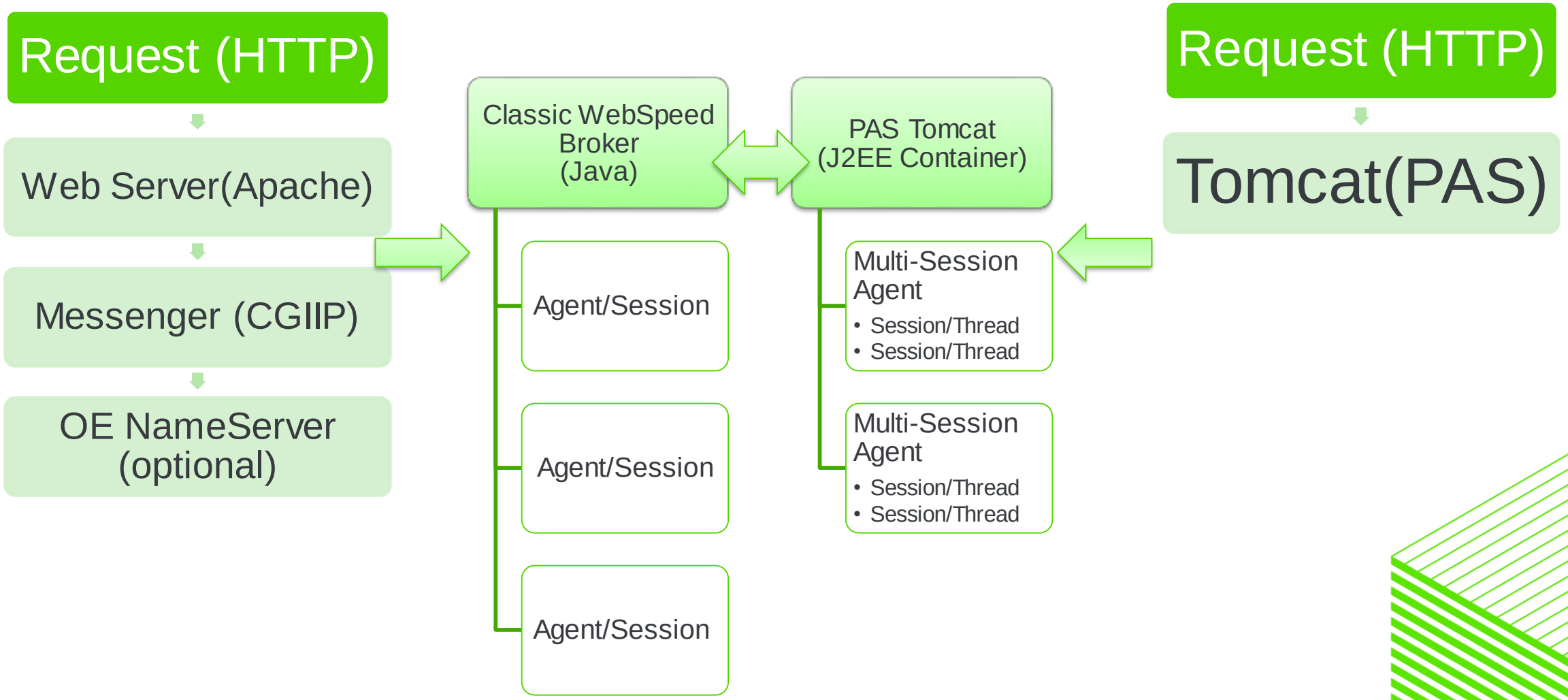
- A single delivery platform for all Progress Web-based products
  - Web Services (SOAP)
  - REST services (JSON)
  - WebSpeed (HTML, JSON, other)

- Secure, proven, production-ready platform
  - Tomcat
  - Spring Security

- Provides *compatibility* for running existing WebSpeed code

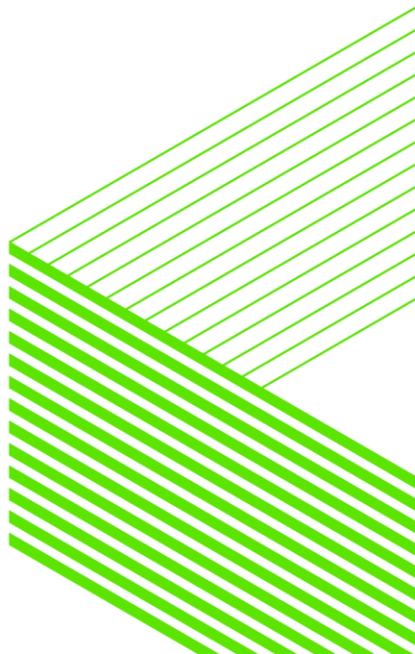


Progress Application Server Platform



Question to Ask: Why should I care?

- Industry Standard
  - Consider searching for support
    - "OpenEdge" or "WebSpeed" vs "Tomcat", "Spring Security"
  - Vast availability of Tools, add-ons, plug-ins, and documentation
- Efficiency
  - Fewer resources
    - Executable processes (spawn, exec)
    - Memory
  - Simplified Communication channel
    - No CGIIP network communication
    - No OE Nameserver
- Scalable
  - Native and extensible load balancing and clustering



