

Ivory Service Architect[®]

Agile Development for Modernizing Mainframe Applications

Solution Overview

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Agenda



GT Software, Inc. Overview

- Company History
- Customers

Mainframe Market Challenges

- Predictions for 2016 and beyond
- Ivory Service Architect

Design Patterns

- Simplistic Approach
- Orchestration
- **Why is Ivory Service Architect unique?**
 - Studio
 - Server
- **Customer References and Case Studies**

Credibility Matters





History

- Founded in 1982
- Consistently profitable
- Over 2000 customers worldwide
- Worldwide sales and support network
- Continued growth

□ Laser focused for today and the future...

- IBM System z tooling and technology
- Integration and modernization via SOA

Selected Global Customers













PORSCHE





Nationwide[®]

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IBM Partnership





- Partnership Highlights
 - Business Partner for 20+ years
 - Advanced level Business Partner
 - PartnerWorld Member for over 15 years
 - Active in CICS and IMS ISV ETP's
 - Both z/OS and VSE/ESA partner programs
 - WebSphere Information Integration Partner
 - IBM's Data Stage Technology Partner
 - Long standing relationship with CICS and IMS labs

IBM Partnership





Validations

- SOA Business Partner Community
- PartnerWorld Industry Networks (Industry Specific Solutions)
- IBM Linux Chiphopper[™] certification
- Linux and Linux on System z
- Server Proven for IBM eServer
- Ready for LinuxONE



Mainframe Integration Challenges



IMS is the System of Record





IMS Systems for Banks (ATM, loans, account management)



IMS Systems for Insurance (Claims & policy management)



IMS Systems for Manufacturing



IMS Systems for Finance



IMS Systems for Medical



IMS Systems for Airline

Mainframe Integration Challenges





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Today's Business Needs



- Web self-service, mobile/cloud, BYOD
- Real-time access to enterprise data residing on any platform
- Integrated views of related information
- Customer and business focused IT
- Build and deploy apps rapidly
- Industry standards
- Integration between mainframe & distributed systems
- **Common tools & skills**





Ivory Service Architect





"When looking to extend mainframe investment into SOA, one thing is for sure - **you simply cannot code your way into the future**.

Look for tools that enable mainframe developers to quickly and easily become service developers in an automated, code-free environment."

Dale Vecchio, Vice President



Typical Mainframe Approach to SOA



- □ Simplistic, Web services only approach
 - Lack of confidence
 - A lot to learn
 - SOA is typically driven by "distributed" folks
 - Think of the mainframe in almost database terms
 - F.U.D.
 - Can mainframe developers "do" SOA?
 - Where to start?

Mainframe Resources



- Transactions
 - IMS
 - CICS
- Applications
 - IMS
 - CICS
 - Other Natural, CoolGen, IDEAL, etc.
- Data
 - Flat to relational
 - (IMS/DB, VSAM, ADABAS, ISAM, DB2, etc.)
- Services
 - On or off-platform

Pre-existing Mainframe Functionality



- Account Management
 - 3270 applications
 - Requires the account number to retrieve details



Account Details

- COMMAREA transaction
- Translates customer name to account number



1	01 CA-DE	FAIL-RECORD.	
2	05	CA-CONVERSATION-STATE	PIC X.
3		68 CA-MAIN-MENU-SENT	VALUE "M".
4		99 CA-DETAIL-SCREEN-SENT	VALUE "D".
5		88 CA-SCAP-REQ	VALUE "S".
6	05	CA-MODE	PIC X.
7		88 CA-DISPLAYING	VALUE *D*.
8		88 CA-NODIFYING	VALUE "M".
9		00 CA-DELETING	VALUE 'X'.
10		88 CA-ADDING	VALUE 'A'.
		98 CA-SEARCHING	VALUE 'S'.
12	05	CA-ERROR	PIC X.
13		68 CA-NOERROR	VALUE ' '.
14		88 CA-DUP-RECORD	VALUE 'D'.
15		88 CA-RECORD-NOTEND	VALUE 'R'.
16		88 CA-INUSE	VALUE 'U'.
		68 CA-MAME-NOTIND	VALUE 'N'.
18		88 CA-CRUD-FAIL	VALUE "F".
19	05	CA-REQUEST-TYPE	PIC X.
20		88 CA-REQUEST-DISFLAY	VALUE 'D'.
		88 CA-REQUEST-MODIFY	VALUE 'M'.
22		66 CA-REQUEST-ADD	VALUE "A".
23		00 CA-REQUEST-DELETE	VALUE "X".
24	05	CA-DETRIL-DATA.	

