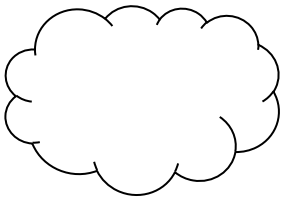

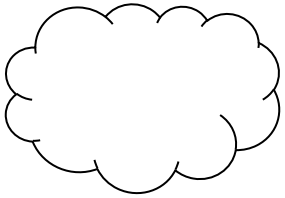

Modernizing IMS……

Dusty Rivers

Principal Technical Architect

GT Software

GOT IMS?

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GOT IMS?

NEED TO MODERNIZE!

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GOT IMS?

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GOT IMS?

Need
New
Web
Look and Feel

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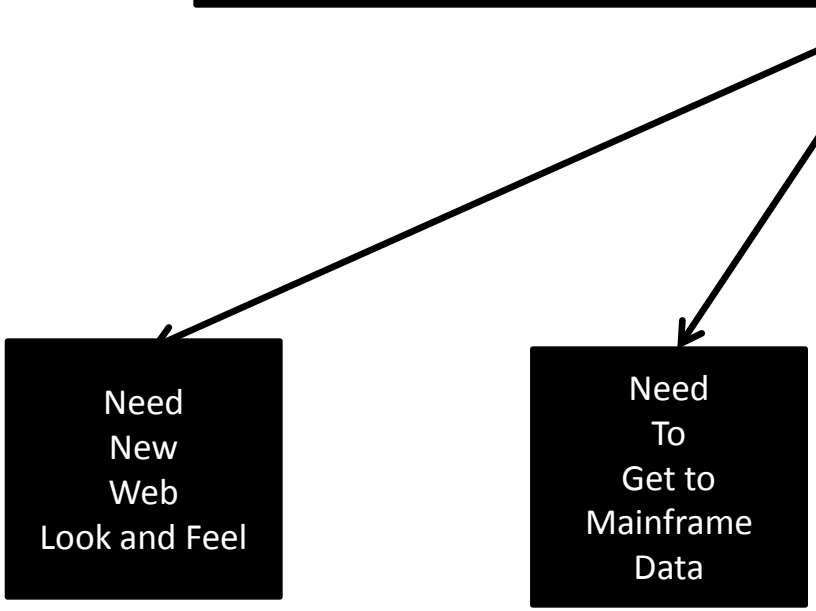
GOT IMS?



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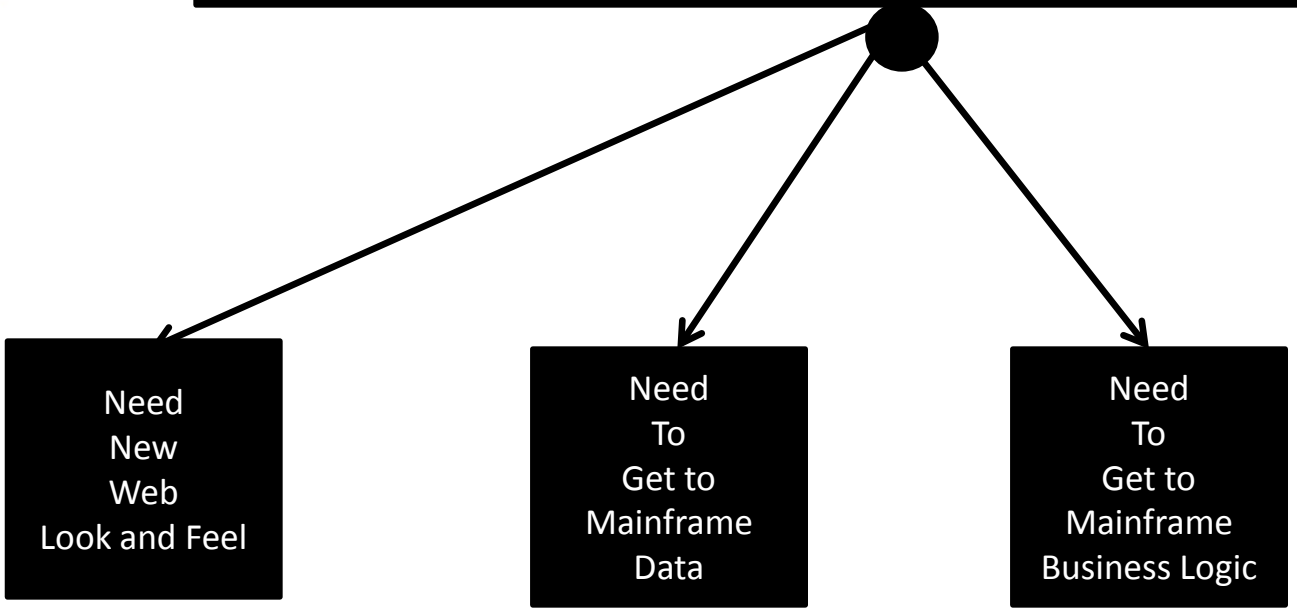
GOT IMS?



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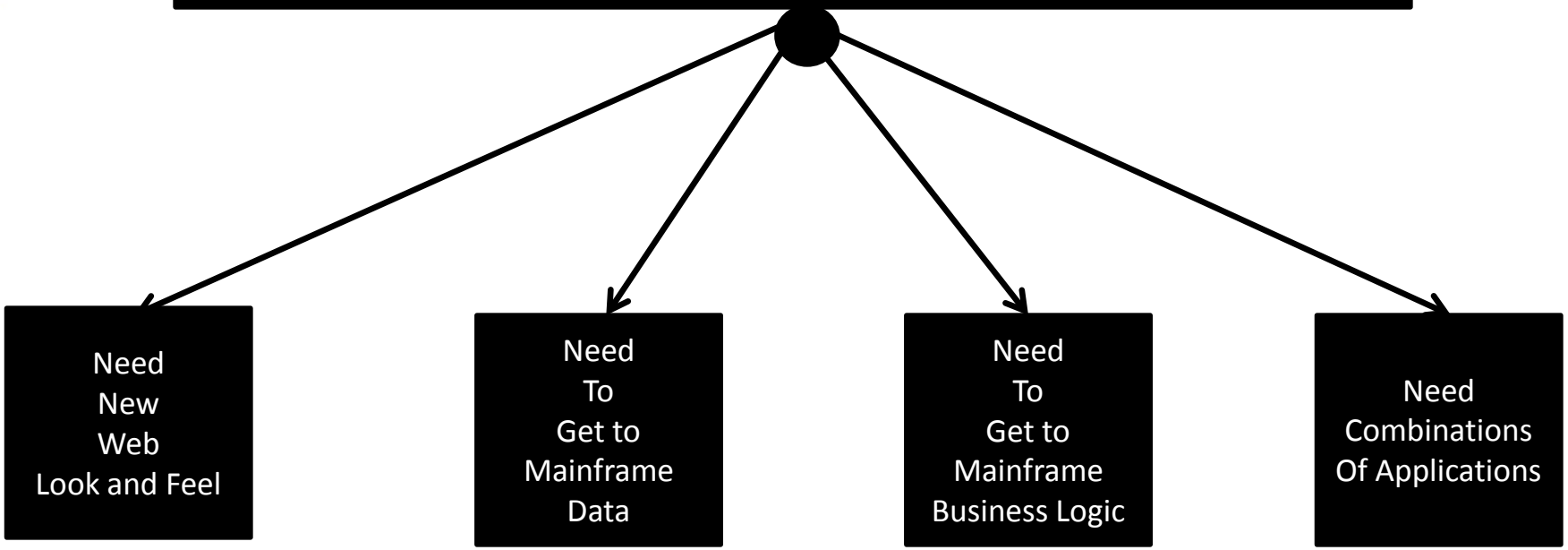

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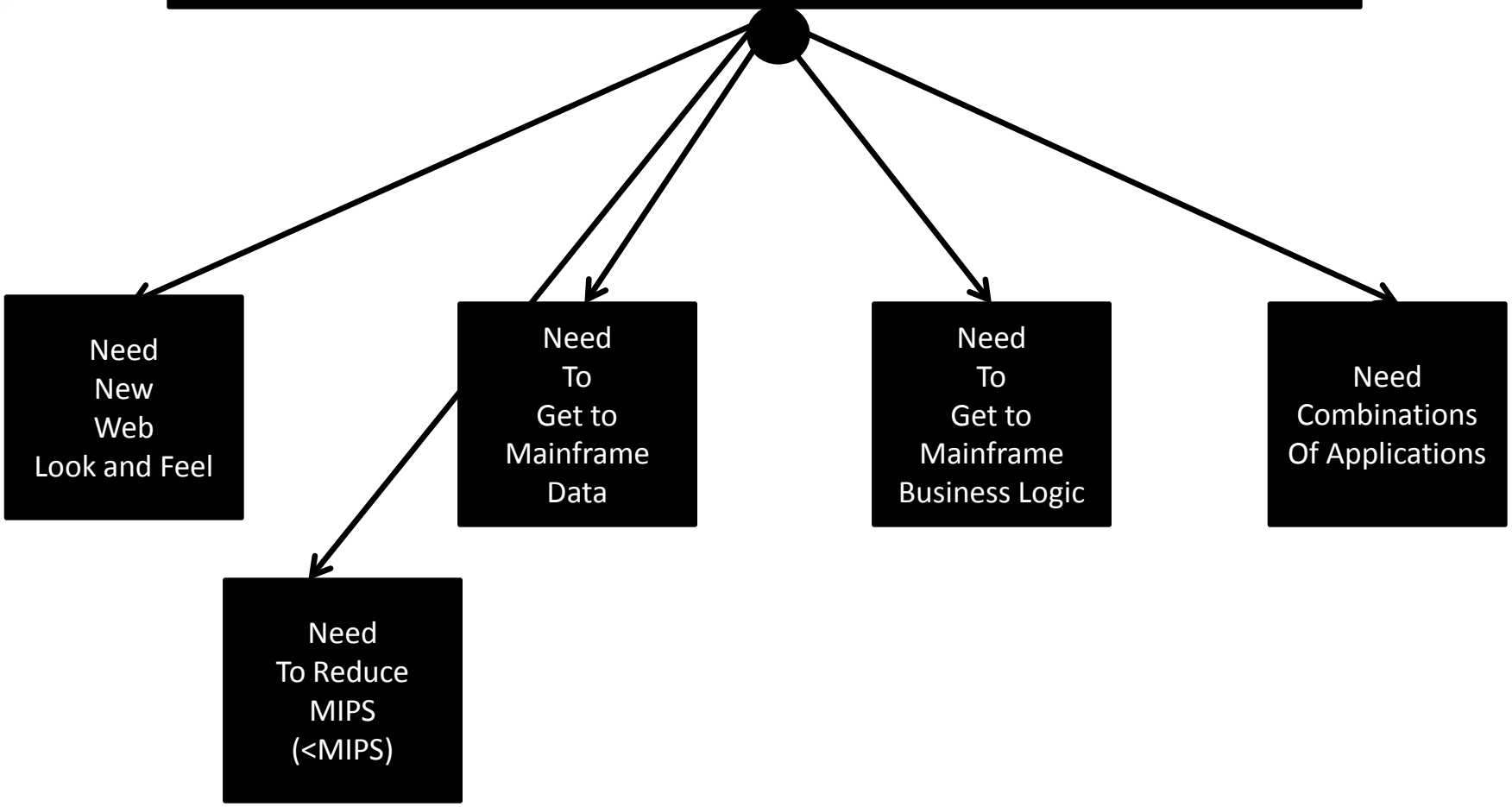

