DataPower XI50z

Smarter Banking Showcase Team
WW Banking Centre of Excellence, IBM Montpellier

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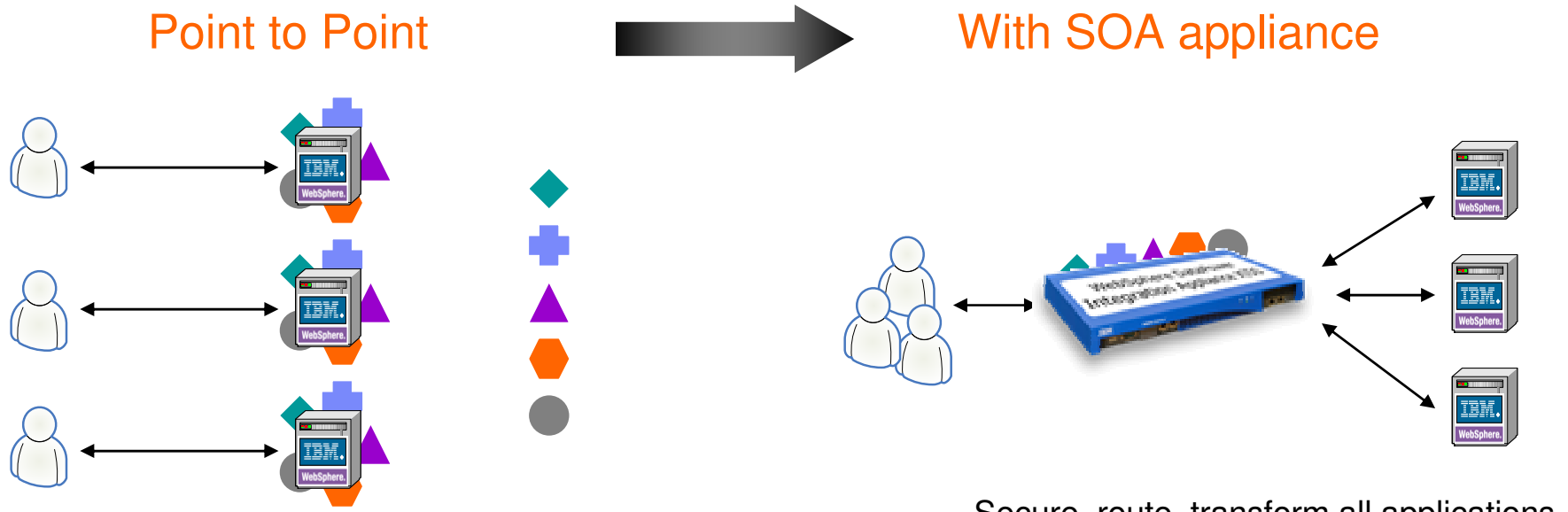
The role of an SOA appliance

- As an ESB (Enterprise Service Bus) to **route**, **transform**, and help **secure** multiple applications without code changes
- Lower cost and complexity
- Enable new business with unmatched performance



Update application servers individually

Secure, route, transform all applications instantly

No changes to applications

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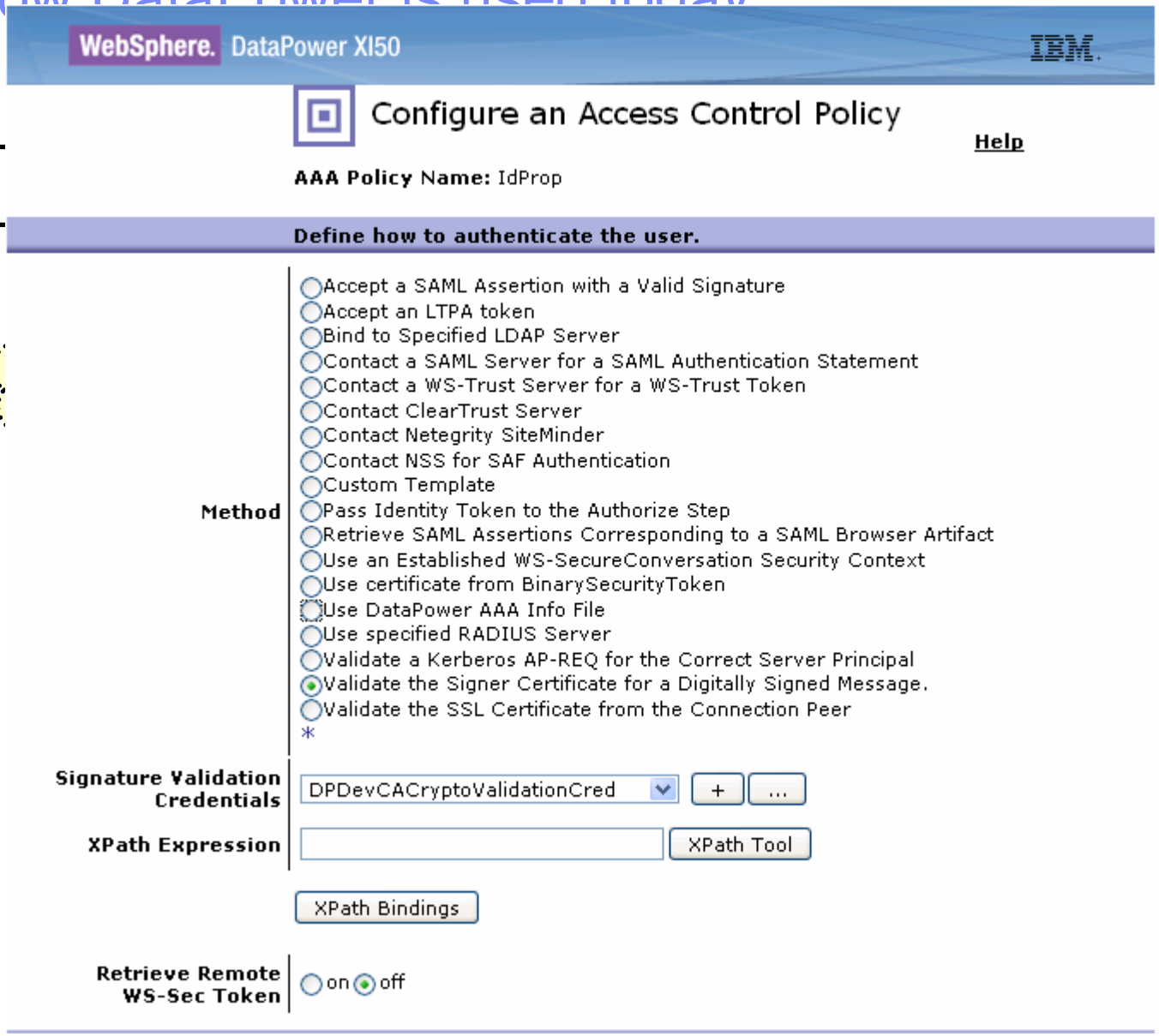
How DataPower is used today