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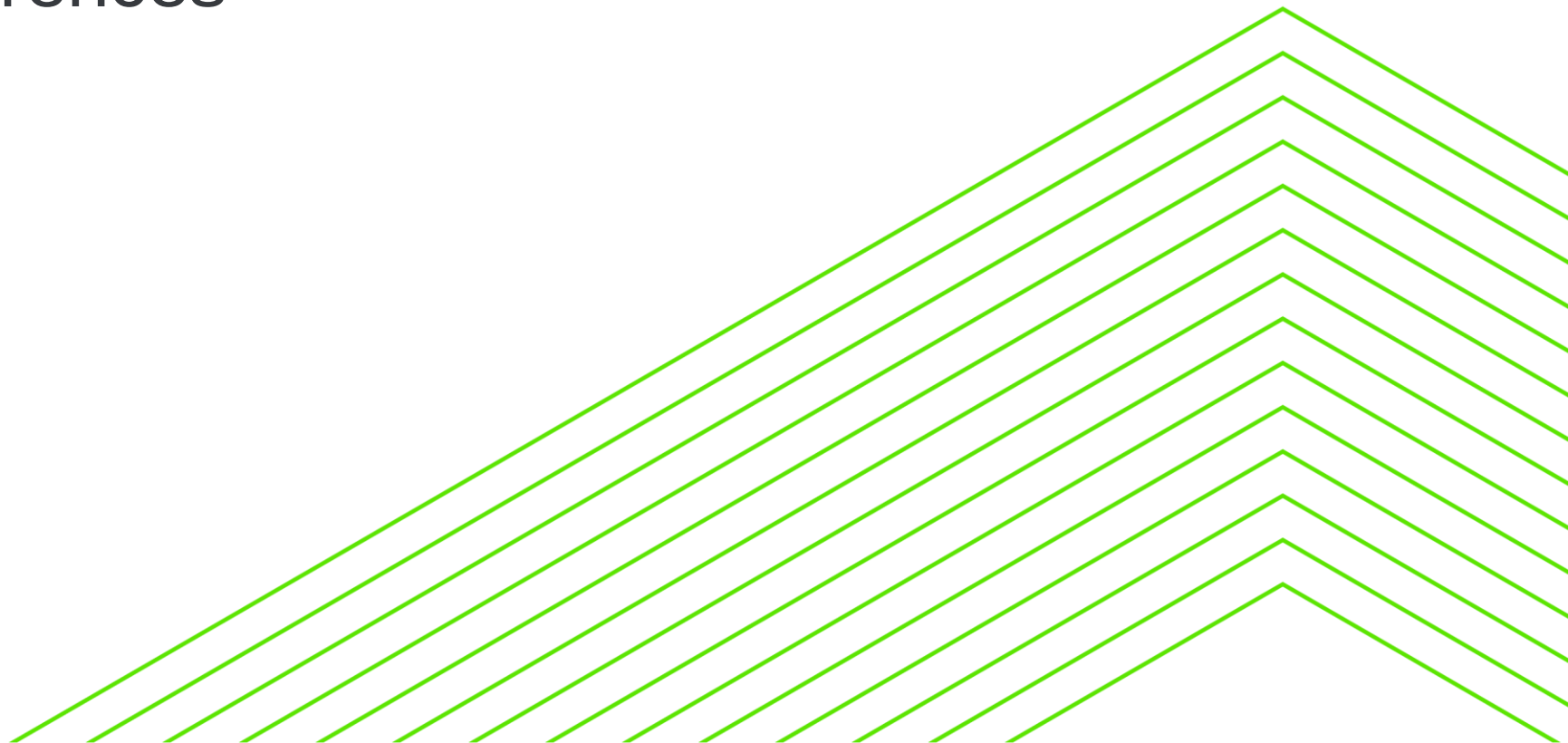
Key Platform Differences



Key Platform Differences

Classic WebSpeed

- Workshop tools
- Customized web-disp.p
  - ** there are better ways*

- Mapped web-objects
- Status and configuration utilities
  - wtbman
  - mergeprop

PAS WebSpeed

- Workshop not formally supported
- Web-disp.p modifications need to be migrated

- No Mapped-object support
- New configuration utilities
  - pasman
  - tcman
  - oeprops

http://knowledgebase.progress.com/articles/Article/What-is-the-difference-between-Classic-WebSpeed-and-Webspeed-for-PASOE

Key Platform Differences: How do they affect me?

Without this...

- Workshop Tools
  - **hint: still accessible*
- Web-disp.p modifications
- Mapped web-objects
- Classic CLI utilities

You may need to...

- Look at tool use and evaluate new toolchain components
- Use agent and session init procedures
  - *think: AppServer srvStartupProcedure*
- Re-consider page architecture design and approach
  - eg. Client-side Ajax web-handlers or custom template objects
- Adopt new CLI tools
  - Review and migrate current deployment and configuration scripts

The biggest difference:

Platform and technology considerations force a mindset evolution

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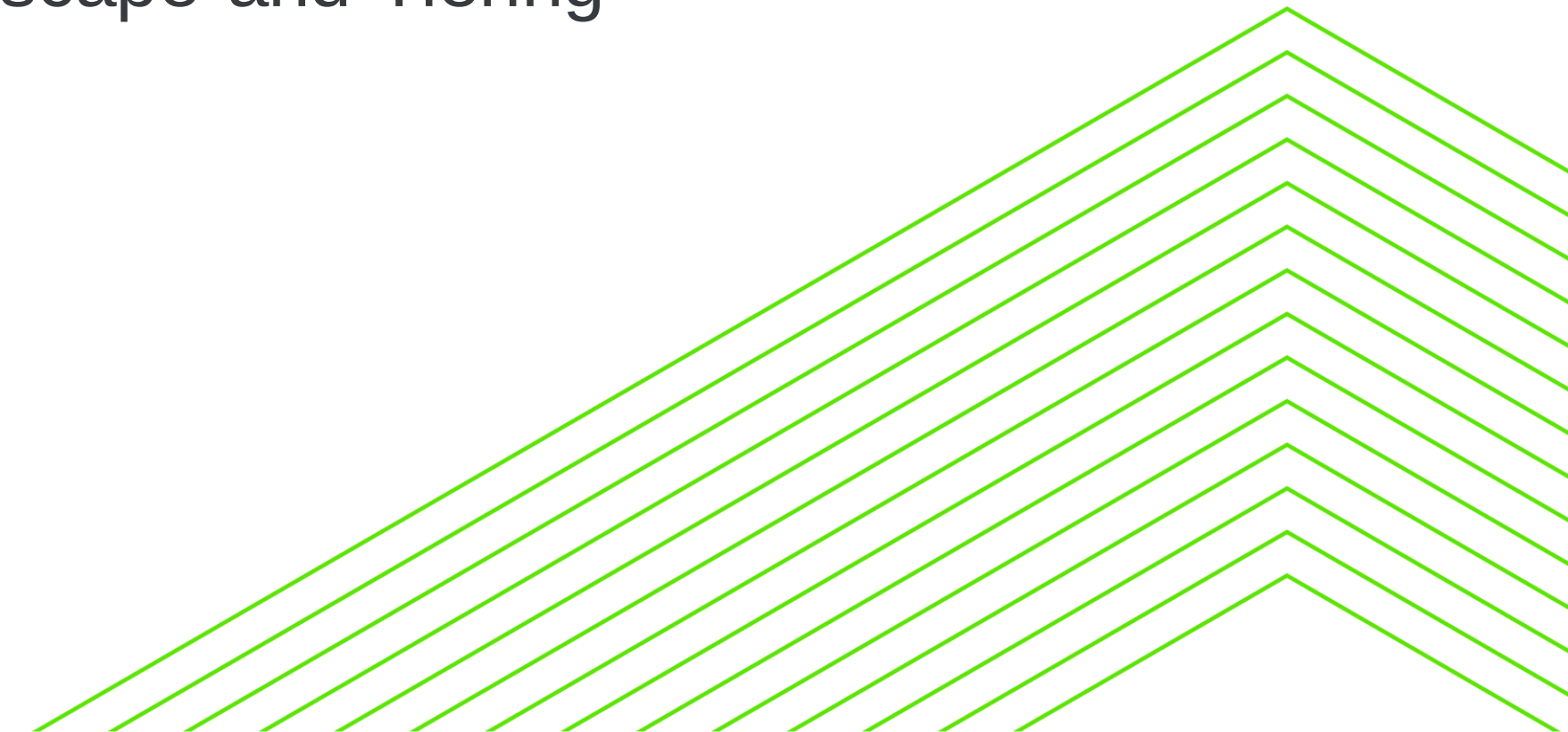
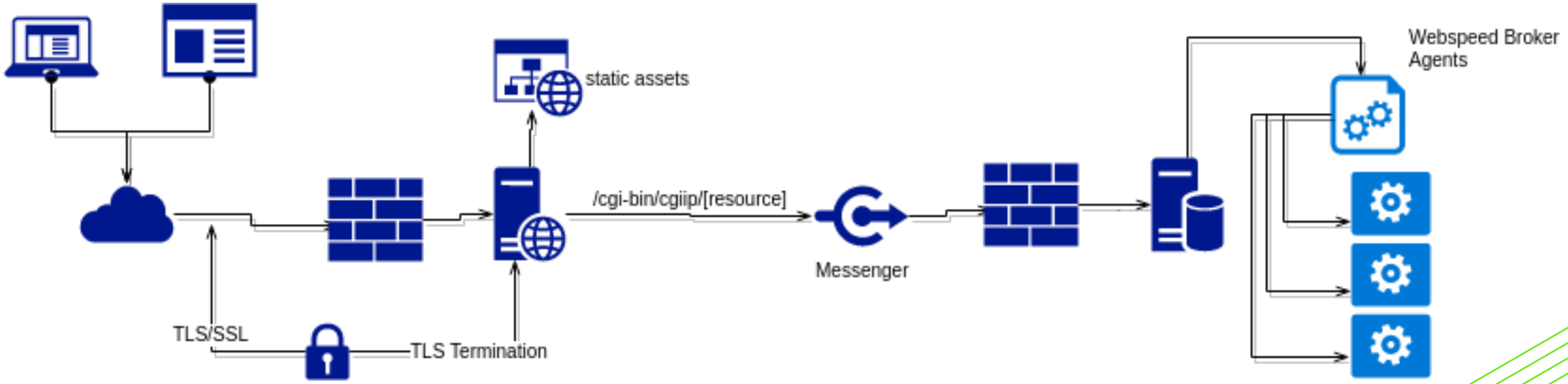
Deployment Landscape and Tiering

