

IMS Modernization Cloud, Mobile and More

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GT Software

Session Number 13995

Agenda



- The Importance of Cloud / Mobile Integration (really just another integration opportunity)
- Mainframe Data Access Considerations (Mainframe(IMS) data to/from the cloud)
- Ivory
 - SQL-based access to mainframe data
 - Service-based access to IMS transactions
 - IMS Access to Cloud
- Q & A

Company background matters



- **History**
 - Founded in 1982
 - Consistently profitable for 30+ years
 - Worldwide sales and support network
- **Laser focused for today and the future...**
 - Integration and SOA
 - Mainframe tools and technologies

What is consumerization?

- Personal devices in the workplace (BYOD)
- Applications (BYOA)
- Servers (BYOS)
- Cloud computing



Internal Devices and Apps



External Applications

- Portals
- Web applications
- Websites
- Mobile computing



Risk of consumerization



- Security
- Strain IT resources
- Disruptive technology
- Integration challenges to the Mainframe

Integration challenges



Development challenges

New skill sets

Legacy integration

New mindset

Cloud services

- Servers on Demand
- Amazon
- Rackspace



Cloud deployment checklist



- ✓ Understand service risks
- ✓ Plan for cloud outages
- ✓ Assess service level agreement
- ✓ Review compliance policies and procedures
- ✓ Estimate all cloud costs



A CFO's five-point cloud deployment checklist
[Dan Sullivan, Contributor](#)

```

*****
*   IMS INSTALLATION VERIFICATION PROCEDURE   *
*****

TRANSACTION TYPE : NON-CONV (OSAM DB)
DATE              : 01/30/2013

PROCESS CODE (*1) : display
LAST NAME         : smith
FIRST NAME        :
EXTENSION NUMBER  :
INTERNAL ZIP CODE :

SEGMENT# :
  
```

Input



```

*****
*   IMS INSTALLATION VERIFICATION PROCEDURE   *
*****

TRANSACTION TYPE : NON-CONV (OSAM DB)
DATE              : 01/30/2013

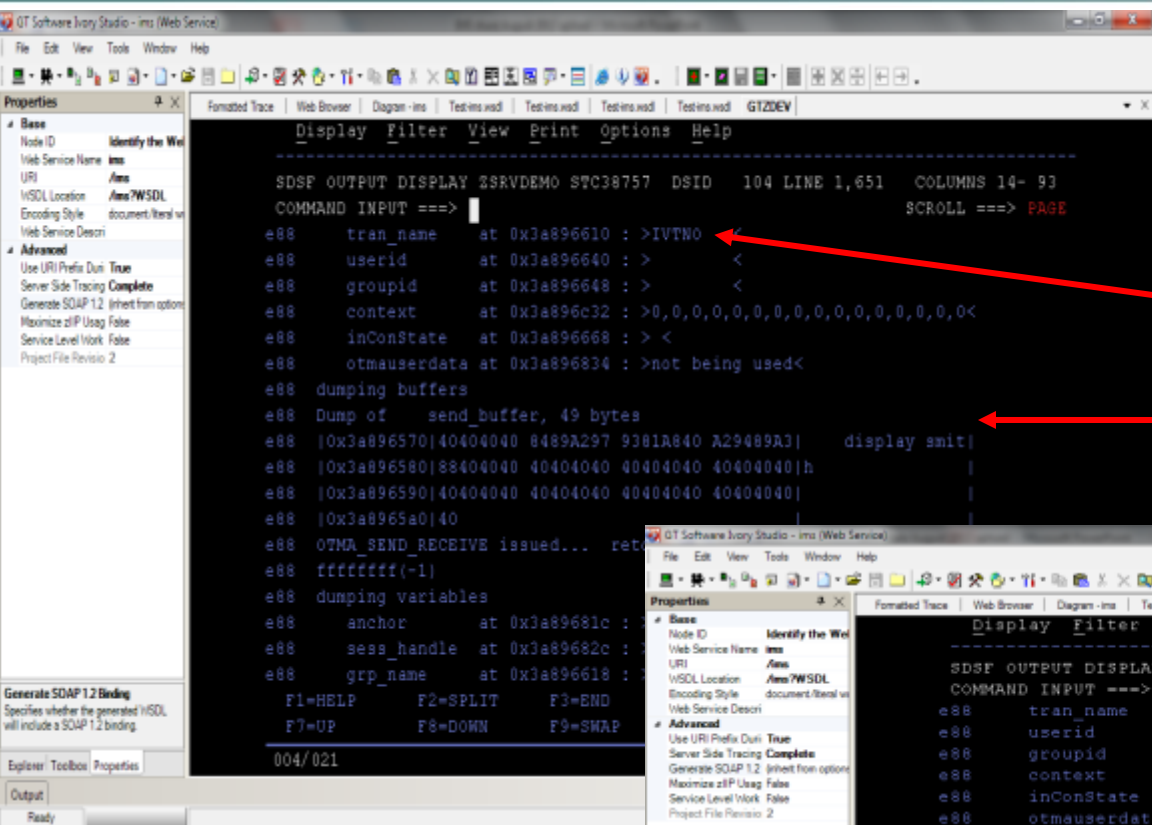
PROCESS CODE (*1) : INDELAY
LAST NAME         : SMITH
FIRST NAME        : MARY
EXTENSION NUMBER  : 265
INTERNAL ZIP CODE : 39822

ENTRY WAS DISPLAYED

SEGMENT# : 0009
  