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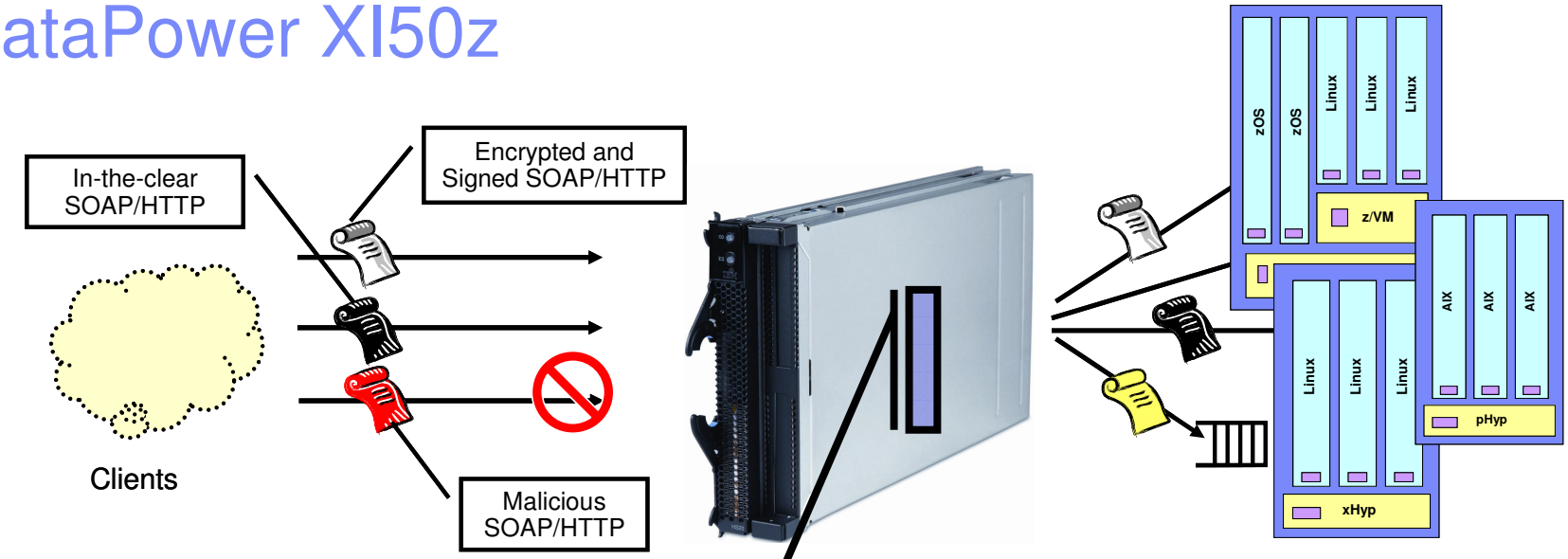
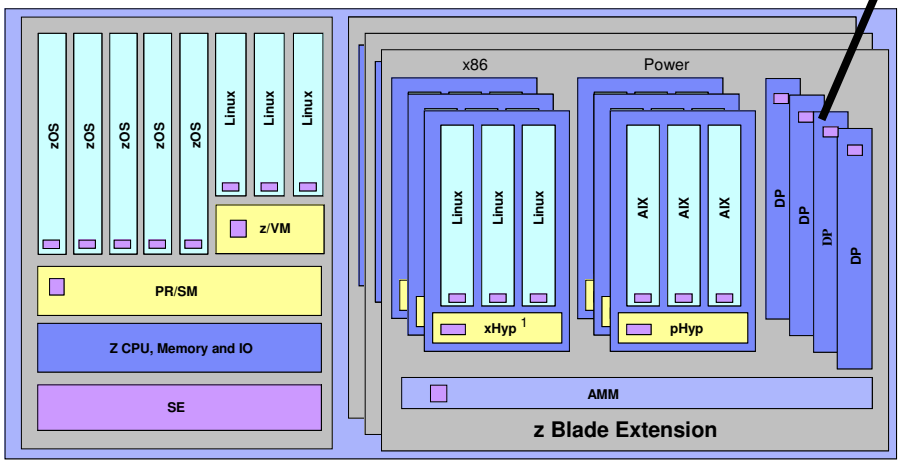
DataPower XI50z





zEnterprise

Additional benefits XI50z

- Fast secure network between DataPower blade and target servers
- Virtual Network Provisioning
- Dynamic Load Balancing (via Sysplex Distributor)
- HMC Console Integration
- Blade hardware management
- DataPower Firmware Load and Update
- Monitoring and Reporting

[1] All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

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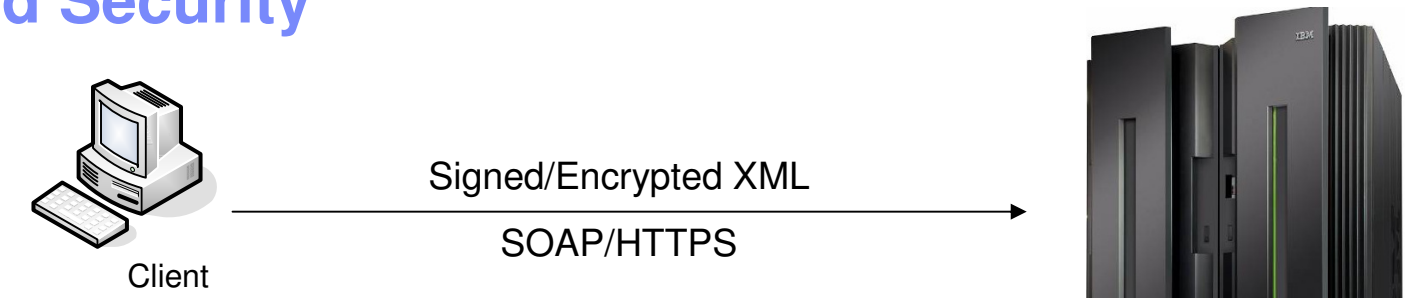
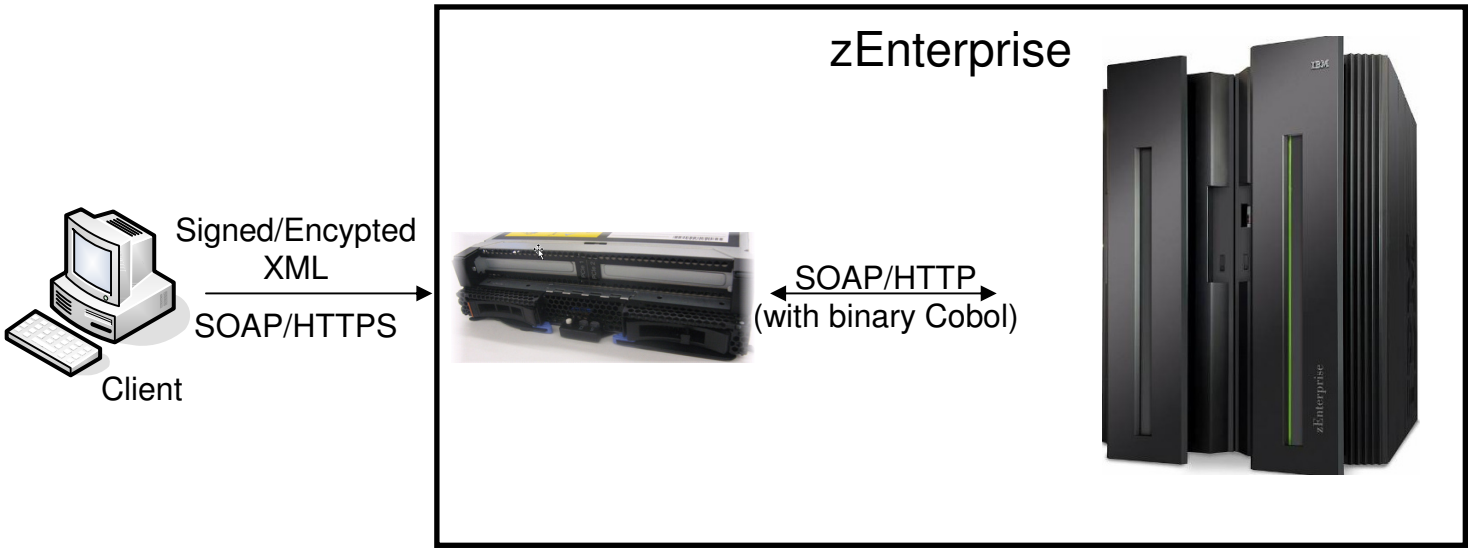
Legacy Enablement: XML Parsing, binary transformation and Security



Significant CPU consumption for XML processing



Reduced CPU consumption for XML processing

- **Backend can be anything: CICS, IMS, WAS, Message Broker…..**
- **Connection can be anything: binary over MQ, SOAP….**