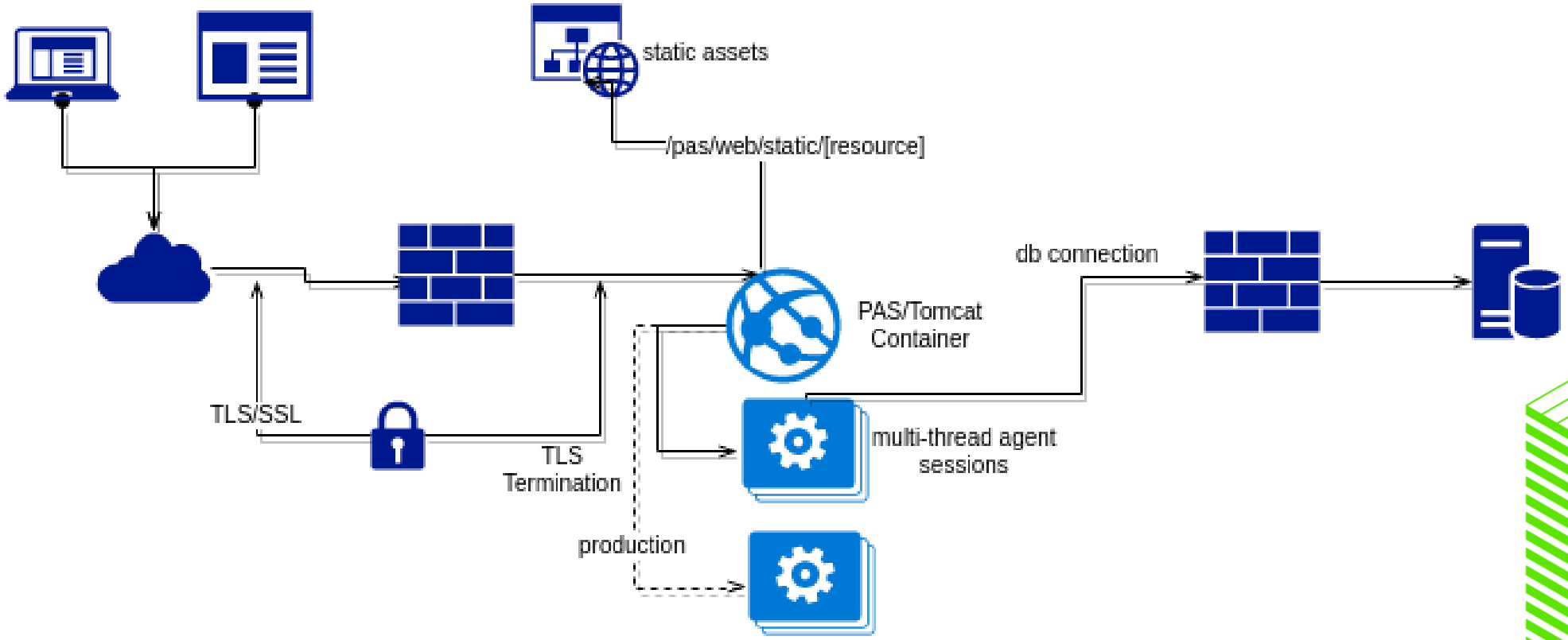


Classic WebSpeed Landscape

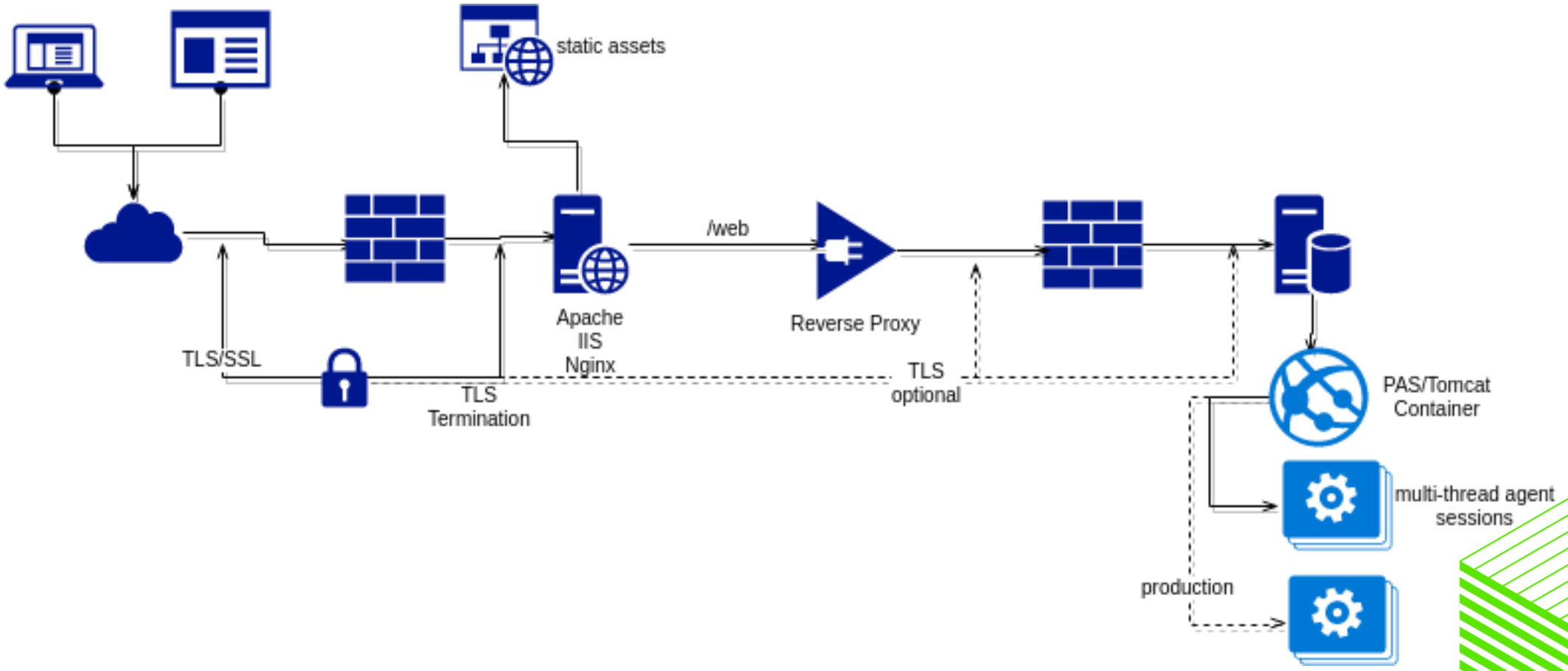


PAS WebSpeed Landscape: Simple

- Where do I deploy PAS/Tomcat?
  - It's a web server, right? So, it should go into the DMZ, right?

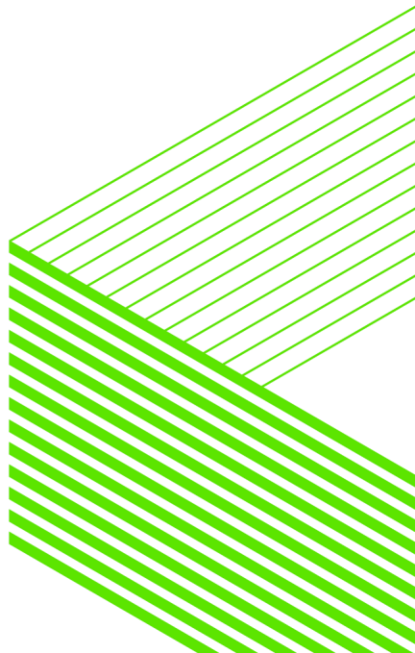


PAS WebSpeed Landscape: Reverse Proxy

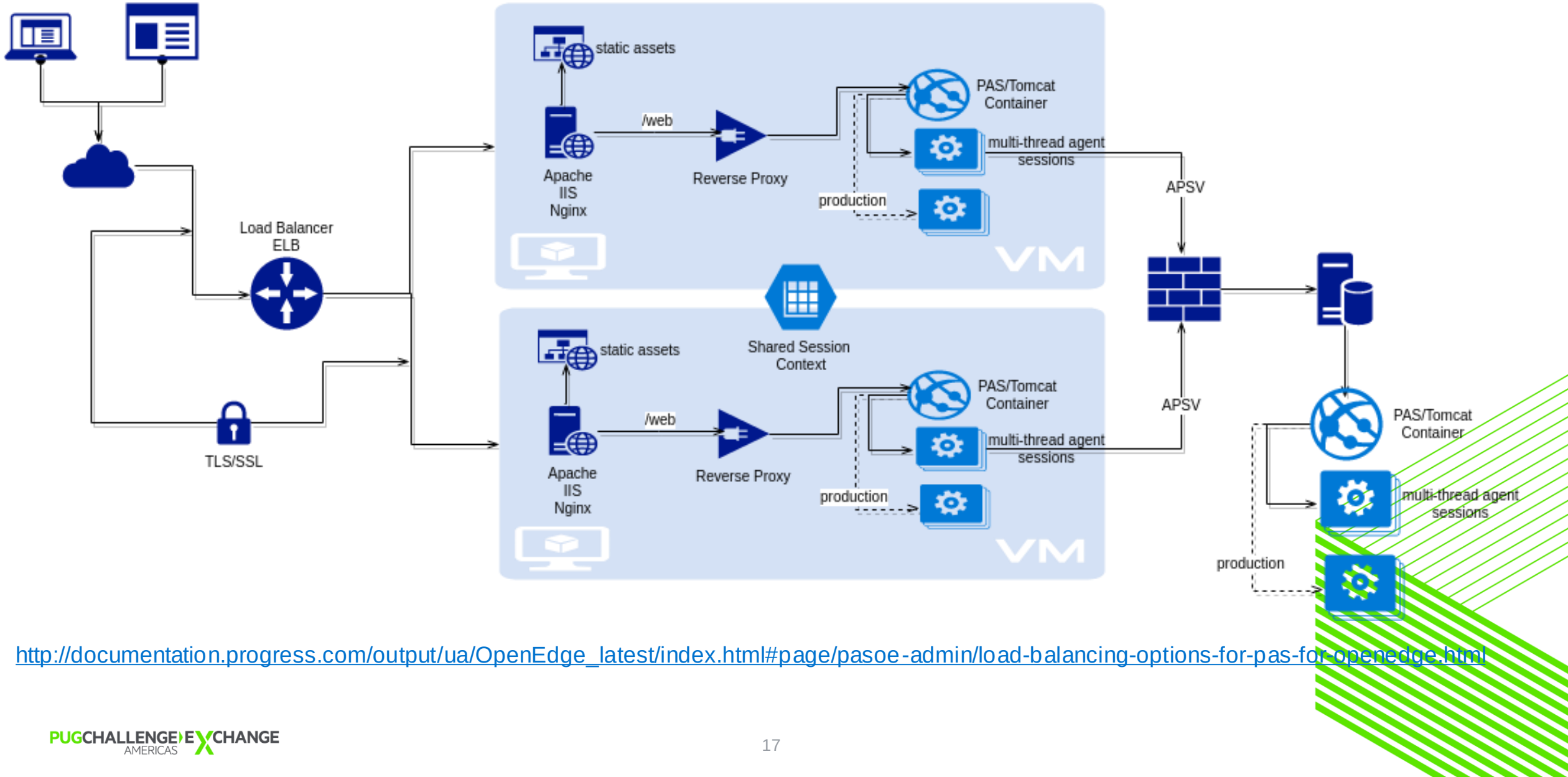


What you should consider

- Where should you place the static web assets (.jpg, .png, .js, .css) vs 'code'?
- Evaluate how your session/state management works
  - How does clustering and/or load-balancing affect your applications state-management model?
- Using PAS session-free model, continue what you were doing
  - It should *just work*



