

CPET 499/ITC 250 Web Systems

Topics in Web System

December 2 and 4, 2014

Topics

- Web Services
- Cloud Computing and Services
 - NIST Definition of Cloud Computing, <http://www.etcs.ipfw.edu/~lin/CPET581-CloudComputing/2013-Spring/1-Lectures/CPET581-CloudComputing-Lect-2-CloudStandardRoadMap-2013Spring.pdf>
 - SaaS (Software as a Service)
 - PaaS (Platform as a Service)
 - IaaS (Infrastructure as a Service)
- Amazon Web Services/Cloud Computing Infrastructure Service, <https://aws.amazon.com/>
 - What is Amazon Web Services, 2:56 minutes video, <http://aws.amazon.com/products/>
 - Compute
 - Storage & Content Delivery
 - Networking & Content Delivery
 - Databases
 - Analytics
 - Application Services
 - Deployment & Management
 - Mobile Services
 - Enterprise Applications
 - AWS Support
 - AWS Marketplace
 - Additional Services
- Microsoft Azure
- Microsoft 365, <http://office.microsoft.com/en-001/business/what-is-office-365-for-business-FX102997580.aspx>
 - How Office 365 works, 1:32 minutes video, <http://office.microsoft.com/en-001/business/what-is-office-365-for-business-FX102997580.aspx#>
 - Developing on the Office 365 platform, <http://msdn.microsoft.com/en-us/office/office365/howto/platform-development-overview>
- Enterprise service bus
- Windows Communication Foundation
- Service-Oriented Architecture (SOA)

Web Services

- Programmable, self-describing, discoverable, application-centric web-based software systems
- Can perform any kind of tasks
- SOAP (Simple Object Access Protocol), UDDI (Universal Description, Discovery and Integration), WSDL (Web Service Description Language)
- Web Service Architecture, Feb. 11, 2004, <http://www.w3.org/TR/ws-arch/>

- [Definition: A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL). Other systems interact with the Web service in a manner prescribed by its description using SOAP messages, typically conveyed using HTTP with an XML serialization in conjunction with other Web-related standards.]
- Definition, 2001, <http://www.w3.org/2001/03/WSWS-popa/paper13>
- W3C Web Services Specifications, http://www.service-architecture.com/articles/web-services/world_wide_web_consortium_w3c.html
 - SOAP
 - WS Choreography Description Language (CDL)
 - WS Choreography Model
 - Web Service Description Language (WSDL)
 - XML Encryption
 - XML Key Management Specification (XKMS)
- Web service examples
 - Stockquote
 - NASDAQ Data-On-Demand, <http://www.nasdaqdod.com/>
 - NYSE Market Data Web Services, 3:18 minutes video, <http://www.nyxdata.com/Market-Data-Web-Services>
 - Weather
 - National Weather Services, <http://graphical.weather.gov/xml/>
 - National Digital Forecast Database (NDFD)
 - Simple Object Access Protocol (SOAP)
 - OpenWeatherMap API, <http://openweathermap.org/api>
 - RestFul Weather Forecast Service, <http://www.restfulwebservices.net/Service.aspx?ID=25>
 - CRM
 - WebserviceX.NET, <http://www.webservices.net/WS/default.aspx> (SOAP, WSDL, UDDI)
 - Stock quote, Currency converter, Global weather, ...
 - RestFul Web Services, <http://www.restfulwebservices.net/servicecategory.aspx>
 - Communications, Financial, CRM, Marketing, Government, E-Commerce, Lead Verification, Data Enhancement, Utilities

IBM SaaS Resources, <http://www.ibm.com/cloud-computing/us/en/saas.html>

RESTful Web Services

- Learn REST: A Tutorial, <http://rest.elkstein.org/>
- A Guide to Designing and Building RESTful Web services with WCF, by Aaron Skonnard, Oct. 2008, <http://msdn.microsoft.com/en-us/library/dd203052.aspx>
- Microsoft Web API – the REST is done by WCF, Alexander Zejtler, [http://blog.alexonasp.net/post/2011/04/15/Microsoft-Web-API-e28093-the-REST-is-done-by-WCF-\(Part-1\).aspx](http://blog.alexonasp.net/post/2011/04/15/Microsoft-Web-API-e28093-the-REST-is-done-by-WCF-(Part-1).aspx)
- AWS REST API, <http://docs.aws.amazon.com/AmazonS3/latest/API/APIRest.html>
- Using Amazon's Web Services with REST, <http://www.cs.usfca.edu/~brooks/S06classes/cs682/slides/amazon-printable.pdf>

Enterprise service bus

- Open source ESB, <http://java-source.net/open-source/enterprise-service-bus>
- Apache Synapse Enterprise Service Bus, <http://synapse.apache.org/>
- IBM WebSphere Enterprise Service Bus, <http://www-03.ibm.com/software/products/en/wsesb>
 - IBM WebSphere ESB 6.2 – SOA Connectivity, Video, Oct. 24, 2008, <https://www.youtube.com/watch?v=H72s78so6DM>
- Oracle SOA EBS, <http://www.oracle.com/technetwork/articles/soa/ind-soa-esb-1967705.html>
- SAP NetWeaver Technology Platform, <http://scn.sap.com/community/netweaver>
- SAP NetWeaver Process Integration as ESB, Jan. 2012, <http://itknowledgeexchange.techtarget.com/enterprise-IT-tech-trends/sap-netweaver-pi-as-enterprise-service-bus-esb/>