Service Design Pattern #1



Bottom-up

- Web service "wrapping"
- Start with programs
- Define the contract or service organically
- Quick and easy

Bottom-up Design





Bottom-up Design





What Makes Ivory Service Architect Unique?

GT Software*

Powerful Development tool

- Orchestration
- No coding
- Top down (WSDL 1st) and bottom up (copybook)
- Integrated Test Facility
- IMS, CICS native
 - Delegate model for EVERYTHING else





Ivory Service Architect





Service Design Pattern #2



- Top-down (Contract first)
 - Start with a service definition
 - Essentially your "contract" with the service consumer
 - Map required programs/applications to that definition
 - More likely approach
 - Business requires a service
 - IT delivers the service



Input: Last Name, First Name, Stock Symbol Output: Number of Shares



GetStockQuote

Account Details CICS COBOL COMMAREA ACCOUNT Mgt 3270 BMS





Input: Last Name, First Name, Stock Symbol Output: Number of Shares



GTSoftware[®]



Input: Last Name, First Name, Stock Symbol Output: Number of Shares



GTSoftware[®]

American Airlines Example



Ivory Suite Workflow



What's The Implication?



- You will need to support both design patterns
 - The ability to deliver the optimal level of granularity

Considerations

- Mainframers must be involved in service definition and implementation
- Multi-step processing
 - More than one transaction may be required
 - Data mapping and transformation
- Multiple operations
 - Logically group related functions

Benefit

- Create valuable, easily understandable services
- Optimize Mainframe performance
 - Amount of XML to be processed
 - Amount of data to transfer
 - Less transaction overhead
- Platform owners fully participate in the process

What Makes Ivory Service Architect Unique?

- Service Definition and Development Process
 - Top-down/bottom-up
 - WSDL first or WSDL last
 - The amount the mainframe developers get involved in the process
- Orchestration / Composites
 - On the mainframe
 - On the distributed tier
 - ...or Both!
- □ What you can include...
 - IMS, CICS, TN3270, Link3270, Data, and Web services
 - IMS non-conversational and conversational
 - Multi Segment Support
- □ Where you can deploy...
 - Mainframe (Started task, zLinux, CICS), Windows, Linux



GTSoftware⁶

GT Software[®]

- "Instant" deployment
- Platform independent deployment
- Easily govern and manage lvory projects
- Easily shift workload
- zLinux
 - IFL processor support = no MIPS
 - HiperSockets from zLinux to IMS = high performance

What Else Makes Ivory Service Architect Unique?



- Services deployed as Web services or mainframe-based callable services
- High-performance support for Batch
- Windows-based development tool
 - Easy to install (less than 5 minutes)
 - Minimal pre-requisites (hardware and software)
 - No Java knowledge required
- No formal training required



"The cost of delivering a mainframe-based service in Ivory is 10X cheaper than competitive solutions."

"Ivory provides a 5-10X improvement in productivity versus our traditional method of delivering services using COBOL and MQ Series."



"In the case of GT Software, the company is a forerunner in delivering SODA (Service-oriented Development of Applications) on the mainframe."

Daryl Plummer Group Vice President





User Success Stories!!



Leading Luxury Sports Car Manufacturer

- > One of the world's best known brands in luxury, performance sports cars
- Strive for 'maximum output with minimum input'

Needs

- Replace and web enable 3270-based vehicle specification and configuration system
- > A tool that could interact with the manufacturing and inventory systems
- Give prospects the ability to custom design and interact online with newest models

Challenge

- > Wanted web-access to its mainframe-based specification and configuration system
- > Current interface was based on IBM OS/2 operating system with 3270 'green-screens'





Less than 1 Day to Develop, Publish and Use Web Services No Programming or Additional Personal Required

2



Secure Transfer of Information Readily Available



U.S. Regional Bank

- Headquartered in Atlanta, GA
- Operates 2,200 ATMs nation wide
- > 1,500 retail branches

Needs

- > Quickly respond to consumer demand of mobilization
- Improve customer satisfaction with real-time access
- Remain competitive with larger banks

Challenge

- Short 6 month time frame
- Modernize mainframe and green screens
- Re-writing code may be too time-consuming
- > IT spending 50% of time on maintenance







services

75% reduction in development time





South African Financial Institute

- Headquartered in Johannesburg, South Africa
- Strives to be the "go-to" bank, and first choice for clients
- ➢ 40,000+ employees and 9.4 million customers

