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Agile Business Suite Interfaces

Practical Examples

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Agenda

- Review potential interface requirements
- Examine both inbound and outbound options
- Show customer solutions

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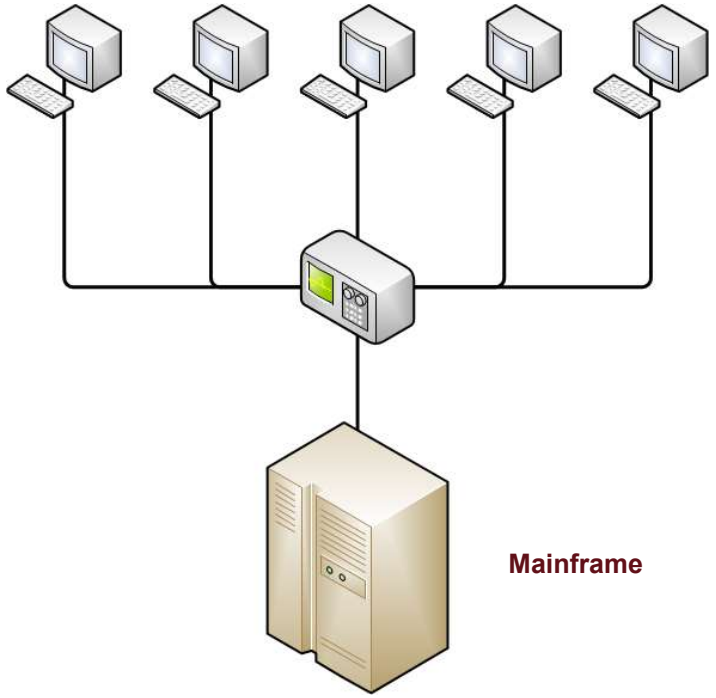
The good old days



Dumb Screens

Mainframe

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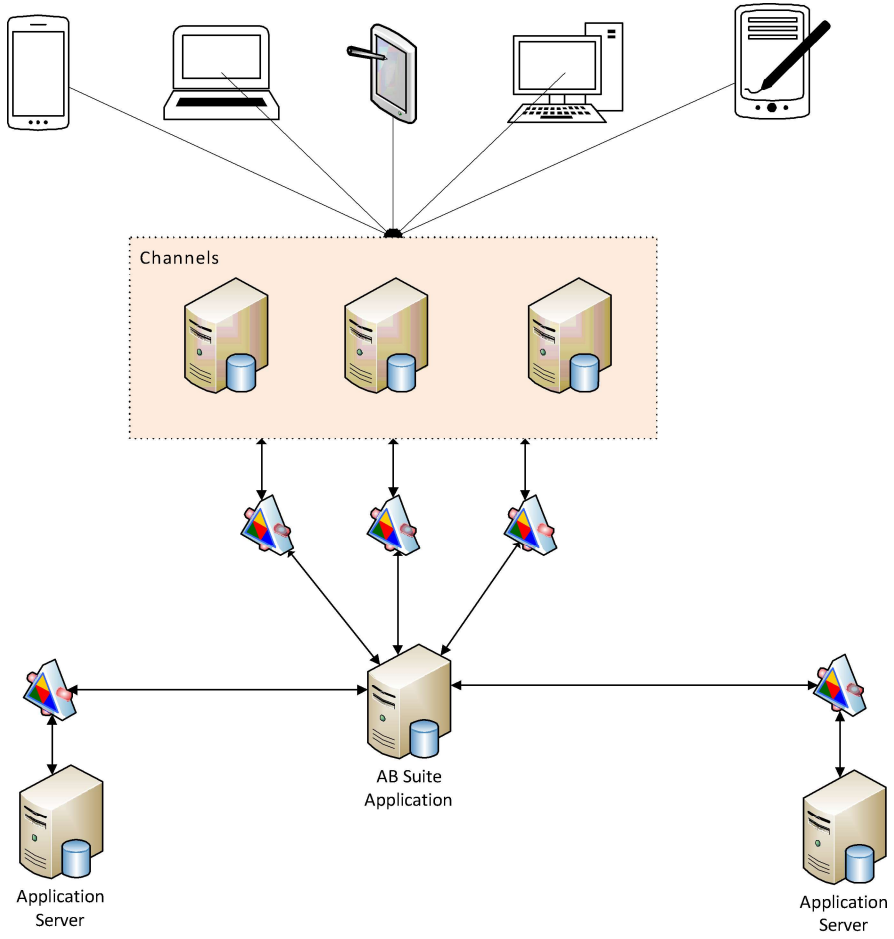
Today

- Many more channels
- Agile Business Suite applications are both the consumer and provider of services



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Examples

Leveraging the .Net Framework

Business Problem

- Invoke .Net Framework from Agile Business Suite
  - E.g. Encrypt data

Solution

- Use Business Integrator and the HUB mechanism
- Standard feature of Agile Business Suite

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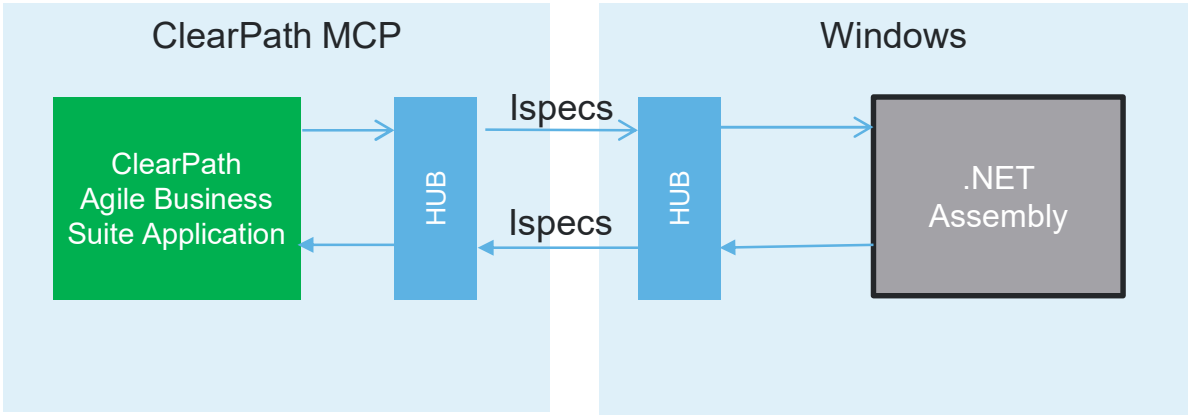
Business Integrator Architecture



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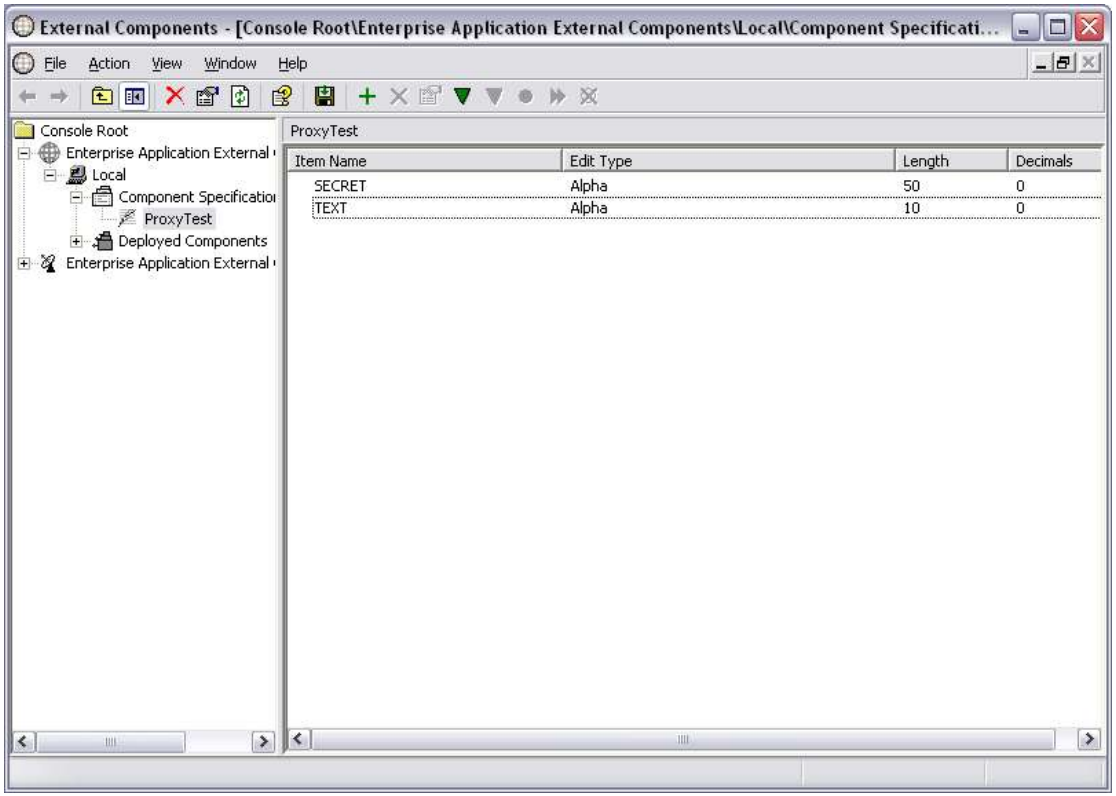
Development Process - Define the Ispec



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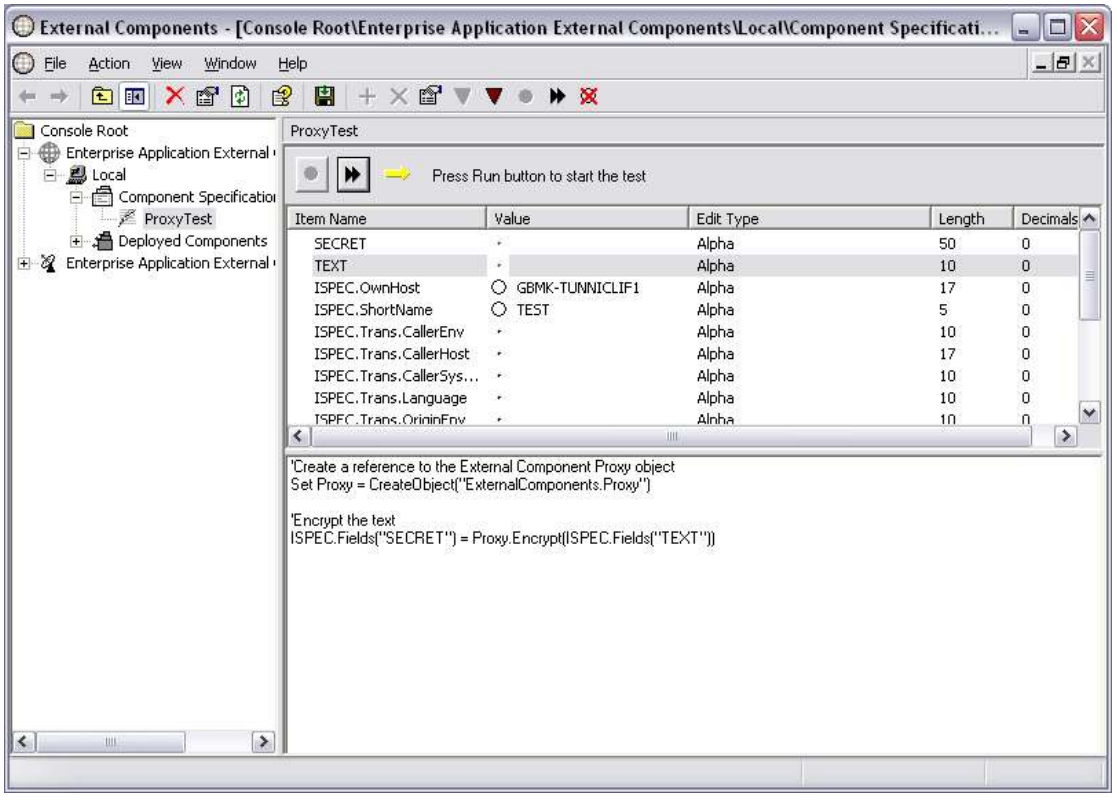
Development Process - Create the Script