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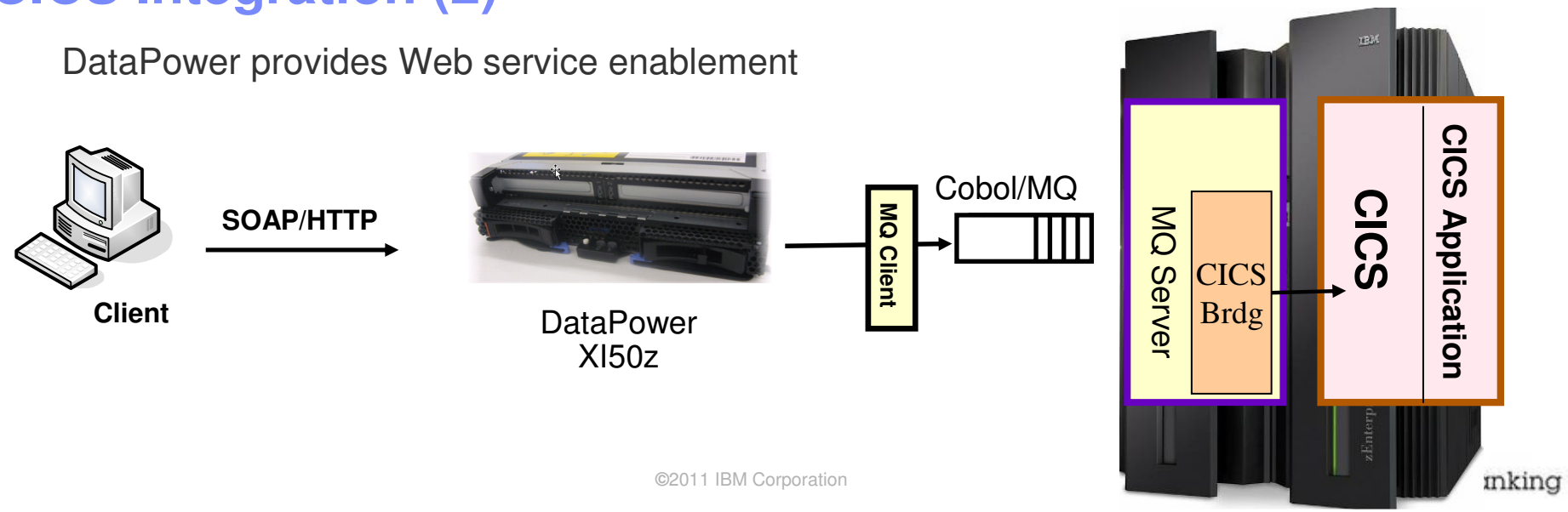
CICS Integration (1)

Security and Management for CICS Web services

CICS Integration (2)

DataPower provides Web service enablement



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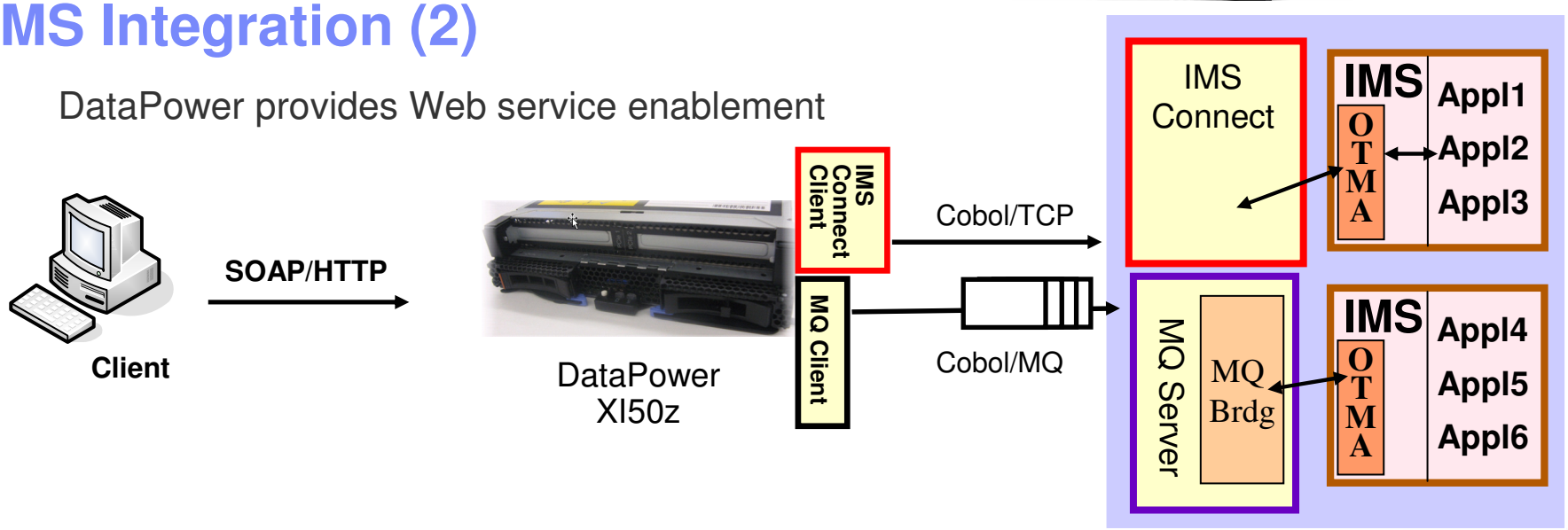
IMS Integration (1)

Security and Management for IMS Web services

IMS Integration (2)

DataPower provides Web service enablement



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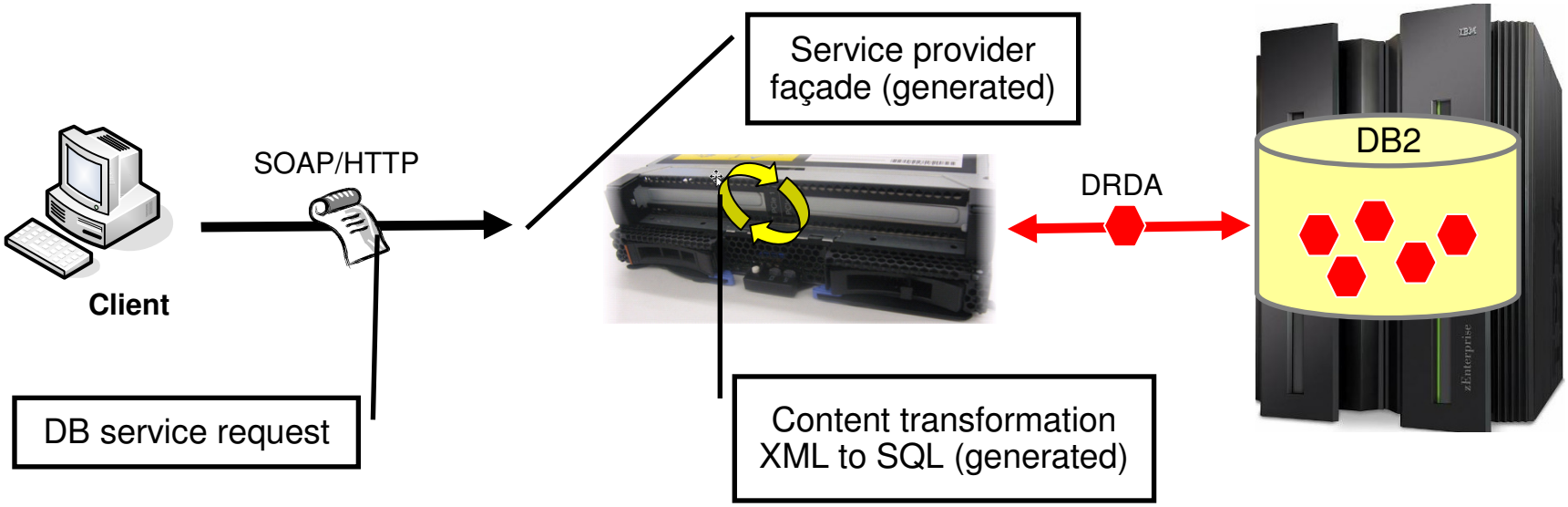
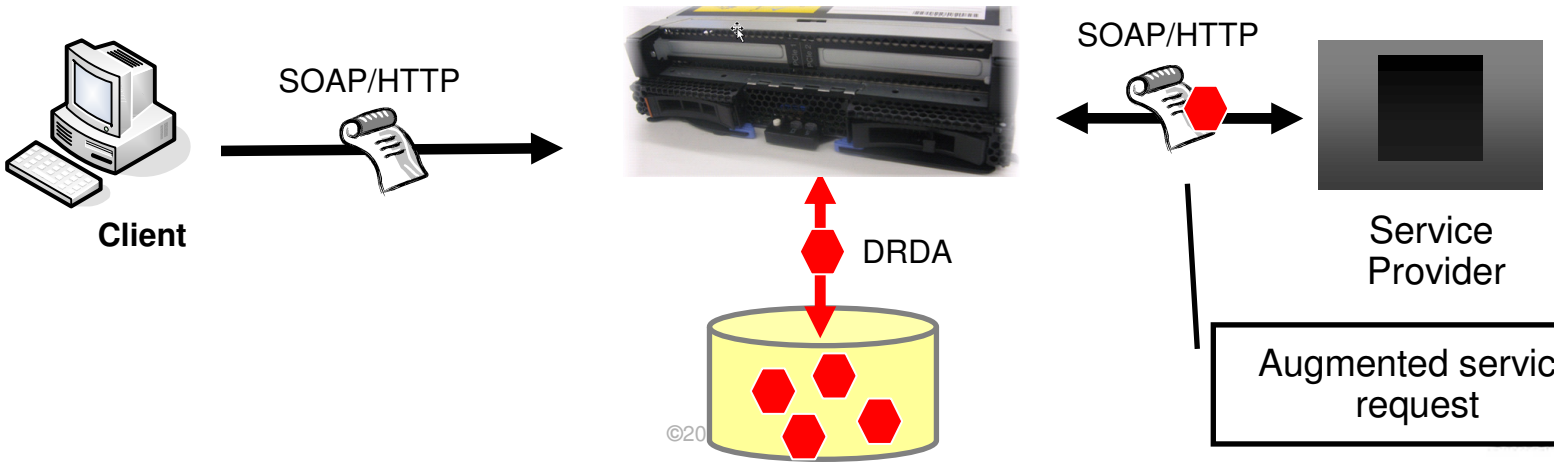
DB2 Integration (1)

