UNITE 2015
Annual Conference

Using the Cloud from MCP Applications

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MGS, Inc.

Session MCP4047

11:00am – 12:00pm

Tuesday, October 13, 2015

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Computer Business Solutions

Who is MGS, Inc.

- Software Engineering, Product Development & Professional Services firm founded in 1986
- We provide products and services to solve business problems:
  - **Software Engineering Services**
  - **Professional Services**
    - **Management Support Services**
    - **Consulting Services**
    - **Technical Services**
  - **Product Development**
    - **Performance Analysis**
    - **Communications**

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Cloud Services

- Characteristics
  - Agility
  - Low Cost
  - Location Independence
  - Scalability/Reliability
  - Low Maintenance
- Available Services
  - Infrastructure as a Service (IaaS)
  - Platform as a Service (PaaS)
  - Software as a Service (SaaS)
  - <your name here> as a Service (saS)

Infrastructure as a Service (IaaS)

- Provide “Computers”
  - Physical or Virtual
- Separates user from
  - Physical location
  - Hard Resources (power, HVAC, network, etc)
  - Scaling/Security/Backup
- They provide the computer and OS, you provide everything else
- Examples
  - Amazon EC2
  - Google Compute
  - Cloud Storage Services

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Platform as a Service (PaaS)

- Application development and deployment tools
- You provide the app, they provide the development framework and implementation
- Examples
  - Microsoft Azure (WebApps, DB Storage, Analytics)
  - Google App Engine (Java, Python, PHP, Go)

Software as a Service (SaaS)

- Solutions provided over the Internet
- Solution can be utilized by customer without server or application involvement (data only)
- Examples
  - DropBox (Doc Control)
  - Salesforce.com (CRM)
  - Quickbooks (Financials)

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MCP Cloud Integration

- Infrastructure /Platform as a Service are less applicable on MCP systems
  - Exceptions:
    - ClearPath Cloud or Fabric
    - Storage is the exception
- Software as a Service (SaaS) can be very useful for MCP Applications
  - Avalara Sales Tax
  - OpenText Facsimile Transmit

MCP Cloud Integration

- Avalara Sales Tax Service
  - Cloud based SaaS for:
    - Tax rate calculation
    - Exempt certificate management
    - Filing and returns
  - Validates the address of where the transaction is occurring
  - Calculates taxes on a document such as a sales order, sales invoice, purchase order, purchase invoice, or credit memo.

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MCP Cloud Integration

- OpenText Facsimile Service
  - Cloud based SaaS for:
    - Facsimile transmission
    - Distribution lists
    - Supports a variety of formats
    - Provides result reports
  - API to Send Facsimile
  - API to check status

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MCP Cloud Integration

- SaaS APIs are generally “standards” based
- MCP Applications require middleware Support:
  - Communications
  - XML construction and parsing
  - Conversion of flat MCP data structures to/from XML

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MCP Cloud Integration

- APIs are built on proven Internet communications standards
  - **TCP/IP –Transmission Control Protocol / Internet Protocol**
  - **SSL – Secure Socket Layer**
  - **HTTP – HyperText Transfer Protocol**
  - **SOAP – Simple Object Access Protocol**
  - **XML – eXtensible Markup Language**

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MCP Cloud Integration

- No “native” MCP Solution
- Middleware Support Required:
  - Hardware/Software (ePortal, AB Suite)
  - Software Only (MCPJava, MGSWeb)
  - Custom app development using WEBAPPSUPPORT features
    - HTTPCLIENT
    - XMLPARSER
    - (Sessions MCP4013, MCP4014 and GE4019)

