

Platform Architecture Evolution :]

SAP BusinessObjects Enterprise XI (R2) to XI (3.1) to SAP BusinessObjects BI 4.0

Mark J. Richardson
Rose-Richardson Enterprises, Inc.

Communications Chair
ASUG Ontario Chapter

@ASUG_Ontario



The
DIFFERENCE
Is YOU



[**ALLAN FISHER**
ASUG INSTALLATION MEMBER
MEMBER SINCE: 2008

[**COREY PEARSON**
ASUG INSTALLATION MEMBER
MEMBER SINCE: 2008

[**CHAVONE JACOBS**
ASUG INSTALLATION MEMBER
MEMBER SINCE: 2003

[Overview

Since 2005 there have been a number of major changes to the BusinessObjects platform architecture.

With each major release since BusinessObjects Enterprise XI (R2), new servers / services have been added to the platform infrastructure - and existing servers / services have been renamed and revised.

This evolution of the platform infrastructure continues with the SAP BusinessObjects BI 4.0 architecture.

New servers / services will impact your deployment plans, based on the BusinessObjects content types and methods of delivery your SAP BusinessObjects BI 4.0 environment will support.

This session will detail the incremental changes between each platform release from BusinessObjects Enterprise XI (R2) to XI (3.1) to SAP BusinessObjects BI 4.0, and ensure that you are using the correct strategy and terminology when planning your infrastructure upgrade.

[Learning Points

- Learn about SAP BusinessObjects servers / services change matrix - XI (R2) to XI (3.1) to SAP BO BI 4.0.
- Explore the new servers: services in the SAP BusinessObjects BI 4.0 platform.
- Understand the services dependencies for BO content types and methods of delivery.

[Why should we listen to this guy...?

- **Mark J. Richardson** (Independent Consultant)
- 15+ years of Crystal Reports and Business Objects experience starting from Crystal 7.5 and Seagate Info.
- Focus on high-volume Operational and Transactional reporting deployments.
- BETA tester for Business Objects BI 4.0 / Ramp-Up FP3 (SP04)
- Selected member of the **ASUG SAP BusinessObjects Enterprise Platform Influence Council**
- Designed and Deployed a number of SAP Business Objects Enterprise architectures for different Real-World clients in a number of different sectors...



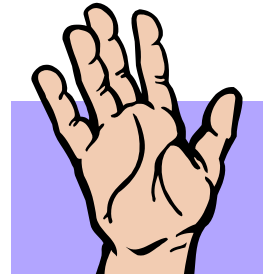
[Know my audience (Who is attending this session..?)

■ Show of Hands

- Never used Business Objects?
- Some experience with Business Objects?
- Many years of experience with Business Objects?

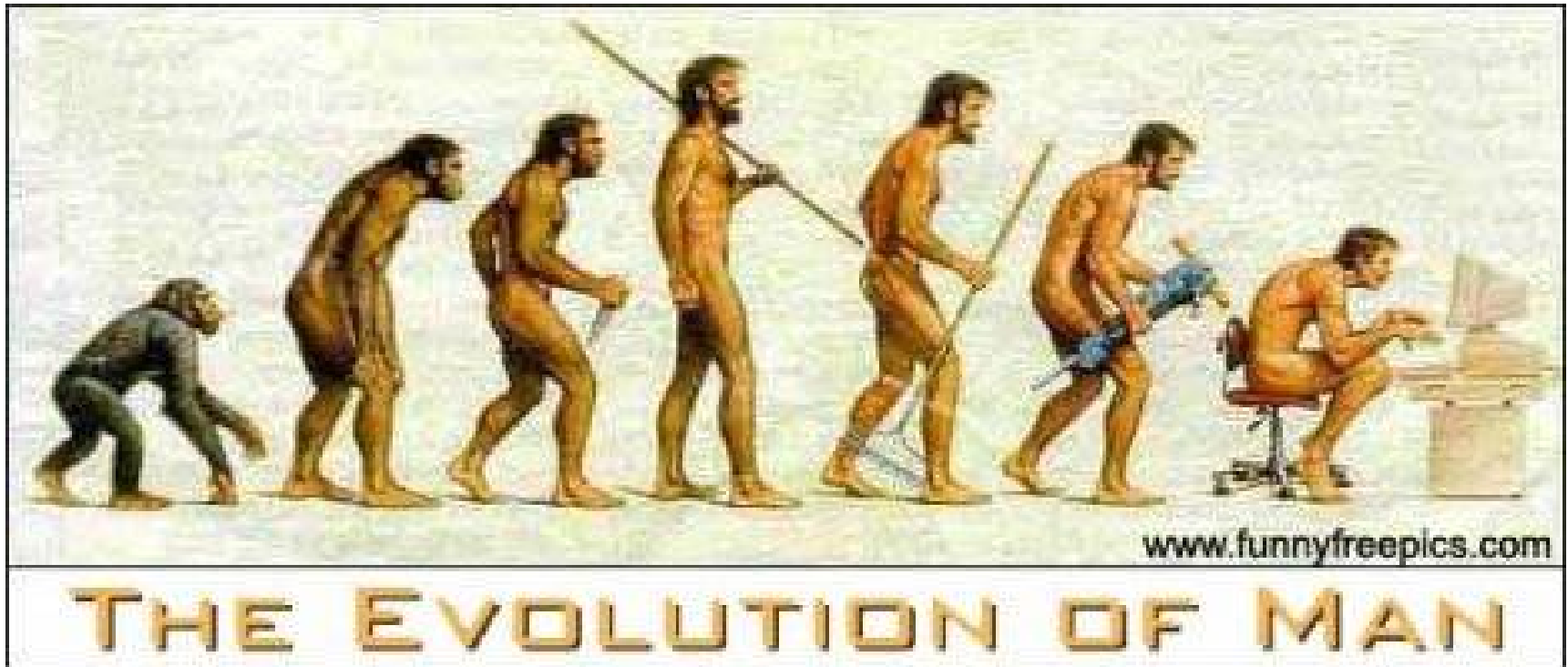
- End Users?
- Administrators?
- Architects?

- Business Objects Enterprise XI (R2)? [Not Supported]
- Business Objects Enterprise 3.1?
- SAP Business Objects Enterprise 4.0?



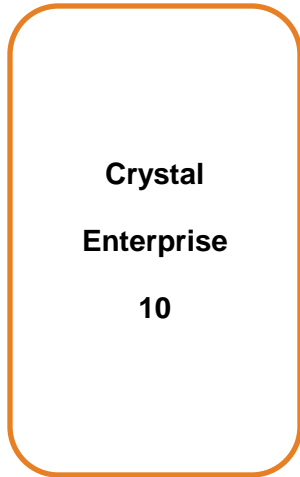
[How did we get where we are today...?

[How did we get where we are today...?



[How did we get where we are today...?

