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EAI Implementation Workshop
Part 1

14 May, 2002

1:30-4:00 PM

Room 221 BC

Dial-In: (877) 714-4281

Meeting ID: 4057

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Agenda

Part I: Overview of EAI & Intro To EAI Concepts

- Overview of EAI
- Intro to EAI Concepts
- Break

Part II: Products & Architecture

- Products
- Overview of the EAI Architecture
- Questions & Answers

Appendices

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Part I: Overview of EAI & Intro to EAI Concepts

Overview of EAI

- What is EAI?
- What is the context of EAI at FSA?
- What are the benefits of EAI?
- What is the history of EAI at FSA?

Intro to EAI Concepts

- What is the Bus?
- Messaging Concepts
  - What is a Message?
  - What is a Queue?
  - What is a Queue Manager?
  - What is a Channel?
- What is an Adapter?
- What is a Component?
- What are the steps to build an interface?

What is EAI?

E → FEDERAL STUDENT AID → ***Enterprise***

A → CPS | eCB | FMS | COD | Others… → ***Application***

CPS	eCB	FMS	COD
Central Processing System	eCampus Based	Financial Management System	Common Origination & Disbursement

I → DLSS, CPS, NSLDS, SAIG, PEPS → EAI Bus Servers → FMS, eCB, eMPN, P-Note, More.. → ***Integration***

…EAI means integration of applications across the enterprise.

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EAI is defined as…

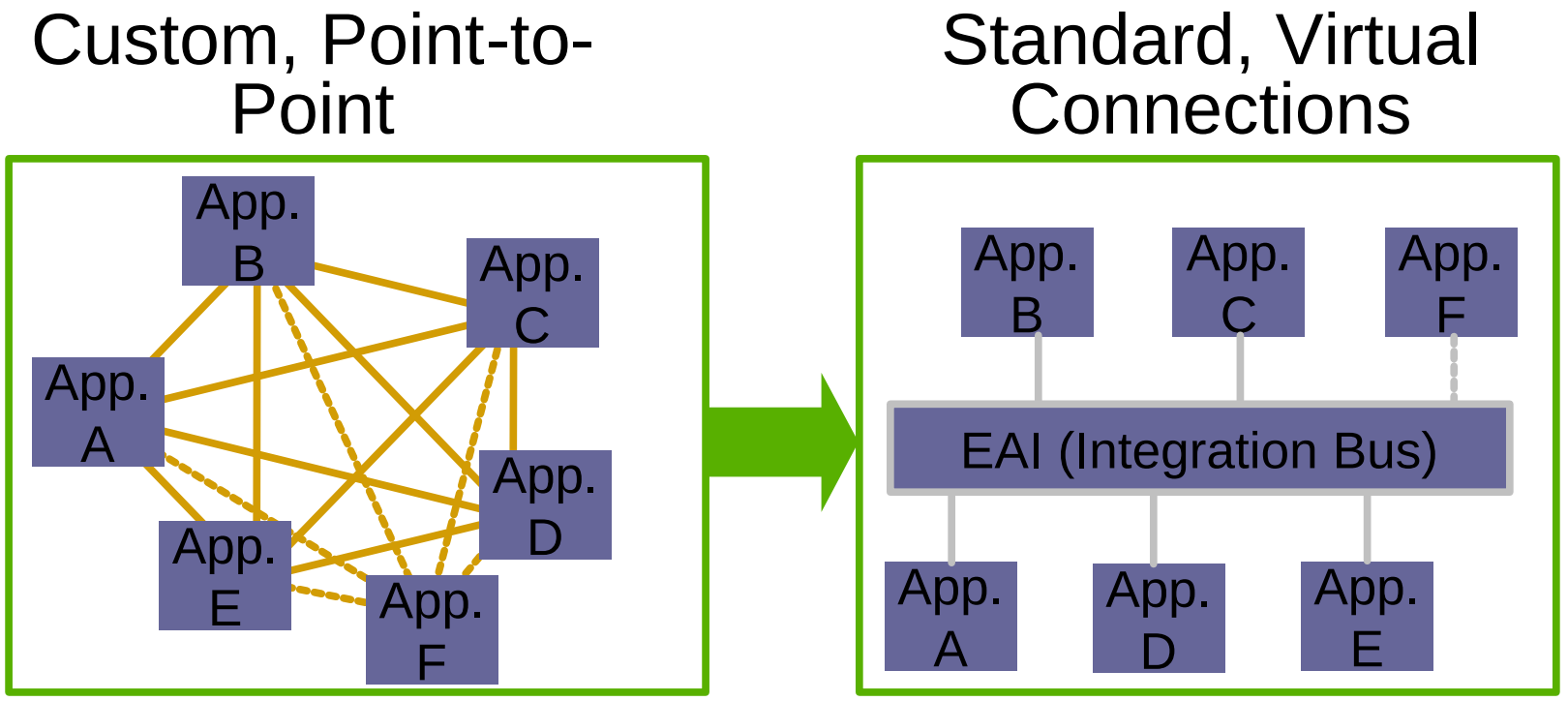
…a set of technology services that enables the integration of disparate systems, processes and data to support end-to-end business processes.