```

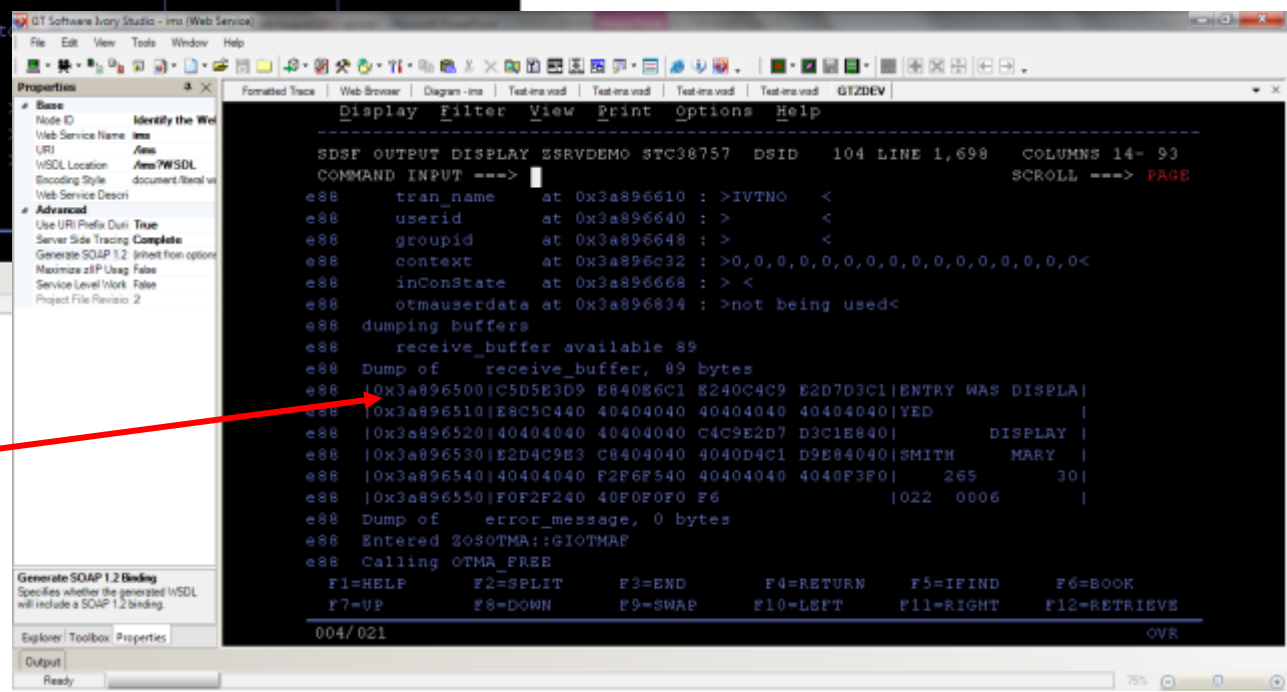
Output





Trancode(IVTNO)

Input



Output

(LL,ZZ,Trancode,DATA)

REST & SOAP (Web Services)



```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:s0="urn:ims2TNS">
  <soap:Body>
    <s0:getInfo>
      <s0:inCommand>display</s0:inCommand>
      <s0:inLastName>smith</s0:inLastName>
    </s0:getInfo>
  </soap:Body>
</soap:Envelope>
```