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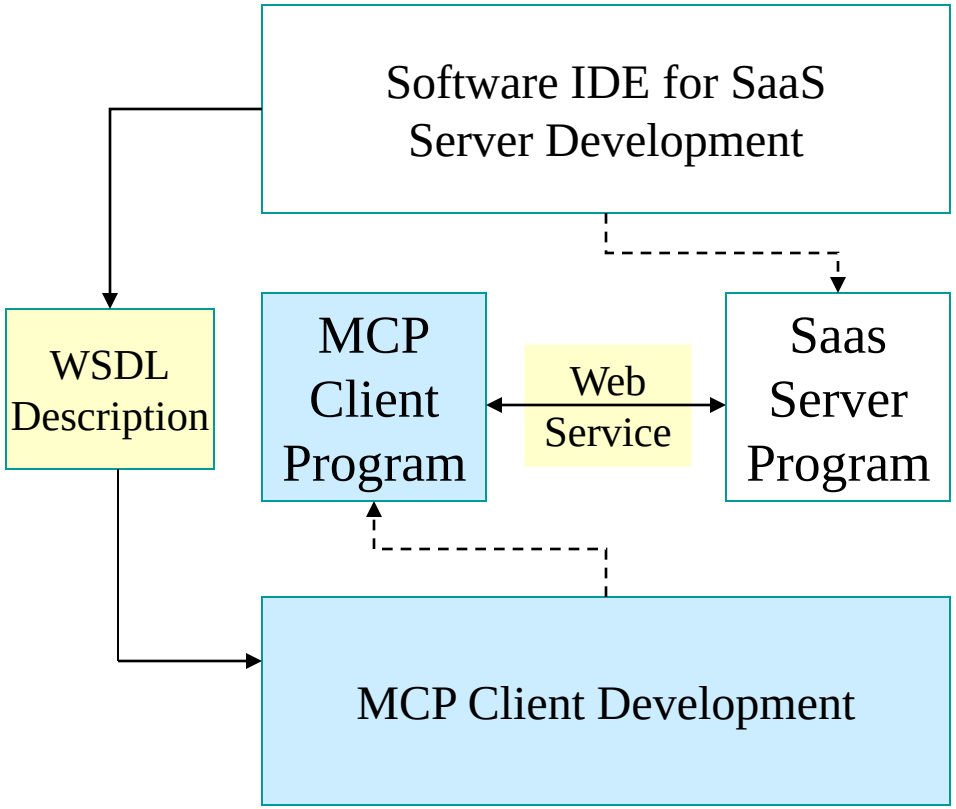
MCP Web Services

Indicates XML Encoding



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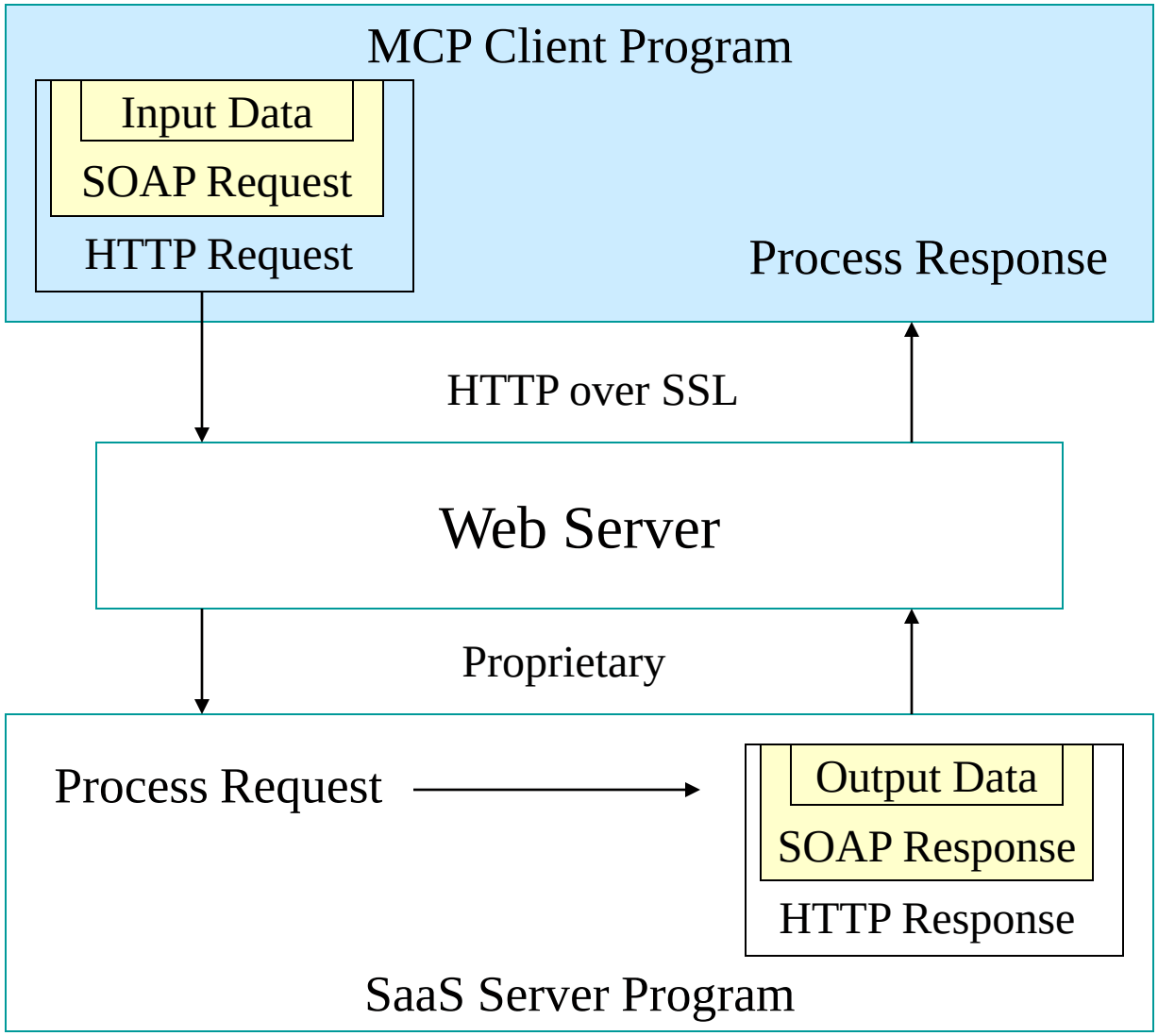
MCP Web Services

