

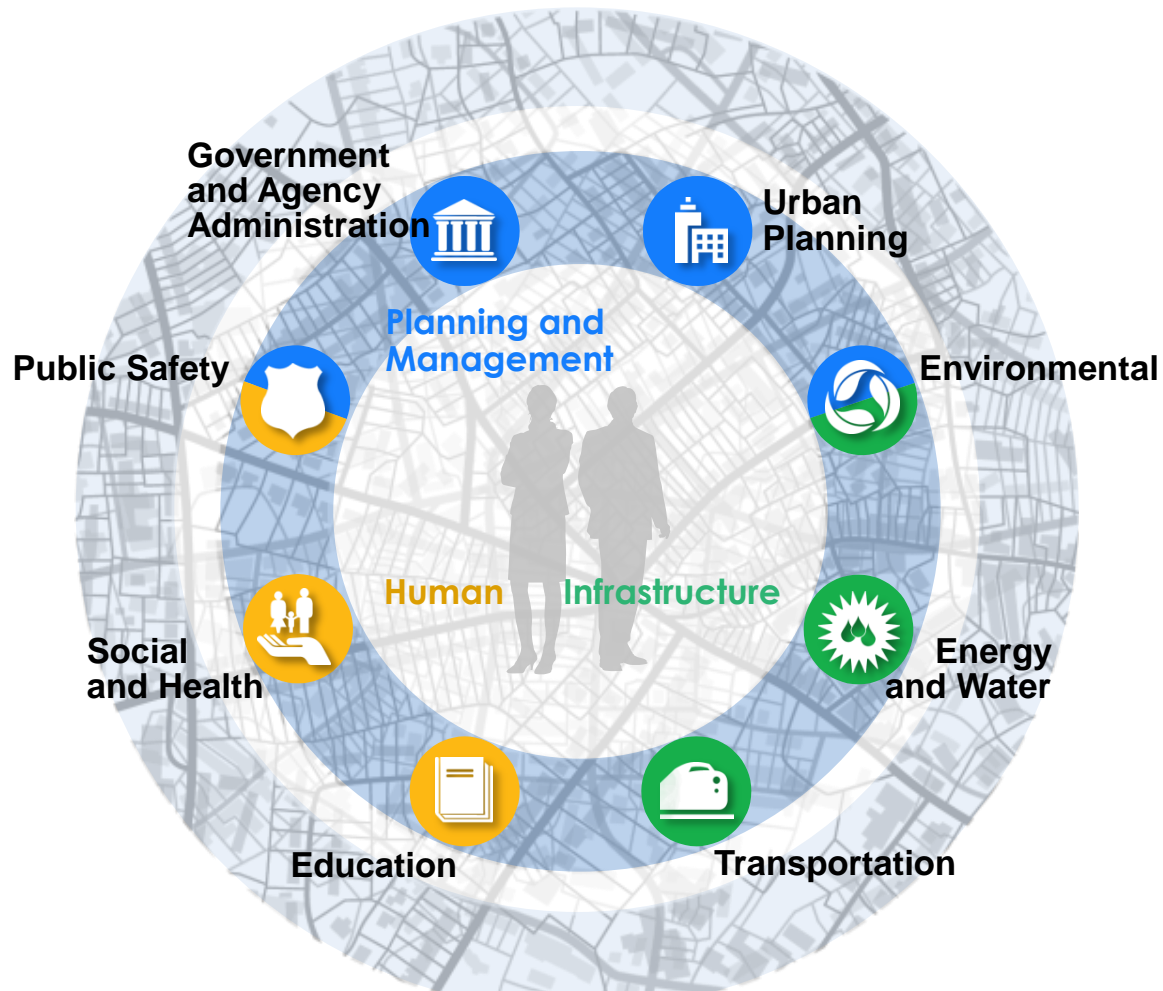
Technical Solutions Overview

IBM i2 Intelligent Law Enforcement

Dr. Wilfred C. Jamison
ILE Product Architect

Smarter. Faster. Stronger.

Smarter Cities innovate across services to **meet and exceed citizen expectations**



Planning and Management

Design and implement a city plan to realize full potential for citizens and businesses; while efficiently running daily operations

Infrastructure

Deliver efficient fundamental city services that make a city desirable for citizens

Human

Provide effective services that support the economic, social and health needs of citizens

Learning Objectives

At the end of this session, you should be able to

- Get a better technical understanding of IBM i2 Intelligent Law Enforcement
- Communicate the various technical components of ILE and how they interact with each other
- Articulate the overall ILE system requirements and a few deployment options
- Describe ILE's security design, architecture and implementation overview
- Get an insight of the processes involved when deploying ILE

Key Learning Points

- ILE is made up of 3 major components that together implement its key capabilities: Policing Engine, Analysis Engine and Common Portal.
- ILE is governed by a common user registry across all major components but leaving each component to enforce its own security policies against the current user.
- There are a few options for deploying ILE at a customer site. The best option will always depend on customer's requirements and priorities.

Agenda

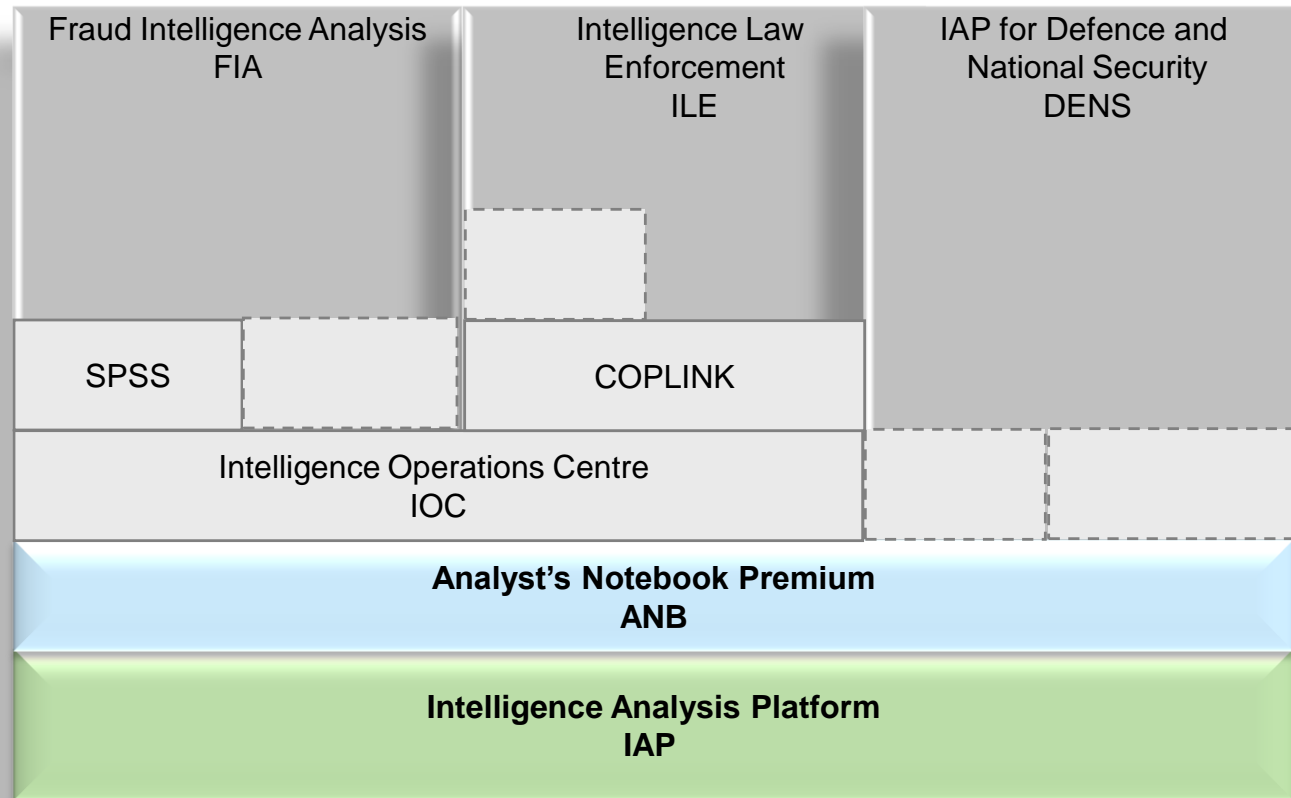
A Recap

ILE Architecture

ILE Security

ILE Deployment

i2 Product Offerings



Understand the key facets of Intelligent Law Enforcement


- 1 A pre-configured law enforcement solution

Provides the optimum knowledge tools for intelligence analysis, lead generation, agency collaboration, GIS and communications integration.
- 2 A holistic view of policing and partner agencies

Removes barriers to information access and sharing enabling the entire organization to focus solely on its mission of predicting, preventing and defeating the sophisticated criminal and terrorist threats.
- 3 Modular design

Modular design allows ILE to integrate with any part of an organization's information structure.
- 4 A flexible approach

Provides the freedom to roll out functionality based on the most prevailing business needs first or to compliment existing capabilities.
- 5 Framework for existing customers

Powered by  & **IAP** - ILE provides a framework for non-disruptive integration of existing COPLINK and i2 products – delivering additional benefits for existing client investment.

Know your target audience



Front Line Officers

Tactical lead generation through access to historical and real time records to assist in generating investigative leads, developing links, associations and reports.



Analysts & Investigators

Long running and/or complex analytical tasks requiring specialist skills, with sharing and collaboration on the gathering, analysis and dissemination of intelligence.

