PERVASIVE®

CASE STUDY

SOLUTION:
Pervasive Business Integrator for Healthcare™

CSC and Pervasive Deliver Real-Time HIPAA Medicaid Processing for the State of New York

"CSC's core integration expertise, combined with Pervasive's extensive data translation experience, complete with complex mapping and HIPAA rules definition, enabled CSC to provide New York State with the nation's first HIPAA-compliant Medicaid system."

–John Palter
Senior Partner and Program Architect
CSC

About Computer Sciences Corporation

Founded in 1959, Computer Sciences Corporation (CSC) is a leading global IT services company. CSC's mission is to provide customers in industry and government with solutions crafted to meet their specific challenges and enable them to profit from the advanced use of technology. With approximately 90,000 employees, CSC provides innovative solutions for customers around the world by applying leading technologies and CSC's own advanced capabilities. These include systems design and integration; IT and business process outsourcing; applications software development; Web and application hosting; and management consulting. Headquartered in El Segundo, California, CSC reported revenue of $14.9 billion for the 12 months ended July 2, 2004.

Executive Summary

As a leading global technology consulting, integration and outsourcing company, CSC leverages its technology alliances to offer its clients the most comprehensive solutions at the lowest cost. When the state of New York wanted to modernize its Medicaid system while staying within budget, it relied on CSC to bring the best providers to the table. After analyzing the state's needs, CSC chose Pervasive Business Integrator for Healthcare™ to help New York process Medicaid claims more efficiently with a new HIPAA translation engine.

Business Challenge:

Accelerate Medicaid Processing, while meeting HIPAA regulations, for the State of New York

When CSC was tasked to migrate the State of New York's Medicaid processing system (eMedNY) to the federally mandated HIPAA transaction formats, detailed analysis was conducted which indicated that a front end data translation approach would be required in order to meet the development timeline and performance requirements of the system. Additionally, the high transaction volumes and 24x7 processing requirement dictated that there could be no system downtime to accommodate the migration.

eMedNY Phase 1 handles more than four million Medicaid transactions per week, resulting in more than $6 billion in prescription payments per year by the state of New York. The challenges for the new system included SLA's for both reliability (true 24x7 availability) as well as transaction response time.

In the first implementation phase, Eligibility and Service Authorization transactions are submitted through various input paths for real-time processing. In addition, batch-oriented pharmacy claims were transformed to adjudicate in real time, with direct access by more than 50,000 providers (pharmacies, hospitals and doctors) serving 4 million consumers eligible for Medicaid. The second phase of eMedNY would include all medical claim types. Meeting the HIPAA compliance mandate required additional complex and compute-intensive processing while still delivering nearly instantaneous transaction response times. The HIPAA implementation had to be completed within six months in order for New York state to meet the federally mandated deadline.

Design Approach

CSC realized that the additional processing workload of HIPAA-formatted claims and acknowledgement transactions could not be handled on the mainframe without budget-breaking costs of additional mainframe hardware and extensive software modifications. The architecture team started design of a mid-tier using multiple, low-cost Windows-based blade servers that would validate and translate claims between the HIPAA-based formats arriving from healthcare providers and the proprietary binary format needed by the mainframe.

Similarly, acknowledgments, rejections and requests for additional information needed to be translated from binary to the HIPAA standards expected by doctors and pharmacies. The software running on these mid-tier blade servers would have to meet the requirements of sub-second translations and run reliably enough to achieve 24x7, 365 uptime. Based on previous experience, CSC turned to Pervasive's integration software and services to architect and deliver a seamless, scalable platform that could be quickly built and tested.