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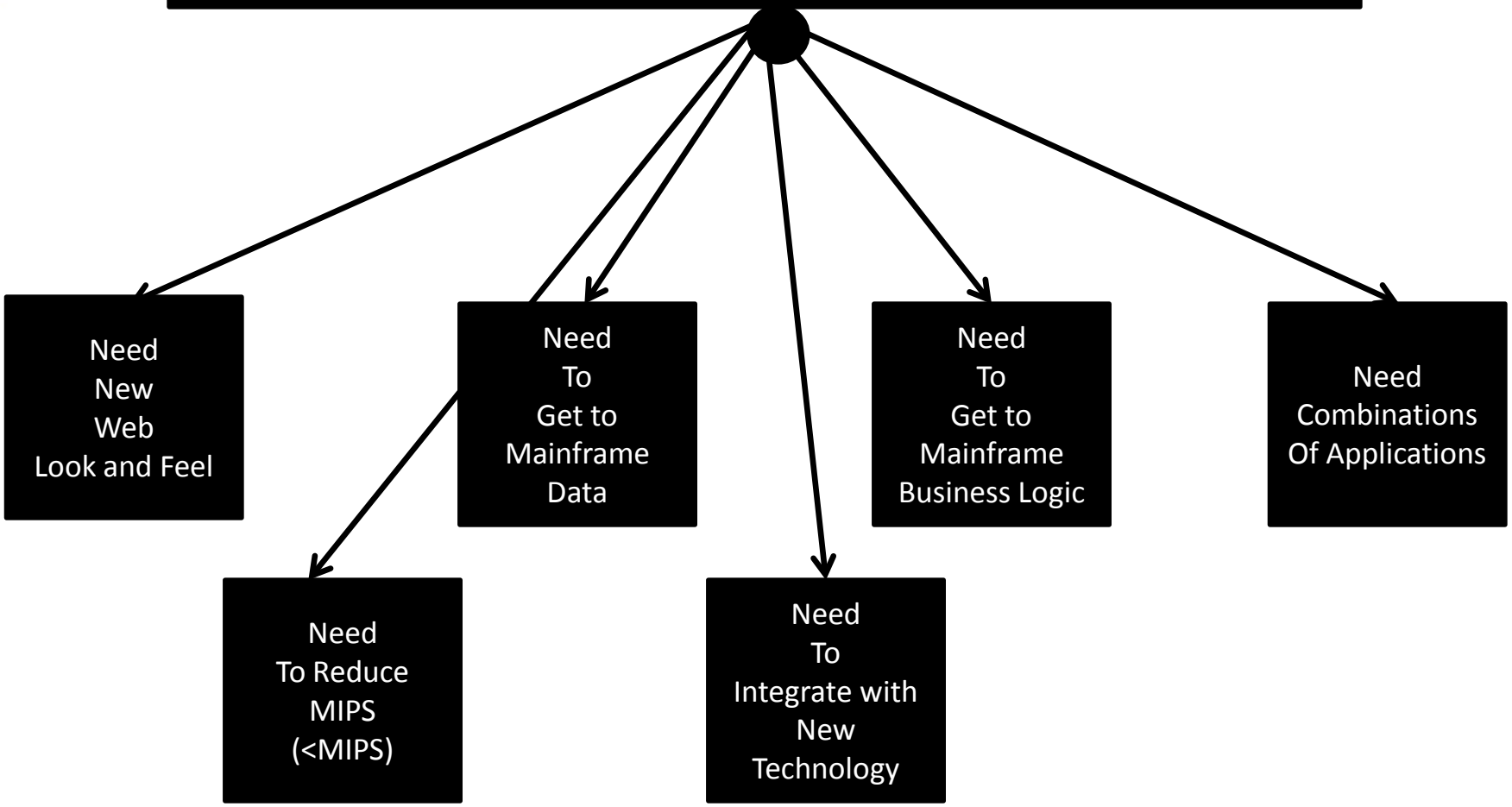

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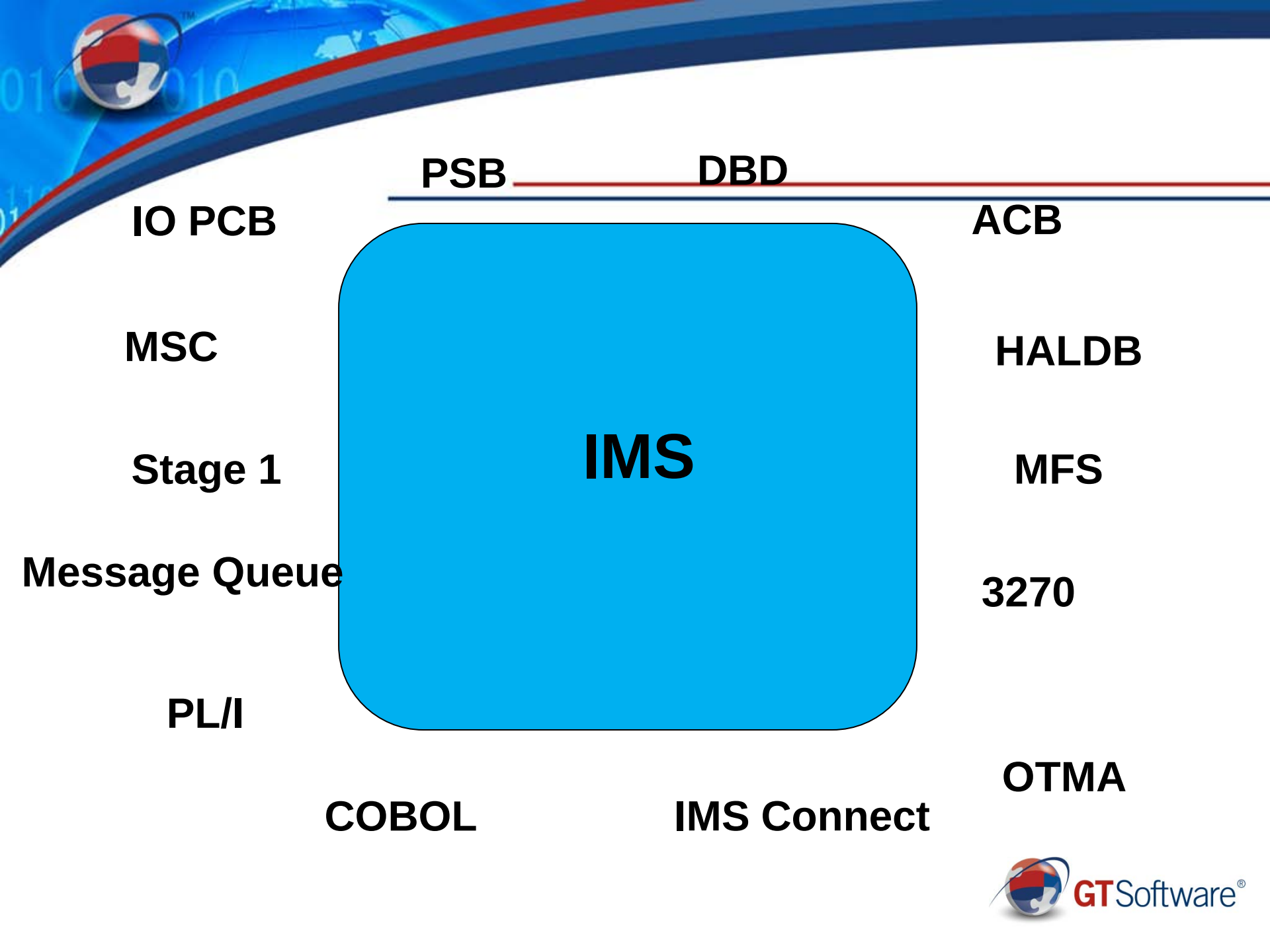
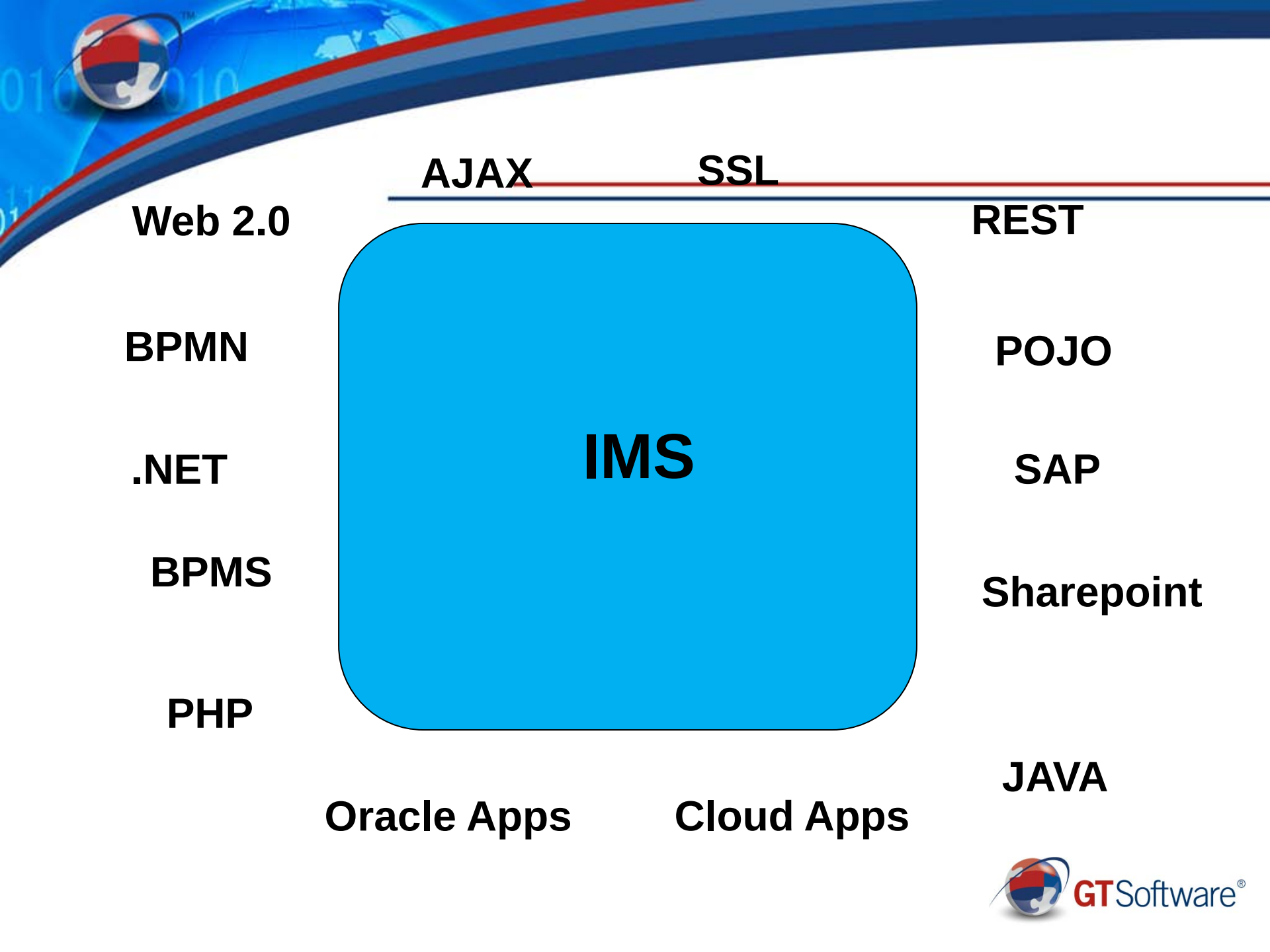

PSB
DBD
IO PCB
ACB
MSC
HALDB
IMS
Stage 1
MFS
Message Queue
3270
PL/I
OTMA
COBOL
IMS Connect
GTSoftware®