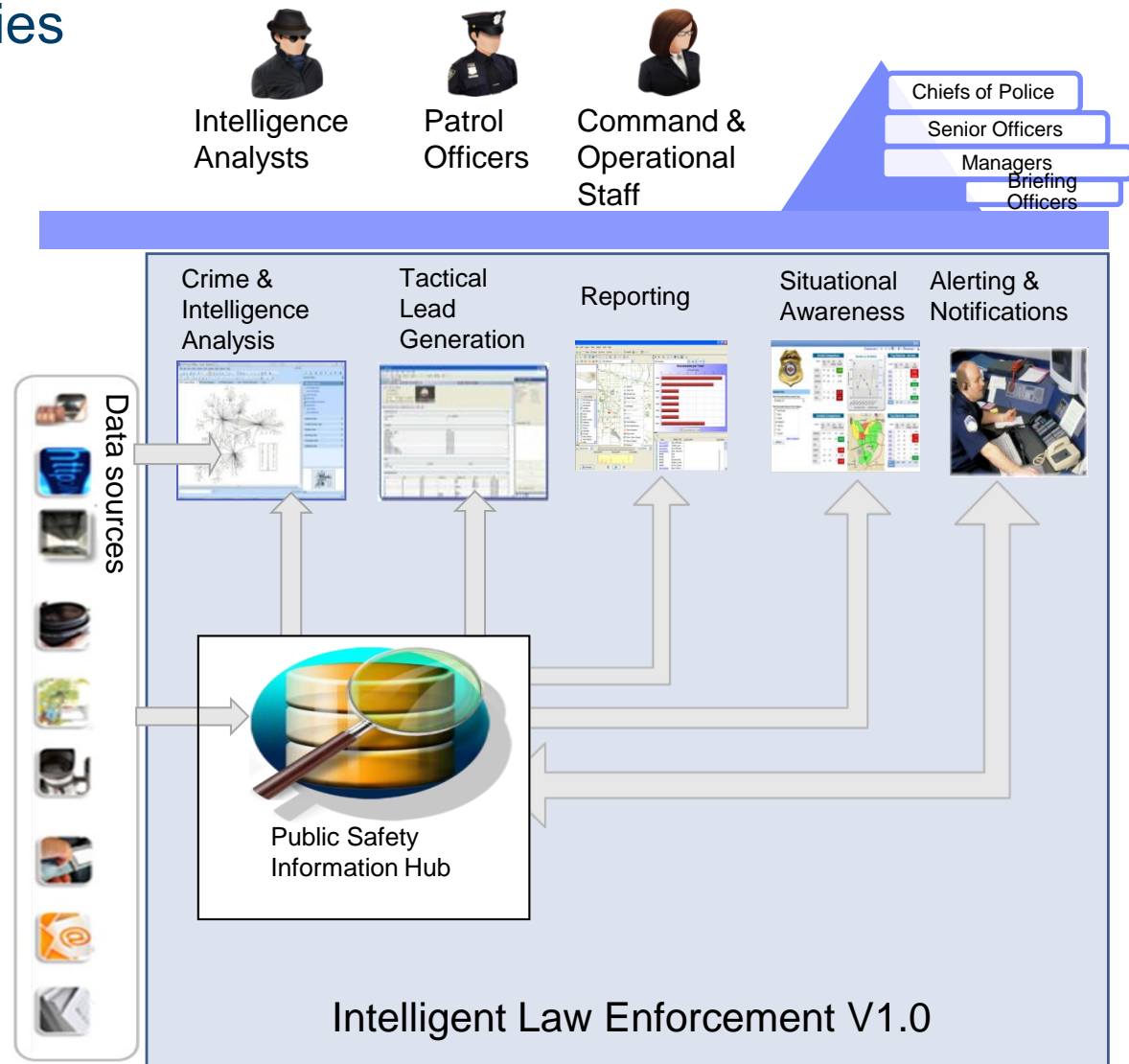


Command & Operational Staff

Provide clear, easily understood information for rapid situational awareness to ensure resource synchronization, officer safety and performance targets.

Articulate ILE's Capabilities

1. Public Safety Information Hub
 - Data consolidation
 - Data storage
 - Information discovery
 - Information sharing
2. Situational Awareness
3. Enhanced Collaboration
4. Information Reports
5. Crime Pattern Analysis
6. Crime Series Identification
7. Crime Reporting
8. Tactical Lead Generation
9. Criminal Business and Person Profiles
10. Criminal Network Detection
11. Major Investigation Analysis Support
12. Threat Tracking and Disruption