DataPower provides enablement for Data Web services

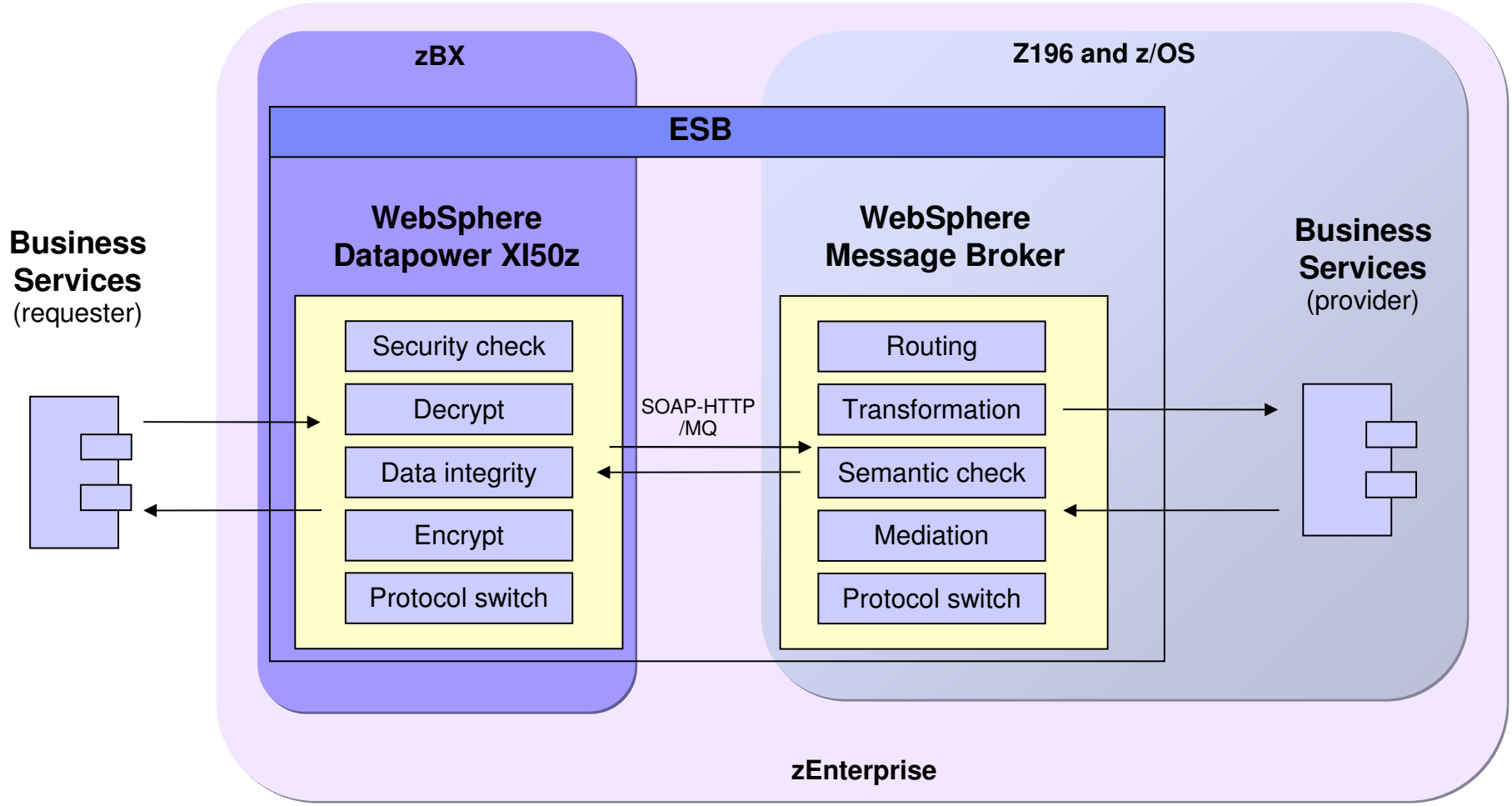


DB2 Integration (2)

Web service requests are augmented with information from the database



Federated ESB use case



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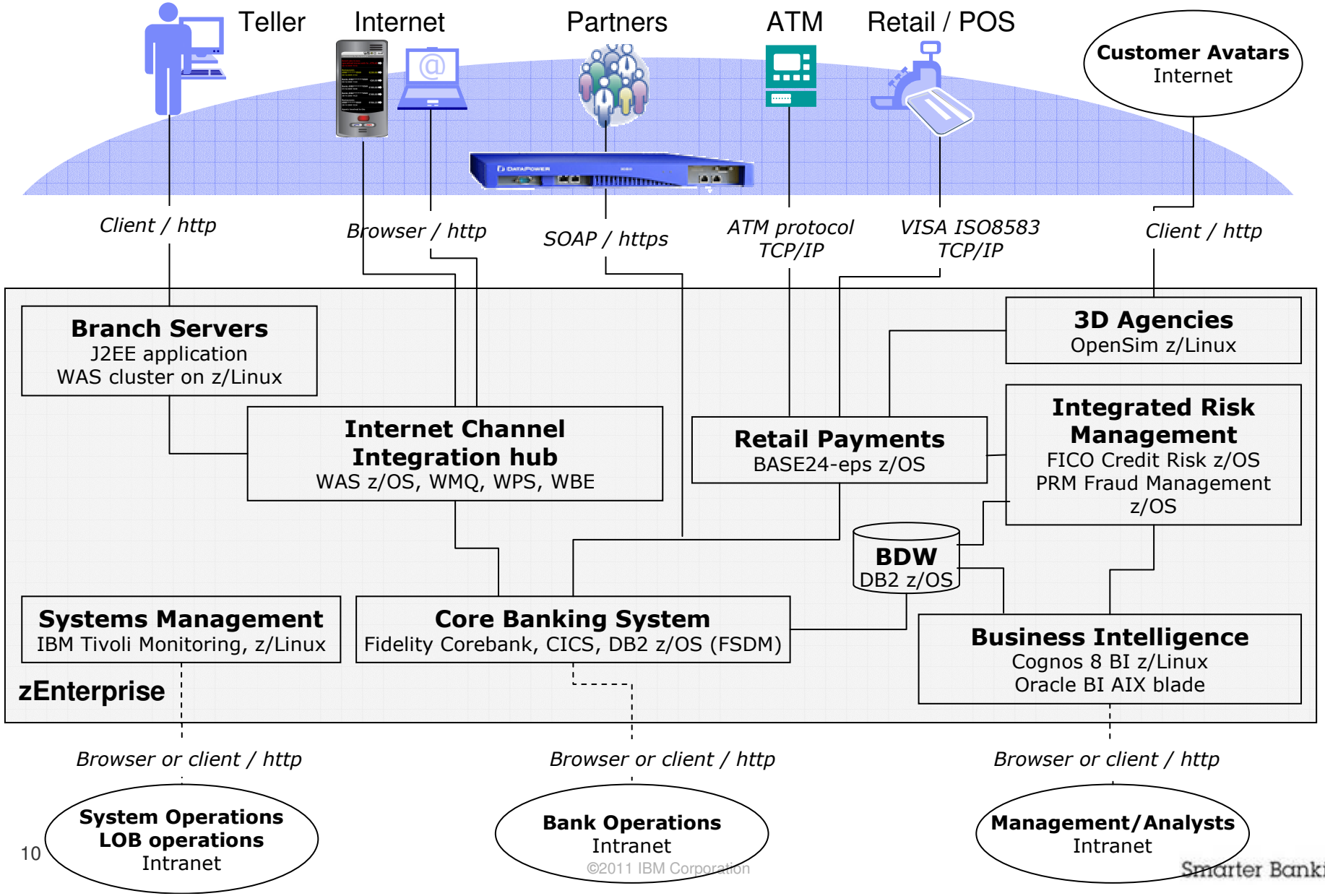
How DataPower is used in showcase



