



OpenEdge 12

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OpenEdge 12: Powering Tomorrow's Evolution Today

Introducing the highest performing, most agile, secure and scalable version of the application development platform that keeps your business thriving.

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Topics

- OpenEdge (OE) 12
 - What's gone?
 - Features & Benefits
- A closer look:
 - ABL enhancements
 - Multi-Threaded DB
 - Server-Side Joins
- Q&A

What's gone in OE12.0?



Products / features removed in OE12.0

- Classic AppServer
- WebSpeed
- Query Results, Report Builder, WebSpeed workshop (and some other ancient dev. products)
- Progress Dynamics
- Solaris platform (will be back in OE12.1)
- HP-UX 11i v3
- Windows Server 2008R2



OpenEdge 12.0



The Seven Evolution Imperatives

Make it Extensible, Scalable, Performant, Available, Usable and Secure
(and do it quickly)

Extensibility and Integration



The app's ability to extend information and capabilities across many connections, devices, and data sources

Scalability



The app's ability to grow and scale as the number of users and connections increases without affecting performance

Performance



The app's measurement of response time to act on a user's input or finish an amount of work, under normal and peak loads

Availability



The app's measurement against a goal of continuous uptime and avoidance of data loads to a disaster or breach

Security



The organizations ability to protect the system from unauthorized users while staying in compliance with regulatory mandates

Engaging Usability



The presentation layer's ability to provide intuitive and exciting experiences

Agility



The organization's agile culture and ability to develop and deploy new application functionality quickly and productively

Features and Benefits



Performance and Scale

Key Features to Support



- Multi-threaded Database, server-side multi-table JOINS, and locking delay improvements provide dramatic improvement to database throughput
- More efficient replication process serves to further improve performance
- Faster OOABL class instantiation
- SQL Query Plan statistics automatically updated for most efficient SQL query resolution
- Container deployment for PAS for OpenEdge allows fast and efficient creation of repeatable environments