PAS WebSpeed Landscape: Advanced



http://documentation.progress.com/output/ua/OpenEdge_latest/index.html#page/pasoe-admin/load-balancing-options-for-pas-for-openedge.html

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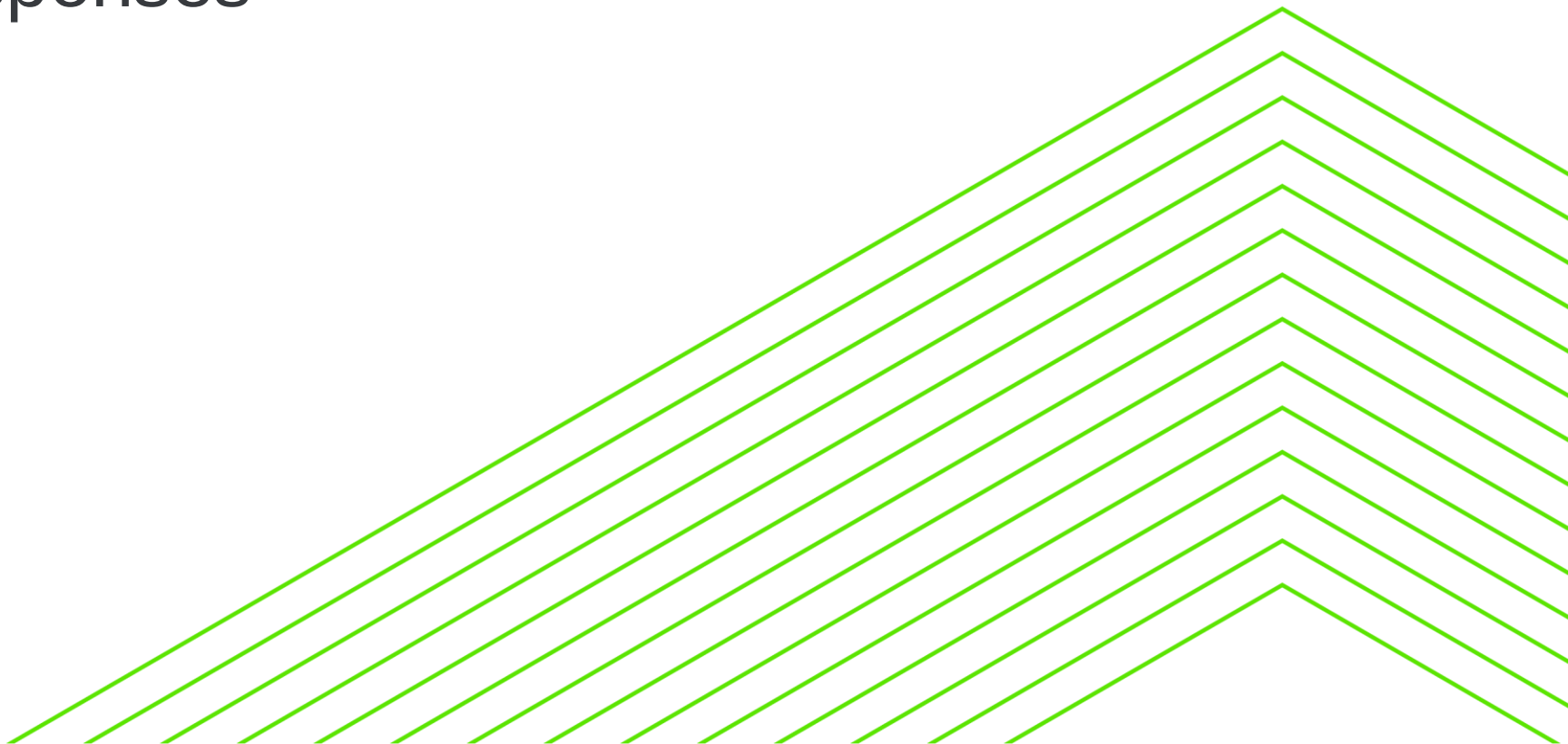
Requests and Responses



Requests and Responses: URL Patterns

- Typical URL Request Pattern for WebSpeed
  - <scheme>://<server>:<port>[/<webapp>]/<transport>/<service>[/<resource>]
    - Scheme: http/https
    - WebApp: (optional) relative to Tomcat webapps folder (usually)
    - Transport: Web for WebSpeed (also REST, SOAP, or APSV)
    - Service: grouping of resources
    - Resource: pathing and optional tokens for handler mapping
  - http://pca2017.thomson.net/web/main.html
  - http://pca2017.thomson.net/web/test/this/that

Requests and Responses: URL Mapping

- PAS WebHandlers map to URL "slugs" (openedge.properties)
  - Handler1= webhandlerclass2:/thisurlpath/{token}/{id}
  - Handler2= webhandlerclass2:/thisurlpath/{token}
  - Handler3= webhandlerclass2:/thisurlpath
  - Handler4= webhandlerclass1:/thisotherpath
  - defaultHandler= OpenEdge.Web.CompatibilityHandler

- URL handlers should be configured from MOST to LEAST specific URL
  - CompatibilityHandler allows existing WebSpeed code to "just work"

- OpenEdge.Web, OpenEdge.Net, OpenEdge.Core Documentation
  - https://documentation.progress.com/output/oehttpclient/oe116/index.html

Requests and Responses: OpenEdge.Web.CompatibilityHandler

```
class OpenEdge.Web.CompatibilityHandler implements Progress.Web.IWebHandler:
    define protected property AllowedMethods as char no-undo init "POST,GET":U get. set.

    /* use private var for destructor */
    define private variable mProcHandle as handle no-undo.

    /* Keep track of web-handler.p  */
    define protected property ProcedureHandle as handle no-undo
        get ().
            if not valid-handle(ProcedureHandle) then
                ProcedureHandle = StartProcedure().
            return ProcedureHandle.
        end.
        set.

    constructor public CompatibilityHandler():
    end constructor.

    /**
     * Handle a web request.
     */
    method public integer HandleRequest( ):
        define variable cMethod as character no-undo.

        cMethod = web-context:get-cgi-value ("ENV":U,"REQUEST_METHOD":U).
        if lookup(cMethod,AllowedMethods) = 0 then
            /* throwing errors to the client is not supported */
            /* undo, throw new AppError("Method " + cMethod + " is not supported by WebSp
            return error "Method " + cMethod + " is not supported by WebSpeed compatibil

        run process-web-request in ProcedureHandle.
        return 0.
```