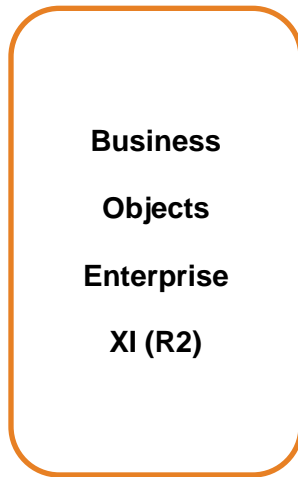
Pre-2005



Version 10



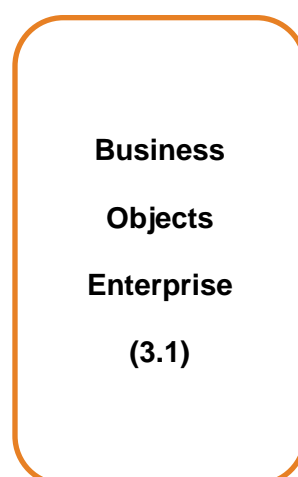
2005



Version 11.5



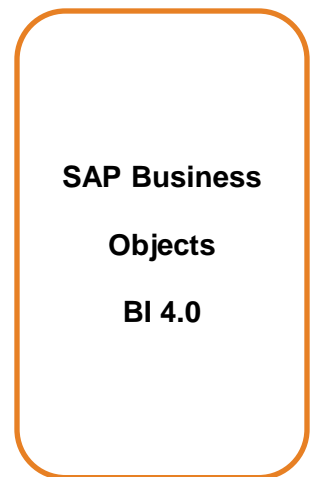
2008



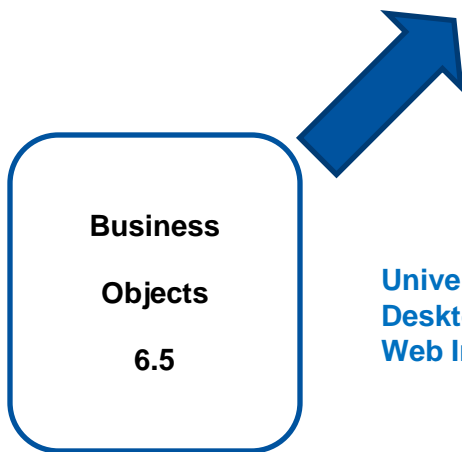
Version 12



2011



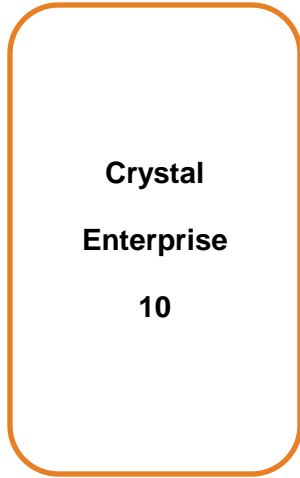
Version 14



Universe
Desktop Intelligence
Web Intelligence

[How did we get where we are today...?

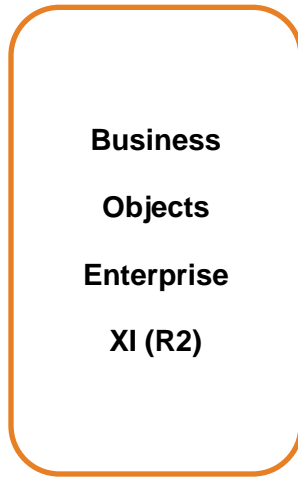
Pre-2005



Version 10



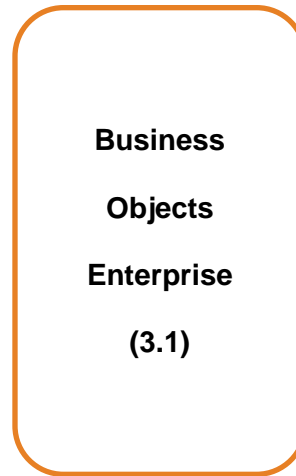
2005



Version 11.5



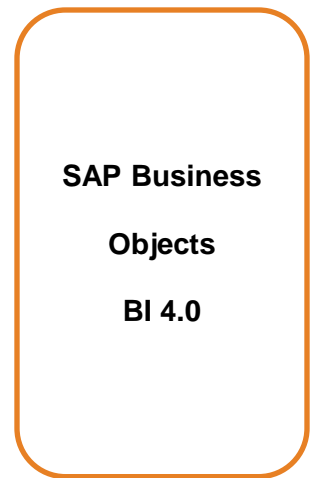
2008



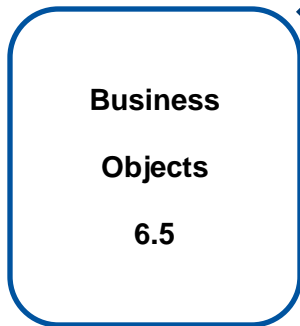
Version 12



2011

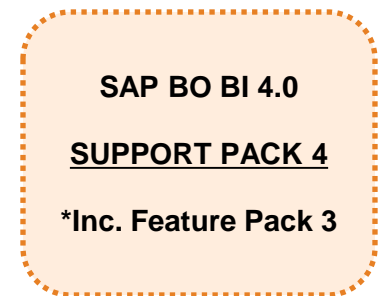


Version 14



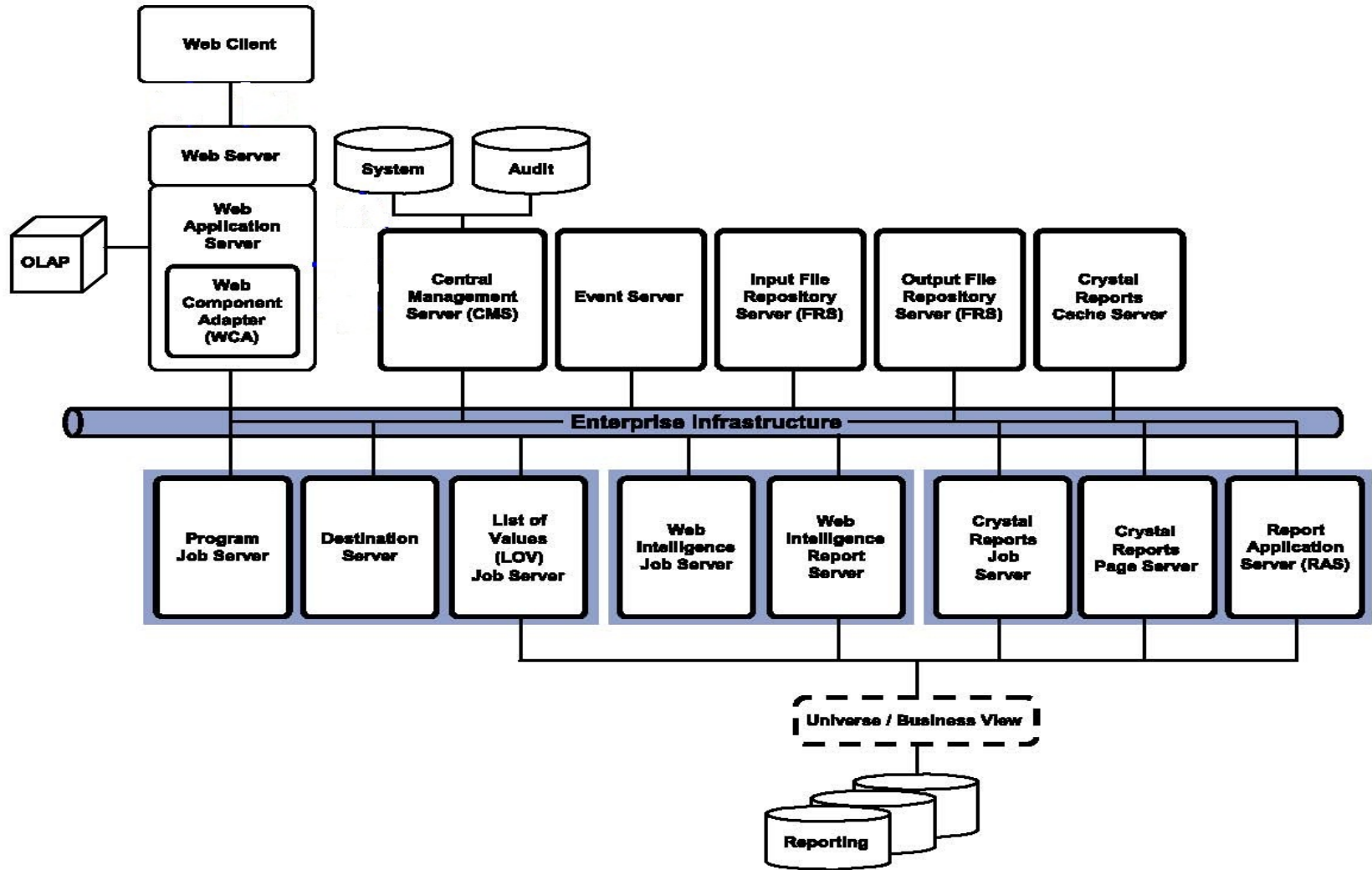
Universe
Desktop Intelligence
Web Intelligence