Agenda

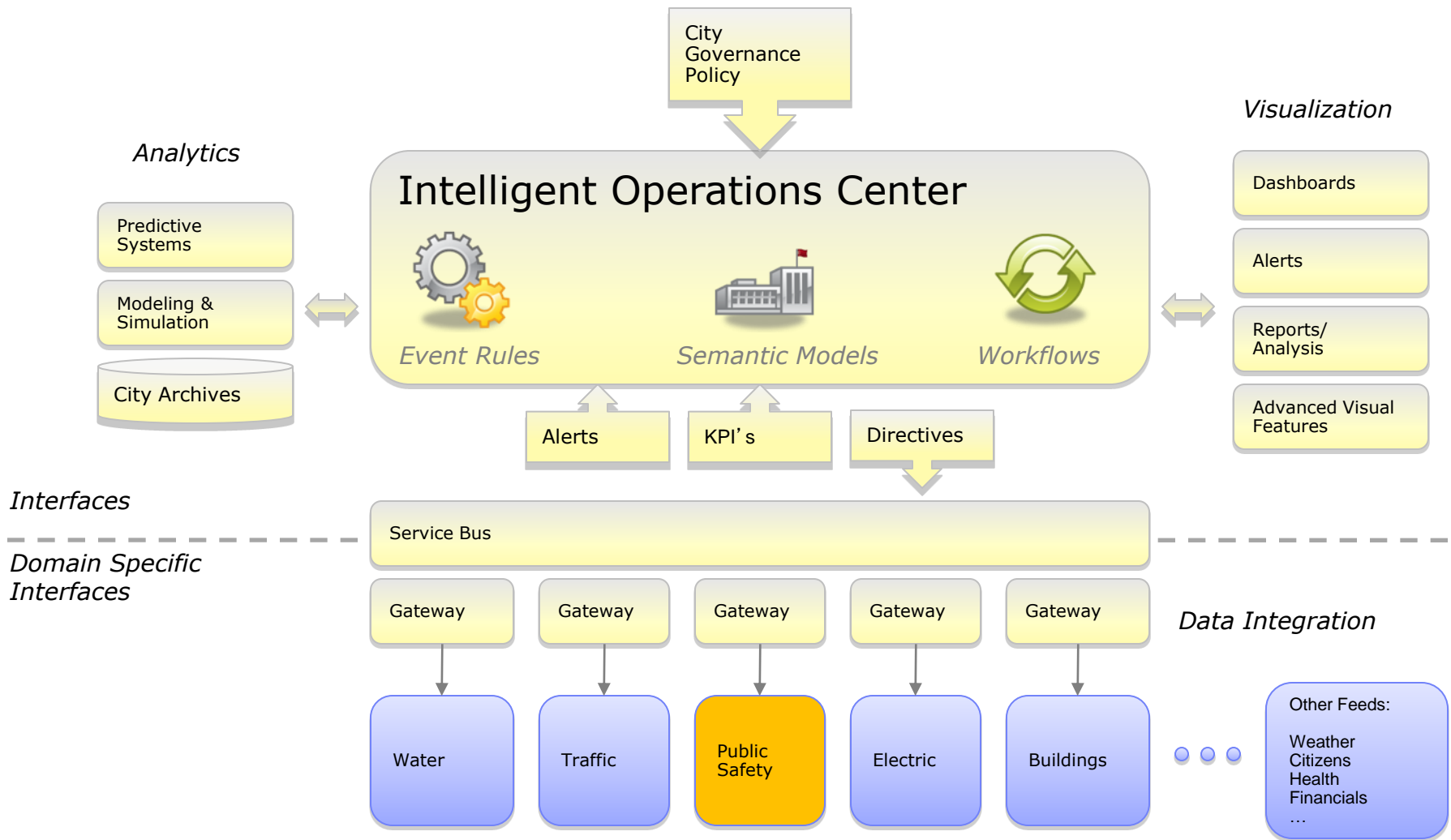
A Recap

ILE Architecture

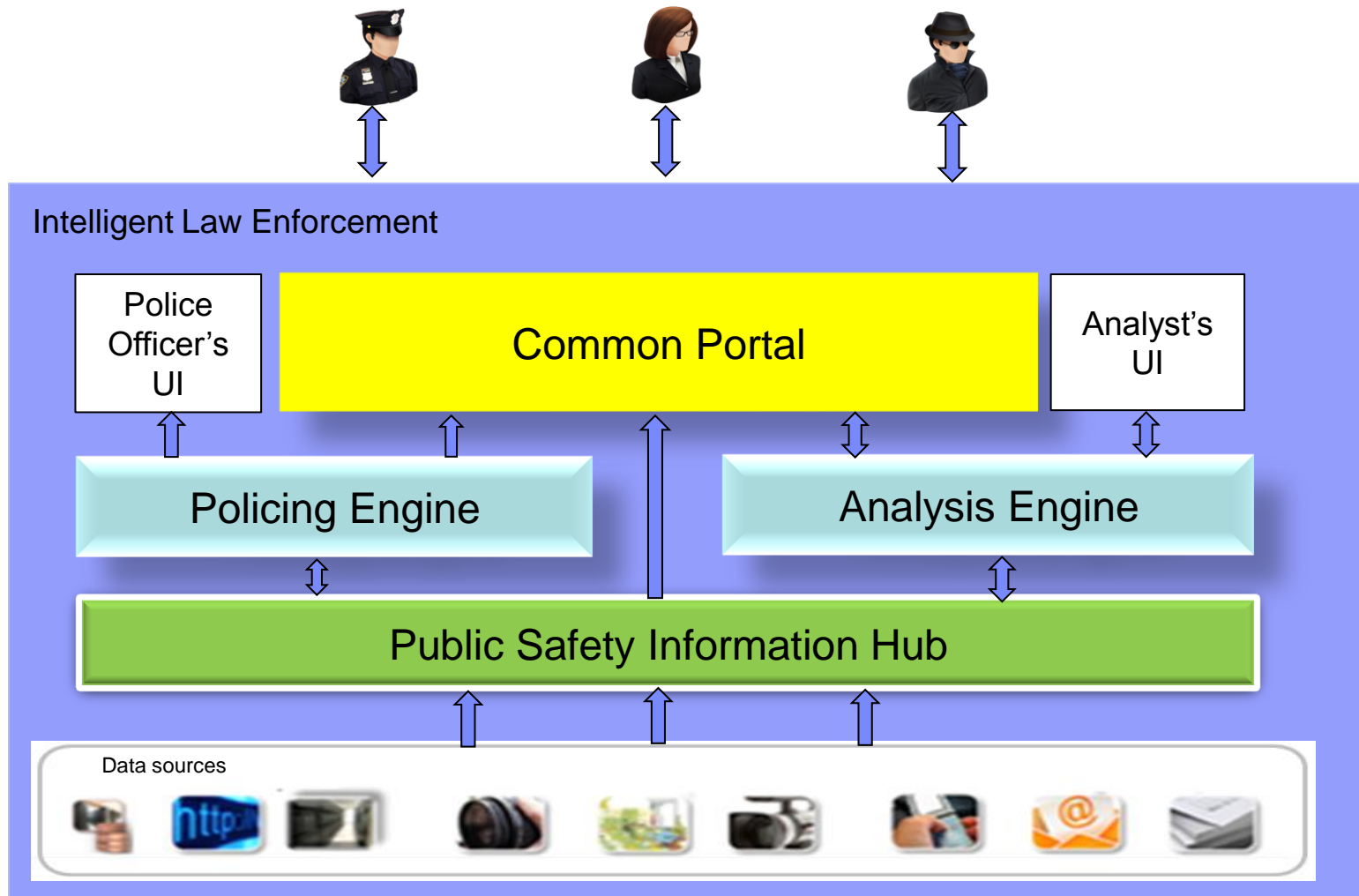
ILE Security

ILE Deployment

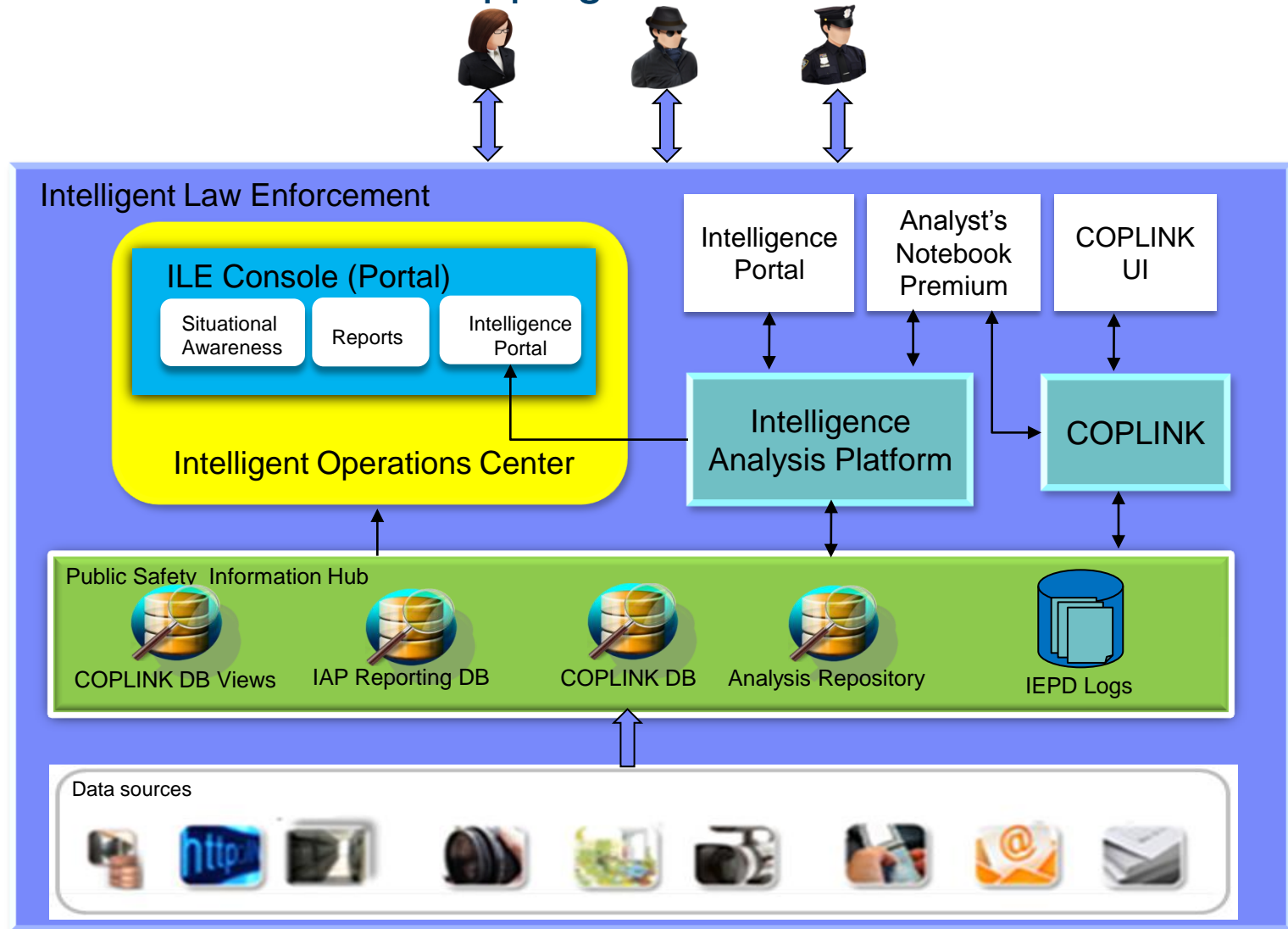
Know where we are in the grand scheme of things