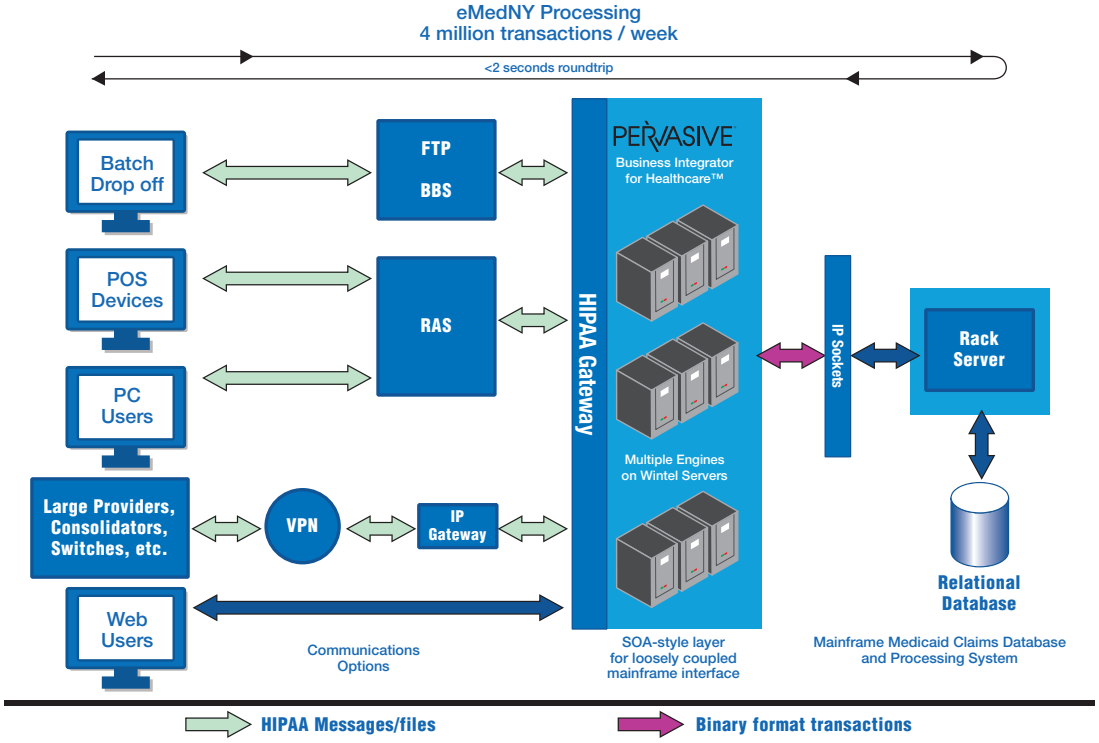
Solution

CSC integrated Pervasive's Business Integration Engine into its custom IP-based multi-threaded gateway in order to provide eMedNY with the infrastructure to send and receive millions of Medicaid responses in real time, including eligibility verification, service authorizations and prescription claims. The ability to deploy multiple engines across multiple servers helps to eliminate single points of failure, as well as providing unlimited scalability. "CSC's core integration expertise, combined with Pervasive's extensive data translation experience, complete with complex mapping and HIPAA rules definition, enabled CSC to provide New York state with the nation's first HIPAA-compliant Medicaid system," says John Palter, senior partner and program architect for CSC.

Pervasive pre-built the schema for Medicaid processing (a component that interprets and transforms data in XML formats) in less than four weeks.

"The eMedNY system currently processes four million Medicaid transactions per week, peaking at rates of 60 transactions per second," says Palter. "We are extremely focused on meeting our 24x7 availability and rapid response time commitments. Using

High Volume HIPAA Claims Processing



Pervasive's Business Integration Engine for HIPAA translation has added less than 50 milliseconds to our overall response time per transaction. This was critical to us in product selection."

According to Palter, the alternative of performing HIPAA translation on the mainframe would have been up to ten times more costly. "The implementation of Pervasive Business Integrator took only six months from product selection to deployment, because of the development efficiencies delivered by Pervasive's Business Integrator design tools," he explains. "Mainframe capacity upgrades were minimized by performing the HIPAA translation outside of our core processing application on the mainframe. We have been able to maintain the backend Medicaid processing application and database with relatively minor modification. This approach provided significant risk mitigation, and allowed for parallel development and testing by tier."