- The Enterprise Application Integration (EAI) system is part of the Enterprise Architecture for the FSA system as part of the Modernization Blueprint.
- EAI is a set of common technology services that enables the sharing of processes and data of disparate systems to support end-to-end business processes.
- The EAI architecture enables many "stovepipe" applications to exchange information via common, reusable methods and infrastructure.
- EAI provides the capability to integrate web-based applications, the Data Warehouse environment, COTS packages, and existing legacy systems within the FSA technical environment.

So what does EAI do?

- **It integrates data located on disparate systems**
- **It translates data so it is understood by all of the systems that need it**
- **It facilitates data exchange and leverages already existing business processes**

EAI Enhances Tools and Technologies to Tie Applications Together.



But in an improved, more flexible manner.

The Challenge at FSA

FSA

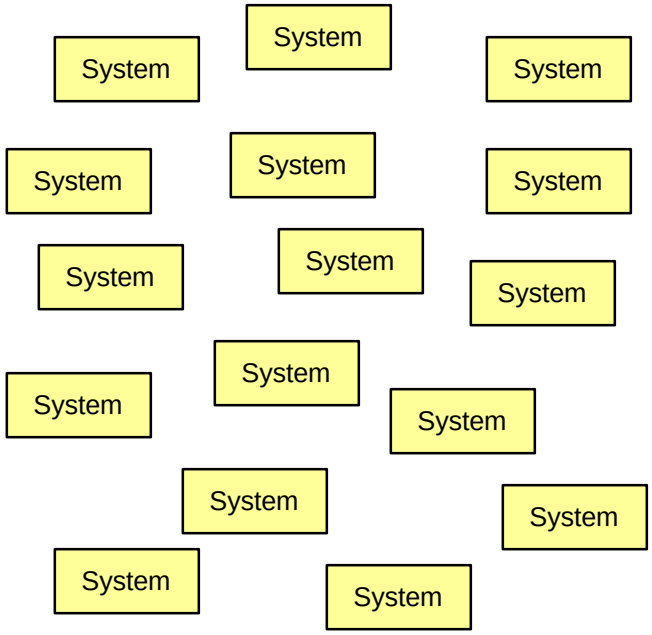
Three Channels

Financial Partners

Schools

Students

Data stored in Disparate Systems

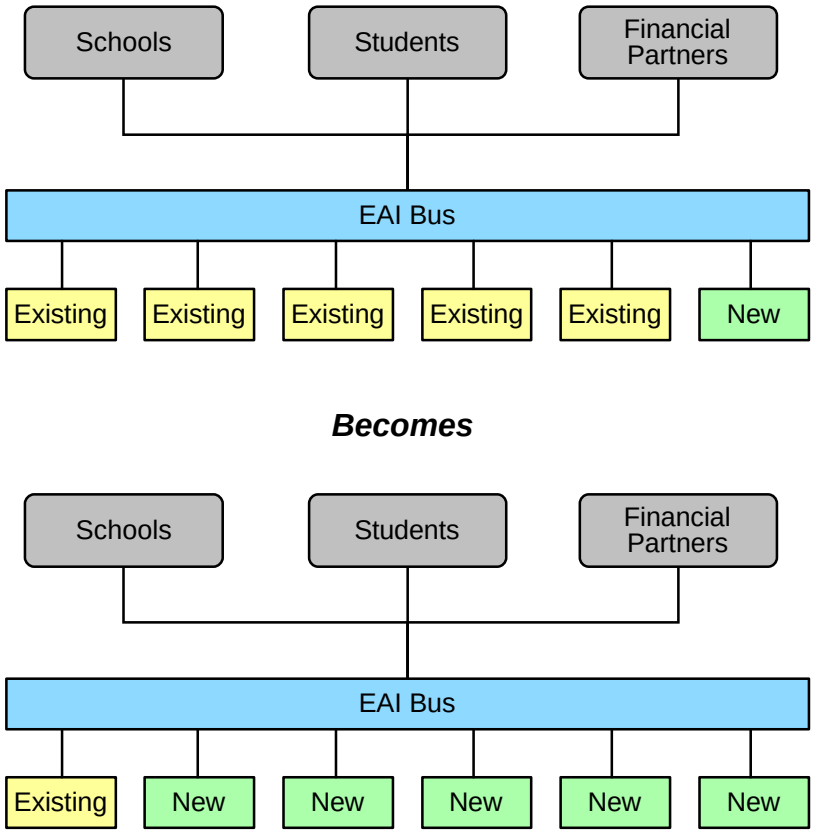


One enterprise, one mission…

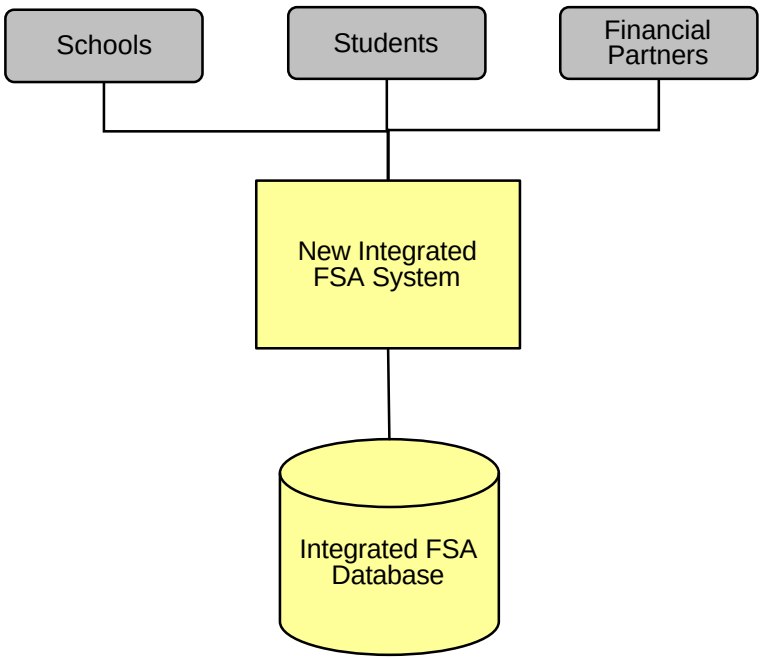
Data is stored on different systems using different platforms…and languages

FSA's Modernization Approach Alternatives

Evolutionary Approach
"Build a Little, Test a Little"



Monolithic Approach
"Big Bang"

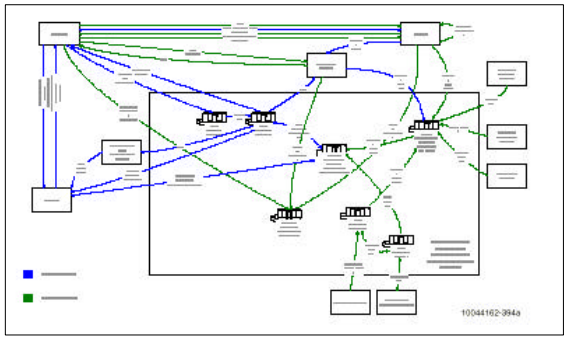


Managing Many Interfaces

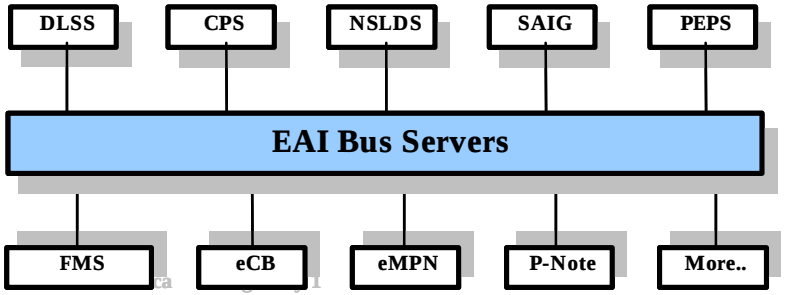
Challenge:

Legacy systems hold valuable business functionality and data that cannot be easily updated or replaced with new technology. This information is currently housed in a number of "stovepipes" that currently interface with other systems through complex point-to-point interfaces.