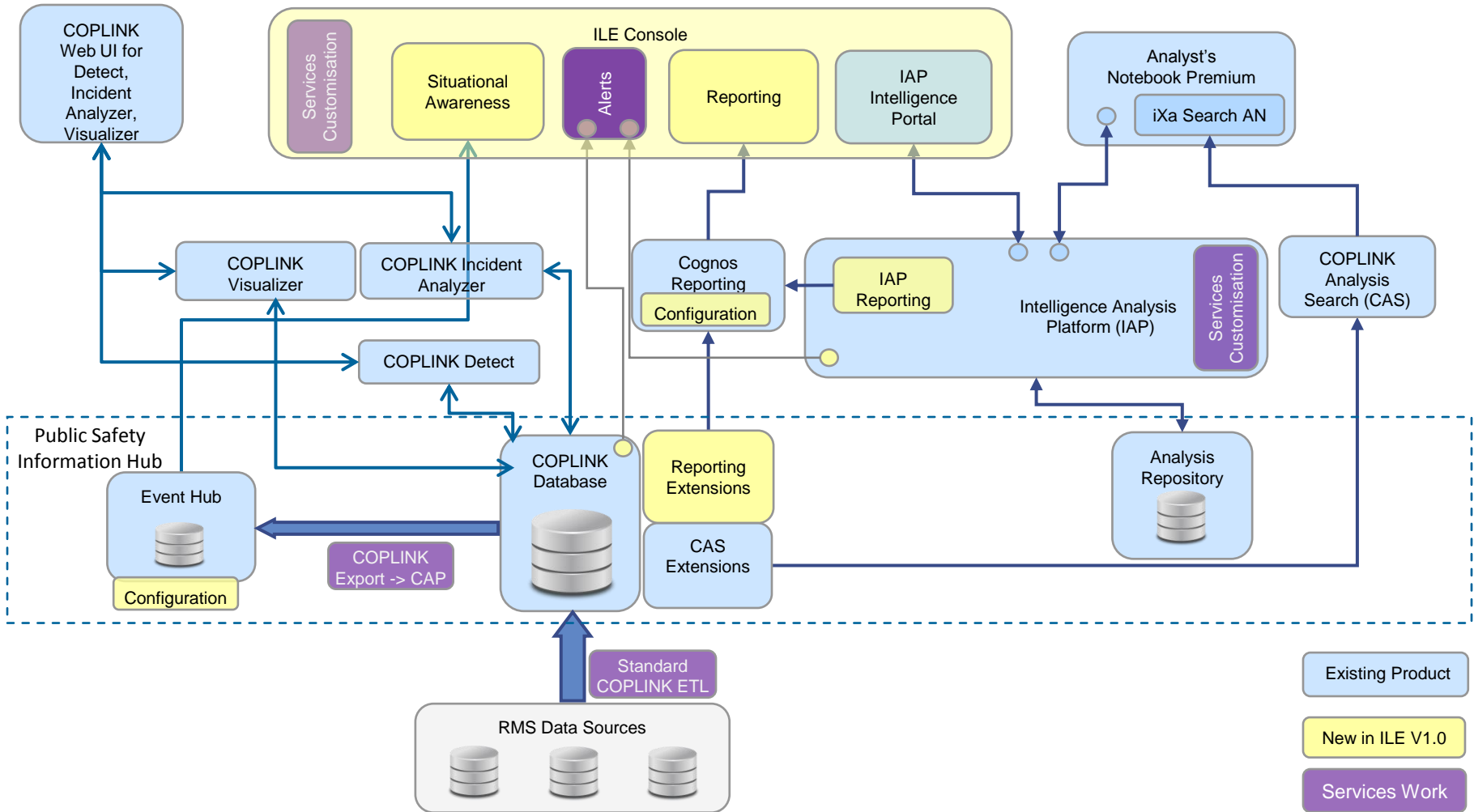
Start with the high-level components



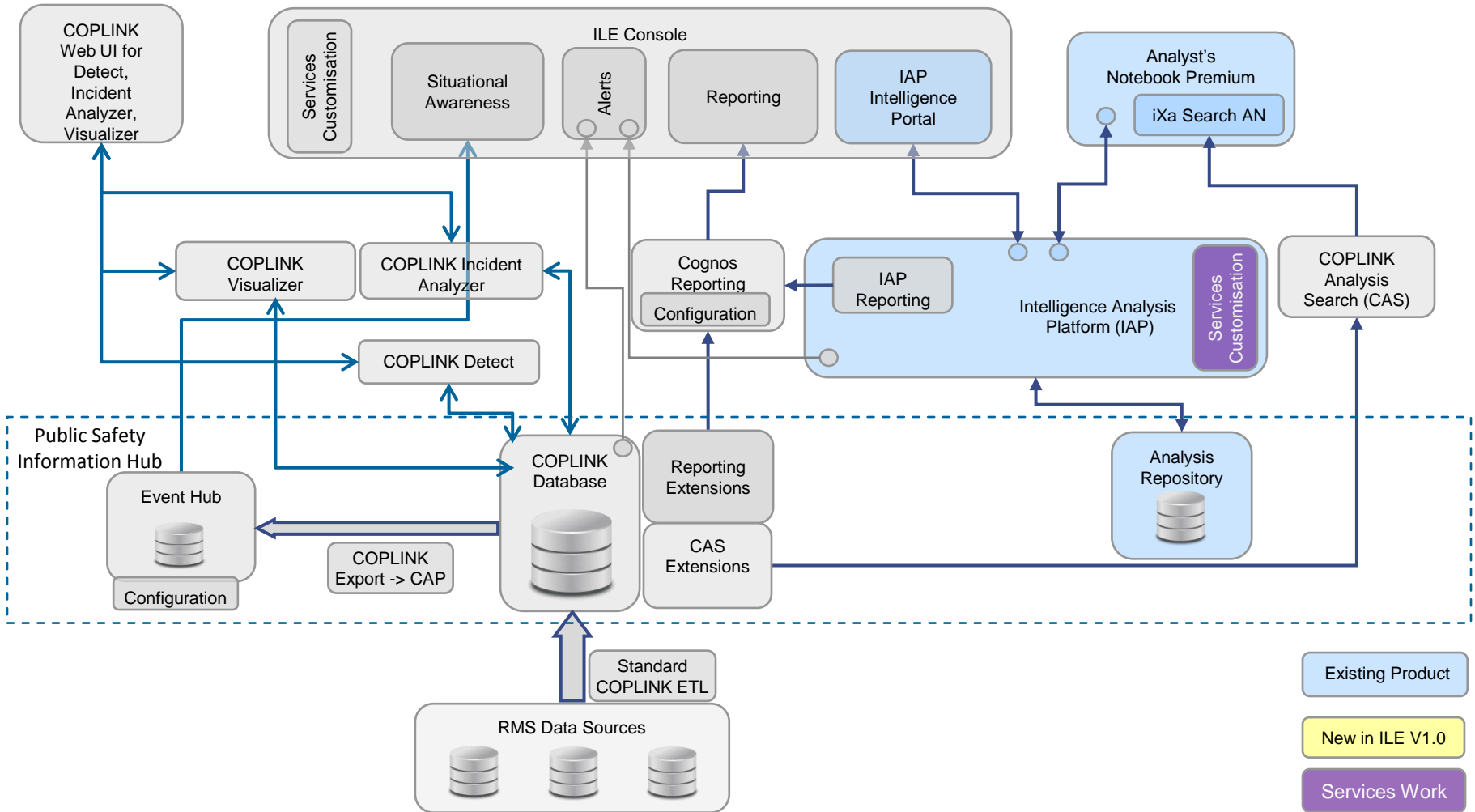
Get down to the Product Mapping



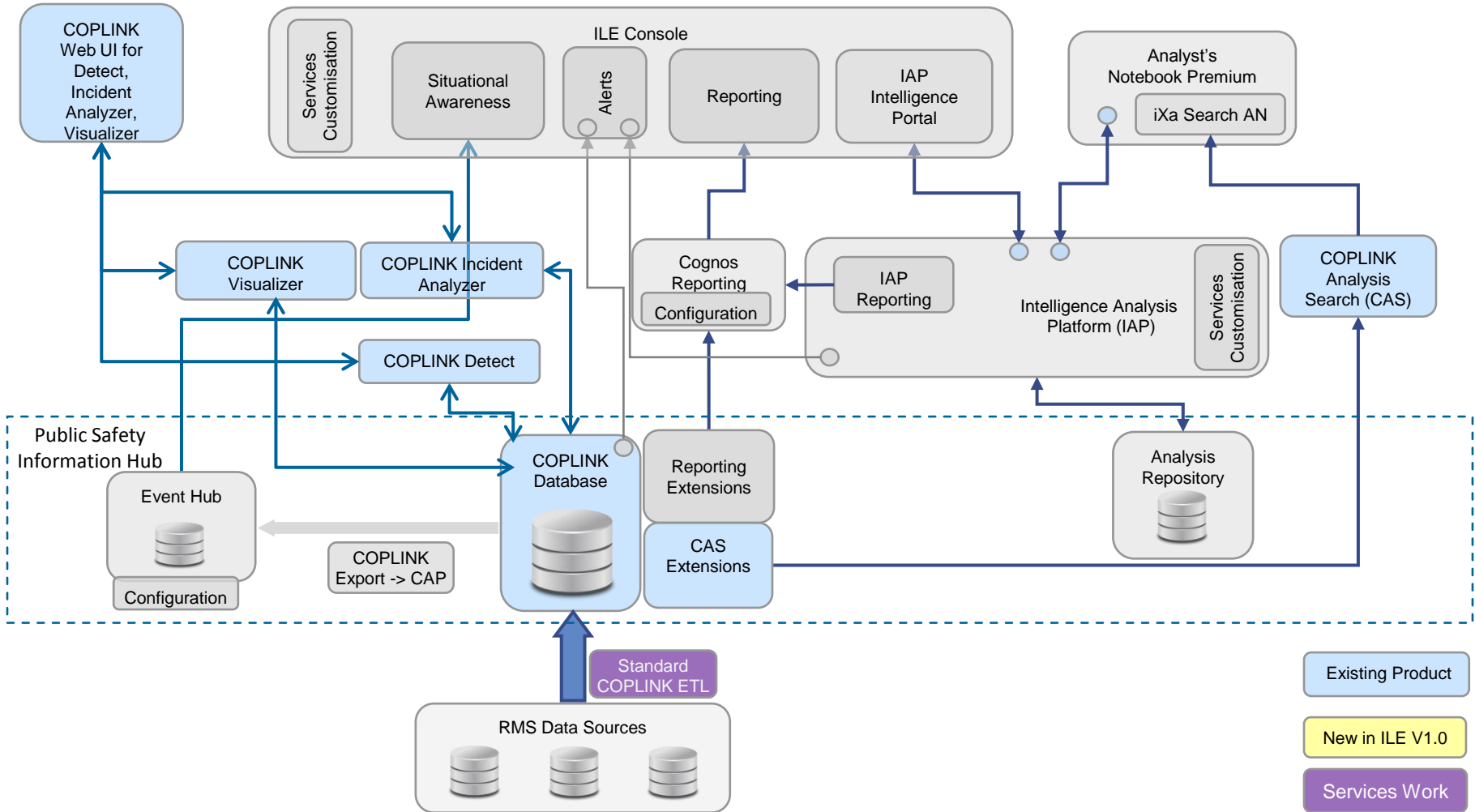
Drill down to the modules, if you will



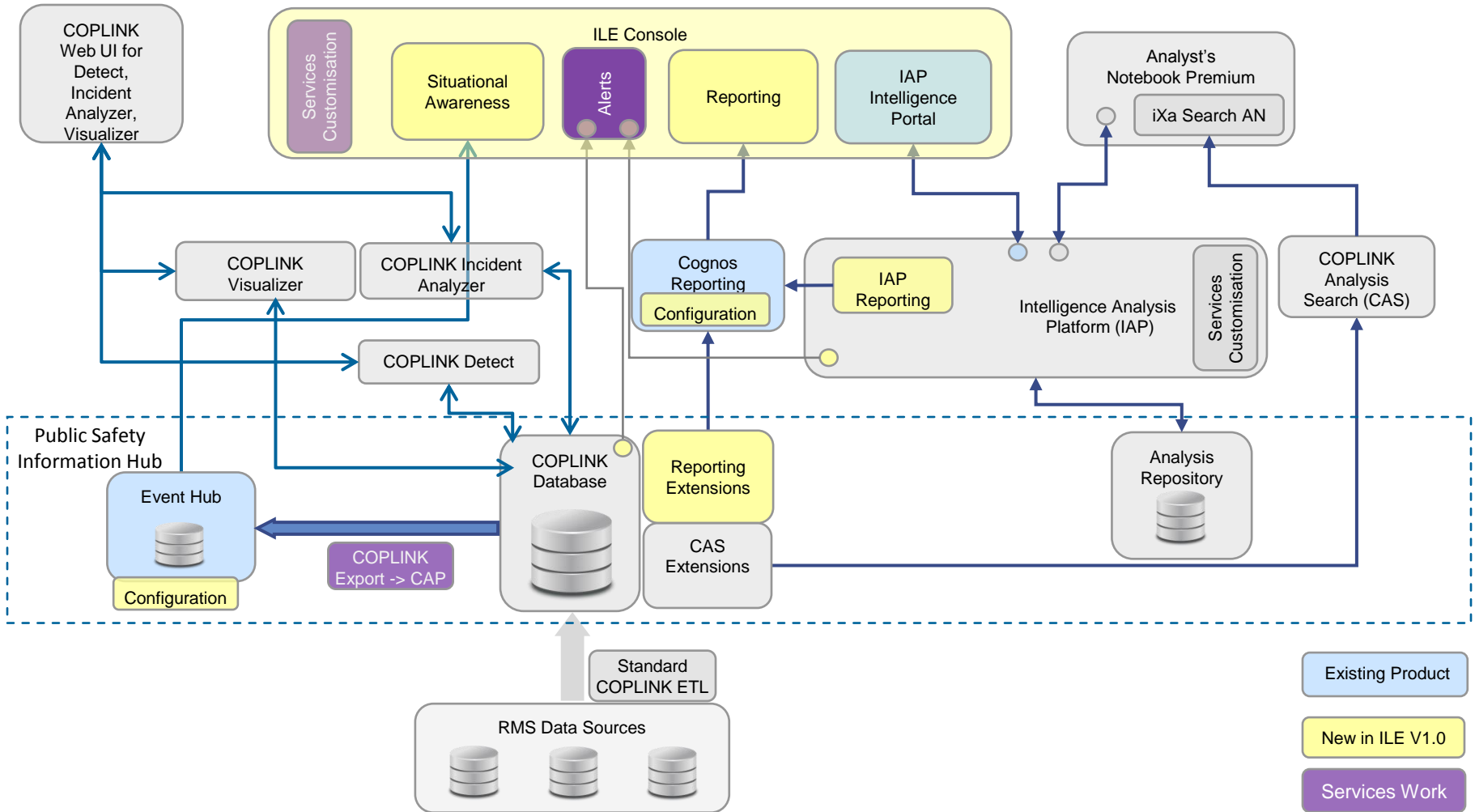
Map modules to *Analysis* Component



Map modules to *Policing* Component



Map modules to *Common Portal* Component



Agenda

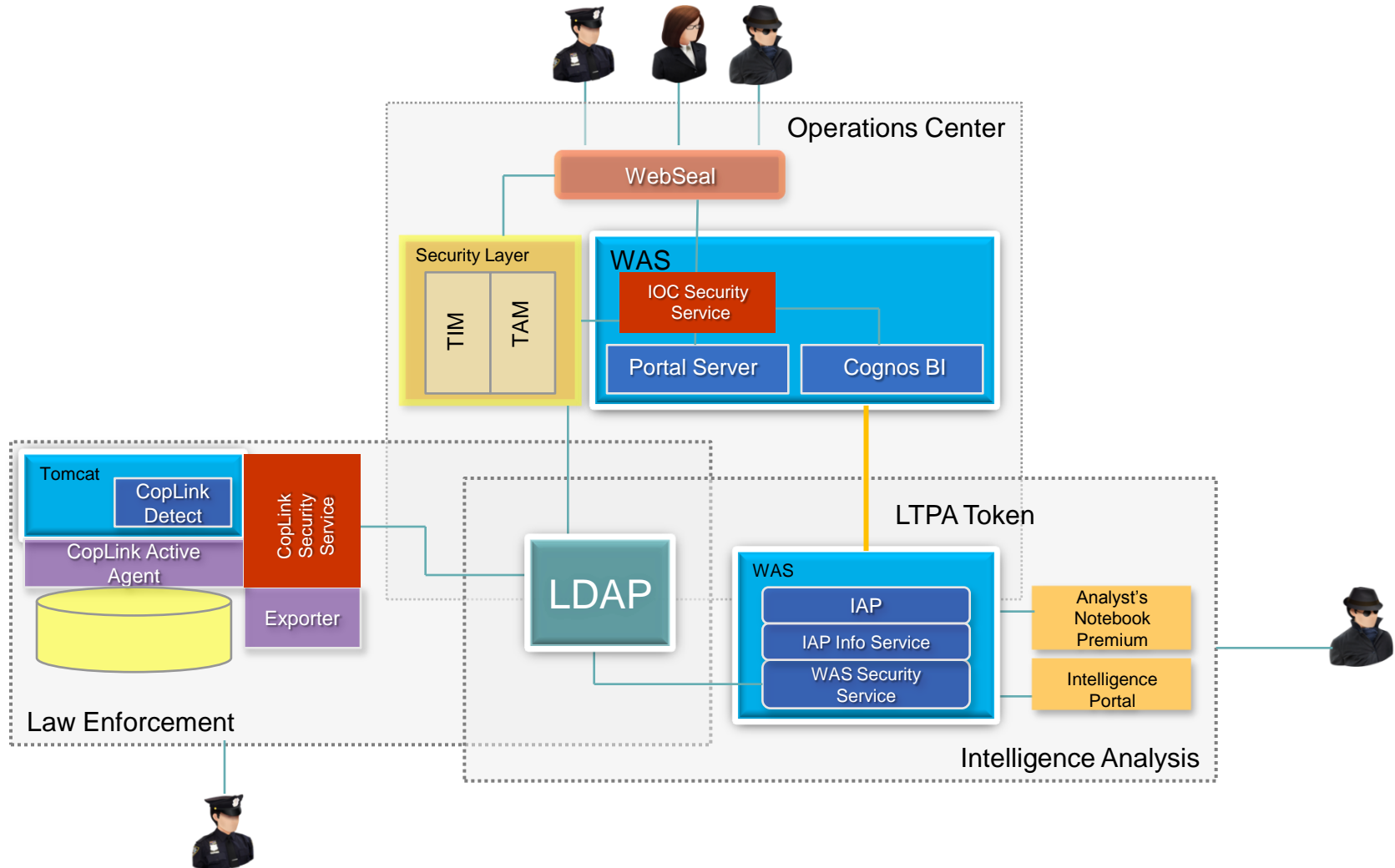
A Recap

ILE Architecture

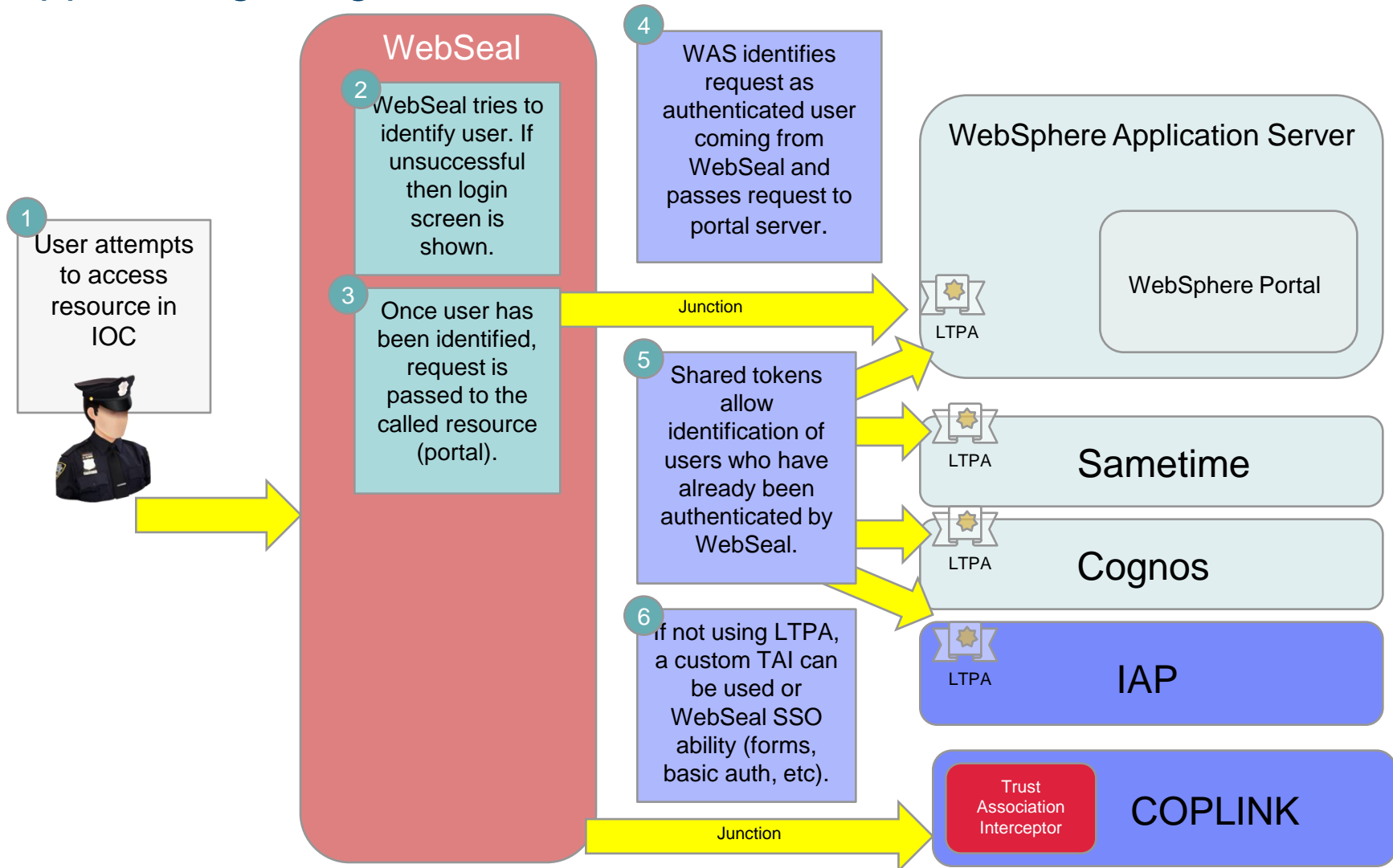
ILE Security

ILE Deployment

Understand how ILE security is designed to work



Support Single Sign-on



Agenda

A Recap

ILE Architecture

ILE Security

ILE Deployment

Get familiar with the System Requirements

IAP V3.0.3 Software Requirements

- Supported Server Operating Systems
 - Windows Server 2008 R2 x64 (64-bit)
 - Windows Server 2008 x86 (32-bit) and x64 (64-bit)
 - Windows Server 2003 Standard/Enterprise x86 (32-bit) and x64 (64-bit) SP2 or later
 - Windows Server 2003 R2 Standard/Enterprise x86 (32-bit) and x64 (64 bit) SP2 or later

- Supported RDBMS
 - IBM DB2 V9.7
 - Enterprise Server Edition
 - Workgroup Edition
 - Microsoft SQL Server 2008
 - Standard Edition
 - Enterprise Edition
 - Workgroup Edition
 - Oracle 11g Release 2
 - Standard Edition

IAP V3.0.3 Software Requirements

Supported Web Servers

IBM WebSphere Application Server, base V8.0.0.4

Supported message-oriented middleware

IBM WebSphere MQ V7.5

Notes:

1. All server operating systems offer a thin client environment when Terminal Services are enabled
2. All server operating systems are also supported with Citrix Xen Application Server 5.0 or later.

ANB Premium V8.9.3 Software Requirements

- Supported Desktop Operating Systems
 - Windows 7 Professional, Enterprise, or Ultimate x86 (32-bit) and x64 (64-bit)
 - Windows Vista Business, Enterprise, or Ultimate x86 (32-bit) and x64 (64-bit) SP1 or later
 - Windows XP Professional x86 (32-bit) and x64 (64-bit) SP3 or later
- Supported Web Browsers
 - Microsoft Internet Explorer 7, 8 and 9
 - Mozilla Firefox 3.5, 3.6, 4-14
 - Google Chrome 21

Notes:

1. Google Chrome Frame is required if running Microsoft Internet Explorer 7