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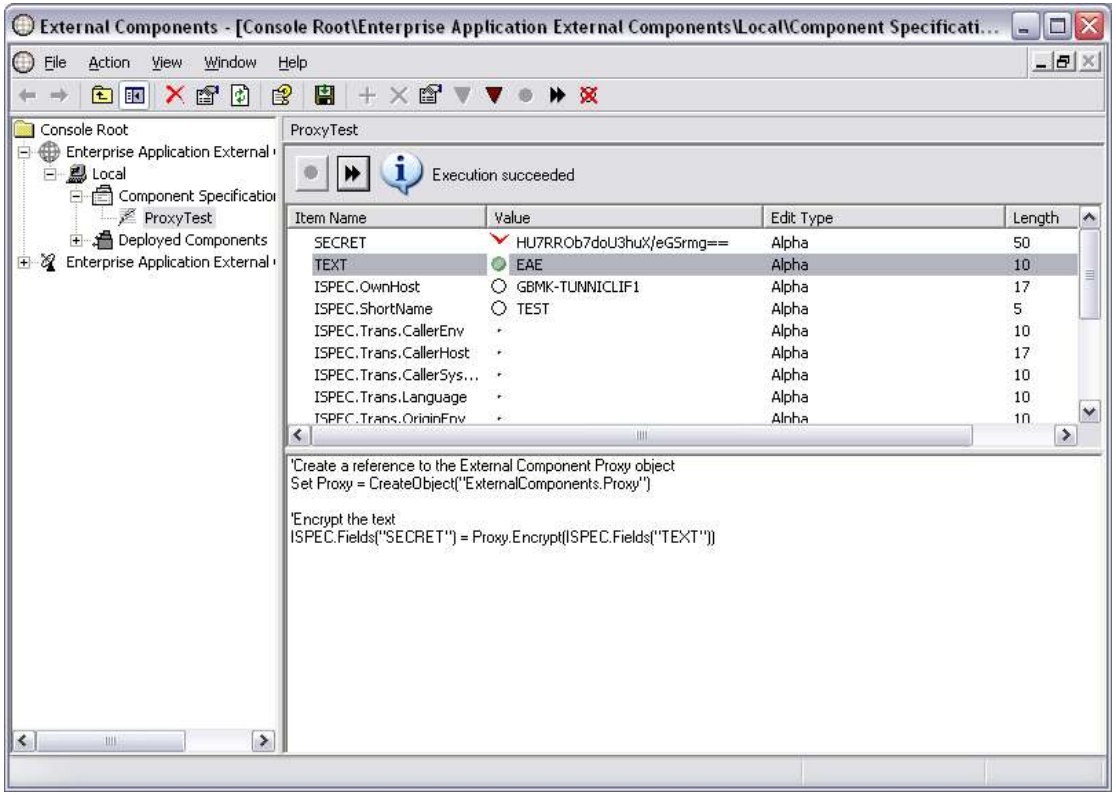
Development Process - Test the Script



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Leveraging the .Net Framework

Business Problem

- Invoke .Net Framework from Agile Business Suite on Windows
  - Update custom table in application database
  - Get report status
  - Create fixed width file
  - Parse XML
  - Many more

Solution

- Write an external library in C# or VB.Net
  - Pass Agile Business Suite application variables as parameters
  - Perform any function that can be implemented in .Net

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Invoking External Services

Business Problem

- Invoke an external web service from Agile Business Suite

Solution

- Use ClearPath Application Integration Services (AIS) to autogenerate proxy interface code
- Use ePortal to generate a proxy to invoke the service

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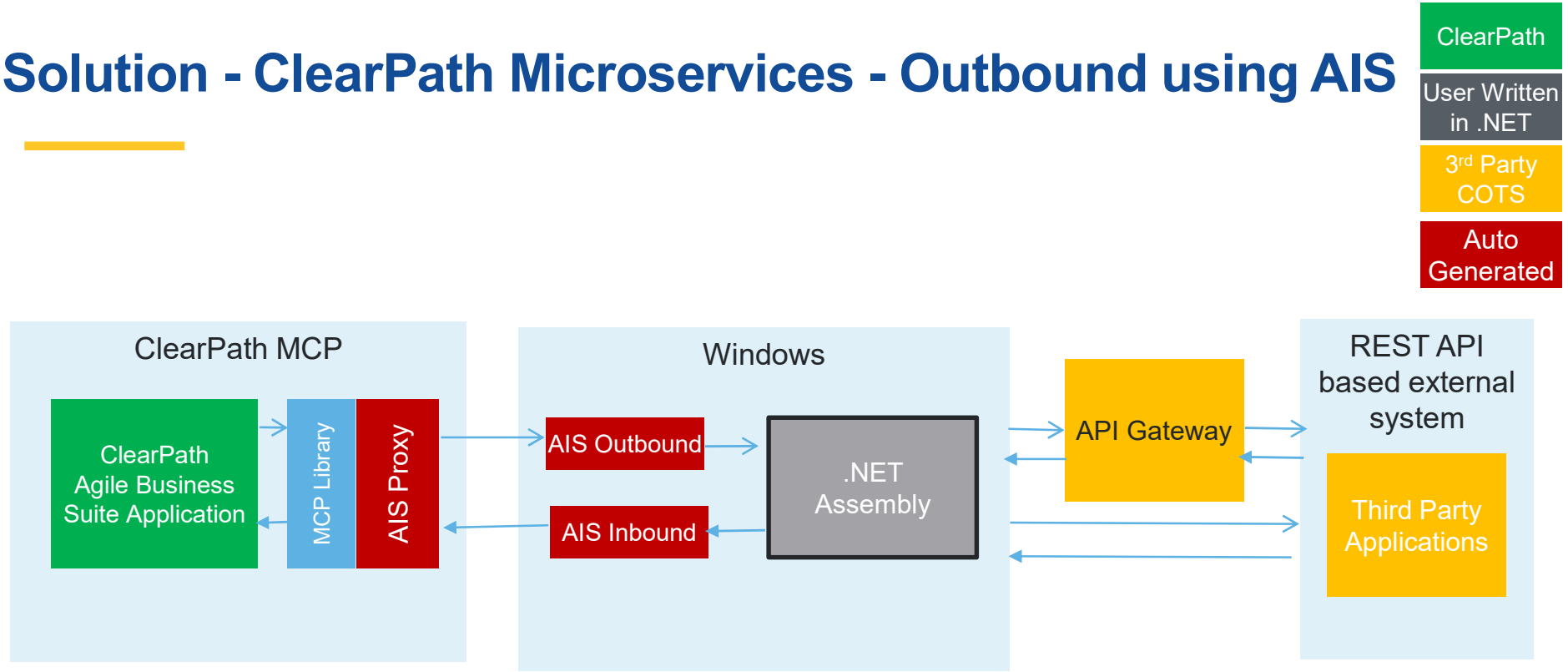
Solution - ClearPath Microservices - Outbound using AIS



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On-Line Banking System

Business Problem

- Expose Ispec functionality as Micro-Services
- Short development timescales
- Small development team

Solution

- Use ClearPath ePortal to automatically create RESTful services from Ispec definitions
  - Automatic scaling and management using ePortal
  - Industry standard API testing tools

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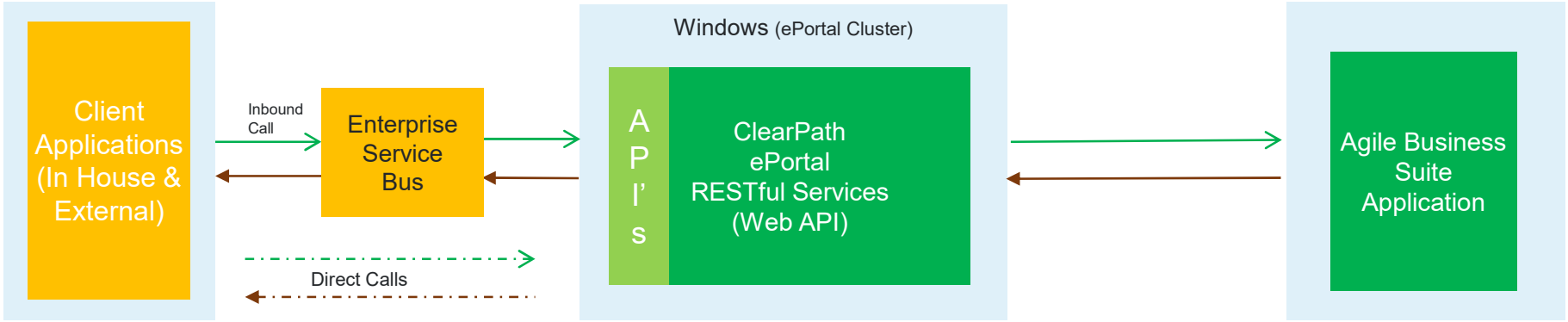
Agile Business Suite and Microservices

Inbound REST Services



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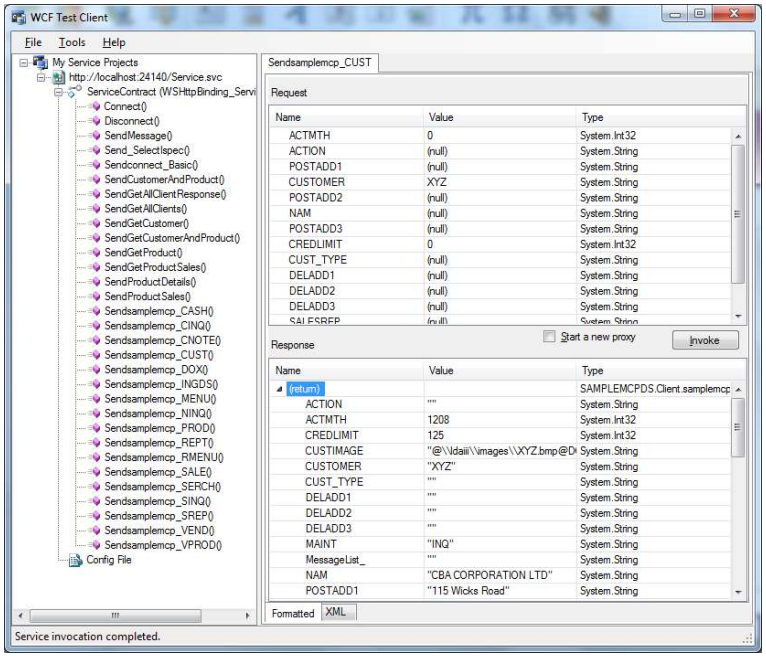
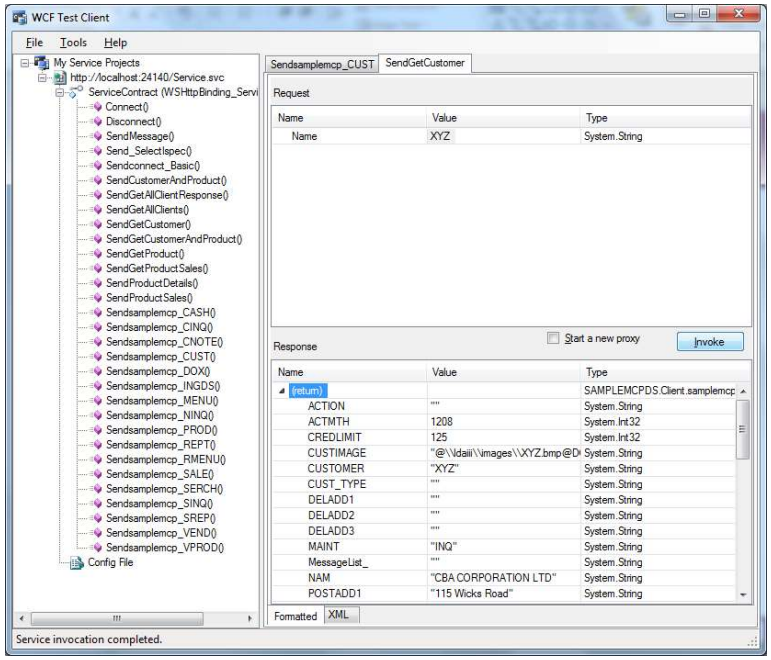
Sample Microservice

Simple Ispec Service



Microservice



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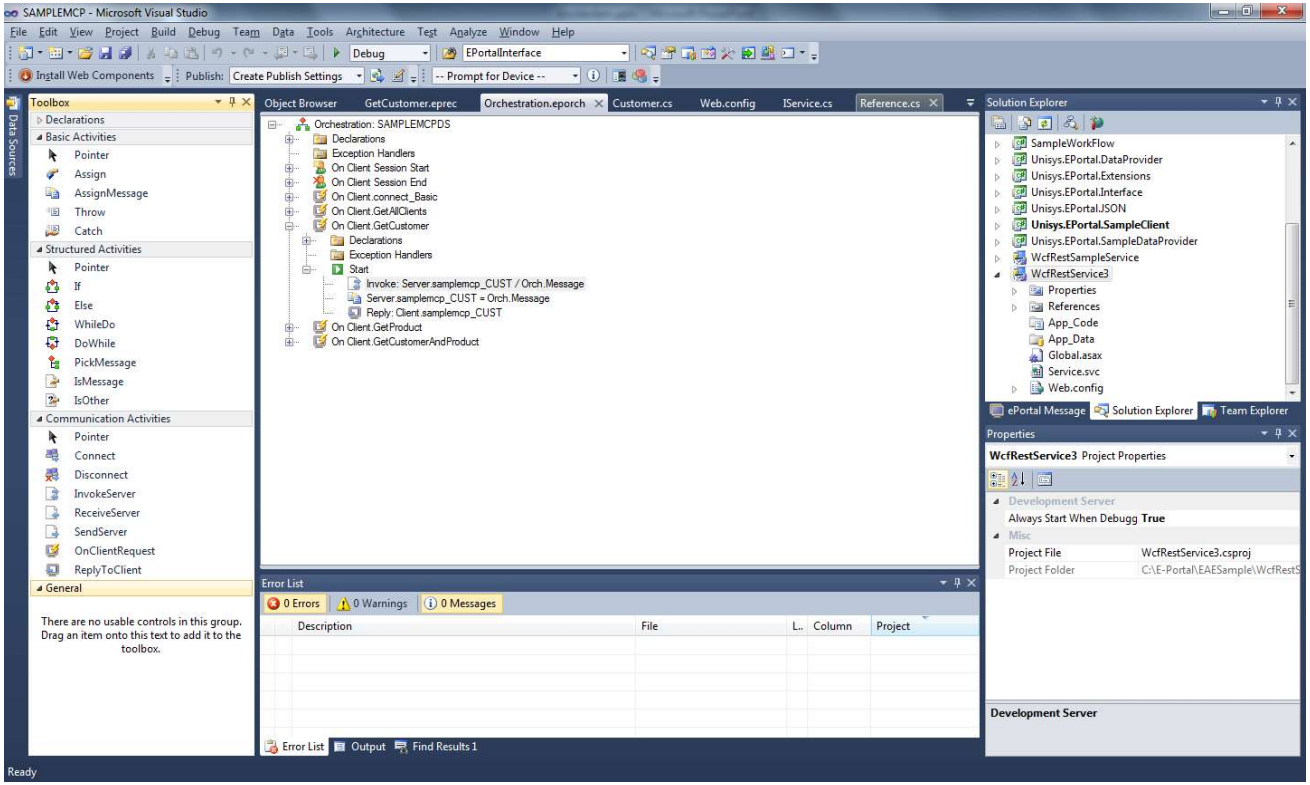
Sample Microservice