Conclusion

Pervasive's technology was key to enabling New York to become the first state to meet the federal HIPAA mandate while processing a higher volume of Medicaid transactions more efficiently. "With Pervasive's Business Integrator, we were able to incorporate HIPAA compliant transaction formats into the eMedNY environment while maintaining our rapid response time commitment, and still achieve throughput of up to 60 transactions per second," says Palter. "Using Pervasive tools for our map development was roughly two times faster than with our mainframe translation alternative."

eMedNY's service levels, with two second response time, and true 24x7 processing are among the most stringent in the industry. "The Business Integrator is a lightweight, reliable and simple programming environment that allowed us to meet an extremely tight deadline by increasing productivity," says Palter. "From a transaction throughput perspective, we can do more processing while still meeting our response time and 24x7 availability commitments. Due to teamwork with Pervasive Professional Services, we were able to configure and install the Business Integrator middle tier into our production environment while the system was live without dropping a single transaction."

Leveraging Pervasive's Professional Services team's extensive experience and best practices in healthcare, CSC was able to accelerate the project against a tight deadline and get the State of New York's first HIPAA-compliant Medicaid System up and running.

Providers, patients and the State of New York have seen significant results since the implementation of eMedNY. "Patients now only have to swipe their Medicaid card through a POS device at their pharmacy to get eligibility approval virtually instantaneously," explains Palter. "This technology helps with fraud detection, saving pharmacies and the state precious funds and sheltering them from potential liability. We also perform sophisticated drug interaction, side-effects and generic-equivalent analysis for improved patient safety and additional fraud prevention."

Comprehensive Connectivity

Pervasive connectors enable rapid access to heterogeneous data. A comprehensive set of 150+ connectors allows a broad range of seamless connectivity to file systems, databases, message buses, EDI networks, Web-enabled applications, business applications and industry-standard protocols on numerous platforms. Also included is Pervasive's unique capability to process non-relational and semi-structured content buried in most companies.

File

Access
Access 97
Access 2000
Access XP
Alpha Four
ASCII (Delimited)
ASCII (Delimited) Join
ASCII (Fixed)
Clarion
Clipper
CLF Webserver
DataEase
DataFlex
DJ Log File Data
dBASE II, III (III+)
dBASE IV
dBASE V (IDAPI)
DIF
Enable
Excel
Excel 2000
Excel XP
Folio Flat File
Foxbase
FoxPro
LDIF
Lotus 1-2-3
Lotus Notes
Lotus Notes 5
Lotus Notes Structured Text
Lotus Works
Mac ASCII Delimited
Magic PC
MAILERS+4 (dBASE)
Microsoft Word (Mail Merge)
Paradox v5 (IDAPI)
Quattro Pro Windows v5
Rich Text Format (RTF)
Unicode (Delimited)
Unicode (Fixed)
WordPerfect 6.0 (Mail Merge)
Wordstar (Mail Merge)
WordPerfect 4.2/5.0
Visual FoxPro
Visual dBASE 5.5

