

MConneen

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1. Personal

1.1. Michael Conneen

1.1.1. Welcome

Welcome to my development site. This site is offered as a service to our customers and is a "development repository" of various projects and artifacts. As time permits, it will be expanded.

What a mug shot. It's from my DePaul site. Since my undergraduate days at DePaul and as a US Steel Intern, I have always enjoyed sharing what I know (provided that I am legally permitted to share it!) Upon graduation from DePaul, I promised myself that one day I would lecture at the college level. Well, goal accomplished. Since about 1997, I have lectured on various topics. Following are just a few:

- Enterprise Object Oriented Development, DePaul University
- Secured Electronic Programming, DePaul University
- Java Programming, DePaul University
- Introduction to Java Programming, Purdue University, Calumet
- Introduction to C Programming, Purdue University, Calumet
- Advanced C++ Programming, Purdue University, Calumet
- Object Oriented Analysis & Design, Purdue University, Calumet
- Visual Basic Programming, Purdue University Calumet

.

But enough about **me**. I also invite you to review our other related work pages:

- Our general web page is here.
- Our development center starts here.
- An II Principle page.
- An II Principle page.

If you find any of the information provided on this site of value, or if you have comments or suggestions, I would be happy to hear from you. Just drop me an e-mail

Warning:

This site is being migrated from an XDoc pattern to Apache Forrest. Some links and pages may be broken for a while.

2. Projects

2.1. Projects

2.1.1. Professional Projects

Since 1995, I've been dedicated to building Information Integrators Inc. into a premiere consulting solutions vendor. This site contains project profiles of several of our projects in which I have had direct involvement.

Please refer to my project profile for an employment history overview. You can refer to the *II Projects* navigation tab to see project descriptions of the various Information Integrators Inc. projects which I have had direct involvement.

Descriptions of other Information Integrators Inc. projects can be found on our corporate web site.

2.1.2. Personal Projects

"Under the impetus of God's love there is no limit to human potential for good, especially when the human family becomes one in mind and heart in this endeavor. God wills it. God enables it. Only human freedom can limit it."

- St. Francis de Sales

There are many measures of a person. One such measure is in what he/she gives back to the community. Please feel free to review my personal site for a project summaries that my wife and I have participated.

2.2. II Projects

2.2.1. M. Conneen Professional Profile

2.2.1.1. Career Achievements

Since January of 1995, Mr. Conneen has focused his energies participating as a Principle in the formation, growth, and prosperity of the [INFORMATION INTEGRATORS INC.](#), a consulting services vendor. His most recent project assignments have been as

- Utility Industry Specialist, using OOA/OOD and Microsoft™ .NET technologies melded with Enterprise Architect and various UML diagramming techniques,
- an Enterprise Application Integration specialist, using OOA/OOD and Java™ technologies,

Mr. Conneen started as a programmer in 1981, coding financial systems in BASIC on the TRS-80 platform. This activity discovered his programming talents and certainly helped in attaining the 1983/1984 Stanley Schmidt Scholarship Award from DePaul University. While attaining a B.S. in Computer Science from DePaul, Mr. Conneen won an internship position with (then) U.S. Steel Chicago Corporate offices.

Over the years he has developed his skills as a mainframe programmer coding in COBOL, a systems programmer writing Assembly and CLISTS/REXX utilities, a reengineering specialist using PC technologies to off-load mainframe development, a CASE consultant developing requirements statements, design statements and generating code, a UNIX/Oracle C/C++ consultant, an OOA/OOD specialist, a Java™ application engineer, and a Web integration specialist. He truly has participated in every facet of the application development life cycle, and has consistently demonstrated his abilities to analyze, design, and implement appropriate business solutions.

Following is a time-table of various positions held:

1995 - Present

Information Integrators, Inc. Downers Grove Illinois

- Technical Officer, Equity Partner
- Application Integration Specialist focusing on N-Tier and Distributed Application Architectures. Currently engaged as an Enterprise Architect involved with all aspects of project development and administration.
- Adjunct Faculty / Lecturer on various topics such as
 - Enterprise Object Oriented Development, DePaul University
 - Secured Electronic Programming, DePaul University
 - Java Programming, DePaul University
 - Introduction to Java Programming, Purdue University, Calumet
 - Introduction to C Programming, Purdue University, Calumet
 - Advanced C++ Programming, Purdue University, Calumet
 - Object Oriented Analysis & Design, Purdue University, Calumet
 - Visual Basic Programming, Purdue University Calumet

For additional project summaries, please refer to the [Project Profile](#) navigation to the left.