Input

<http://gtzdev.gtsoftware.com:20180/soap/ims2?RESTRequest=getinfo&inCommand=display&inLastName=smith>

```
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="urn:ims2TNS">
  <soap:Body>
    <getInfoResponse xmlns="urn:ims2TNS">
      <outDataType>
        <outLastName>SMITH</outLastName>
        <outFirstName>MARY</outFirstName>
        <outExtension>265</outExtension>
        <outZipCode>30022</outZipCode>
      </outDataType>
    </getInfoResponse>
  </soap:Body>
</soap:Envelope>
```

Output

```
<?xml version="1.0" encoding="utf-8" ?>
<getInfoResponse>
  <outDataType>
    <outLastName>SMITH</outLastName>
    <outFirstName>MARY</outFirstName>
    <outExtension>265</outExtension>
    <outZipCode>30022</outZipCode>
  </outDataType>
</getInfoResponse>
```

SOAP

REST

IMS road blocks

- The mainframe is not agile
- Multiple systems and interfaces
- Integration will be a challenge
- Legacy Data
- “IMS is Old”



The Mainframe



Stage 1 HALDB DBD
 MFS IO PCB ACB
 PSB MSC IMS Connect
 OTMA 3270 Message Queue

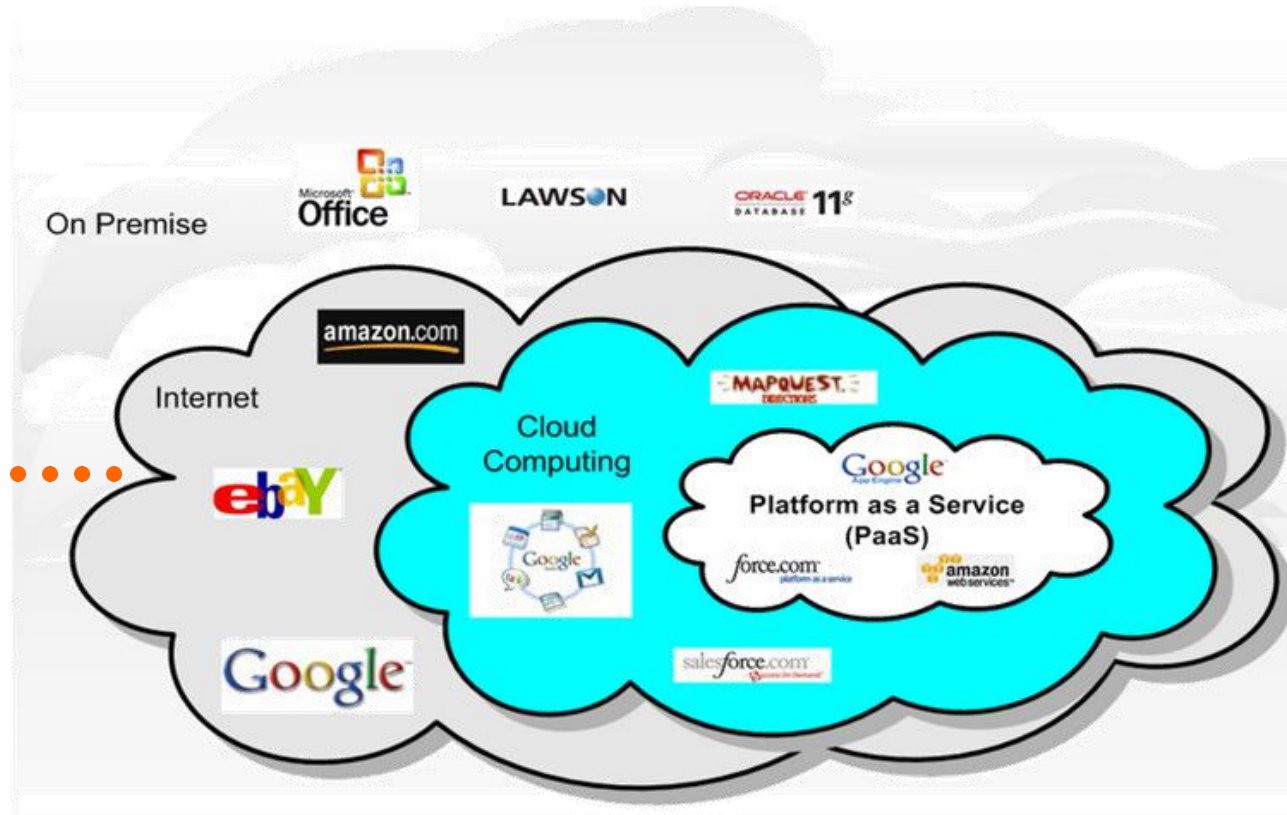
EXCI PL/I Transactions
 Natural COBOL 3270
 Assembler CTG BMS
 TS Queue VSAM DB2
 Copybook TD Queue