Multi-Threaded DB Server

The OE DB Storage Engine is indeed thread safe

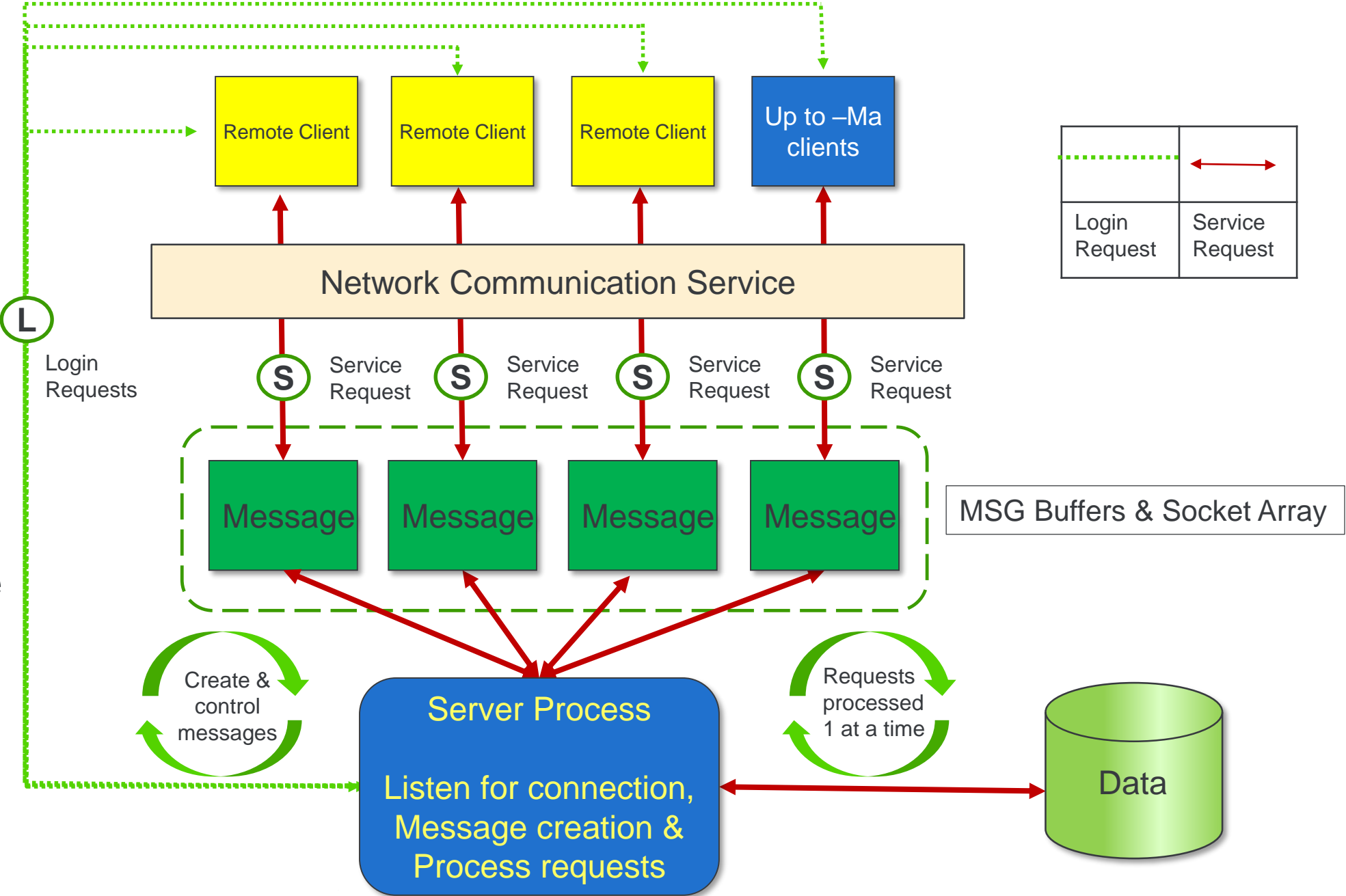
- The Storage Engine provides threaded access to data for
 - PASOE accesses the database via threads
 - Uses a thread pooling technique
 - OE SQL accesses the database via threads
 - Employs one thread per connection
 - Certain DB utilities utilize threads for data access
- ABL Database Server is not multi-threaded
 - Each server process handles data requests for multiple connections one at a time.

Multi-threaded DB Server – Why?