1989 - 1995

Ameritech, ALDIS Chicago Illinois

- Manager, IS Strategy and Architecture
- Technical Consultant, Future Optimum State (FOS) Bill Development

- Analyst, Development Platform Support
- Technical Consultant, Future Optimum State (FOS) Volume Compare
- Analyst, Carrier Access Billing System (CABS) Re-engineering
- Analyst, Carrier Access Billing System (CABS) Usage Processing

1989

Information Industries, Incorporated. Chicago, Illinois

- System Engineer Consultant, Carrier Access Billing System (CABS) Usage Processing

1987 - 1989

Navistar International Transportation Corporation. Oak Brook, Illinois

- ISS Analyst, Truck Dealership New Systems Development
- ISS Analyst, Payroll Systems Maintenance
- ISS Associate, Payroll Systems Maintenance

1985 - 1987

USX Corporation. Chicago, Illinois

- Associate Programmer, Supply Division

2.2.1.2. Professional/Educational Associations

DePaul University, Chicago Illinois

Guest Lecture on following topics

- Enterprise Object Oriented Development
- Java For Programmers
- Secure Electronic Commerce
- Object-Oriented Enterprise Computing
- Object-Oriented Enterprise Application Development

Purdue University, Calumet Hammond Indiana

Guest Lecture on following topics

- Object Oriented Programming Using Java
- Object Oriented Programming Using C++
- Structured Programming Using C
- Introduction to Visual Programming Using Visual Basic
- Advanced System Analysis and Design using Object Technologies

Midwest Area Micro Focus Users Group, Inc., Founding Vice President of Membership

Nominated as first Vice President of Membership from November 1991 to December 1992 by committee of peers. Responsible for coordinating membership activities, membership billing, and mass mailing of over 1,000 perspective members. Created skills inventory database for use by members in good standing for “information networking”.

2.2.2. Skills Inventory**2.2.2.1. Application Development****Programming Technologies**

- ASP
- C
- C++
- C#
- CICS
- COBOL
- CSS
- CLISTS
- COBOL
- Crystal Reports 8.x
- Flash
- Groovy
- HTML
- IMS/MFS
- ISPF/REXX
- Java™
- Java™Servlets / J2EE Containers
 - Jakarta Tomcat 3.x, 4.x, 5.x
 - JBOSS 3.x, 4.x
 - IBM WebSphere 3.5, 4.x, 5.x
- JavaScript
- JCL
- JSP
- Microsoft IIS 5.x, 6.x
- MVS/TSO
- Netscape Directory Server
- OpenLDAP
- PL/I

- REXX
- VBA
- XSLT
- XML

Project Management

- OOA/OOD using UML 1.x 2.x (Use Case, Class, Activity, Sequence, CRC, etc) MagicDrawUML, ArgoUML, Enterprise Architect, Rational Rose and our own publishing framework
- OpenUP
- PM/Task management and reporting via Microsoft Project (2000, 2003)
- PM/Task management and reporting via OmniPlan
- Rational Unified Process (RUP)
- Scarab Issue/Task application
- JIRA

Operating Systems

- LINUX (Red Hat 7, ES, Debian)
- MacOSX (10.2, 10.3, 10.4)
- Microsoft Windows (NT/NT Server, 2K-Pro/Server, XP-Pro)
- UN*X (AIX 4.x, 5.x)

Relational Database Management Systems

- DB/2
- HSQLDB
- MS Sql Server (7, 2000) with Stored Procedures
- MySQL
- Oracle(PL/SQL) 8.x, 9.x, 10.x
- PostgreSQL

2.2.2.2. OpenSource

This section lists various open source code bases. The list is a representative sample, inquire for specifics as my exposure varies based on projects.

- Apache ANT
- Apache Forrest
- Apache HTTPD
- Apache JetSpeed-1
- Apache Maven

- Apache OfBiz
- Apache Tapestry
- Apache Turbine
- eclipse IDE
- jakarta-commons
- JUnit
- Spring

2.2.2.3. Applications

- Genesys CTI Framework
- IBM/MRO Maximo
- PCI GenManager
- Plateau Learning Management Systems
- The Structure Group nMarket
- Trading Technologies XTrader

2.2.3. SoftPhone Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.3.1. Business Objective

Reduce Average Speed to Answer (ASA), increase Customer Service Representative (CSR) effectiveness, and provide a common *SoftPhone* interface thus promoting the corporate drive to a Universal Call Center Agent.

2.2.3.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies with over \$20 billion in assets and revenues in excess of \$6.031 billion, was seeking to reduce their Average Speed to Answer (ASA) time while increasing Customer Service Representative (CSR) effectiveness and overall customer satisfaction. In previous technology projects and through corporate mergers and acquisitions, our client has four regional call centers with three different Integrated Voice Response (IVR) systems, three different Telephony implementations/switches, and two different Customer Information Systems (CIS).

Our project objective was to design and implement a common telephony application that accepts information processed by the IVR, messages the disparate CIS systems to provide context sensitive screen pops, and provide a common workflow/state management for the

various Customer Service Representatives. To assist in this goal, the client evaluated several Computer Telephone Integration (CTI) frameworks and selected the [Genesys CTI Framework](#).

2.2.3.3. Solution

First, a technology review of the Genesys Framework and development kit was conducted to address issues such as feasibility, scalability, and manageability. There were two main concerns. First, this would be the first Java™ desktop application to be used by the over 400 Customer Service Representatives (CSR) in four different call centers. Also, the client's deployment standard was SMS. Secondly, the two CIS applications which were to provide the screen pops had different application architectures. One CIS application is a heavyweight Client/Server application running on Windows NT/4.0 while the other CIS system is a green-screen legacy mainframe application running within CICS.

Next, several user story board scenarios were created and reviewed with CSR specialists. From these story boards, and following such design patterns as Model-View-Controller, Worker Thread, Decorator and various other J2EE patterns, appropriate class and object interaction models were developed.