2012



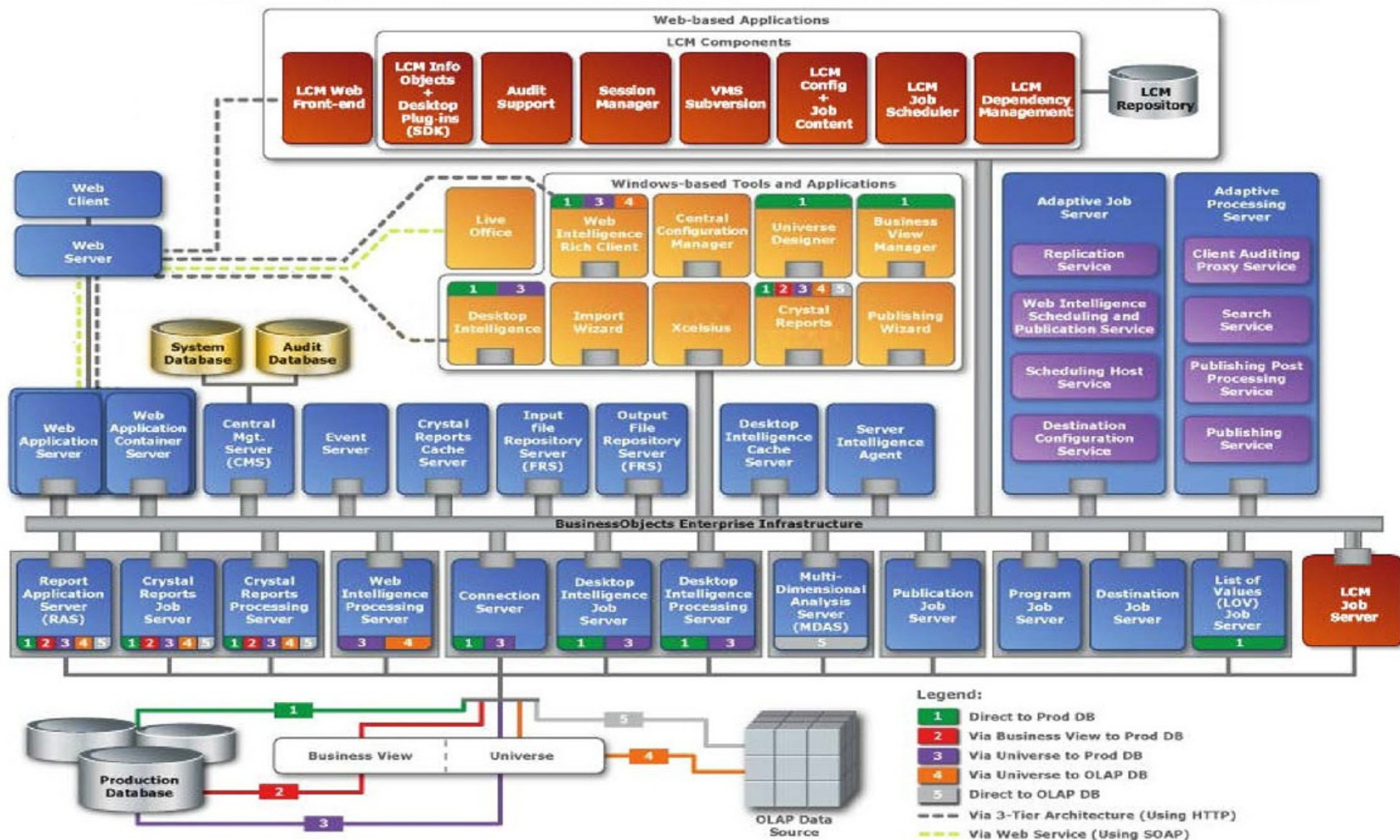
Version 14.0.4.738

[In other words.....this architecture model...



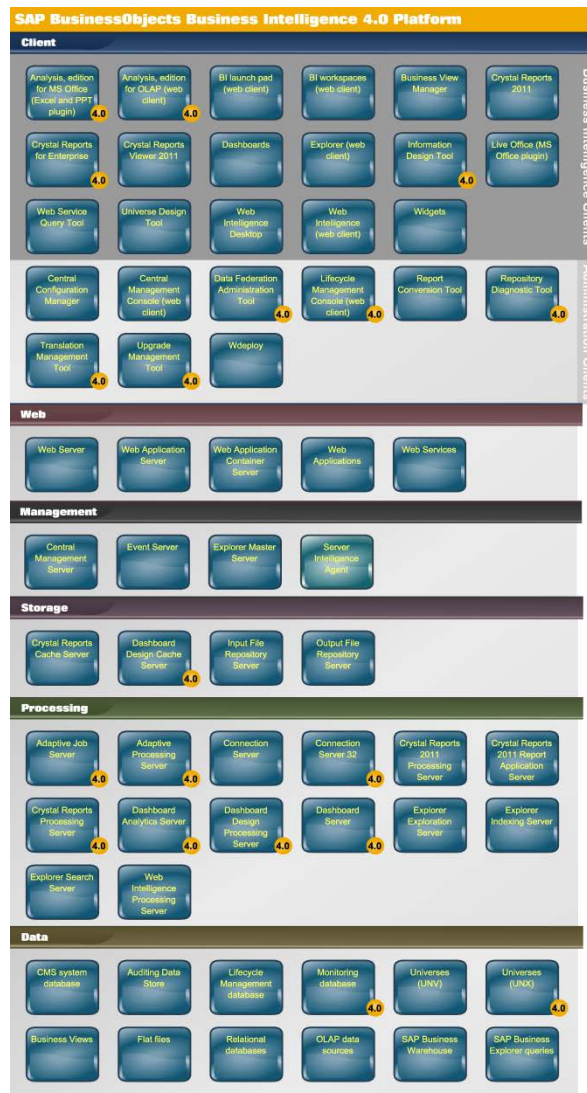
Business Objects XI

[....became this architecture model...which in turn...



Business Objects XI (3.1)

[...became this architecture model.