2. Google Chrome Frame is recommended if running Microsoft Internet Explorer 8

- Additional Requirements
 - Microsoft .NET Framework 2.0 SP1 or .NET Framework 3.5, depending on the operating system
 - Microsoft Windows Installer 4.5 if the installation system is running Windows Vista or Windows Server 2008
 - Microsoft Silverlight 5

IAP V3.0.3 Hardware Requirements

- 2 GHz 4-core processor (minimum requirement)
- 6 GB RAM
- RAID disk array per server

ANB Premium V8.9.3 Hardware Requirements

- 2 GHz single core processor
- 512 MB RAM
- SXGA-capable graphics card (1024 x 768 high color (16 bit)) color monitor
- Mouse or trackball

Virtual Environments

- Citrix XenServer 5.0 or later
- VMWare Workstation 6 or later
- VMWare ESX Server 3 or later
- Microsoft Hyper-V

COPLINK Premium V4.7 Software Requirements

- Oracle Java 1.6.30 64 bit
- Oracle 11g (11.2.0.1 Patch 8795792 with partitioning) or Microsoft SQL Server 2008 R2

Note: If non-English language data is to be stored, Oracle is a requirement. Microsoft SQL Server cannot be used. Contact your IBM representative or IBM business partner for information on supported languages.

- Apache Tomcat 7
- Microsoft Windows Server 2008 64 bit for servers
- Microsoft Windows 7 for integration boxes
- Microsoft Windows XP for desktops
- Microsoft .NET 4.0

The following IBM programs are prerequisites for **IBM i2 COPLINK Analysis Search Premium**:

- IBM i2 Analyst's Notebook Premium 8.9.3
- IBM i2 Information Exchange for Analysis Search for Analyst's Notebook 8.9.3
- IBM Installation Manager 1.5

COPLINK Premium V4.7 Software Requirements

Environmental Systems Research Institute's (Esri) ArcGIS Server is a prerequisite for the following components:

- IBM i2 COPLINK Activity Correlation Technology
- IBM i2 COPLINK Computer Statistics
- IBM i2 COPLINK Dashboard
- IBM i2 COPLINK Incident Analyzer

Compatibility: IBM i2 COPLINK Premium 4.7 is compatible with the previous version via COPLINK distributed search queries.

Limitations: IBM i2 COPLINK Computer Statistics Premium is limited to 1.5 million documents viewable on a client machine with 1536 MB of memory.