Consumerization world



Consumer Side of IT



Two worlds collide



Complete your sessions evaluation online at SHARE.org/BostonEval



Two worlds collide



Ivory® Data Hub™

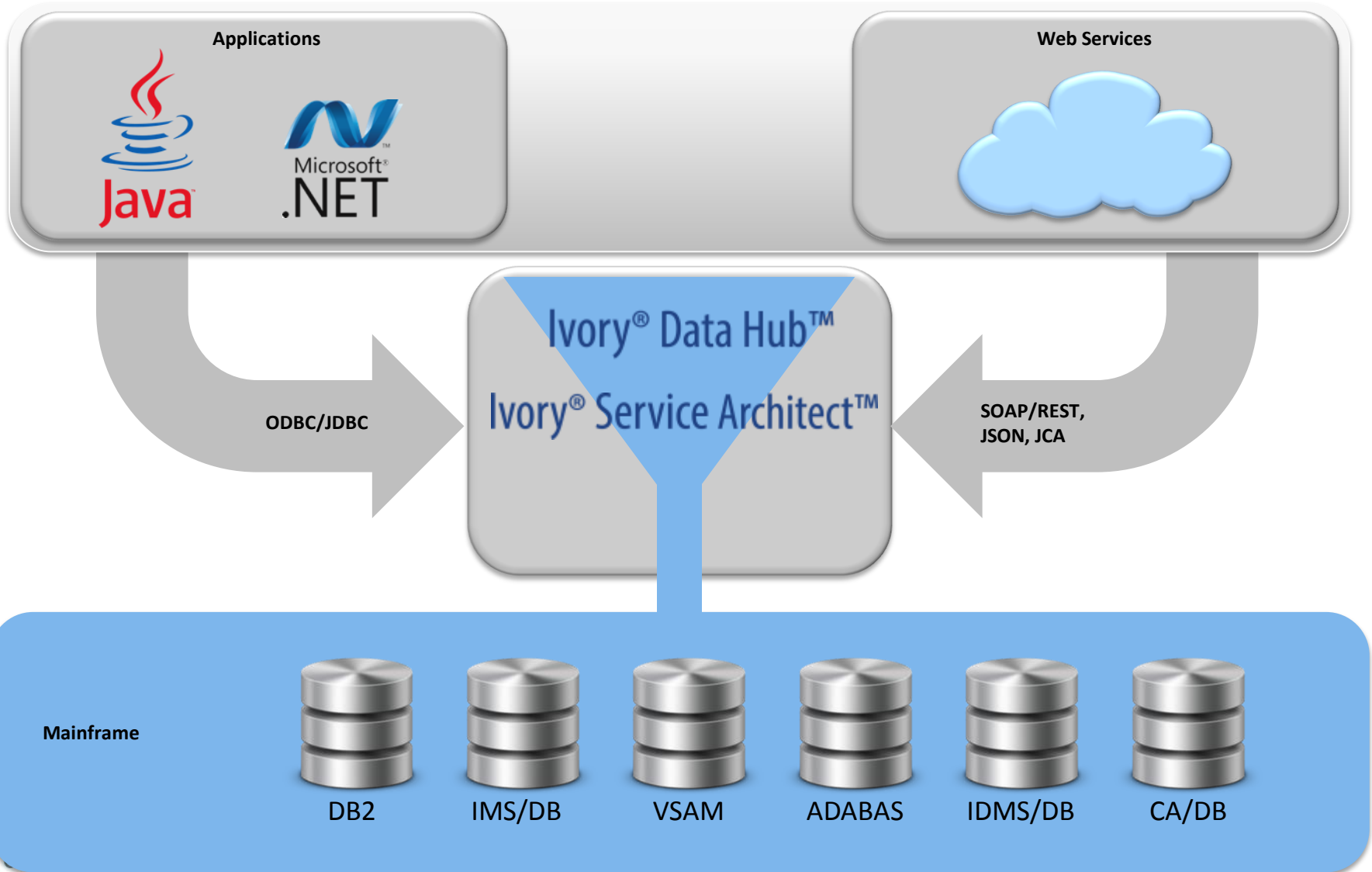
Ivory® Service Architect™



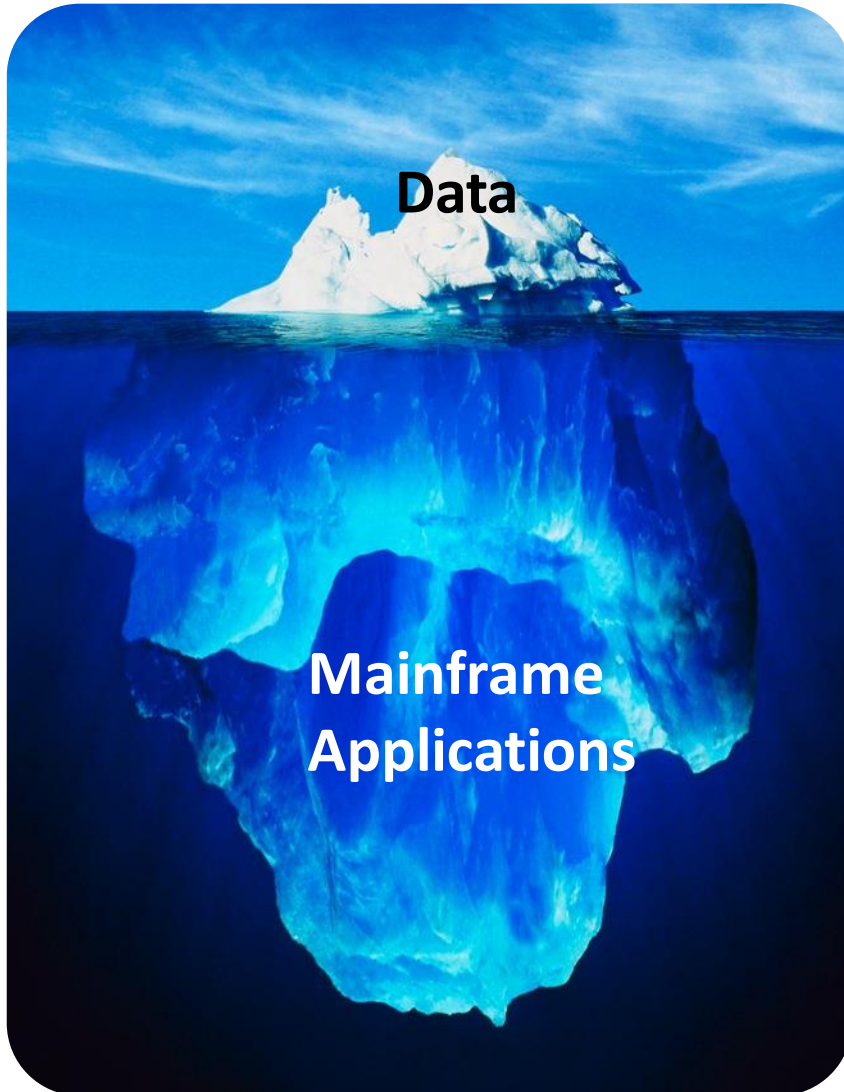
Complete your sessions evaluation online at SHARE.org/BostonEval



Integrating Mainframe data



Ivory Data Hub



- High performance data integration & migration
- Processing of relational and non-relational mainframe data using standard SQL-syntax
- Full support for mainframe security