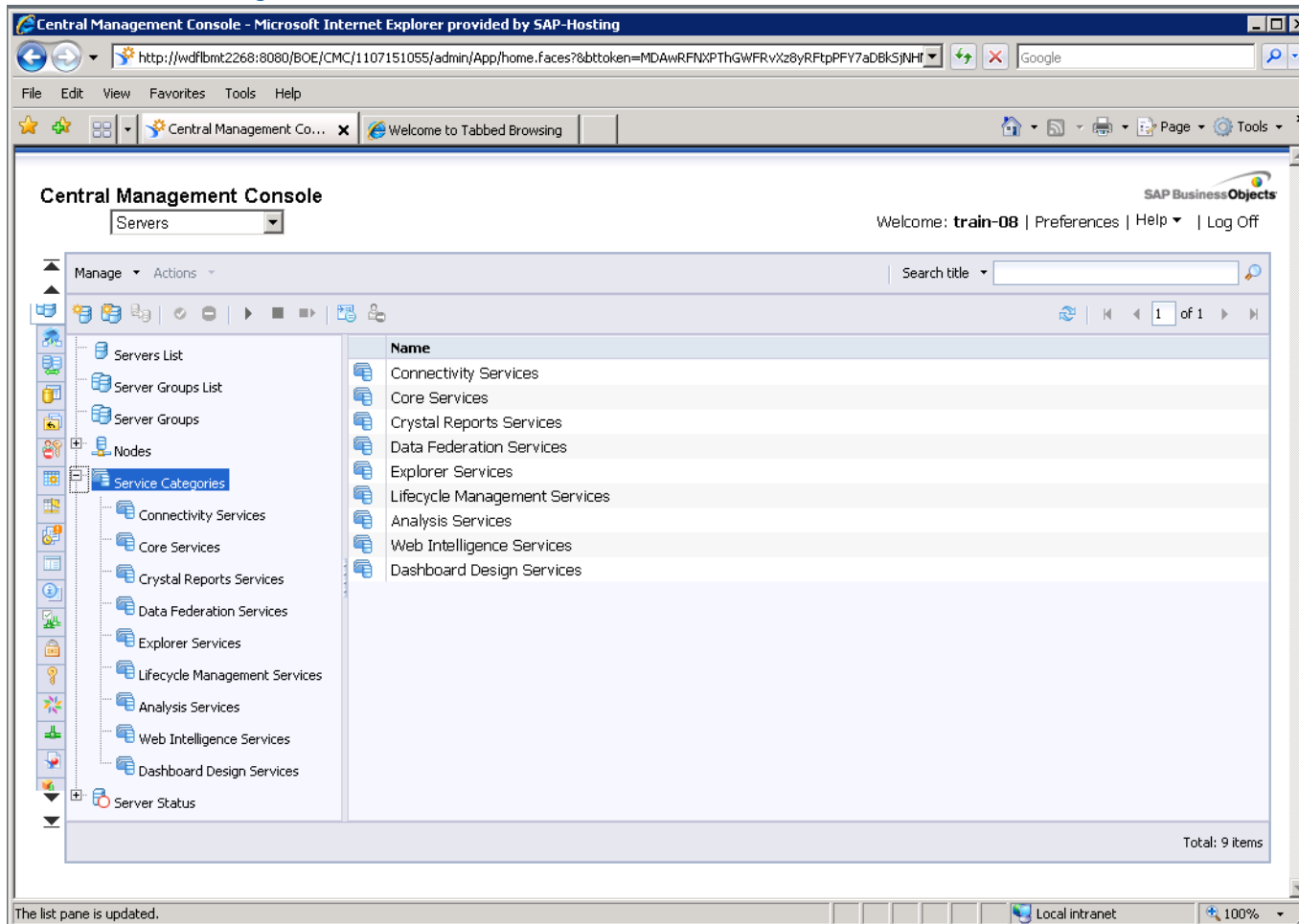


SAP BusinessObjects BI (4.0)

[Business Objects Servers / Services

- **Physical / Virtual Servers (Host)**
 - The specific Operating System platform-session that the Business Objects software components are installed on.
- **CCM -> Server Intelligence Agent (SIA)**
 - The Business Objects software component that is the base-level manager (Stop/Start/Enable) of the individual Business Objects “Functional” Servers.
- **Individual Business Objects “Functional” Servers**
 - The “TASK SPECIFIC” Business Objects software components that work together to respond to functional users-requests. *(Services)

[Business Objects Servers / Services



■ Service Categories

- A group of **"TASK SPECIFIC"** Business Objects software components.

[Architecture Tiers

- **CLIENT Tier**

The “**User Window(s)**” into your environment

- **WEB Tier**

The “**Gateway**” of your environment

- **INTELLIGENCE Tier**

The “**Brains**” of your environment

- **STORAGE Tier**

The “**Library**” of your environment

- **PROCESSING Tier**

The “**Worker Bees**” of your environment

- **DATA Tier**

The “**Source Information**” of your environment

[Architecture Tiers

- **CLIENT Tier**

The “**User Window(s)**” into your environment

- **WEB Tier**

The “**Gateway**” of your environment

- **INTELLIGENCE Tier**

The “**Brains**” of your environment

- **STORAGE Tier**

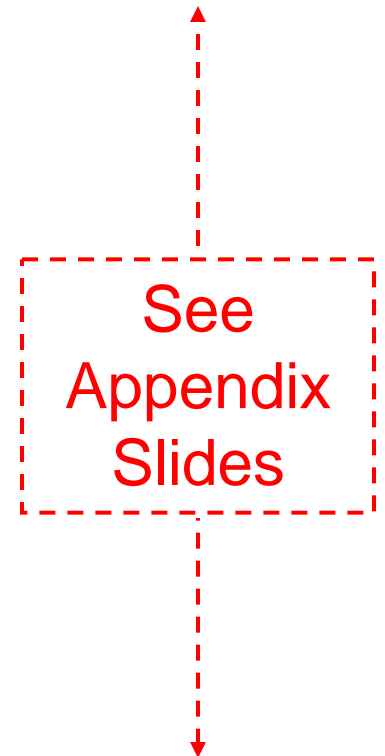
The “**Library**” of your environment

- **PROCESSING Tier**

The “**Worker Bees**” of your environment

- **DATA Tier**

The “**Source Information**” of your environment

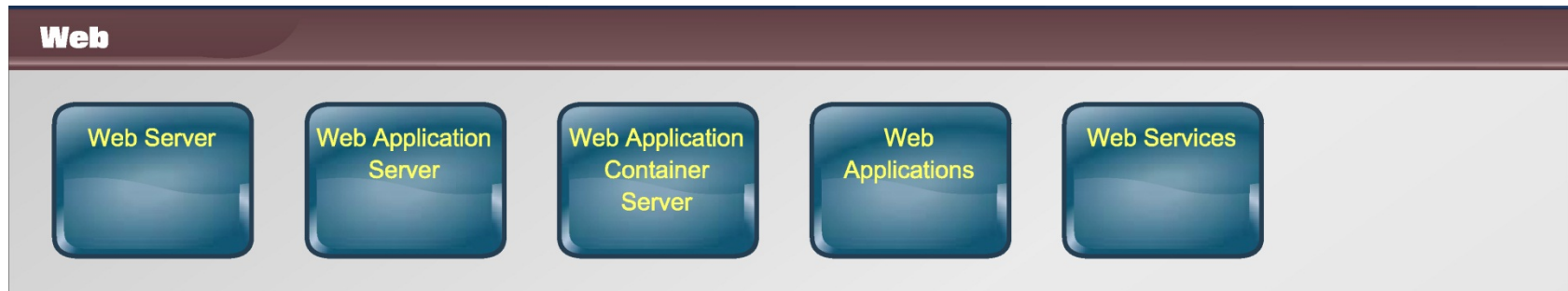


[Architecture Tiers (Web Services)

The “**Gateway**” of your environment

XI (R2)	3.1	4.0
Web Server	Web Server	Web Server
Web Application Server	Web Application Server (Java – Tomcat 5 = Default)	Web Application Server (Java – Tomcat 6 = Default)
Web Component Adapter	Web Application Container Server	Web Application Container Server
Web Applications	Web Applications	Web Applications
	Web Services	Web Services

[Architecture Tiers (Web Services)



4.0	Function
Web Server	Receives HTTP requests from the Web Client
Web Application Server (Java – Tomcat 6 = Default)	Communicates the requests to the BOE Platform.
Web Application Container Server	“Stand-Alone” HOST for Web Application Server. *(Limited options to manage / modify – <u>AVOID</u> if possible)
Web Applications	Standard GUI interface applications for BOE Platform. *(See CLIENT list in Appendix)
Web Services	Simple Object Access Protocol (SOAP) method to interface with BOE Platform.

[Architecture Tiers (Management Services)

The “**Brains**” of your environment

XI (R2)	3.1	4.0
Central Management Server (CMS)	Central Management Server (CMS)	Central Management Server (CMS)
Event Server	Event Server	Event Server
	Server Intelligence Agent (SIA)	Server Intelligence Agent (SIA)
	Destination Job Server	
	Explorer Master Server (**Service Pack 1)	Explorer Master Server

[Architecture Tiers (Management Services)

Management



4.0

Function

Central Management Server ([CMS](#))

Controls and Manages all activity on the BOE Platform.

Event Server

Monitors the system for Event “Triggers” that have been defined by Users.

Server Intelligence Agent ([SIA](#))

Base-level manager (Stop/Start/Enable) of the individual Business Objects “Functional” Servers.

Explorer Master Server

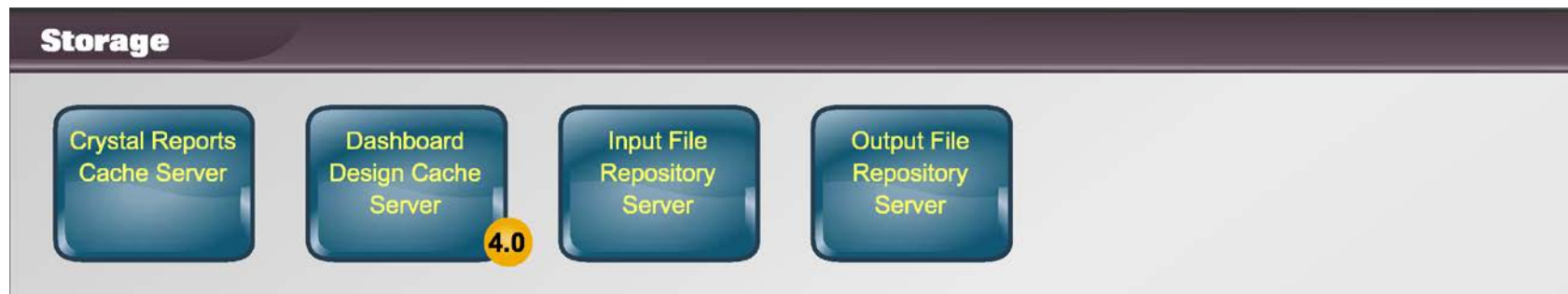
Manages the Explorer Processing Servers.