While negotiations lagged with the CTI vendor, several design, code, and test iterations were undertaken to stabilize the clients desired User Interface. The principle goal was to eliminate the CSRs use of the hard phone while streamlining the call flow. Subsequently, a CTI lab was established to provide a production simulation environment upon which to continue testing. Once the CTI lab was in place, additional iterations were undertaken, tested, and rolled out to the various call centers for additional integration testing with the various telephony networks.

As a tribute to Java™'s portability, the application coding was started using a DELL Inspiron running Windows 2000 Professional, and, do to a malfunctioning keyboard, was completed on an Apple PowerBook G4 running OSX, 10.2!

The application was successfully deployed within the call centers and has matured through several minor maintenance and enhancement releases.

2.2.3.4. Solutions Architecture

Technologies used to complete project objectives were:

- Java™ Version 1.3.1 Mac OSX 10.2
- Java™ Version 1.4.1 Windows NT, Windows 2000
- Java™ custom objects
- Genesys CTI Framework 6.x

- OOA/OOD
- UML
- Rational Rose
- Argo UML
- XML
- CVS on Linux
- Jakarta Ant, Velocity, DVSL
- Tigris Scarab
- MicroSoft SMS

2.2.4. Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.4.1. Business Objective

Provide application integration services, develop custom reports and ensure Sarbanes-Oxley compliance.

2.2.4.2. Project Overview

Our client, a full service [energy marketer and portfolio manager](#), engaged Information Integrators Inc. services to assist in supporting an off the shelf energy management application written by [EnSite](#).

With the enactment of the [Sarbanes-Oxley Act](#) our client was in need of application integration and administration skills that were compliant with Sarbanes-Oxley Act.

2.2.4.3. Solution

We provided our customized application integration methodology which consists of but not limited to:

- Use Case Narratives
- Navigation Story Boards
- Test Case Validations
- Automated build procedures
- Documentation Generation

Working with the client, formalized work requests are generated. Use Case(s) are then created/modified detailing the desired business processes. Supporting Story Board and test

case logic are reviewed and accepted by the client. Finally, and appropriate design and implementation is constructed and released into a controlled testing environment. Upon documented client acceptance, the deliverable(s) is(are) migrated into production by an application administrator.

Also, working with the application vendor, we implemented Sarbanes-Oxley compliant application support and release protocols.

All Information Integrators, Inc. application integration interface documentation is housed in a [CVS](#) repository and generated using [Maven](#) tasks. All custom Java™ objects are compiled using Maven and automatically unit tested using Maven's [JUnit](#) plugin. Scheduled application interfaces and utilities are scripted and executed via Apache Ant.

2.2.4.4. Solutions Architecture

Technologies used to complete project objectives were:

- Java™ Version 1.4.2 Mac OSX 10.2
- Java™ Version 1.5.0 Windows NT, Windows 2000, Windows 2003
- Java™ custom objects
- Groovy
- OOA/OOD
- UML
- Argo UML
- XML
- CVS on Linux
- Apache Ant, Maven, Tomcat
- Apache HTTP server
- Microsoft IIS 5.x
- Microsoft SQL Server 2000
- Crystal Reports 8.x
- Tigris Scarab
- DevTrack

2.2.5. Common Gas Management System

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.5.1. Business Objective

Redesign and deploy a Common Gas Management System and retire two (2) differing legacy Gas Management applications thus reducing duplicate system maintenance tasks/resources.

2.2.5.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies (LDC) with over \$20 billion in assets and revenues in excess of \$6.031 billion, initiated several *Business Transformation Projects*. One such project sought to redesign two (2) legacy Gas Management applications into a single cohesive application supporting common business processes.

Our project objective was to initiate the *Business Transformation Project* and provide overall project management, business analyst and application architecture roles. In the midst of the project, the client publicly announced a major out sourcing arrangement with IBM and the project was reviewed and deemed *in flight* and slated to continue under the new corporate structure.

At the request of both the client and IBM, we remained on the project as Lead Business Analyst / Design Analyst for the critical *Gas Scheduling* module. To date, we are nearing completion of the Business Requirements Statement and detailed design estimates.

2.2.5.3. Solution

Working closely with Business Subject Matter Experts located in two different geographic locations, we conducted various Joint Requirements Planning/Gathering sessions to match business rules between the two different work groups.

To produce the various requirements and design artifacts, we utilized Sparx Systems [Enterprise Architect](#) to house various OOA/OOD artifacts such as but not limited too

- Use Case Models
- UI Wire frames
- Activity Models
- Architecture Overview Model

To assist in UI prototyping, all User Interface prototypes were quickly built using the application framework designed and deployed for previous iterations. During requirements gathering and review, the Business community was thus able to see real-time .NET web based forms to help solidify user interactions and web form expectations.

2.2.5.4. Solutions Architecture

Technologies used to complete project objectives were:

- C Sharp, Visual Studio .NET 1.1 and .NET 2.0
- NUnit
- NAnt
- OOA/OOD
- UML
- Enterprise Architect
- XML
- CVSNT
- Apache Forrest for documentation
- Eclipse
- PowerBuilder 8.0
- Oracle 9i
- Oracle PL/SQL

2.2.6. Java Training Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information.

2.2.6.1. Business Objective

Provide *Just In Time Training* to a core development team in order to develop the necessary skills for a successful project.