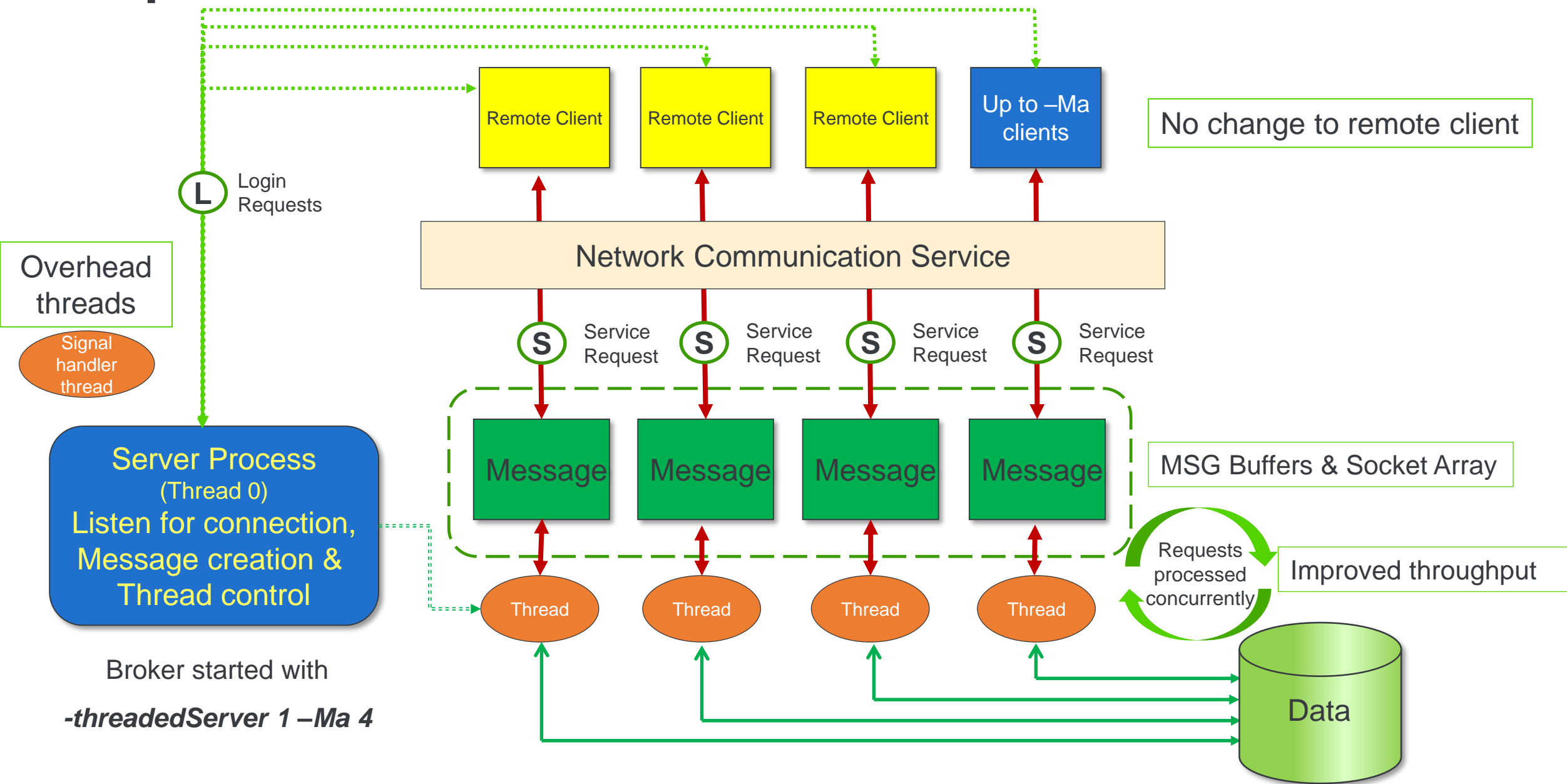
- Improved performance
 - Processing requests in parallel improves remote client performance
 - Enhanced lock wait processing
 - Connection processing separated from OLTP
 - Decreases context switching costs
- Continuous availability
 - Kill of remote client can't crash a database
 - Remote client process never executes in a database critical section
- Enabler for Server Side Join project
 - Served clients don't need to wait another's completion