Indicates XML Encoding



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MCP Web Services - WSDL

```
<message name="WSTEST_SAASRequest">
  <part name="Trancode" type="xsd:string" />
  <part name="Input_data" type="xsd:string" />
</message>
<message name="WSTEST_SAASResponse">
  <part name="Trancode" type="xsd:string" />
  <part name="Input_data" type="xsd:string" />
  <part name="statusLine" type="xsd:string" />
</message>

<service name="SaaSWebServices">
  <documentation>Access Software as a Service via Web Services
  </documentation>
    <port name="WSTEST" binding="wsdl:WSTESTHttpBinding">
    <soap:address location="http://saas-server.com/SaaSWebServices/" />
    </port>
</service>
```

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MCP Web Services – Data Stream

SOAP Request:

```
<soap:Envelope>
  <soap:Body>
    <tns:WSTEST_SAASRequest>
      <Trancode>GETTOKEN</Trancode>
      <InputData>SaaS Request Info</InputData>
    </tns:WSTEST_SAASRequest>
  </soap:Body>
 </soap:Envelope>
```

SOAP Response:

```
<soap:Envelope>
  <soap:Body>
    <tns:WSTEST_SAASResponse>
      <Trancode>GETTOKEN</Trancode>
      <OutputData>SaaS Request  Output</OutputData>
      <statusline><statusLine />
    </tns:WSTEST_SAASResponse>
  </soap:Body>
 </soap:Envelope>
```

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MCP Web Services – Demo

- Demonstration of how to setup an SaaS API call from an MCP application (using MGSWeb)
  - API Documentation & WSDL
    - https://development.avalara.net/tax/taxsvc.wsdl
    - http://developer.avalara.com/wp-content/apireference/master/#avatax-soap-api
  - WSDL Import
  - Data map adjustment
  - Export necessary configuration to MCP host
    - Web Services call configuration
    - COBOL Copy Library