AJAX
SSL
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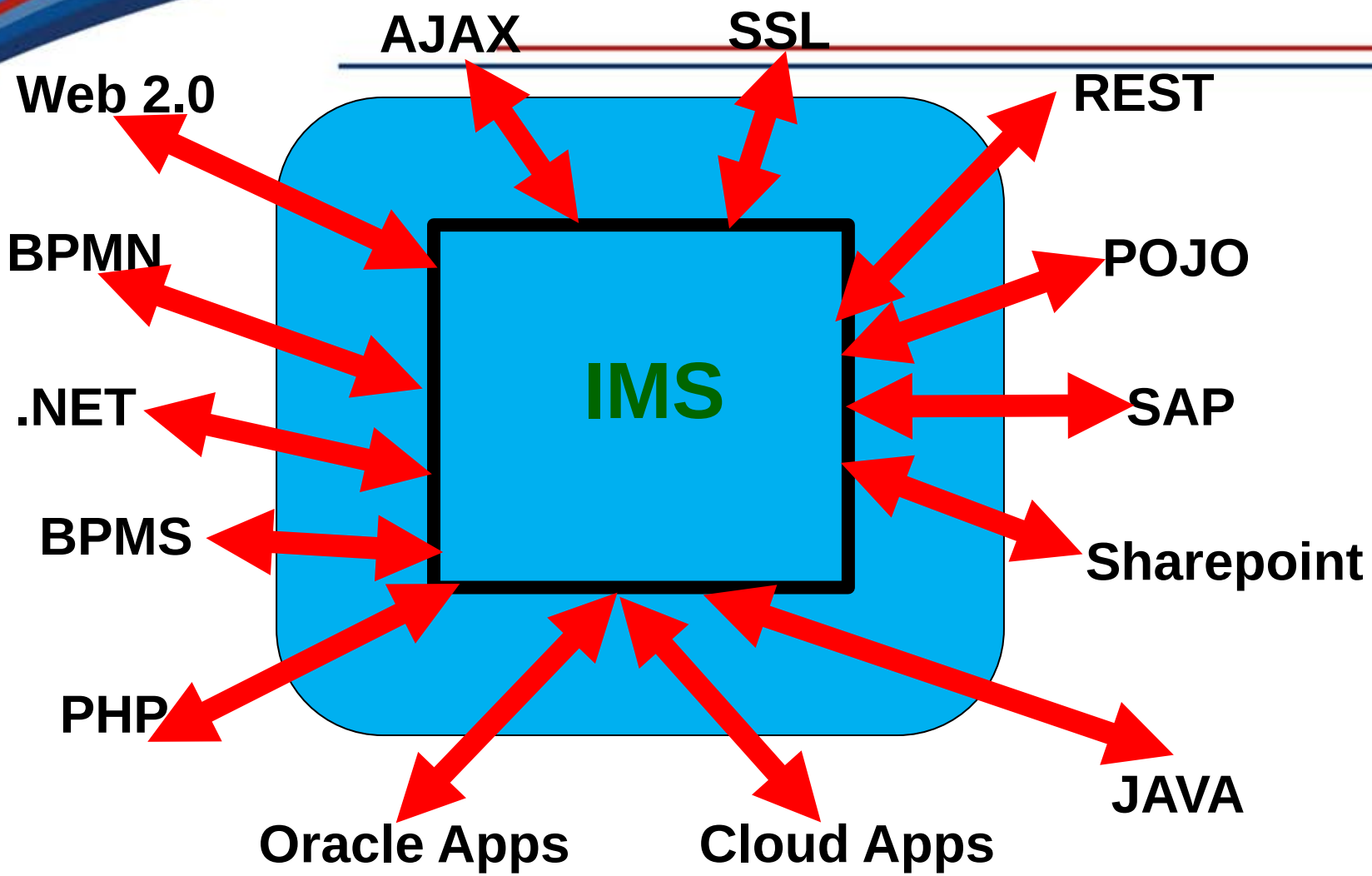
REST
BPMN
POJO
IMS
.NET
SAP
BPMS
Sharepoint
PHP
JAVA
Oracle Apps
Cloud Apps
GTSoftware®


AJAX
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Cloud Apps

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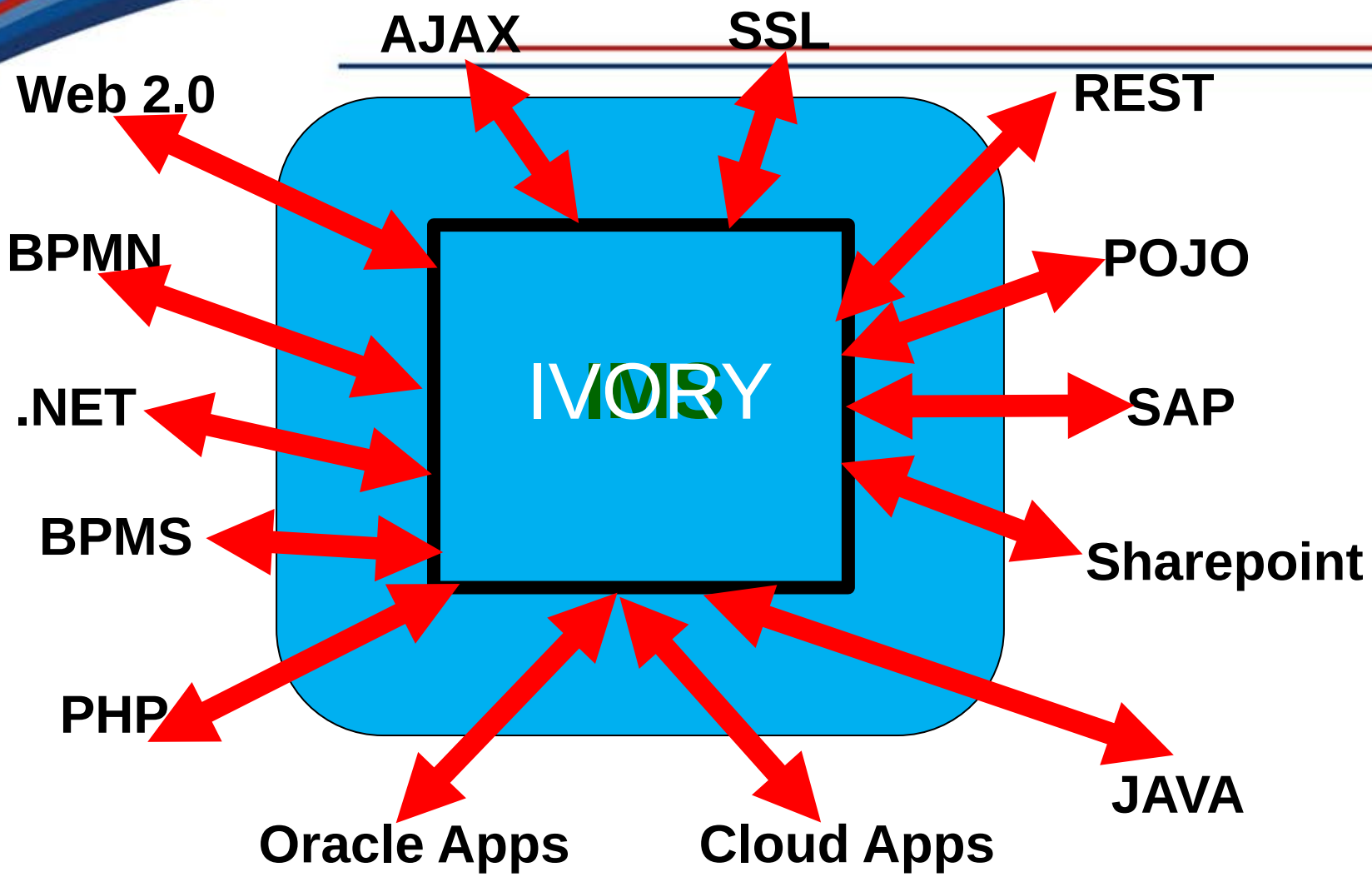
AJAX
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Sharepoint
PHP
JAVA
Oracle Apps
Cloud Apps

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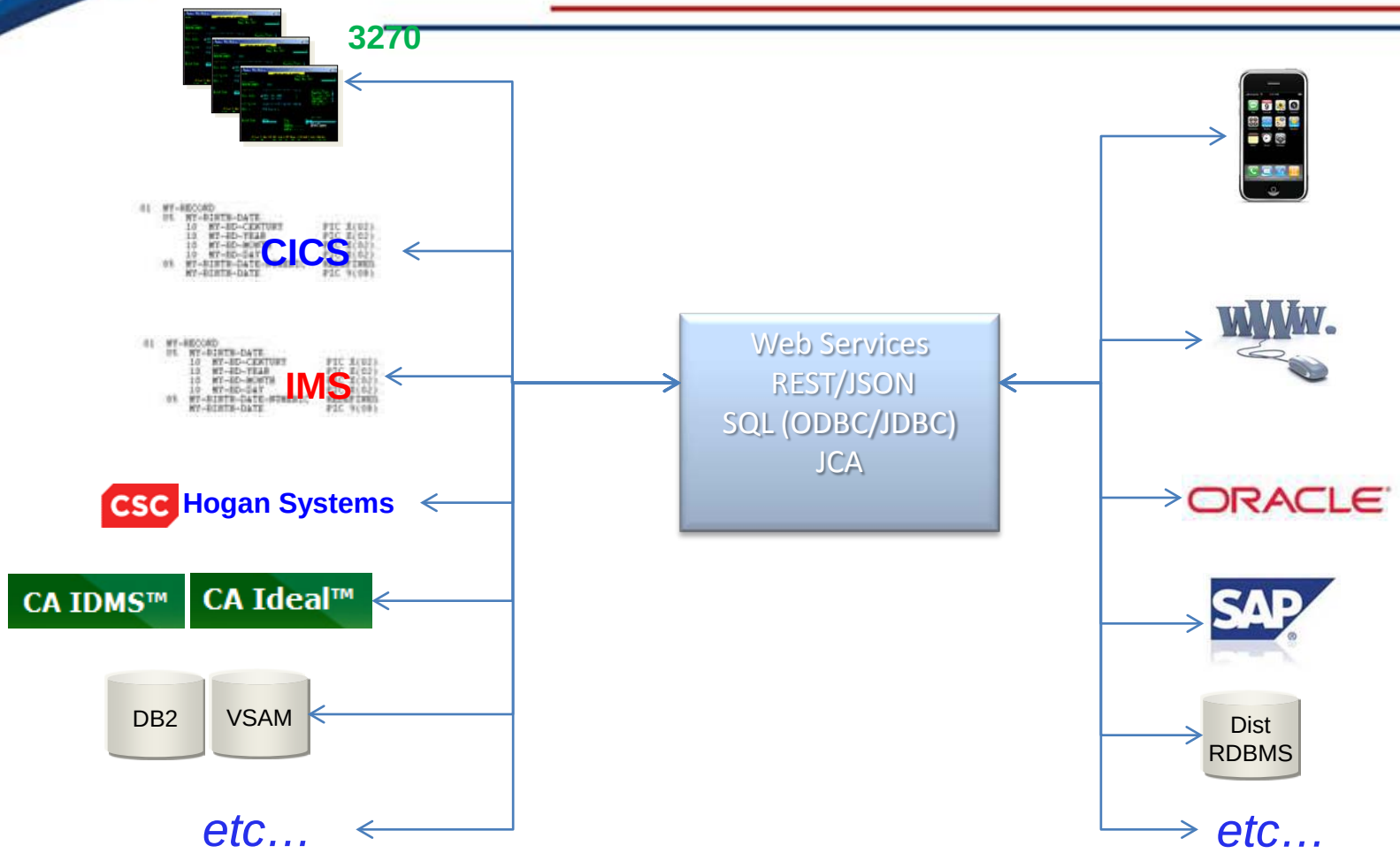
Mainframe Integration Issues and Opportunities



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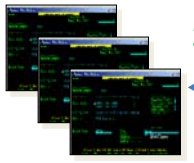
Cloud to Mainframe Integration



3270

CICS

IMS

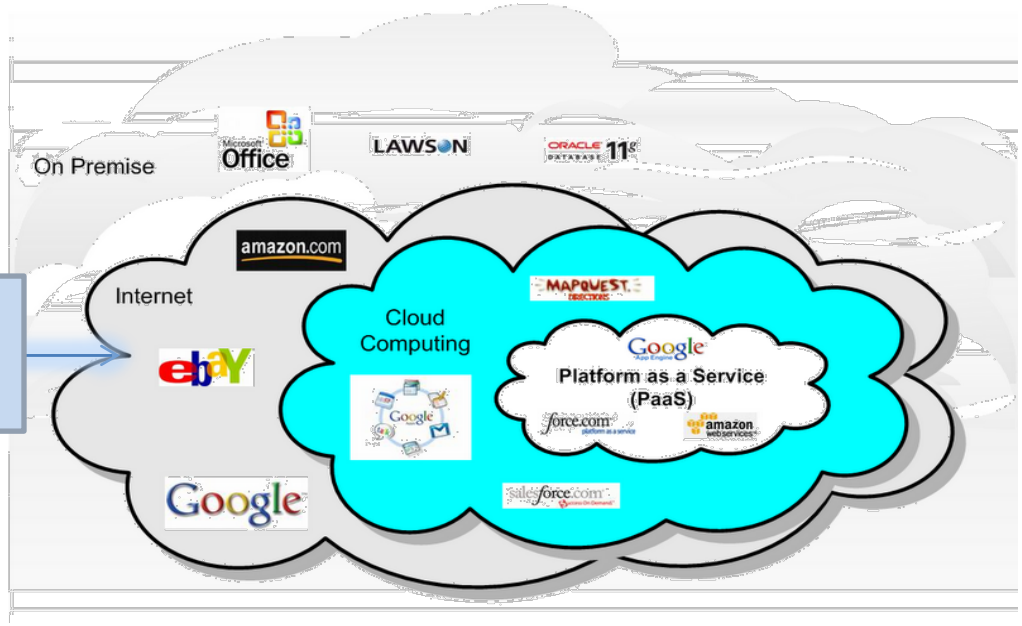
software AG

CA IDMS™ CA Ideal™

DB2 IMS VSAM

Adabas IDMS Datacom

SOAP
REST
SQL



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New Development Paradigm

- Integrated drag and drop graphical environment(No coding)