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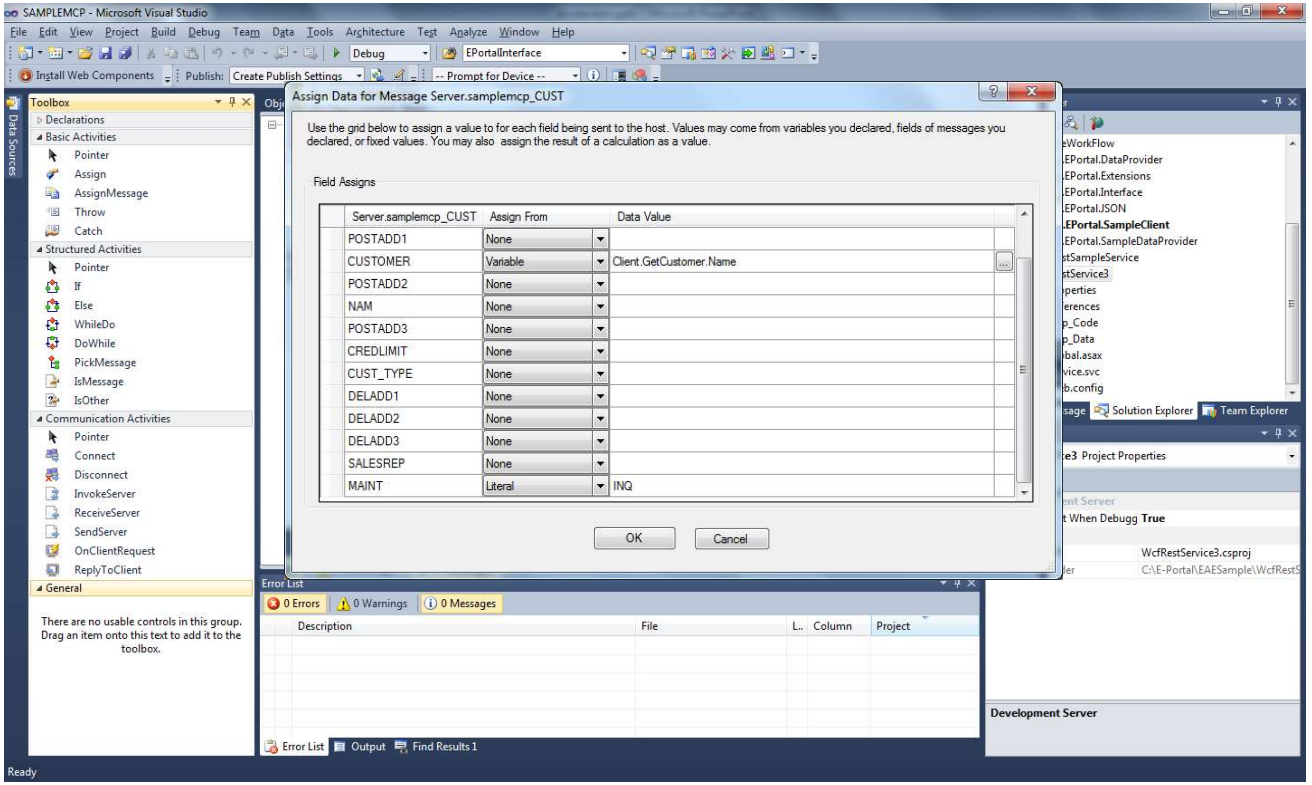
Sample Microservice



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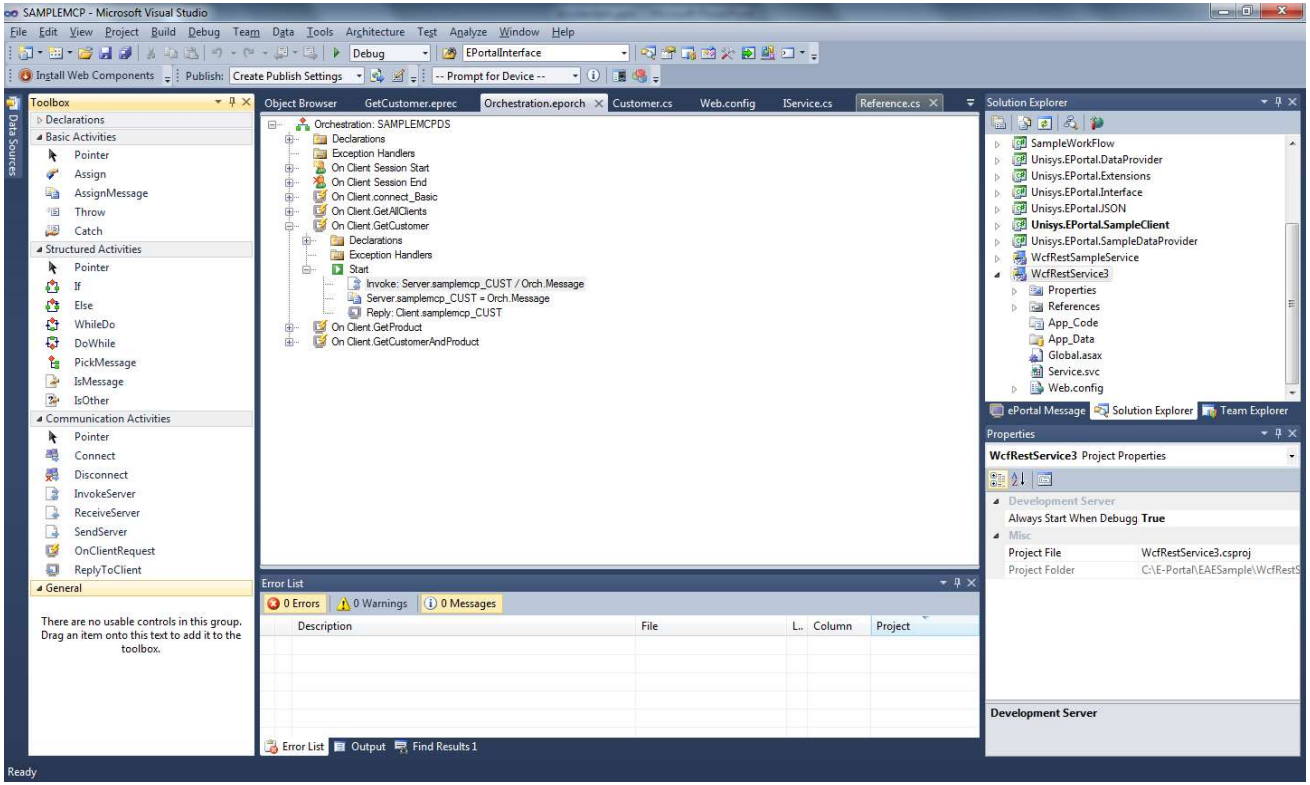
Sample Microservice



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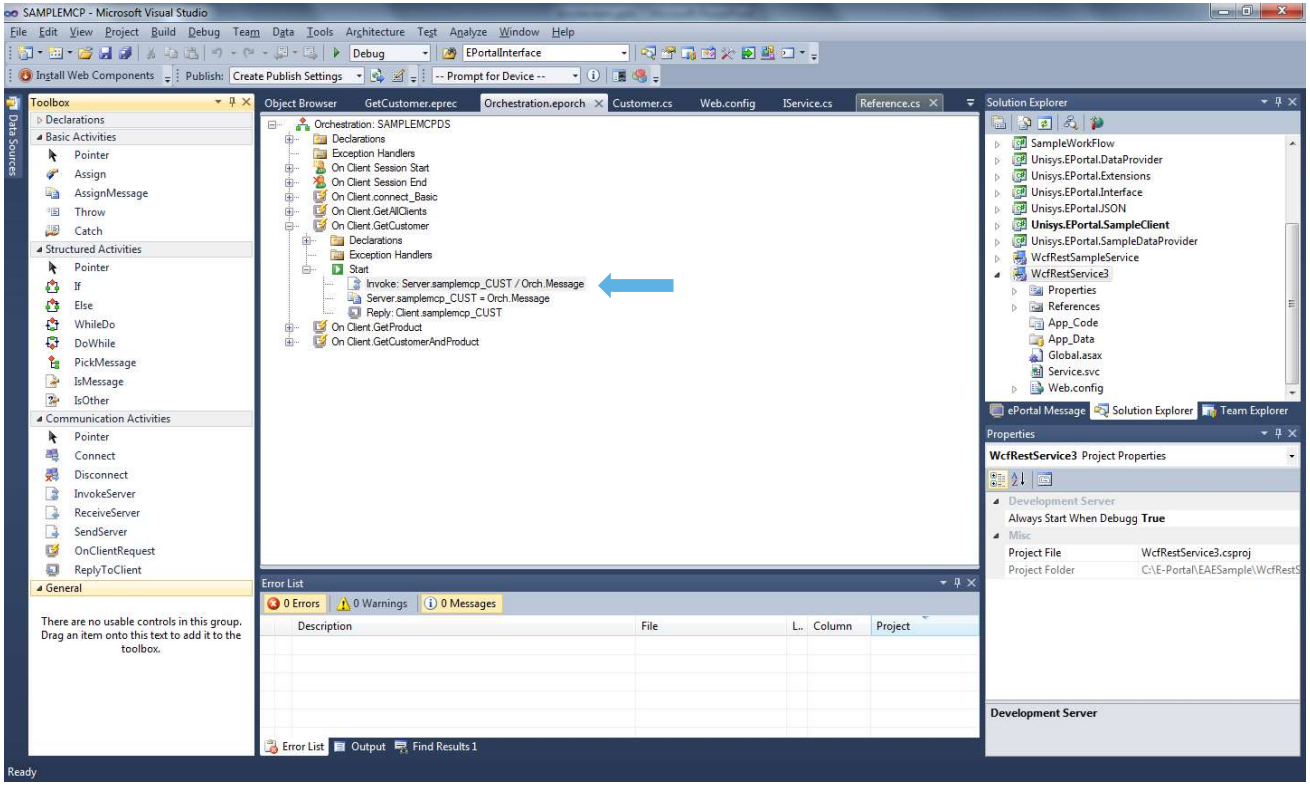
Sample Microservice



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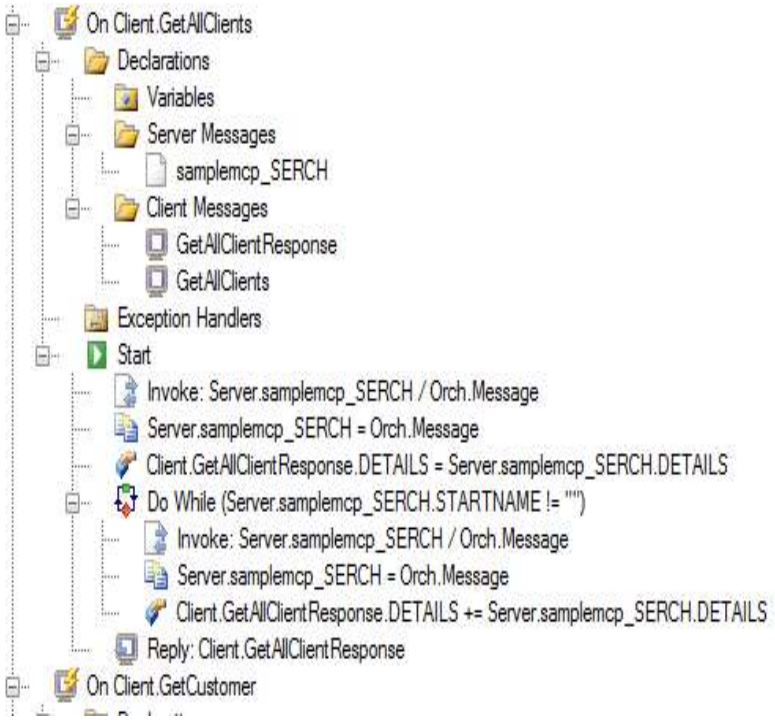
Looping Ispec Workflow