2.2.6.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies (LDC) with over \$20 billion in assets and revenues in excess of \$6.031 billion, was seeking *Just In Time Training* for their Java™ IBM WebSphere applications development team. As [Information Integrators, Inc.](#) had developed and deployed numerous Java™ web applications for them, they requested that we develop a [customized training course](#).

2.2.6.3. Solution

Drawing on over a two decades of application experience as well as numerous years of lecturing at the university level, we developed a course outline for client approval.

Next, detailed course lecture material was created and deployed to an [Information Integrators Inc.](#) training server. The content was then printed and bound into a comprehensive course binder.

Finally, student ids were generated into the LDAP directory server, and the course was ready for deployment.

2.2.6.4. Solutions Architecture

Technologies used to complete project objectives were:

- Java™ Version 1.3.1 Mac OSX 10.2
- Java™ Version 1.4.1 Windows NT, Windows 2000
- Apache Maven
- OOA/OOD
- UML
- Argo UML
- XML
- CVS on Linux
- Tigris Scarab

2.2.7. Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.7.1. Business Objective

Develop a secure *Internet* application that integrates with clients back-office Energy Management System.

2.2.7.2. Project Overview

In some areas, deregulation is prompting a greater emphasis on customer service. Enhancing the way it interacts with people can help distinguish a company from its competitors when the time comes to retain existing customers and attract new ones. For other companies, rapid growth or, conversely, consolidation is the driver says Sandra R. Sabo of American Gas Magazine.

Our client, a holding company of numerous Gas Local Distribution Companies with over \$20 billion in assets and revenues in excess of \$6.031 billion, anticipating FERC order 636, (which initiated the restructuring of interstate pipeline services) embarked on the creation of an internal Gas Management System to meet the demands of a deregulated environment. After the internal system was brought live, one of the final objectives of the implementation was to extend business processes to its customers via the Internet.

Our project objective was to streamline business partner access to their state-of-the-art energy management system (EMS). Offer secure internet access for commercial customers and marketers so they can better manage their energy needs.

2.2.7.3. Solution

As the first site internally hosted (February 1999), the initial tasks were to educate senior level management on the risks and rewards of Internet technologies. The client immediately concurred with the need for a robust Security Strategy.

The application development effort was segmented into two development tracks, a Framework Team and an Application Team. The Framework Team designed and implemented such common components as a Security Framework, Reports Framework, Forms Framework, and Data Access/Peer Framework. The Security Framework provided the Application Administrator the ability to maintain the role based security model. This model was implemented in a Directory Server which was accessed using the Lightweight Data Access Protocol (LDAP). The Report and Forms Frameworks were extended by the Application Team, and provided such functions as authentication, session management, and error recovery. The Data Access/Peer Framework was extended to provide access to the legacy database and integration with legacy application.

This robust internet application consists of over 700 Java, HTML, JavaScript, and graphic components.

2.2.7.4. Solutions Architecture

Technologies used to complete project objectives were:

- HTML/CSS/JavaScript
- Java™ Servlets
- Java™ custom objects
- IBM WebSphere Advanced Server
- Netscape Enterprise Server on AIX
- C on AIX
- OOA/OOD
- UML
- Rational Rose
- XML

2.2.8. LMS Application Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.8.1. Business Objective

Provide application interfaces and administration for the clients Learning Management System. This included such tasks as [developing the single sign on](#), developing the PeopleSoft interface, installing and configuring the LMS, developing and installing various third party interfaces, install, configure and tune IBM WebSphere.

2.2.8.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies with over \$20 billion in assets and revenues in excess of \$6.031 billion, had purchased a Learning Management System (LMS) to facilitate the management of such corporate training records as CDLs, OSHA Compliance Training, Corporate Directives, etc. Further, the client was in the process of migrating to a single PeopleSoft HR solution to house all employee records. Also, the client desired the ability to maintain all network access in their MicroSoft Active Directory deployment but did not want the LMS bound to any particular AD (or PeopleSoft) implementation.

Our project objective was to manage the installation and configuration of the IBM WebSphere application server as well as install and configure the application. Further, we developed various *Third Party* interfaces to integrate the LMS with various client business partners.

Finally, we interface with the clients ENOC to provide both IBM WebSphere and application administration. To assist in *first response* activities, we enhanced our [Simple Network Operation Center](#) objects to provide such services as ping alive, http alive, and other WebSphere monitoring type of functions.

2.2.8.3. Solution

To accomplish the objective we worked with the client's Business Analyst and selected LMS vendor to ensure the application was installed and configured properly. All *Third Party* interfaces were written in JavaTM and deployed to Windows 2000 servers as Windows Scheduled tasks.

2.2.8.4. Solutions Architecture

Technologies used to complete project objectives were:

- JavaTM Version 1.4.2 Mac OSX 10.3

- Java™ Version 1.4.1 Windows NT, Windows 2000
- Java™ custom objects
- IBM WebSphere 4.x
- JUnit
- Groovy
- OOA/OOD
- UML
- Argo UML
- XML
- CVS on Linux
- Apache Ant, Maven
- Eclipse
- Oracle 9i

2.2.9. LMS Single Sign On Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.9.1. Business Objective

Provide an integrated *Single Sign-on* interface to the clients Learning Management System (LMS), thus leveraging their extensive deployment of Windows client machines across a multi-state wide area network (WAN) ranging from the East Coast to the Gulf of Mexico.