Integrating Mainframe applications



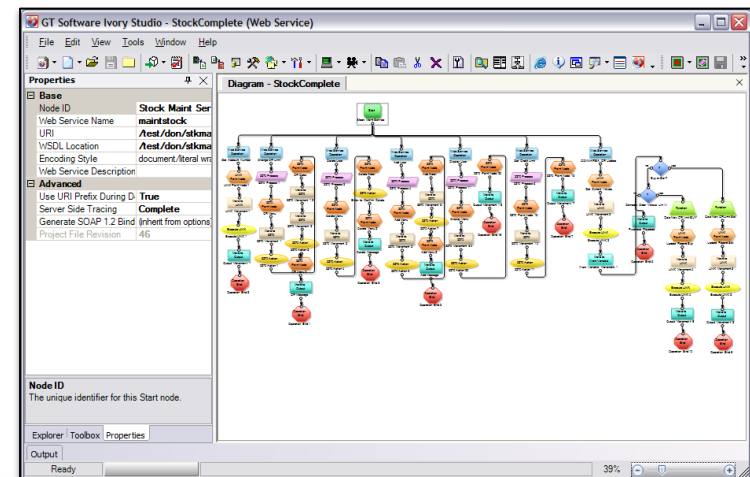
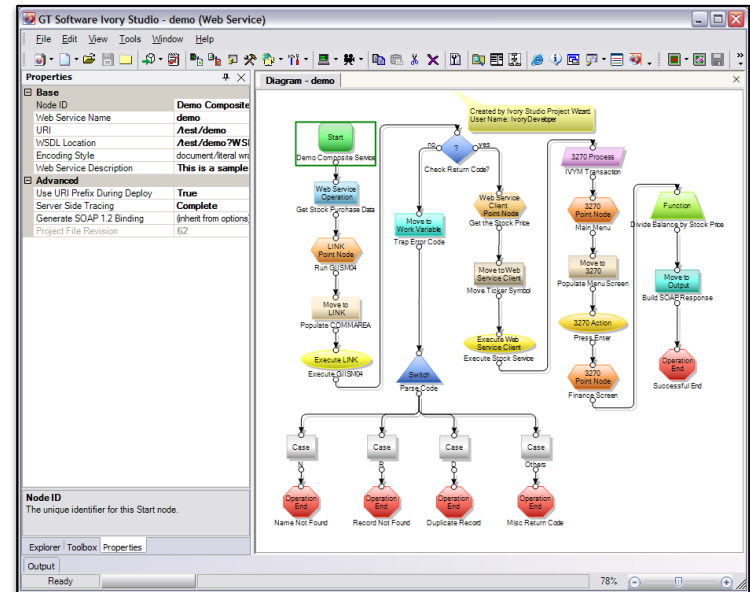
New **Mainframe** application integration with no new coding



- Mainframe Applications can be included in new applications
- Mainframe Applications are left unchanged , but are reused
- Mainframe Applications can be combined in new business function
- Mainframe Applications are not re-coded
- No New Mainframe Application code is required

Ivory Service Architect

- Rapid
 - Lightweight development tools
 - No coding or code generation
- Proven
 - Banking, Insurance, Manufacturing
 - Thousands of services, millions of transactions



Mainframe as a client



Mainframe applications
to/from the cloud...



- Mainframe Applications can be called by Mobile or Cloud
- Mainframe Applications calling Mobile or Cloud applications
- Mainframe Applications calling in native language(COBOL,PL/1)
- Mainframe Applications do not worry about XML/SOAP
- Mainframe Applications can be orchestrated

Ivory runtime architecture



Windows, Linux



Ivory Server

SOAP/REST/JSON/JCA
HTTP or MQ

Requestor /
Provider

IMS
Connect



Mainframe
z/os

IMS
Connect

IMS Connect

Ivory Server

OTMA

IMS
Control
Region



Ivory Server

Requestor



IMS DB

Ivory® Data Hub™



Linux on Z

Use standards



New **Mainframe** Applications leveraging standards

- New Services can leverage industry standards(IFX, SWIFT, ACORD, etc.)
- Applications can use company specified standards and mappings(XSD's, WSDL)
- Services can easily be mapped in Ivory Studio that will handle difficult data types.

Schema, WSDL & more

Properties

- Basic
 - Web Service Operation: Get Stock Purchase Data
 - Message Flow: calcshares
 - SOAP Inputs: (Collection)
 - SOAP Outputs: (Collection)
 - Input Variables: (Collection)
 - ELCGs: (Collection)
 - Description: Operation does a three step service
 - SOAP Header Inputs: (Collection)
 - SOAP Header Outputs: (Collection)
 - Comparator: Sequence
- Reference WSDL
 - WSDL Location
 - Reference Web Service
 - Reference Web Service Port
 - Reference Web Service Operation
- Advanced
 - Request Wrapper Namespace: urn:xjava:TMS
 - Request Wrapper Name: calcshares
 - Response Wrapper Namespace: urn:xjava:TMS
 - Response Wrapper Name: getdata
 - Response XML Stylesheet (URI)
 - RBSF Response Format
 - Allow HTTP GET Requests
 - Operation Level Input Variable Initials

WSDL Location
This property allows you to specify a reference WSDL from which the Web Service Name, Web Service Operation, SOAP inputs, and SOAP outputs will be initially populated.

Edit External Schema Profile

Use the browse button to select an XSD from a network drive or enter a known XSD URI.