Requests and Responses: web-handler.p

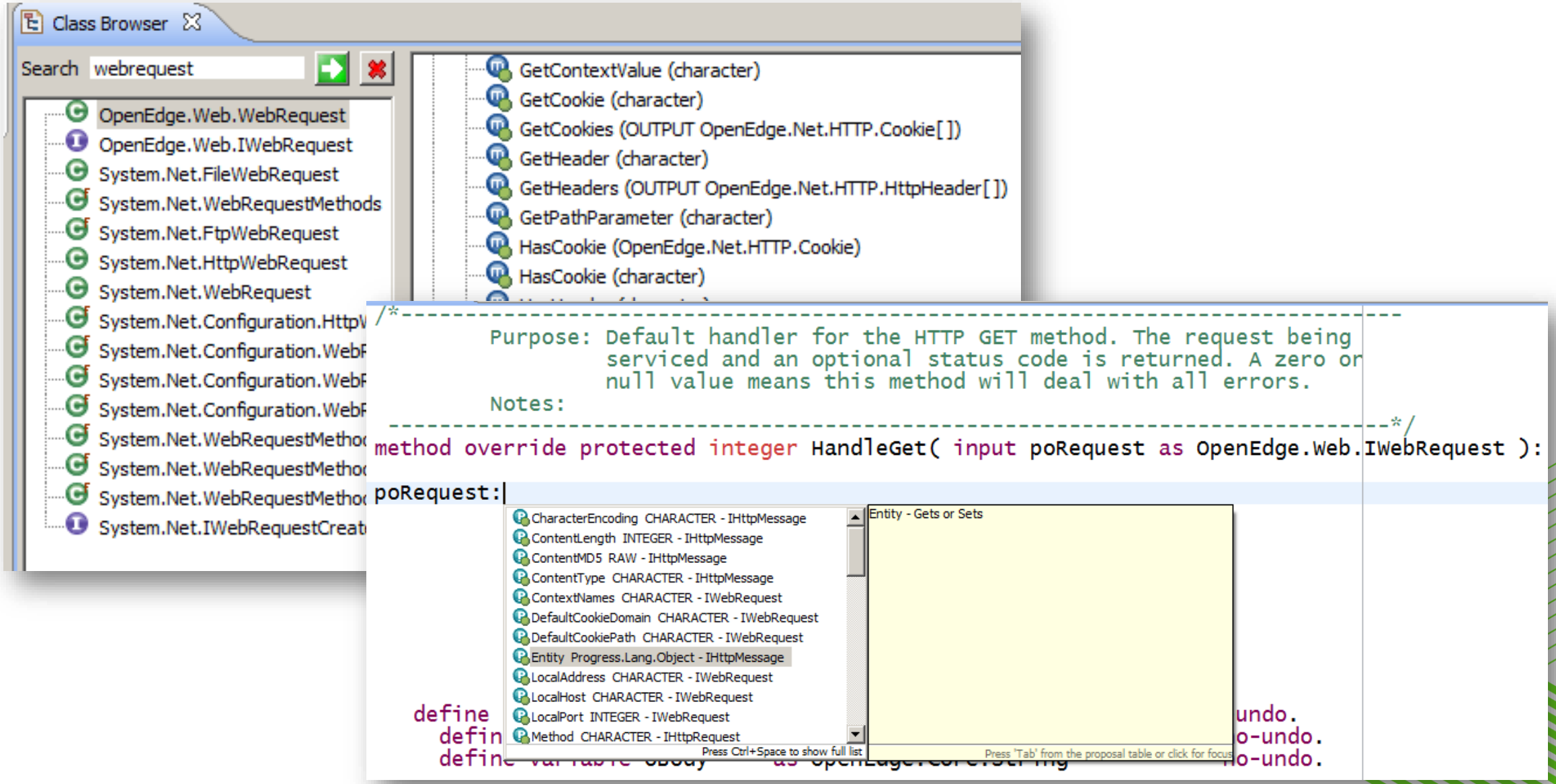
```
41 procedure process-web-request :
42     define variable cMimeCharset       as character  no-undo.
43     define variable cProCharset        as character  no-undo.
44     define variable iTest              as integer    no-undo.
45
46     output {&WEBSTREAM} TO "WEB":U.
47
48     /* This MUST be the first thing written */
49     output-http-header("", "HTTP/1.1 200 OK":U).
50
51     /* Parse the request/CGI from the web server. */
52     run init-cgi in web-utilities-hdl.
53
54     /* Initialize for web-request. */
55     run init-request in web-utilities-hdl.
```

```
87     run run-web-object in web-utilities-hdl (AppProgram) no-error.
88
89     /* Run clean up and maintenance code */
90     run end-request in web-utilities-hdl no-error.
91
```

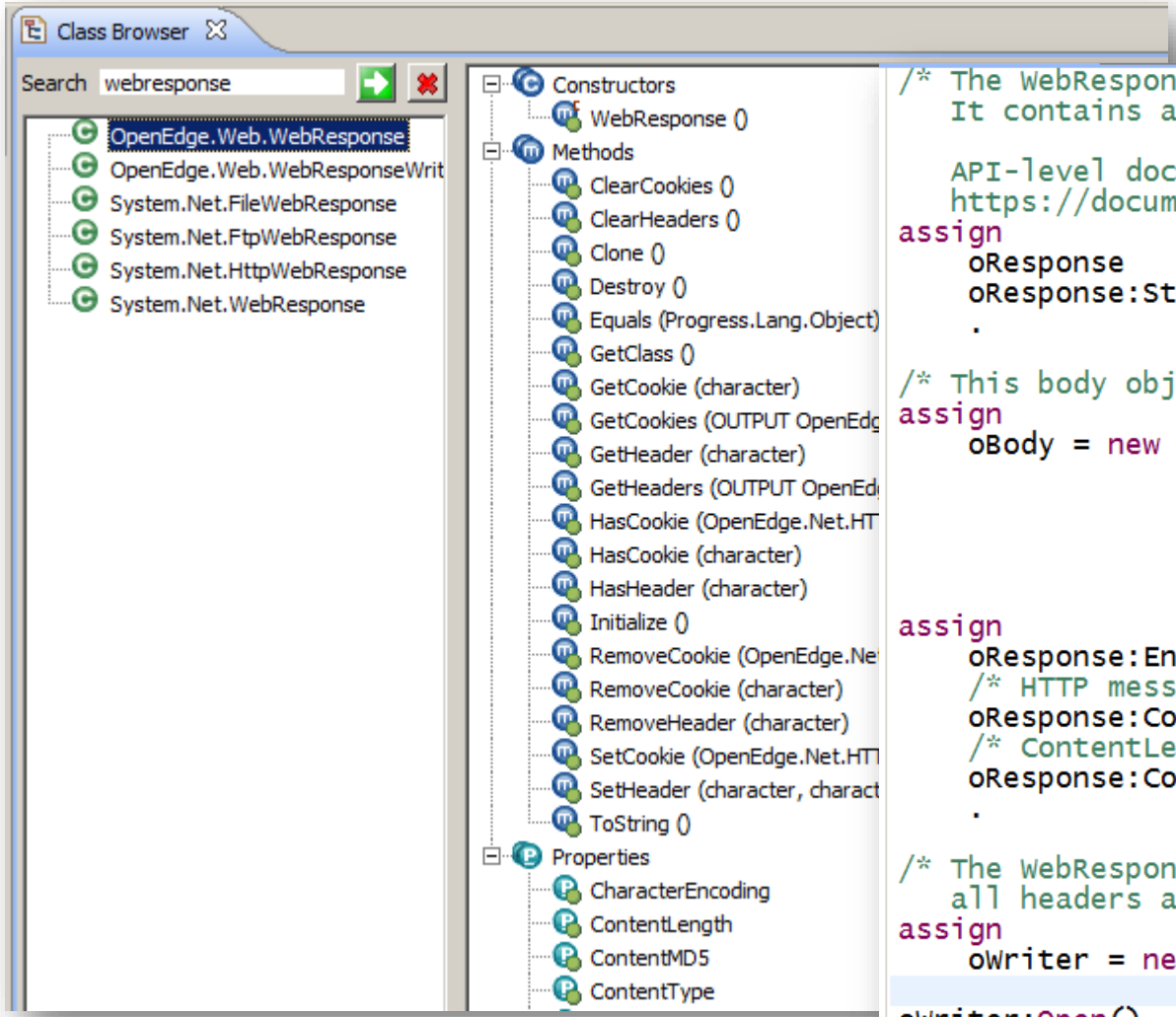
```
110     finally:
111         output {&WEBSTREAM} CLOSE.
112     end.
113 end procedure. /* process-web-request */
```