- One Tool no other pre-reqs.
  WSDL-First design

- Design once, deploy many:
  - Started Task (OTMA)
  - CICS
  - Linux for SystemZ
  - Windows (IMS Connect)
  - Linux (IMS Connect)

- Once designed available via:
  - Web Services (WSDL)
  - REST-ful services
  - JSON
  - JCA

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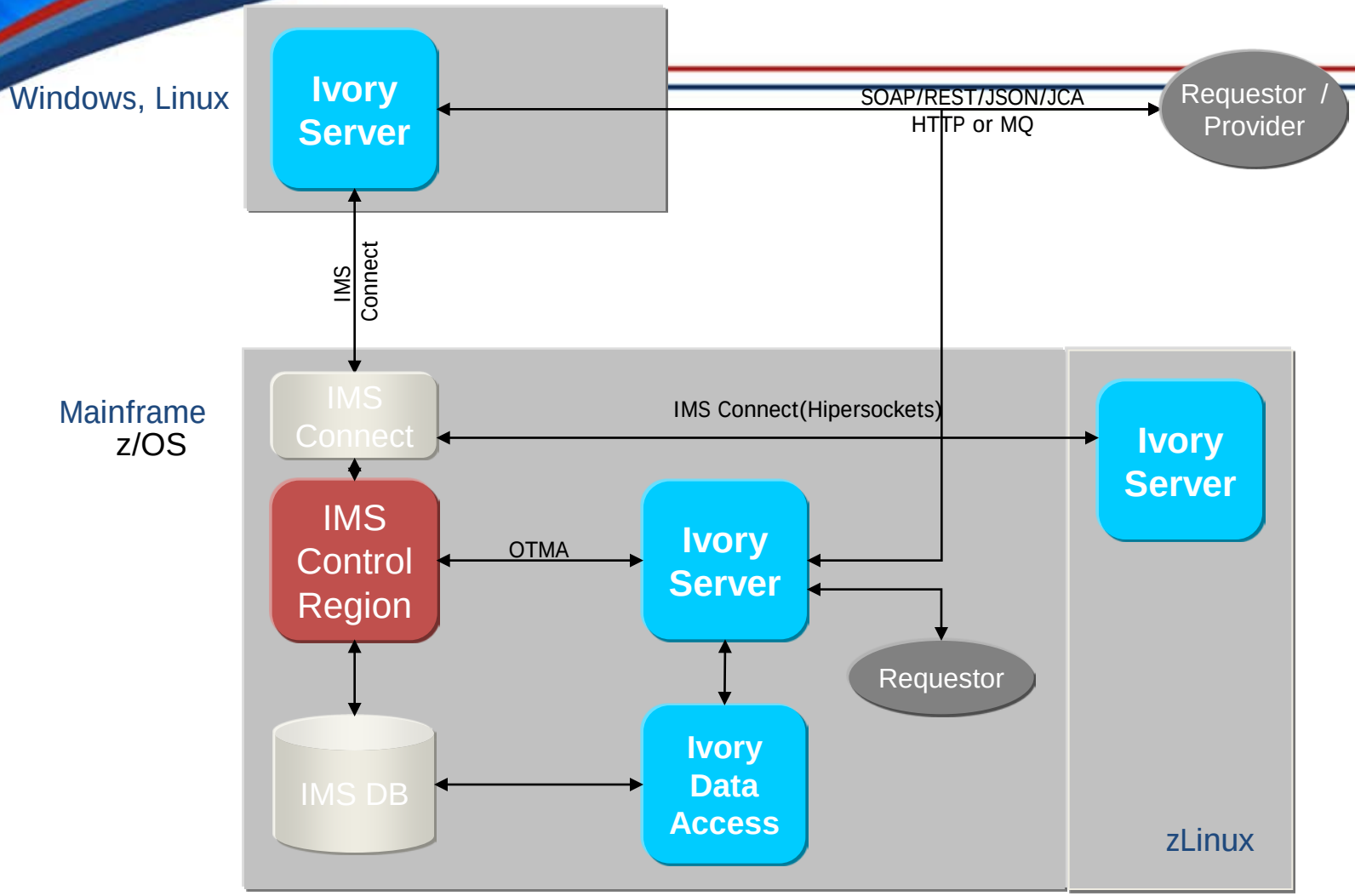
Ivory Runtime Architecture



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Hard Questions

- Can I get IMS data for use in the new software?
- Can I get IMS transactions easily incorporated into the new software?
- What about the others(CICS,IDMS/DC,IDEAL,NATURAL,etc.?
- Do you have the need for 1 IMS tran per service with no other mainframe artifacts?
- Are you are at the current latest edition/version of IMS?
- Do you only want to run the services strictly on the mainframe?
- Do you only have simple IMS transactions, no conversational IMS transactions?
- Do I need IMS calling out to other distributed systems?

Easy !

I need to have IMS data in a new spreadsheet…….

- IDA demo

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Easy !

I need to have IMS transactions in a new software…….

- ISA demo

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Rest and 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

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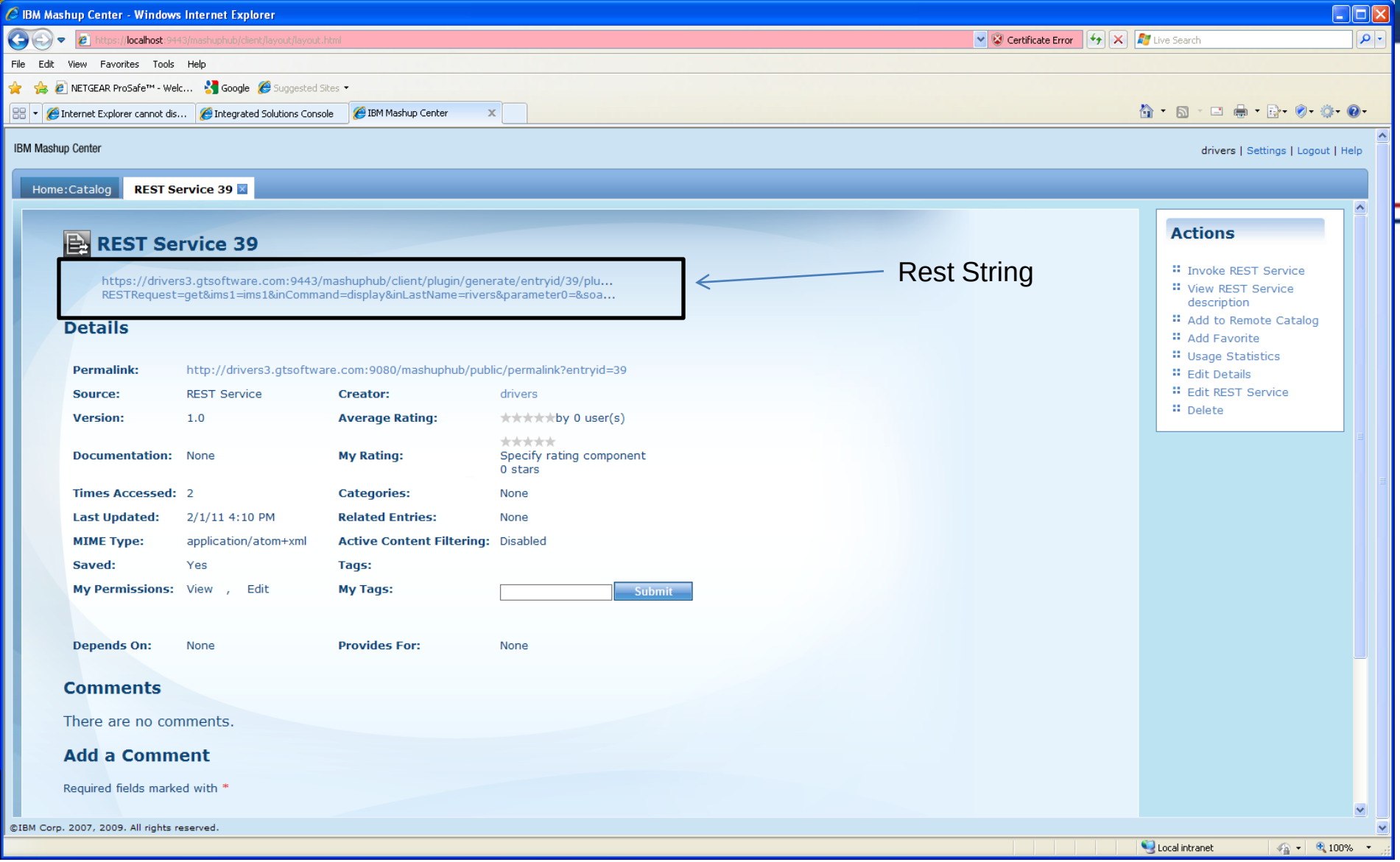

IBM Mashup Hub(InfoSphere MashupHub) , and Ivory REST Service(IMS) has been added to the hub as a listed REST service

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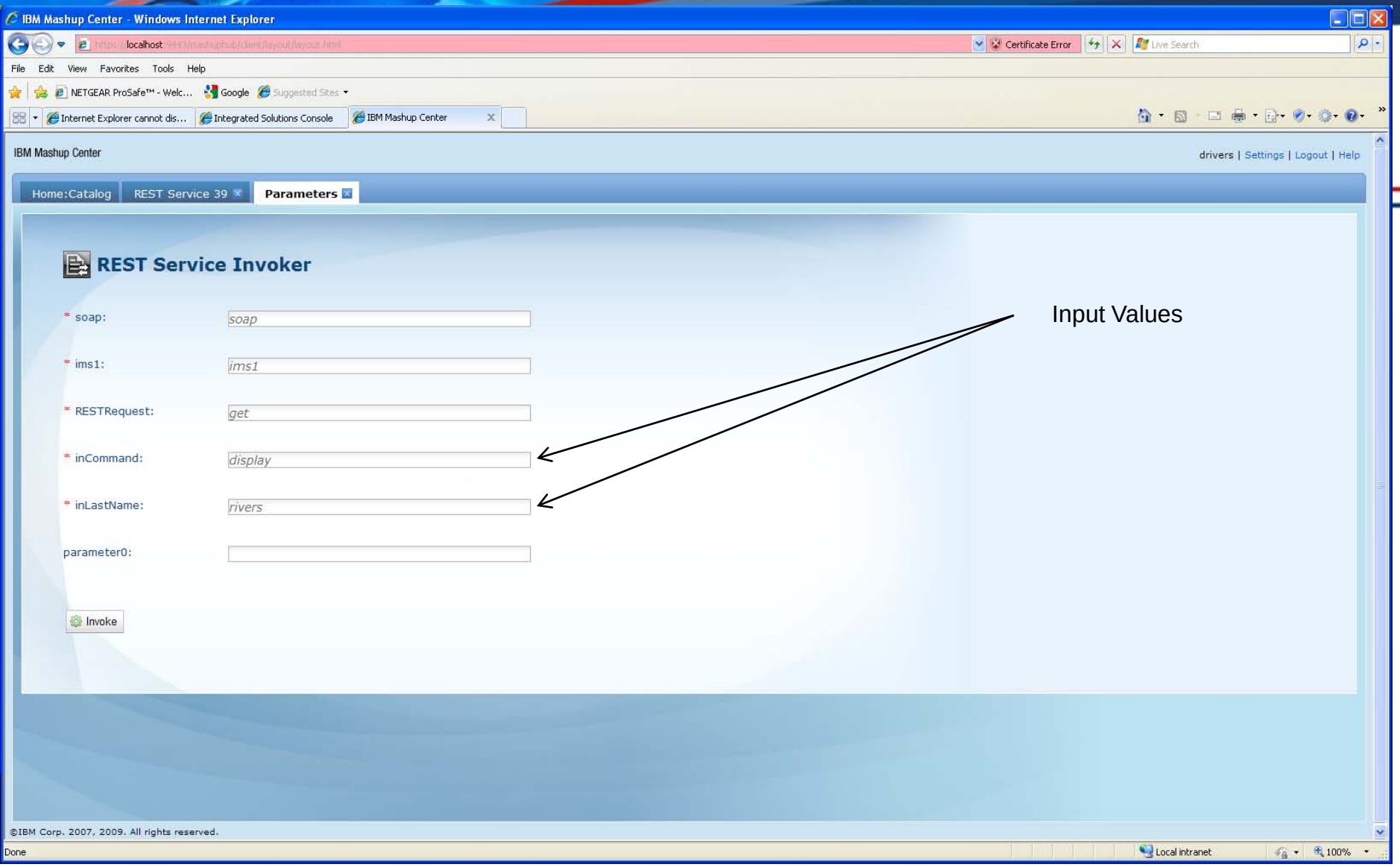