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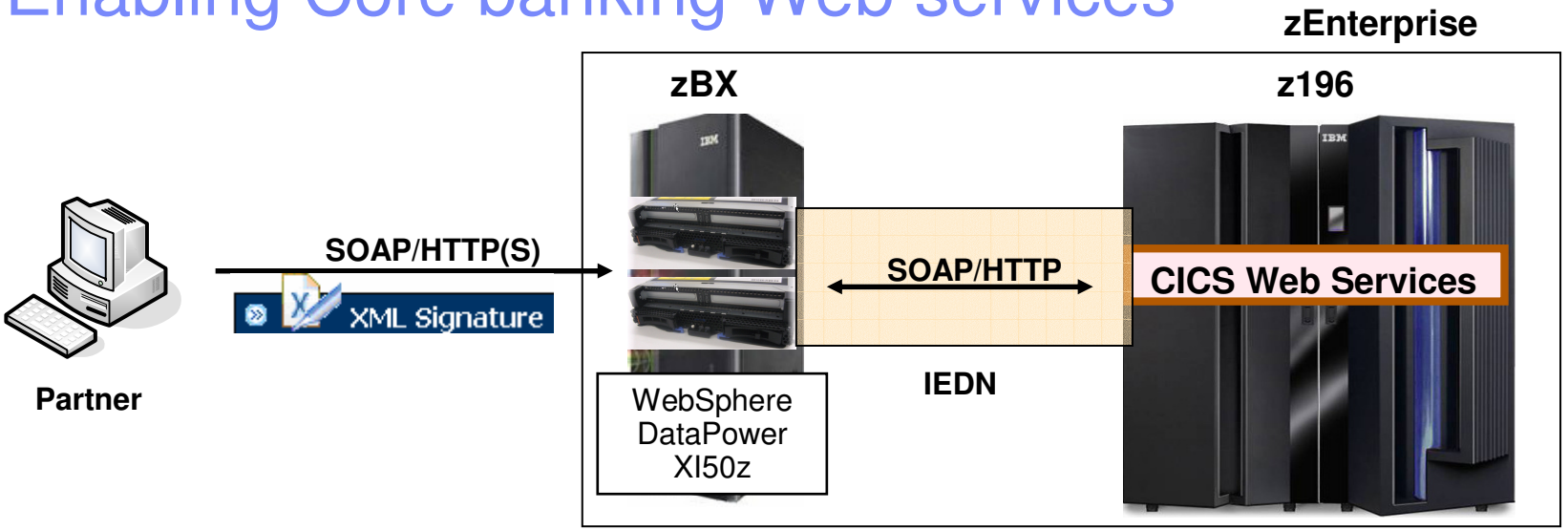
Enabling Core banking Web services



Service	Security	Data transformation	Monitoring
Posting inquiry – retrieve list of account transactions (message length<5K)	XML digital signature and propagate identity (DN) to CICS	None	ITCAM for SOA and ITCAM Agent for DataPower for service monitoring
Transfer external – transfer between accounts (message length<5K)	XML digital signature and propagate identity (DN) to CICS	None	ITCAM for SOA and ITCAM Agent for DataPower for service monitoring
Transfer external batch – batch of transfers between accounts (message length=250K)	BasicAuth over SSL and propagate identity (DN) to CICS	Transform XML body into CICS binary Container and transport using MTOM/XOP	ITCAM for SOA and ITCAM Agent for DataPower for service monitoring

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Sol

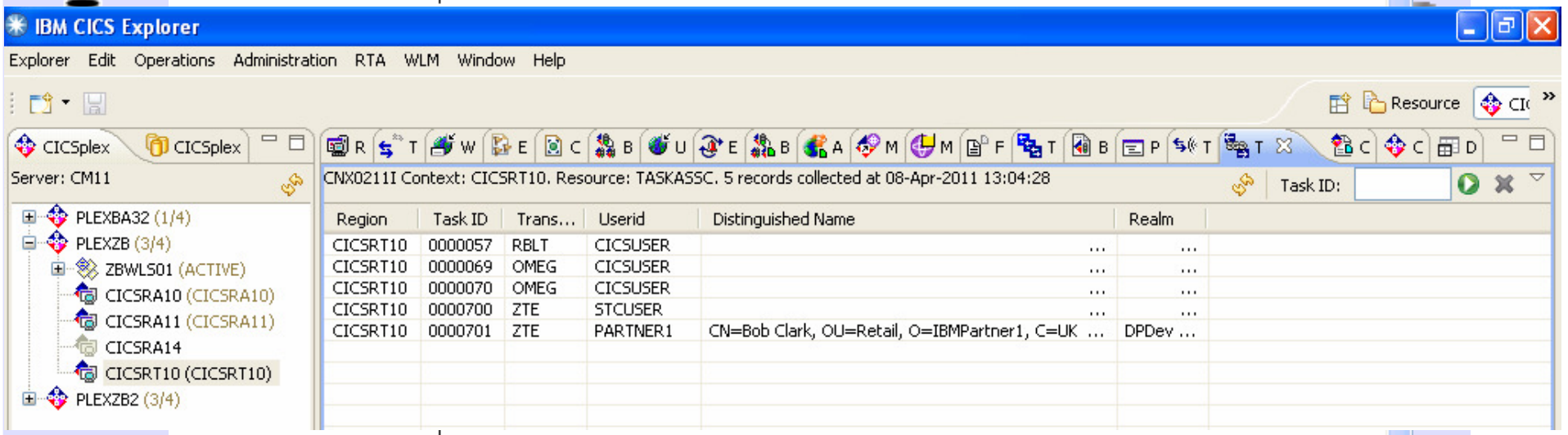
Logging

Enable Logging of Allowed Access Attempts	on / off *
Log Level for Allowed Access Attempts	information
Enable Logging of Rejected Access Attempts	on / off *
Log Level for Rejected Access Attempts	warning

Rule:

Rule Name:

Create rule:



Generate an LTPA Token	on / off
Generate a Kerberos SPNEGO token	on / off
Request TFIM Token Mapping	on / off
Generate an ICRX token for z/OS Identity Propagation	on / off
Actor/Role Identifier	
ICRX Realm	DPREG1

Create Reu

ner1, C=UK

rter Banking

Message optimization for very large messages

Partner Application

Web services requester

JAX-WS Web Services

Short XML message

- **1K in length**
- **1 element**

<tns:w_comm_i>
<href="cid:f7269b7
9-2d87-4687-941d-
225829c20246"/></
tns:w_comm_i>