2.2.9.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies with over \$20 billion in assets and revenues in excess of \$6.031 billion, had purchased a Learning Management System (LMS) to facilitate the management of such corporate training records as CDLs, OSHA Compliance Training, Corporate Directives, etc. Further, the client was in the process of migrating to a single PeopleSoft HR solution to house all employee records. Also, the client desired the ability to maintain all network access in their MicroSoft Active Directory deployment but did not want the LMS bound to any particular AD (or PeopleSoft) implementation.

Our project objective was to develop a *Single Sign-On* set of components that would interface with the purchased LMS system. These components must be browser neutral (that is, work in IE, FireFox, etc), yet integrate with the installed MicroSoft network. Finally, the chosen application server was IBM WebSphere.

2.2.9.3. Solution

To accomplish the objective, we built components on top of [JCIFS](#) to provide the NTLM Challenge/Response functionality. Additional interface components were also built which managed employee details between PeopleSoft and the LMS.

Finally, a *user id mapping* layer was developed to map non-standard network ids to LMS standard student ids. The project was developed on an Apple PowerBook G4 running OSX 10.3 and deployed to an IBM WebSphere application server running on a Windows 2000 server.

2.2.9.4. Solutions Architecture

Technologies used to complete project objectives were:

- JavaTM Version 1.4.2 Mac OSX 10.3
- JavaTM Version 1.4.1 Windows NT, Windows 2000
- JavaTM custom objects
- IBM WebSphere 4.x
- JCIFS
- JUnit
- PeopleSoft 7.x
- OOA/OOD
- UML
- Argo UML
- XML
- CVS on Linux
- Apache Ant, Maven
- Eclipse
- Tigris Scarab

2.2.10. Mark To Market Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.10.1. Business Objective

Develop a *Mark To Market* service for pricing various Gas Local Distribution Company (LDC) deals.

The project had the following stated goals:

- Create a central service to calculate Mark To Market per Deal.
- Create a client process to assist the client applications in enabling communication to the centralized server.
- Update a centralized operational data store.

2.2.10.2. Project Overview

Our client, a holding company of numerous Gas Local Distribution Companies (LDC) with over \$20 billion in assets and revenues in excess of \$6.031 billion, had initiated a *Corporate Credit Management* (CCM) project to assist in managing credit risk. Correctly pricing and rating current and future business partner gas deals was a project *Critical Success Factor!* (CSF).

As [Information Integrators, Inc.](#) had developed and deployed the client's enterprise pricing service, we were engaged to write a web service that would consistently and accurately price the client's complete portfolio of Gas term purchases (for ten LDCs) and feed that information to the enterprise Corporate Credit Management system.

2.2.10.3. Solution

Working with several Business Analyst across a geographically dispersed area, we first produced a *Could Be* model supported by various UML artifacts (Class Diagram, Component Diagram, and Use Cases).

Next, an XML-RPC web service was defined and created to interface with the enterprise pricing service. This web service provided the mechanism to consistently and accurately price each current and forward gas deal.

Finally, *stub client interface* components were created as samples for the various project to use as jump-starts for communicating with the XML-RPC based web service. While the examples were provided using the Java™ programming language. Some application interfaces were developed using MicroSoft's dotNET technology.

2.2.10.4. Solutions Architecture

Technologies used to complete project objectives were:

- Eclipse
- Java™ Version 1.3.1 Mac OSX 10.2
- Java™ Version 1.4.1 Windows NT, Windows 2000 Server
- Java™ custom objects

- OOA/OOD
- UML
- Argo UML
- XML
- XML-RPC
- Apache Ant, Apache Maven
- Tigris Scarab
- DB/2

2.2.11. MRTU Architect Project Summary

Warning:

Our Confidentiality Agreement prohibits the sharing of detailed project information

2.2.11.1. Business Objective

Comply with emerging California Independent Systems Operators (CA-ISO) Market Redesign and Technology Upgrade ([MRTU program](#)), while ensuring that the solution adheres to the company's emerging Enterprise Architecture standards with specific focus on the following:

- Ensure the technical architecture is adequate to meet the compliance projects needs
- Work with the various IT development groups to ensure requirements are met and delivered within the company's existing and emerging IT standards
- Document the architecturally significant aspects of the system as views that describe requirements, design, implementation, and deployment.

2.2.11.2. Project Overview

Our client, the largest gas and electric utility company in northern and central California servicing over 15 million customers, was mandated by the FERC and [CPUC](#) to comply with the California Independent Systems Operators (CA-ISO) Market Redesign and Technology Upgrade ([MRTU program](#)). The MRTU program touches nearly every business activity in the electric procurement business process.

As lead Architect, worked across more than twenty (20) workstreams and managed a team of three (3) full-time technical architects (TAs). The TAs worked with the functional and technical teams to ensure adherence to various Enterprise standards, implementing a best of breed application solution set.

2.2.11.3. Solution

Assembled a best of breed application suite across multiple work streams integrating Commercial Off The Shelf (COTS) applications with custom applications.