IBM Mashup Hub(InfoSphere MashupHub) , REST Service Invoker

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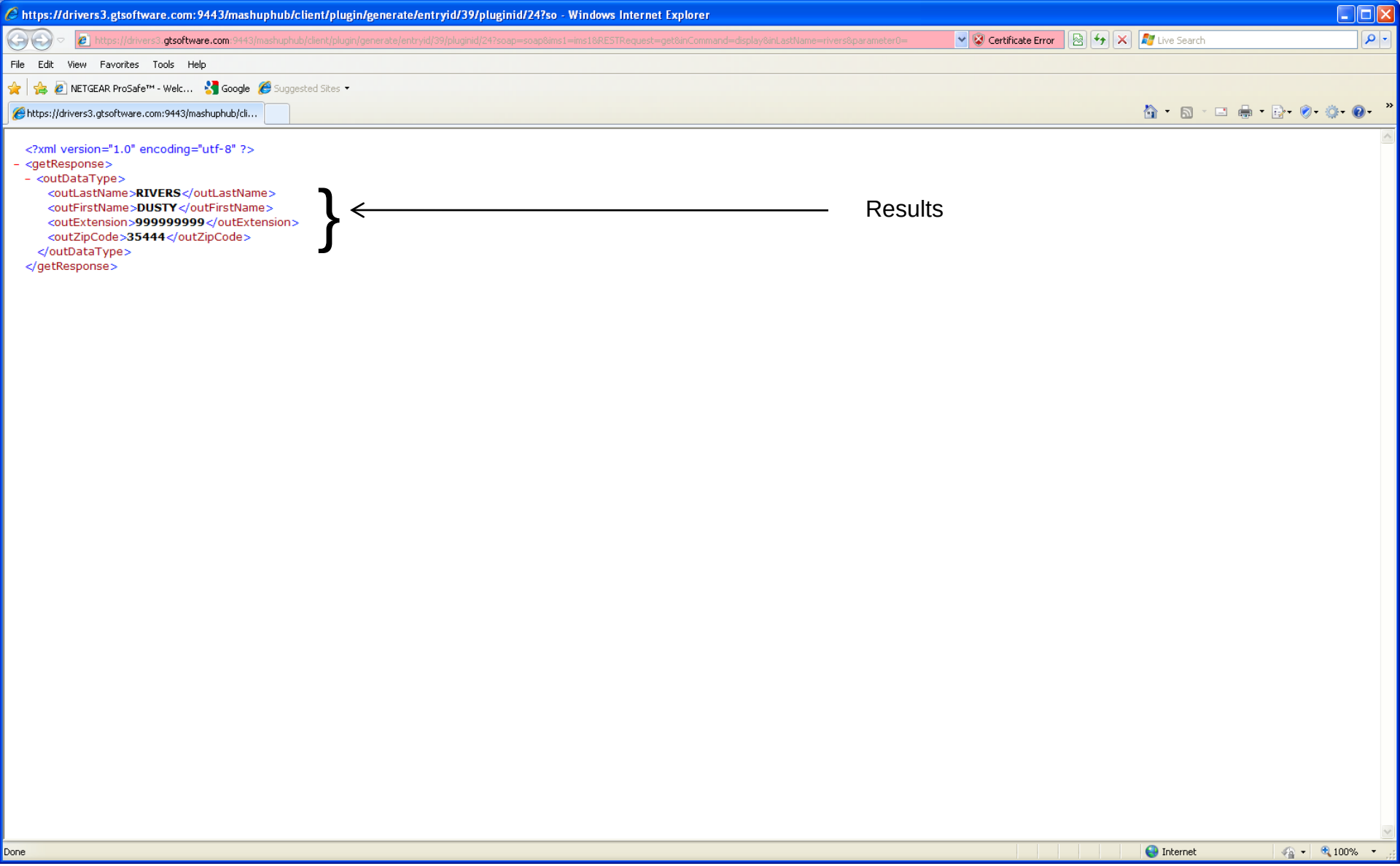
https://drivers3.gtsoftware.com:9443/mashuphub/client/plugin/generate/entryid/39/pluginid/24?so - Windows Internet Explorer
Certificate Error
Live Search
File Edit View Favorites Tools Help
NETGEAR ProSafe™ - Welc...
Google
Suggested Sites
https://drivers3.gtsoftware.com:9443/mashuphub/cli...
<?xml version="1.0" encoding="utf-8" ?>
<getResponse>
<outDataType>
<outLastName>RIVERS</outLastName>
<outFirstName>DUSTY</outFirstName>
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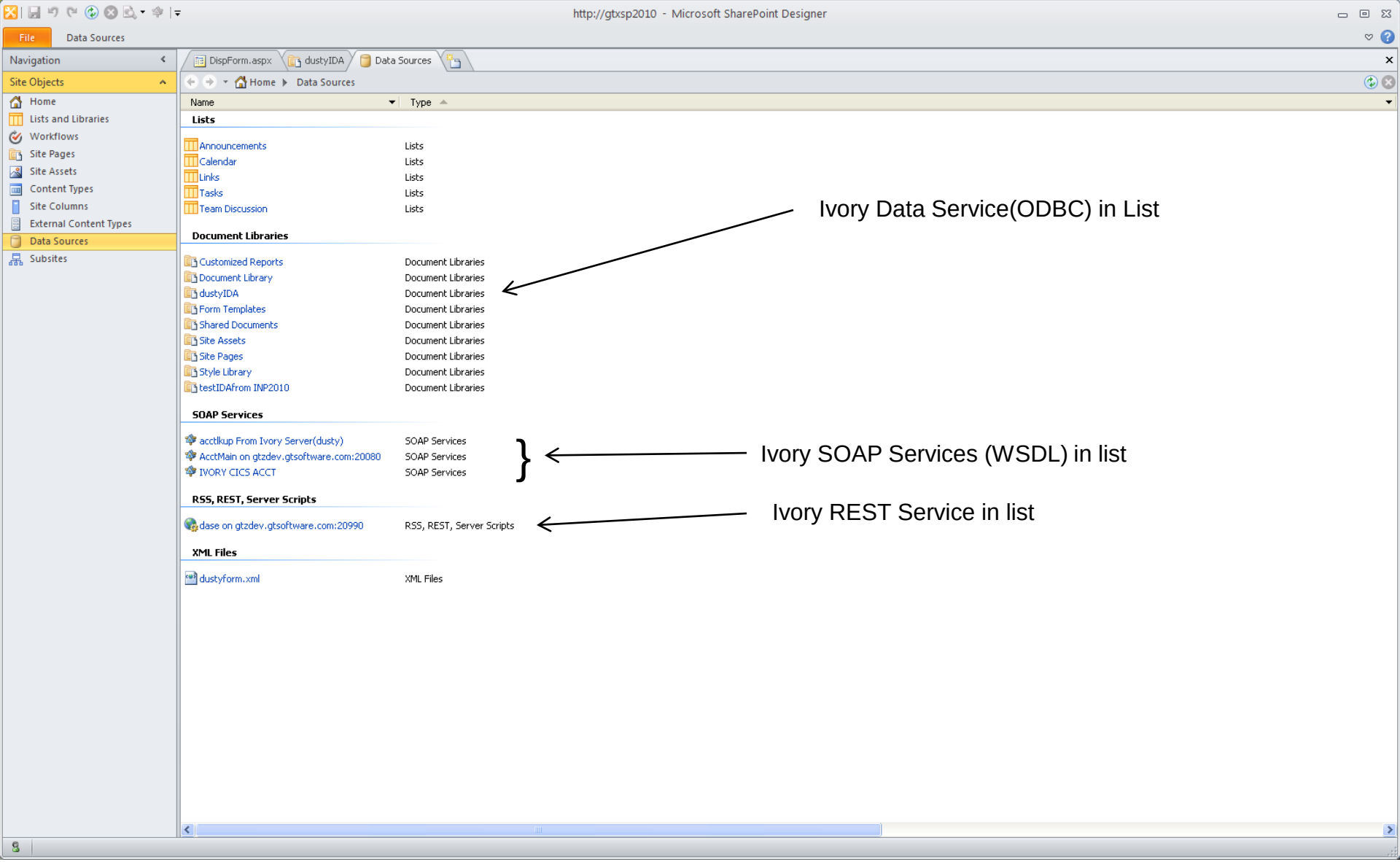
</getResponse>
Results
Done
Internet
100%



SharePoint 2010 Designer

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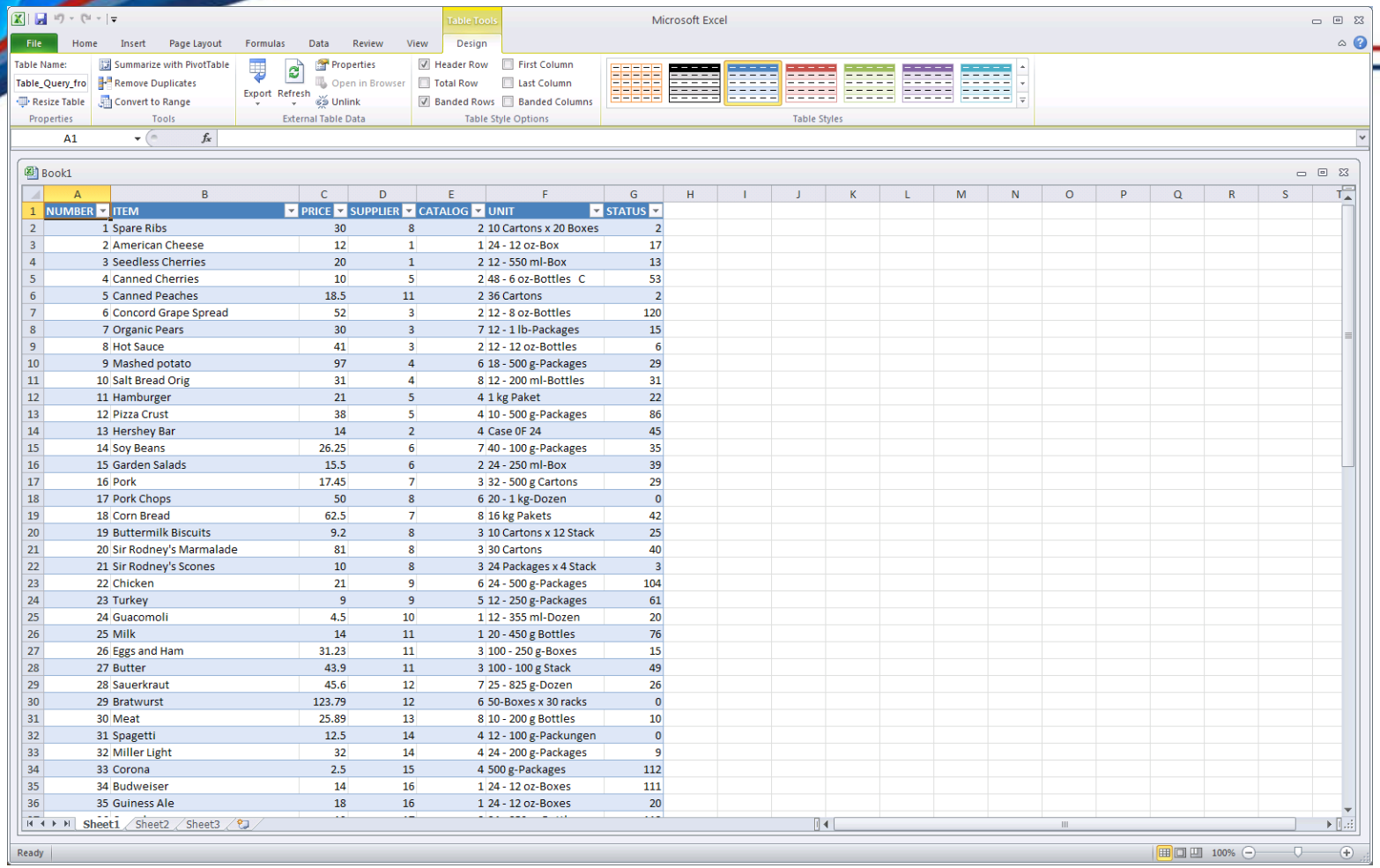