[Architecture Tiers (Storage Services)

The “**Library**” of your environment

XI (R2)	3.1	4.0
Input - File Repository Service (FRS)	Input - File Repository Server (FRS)	Input - File Repository Server (FRS)
Output - File Repository Service (FRS)	Output - File Repository Server (FRS)	Output - File Repository Server (FRS)
	Crystal Reports Cache Server	Crystal Reports Cache Server
	Desktop Intelligence Cache Server	NOT SUPPORTED <u>[END OF LIFE]</u>
		Dashboard Design Cache Server

[Architecture Tiers (Storage Services)



4.0	Function
Input - File Repository Server (FRS)	Stores the “Parent” <u>Objects</u> for documents and programs that have been published to BOE.
Output - File Repository Server (FRS)	Stores the “Child” <u>Instances</u> for report requests that have been successfully completed by the Job Servers.
Crystal Reports Cache Server	Temporary Storage of the Crystal Report pages that have been viewed by the End-User.
Dashboard Design Cache Server	Temporary Storage of the (Xcelsius) Dashboards that have been viewed by the End-User.

[Architecture Tiers (Processing Services)

The “**Worker Bees**” of your environment



- There's a LOT of them.
- They all have very specialized jobs.
- They have to work together as a team.
- If you shake the “Hive” too hard they will **STING** you.

[Architecture Tiers (Processing Services)

XI (R2)	3.1	4.0
Crystal Reports Job Server	Crystal Reports Job Server	Adaptive Job Server**
Crystal Reports Cache Server	[Storage Tier]	[Storage Tier]
Crystal Reports Page Server	Crystal Reports Processing Server	Crystal Reports Processing Server(s)**
Report Application Server (RAS)	Report Application Server (RAS)	Crystal Reports <u>2011</u> Report Application Server (RAS)
Destination Job Server	Destination Job Server	Adaptive Job Server**
List of Values Server (LOV) [Business Views]	List of Values Server (LOV) [Business Views]	Crystal Reports <u>2011</u> Processing Server**
Program Job Server	Program Job Server	Adaptive Job Server**

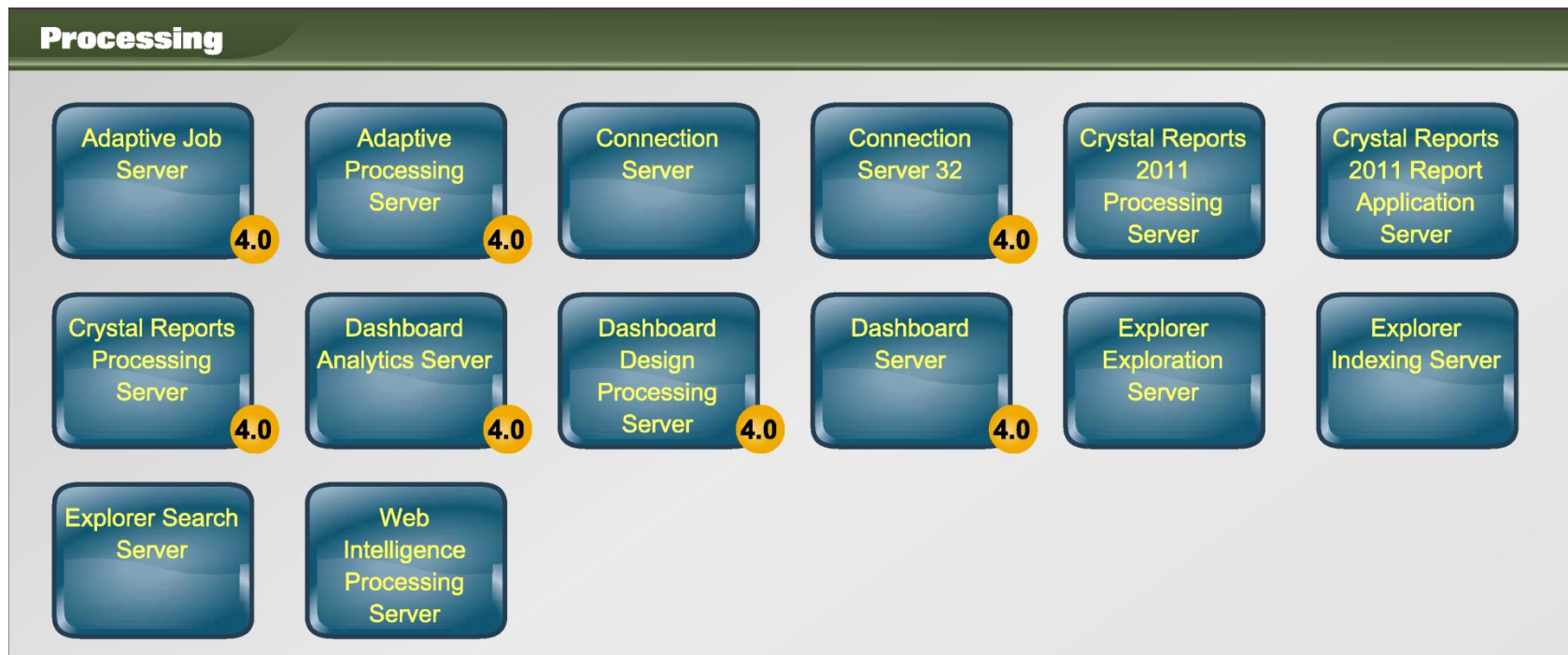
[Architecture Tiers (Processing Services – CONT)

XI (R2)	3.1	4.0
Web Intelligence Job Server	Adaptive Job Server	Adaptive Job Server **
Web Intelligence Report Server	Web Intelligence Processing Server	Web Intelligence Processing Server
	Adaptive Processing Server	Adaptive Processing Server
	Multi-Dimensional Analysis Server	Adaptive Processing Server
Desktop Intelligence Job Server	Desktop Intelligence Job Server	NOT SUPPORTED <u>[END OF LIFE]</u>
Desktop Intelligence Cache Server	[Storage Tier]	NOT SUPPORTED <u>[END OF LIFE]</u>
Desktop Intelligence Report Server	Desktop Intelligence Processing Server	NOT SUPPORTED <u>[END OF LIFE]</u>
	Connection Server	Connection Server

[Architecture Tiers (Processing Services – **NEW**)