- Derive data from one or more Ispecs
- Create services using data from multiple Ispecs
- Point and Click development



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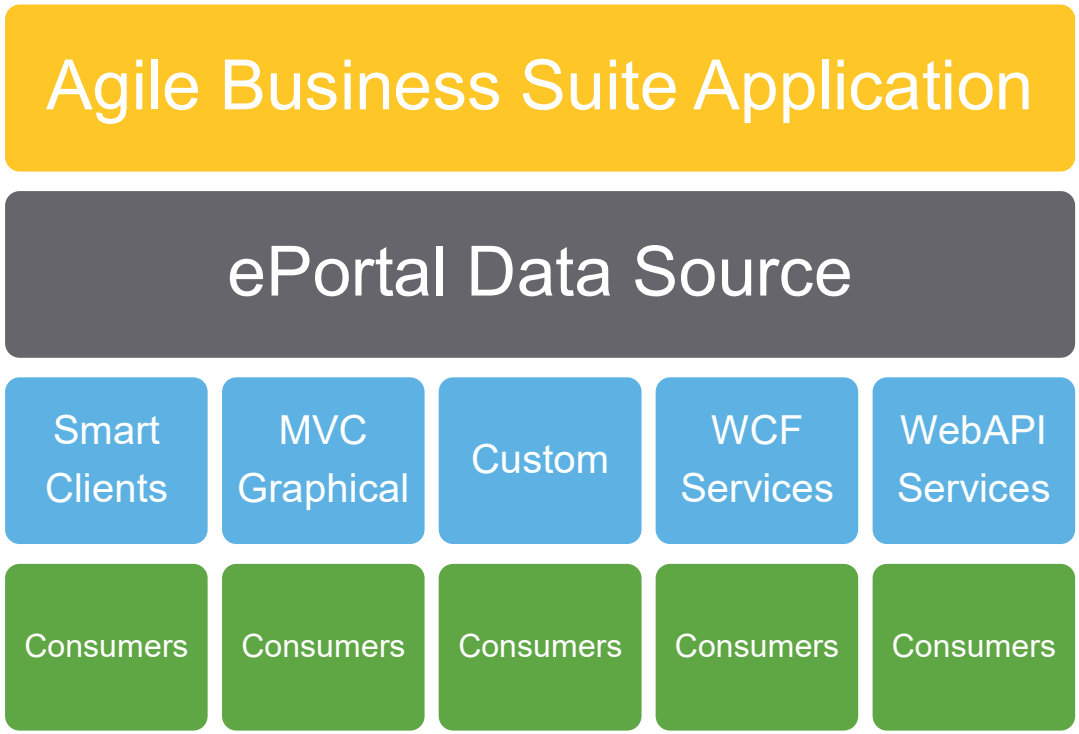
ePortal Architecture



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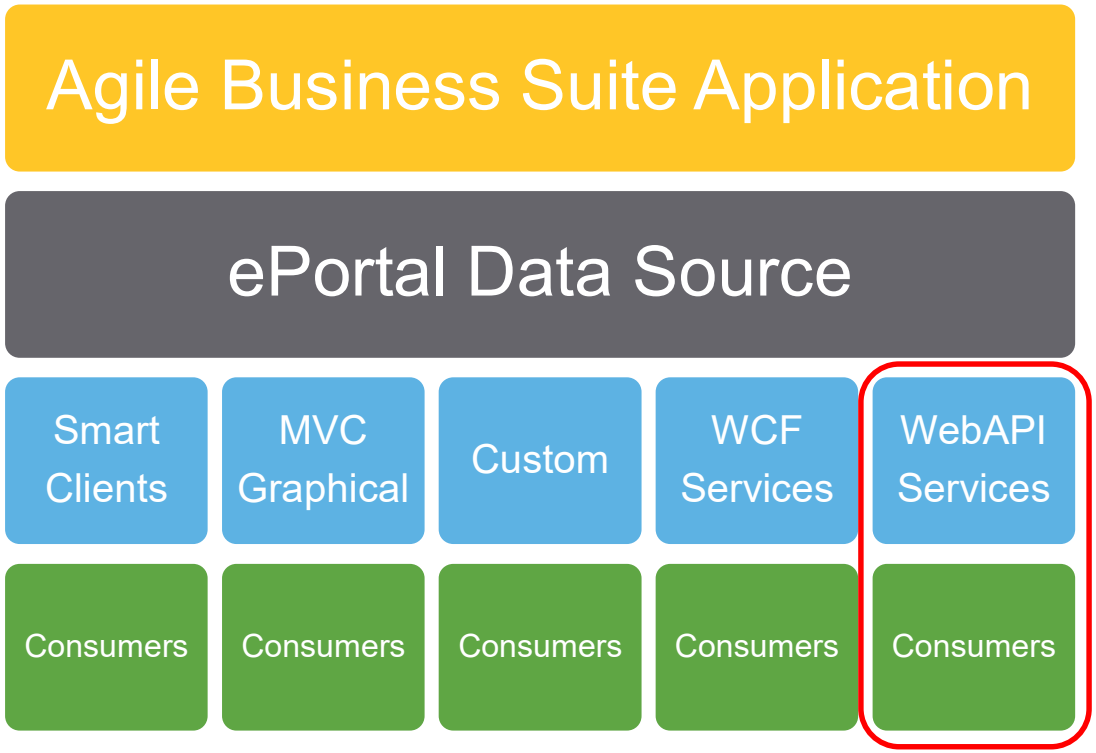
ePortal Architecture



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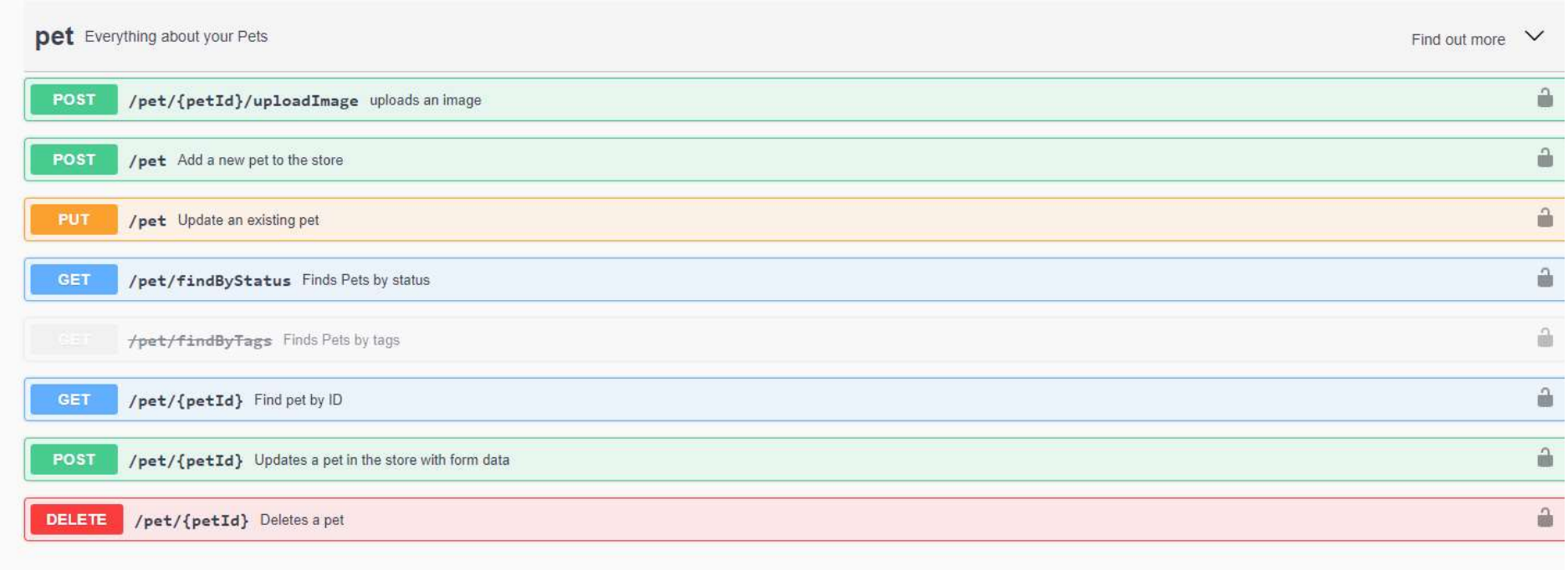
Swagger Documentation



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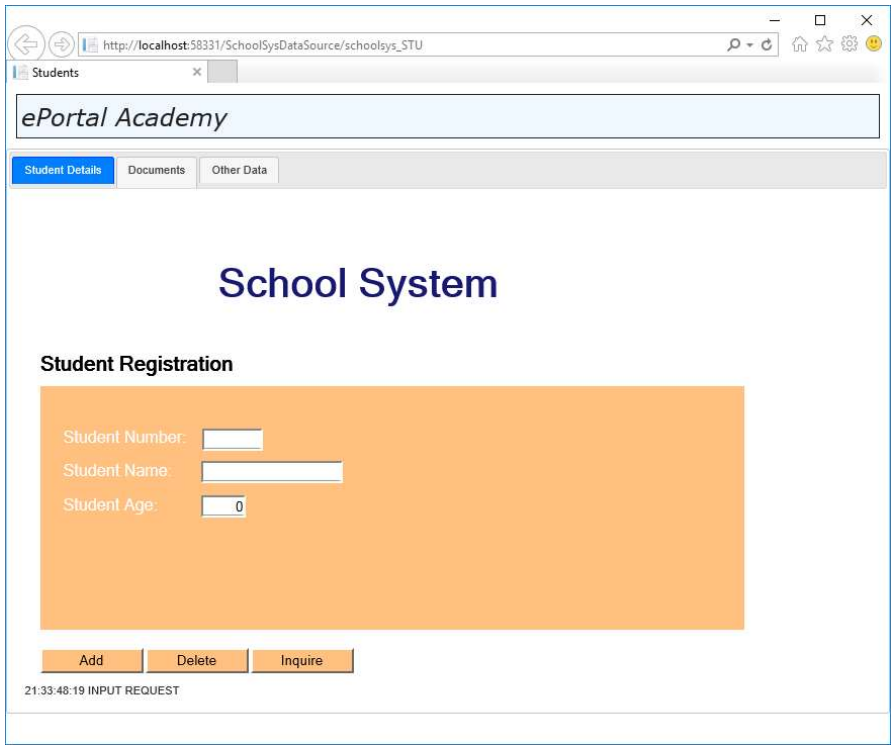
Sample ePortal MVC System