- Any of this look familiar?
  - Closely resembles web-disp.p

Requests and Responses: WebRequest Object



Requests and Responses: WebResponse Object




```
/* The WebResponse body is a wrapper around an entire HTTP response message.
   It contains a status code and reason; headers; cookies and a message body.

   API-level doc for this and related classes can be found at
   https://documentation.progress.com/output/oehttpclient/      */
assign
    oResponse             = new OpenEdge.Web.WebResponse()
    oResponse:StatusCode = integer(StatusCodeEnum:OK)
    .

/* This body object can be a string or something else (JsonObject for instance) */
assign
    oBody = new OpenEdge.Core.String(
                    'Hello bravepoint'
                  + '~r~n':u   /*CRLF */
                  + 'This message was returned by HandleGet in OtherWebHandler.'
                  ).

assign
    oResponse:Entity        = oBody
    /* HTTP messages require a content type */
    oResponse:ContentType   = 'text/plain':u
    /* ContentLength is good too */
    oResponse:ContentLength = oBody:Size
    .

/* The WebResponseWriter ensures that the status line and
   all headers are writted out before the message body/entity. */
assign
    oWriter = new WebResponseWriter(oResponse).

oWriter:Open().

/* Finish writing the response message */
oWriter:Close().
```

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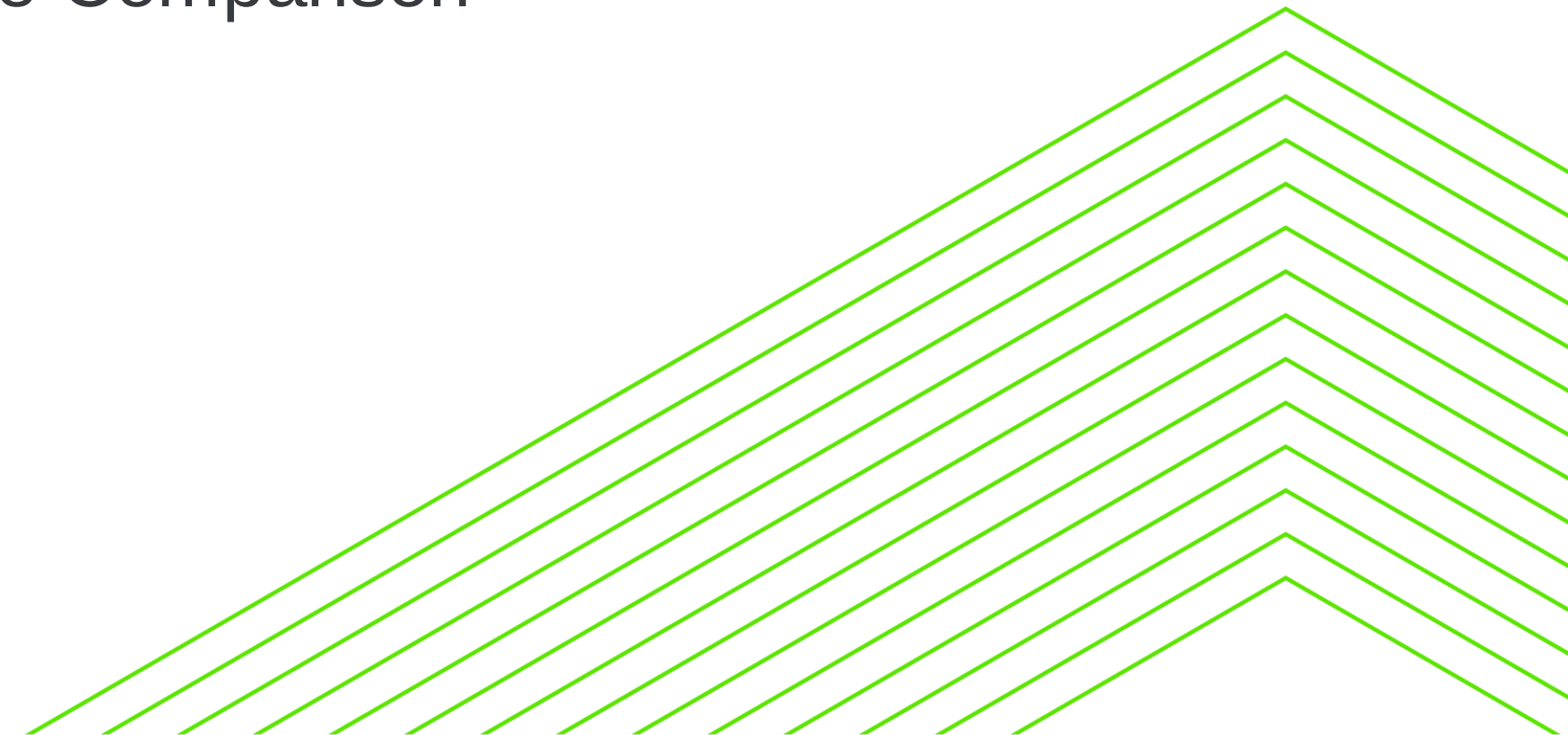
Side-by-Side Code Comparison



Side-by-Side Code Comparison: Requests

Classic WebSpeed

- get-value
  - val = get-value("thisvar")
- get-cookie
  - cookieval = get-cookie("cookiename")