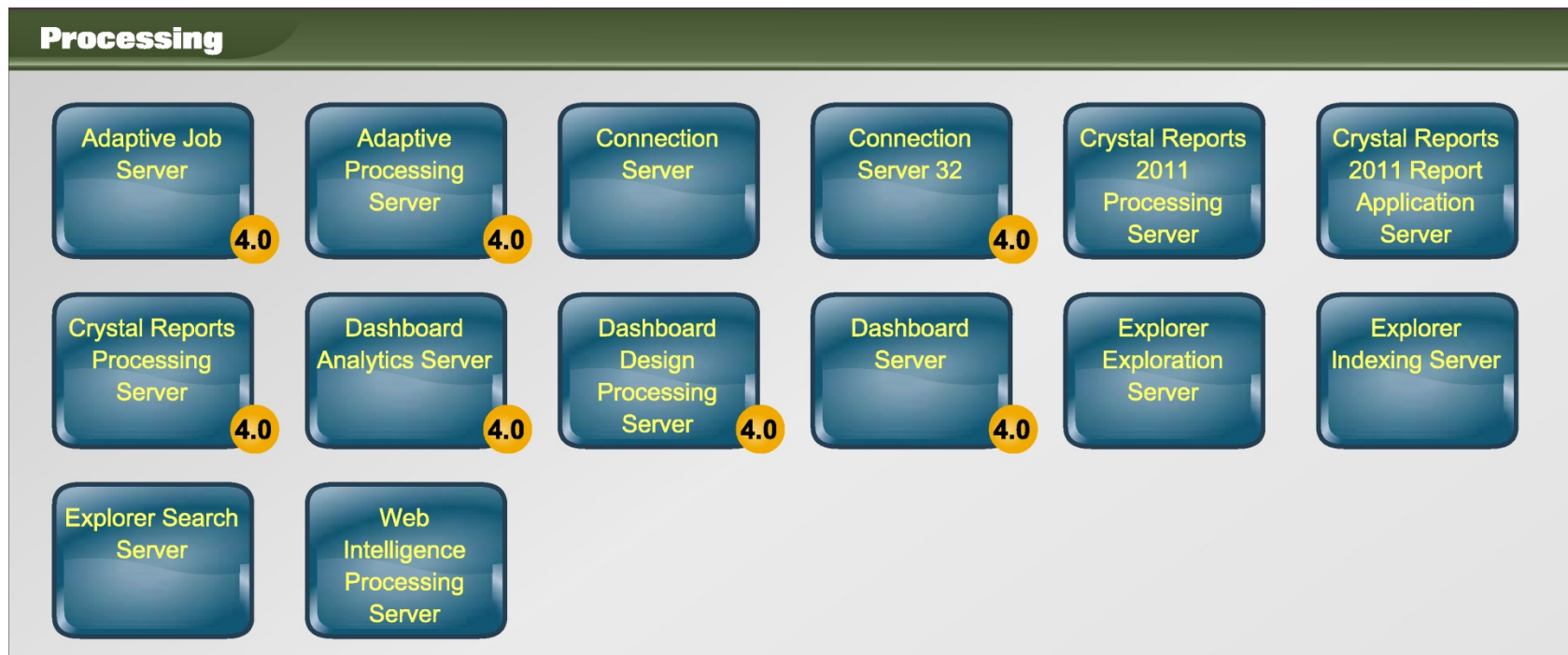
XI (R2)	3.1	4.0
		Connection Server 32
		Dashboard Server
		Dashboard Analytics Server
		Dashboard Design Processing Server
		Explorer Exploration Server
		Explorer Indexing Server
		Explorer Search Server

[Architecture Tiers (Processing Services)



4.0	Function
Adaptive Job Server	A “generic” server that processes Scheduled requests for different Object types.
Adaptive Processing Server	A “generic” server that processes non-Object / post-processing requests.

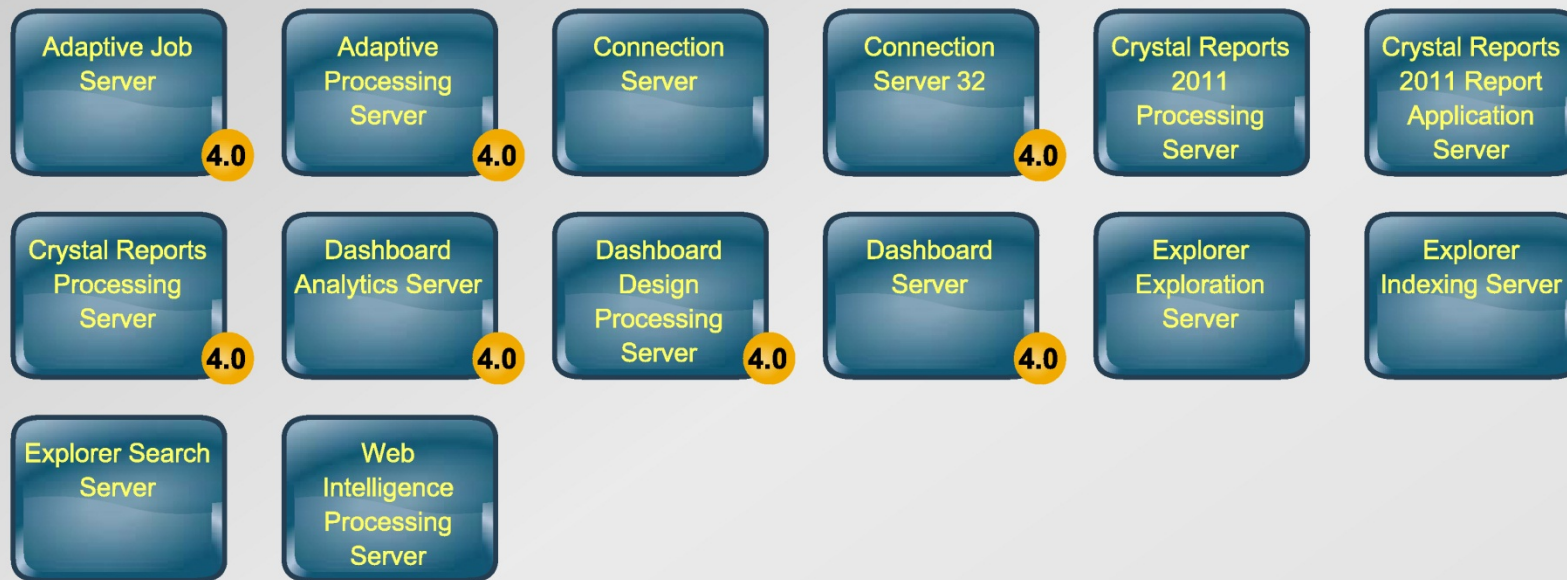
[Architecture Tiers (Processing Services)



4.0	Function
Connection Server	Provides data-access to Source Data. (64-bit) <i>*(Universe <u>3-Tier method</u>, etc – NOT used by WebI, CR4E, etc....)</i>
Connection Server 32	Provides data-access to Source Data. (32-bit) <i>*(Universe <u>3-Tier method</u>, etc – NOT used by WebI, CR4E, etc....)</i>

[Architecture Tiers (Processing Services)

Processing



4.0

Function

Crystal Reports 2011
Processing Server

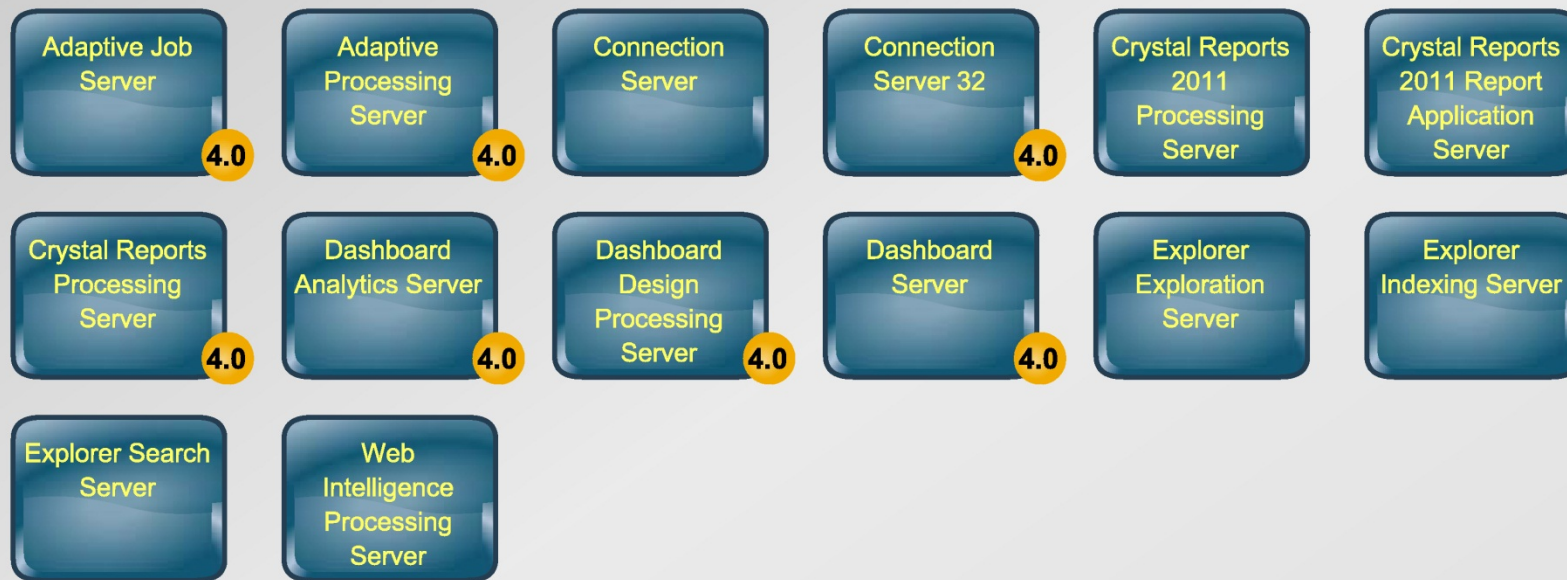
Generates Page-on-Demand Crystal Report content. ***(Legacy Crystal Reports)**