Requests of Server – Classic Model

Unused CPU
power on
server machine

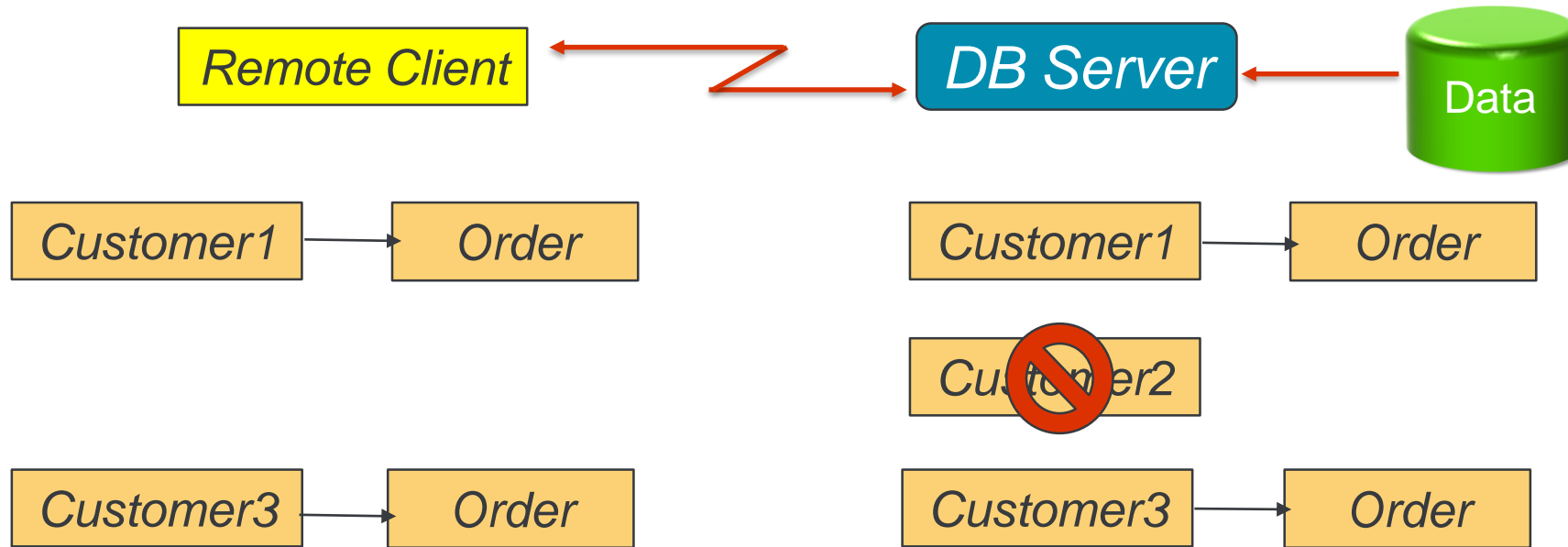


Requests of Server – Threaded Model



Server-Side Multi-Table Joins

Server query resolution model



*FOR EACH
Customer, EACH
Order of Customer
WHERE ...*

- Client now only asks for the next set of data
 - In the past, Client tells Server what to do
- Reduces # records sent
- Reduces TCP communication requests

SSJ OE 12.0 Functionality

- In the first release of the Server Side Join feature
 - Support of “for each” statements for joins up to 10 tables with NO-LOCK
 - no open query or dynamic query operations
- Requires multi-threaded database server
 - -ssj on by default if –threadedServer 1
 - (19329) Database server side join support (-ssj): Enabled
 - -ssj setting lasts for the life of the connection
 - -ssj can be changed online (currently primary broker only)
- Broker Specific Configurations
 - -threadedServer 1 and -ssj 1

Realizing SSJ

- No changes to the application code
- Client logging
 - -logentrytypes QryInfo, -logginglevel 3
 - Monitor the change in
 - DB Reads:
 - Records from server:
 - Type: FOR Statement, Server-side join

Continuous Operations

Key Features to Support



- Replication AI file streaming dramatically reduces the possibility of data loss during a failure
- PAS for OpenEdge HealthScanner helps identify performance anomalies and automates recycling agent processes to reduce risk of failure and increase application uptime
- Database maintenance capabilities via SQL without a database restart keeps the system operational
- Instrumentation-free performance profiling aids in root cause analysis on running production environments



PASOE HealthScanner



PASOE HealthScanner

- New in 12.0
- Primary use case
- <http://hostname:port/health>
 - Default port 8899
- Returns an HTTP 200 if instance is WELL
- Returns an HTTP 500 if instance is UNWELL but still responding