Binary attachment

- CICS COMMAREA

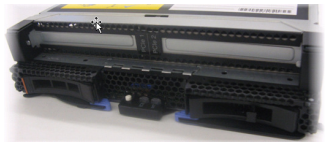
```
f2 f0 f2 f8 60 f0 f3
c6 7b c5 e7 e3 40 f2
60 f1 f5 4b f0 f0 4b
```

Long XML message

- **>250K in length**
- **> 18K elements**

<tns1:transfer_pd_
bd><tns1:pstg_org
nl_amt>50</tns1:p
stg_orgnl_amt><tn
s1:pstg_orgnl_iso4
217>GBP</tns1:ps
tg_orgnl_iso4217>
<tns1:fee_on_debit
_ind>0</tns1:fee_o
n_debit_ind><tns1:
fsre_rfrnc_id></tns
1:fsre_rfrnc_id></t
ns1:transfer_pd_bd

SOAP/HTTP(S)



WebSphere DataPower XI50z

SOAP/HTTP

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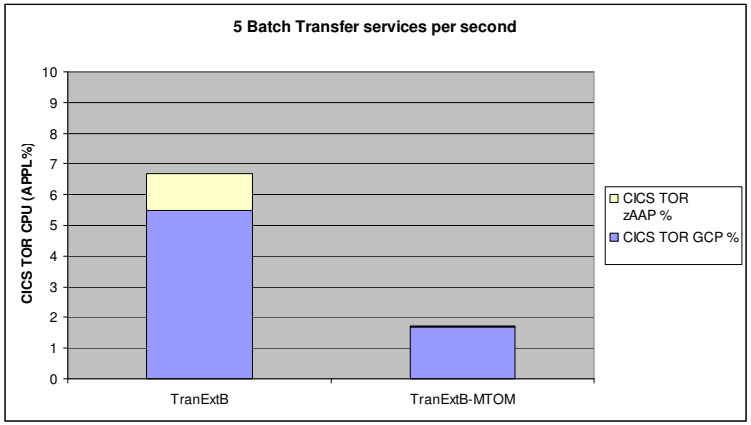
z/OS

CICS

Saves MIPs



1. Data transformation from XML to COMMAREA using WTX
2. Convert message to MTOM/XOP format

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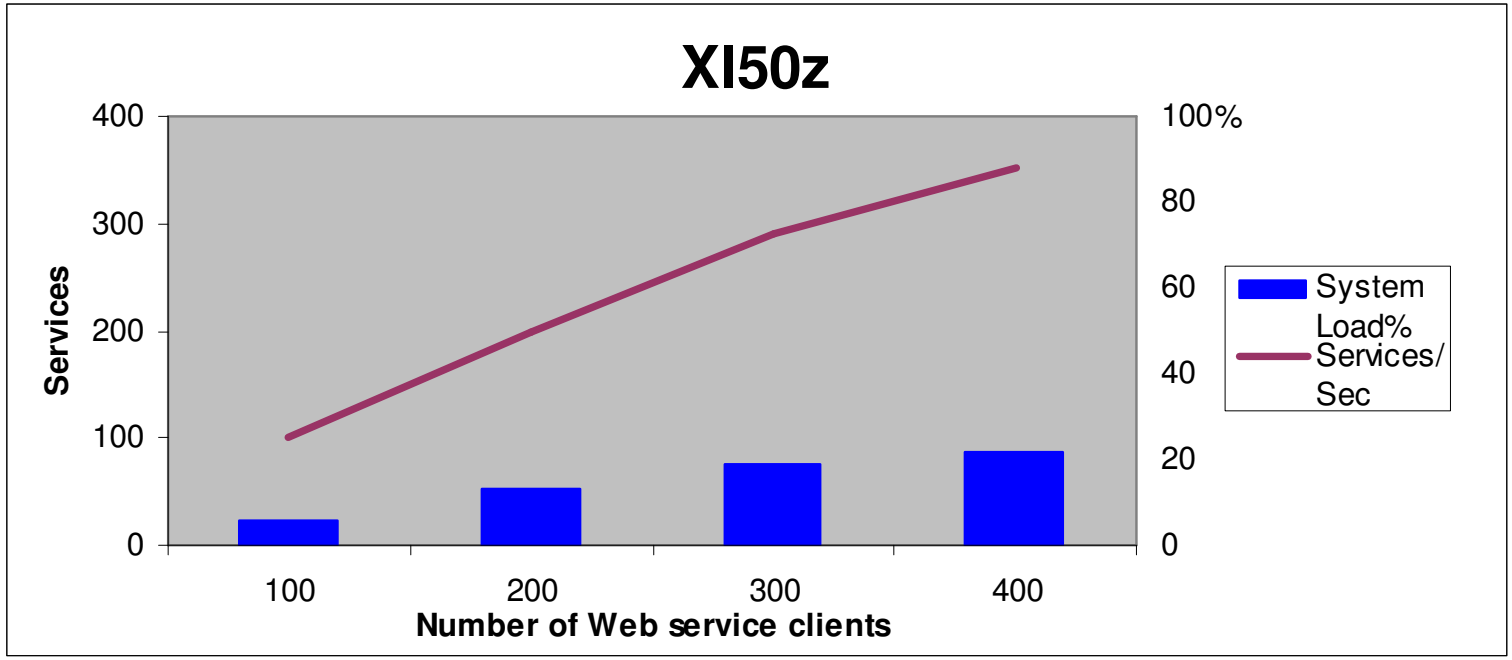
PostingInquiry and Transfer Web services



# Users	Web services/sec	CICS RT ms	DataPower RT ms	End user RT ms	DataPower System Load %
100	100	19	23	47	6
200	200	22	25	48	13
300	290	23	30	50	19
400	352	30	40	60	22

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Service monitoring

'**Simplify**' service interface
'**Secure**' service
'**Optimize**' service performance

Business partners

Transfer
TransferBatch
PostingInquiry

WebSphere DataPower XI50

ITCAM for SOA Agent

zEnterprise

CICS TS

TransferB
Posting
Transfer
TOR

CWPISI05
CPPEPM01
AOR

CWPISI05
CPPEPM01
AOR

Tivoli software

ITCAM for SOA DataPower Agent

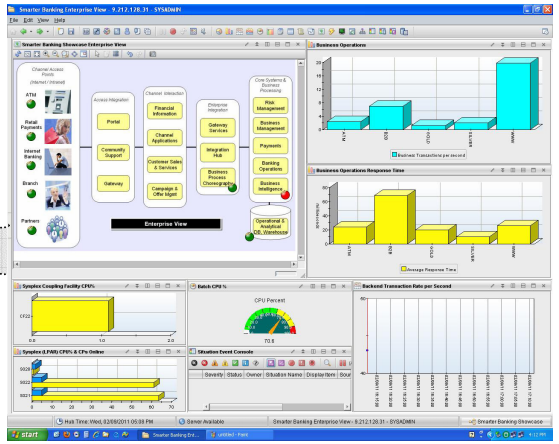
ITCAM for SOA

OMEGAMON® XE for CICS

ITCAM Agent for WebSphere DataPower

IBM Tivoli Monitoring
- Tivoli Enterprise Portal Server
- Tivoli Enterprise Monitoring Server