"As is"
Existing Hairball



"To Be"
Integrated Business Solutions



Benefits of EAI

- Integration development is cheaper
- Operating costs are lower
- Increased application development capacity
- Faster responsiveness to change
- Increased manageability and maintainability
- Improved access and distribution of information
- Visibility and control over transaction processing
- Reusability of components

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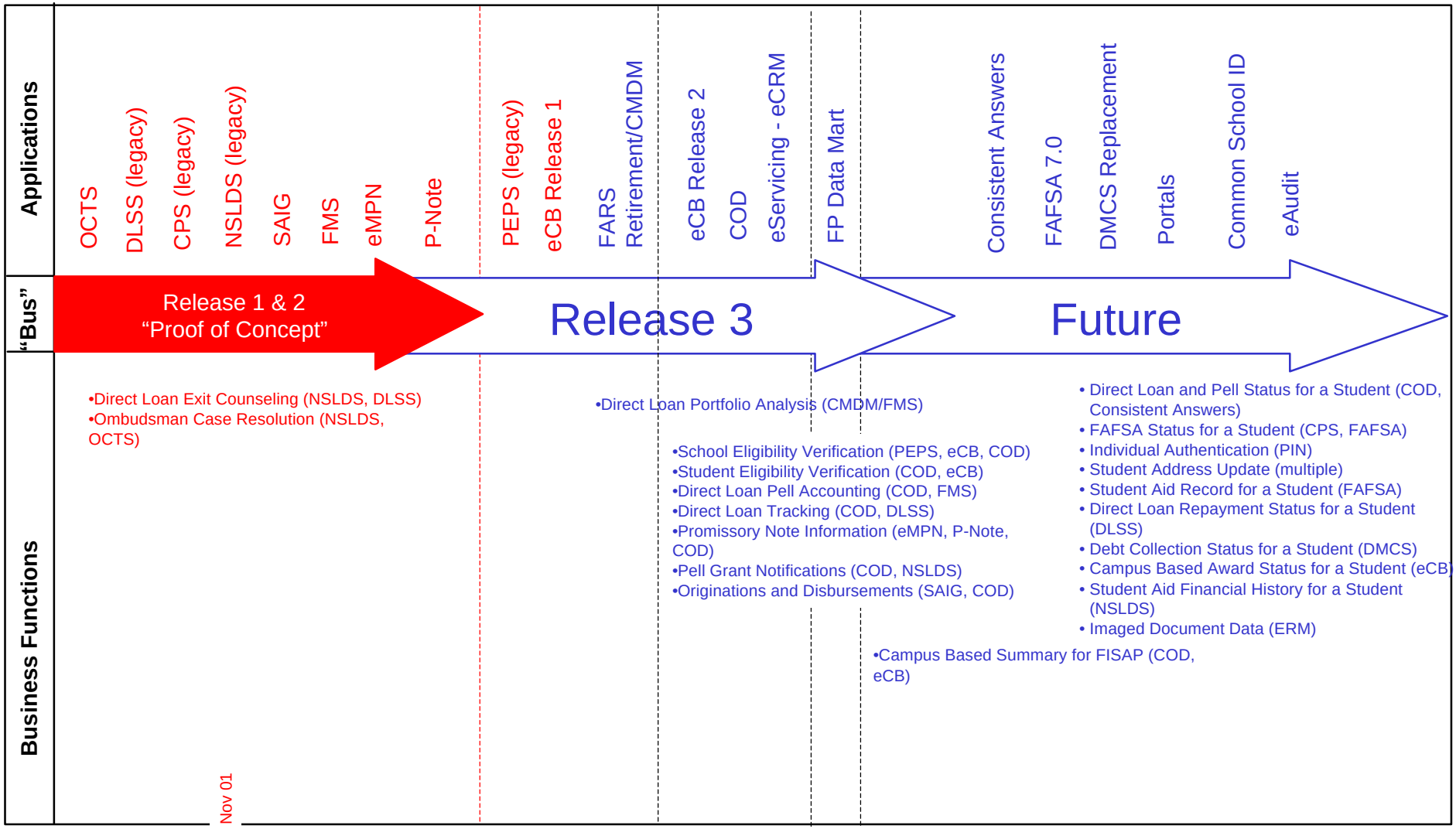
What have we accomplished?