Microsoft

- Windows Communication Foundation (WCF), [http://msdn.microsoft.com/en-us/library/ms731082\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/ms731082(v=vs.110).aspx)
- WCF Data Services 5.0 for OData V3, <http://www.microsoft.com/en-us/download/details.aspx?id=29306>
- An Introduction to RESTful Services with WCF, <http://msdn.microsoft.com/en-us/magazine/dd315413.aspx>

Web Services

- Web of Services, <http://www.w3.org/standards/webofservices/>
 - SOAP, http://www.w3.org/standards/techs/soap#w3c_all
- Web Services, <http://www.w3.org/DesignIssues/WebServices.html>
- WEbServiceX.net, <http://www.webservicex.net/ws/WSDetails.aspx?CATID=12&WSID=56>
- Online REST Web Service Demo, <http://predic8.com/rest-demo.htm>
- FedEx Web Service, <http://www.fedex.com/us/webservices/demo/>
- IBM Web Services, <http://www-01.ibm.com/software/solutions/soa/web-services.html>
- SOA and Web Services, <http://www.ibm.com/developerworks/webservices/>
- IBM Web Service Demos with WebSphere Studio, http://www.ibm.com/developerworks/websphere/library/demos/0310_WSdemo.html
- Windows Web Services Examples, [http://msdn.microsoft.com/en-us/library/windows/desktop/ee354195\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/ee354195(v=vs.85).aspx)
- Amazon Web Services and Microsoft, <http://aws.amazon.com/microsoft/>

SOA (Service Oriented Architecture)

- Definition: SOA is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains, lines 128-129, <http://docs.oasis-open.org/soa-rm/v1.0/soa-rm.pdf>
- IBM SOA, <http://www-01.ibm.com/software/solutions/soa/>
- OASIS SOA Reference Model TC, <https://www.oasis-open.org/committees/soa-rm/>
 - Reference Model for Service Oriented Architecture 1.0, OASIS Standard, Oct. 12, 2006, <http://docs.oasis-open.org/soa-rm/v1.0/soa-rm.pdf>
- Oracle SOA, <http://www.oracle.com/us/products/middleware/soa/overview/index.html>
- Understanding Service Oriented Architecture, <http://msdn.microsoft.com/en-us/library/aa480021.aspx>
- Ch 1: Service Oriented Architecture (SOA), <http://msdn.microsoft.com/en-us/library/bb833022.aspx>
- SAP SOA Governance, http://www.soa.com/index.php/solutions/sap/sap_soa_governance/

Enterprise Web Services

- Oracle Web Services Manager, <http://www.oracle.com/us/products/middleware/application-server/web-services-manager-066515.html>
- SAP NetWeaver Process Integration, http://en.wikipedia.org/wiki/SAP_NetWeaver_Process_Integration

REST vs. SOAP, <http://searchsoa.techtarget.com/tip/REST-vs-SOAP-How-to-choose-the-best-Web-service>

JSR 109 – Implementing Enterprise Web Services,

<http://help.eclipse.org/indigo/index.jsp?topic=%2Forg.eclipse.jst.ws.doc.user%2Fconcepts%2Fcjsr109.html>

- Amazon Web Service/Cloud Computing Infrastructure Service, <https://aws.amazon.com/>
 - What is Amazon Web Services, 2:56 minutes video, <http://aws.amazon.com/products/>
 - Compute
 - Elastic Compute Cloud (EC2), 4:01 minutes video, <http://aws.amazon.com/ec2/>
 - AWS Lambda
 - Storage & Content Delivery
 - Amazon S3 (Simple Storage Service), 3:08 minutes video, <http://aws.amazon.com/s3/>
 - Amazon Glacier
 - AWS Storage Gateway
 - Amazon EBS (Elastic Block Store)
 - Networking & Content Delivery
 - Amazon Redshift (data warehouse service)
 - Amazon ElastiCache
 - Amazon VPC (Virtual Private Cloud)
 - Amazon Route 53 (DNS web service)
 - AWS Direct Connect
 - Databases
 - DynamoDB
 - Amazon RDS (Relational Database Service)
 - Analytics
 - Amazon EMR (Elastic MapReduce)
 - Amazon Kinesis
 - Amazon Redshift
 - AWS Data Pipeline
 - Application Services
 - Amazon AppStream
 - Amazon CloudSearch
 - Amazon SWF (Simple Workflow Service)
 - Amazon SES (Simple Email Service)
 - Amazon SNS (Simple Notification Service)
 - Amazon SQS (Simple Queue Service)
 - Amazon Elastic Transcoder
 - Deployment & Management
 - AWS Identity and Access Management (IAM)
 - AWS Directory Service
 - Amazon CloudWatch

- AWS Elastic Beanstalk
 - AWS CloudFormation
 - AWS CodeDeploy
 - AWS Data Pipeline
 - AWS OpsWorks
 - AWS Config
 - AWS CloudHSM
 - AWS Key Management Service
 - AWS CloudTrail
- Mobile Services
 - Amazon Cognito
 - Amazon Mobile Analytics
- Enterprise Applications
 - Amazon WorkSpaces (desktop computing service)
 - Amazon Zocalo
- AWS Support
- AWS Marketplace
- Additional Services
 - Amazon FPS (Flexible Payment Service)
 - Alexa Web Information Service