IMS Modernization
Cloud, Mobile and More

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Session Number 13995

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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

GTSoftware®

- **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

- Email
- CRM
- Social Media
- Etc.

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 applications

- BYOA

- CRM – Salesforce.com

- Google – Google Docs

- Etc.

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
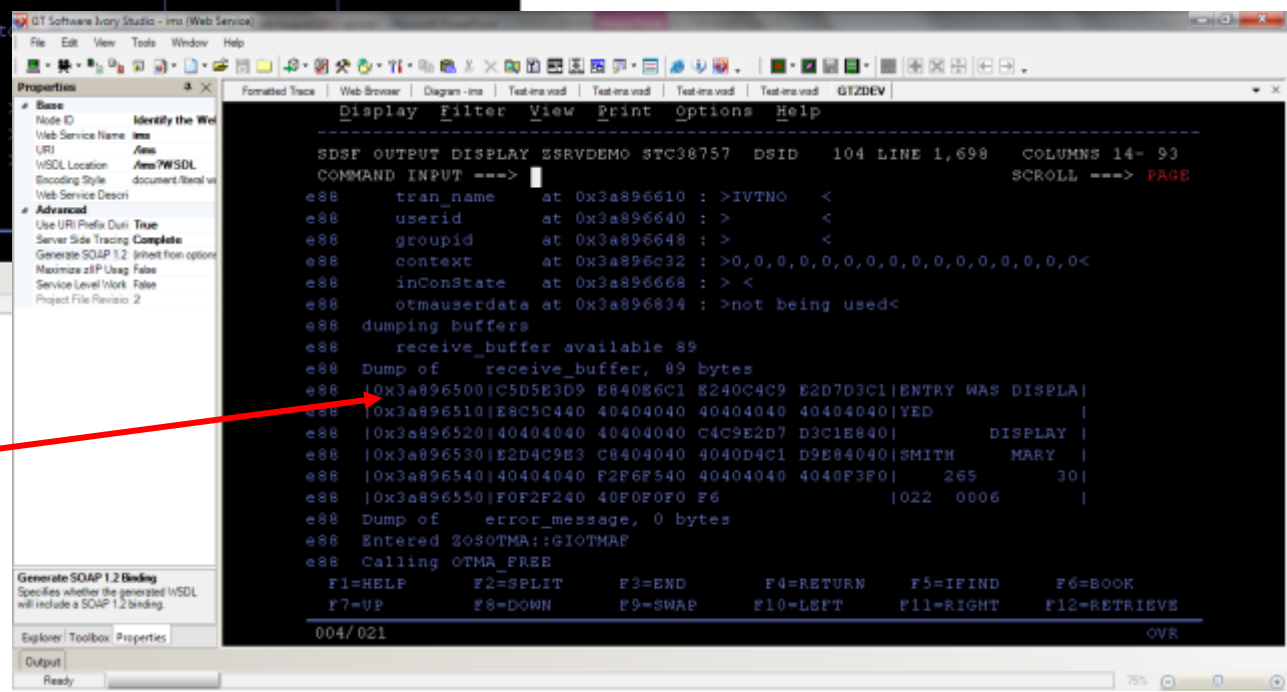
Input
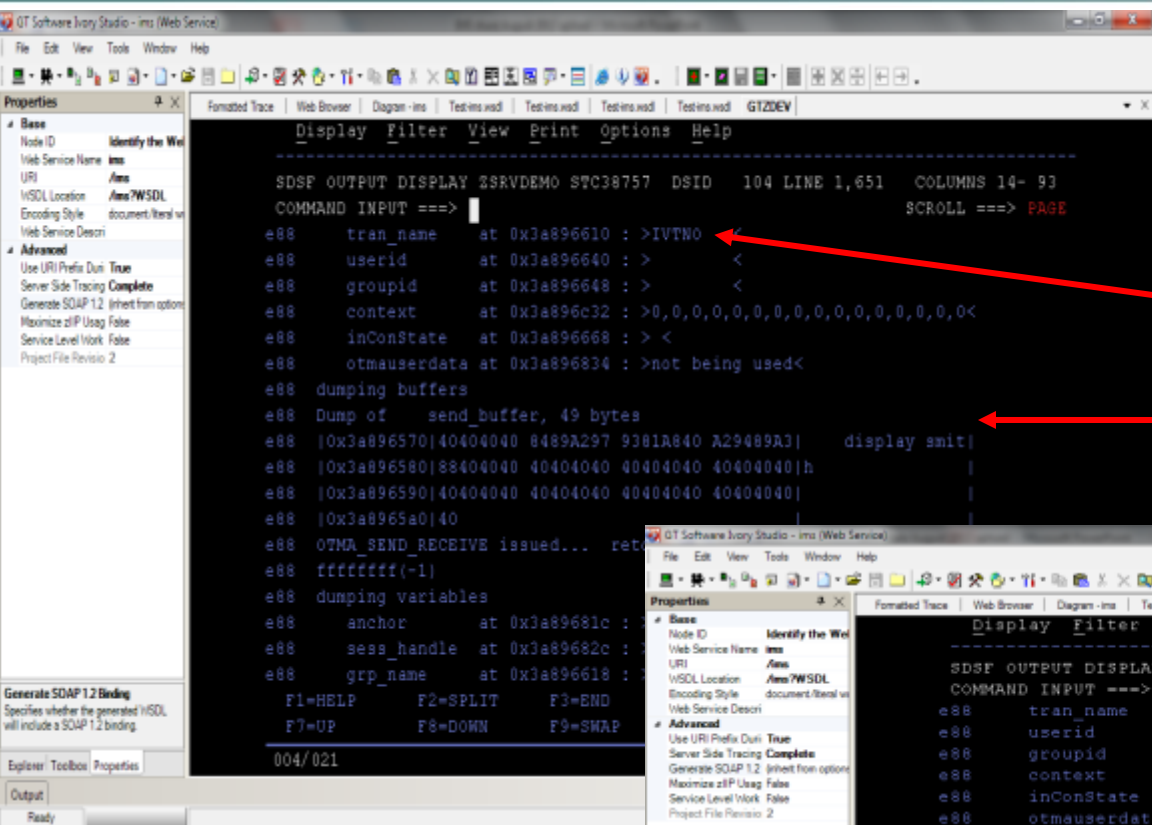
Output