DB2



Tivoli Enterprise Portal

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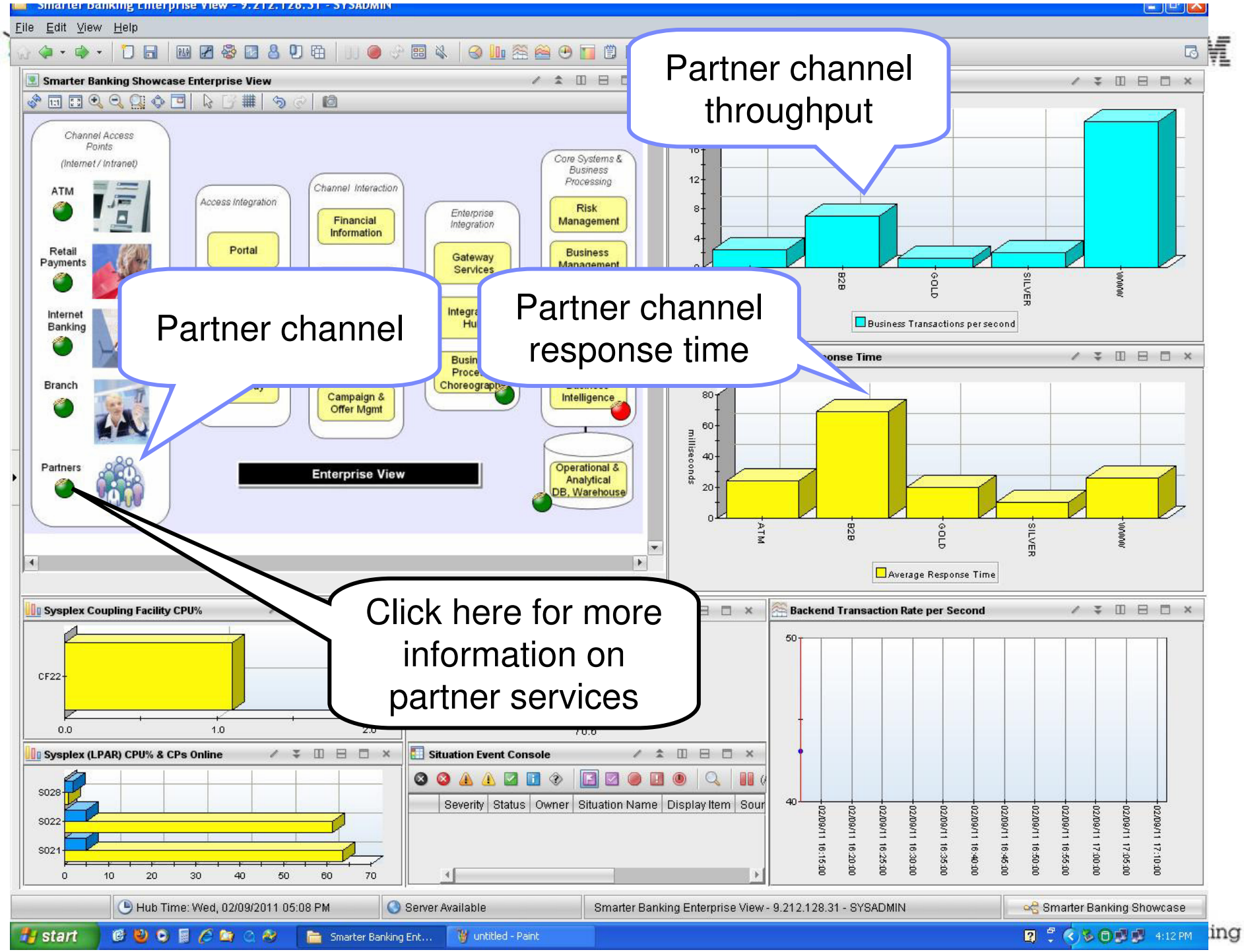
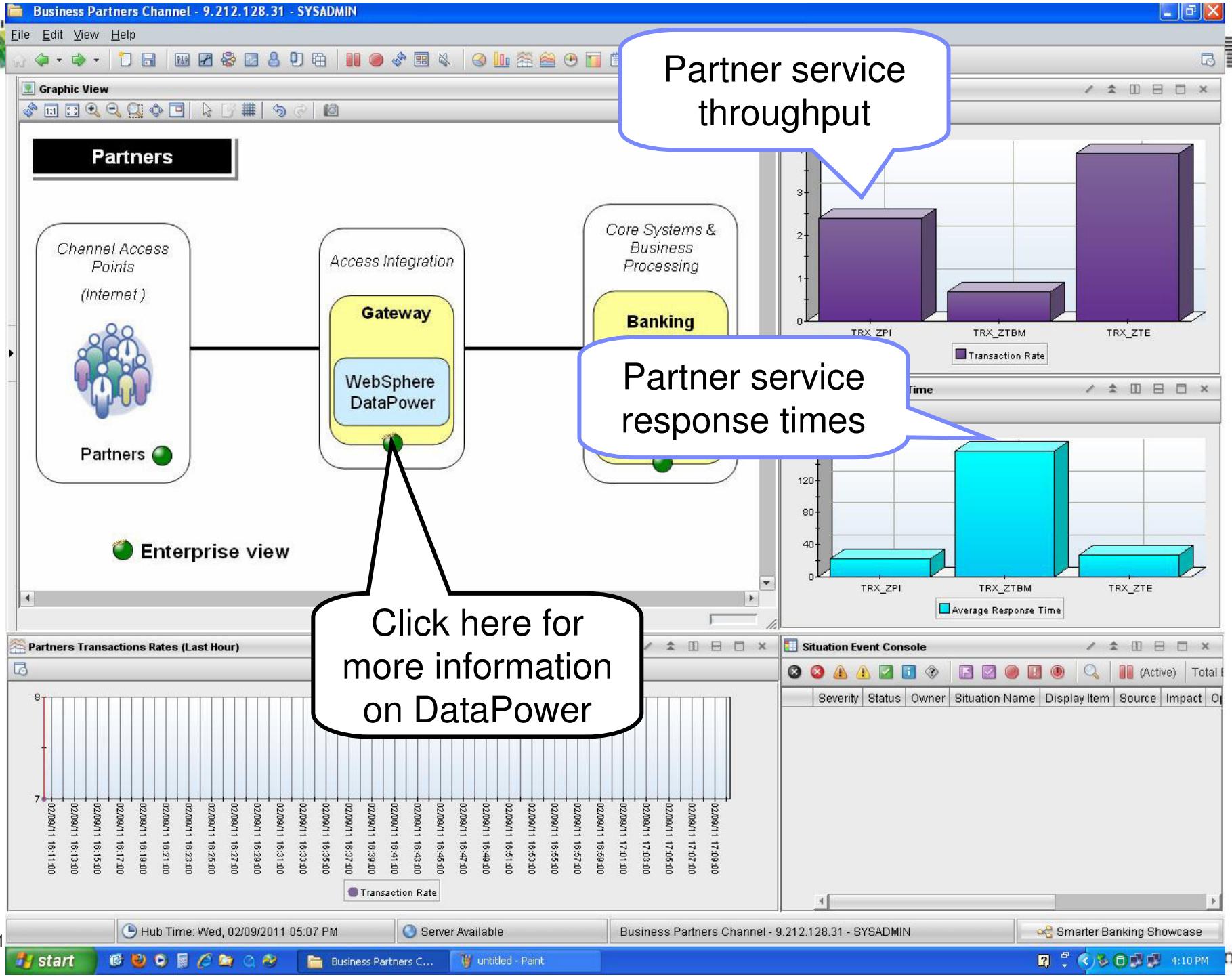
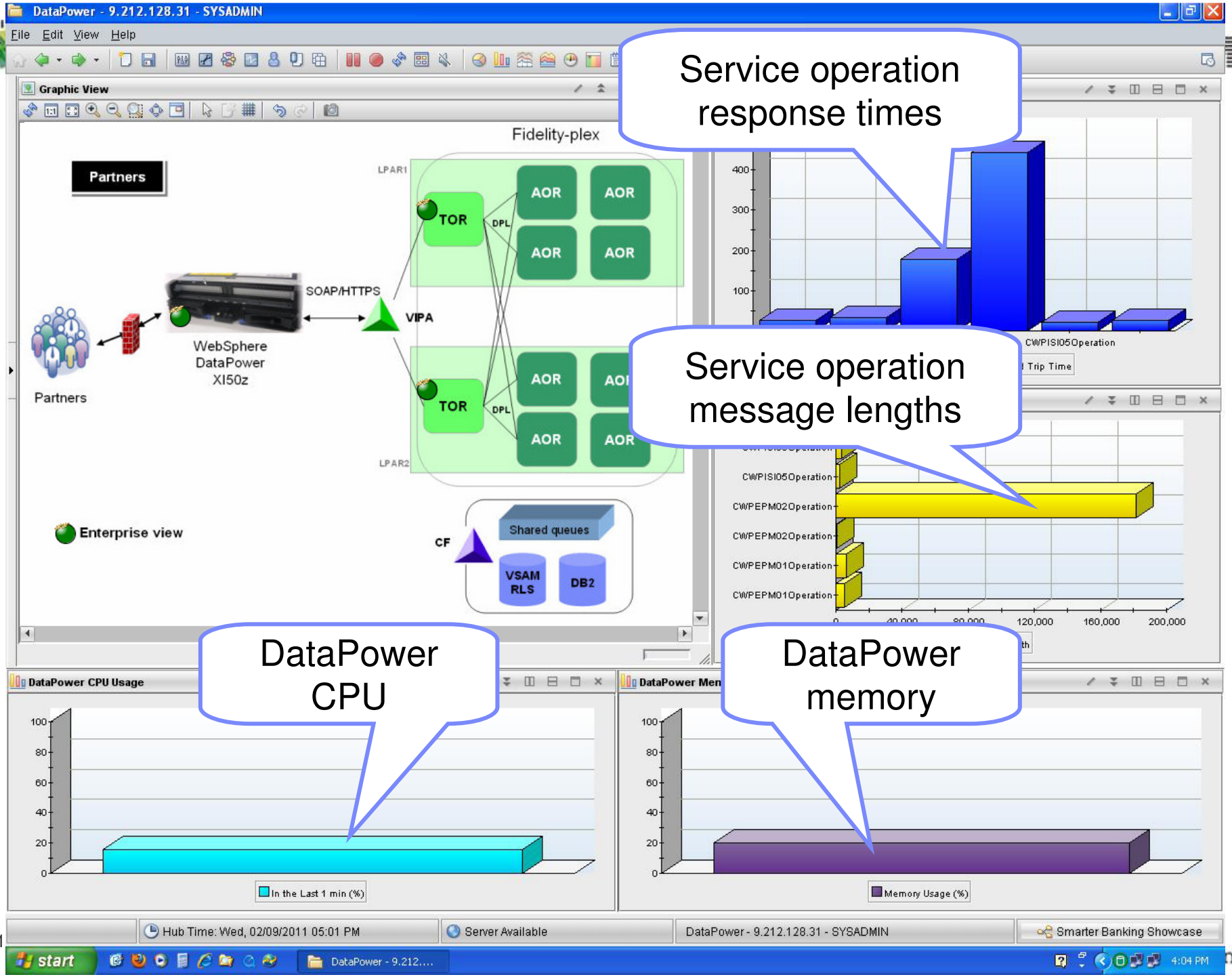