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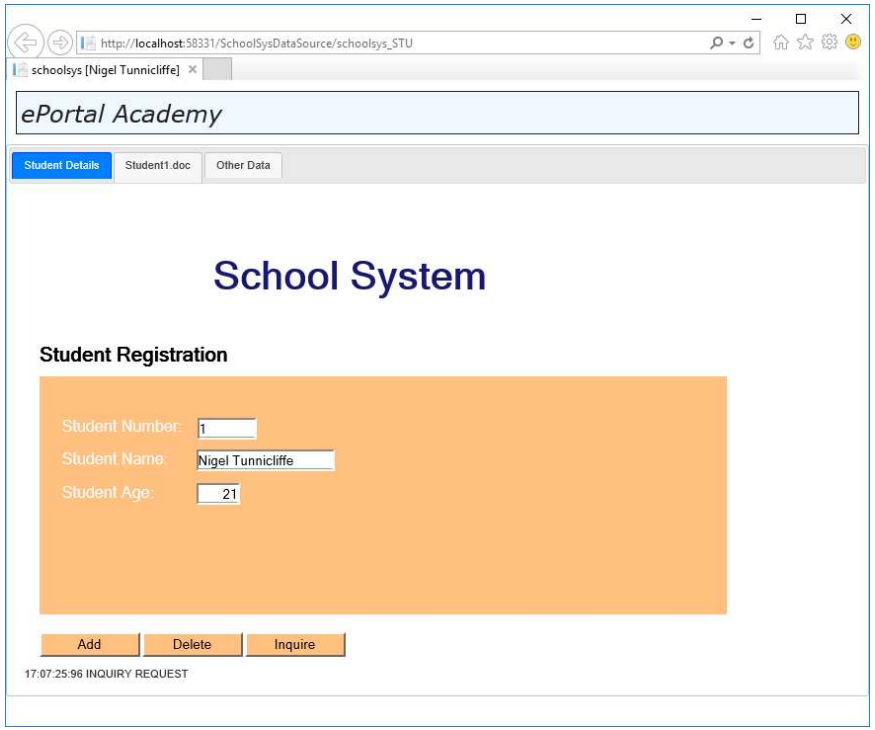
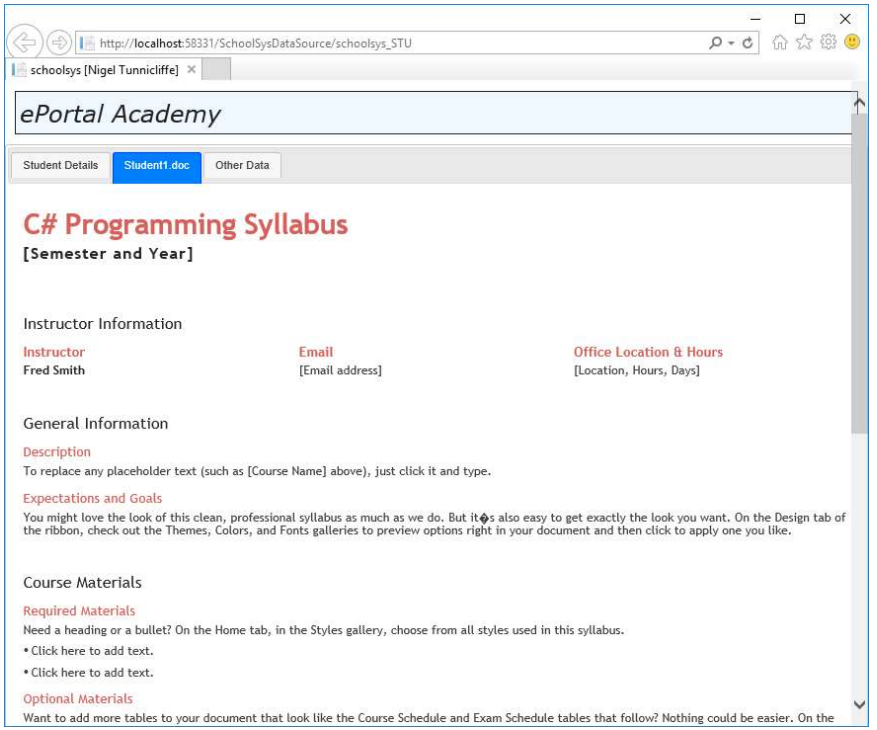
Student 1 Details





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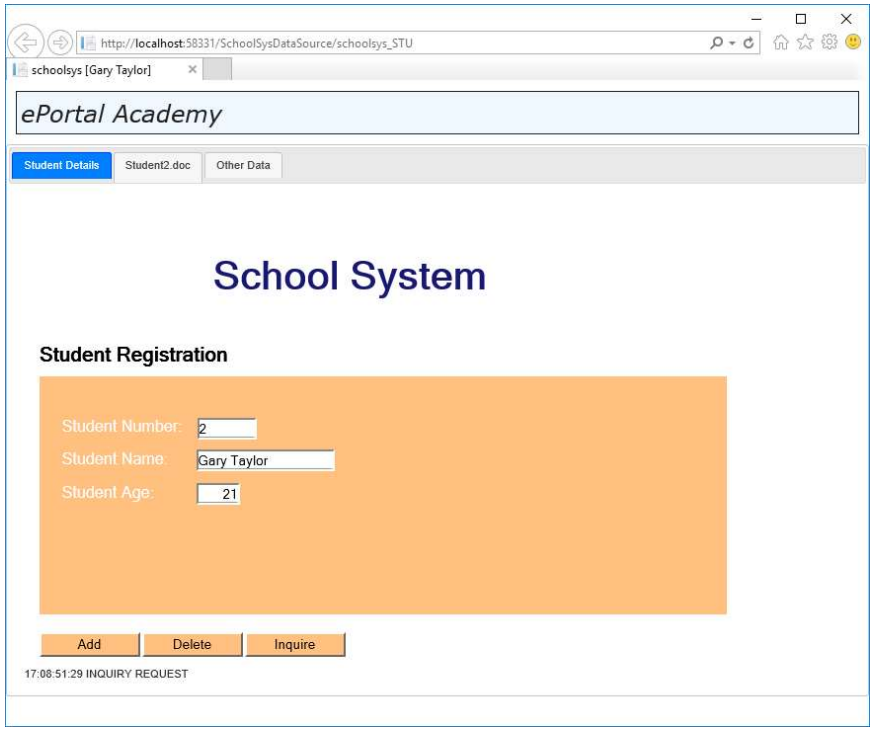
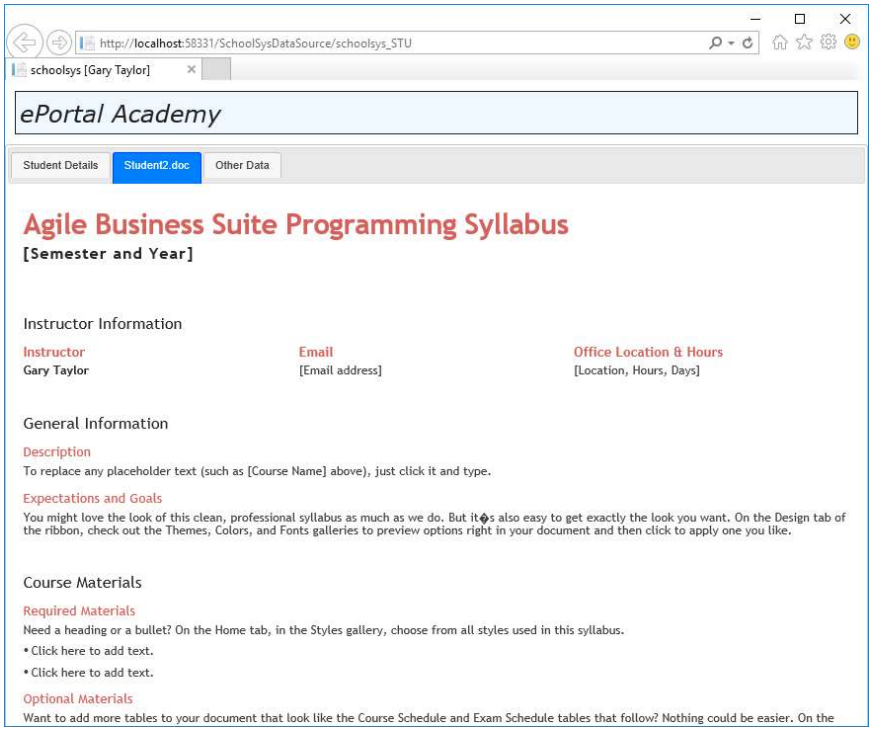
Student 2 Details





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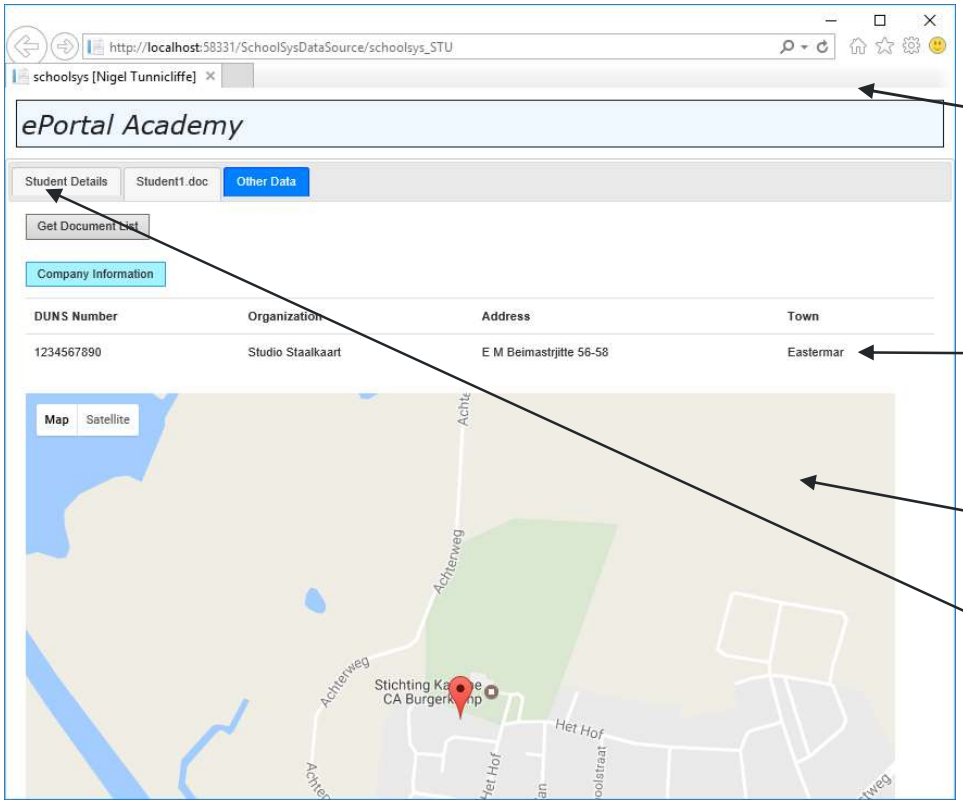
ePortal MVC Application



MVC Application

Data generated by call to external web service from Web server

Data generated from Browser

Ispec data generated from Agile Business Suite application

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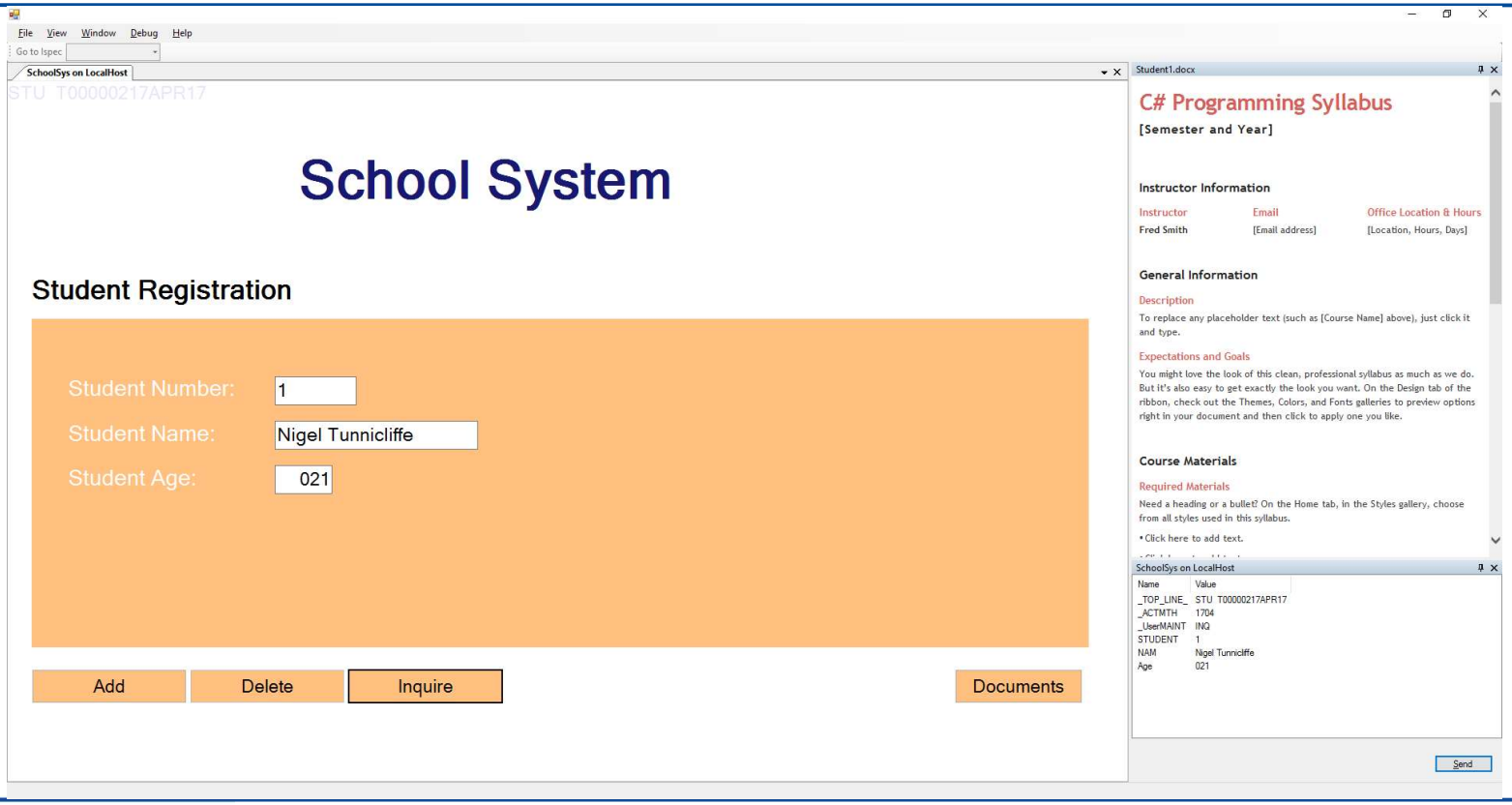
WinForm Interface