Trancode(IVTNO)

Intput

Output

(LL,ZZ,Trancode,DATA)

REST & SOAP (Web Services)

```xml
<?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
<?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
<?xml version="1.0" encoding="utf-8" ?>
- <getinfoResponse>
- <outDataType>
  <outLastName>SMITH</outLastName>
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  <outExtension>265</outExtension>
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  </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
ACB
MFS IO PCB
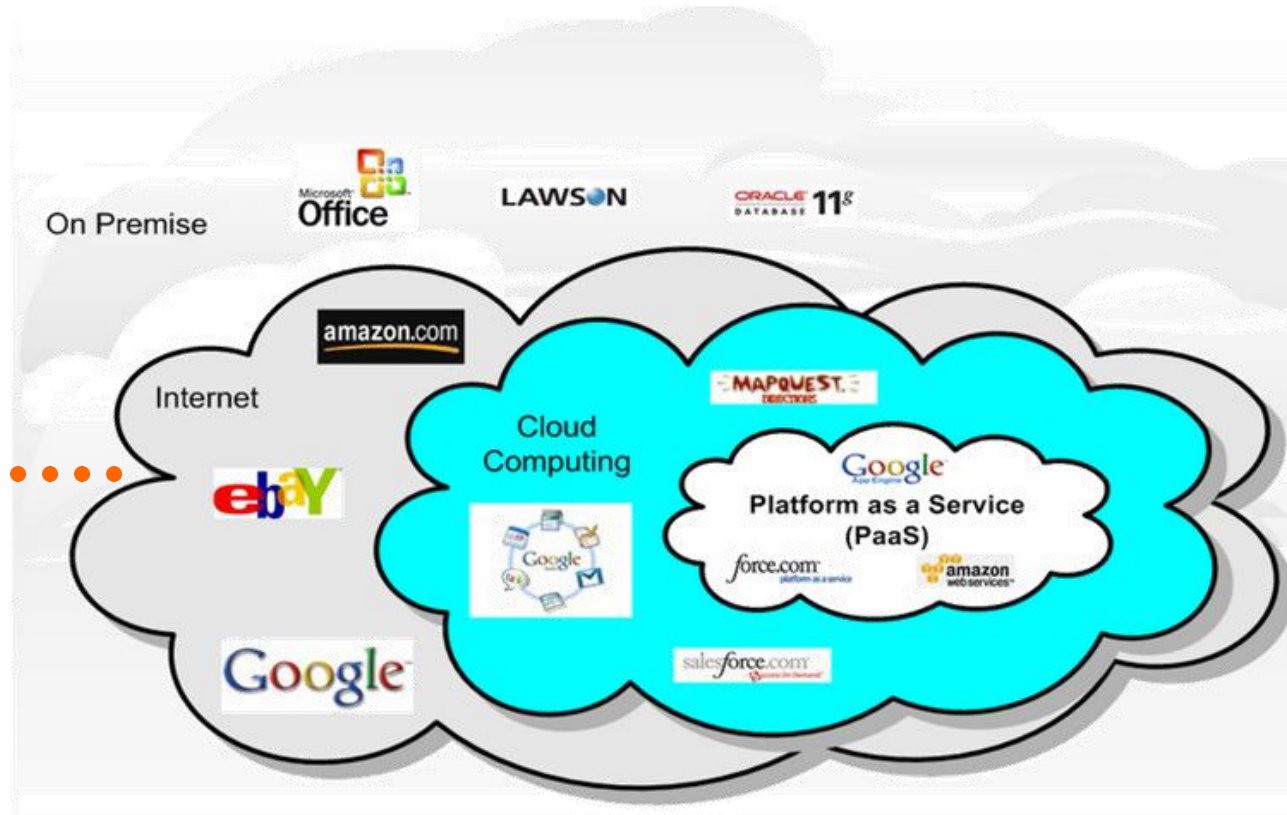PSB MSC IMS Connect
OTMA 3270 Message Queue

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

Consumerization world

Consumer Side of IT

Two worlds collide

Two worlds collide

Ivory® Data Hub™

Ivory® Service Architect™

Integrating Mainframe data

Ivory Data Hub