2.2.11.4. Solutions Architecture

Technologies used to complete project objectives were:

- BEA Enterprise Service Bus
- BEA WebLogic Server
- IBM AIX 5.x
- IBM Java 1.4.x
- Infragistics GUI Framework
- MicroSoft SharePoint
- MicroSoft SQL Server, 2003
- MicroSoft Visual Studio, CSharp
- MicroSoft Windows 64-bit, Enterprise Edition
- Oracle RDBMS 9i
- PCI's GenManager
- The Structure Group's nMarket
- Sparx Systems, Enterprise Architect

2.2.12. Simple Network Operations Center Project Summary

2.2.12.1. Opportunity Statement

Information Integrators Inc. builds and deploys various web application and web service frameworks. We have always focused on the business domain. However, there are situations where we participate in the hosting and management of such services. To date, we have no means of monitoring the health of our web applications. To that extent, other than using JUnit and client supplied regression testing tools, we have no means to regression test our applications either.

As a few examples, we are responsible for managing the following...

- SheddableShell
A small e-comm site that we have a services and residual agreement with.
- St. Joseph School
- II Wiki
- II Scarab

From an application management perspective, basic needs are:

- Ping Alive

- Is the box up, if not.. e-mail or page someone
- HTTP Alive
 - Is the HTTP request alive, if not.. e-mail or page someone
- HTTP Responsive
 - Is the HTTP request responding within a threshold of time..
- Did a schedule process run, such as backups.
-

Another item that should be considered is a recurring down count. For example, if the monitor case runs every 3 minutes, and the web site has been down for 5 occurrences, then it should probably STOP massaging the list as to not flood a wireless phone or e-mail account.

From an application quality assurance perspective, basic needs are:

- Unit test case - doGet, evaluate response
- Unit test case - doPost, evaluate response
- Web Services ?????

2.2.12.2. Domain Analysis

There are several ENOC type open source solutions available. If our core competency is to be operations management, then a robust solution is required. However, if we simply need to offer a base solution to ensure that our services are running and healthy, then we may be able to wrap one of the unit testing frameworks available to satisfy both needs.

Applications within the domain are..

Domain	Solution Description
NOC	MRTG This is the leading product for traffic analysis. There are perl add-ons that can also measure the health and responsiveness of various HTTP requests.
NOC	MARS - Monitoring Application for Resources and Servers
NOC	http://www.ipmonitor.com
Unit Testing	jakarta-commons/Latka
Unit Testing	Anteater
Other	We could use jakarta-commons/jelly along with jakarta-commons-sandbox/messenger or our own services/notification framework and build

	our own framework which satisfies our requirements.
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Note:

TO DO: document pros cons of leading approaches.

2.2.12.3. Stand Alone Monitor

2.2.12.4. Notification Layer Approach

If we wrap, extend, or build our own set of services, following is a conceptual view

In the above diagram, the MonitorTestCase is responsible for executing a monitor test suite against a URL and publishing the results of the suite to a messaging layer. An EventListener is an object that has subscribed to the messaging layer thus registering an interest in a specific event.

Pros	Cons
<ul style="list-style-type: none"> • Clean separation of duties • Can schedule and script using existing frameworks, such as JUnit, Latka, etc. • Scheduler and Listener can be on different machines, networks, etc. 	<ul style="list-style-type: none"> • Overly complex for monitoring framework.. what if messenger goes down?

2.2.13. Tri-Electronics Project Summary

2.2.13.1. Business Objective

A potential client was seeking a competitive bid to develop a *Proposal Data Collection* system that would integrate various disparate back office home-grown applications.

2.2.13.2. Project Overview

The basic project objective was to develop the content for an RFP style web site, thus permitting the client to evaluate Information Integrators Inc. proposal on-line.

2.2.13.3. Solution

Utilizing the XDoc document pattern, we quickly produced a detailed project documentation web site and deployed it to a secured internet server, thus permitting the client to view the proposal on-line as well as providing a detailed example of a potential web site pattern.

2.2.13.4. Solutions Architecture

Technologies used to complete project objectives were:

- Apache Maven
- OOA/OOD
- UML diagrams (Class, Activity, Component, Use Case)
- Argo UML
- XML
- CVS on Linux
- Tigris Scarab

2.2.14. Ameritech New Media Project Summary

2.2.14.1. Assignment Overview

Contracted to the nations 57th largest based Cable Services Provider. Primary responsibilities where Project Management of the Consumer Database demographic acquisition interfaces, as well as the Customer Data Extract, and Household Management processes. These applications are written in C++, Pro-C, PL/SQL, Korn Shell, sed, and awk scripts. The databases and application services reside on a Sun Solaris UNIX server.

Sun SparcWorks development platform was used for graphical analysis of class libraries, as well as for the graphical source code debugger. Also supported two tactical applications, one written in MicroSoft Access 2.0, and the other written in Powerbuilder 4.0. These applications extract and update specific information within the database.

A major accomplishment was rearchitecting the MicroSoft Access application so that it could efficiently be deployed and utilized by over twenty field notebook computers. This effort prompted a complimentary letter from the Marketing Manager. Another notable accomplishment was adding a DDE link to a PowerBuilder application which facilitates the import of Mailing Addresses. This link interfaced with the Address Validation Server, thus providing assurances that addresses complied with Business Unit standardization practices.