File Edit View Help
Smarter Banking Showcase Enterprise View
Channel Access Points
(Internet / Intranet)
ATM
Retail Payments
Internet Banking
Branch
Partners
Access Integration
Portal
Channel Interaction
Financial Information
Campaign & Offer Mgmt
Enterprise Integration
Gateway Services
Core Systems & Business Processing
Risk Management
Business Management
Intelligence
Operational & Analytical DB, Warehouse
Enterprise View
Partner channel throughput
Business Transactions per second
B2B
GOLD
SILVER
Partner channel
Partner channel response time
Average Response Time
milliseconds
ATM
Sysplex Coupling Facility CPU%
CF22
Backend Transaction Rate per Second
Sysplex (LPAR) CPU% & CPs Online
S028
S022
S021
Situation Event Console
Severity
Status
Owner
Situation Name
Display Item
Click here for more information on partner services
Hub Time: Wed, 02/09/2011 05:08 PM
Server Available
Smarter Banking Enterprise View - 9.212.128.31 - SYSADMIN
Smarter Banking Showcase
start
Smarter Banking Ent...
untitled - Paint
4:12 PM


Business Partners Channel - 9.212.128.31 - SYSADMIN
File Edit View Help
Graphic View
Partners
Channel Access Points
(Internet)
Partners
Access Integration
Gateway
WebSphere DataPower
Core Systems & Business Processing
Banking
Enterprise view
Partner service throughput
TRX_ZPI
TRX_ZTBM
TRX_ZTE
Transaction Rate
Partner service response times
Average Response Time
Click here for more information on DataPower
Partners Transactions Rates (Last Hour)
Transaction Rate
Situation Event Console
Severity
Status
Owner
Situation Name
Display Item
Source
Impact
Hub Time: Wed, 02/09/2011 05:07 PM
Server Available
Business Partners Channel - 9.212.128.31 - SYSADMIN
Smarter Banking Showcase
start
Business Partners C...
untitled - Paint
4:10 PM


DataPower - 9.212.128.31 - SYSADMIN
File Edit View Help
Graphic View
Fidelity-plex
Partners
LPAR1
TOR
DPL
AOR
AOR
AOR
AOR
SOAP/HTTPS
VIPA
WebSphere
DataPower
XI50z
Partners
TOR
DPL
AOR
AOR
AOR
AOR
LPAR2
Enterprise view
CF
Shared queues
VSAM
RLS
DB2
Service operation
response times
400
300
200
100
CWPISI05Operation
Trip Time
Service operation
message lengths
CWPISI05Operation
CWPEPM02Operation
CWPEPM02Operation
CWPEPM01Operation
CWPEPM01Operation
0
40,000
80,000
120,000
160,000
200,000
DataPower CPU Usage
DataPower
CPU
100
80
60
40
20
0
In the Last 1 min (%)
DataPower Mem
DataPower
memory
100
80
60
40
20
0
Memory Usage (%)
Hub Time: Wed, 02/09/2011 05:01 PM
Server Available
DataPower - 9.212.128.31 - SYSADMIN
Smarter Banking Showcase
start
DataPower - 9.212....
4:04 PM

XI50z positioning and added value

Accelerates time to value

Enables connectivity infrastructure with ESB capabilities

Integrates with System z assets including CICS, IMS and DB2

XI50

Secures SOA, Web 2.0 and cloud environments

Governs your evolving IT architecture

Increases scalability and throughput

Consolidates datacenter footprint

Reduces power consumption by up to 35%

Lowers TCO through simplified management and lower power cost

Secures physical integration of DataPower and virtual servers within zEnterprise through use of high speed private network

Extends ESB integration across the zEnterprise

Centralizes installation, operations and management of DataPower blade using zManager

Improves support with zManager monitoring and automatic "call home"

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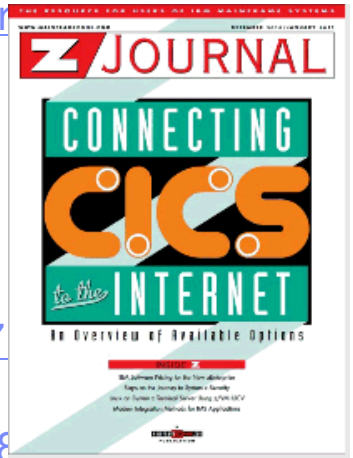
Additional Information

- ***zEnterprise BladeCenter Extension (zBX)***
  - http://www.ibm.com/systems/z/hardware/zenterprise/zbx.html
- ***WebSphere DataPower SOA Appliances home page***
  - http://www.ibm.com/software/integration/datapower/
- ***WebSphere DataPower Information Center (online help):***
  - http://publib.boulder.ibm.com/infocenter/wsdatap/v3r8m1/inde
- ***developerWorks***
  - http://www.ibm.com/developerworks/websphere/zones/busine
- ***Redbooks***
  - http://www.redbooks.ibm.com/cgi-bin/searchsite.cgi?query=datapower
- ***zJournal***
  - http://www.mainframezone.com/z-journal
- ***IBM Software Services for WebSphere***
  - http://www.ibm.com/developerworks/websphere/services/
- ***IBM WebSphere DataPower SOA Appliance Handbook***
  - http://www.ibmpressbooks.com/bookstore/product.asp?isbn=9780137
- ***DataPower SOA Appliance Customer Forum***
  - http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1198
- ***Global WebSphere Community***
  - http://www.websphereusergroup.org/datapower
- **Technotes**
  - http://www.ibm.com/search/csass/search?q=&sn=spe&lang=en&filter=collection:stgsysx,dblue,ic,pubs,devrel1&prod=U692969C82819Q63



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