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Leverage Agile Business Suite application

Business Problem

- Invoke Agile Business Suite method from .Net application
  - E.g. Validate Account Number

Solution

- Expose method as a ‘Public Segment Method’ and invoke via Client Tools
  - Less overhead than the Ispec cycle
  - Built into ePortal 11.0 and above
- Use Application Integration Services (AIS)

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Single Sign On (SSO)

- Problem statement:
  - Clients did not want to log on to workstation and Application
    - Current implementation also required Host level User ID and Password management
  - For Auditing Application had to be able to Identify end user
  - Application runs on Windows and MCP – Client is ASP.Net solution
- Solution SSO
  - But
    - Both Windows and MCP Clients complicated things
      - Could not assume Windows Active Directory available end to end
    - No COTS based SSO solution for AB Suite

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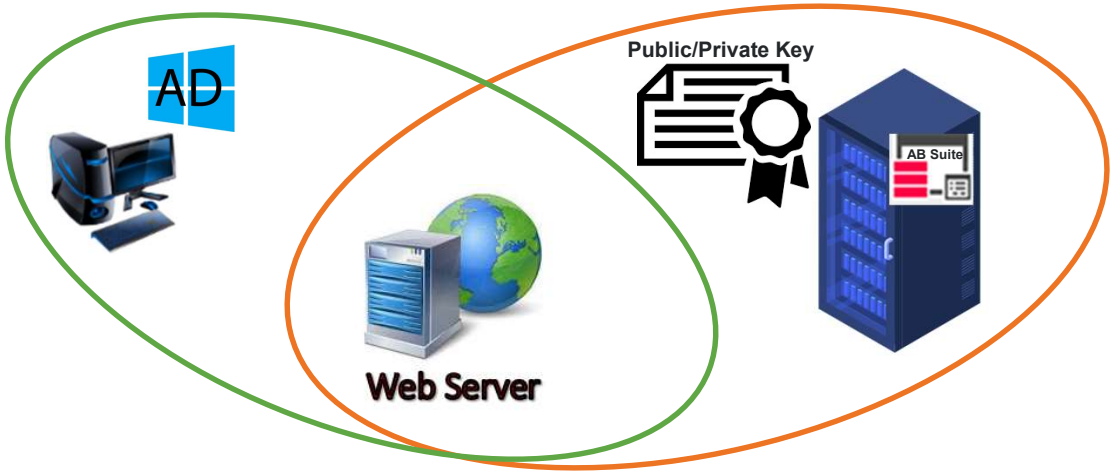
SSO Approach

- First Understand what SSO really means
  - In one word Trust
    - Its about trusting that the session is initiated by someone you trust and so you can trust the information they supply
- Solution
  - Active Directory (AD) for Workstation/WebServer trust
  - Public/Private Key Certificate for WebServer/Host trust



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AB Suite Solution

- Both Windows and MCP support Public/Private key encryption
  - Build ALGOL and .Net external Libraries to handle Certificates
  - Create AB Suite Methods to call external routines

- Use AD Trust to Web Server
  - Allows Web Server to use/trust workstation Logon details
- Use Trusted Certificate to provide Trust between Webserver and AB Suite Host
  - Pass Logon details as encrypted message to AB Suite Host Application
    - Using Certificate to Encrypt/Decrypt
    - Performed as handshake at session establishment via Hidden ISPEC not shown to end users
    - Works with standard RATL no need to change anything at AB Suite Product Level
    - Uses Certificate to encrypt generated AES256 key used to encrypt message text
      - Overcomes message length limitations
      - Allows for other encryption uses

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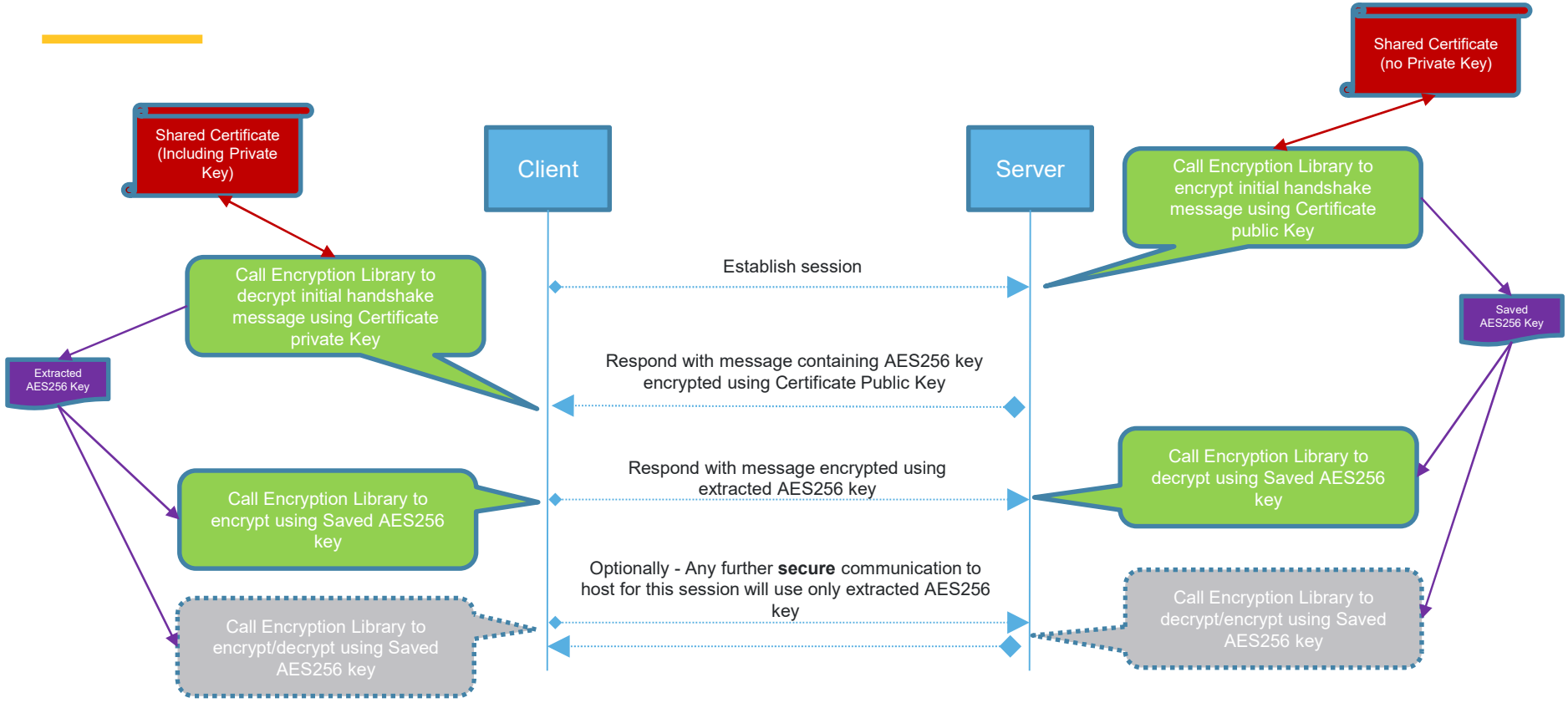
Message flow



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Create Modern User Interface

Business Problem

- Create a modern web based interface but without re-writing Agile Business Suite application

Solution

- Use ePortal to create a Microsoft WebAPI solution
  - Core interface generated automatically
  - Additional features added manually
    - Interfaces with external system
- Use Orchestration to create composite screens
  - One-to-Many
  - Many-to-One

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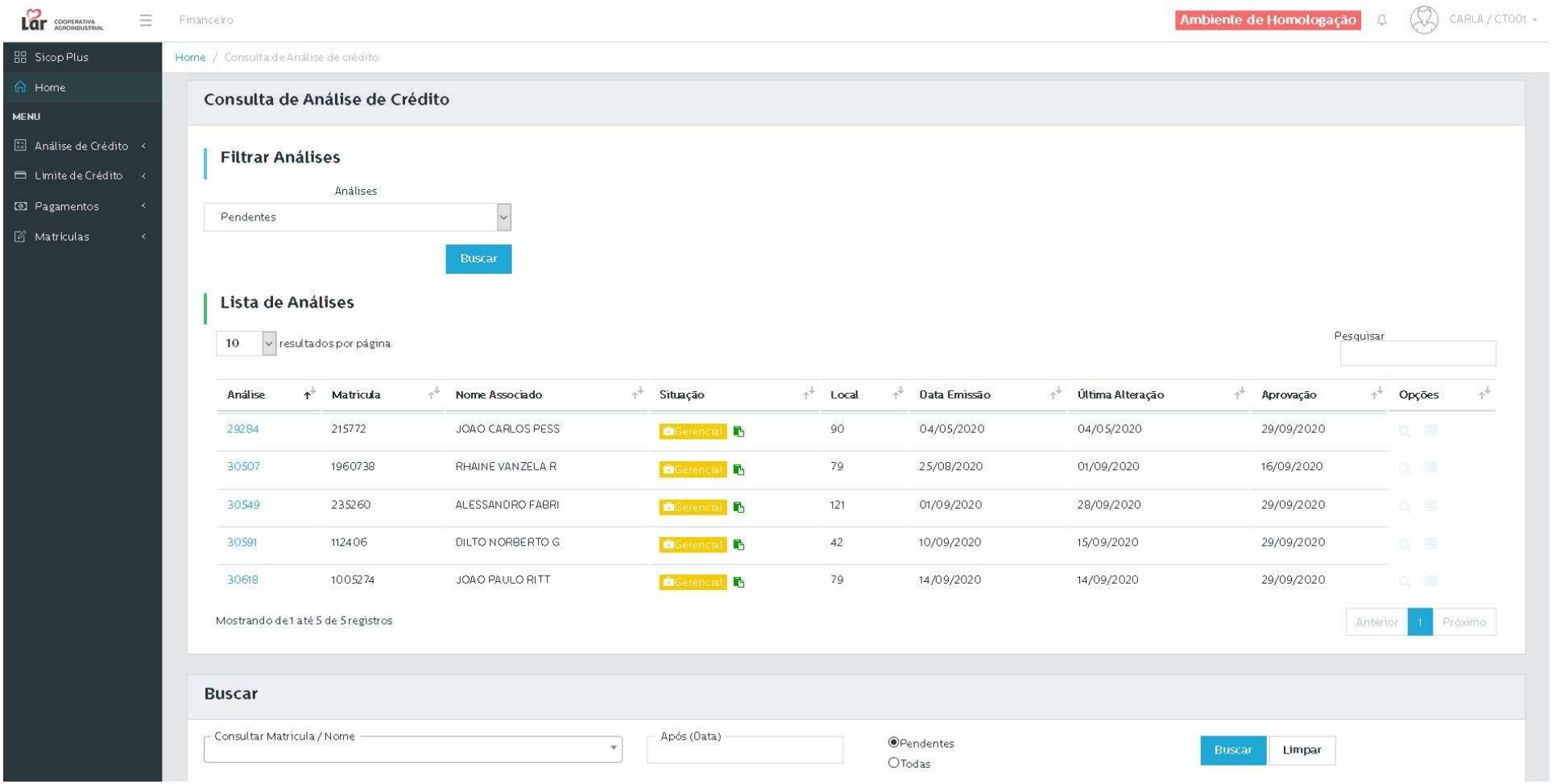
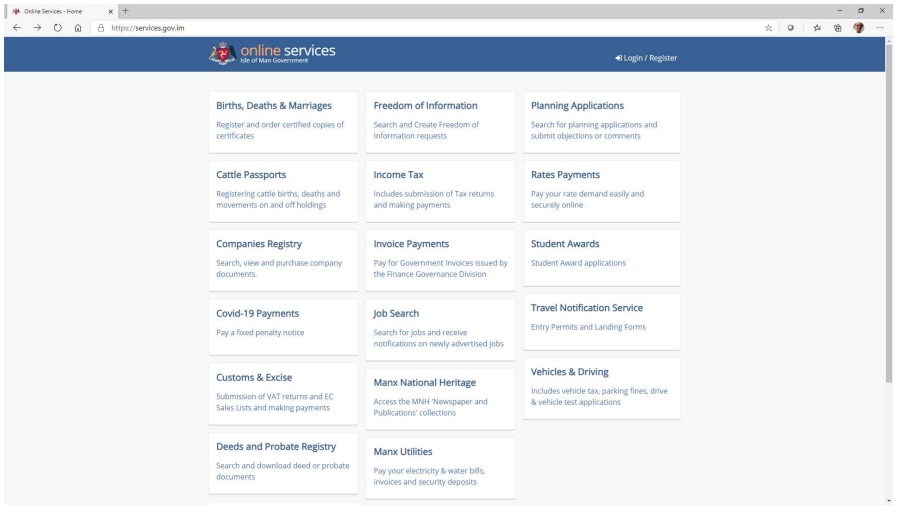