2.2.14.2. Solutions Architecture

Technologies used to complete project objectives were:

- C++
- Pro-C
- Oracle PL/SQL
- Korn Shell

- Various UNIX utilities, such as sed, awk
- Sun Solaris
- PowerBuilder 4.0
- MicroSoft Access

3. How Tos

3.1. Make The Switch

3.1.1. Why Switch?

Is it Linux? Is it FreeBSD, Win2K? No, it's MacOSX. Oh yeah.. it is FreeBSD! ;)

Time to practice what I preach. Well, almost. I'm not ready to go to LINUX on the desktop just yet, and I wanted to see what all the fuss was about with the G4 and the MacOSX/Jaguar release.

3.1.2. The Ordering Process

Its been hell. Having purchased three Dells in the past few years, Apple could learn a lot about inventory management from DELL.

3.1.3. Application List

Here is a list of the applications that I run on a regular basis. For applications that do not have native MacOSX versions, and until either one is developed or a replacement is found, the goal is to use Virtual PC to run a Windows XP session on MacOSX.

Function	Windows	MacOSX
Accounting	Quickbooks Professional	
Application Server	IBM WebSphere	Will run on my Win2K server
Browser	IE	
Database	MS Access	
Database	MySQL	
Database	Oracle	There is a MacOSX version available, but will look to MySQL or Postgress first.
Dev Tool	DBVisualizer	Pure Java tool. Should run just

		fine
Dev Tool	Eclipse	
Dev Tool	WinCVS	MacCVS
Document Publishing	Adobe PDFWriter	
Drawing Tool	Visio	
Editor	Slickedit	
Editor	XML Spy	Vendor suggests to run in pc emulator
Finance	Turbo Tax	
Graphics Editor	FireWorks	
Help Tool	Aspect Online Library	Won't port, it;s a Windows help file for the Aspect ACD.
IM	AOL IM	IChat
Java Servlet Container	Tomcat	
Java	Java	
Methodology	RUP	Browser based, should be O.K.
Office	MS Excel	Open Office/Star Office
Office	MS Word	Open Office/Star Office
PIM	MS Outlook	There is an integrated AddressBook, Mail, IChat. Not sure about calendaring, may have to bite the bullet and either purchase a PIM or it will spur the development of our II Calendaring service!
PIM	True Sync	
PIM	MS Outlook	Apple iCall, Aqua Cal, DesktopCalendar
Terminal Emulation	SecureCRT	Basic terminal included
Utility	Norton Antivirus	same
Utility	WSFtPro	

Utility	WinZip	Stuffit, jar, tar
Web Publishing	DreamWeaver	
Web Server	Apache	Same

3.1.4. The Migration Process

3.2.

3.2.1.

Sure.. I know port 80 is www-http... but that is about all I remember. Whenever I wanted to find out what port was what, I always ended up sniffing around.. So, here is a list that I've swiped from various places and files. As time permits, more detail will be added.

Port	Description
1	tcpmux
3	
4	
5	rje
7	echo
9	discard
11	systat
13	daytime
15	netstat
17	qotd
18	send/rwp
19	chargen
20	ftp-data
21	ftp
22	ssh, pcAnywhere
23	Telnet

25	SMTP
27	ETRN
29	msg-icp
31	msg-auth
33	dsp
37	time
38	RAP
39	rlp
40	
41	
42	nameserv, WINS
43	whois, nickname
49	TACACS, Login Host Protocol
50	RMCP, re-mail-ck
53	DNS
57	MTP
59	NFILE
63	whois++
66	sql*net
67	bootps
68	bootpd/dhcp
69	Trivial File Transfer Protocol (tftp)
70	Gopher
79	finger
80	www-http
87	
88	Kerberos, WWW

95	supdup
96	DIXIE
98	linuxconf
101	HOSTNAME
102	ISO, X.400, ITOT
105	cso
106	poppassd
109	POP2
110	POP3
111	Sun RPC Portmapper
113	identd/auth
115	sftp
116	
117	uucp
118	
119	NNTP
120	CFDP
123	NTP
124	SecureID
129	PWDGEN
133	statsrv
135	loc-srv/epmap
136	
137	netbios-ns
138	netbios-dgm (UDP)
139	NetBIOS
143	IMAP

144	NewS
150	
152	BFTP
153	SGMP
156	
161	SNMP
175	vmnet
177	XDMCP
178	NextStep Window Server
179	BGP
180	SLmail admin
199	smux
210	Z39.50
213	
218	MPP
220	IMAP3
256	
257	
258	
259	ESRO
264	FW1_topo
311	Apple WebAdmin
350	MATIP type A
351	MATIP type B
360	
363	RSVP tunnel
366	ODMR (On-Demand Mail Relay)

371	
387	AURP (AppleTalk Update-Based Routing Protocol)
389	LDAP
407	Timbuktu
427	
434	Mobile IP
443	ssl
444	snpp, Simple Network Paging Protocol
445	SMB
458	QuickTime TV/Conferencing
468	Photuris
475	
500	ISAKMP, pluto
511	
512	biff, rexec
513	who, rlogin
514	syslog, rsh
515	lp, lpr, line printer
517	talk
520	RIP (Routing Information Protocol)
521	RIPng
522	ULS
531	IRC
543	KLogin, AppleShare over IP
545	QuickTime
548	AFP