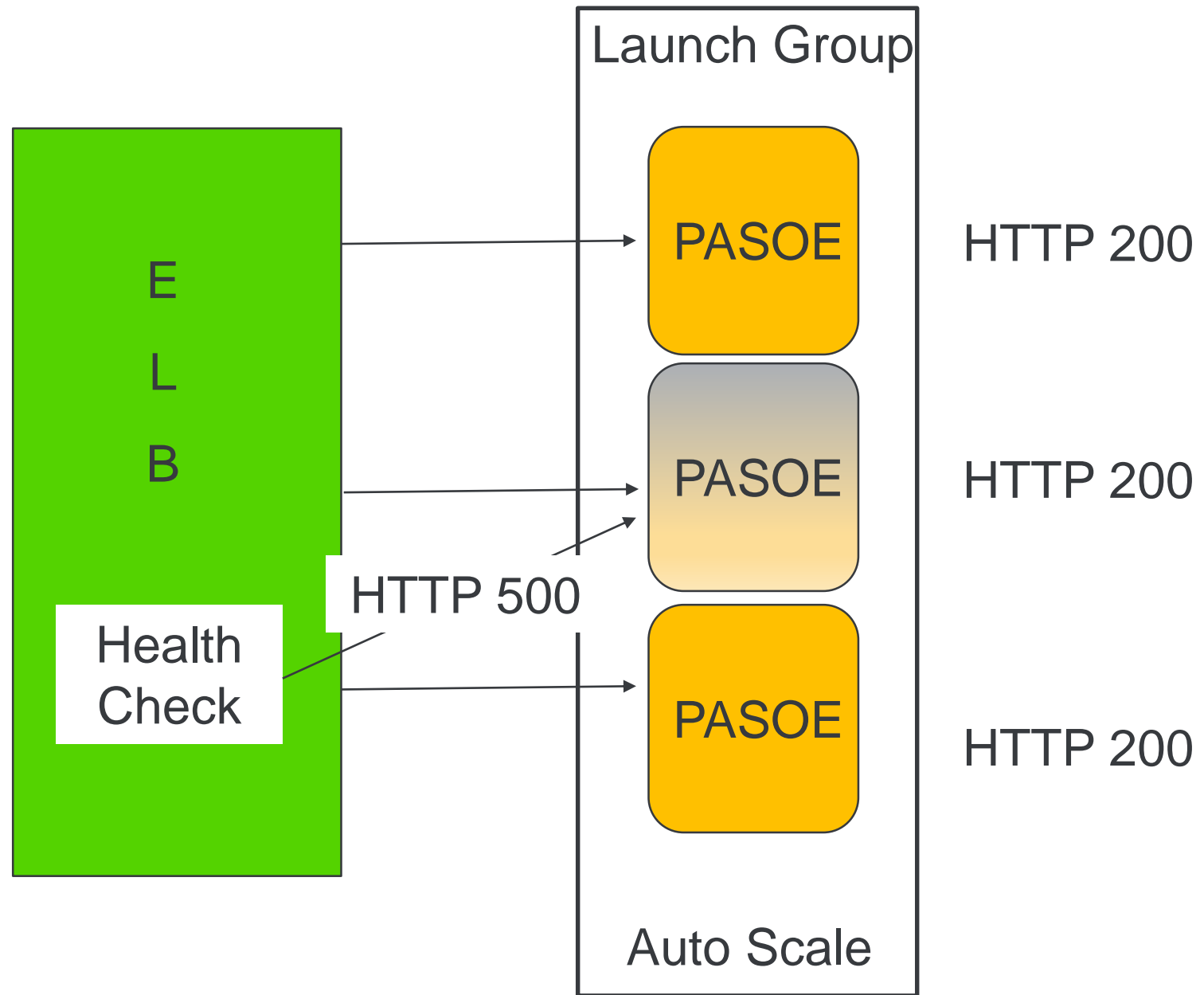
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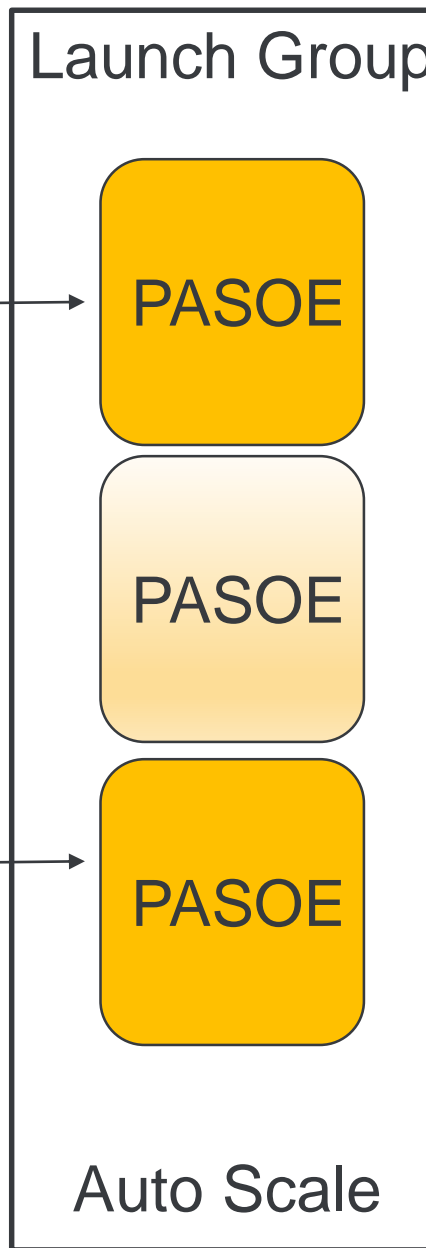