NUMBER	ITEM	PRICE	SUPPLIER	CATALOG	UNIT	STATUS
1	Spare Ribs	30	8	2	10 Cartons x 20 Boxes	2
2	American Cheese	12	1	1	24 - 12 oz-Box	17
3	Seedless Cherries	20	1	2	12 - 550 ml-Box	13
4	Canned Cherries	10	5	2	48 - 6 oz-Bottles C	53
5	Canned Peaches	18.5	11	2	36 Cartons	2
6	Concord Grape Spread	52	3	2	12 - 8 oz-Bottles	120
7	Organic Pears	30	3	7	12 - 1 lb-Packages	15
8	Hot Sauce	41	3	2	12 - 12 oz-Bottles	6
9	Mashed potato	97	4	6	18 - 500 g-Packages	29
10	Salt Bread Orig	31	4	8	12 - 200 ml-Bottles	31
11	Hamburger	21	5	4	1 kg Paket	22
12	Pizza Crust	38	5	4	10 - 500 g-Packages	86
13	Hershey Bar	14	2	4	Case 0F 24	45
14	Soy Beans	26.25	6	7	40 - 100 g-Packages	35
15	Garden Salads	15.5	6	2	24 - 250 ml-Box	39
16	Pork	17.45	7	3	32 - 500 g Cartons	29
17	Pork Chops	50	8	6	20 - 1 kg-Dozen	0
18	Corn Bread	62.5	7	8	16 kg Pakets	42
19	Buttermilk Biscuits	9.2	8	3	10 Cartons x 12 Stack	25
20	Sir Rodney's Marmalade	81	8	3	30 Cartons	40
21	Sir Rodney's Scones	10	8	3	24 Packages x 4 Stack	3
22	Chicken	21	9	6	24 - 500 g-Packages	104
23	Turkey	9	9	5	12 - 250 g-Packages	61
24	Guacomoli	4.5	10	1	12 - 355 ml-Dozen	20
25	Milk	14	11	1	20 - 450 g Bottles	76
26	Eggs and Ham	31.23	11	3	100 - 250 g-Boxes	15
27	Butter	43.9	11	3	100 - 100 g Stack	49
28	Sauerkraut	45.6	12	7	25 - 825 g-Dozen	26
29	Bratwurst	123.79	12	6	50-Boxes x 30 racks	0
30	Meat	25.89	13	8	10 - 200 g Bottles	10
31	Spagetti	12.5	14	4	12 - 100 g-Packungen	0
32	Miller Light	32	14	4	24 - 200 g-Packages	9
33	Corona	2.5	15	4	500 g-Packages	112
34	Budweiser	14	16	1	24 - 12 oz-Boxes	111
35	Guiness Ale	18	16	1	24 - 12 oz-Boxes	20

IMS data (via ODBC) in a Microsoft Excel Spreadsheet

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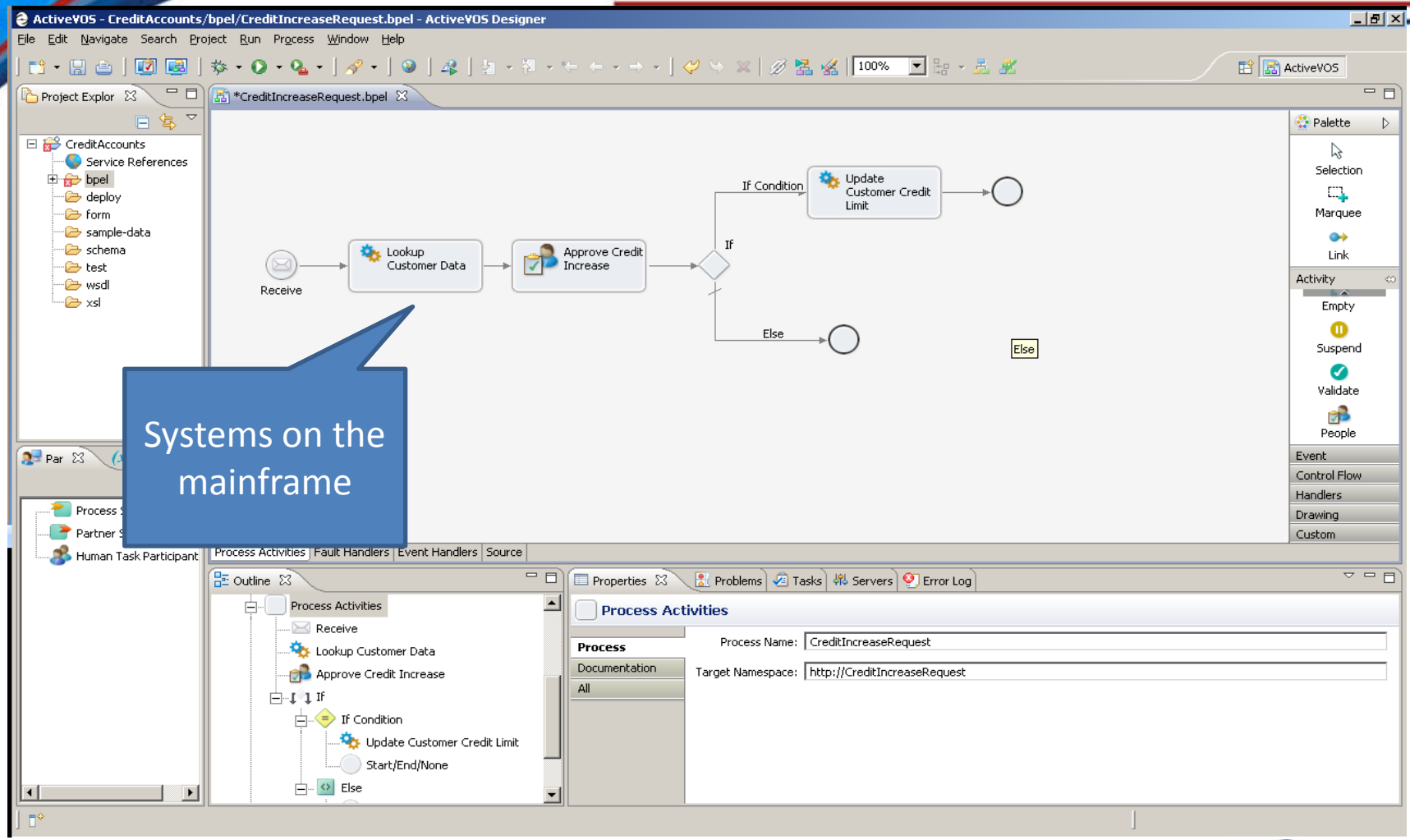
Ivory and BPMN(ActiveVOS)



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Issues with Services on the Mainframe

- SOAP/XML Processing on the GPP = More MIPS
- New Compiled programs running on GPP = More MIPS
- More installed programs/products = More Support $$$
- No zIIP or zAAP use the IFL

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- 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

IMS and Ivory Other Implementations

- Batch Support
  - Enabling IMS Batch jobs to call external services
  - Server can be linked in for performance
  - All necessary code and linkage created

- Complete IMS Outbound Support
  - IMS transactions enabled to call external services (like SAP, Oracle, Sharepoint etc)

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IMS and Outbound (WSDL – First)

- Must be able to Import WSDL and map correctly
- Must be able to generate correct PL/1 and COBOL from WSDL
- Must be able to easily build usable services

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Real World:

- Bank (Banking Application)
- Insurance (Mobile Insurance Application for agents)
- Manufacturing (Automobile Engineering)

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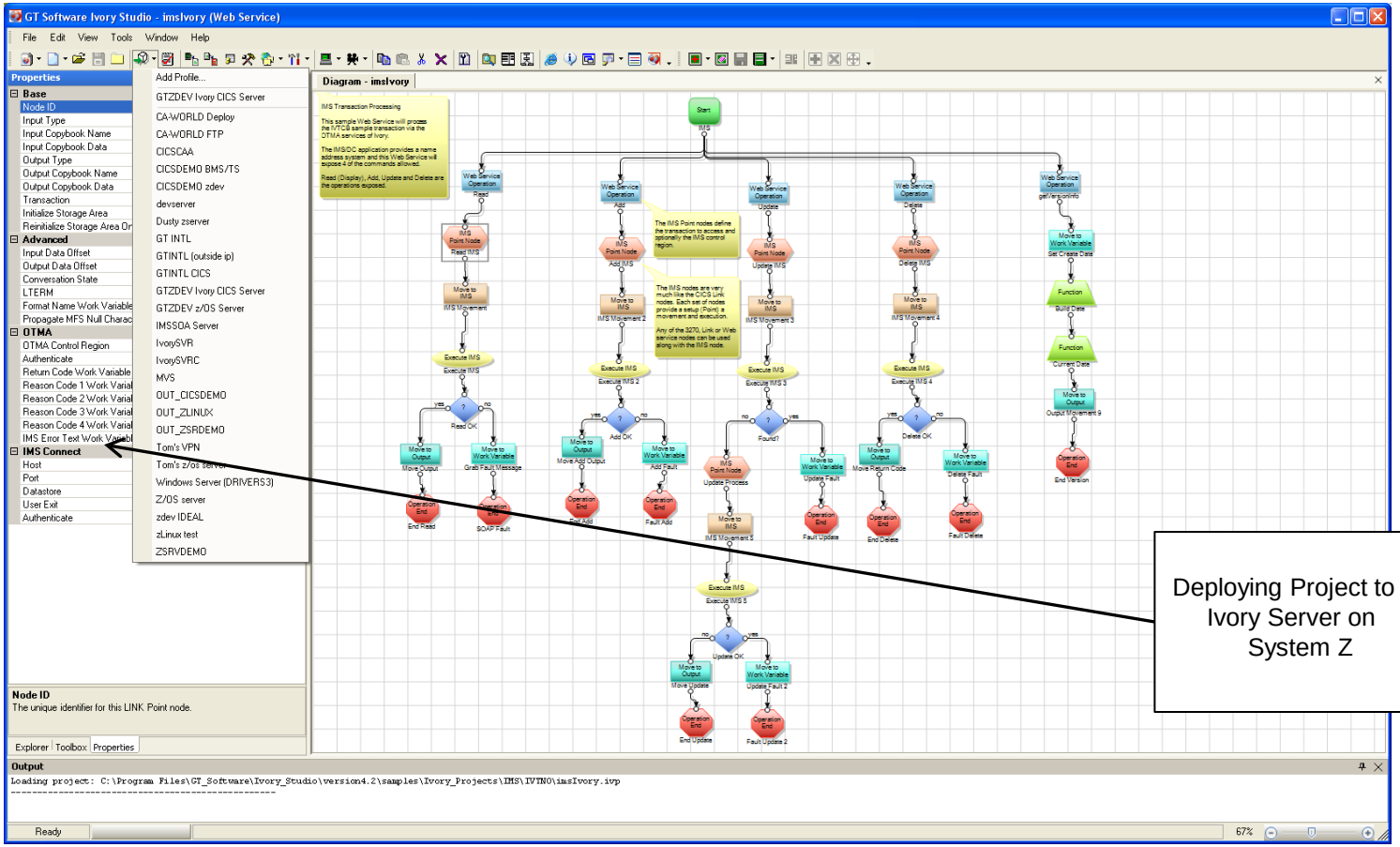
Deploying to Linux on System Z