Financeiro
Ambiente de Homologação
CARLA / CT001
Sicop Plus
Home
MENU
Análise de Crédito
Limite de Crédito
Pagamentos
Matrículas
Home / Consulta de Análise de crédito
Consulta de Análise de Crédito
Filtrar Análises
Análises
Pendentes
Buscar
Lista de Análises
10 resultados por página
Pesquisar
Análise
Matricula
Nome Associado
Situação
Local
Data Emissão
Última Alteração
Aprovação
Opções
29284 215772 JOAO CARLOS PESS Gerencial 90 04/05/2020 04/05/2020 29/09/2020
30507 1960738 RHAINE VANZELA R Gerencial 79 25/08/2020 01/09/2020 16/09/2020
30549 235260 ALESSANDRO FABRI Gerencial 121 01/09/2020 28/09/2020 29/09/2020
30591 112406 DILTO NORBERTO G Gerencial 42 10/09/2020 15/09/2020 29/09/2020
30618 1005274 JOAO PAULO RITT Gerencial 79 14/09/2020 14/09/2020 29/09/2020
Mostrando de 1 até 5 de 5 registros
Anterior 1 Próximo
Buscar
Consultar Matricula / Nome
Após (Data)
Pendentes
Todas
Buscar
Limpar

Common Gateway

- Common gateway to wide variety of back end systems
  - Agile Business Suite application
  - Oracle Application
  - SharePoint
  - Content Management
  - Third party applications
- Common infrastructure
- Common look and feel for all applications

Available On-Line Services



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Common Gateway

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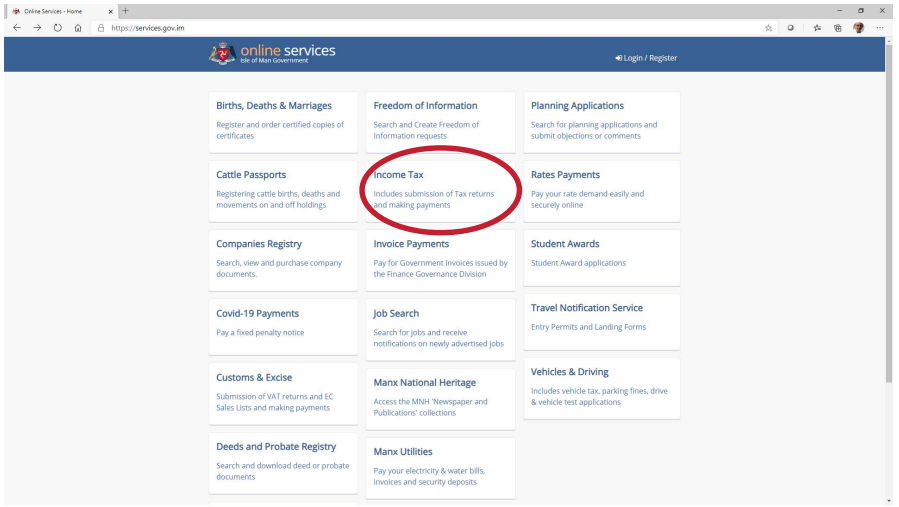

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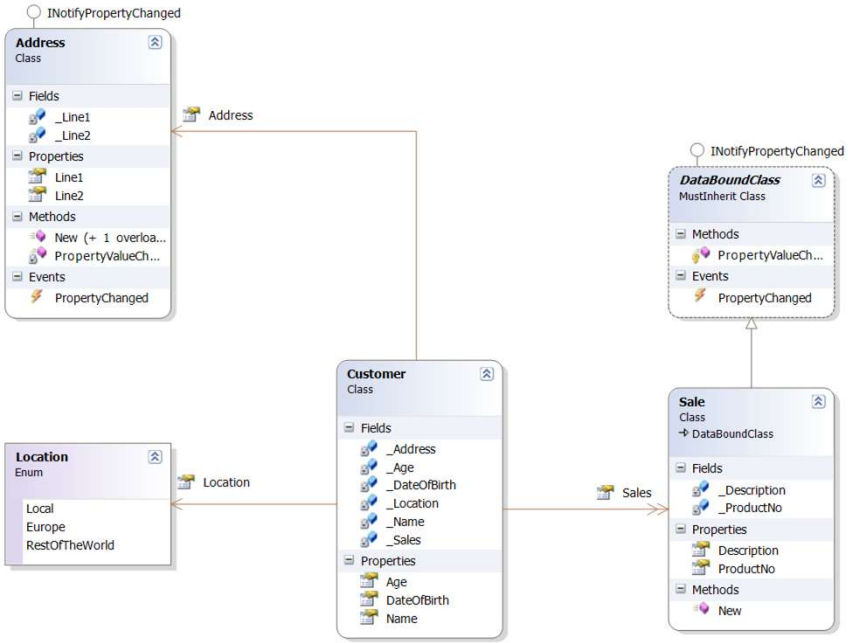
Model based Interface

- Custom solution to map .Net Classes to an Ispec

```
<IspecName("CUST"), DataContract()> _¶
Public Class Customer¶
¶
    <Class definition> ¶
¶
End Property¶

<IspecDataItem("CUSTNAM"), DataMember()> _¶
Public Property Name() As String¶
    Get¶
        Return _Name¶
    End Get¶
    Set(ByVal value As String)¶
        _Name = value¶
    End Set¶
End Property¶
```



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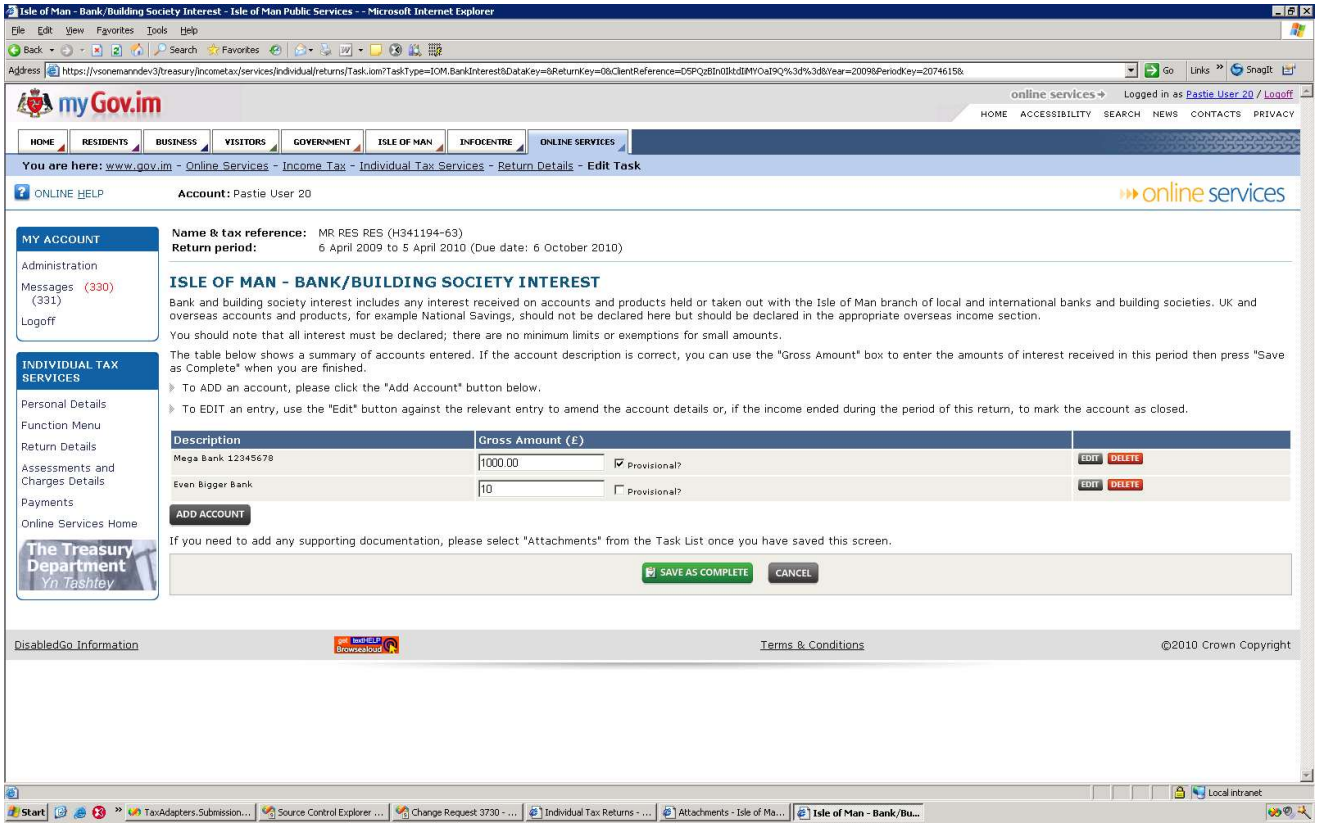
On-Line Tax Return



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Microsoft ‘Office’ interface

- Create pro-forma letters from template
  - User selects appropriate account
  - Selects letter required from drop down list
  - Letter contains a macro which uses Client Tools to extract name and address from Agile Business Suite application
  - Letter saved to document management system
  - E-Mail sent to user informing them of the new letter
  - Agile Business Suite application updated with a refence to the letter
- Benefits
  - Cost saving (no printing or postage)
  - Agile Business Suite application user has a copy of the same letter sent to the end user

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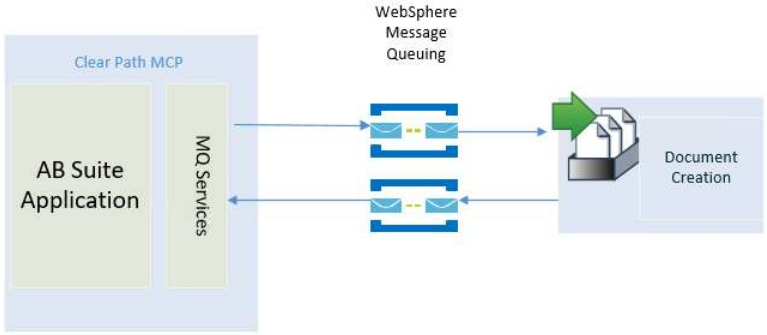
IBM WebSphere Interface (Outbound)

- Agile Business Suite Application creates letter request
  - Request written to IBM MQ Queue
  - Letter created by third party document management system
  - Response written to queue
  - Agile Business Suite application updated via Client Tools



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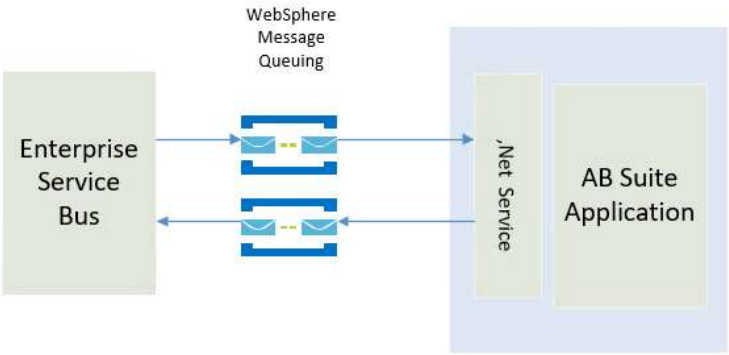
IBM WebSphere Interface (Inbound)

- Variety of channels to Agile Business Suite application
  - Web Pages
  - External systems
  - ‘Batch’
- Custom .Net Service to read from MQ Queue and send to Agile Business Suite application
  - Uses ‘COMManager’ Interface
    - Full access to Ispecs with a user interface
      - Also NOF and XML interfaces