Concepts

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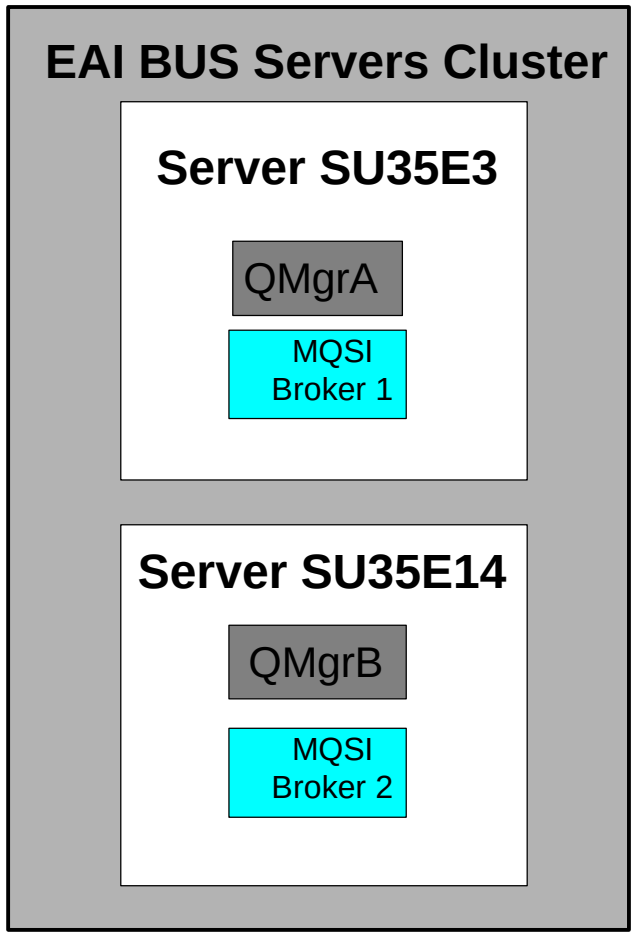
What is the EAI Bus?

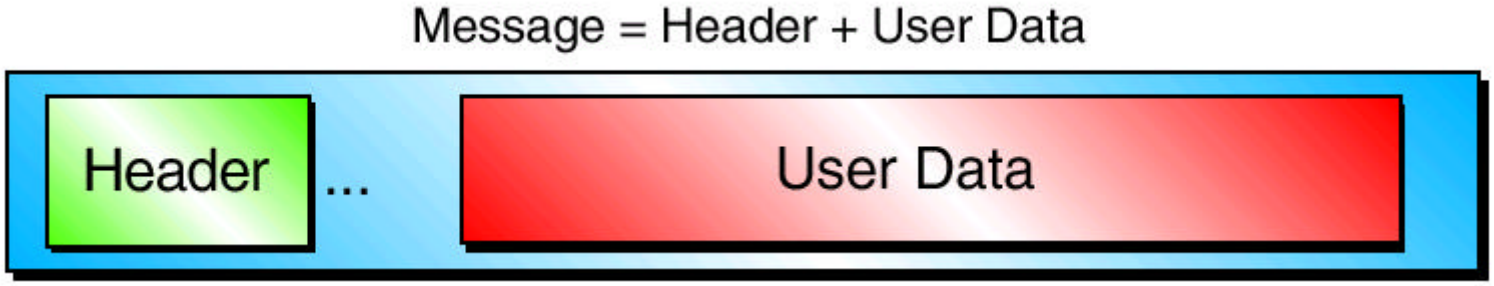


The EAI Bus consists of two Sun Microsystems Servers Running in an MQSeries cluster.

MQSeries cluster:

1. Reduces MQSeries system management
2. Provides MQSeries load balancing
3. Both servers are active.

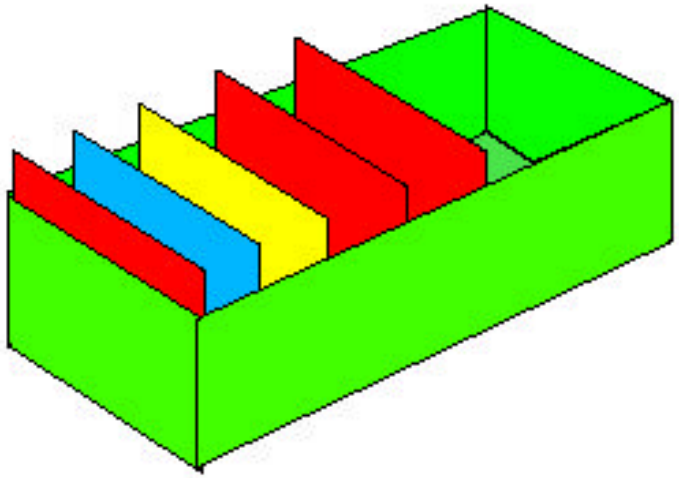
What's a Message?