Crystal Reports 2011
Report Application
Servers (RAS)

Generates / Modifies Demand Crystal Report content via the SDK. ***(Legacy Crystal Reports)**

[Architecture Tiers (Processing Services)

Processing



4.0

Function

Crystal Reports Processing Server

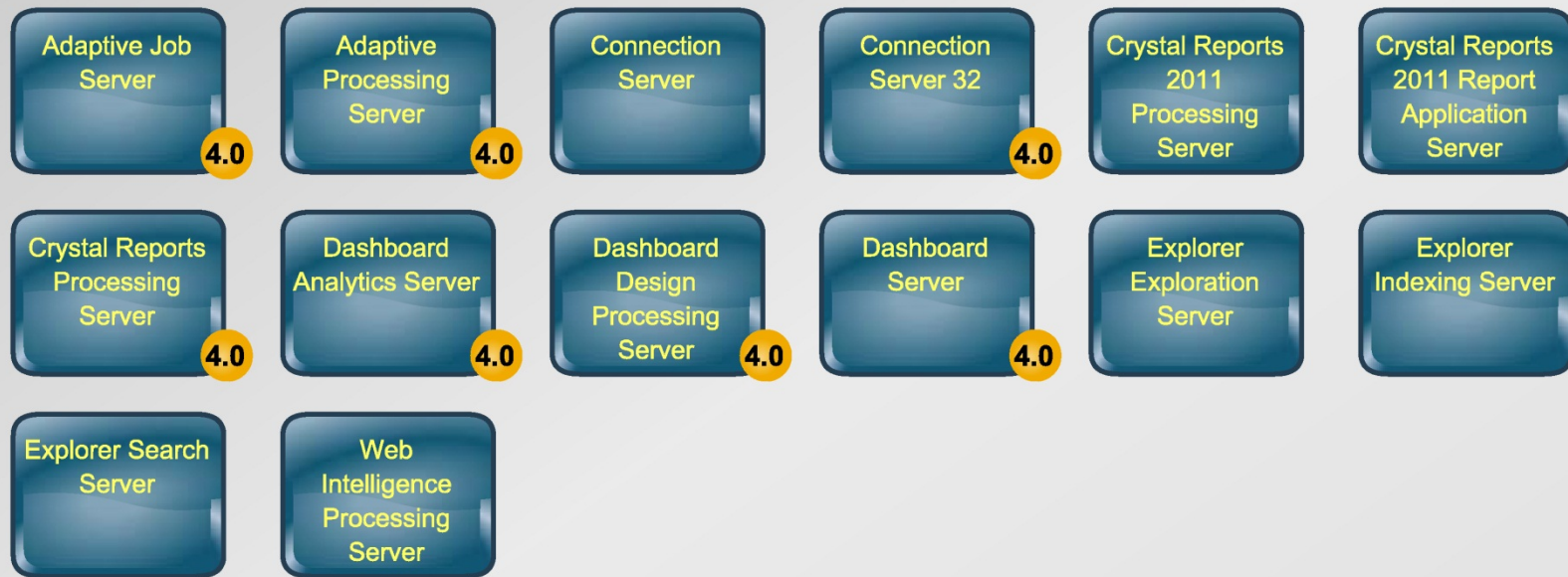
Generates Page-on-Demand Crystal Report content. ***(Crystal Reports for Enterprise)**

Dashboard Analytics Server

Creates and Manages BI workspace module content.

[Architecture Tiers (Processing Services)