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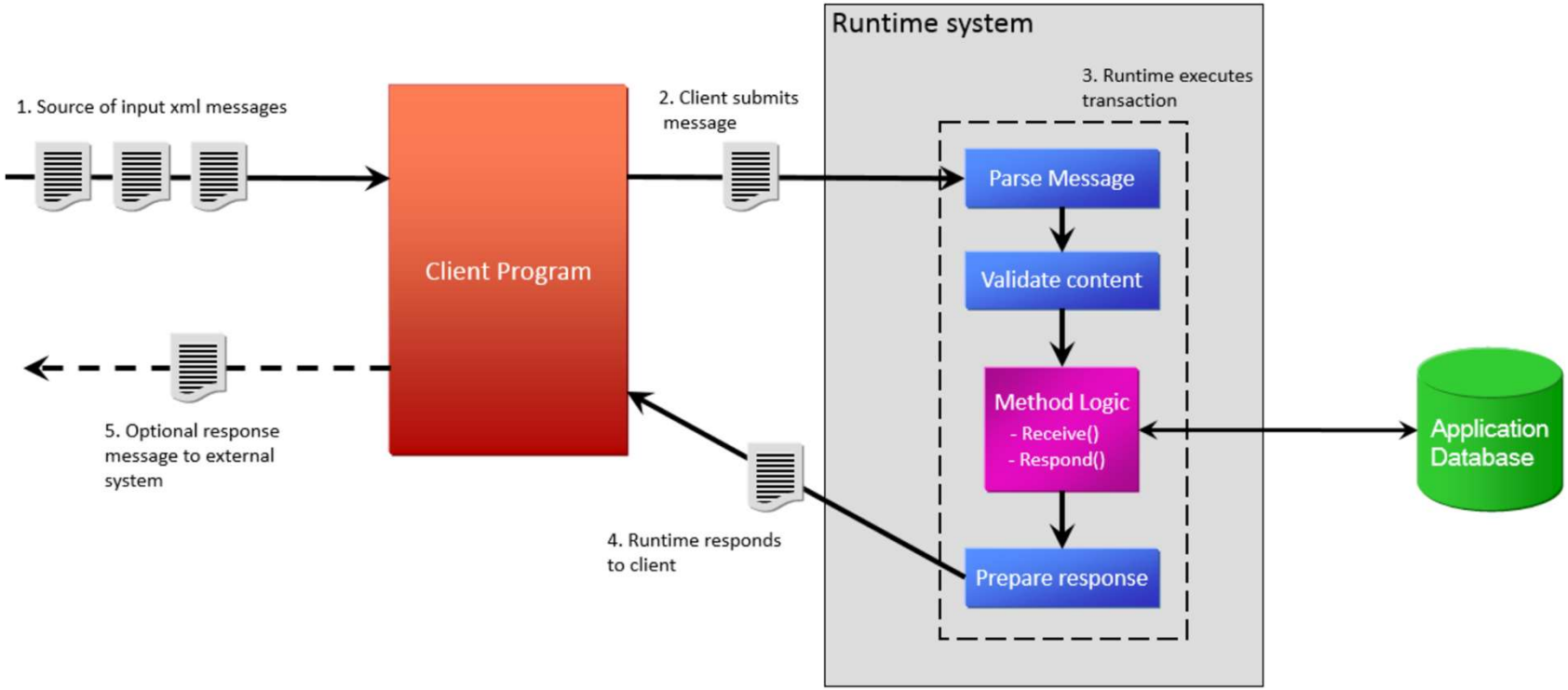
XML processing in Agile Business Suite on Windows



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Create something completely different

Problem Business

- None of the previous options fits your needs

Solution

- Create a custom generator
  - Generate your custom interface as part of the build
  - Samples and documentation included with customization kit

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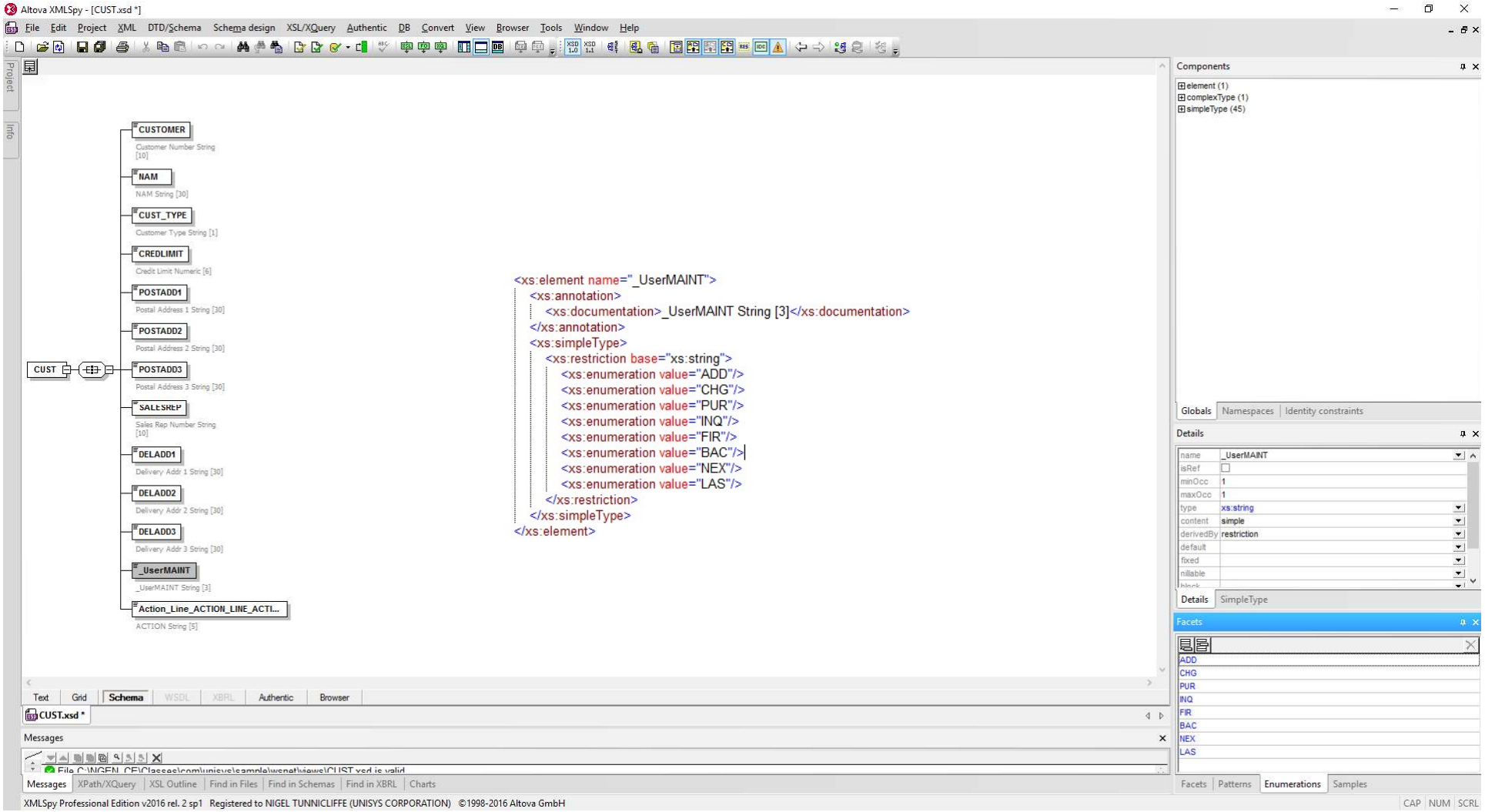
Altova XMLSpy - [CUST.xsd *]
File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic DB Convert View Browser Tools Window Help
CUSTOMER
Customer Number String [10]
NAM
NAM String [30]
CUST_TYPE
Customer Type String [1]
CREDLIMIT
Credit Limit Numeric [6]
POSTADD1
Postal Address 1 String [30]
POSTADD2
Postal Address 2 String [30]
CUST
POSTADD3
Postal Address 3 String [30]
SALESREP
Sales Rep Number String [10]
DELADD1
Delivery Addr 1 String [30]
DELADD2
Delivery Addr 2 String [30]
DELADD3
Delivery Addr 3 String [30]
_UserMAINT
_UserMAINT String [3]
Action_Line_ACTION_LINE_ACTI...
ACTION String [5]
<xs:element name="_UserMAINT">
<xs:annotation>
<xs:documentation>_UserMAINT String [3]</xs:documentation>
</xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:string">
<xs:enumeration value="ADD"/>
<xs:enumeration value="CHG"/>
<xs:enumeration value="PUR"/>
<xs:enumeration value="INQ"/>
<xs:enumeration value="FIR"/>
<xs:enumeration value="BAC"/>
<xs:enumeration value="NEX"/>
<xs:enumeration value="LAS"/>
</xs:restriction>
</xs:simpleType>
</xs:element>
Components
element (1)
complexType (1)
simpleType (45)
Globals Namespaces Identity constraints
Details
name _UserMAINT
isRef
minOcc 1
maxOcc 1
type xs:string
content simple
derivedBy restriction
default
fixed
nillable
Details SimpleType
Facets
ADD
CHG
PUR
INQ
FIR
BAC
NEX
LAS
Facets Patterns Enumerations Samples
Text Grid Schema WSDL XBRL Authentic Browser
CUST.xsd *
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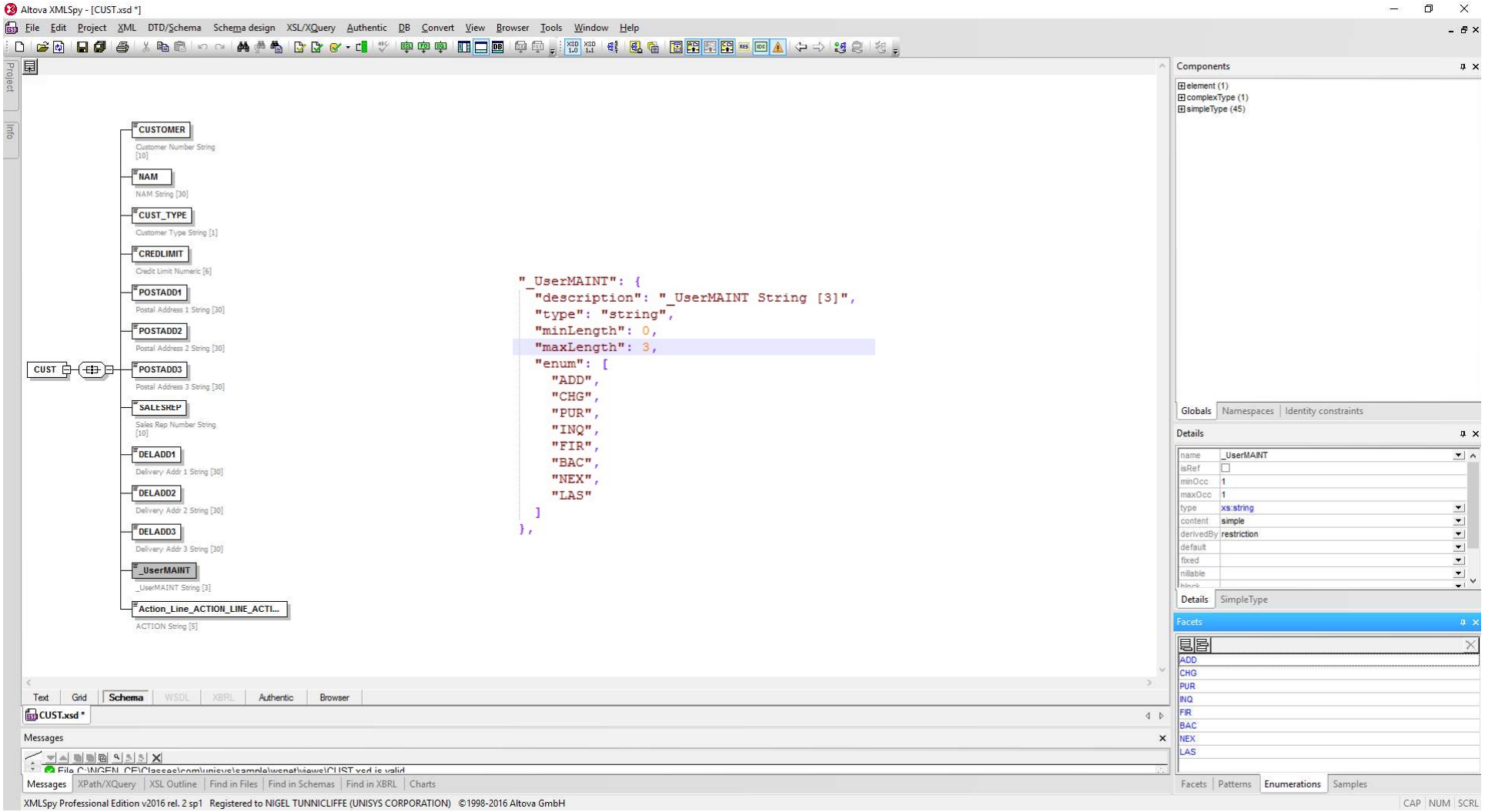
Altova XMLSpy - [CUST.xsd *]
File Edit Project XML DTD/Schema Schema design XSL/XQuery Authentic DB Convert View Browser Tools Window Help
CUSTOMER
Customer Number String [10]
NAM
NAM String [30]
CUST_TYPE
Customer Type String [1]
CREDLIMIT
Credit Limit Numeric [6]
POSTADD1
Postal Address 1 String [30]
POSTADD2
Postal Address 2 String [30]
CUST
POSTADD3
Postal Address 3 String [30]
SALESREP
Sales Rep Number String [10]
DELADD1
Delivery Addr 1 String [30]
DELADD2
Delivery Addr 2 String [30]
DELADD3
Delivery Addr 3 String [30]
_UserMAINT
_UserMAINT String [3]
Action_Line_ACTION_LINE_ACTI...
ACTION String [5]
"_UserMAINT": {
"description": "_UserMAINT String [3]",
"type": "string",
"minLength": 0,
"maxLength": 3,
"enum": [
"ADD",
"CHG",
"PUR",
"INQ",
"FIR",
"BAC",
"NEX",
"LAS"
]
},
Components
element (1)
complexType (1)
simpleType (45)
Globals Namespaces Identity constraints
Details
name _UserMAINT
isRef
minOcc 1
maxOcc 1
type xs:string
content simple
derivedBy restriction
default
fixed
nillable
Details SimpleType
Facets
ADD
CHG
PUR
INQ
FIR
BAC
NEX
LAS
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Conclusions

Conclusions

- Agile Business Suite applications can interoperate with other applications on other platforms
  - Many different ways of implementing the solution
- Come and talk to us about your requirements

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Thank You