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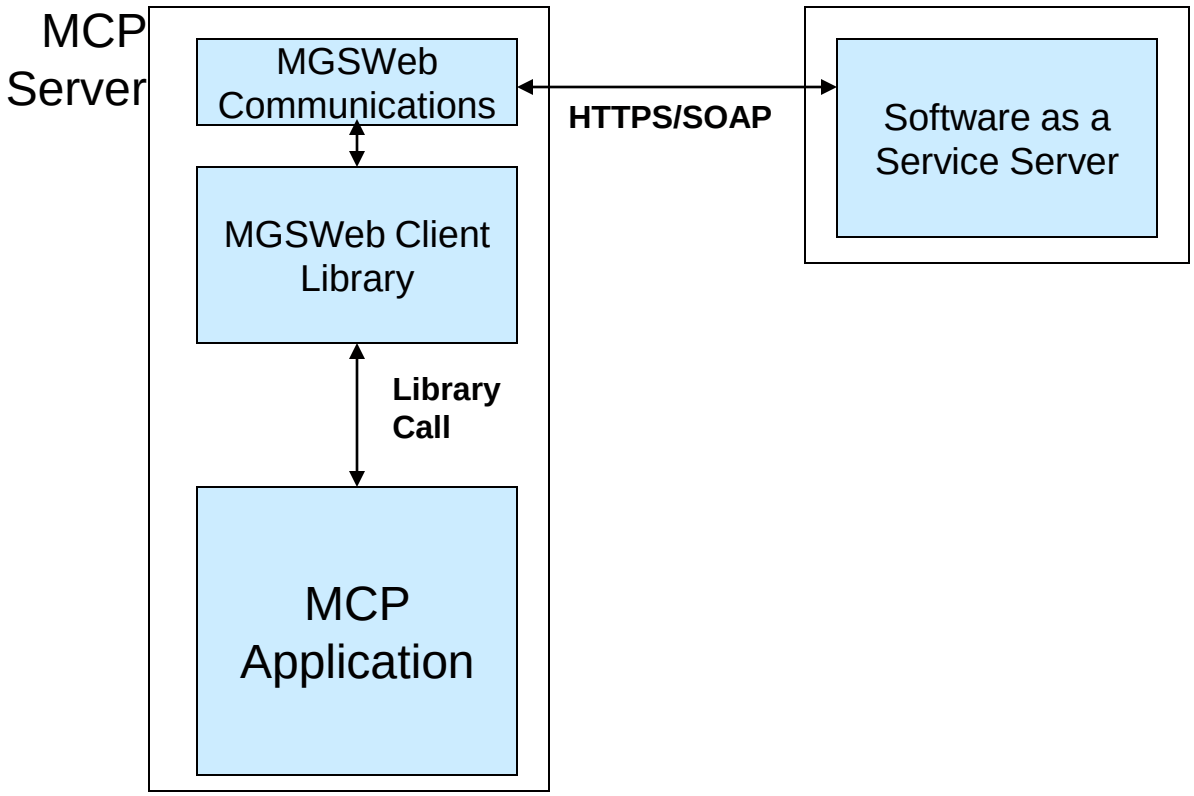
MCP Web Services – Application

- Application code to call the SaaS Web Service

```
COPY "WEBSERVICES/USERFILES/WEBOUT/SAAS-GETTOKEN".

MOVE SPACES TO REQ-RECORD.
MOVE SPACES TO RESP-RECORD.
MOVE “GETTOKEN” TO TRANCODE.
MOVE “SaaS Request Info” TO INPUTDATA.

CALL "INVOKE OF WEBSERVICES/LIBRARY"
  USING SAASFUNCT-PARAM,
        REQ-RECORD,
        RESP-RECORD
        RESULT-STRING
  GIVING RESULT.

IF RESULT NOT EQUAL ZERO
  DISPLAY "Error calling Web Service: “ RESULT-STRING
ELSE
  DISPLAY “Output:” OUTPUTDATA,
  DISPLAY “Status:” STATUSLINE.
```

MCP Web Services – Data Flow

- MCP Application Calls SaaS



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MCP Web Services - Summary

- SaaS can be accessed by MCP applications
- Application invokes middleware
- Middleware Processing
  - Remap COBOL 01 Request to XML
  - Format SOAP Request
  - Add HTTP envelope
  - Connect via SSL to SaaS server
  - Send request, receive response
  - Extract SOAP Response from HTTP
  - Remap XML to COBOL 01 Response

MCP Web Services - Summary

- Many Software as a Service Cloud Services are available today
- Robust middleware exists to allow MCP applications to directly access these services
- Substantial advantages in using these services (eg. Sales tax calculation by sale location)

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MCP Web Services - Summary

- Example Services:
  - Office Time (time tracking)
  - Sage One (accounting)
  - SalesForce
  - Docusign
  - Microsoft Office 365
  - Intuit QuickBooks
  - Intuit Online Payroll
  - Abukai Expenses (reporting/mgt)
  - Google Drive, SkyDrive

MCP Web Services - Summary

- Caveats
  - Cloud Services are only as reliable as their provider
  - Once functionality leaves the data center
    - Costs may be reduced
    - Control is lost
  - Must be evaluated on an application-by-application basis

Additional Questions?

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