COPLINK Premium V4.7 Hardware Requirements

- Application server
 - Processor: Two Xeon E5550
 - Clock speed: 2.66 GHz
 - Memory: 8 GB
 - Hard drive: Two 146 GB 15K
 - HDD Configuration: RAID-1
- Migration server
 - Processor: Two Xeon E5550
 - Clock speed: 2.66 GHz
 - Memory: 8 GB
 - Hard drive: Two 146 GB 15K
 - HDD Configuration: RAID-1
- Face match server
 - Processor: Two Xeon E5550
 - Clock speed: 2.66 GHz
 - Memory: 32 GB
 - Hard drive: Two 146 GB 15K
 - HDD Configuration: RAID-1

COPLINK Premium V4.7 Hardware Requirements

- Database server
 - Processor: Two Xeon E5550
 - Clock speed: 2.66 GHz
 - Memory: 8 GB
 - Hard drive: Two 146 GB 15K
 - HDD Configuration: RAID-1
- Data storage (two required)
 - Hard drive: 30 300 GB 15K dual HBA controllers, 9 TB usable
 - HDD Configuration: RAID-50
- Integration box (desktop)
 - Processor: Intel Core 2 Duo E8400
 - Clock speed: 3 GHz, 6M, 1333 MHz
 - Memory: Two DIMMs 4 GB DDR2 non-ECC SDRAM, 800 MHz
 - Hard drive: Two 160 GB 7200 RPM SATA 3.0 GB/s and 8 MB DataBurst
 - HDD Configuration: RAID-1

COPLINK Premium V4.7 Hardware Requirements

- General workstation
 - Processor: Intel Celeron™
 - Memory: 512 MB
 - Hard drive: 80 GB
 - Display: 1024 X 768
- Computer Statistics workstation
 - Processor: Intel i7 64 bit
 - Memory: 4.00 GB
 - Hard drive: 80 GB
 - Display: 1024 X 768

IOC 1.5 Minimum Hardware Requirements

Resource	Application server	Event server	Data server	Management server	Installation server
CPUs	4	4	4	4	2
Memory	24 GB	16 GB	16 GB	24 GB	4 GB
Network adapters	1	1	1	1	1
Disk space	113 GB	108 GB	108 GB	108 GB	108 GB
Additional disk space required during installation	90 GB	90 GB	90 GB	90 GB	90 GB

Hardware and virtualization: General information and Recommendations

- See documentation for specific minimum disk requirements
 - Recommend mounting separate 90GB partition for /installMedia for each target server
- May be deleted after installation
- vRAM, vCPU, and disk space numbers are minimums
- Allows for some application usage
- Increase to match expected or observed workloads
- Reasonable performance of CPU, networking, and storage is expected

Minimum Directory Space Requirements on each Server (excluding space for boot and swap partitions)

Directory	Minimum space	Notes
/	8 GB	
/opt	35 GB or 40 GB	40 GB is required for the application server, 35 GB is required for all other servers
/usr	8 GB	
/home	5 GB	
/tmp	10 GB	
/chroot	1 GB	
/datahome	25 GB	
/loghome	8 GB	
/installMedia	90 GB	This directory can be deleted after installation.
/var	8 GB	

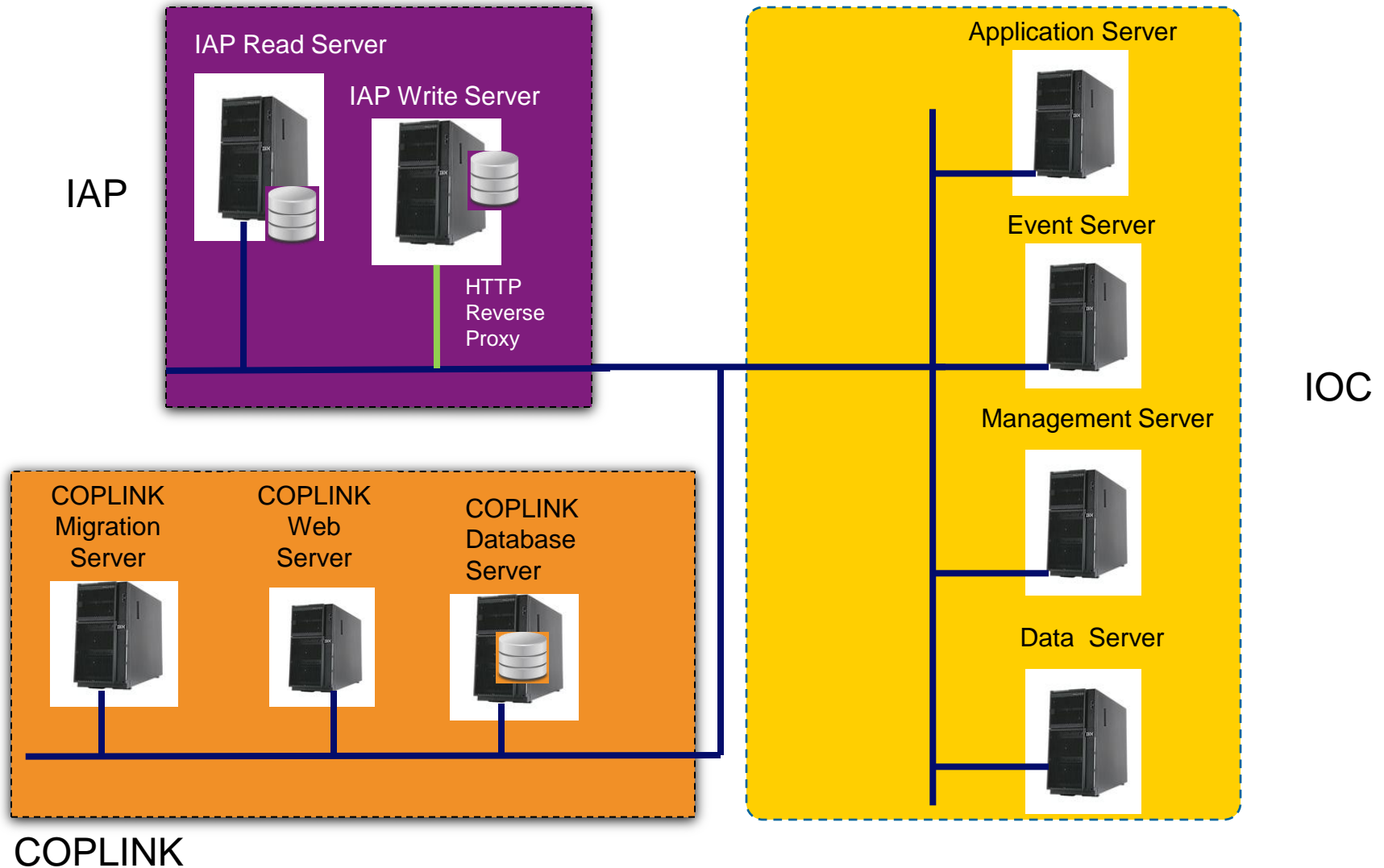
Prerequisite Software Requirements

- Red Hat Enterprise Linux Version 5, Update 5 or later to be installed on all servers. **Red Hat Enterprise Linux Version 6 is not supported.**
- Supported Browsers (i.e., tested)
 - Microsoft Internet Explorer 8.x (32-bit only)
 - Compatibility View not supported
 - May have performance problems
 - Microsoft Internet Explorer 9.x (32-bit only)
 - Compatibility View not supported
 - Mozilla Firefox 10 ESR

Note:

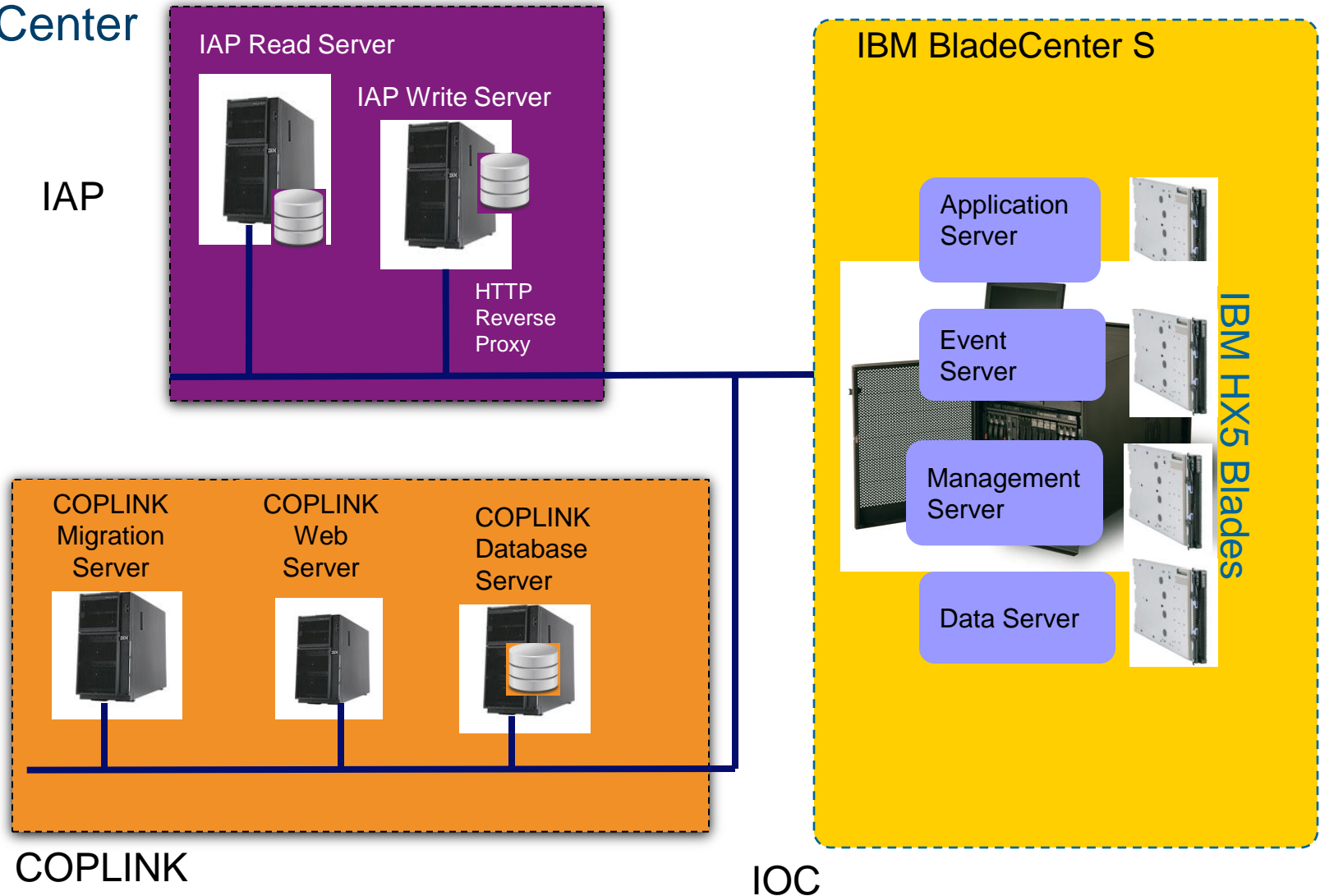
1. Chrome and Safari were tested but not officially supported
2. Supported Dojo is V1.7.2
3. Cognos in IOC requires DataDirect ODBC driver to talk to MS-SQL