Up to 100MB message length

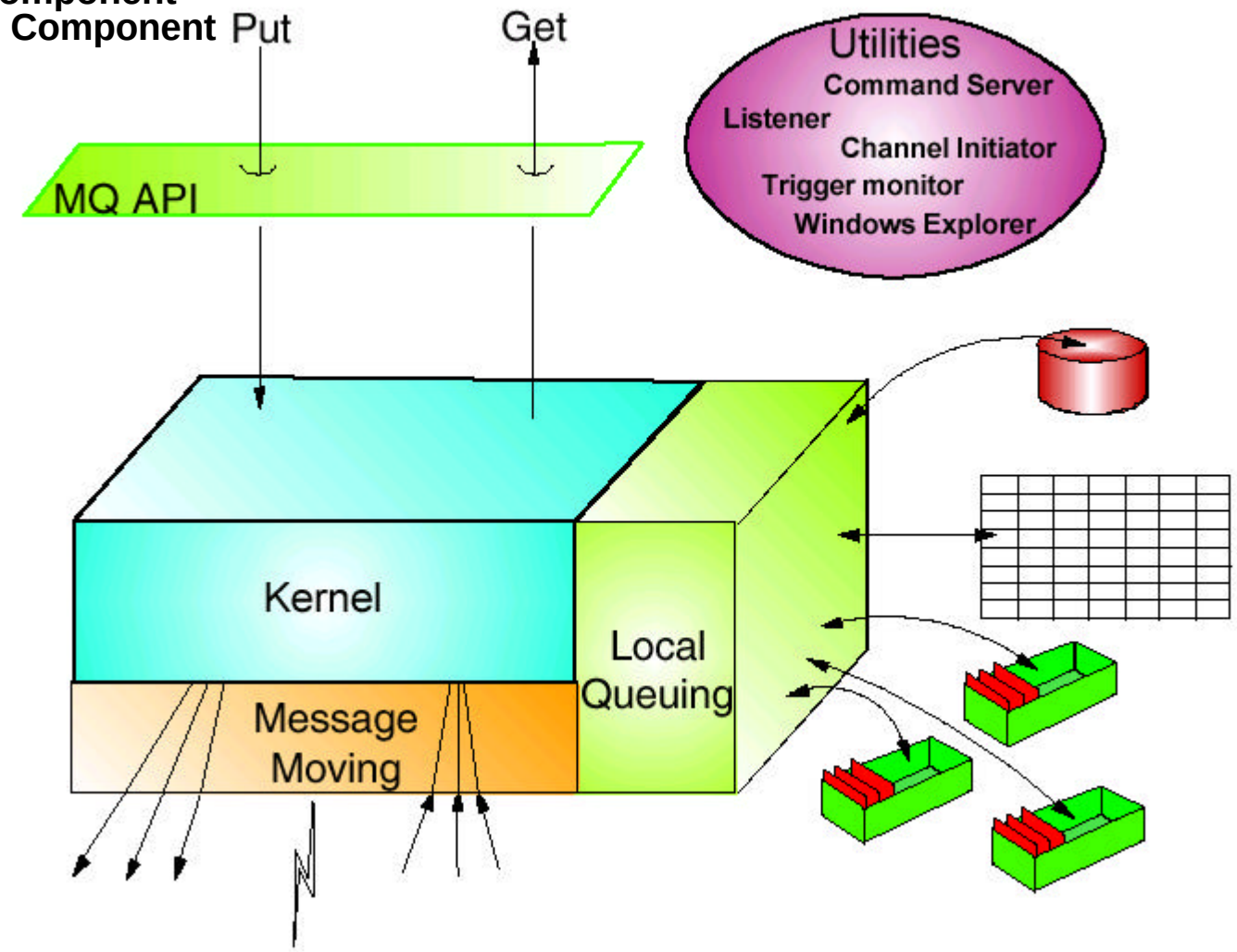
What's a Queue?