Deploying Project to Ivory Server on System Z

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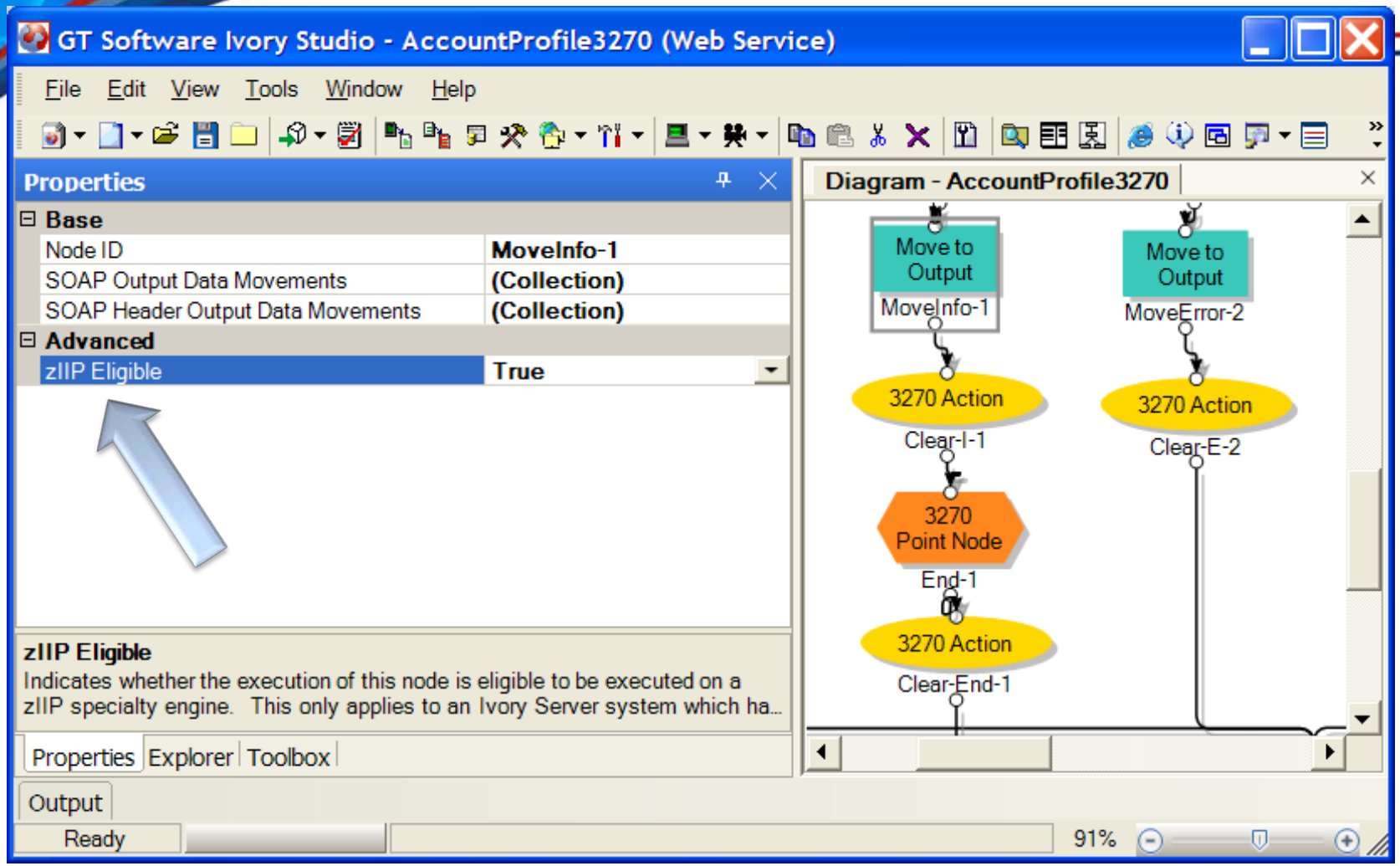
Ivory uses the zIIP



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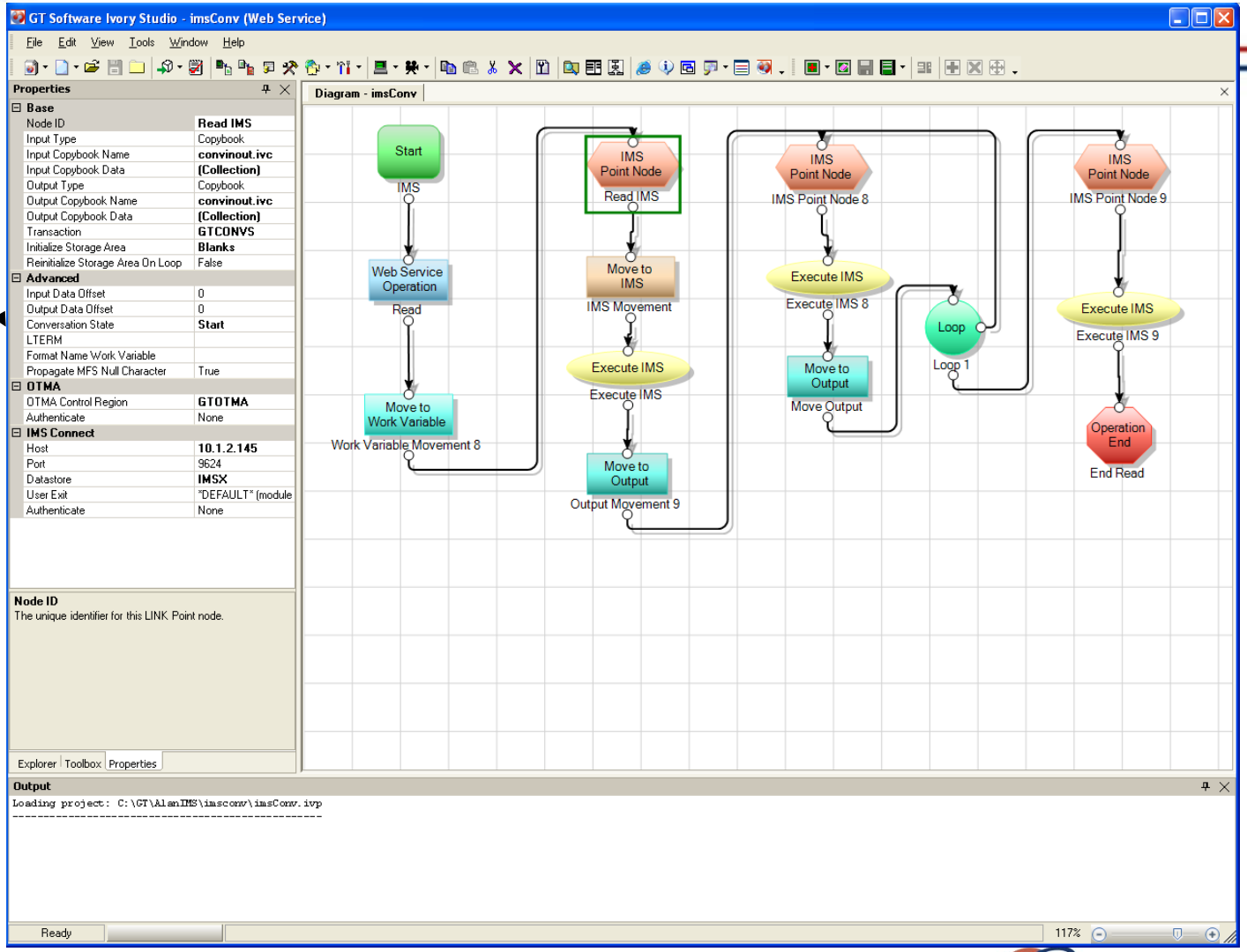
IMS Conversational as Service

Conversation State



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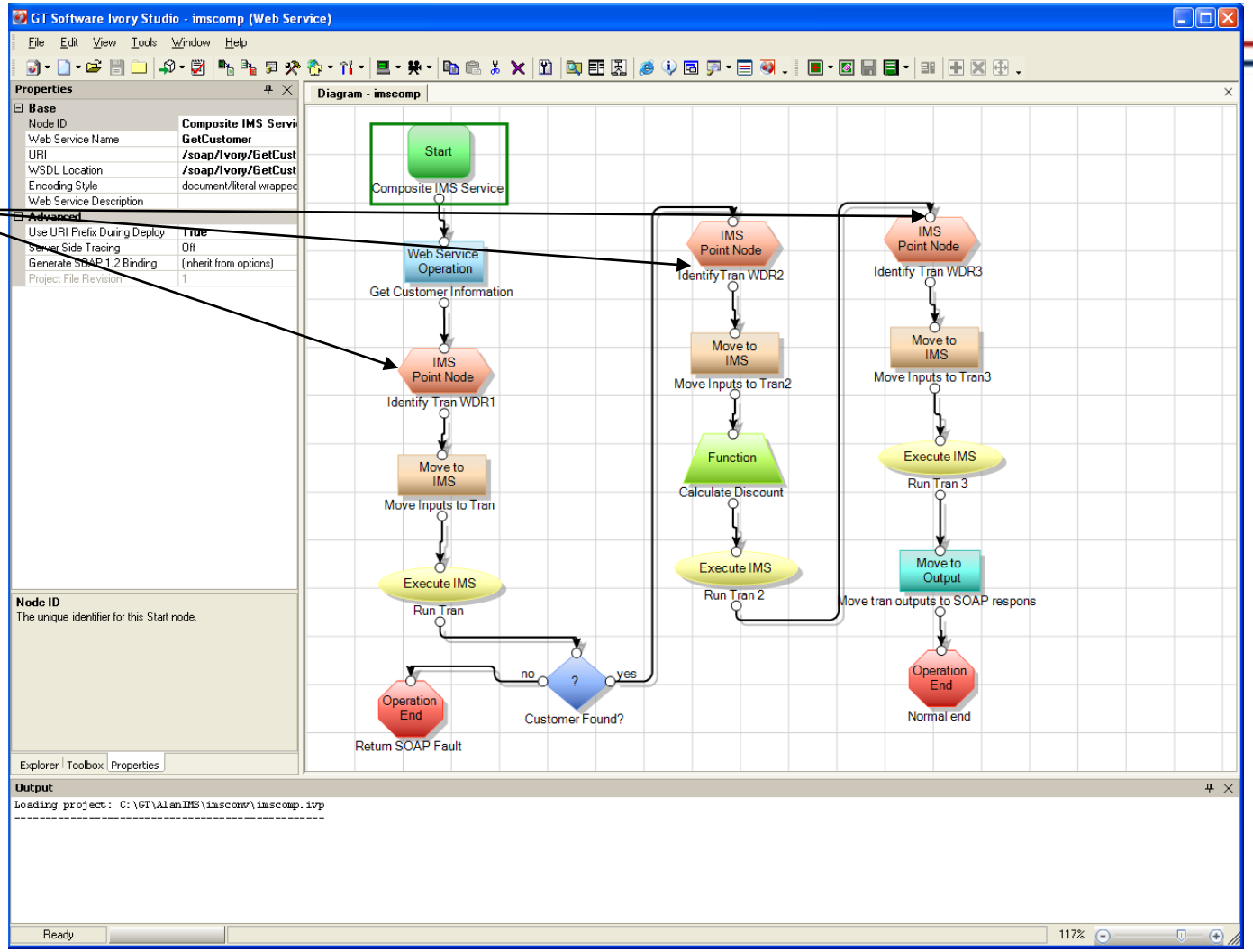
IMS Composite as Service