Know your physical deployment options: (1) Regular Servers*



*Can be Virtual Machines

Know your physical deployment options: (2) Regular Servers* + BladeCenter



Know your physical deployment options: (3) BladeCenter

IBM BladeCenter S



Application
Server

Event Server

Management
Server

Data Server

IAP Read
Server

IAP Write
Server

CopLink DB
Server

CopLink Web
Server

CopLink
Migration
Server



IBM HX5 Blade s

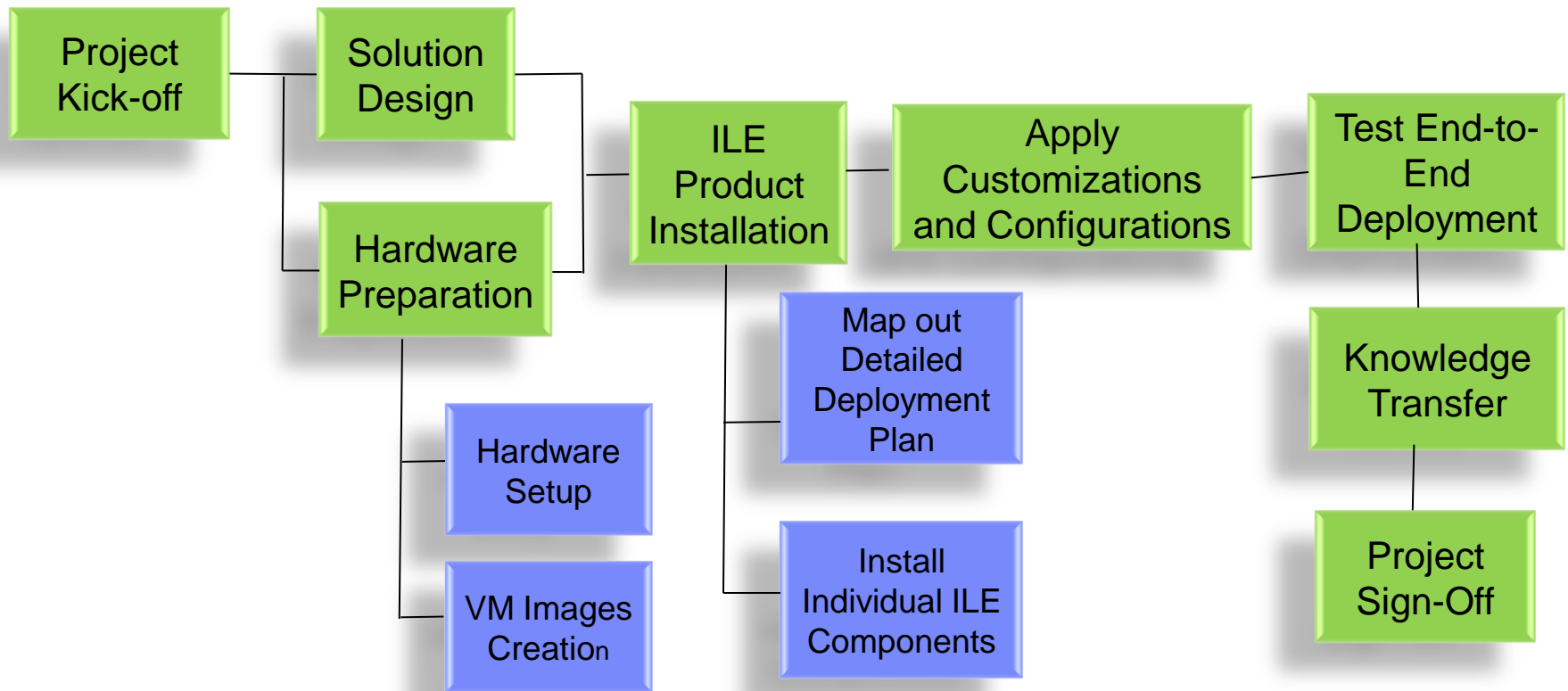
Know your physical deployment options: (4) PureFlex

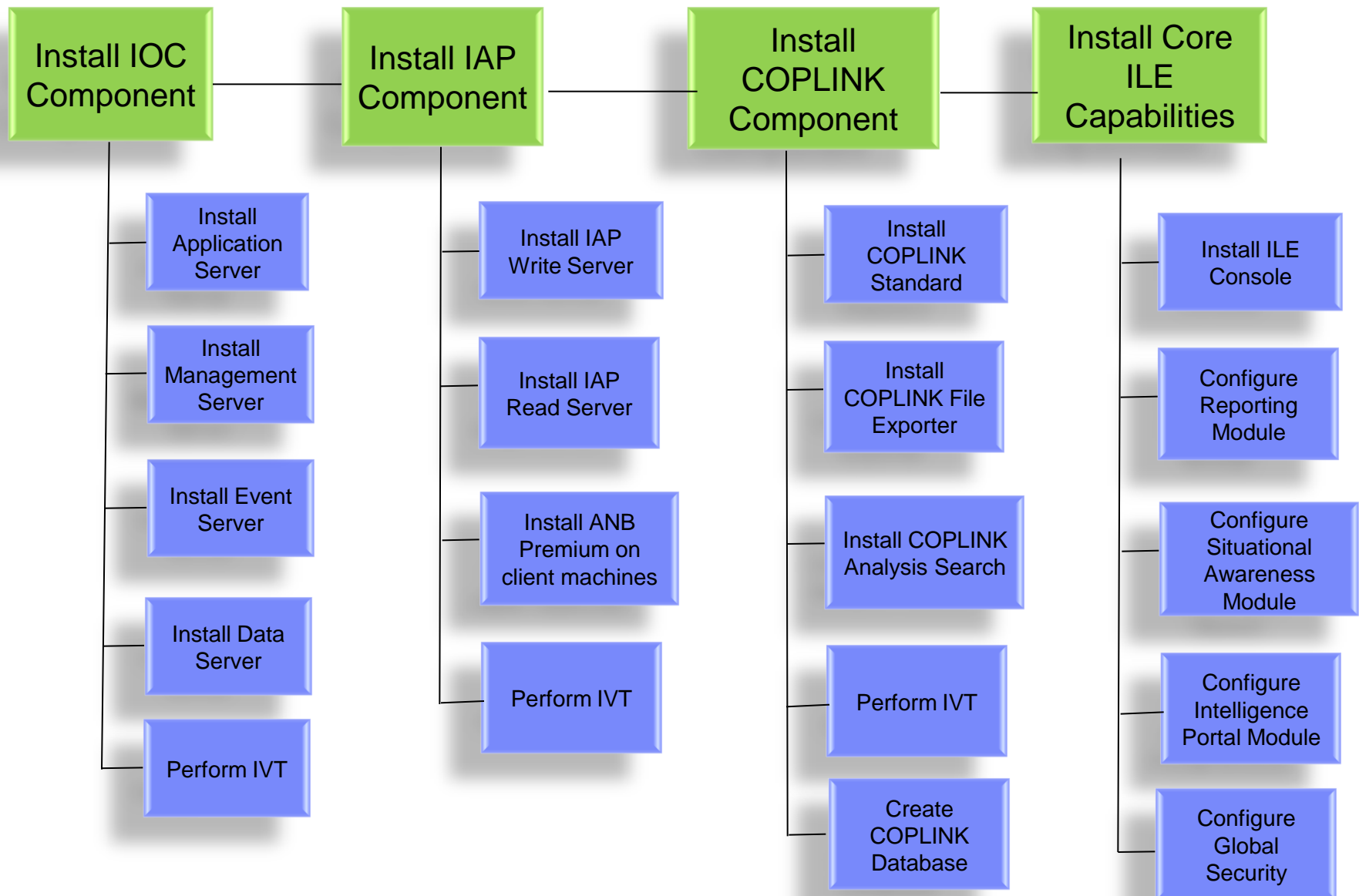
- A PureFlex System configuration has these main components:
 - Preinstalled and configured IBM Flex System Enterprise Chassis
 - Compute nodes with either IBM POWER® or Intel Xeon processors
 - IBM Flex System Manager, preinstalled with management software and licenses for software activation
- IBM Storwize V7000 external storage unit
- All hardware components preinstalled in an IBM PureFlex System 42U rack



- Choice of:
 - Operating system: IBM AIX®, IBM i, Microsoft Windows, Red Hat Enterprise Linux, or SUSE Linux Enterprise Server
 - Virtualization software: IBM PowerVM®, KVM, VMware vSphere, or Microsoft Hyper V
- Complete pre-integrated software and hardware

A Template for ILE Deployment





Key Learning Points

- ILE is made up of 3 major components that together implement its key capabilities: Policing Engine, Analysis Engine and Common Portal.
- ILE is governed by a common user registry across all major components but leaving each component to enforce its own security policies against the current user.
- There are a few options for deploying ILE at a customer site. The best option will always depend on customer's requirements and priorities.