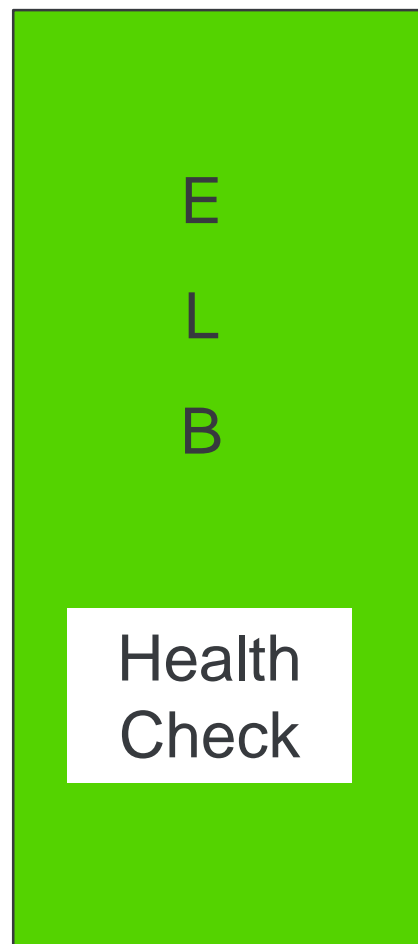
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HTTP 200