Multiple IMS Transactions



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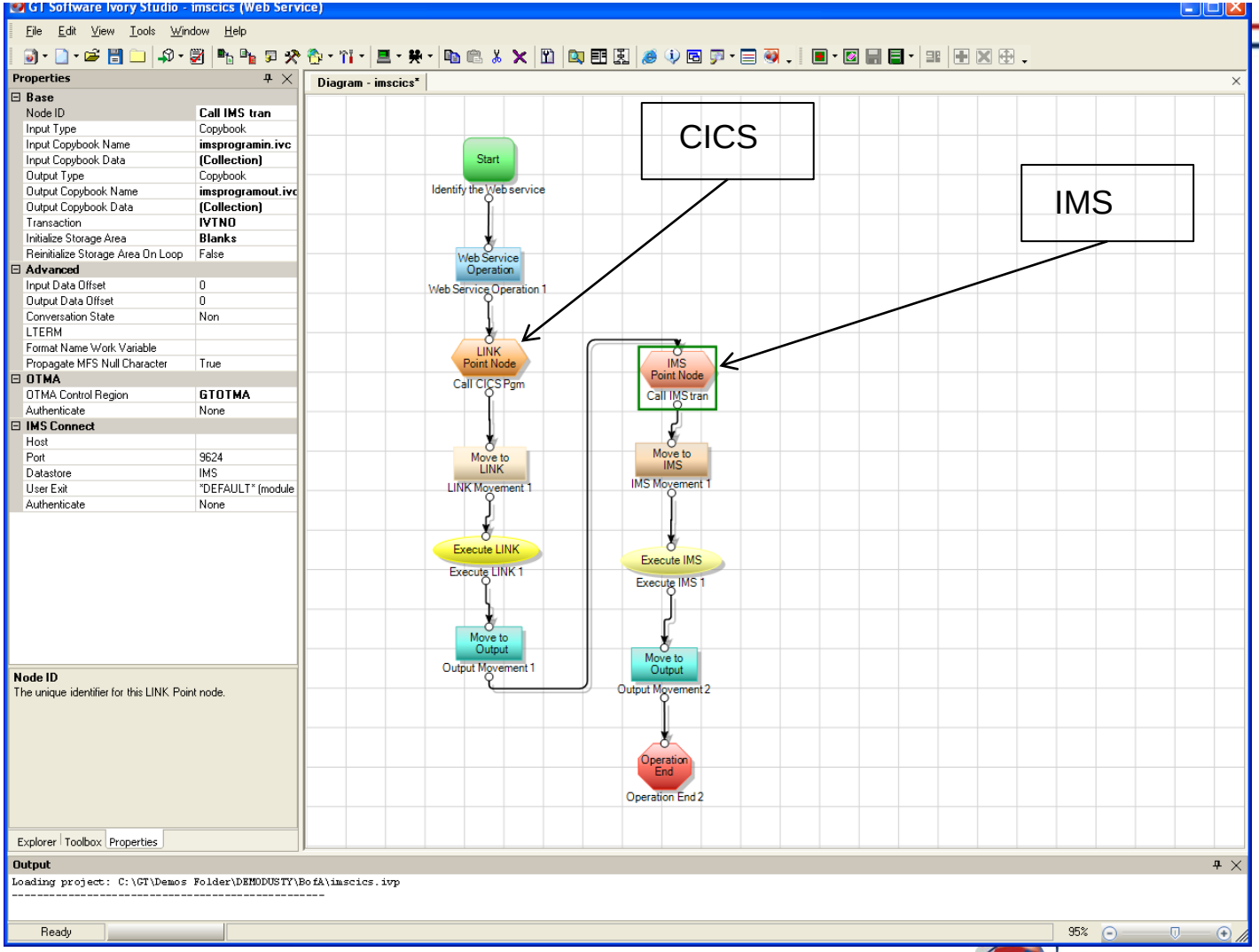
IMS & CICS in the same Service



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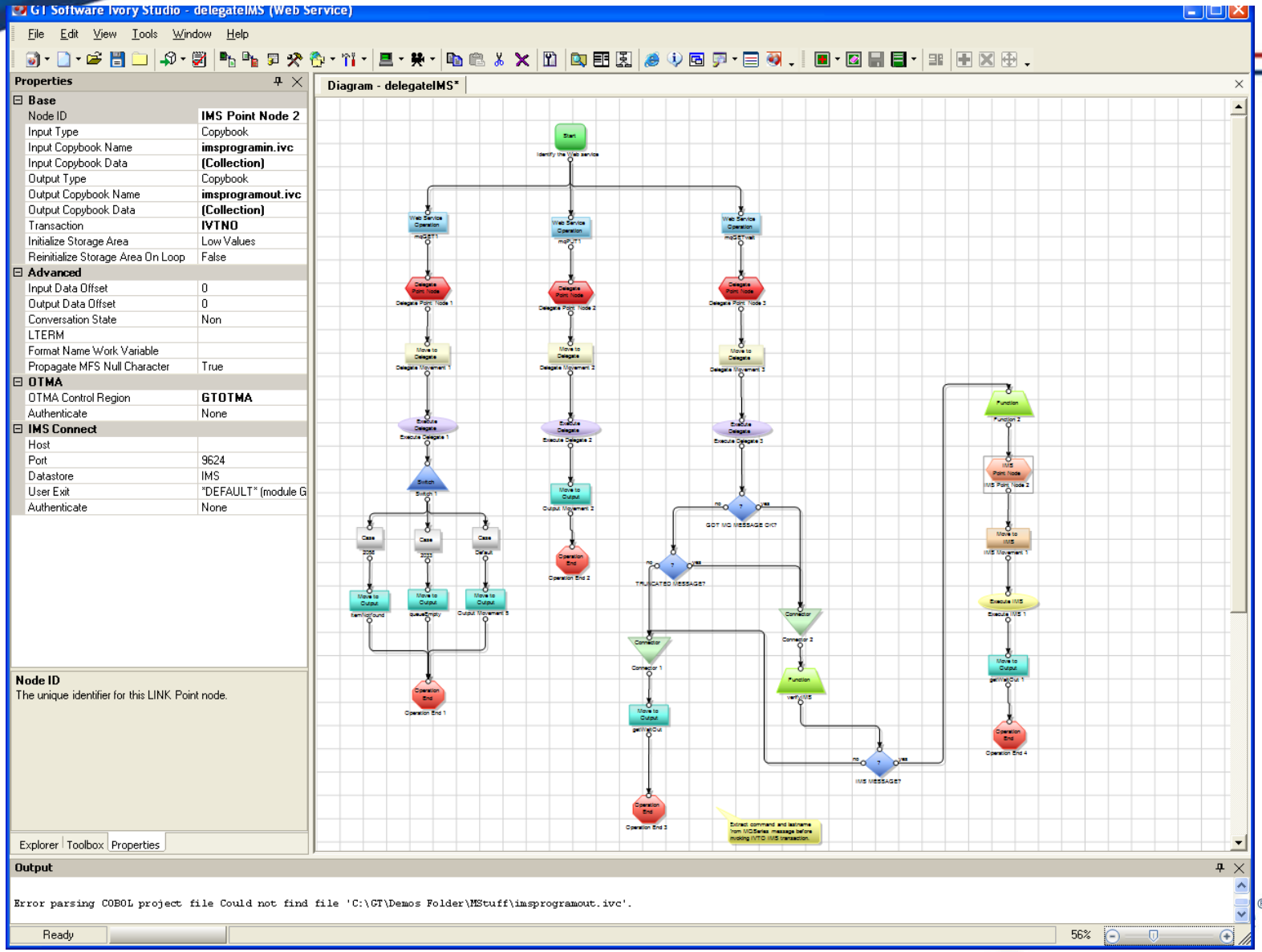
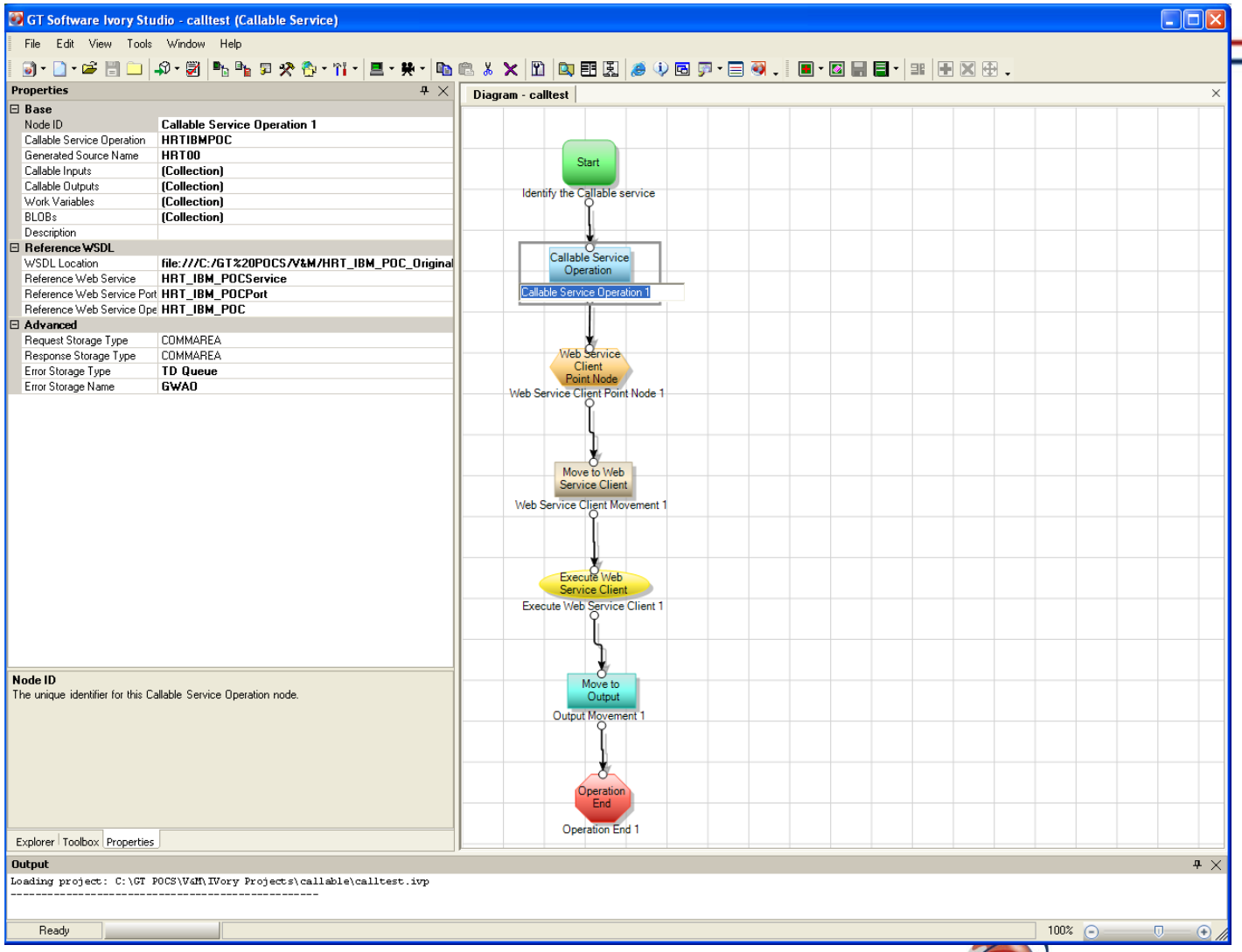
Custom code, MQ and IMS



IMS Calling external services



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IMS Calling external services

- IMS transactions calling SAP processes
- IMS transactions calling Tandem processes
- IMS transactions calling Oracle processes
- IMS transactions calling Microsoft Sharepoint
- IMS Batch jobs calling distributed services

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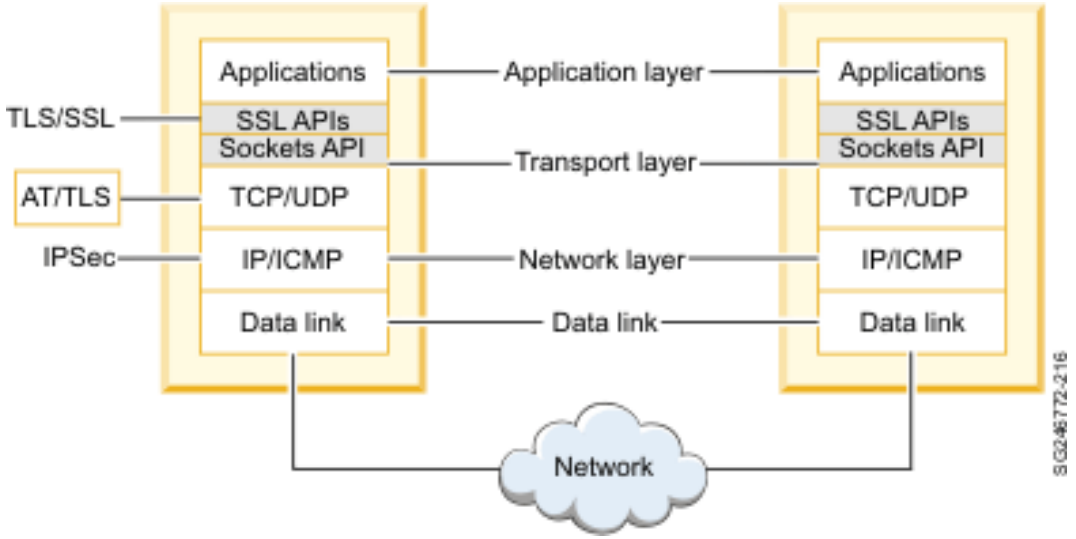
Security

- Use AT-TLS(Application Transparent Transport Level Security)



IMS

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