For more information

- [Get the IBM i2 Intelligence Law Enforcement White Paper](#)
- [IBM i2 Intelligence Law Enforcement V1.0](#)
- [IBM i2 Intelligence Analysis Platform Website](#)
- Technical Contacts
 - Wilfred Jamison
 - Ross Maughan

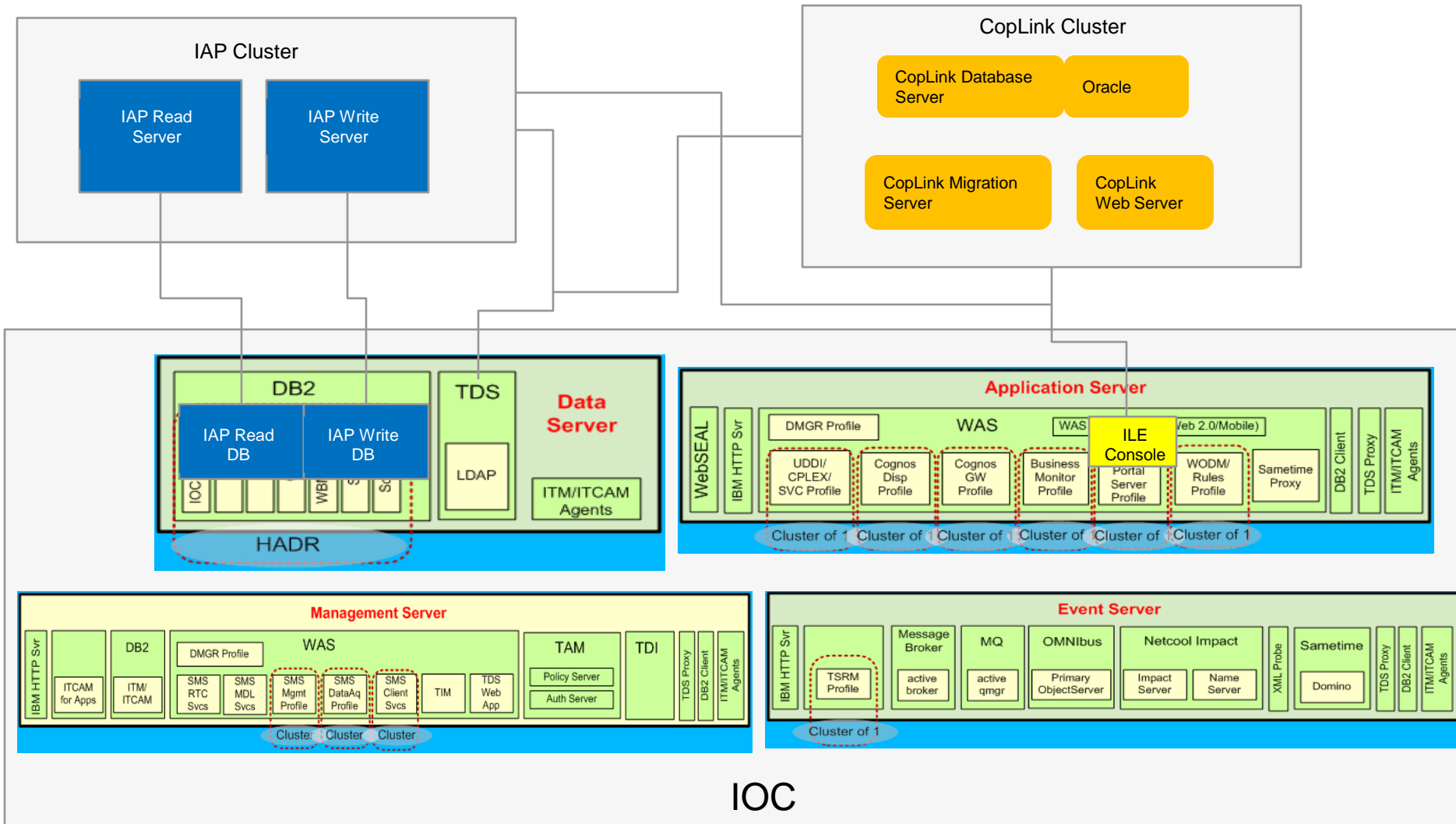
Technical Solutions Overview

IBM i2 Intelligent Law Enforcement and Fraud Intelligence Analysis

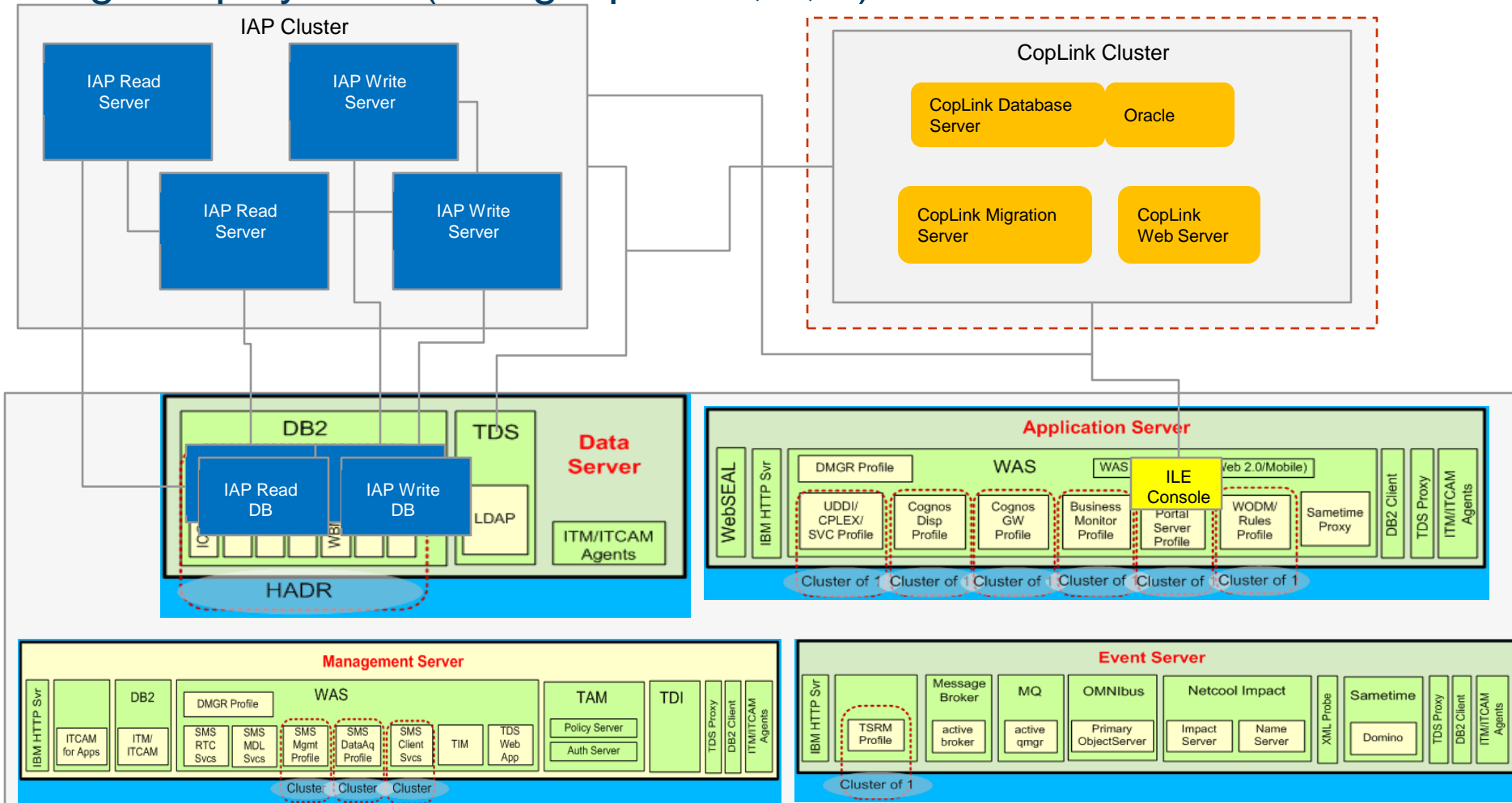
Backup Slides

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Entry Level to Medium Deployment (Using Option 1, 2)

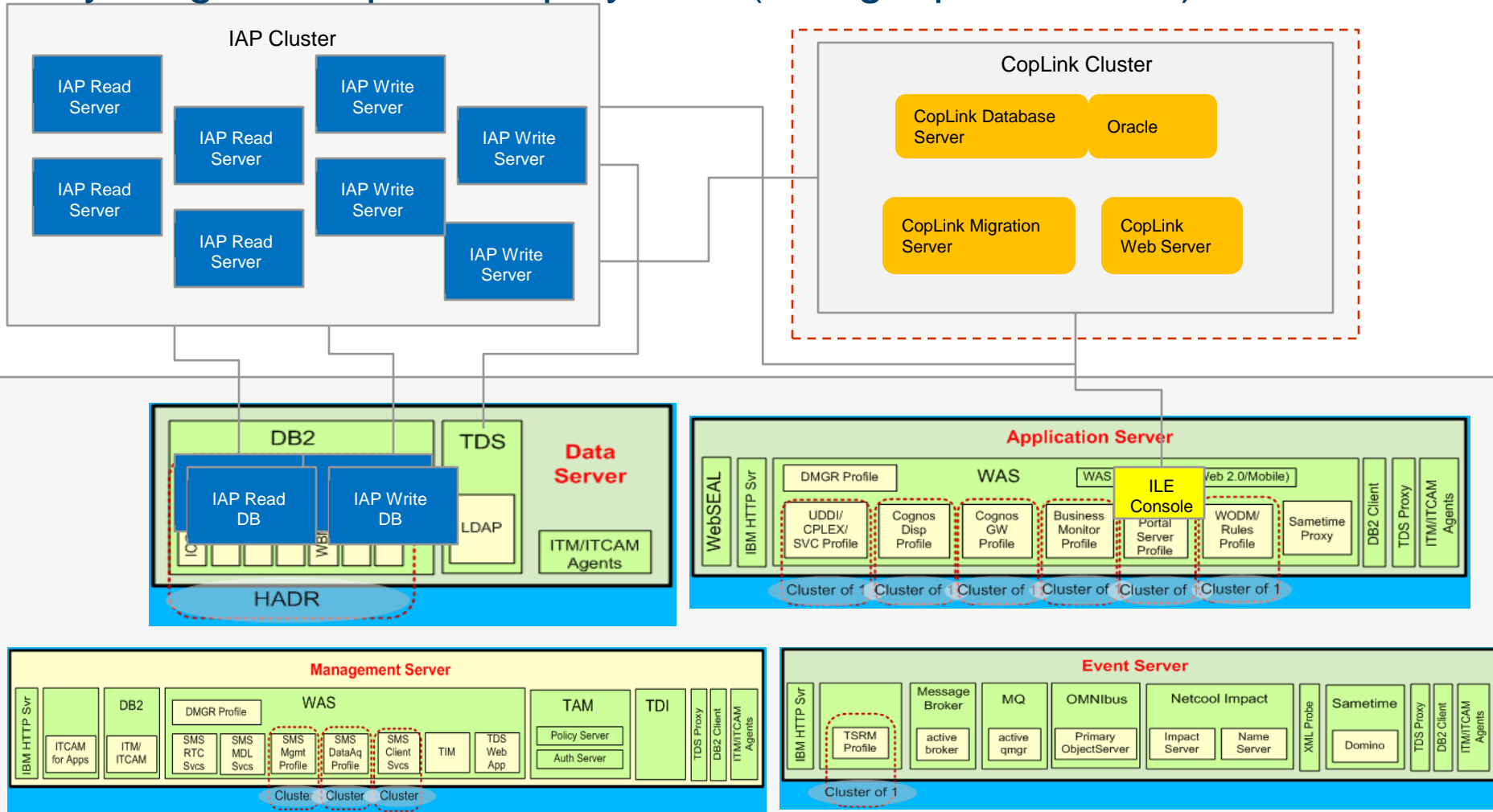


Large Deployment (Using Option 2, 3, 4)



IOC

Very Large/Enterprise Deployment (Using Option 2, 3, 4)



IOC