554	Real Time Streaming Protocol
555	phAse Zero
563	NNTP over SSL
575	VEMMI
581	Bundle Discovery Protocol
593	MS-RPC
608	SIFT/UFT
626	Apple ASIA
631	IPP (Internet Printing Protocol)
635	mountd
636	sldap
642	EMSD
648	RRP (NSI Registry Registrar Protocol)
655	tinc
660	Apple MacOS Server Admin
666	Doom
674	ACAP
687	AppleShare IP Registry
700	buddyphone
705	AgentX for SNMP
901	swat, realsecure
993	s-imap
995	s-pop
999	
1024	
1025	
1050	

1062	Veracity
1080	SOCKS
1085	WebObjects
1100	
1105	
1114	
1227	DNS2Go
1234	
1243	SubSeven
1338	Millennium Worm
1352	Lotus Notes
1381	Apple Network License Manager
1417	Timbuktu
1418	Timbuktu
1419	Timbuktu
1420	
1433	Microsoft SQL Server
1434	Microsoft SQL Monitor
1477	
1478	
1490	
1494	Citrix ICA Protocol
1498	
1500	
1503	T.120
1521	Oracle SQL
1522	

1524	
1525	prospero
1526	prospero
1527	tlisrv
1529	
1547	
1604	Citrix ICA, MS Terminal Server
1645	RADIUS Authentication
1646	RADIUS Accounting
1680	Carbon Copy
1701	L2TP/LSF
1717	Convoy
1720	H.323/Q.931
1723	PPTP control port
1731	
1755	Windows Media .asf
1758	TFTP multicast
1761	
1762	
1808	
1812	RADIUS server
1813	RADIUS accounting
1818	ETFTP
1968	
1973	DLSw DCAP/DRAP
1975	
1978	

1979	
1985	HSRP
1999	Cisco AUTH
2000	
2001	glimpse
2005	
2010	
2023	
2048	
2049	NFS
2064	distributed.net
2065	DLSw
2066	DLSw
2080	
2106	MZAP
2140	DeepThroat
2301	Compaq Insight Management Web Agents
2327	Netscape Conference
2336	Apple UG Control
2345	
2427	MGCP gateway
2504	WLBS
2535	MADCAP
2543	sip
2565	
2592	netrek
2727	MGCP call agent

2766	
2628	DICT
2998	ISS Real Secure Console Service Port
3000	Firstclass
3001	
3031	Apple AgentVU
3052	
3128	squid
3130	ICP
3150	DeepThroat
3264	ccmail
3283	Apple NetAssitant
3288	COPS
3305	ODETTE
3306	mySQL
3352	
3389	RDP Protocol (Terminal Server)
3520	
3521	netrek
3879	
4000	icq, command-n-conquer
4045	
4144	
4242	
4321	rwhois
4333	mSQL
4444	

47017	
4827	HTCP
5000	
5001	
5002	
5004	RTP
5005	RTP
5010	Yahoo! Messenger
5050	
5060	SIP
5135	
5150	
5190	AIM
5222	
5353	
5400	
5500	securid
5501	securidprop
5300	
5423	Apple VirtualUser
5555	
5556	
5631	PCAnywhere data
5632	PCAnywhere
5678	
5800	VNC
5801	VNC

5900	VNC
5901	VNC
5843	
6000	X Windows
6112	BattleNet
6050	
6499	
6500	
6502	Netscape Conference
6547	
6548	
6549	
6666	
6667	IRC
6670	VocalTec Internet Phone, DeepThroat
6699	napster
6776	Sub7
6968	
6969	
6970	RTP
6971	
7000	
7007	MSBD, Windows Media encoder
7070	RealServer/QuickTime
7161	
7323	
7777	

7778	Unreal
7640	
7648	CU-SeeMe
7649	CU-SeeMe
7654	
8000	
8002	
8010	WinGate 2.1
8080	HTTP
8100	
8181	HTTP
8383	IMail WWW
8765	
8875	napster
8888	napster
8890	
9000	
9090	
9200	
9704	
9669	
9876	
9989	
10008	cheese worm
10752	
12345	
11371	PGP 5 Keyserver

12346	
13000	
13223	PowWow
13224	PowWow
14000	
14237	Palm
14238	Palm
14690	
16969	
18888	LiquidAudio
21157	Activision
22555	
22703	
22793	
23213	PowWow
23214	PowWow
23456	EvilFTP
26000	Quake
27000	
27001	QuakeWorld
27010	Half-Life
27015	Half-Life
27374	
27444	
27665	
27910	
27960	QuakeIII

28000	
28001	
28002	
28003	
28004	
28005	
28006	
28007	
28008	
30029	AOL Admin
30100	
30101	
30102	
30103	
30303	
30464	
31335	
31337	Back Orifice
32000	
32771	
32777	rpc.walld
34555	
40193	Novell
41524	arcserve discovery
45000	Cisco NetRanger postofficed
50505	
52901	

54321	
61000	
65301	
Multicast	hidden
ICMP Type	hidden
9998	
32773	rpc.ttdbserverd
32776	rpc.spray
32779	rpc.cmsd
38036	timestep

4. Site Doc