Processing



4.0

Function

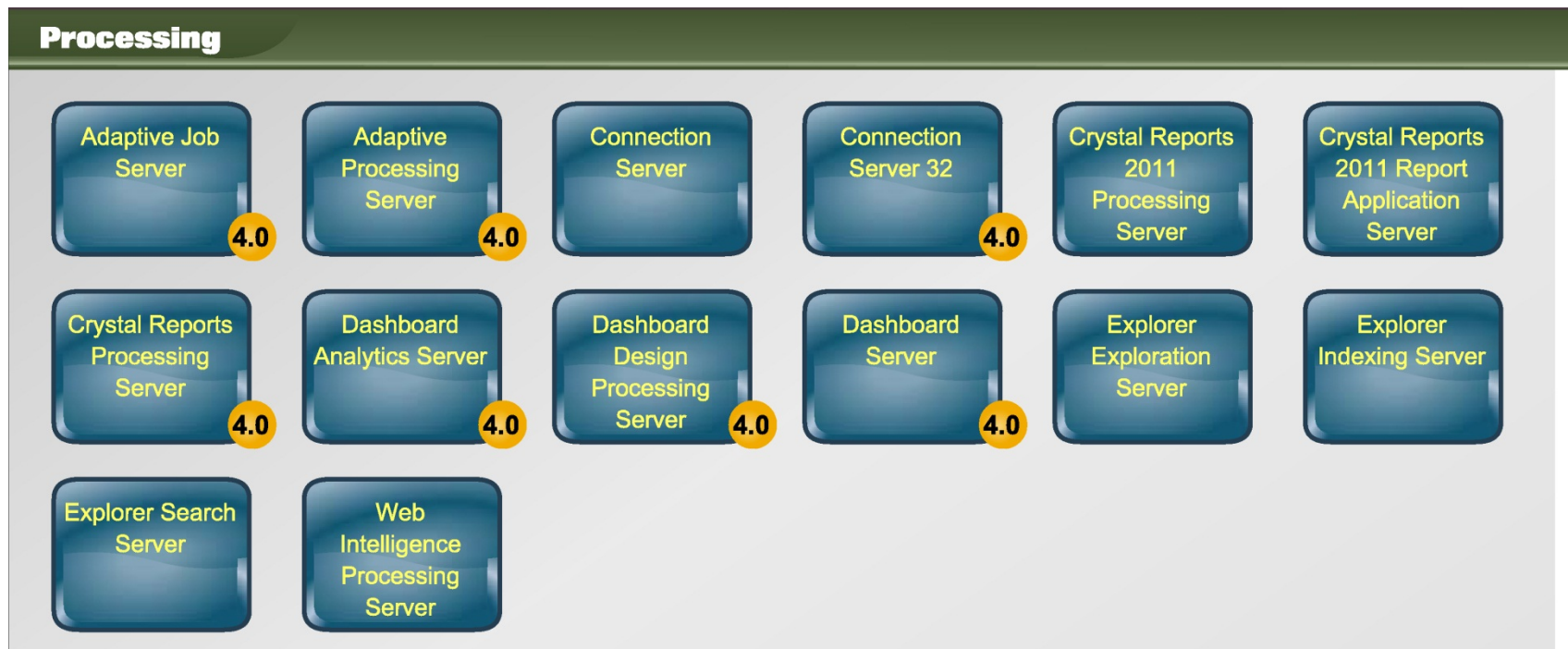
Dashboard Design Processing Server

Processes (Xcelsius) Dashboard requests and generates results

Dashboard Server

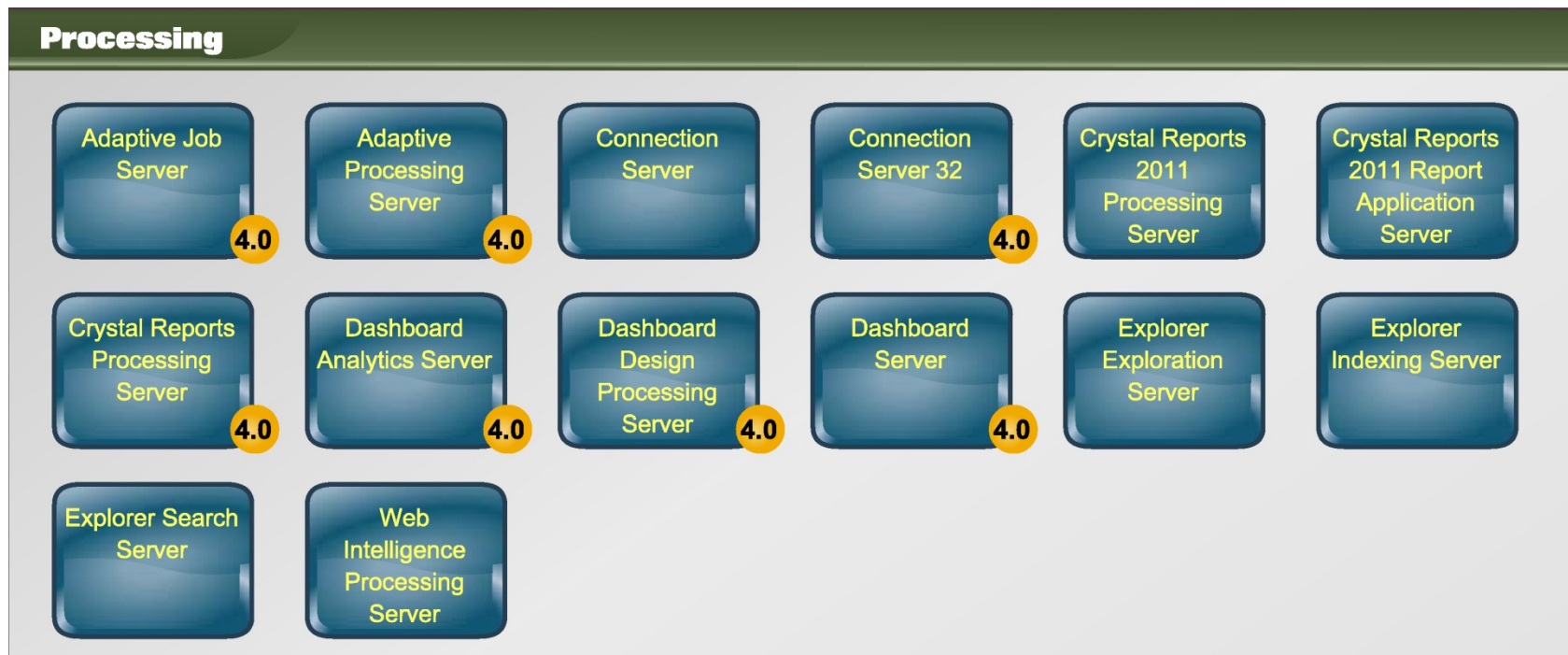
Creates and Manages (Xcelsius) Dashboard content within a BI Workspace.

[Architecture Tiers (Processing Services)



4.0	Function
Explorer Exploration Server	Manages the Information Space exploration and analysis (eg. search, filtering, aggregation)
Explorer Indexing Server	Manages the Indexing of Information Space data and meta-data.

[Architecture Tiers (Processing Services)



4.0	Function
Explorer Search Server	Processes Search queries and returns results.
Web Intelligence Processing Server	Processes Web Intelligence document requests.

[BI-4.0 User Content Types

- Crystal Reports 2011
- Crystal Reports for Enterprise 4.0
- Web Intelligence
- Explorer
- Dashboards (Xcelsius)

[BI-4.0 User Content Type

- Crystal Reports 2011 (Dependent Servers)

SCHEDULED	VIEW-ON-DEMAND	VIEW INSTANCE
	Web Server	Web Server
	Web Application Server	Web Application Server
Central Management Server (CMS)	Central Management Server (CMS)	Central Management Server (CMS)
Adaptive Job Server	Crystal Reports Cache Server	Crystal Reports Cache Server
Input File Repository Server (FRS)	Crystal Reports 2011 Processing Server	Crystal Reports 2011 Processing Server
Output File Repository Server (FRS)	Input File Repository Server (FRS)	Output File Repository Server (FRS)

[BI-4.0 User Content Type

- Crystal Reports for Enterprise 4.0 (Dependent Servers)

SCHEDULED	VIEW-ON-DEMAND	VIEW INSTANCE
	Web Server	Web Server
	Web Application Server	Web Application Server
Central Management Server (CMS)	Central Management Server (CMS)	Central Management Server (CMS)
Adaptive Job Server	Crystal Reports Cache Server	Crystal Reports Cache Server
Input File Repository Server (FRS)	Crystal Reports Processing Server	Crystal Reports Processing Server
Output File Repository Server (FRS)	Input File Repository Server (FRS)	Output File Repository Server (FRS)

[BI-4.0 User Content Type

- Web Intelligence (Dependent Servers)

SCHEDULED	VIEW-ON-DEMAND	VIEW INSTANCE
	Web Server	Web Server
	Web Application Server	Web Application Server
Central Management Server (CMS)	Central Management Server (CMS)	Central Management Server (CMS)
Adaptive Job Server	Web Intelligence Processing Server	Web Intelligence Processing Server
Web Intelligence Processing Server	Input File Repository Server (FRS)	Output File Repository Server (FRS)
Input File Repository Server (FRS)		
Output File Repository Server (FRS)		

[Key Learnings

- Learned about SAP BusinessObjects servers / services change matrix - XI (R2) to XI (3.1) to SAP BO BI 4.0.
- Explored the new servers: services in the SAP BusinessObjects BI 4.0 platform.
- Understanding the services dependencies for BO content types and methods of delivery.

[External Resources

- SAP [SCN] BI Suite Official Product Tutorials
(4.0 Platform – workflows, etc.)

<http://www.sdn.sap.com/irj/scn/bi-platform-elearning?refer=main>

- BusinessObjects Board (BOB)

<http://www.forumtopics.com/busobj/about.php>

[Meet with Mark at these ASUG Events

2013 ASUG Annual Conference and SAPPHIRE® NOW

(May 14-16, 2013 – Orlando, FL)

<http://www.sapandasug.com/>

2013 ASUG SAP Business Objects Conference

(September 9 - 12, 2011 – Anaheim, CA)

<http://www.asug.com/Membership/SAPBusinessObjects.aspx>

[Questions / Contact Information

- Q and A
- Contact Information



Mark J. Richardson

Rose-Richardson Enterprises, Inc.

Toronto, Ontario, Canada

mark@roserichardsonenterprises.com

Connect to me on **LinkedIn**

<http://ca.linkedin.com/pub/mark-richardson/20/a66/701>



Follow us on Twitter....

@ASUG_Ontario

Thank you for participating.

For ongoing education on this area of focus, visit the Year-Round Community page at www.asug.com/yrp

[Appendix – Client Tier

SAP BusinessObjects Business Intelligence 4.0 Platform

Client

Analysis, edition
for MS Office
(Excel and PPT
plugin)

4.0

Analysis, edition
for OLAP (web
client)

4.0

BI launch pad
(web client)

BI workspaces
(web client)

Business View
Manager

Crystal Reports
2011

Crystal Reports
for Enterprise

4.0

Crystal Reports
Viewer 2011

Dashboards

Explorer (web
client)

Information
Design Tool

4.0

Live Office (MS
Office plugin)

Web Service
Query Tool

Universe Design
Tool

Web
Intelligence
Desktop

Web
Intelligence
(web client)

Widgets

Business Intelligence Clients

Central
Configuration
Manager

Central
Management
Console (web
client)

Data Federation
Administration
Tool

4.0

Lifecycle
Management
Console (web
client)

4.0

Report
Conversion Tool

Repository
Diagnostic Tool

4.0

Administration Clients

Translation
Management
Tool

4.0

Upgrade
Management
Tool

4.0

Wdeploy



[Appendix – Data Tier