Profile Name: GTEmployee

Schema URI: \\dipoerke4\CS\Users\dipoerke\Documents\Copypbooks and BMS Maps and XSD\GTEmpk Go

Requires Authentication User ID: Password:

Summary of External Schema Contents:

Target Namespace: urn:GTEmployee.XSD
Version: 1.0

Global Metadata

Simple Types	Complex Types	Attributes	Elements
3	1	0	1

Browse OK Cancel Help

Set WSDL Location

Use this page as a starting point to find the Web Service you would like to access. You can click the links below, use the Browse button, or type a known WSDL URL into the address bar.

URL: GO

(Optional) User ID: Password: Retain Schema Type Definitions

Ivory Studio WSDL Explorer

- WSDL URL
 - Get Account W for CBS
 - SAP UDDI
 - Zip Temperature
 - ZIPCityState
 - Stock Quote - GTZBEV
 - ZipWeather
 - AmberPoint Registry
 - Stock Quote sMethods
 - SynerInet UDDI

Add Profile... Browse... OK Cancel Help

Create SOAP Input

Expand To: 1st Level 2nd Level 3rd Level All Level Properties

- SOAP Inputs
 - caLastname
 - caFirstName
 - token
 - sharestid
 - GTEmployee
 - GTEmp
 - GTEmpData
 - GTEmpEmployee
 - GTEmpSalary

Basic

- Is External Element: True
- Profile Name: GTEmployee
- Data Type: Complex Type
- Comparator: Sequence
- Variable Name: GTEmployee
- Optional Element: False
- Is Nullable: False
- Namespace: urn:GTEmployee.XSD
- Description:
- Schema Data Type: Employee
- Array Properties
 - Is Array: False

Optional Element
Whether this element has to show up in the payload.

OK Cancel Help

Do it quickly



New applications developed at the speed of business

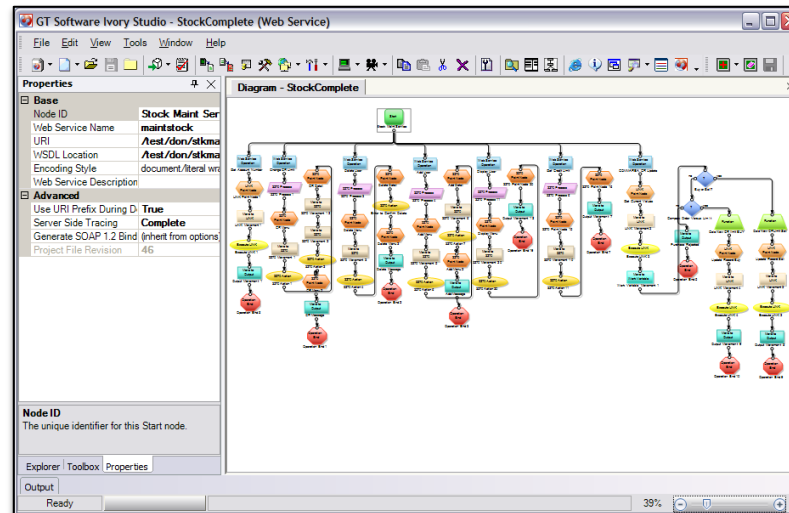


- Mainframe based services developed in minutes
- Mainframe based services developed as new business needs
- Mainframe based services in easy drag and drop studio
- Mainframe based services immediately available
- No New Mainframe Application code is generated

At the speed of the customer



- No coding or code generated
- Rapid iteration gets the job done
- One Click Deployment
- Deployed to **mainframe** (CICS, Started task, z/Linux) or **off-platform** (Windows or Linux)
- Leverages z/Linux and specialty engines to *slash* costs