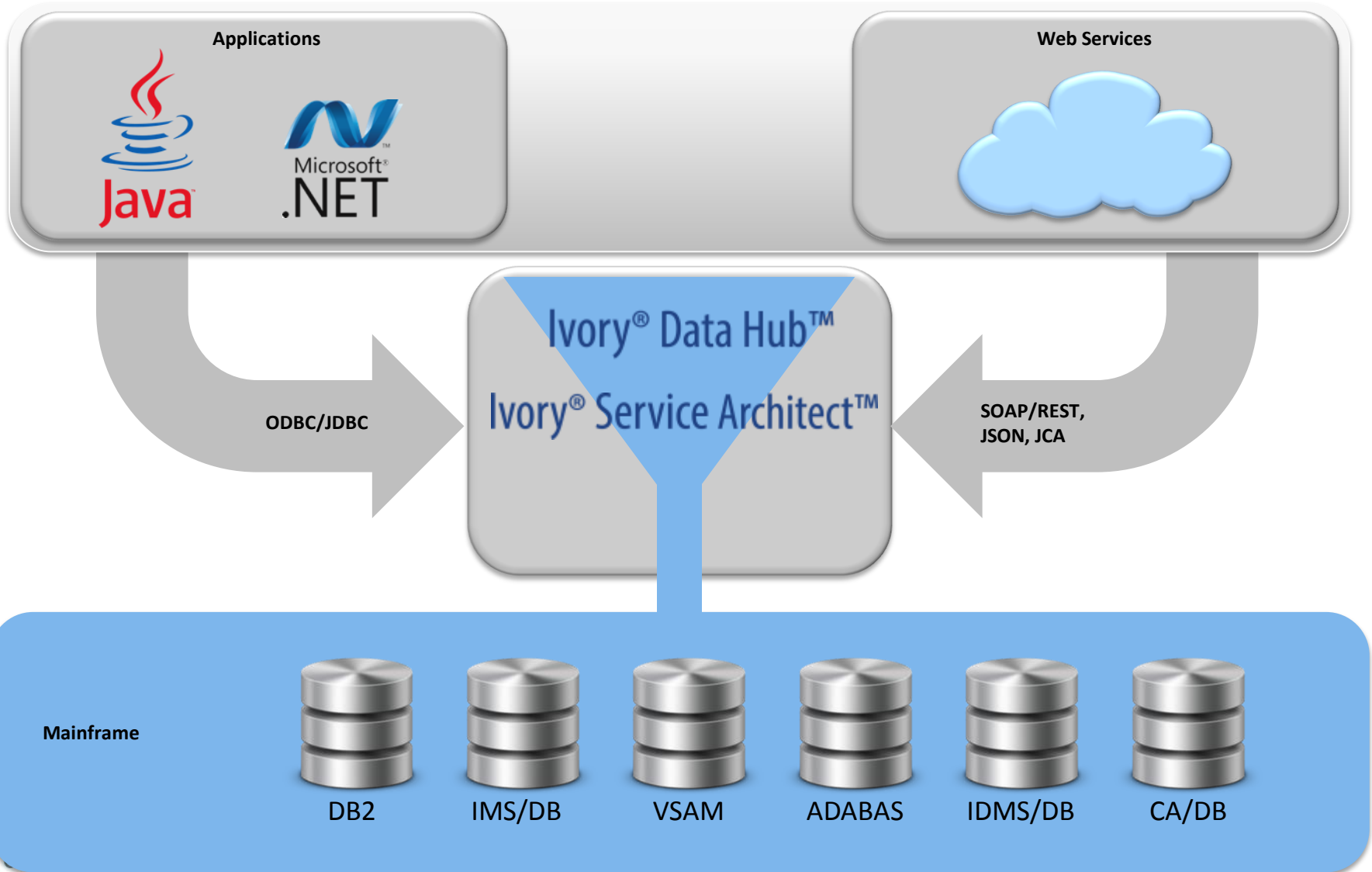
Data

Mainframe Applications
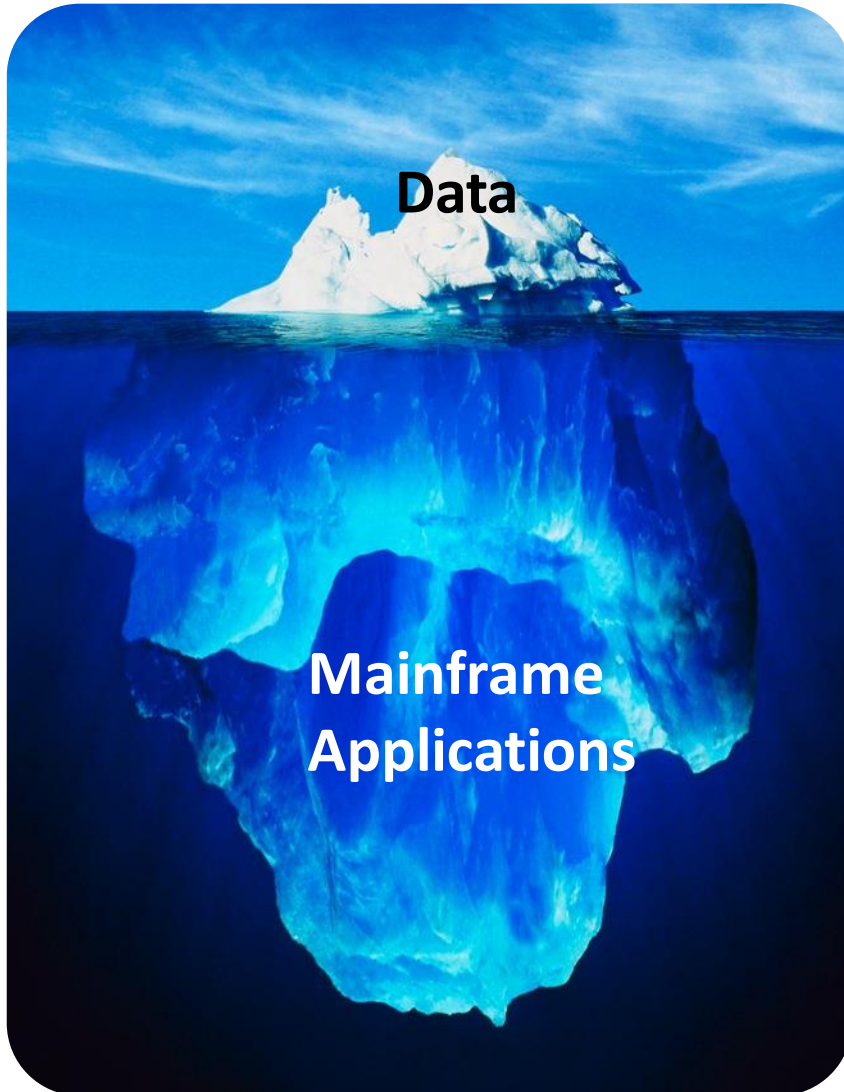
- High performance data integration & migration

- Processing of relational and non-relational mainframe data using standard SQL-syntax

- Full support for mainframe security
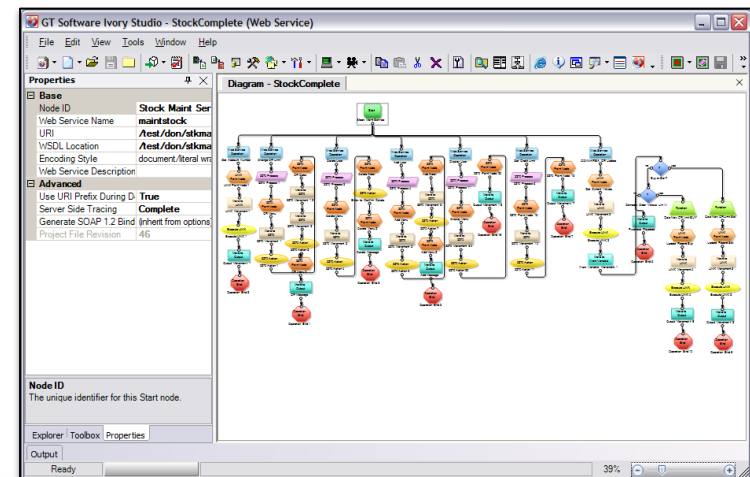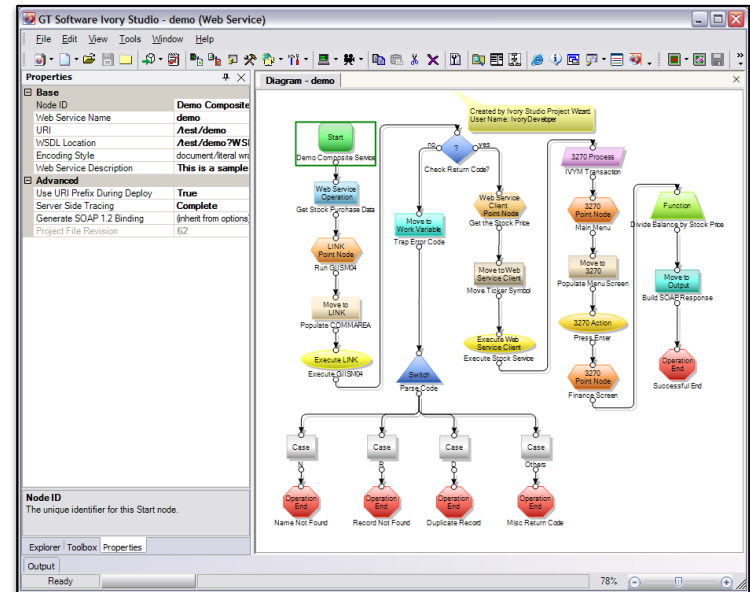
Integrating Mainframe applications