HTTP 200

PASOE HealthScanner

- Secondary features
- Heat Map
 - <http://hostname:8899/heatmap.html>
- Summary JSON
 - <http://hostname:8899?view=summary>
- Details JSON
 - <http://hostname:8899?view=details>
- ~/bin/oehealth (-D)
 - Script of summary (details)

PASOE HealthScanner

- Enable feature on PASOE instance:
 - tcman feature HealthCheck=on
- Turn on Data Collection
 - tcman config psc.as.health.enabled=true
- 'Tcman env' command now shows 'manager health port: 8899' entry
- Port number can be changed
 - tcman config psc.as.healthcheck.port=10103

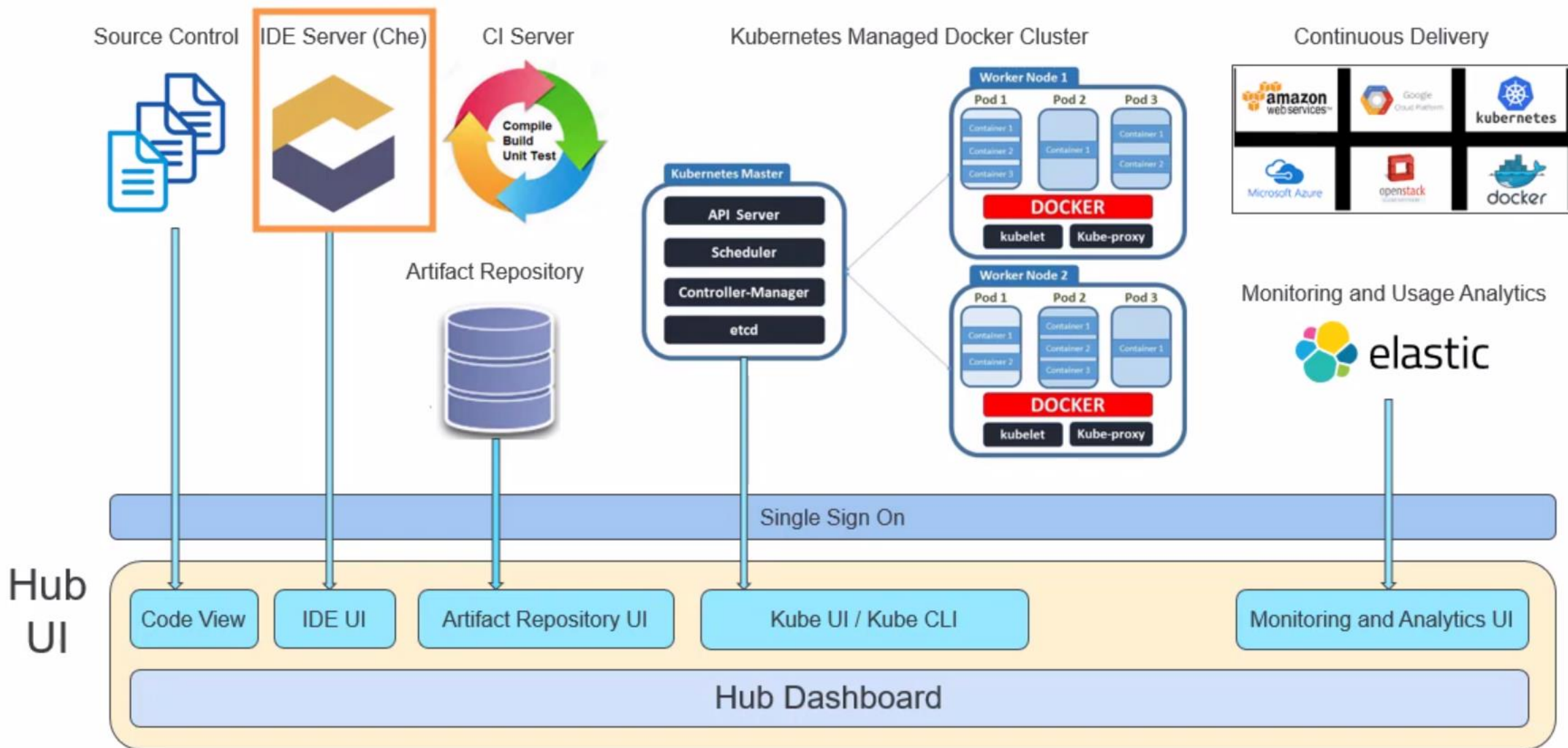
Agility

Key Features to Support



- Introductory source code analysis, and ABL performance profiler improvements reduce errors in coding and speed efficiency.
- Preview of cloud-based next-gen DevOps platform improves developer productivity and efficiency by allowing continuous integration and deployment (CI/CD) -> OE12.x
- Currency upgrades to OpenEdge supporting technologies, along with a new Sports 2020 sample database improve the developer experience

Hub DevOps Architecture



Security

Key Features to Support



- Update to latest version of Spring Security, and OpenSSL strengthens security in PAS for OpenEdge and fortifies secure communications
- High priority issues identified by internal security scans (Veracode, AppScan and OWASP) are addressed for improved infrastructure security
- Older compromised encryption ciphers removed from the product, with a Migration Guide providing best practices for moving to more secure ciphers
- More secure file permission on various utilities helps ensure only authorized staff have access

Extensibility and Integration

Key Features to Support

- Updated third-party libraries used by SOAP stack in PASOE will improve API compatibility
- Refactoring tools make it easy to find references and adjust i.e. class names -> OE12.x
- Improved SQL Server DataServer support and functionality produces improved integration performance with SQL databases.

ABL enhancements

ABL enhancements

- New memory stream classes
 - Makes it easier to work with MEMPTR's:
 - Progress.IO.MemoryOutputStream
 - Progress.IO.MemoryInputStream
- Indeterminate array resizing
 - Use EXTENT statement to resize it
- STOP conditions behave more like errors
- Empty FIELDS list now actually returns no fields

Docker

Docker & OpenEdge

- Baseline PASOE Docker image available on ESD:
 - OE11.7.4
 - OE12.0
- For now only Linux is supported (RHEL):
 - Running on Ubuntu 18.04 seems to work fine as well
- Only PASOE supported for now
- RDBMS for development purposes is now being researched

What else?



Customer Validation Program



Roadmap Surveys

We receive hundreds of enhancement requests. Your responses to our short roadmap surveys influence our product direction and help prioritize deliverables.



Virtual Open Houses

Geek out at our live interactive webinars that will share new development and architectural runways.



Usability Surveys

Show us how you actually use the product, so that we can improve your experience with it.



Sprint Reviews

We will showcase our development progress to make sure we're on the right track.



Pre-release Software

Your chance to preview, test and share your feedback...before we ship it.

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