Database

Oracle 7.x
Oracle 8.x
Oracle 8.x Multimode
Oracle 9i
Oracle 9i Multimode
Oracle 10g
Oracle Direct Path
Oracle SQL Loader
Pervasive.SQL
Pervasive.SQL v8
Pervasive.SQL v8 Multimode
Pervasive.SQL v9
PostgreSQL
PostgreSQL (ODBC 3.x)
Btrieve v5
Btrieve v6
Btrieve v7
Btrieve v8
CA dB-Fast
C-ISAM
Cloudscape
CWM
DB2 7.2 Univ. DB
DB2 7.2 Univ. DB Multimode
DB2 Loader
DB2 UDB Mass Insert
DB2 (ODBC)
DB2 Univ. DB
DB2 Univ. DB Multimode
eXcelon
eXcelon XIS 3.0
Hitachi Hi-RDB
IDAPI
Informix DB Loader
Informix (ODBC)
Informix Online DS
Informix/SE
Ingres (ODBC 3.x)
Interbase(IDAPI)
MUMPS (ODBC)
MySQL
NonStop SQL/MX
ODBC 3.x
ODBC 3.x Mass Insert
ODBC 3.x Multimode
ODBC 3.5
ODBC 3.5 Mul mode
RBase 4.5 (ODBC)
Red Brick
Scalable SQL
SQLBase
SQL Script
SQL Server 6.x
SQL Server 7 Mass Insert
SQL Server 7 (OLEDB) Multimode
SQL Server 7 (OLEDB)
SQL Server 2000
SQL Server 2000 Mass Insert
SQL Server 2000 Multimode
SQL Server 2005
SQL Server 2005 Mass Insert
SQL Server 2005 Multimode
SQL Server BCP
SQL Server Mass Insert
SQL Server (ODBC)
Sybase 11.x
Sybase 11.x Mass Insert
Sybase 11.x Multimode
Sybase 12.x
Sybase 12.x Mass Insert
Sybase 12.x Multimode
Sybase BCP
Sybase (ODBC)
Sybase SQL Anywhere
Sybase SQL Anywhere 6
Sybase SQL Mass Insert
Sybase SQL 11
Sybase SQL 11 Multimode
Teradata (Fastload)
Velocis (ODBC 3.x)
Watcom SQL v5
Watcom SQL (ODBC)

Application

AccountMate
ACT! for Windows
Apache CLF
Champion Acct.
CYMA Acct.
GoldMine
Great Plains DOS
Great Plains UNIX/Mac
Navision Financials
Macola Acct.
Market Force
Microsoft Dynamics CRM
Microsoft IIS ELF
PayChex DJF
Peachtree Acct.
Personal Librarian
Platinum Acct.
RealWorld Acct.
Remedy ARS
Sales Ally
Salesforce.com
SalesLogix
SAP IDoc
SAP BAPI
SAS
SBT Acct.
Oracle Siebel CRM On Demand
Solomon Acct.
SPLUS
SPSS
Statistica
SYSTAT
USMARC

Technology

BizTalk XML
Email
Email Attachments
Erwin
FF Queue
FTP
HTTP
HTTPS
HTML
JMS
LDAP
MSMQ (Extractor)
MSMQ (Fixed ASCII)
MSMQ (XML)
MQSeries (Extractor)
MQSeries (Fixed ASCII)
MQSeries (XML)
Oracle AQ
Oracle BPEL
SGML
SOAP
TCP/IP
URL
URI
XML
XML Schema
XML DTD
XML XDR

Legacy

ACUCOBOL (ODBC 3.x)
ACUCOBOL-GT v7
BAF
Binary
Binary Line Sequential
COBOL Copybook
COBOL Flat File
C-tree Plus
C-tree 4.3
Fujitsu COBOL
ISAM
Micro Focus COBOL
QSAM
Sequential Binary
Tape Drive Sequential
VSAM
Variable Sequential (MVS) (SyncSort)
Variable Sequential (Record-V UniKix)
Variable Sequential
Variable Sequential (User Defined)

B2B

ACORD
EDI (EDIFACT)
EDI (X12)
HCFA 1500-NSF
HIPAA
HL7
HR-XML
MIB
Text (Delimited – EDI)
Text (Delimited – EDIFACT)
Text (Delimited – HL7)
TRADACOMS
UB92-NSF

About Pervasive Software

Pervasive Software provides embeddable data integration software that speeds the flow of data between applications and between organizations. Our robust technology and over 20 years of data integration expertise allows customers to re-use the same software for integration scenarios that span data warehouses, real-time application integration and data exchange with trading partners.

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