New development paradigm

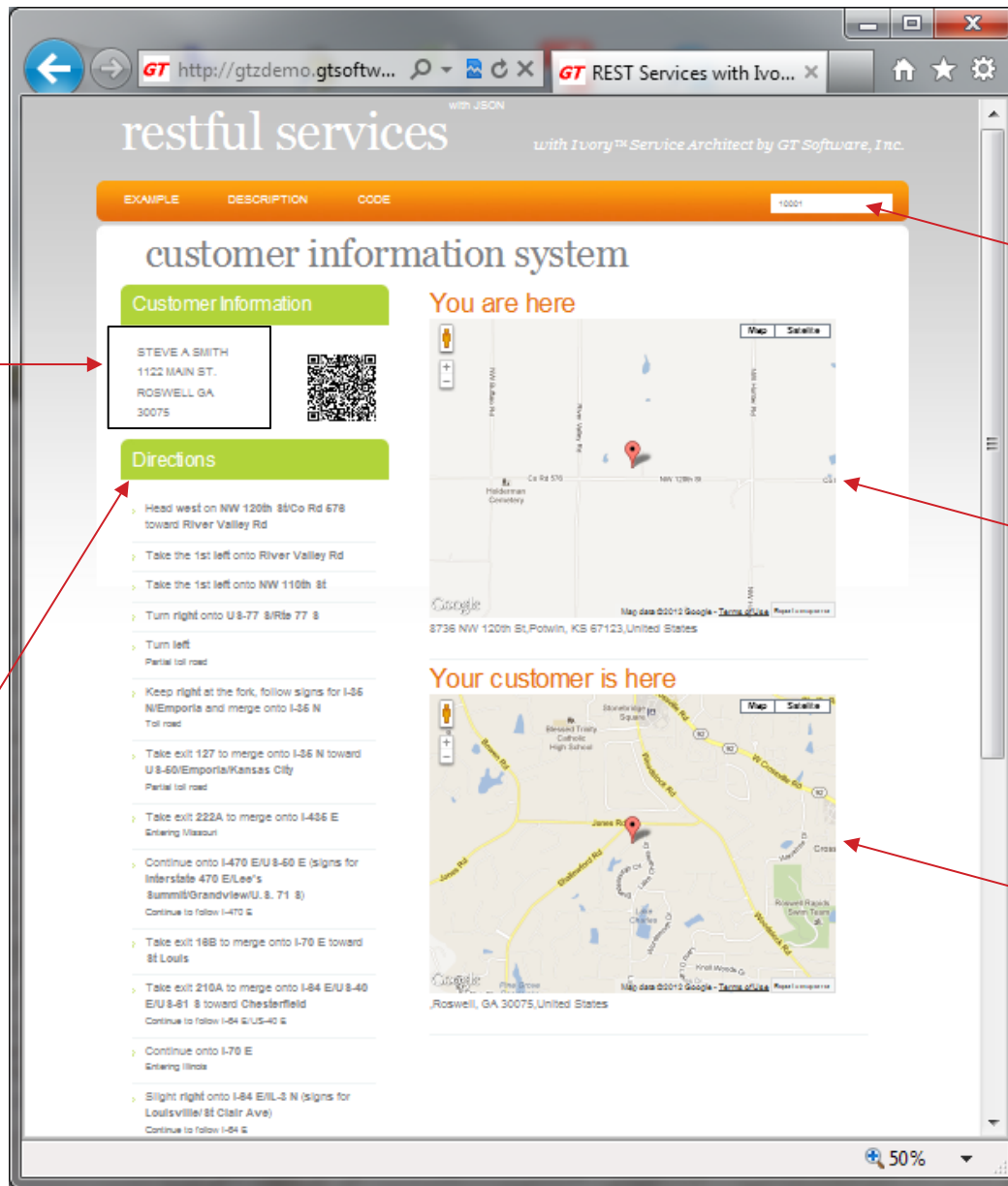


- Integrated drag and drop graphical environment (No coding)
- One Tool no other pre-requisites
- WSDL-First design
- WSDL Wizard
- Design once, deploy many:
 - Started Task (OTMA)
 - CICS
 - Linux for SystemZ (SUSE or Red hat)
 - Windows (IMS Connect)
 - Linux (IMS Connect)
- Once designed available via:
 - Web Services (WSDL)
 - REST-ful services
 - JSON
 - JCA

IMS and Ivory



- Service Enable IMS transactions
 - Including Support for IMS Conversational
 - Support for MFS as service definition
 - LTERM Name if needed
 - Composite Service Support
 - MFS Mod 3
 - Outbound Support to any remote system
 - REST Support for IMS
 - JSON Support
 - JCA Support for IMS
 - Message “chunking”



IMS Output

IMS Input

Google Maps My location

MapQuest Driving directions

Google Maps Cust location

The real world



**Mobile banking
application**
Bank



**Mobile insurance
application for agents**
Insurance



**Automobile
engineering**
Manufacturing



**Stock trading,
Financial tools**
Finance



**Credit card
processing**
International Bank

Summary



- Mainframe data used in cloud and mobile applications
- Mainframe applications to/from the cloud
- New mainframe application usage with no new coding
- New mainframe applications leveraging standards
- New applications developed at the speed of business

Q & A



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