PAS WebSpeed

- WebRequest:GetContextValue()
  - val = poRequest:GetContextValue("thisvar")
- WebRequest:GetCookie()
  - def var ocookie as OpenEdge.Net.HTTP.Cookie
  - ocookie = poRequest:GetCookie("cookie")
- Accessing URL params
  - oReq:PathParameterNames /* "token,id" */
  - oReq:GetPathParameter("token") /* "hello" */
  - oReq:GetPathParameter("id") /* "1" */

Assuming a Handler mapping of:

Handler1= webhandlerclass2:/thisurlpath/{token}/{id}

URL request of:

http://pca2017.thomson.net/web/thisurlpath/hello/1

Side-by-Side Code Comparison: Response

Classic WebSpeed

- {&OUT}
  - {&out}
    "<h1>Hello World!</h1>"
    {&end}

PAS WebSpeed

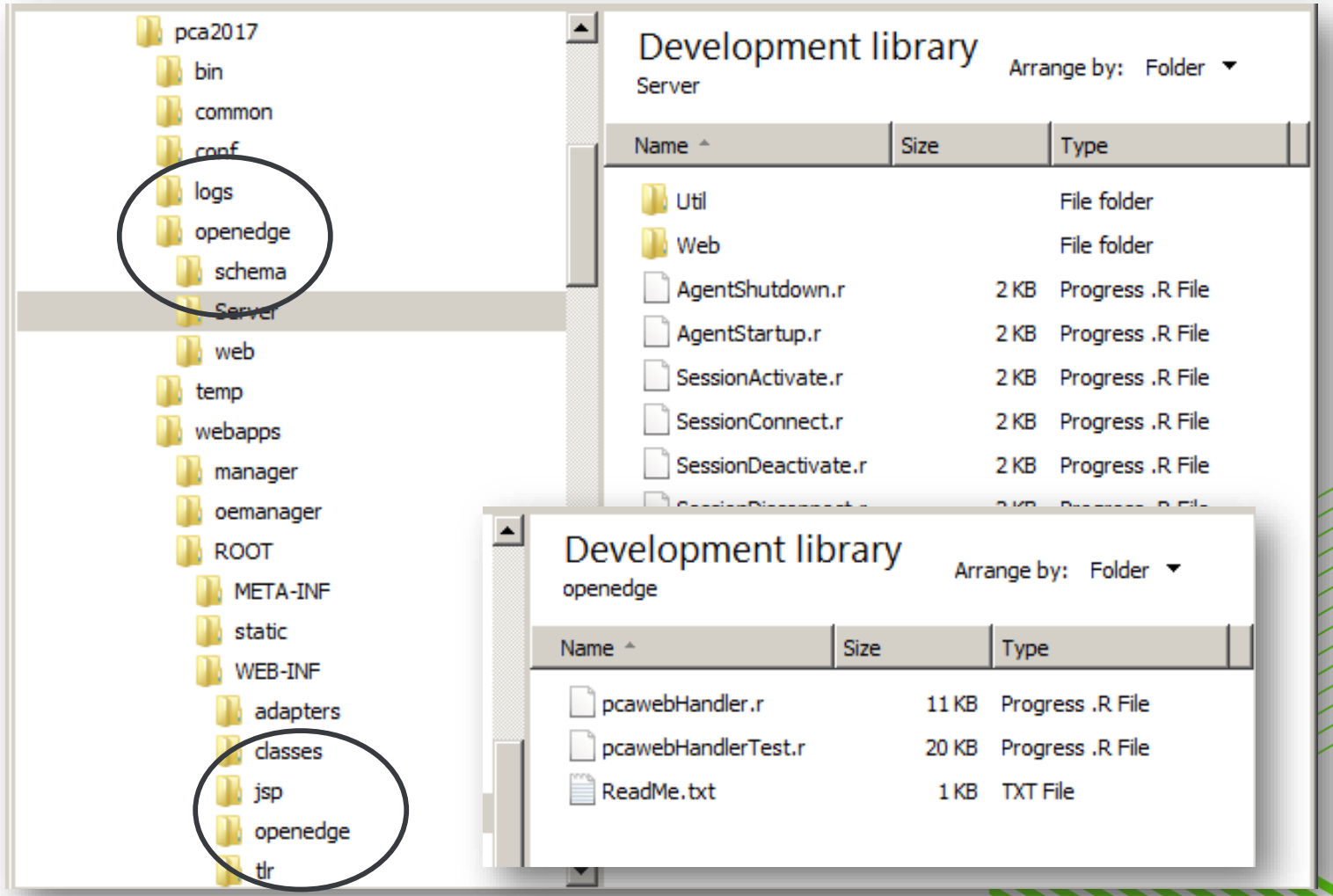
- WebResponse and WebResponseWriter
  - oResponse = new OpenEdge.Web.WebResponse()

    oResponse:ContentType = 'text/html'
    oResponse:Entity = new String("<h1>Hello World!</h1>")

    oWriter = new WebResponseWriter(oResponse)
    oWriter:Open()
    oWriter:Close()

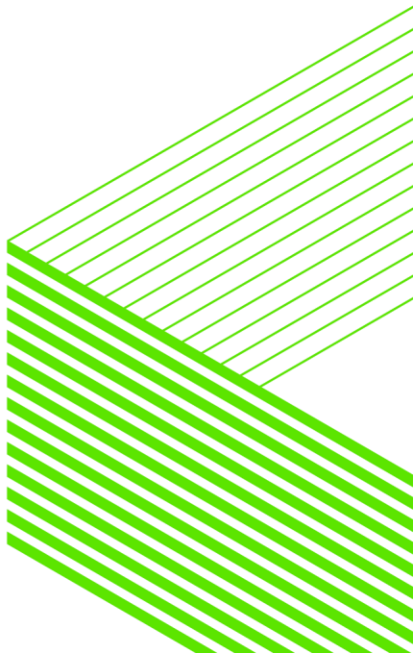
What you should consider: Code Deployment

- Separate "handlers" from "code"
  - think: API-entry-points vs logic
  - handlers address requests/responses -- API
  - application code provides logic
- Traditional WebSpeed r-code
  - ESS or wrap-cgi
  - Position with logic
- Adopt a namespace organization pattern even if you're not using OOP
  - Pay attention to PROPATH



Other Considerations

- A Lot of Planning and [re-]evaluation
  - Platform and technology requirements may represent substantial departure from traditional WebSpeed development and deployment
  - Classic web development patterns vs "micro-services" style (REST, JSON)
    - Evolution of web development has come full-circle
    - Static web => Dynamic generation => Static w/REST
  - Authentication, security model, TLS termination points
    - Intrusion or exploitation sensitivity
- Time Cost for infrastructure planning, ramp-up, and implementation
- IDE Consideration
  - prior WebSpeed development, any IDE would do
    - Still use preferred tools for presentation
  - PAS development is much more OOP-related
    - seriously consider using PDSOE



Questions?

References

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