Needs

- Maintain the brand distinction
- > Further improve customer experience

Challenge

- > Unable to deliver single solution across banking channels
- Needed to expose, consumer, and reuse IMS applications
- Share processes and data across 30 business channels
- Improve developer productivity







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High Level of Service Reuse Achieved ROI in 12 Months



12 Million Service Invocations per Day



Leading US Airline

- Over 300 Mainline Jets and 250+ regional Jets
- Nearly 7,000 departures daily
- Provides travel to over 300 destinations

Needs

- > To improve turnaround time of maintenance procedures
- To expand, anywhere access to multiple maintenance support systems
- > To update access from fixed terminals to mobile devices
- Simplify user interface with unified view of multiple backend systems

Challenge

- Highly visible and business-critical project
- Solution required changes to legacy back end and mission-dependent systems
- > Developers of new applications have no knowledge of legacy code bases
- > Heavily regulated and tight project implementation deadline





Strong ROI

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1 Year Reduced to 4

Months



Reduced Labor Time

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Faster Aircraft Turnaround



Leading Advanced Technology Company

- > 1,000 facilities in 500 cities in 46 U.S. states with Locations in 75 nations and international territories
- Aeronautics, Electronic Systems, Information Systems & Global Services, and Space Systems
- > 41.9 billion revenue; 71.6 billion revenue backlog

Needs

- > Incorporate mainframe applications containing critical business logic into corporate SOA strategy
- Showcase value of mainframe install base to corporate IT (SOA and BPM teams)
- Enable mainframe migration of "select" applications to SAP
- Employ a standards-based approach

Challenge

- Mainframe was being slowly phased out in favor of SAP
- > Key executives saw the value of the mainframe platform being diminished
- > How to incorporate a very diverse mainframe architecture into corporate SOA and SAP strategies?





Group Hospitalization and Medical Services

- > Operations in Maryland, the District of Columbia, Delaware and Northern Virginia
- 6,000+ Employees
- Serving more than 3.3 million members

Needs

- Empower CSR's using Epiphany
- Augment existing tooling on the mainframe
- Create service interfaces during App Consolidation & Enrollment
- Active approach to mainframe SOA

Challenge

- > Two disparate, large mainframe claims apps -- one CRM interface for call center
- Existing tooling required re-architecting CICS apps
- > IT delivery dates not able to support business objectives



Results

5 5-10X Kick-start for 6 – 8 week Leveraging improve process now mainframe SOA ment in developers as infrastructure takes less than 1 service developers productiv implementati week ity on



Multi-lines Mutual Insurance Company

- Operations in 48 States
- > 2,600+ Employees
- \$1.4 Billion in Premium

Needs

- Refocus on the business problem
- Expose and consume Web Services
- Reuse legacy when possible ...or build new
- Active approach to mainframe SOA

Challenge

- > Make legacy services available to new composite applications
- Developers spending 50%+ time on "plumbing"
- Slowing development efforts
- Reuse opportunities lost







Strong ROI Within 1 Year Only 2 Hours of Training Per User Serving 10 Applications Across 7 Business Areas S

Processes over 400K Ivory-based Web Service Requests / day



Leading Aptitude Testing Company

- U.S headquartered, non-profit assessment vendor
- > Develop and administer 50 million aptitude tests annually
- ➤ 180 countries —9,000 locations

Needs

- Immediate credit approval
- Ability to process funds for payment
- Ability to track candidate's scheduling, testing, and scoring

Challenge

- > Two back-end systems written in IDMS/DC and CICS, respectively
- Both required "real-time" communication with third-party credit card processor
- Both were green screen systems and would use same interface
- Neither coded to support encryption, SSL security and WS security tokens a requirement for credit card processing





Created "common" interface



Met aggressive timeline Added encryption, WS security (per PCI Compliance)



Strong ROI 80% Reuse

Customer Success Stories





Delivered private label credit card processing leveraging mainframe IMS processing over 5 million web services request/day.



Banking solution providing a single-view of the customer from BMS transactions and CICS COBOL.

LB≣BW

Global Stock trading application integrating to IMS systems done by Java developers.



Web based automobile configuration site using mainframe COBOL engineering systems.

Customer Success Stories





Single View of the customer, CRM integration across 10 applications and 7 business areas. Ivory running on 3 IFLs.



CRM integration with an existing mainframe application empowering CSR's using Epiphany application increasing productivity and kick starting SOA initiative.



Integration to an packaged banking application required using the IFX XML schema.

Thank you!





Contact us!

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