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

Mainframe z/os

Ivory Server

SOAP/REST/JSON/JCA
HTTP or MQ

Requestor / Provider

IMS Connect

IMS Connect

IMS Control Region

OTMA

Ivory Server

IMS Connect

Ivory Server

Requestor

Ivory® Data Hub™

IMS DB

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

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

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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
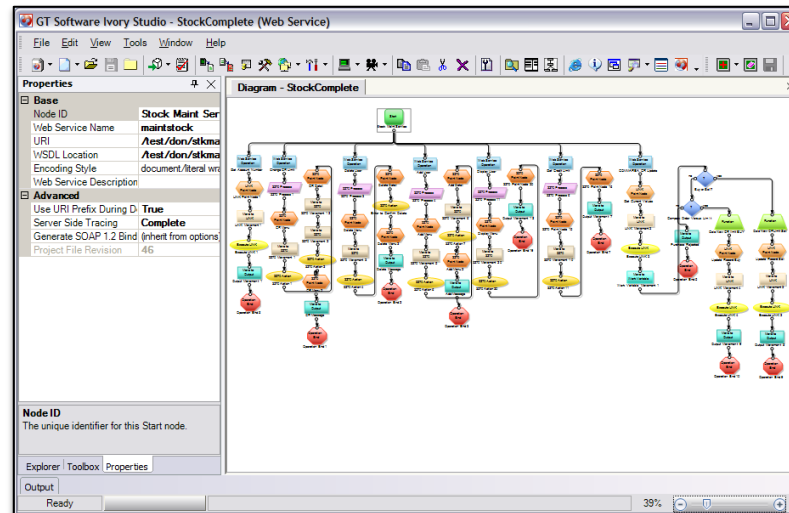
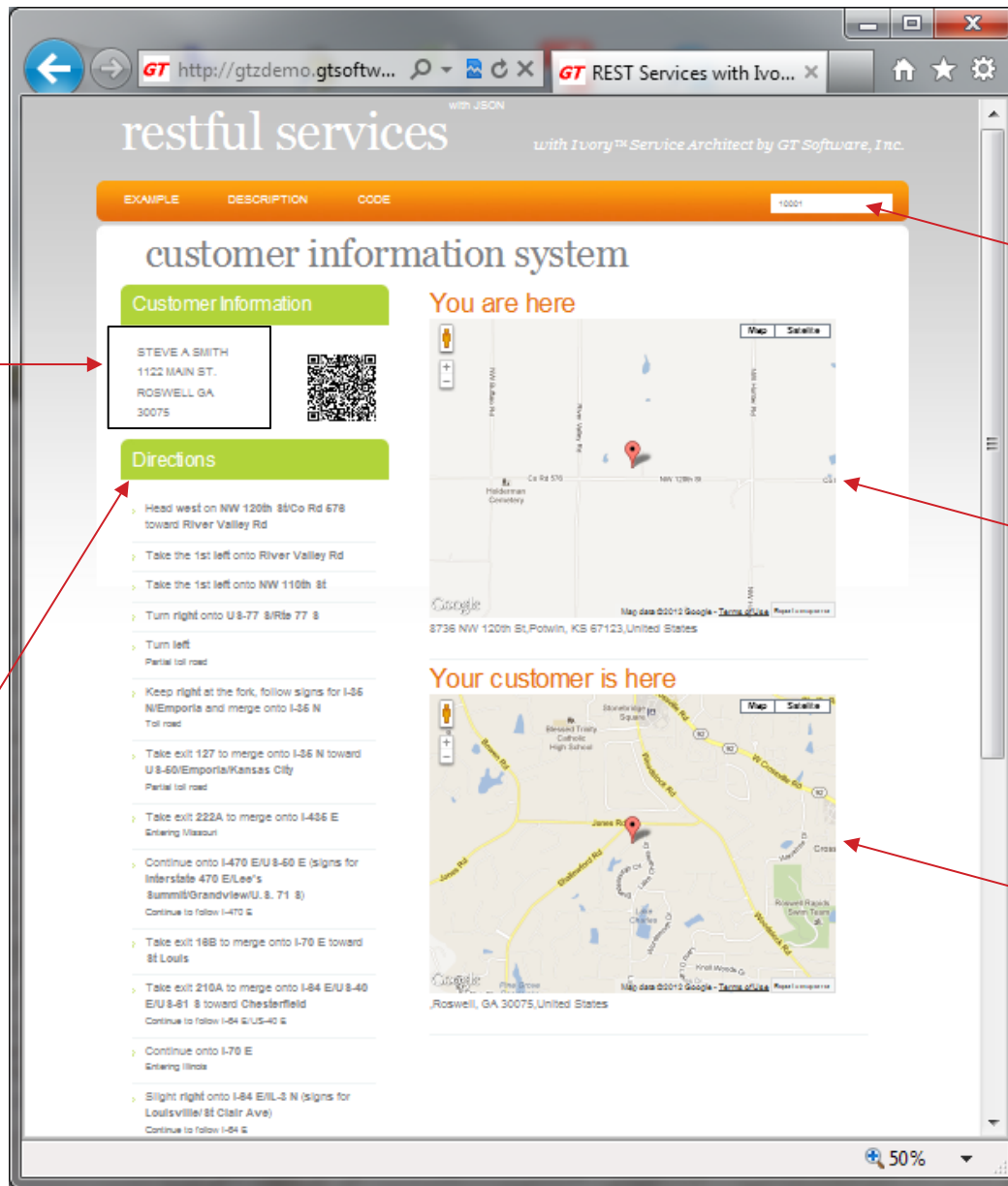# New development paradigm

- 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 Input

IMS Output

MapQuest
Driving directions

Google Maps
My location

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

Booth # 227

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