Place to hold messages

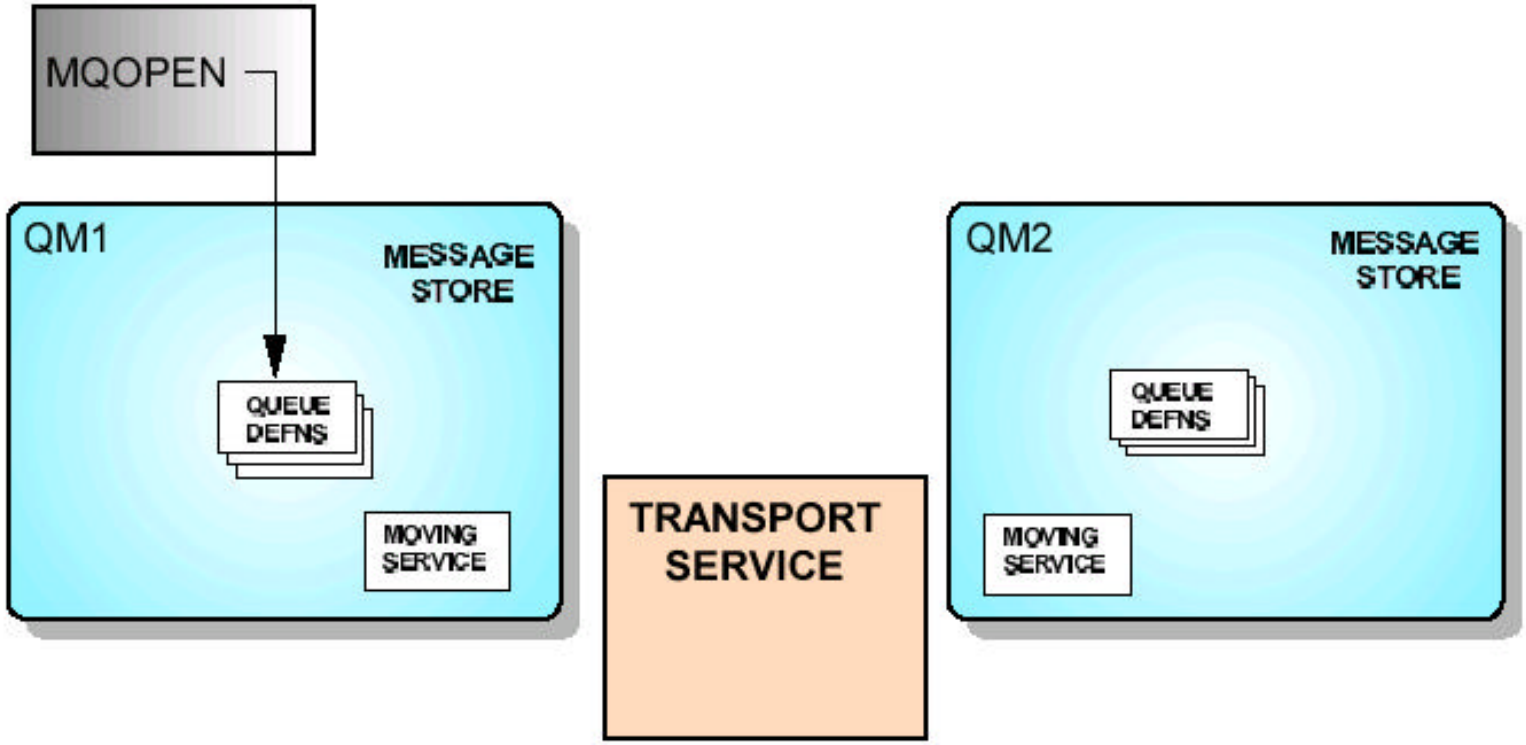


A Queue manager is made of 3 components

1. Kernal
2. Local Queuing Component
3. Message Moving Component

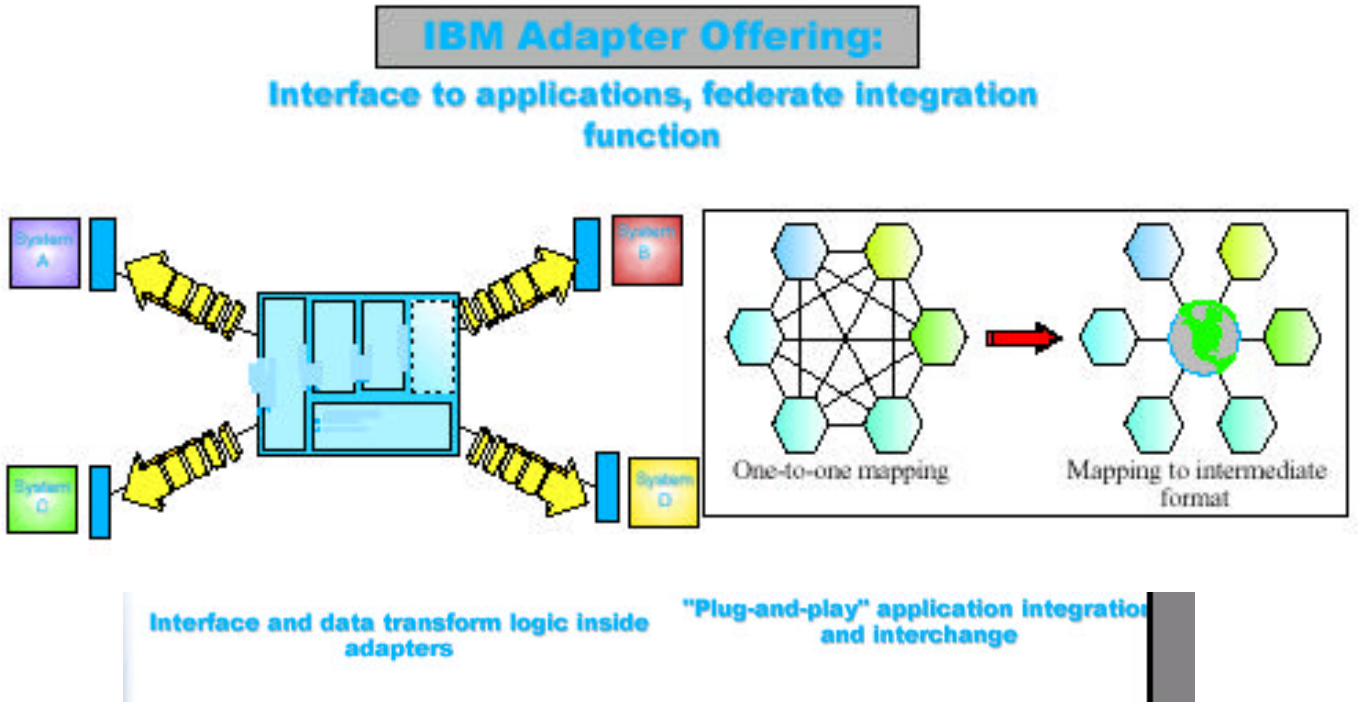


Channel Concepts



What is an adapter?

An adapter connects…



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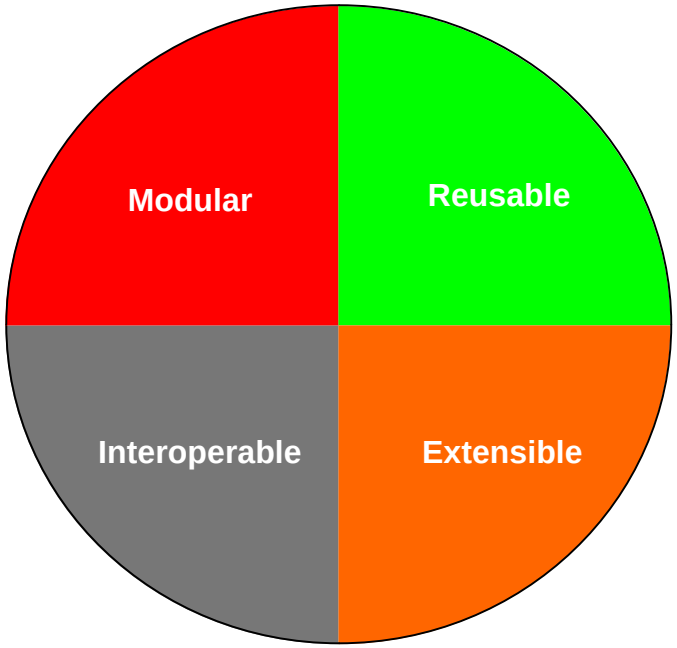
What is a component?

Modular

Individual components can be mixed and matched to meet specific needs

Reusable

Once built, the component can be leveraged by other applications



Interoperable

Integration with new and existing systems is facilitated through open standards

Extensible

Components can be modified and adapted to meet specific application requirements

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Guideline for Team Effort to Build an EAI Interface

Task	Effort (Hrs)		
	Simple	Medium	Complex
Identify target machine	2	4	8
Assess Target Machine (HW Capacity, OS Versions, etc.)	4	12	24
Install MQ Software (MQ Series, Data Integrator, MQMon)	24	24	24
Configure MQ Software and Verify (May include building an interface for test purposes)	24	60	120
Identify Application Interface Functions (Define functional requirements, formats, layouts, Prepare Interface Control Document)	40	120	320
Build Application Interfaces	16	48	120
Test Interfaces (functional and performance)	40	60	120
Migrate Into Production (including Ops Readiness Test)	40	60	80