

ATTACHMENT B

BACKGROUND AND TECHNICAL SPECIFICATIONS

1. System History and Overview

To respond to the dynamic demands of the industry and citizenry, the Office undertook a significant legislative, organizational, and technical restructuring that transformed the agency. The technical restructuring focused on replacing more than 20 legacy systems with a single comprehensive financial regulatory management system with the goal of improving the efficiency of fiscal, licensing, examination, complaint intake, financial investigations and legal processes. Making the transition to a single system also presented the opportunity to combine and automate several core processes that required significant manual effort. The new technical solution also includes a web portal to promote self-service access for the public and license holders.

The Office contracted with a systems integrator to design, build, and implement the Regulatory Enforcement and Licensing (REAL) system. This effort included designing, building, and configuring a new technical and application infrastructure using new computer hardware and the latest versions of core software components. The solution was designed using commercial-off-the-shelf (COTS) packages and new custom development to create a high-quality solution using an optimal combination of components to meet requirements effectively and cost efficiently.

The REAL system consists of the following major components:

- 1) A COTS licensing and regulation application called Versa Regulation (Iron Data, LLC).
- 2) A custom developed portal allowing enhanced capabilities for online application submittal, license renewal, electronic payment and complaint submittal.
- 3) A FileNet document imaging and document management system.
- 4) A data repository supporting data mining and reporting services through SQL.

Release 1 of the REAL System was deployed on March 24, 2008 and focused on specific license types regulated by the Office and core functionality of the portal and COTS application. Release 2 was deployed on January 20, 2009 and included all remaining license types regulated by the Office as well as scanning and imaging functionality. All functional areas of the Office utilize the REAL system in some capacity.

The REAL System provides the following functionality to the Office:

- On-Line application filing
- On-Line complaint filing
- On-Line compliance filings (renewals, quarterly reports, amendments)
- On-Line Public Searches for legal orders, licensed entities
- Case Management for Examinations, Complaints, Investigations, Legal, and Public Records Requests
- License processing for applications, renewals, amendments

- Tracking and accounting for fees received related to licenses, fines and examinations
- Workflow functionality-assignment of work based on pre-defined business rules and advancement of work based on case or license processing activities
- Imaging and electronic storage of related documents
- Ad-Hoc Reports
- Interfacing with Department of Financial Services systems, Bank of America, Florida Department of Law Enforcement, Veritec (Deferred Presentment Provider) and Pearson Vue (Test provider),
- Integration with the Nationwide Mortgage Licensing System (NMLS)

The REAL system hardware is currently housed in the Fletcher Building Data Center in Tallahassee, Florida. The REAL system is currently under an operations and maintenance contract with an external support provider located in Tallahassee, Florida. The Office oversees all activities and functions of the external support provider.

2. OFR Agency Background

The mission of the Florida Office of Financial Regulation is to protect the citizens of Florida by carrying out the banking, securities and financial laws of the state efficiently and effectively and to provide regulation of business that promotes the sound growth and development of Florida's economy.

The Office was created in 2003 as the result of the Cabinet Reorganization Act of 2002 and is administratively housed under DFS. The Office provides regulatory oversight for Florida's financial service providers. Although relatively new, the Office's beginnings as a banking, finance, and securities regulator date back to the mid 1800s, with the creation of the former Comptroller's office. The Office is headed by a Commissioner who is appointed by the Financial Services Commission.

The Office is organized into five program areas: Financial Institutions, Finance, Securities, Investigations and Executive Direction. The programs license, oversee and regulate a wide range of financial enterprises and individuals, such as banks, credit unions, mortgage loan originators, securities issuers and salespeople, consumer finance companies, money transmitters, foreign currency exchangers and pay day lenders.

OFR has offices in Tallahassee, Jacksonville, Orlando, West Palm Beach, Fort Lauderdale, Miami, Fort Myers, Tampa, and Pensacola. This statewide presence provides local access to consumers who are able to visit offices in their area to meet face-to-face with our staff. It also allows professional staff to develop a detailed knowledge of their respective region and develop working relationships with local resources.

The Office functions as follows:

Division of Financial Institutions: licenses, examines and regulates state-chartered financial institutions to ensure they operate in a safe and sound manner and in compliance with state and federal laws and regulations.

Division of Finance: regulates non-depository financial service industries and individuals, including loan originators and mortgage lenders, finance companies, retail installment sellers, collection agencies, title loan lenders, and money services businesses, including payday lenders.

Division of Securities: protects the investing public from unlawful securities activities through regulating the sale of securities in, to or from Florida. Regulated entities include firms (securities dealers, issuers, state-registered investment advisers and federal covered advisers when fraud is alleged), branch offices, and individuals affiliated with these firms.

Bureau of Financial Investigations: conducts financial investigations; takes sworn testimony; issues subpoenas; analyzes financial records; prepares, presents and assists in prosecution of administrative, civil and criminal matters

Executive Direction: provides leadership, financial management and legal guidance to enable the operational programs—Financial Institutions, Finance, Securities and Investigations—to function and achieve their objectives. Executive direction staff under the Commissioner’s Office—Inspector General, Budget & Planning, General Counsel, Legislative & Cabinet Affairs and Communications—lead the Office’s efforts to become more effective through technological innovation, process improvement and the implementation of new strategies. They also provide information to the public and help resolve issues beyond what the operational programs can provide. Management of the REAL System resides under the Commissioner’s Office.

3. TECHNICAL SPECIFICATIONS

The REAL system is currently housed in the Fletcher Building in the DIS data center. However, the Office is anticipating a move of the REAL infrastructure to one of the Primary Data Centers. The move of the REAL infrastructure to one of the PDC’s is tentatively scheduled for FY11-12. The selected vendor, working in conjunction with OFR, will be expected to plan and manage this effort. The vendor will be responsible for coordinating logistics, system installation, configuration, and testing with DFS-DIS and the selected PDC IT staff. The vendor is encouraged to include any experience they have with infrastructure relocation efforts.

The specifications included in this section are intended to inform Proposers of the architecture and components of the REAL system and list the minimum expectations of the Office for operations and maintenance services. Proposers may expand on the minimum requirements as deemed necessary.

2.1 Definitions

Term or Abbreviation	Definition
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Term or Abbreviation	Definition
AD	Microsoft Active Directory.
ADO	Active Data Objects
API	Application Programming Interface
ASP.NET	Active Server Pages.NET, the web server technology in the Microsoft.NET Framework.
ASPX	File extension for ASP.NET pages.
BCV	Business Continuance Volumes
C#	Microsoft Visual C# programming language.
CODA	Cashiers Office Deposit Automation
COOP	Continuity of Operations Plan (COOP).
Control M	Integrates and automates business processes from a single point of view to provide an enterprise-wide dynamic workload management solution for physical, virtual, and cloud environments.
COTS	Commercial off the shelf
CSS	Cascading Style Sheets
DBA	Database administrator
DIS	Department of Information Systems
DNS	Domain Name Server
DR	Disaster Recovery
EMC SAN	EMC's storage area network.
Graphical User Interface (GUI)	A user interface which allows people to interact with a computer and computer-controlled devices.
HTML	Hypertext Markup Language
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
JavaScript	Client-side scripting language supported by modern browsers
JDBC	Java Database Connectivity.
Iron Data	Iron Data – Software development company and owners of the Versa Regulation COTS package.
LDAP	Lightweight Directory Access Protocol
MSDE	Microsoft Data Engine
MSMQ	Microsoft Message Queue
NIMBUS	Nimbus is an open source toolkit that allows you to turn your cluster into an Infrastructure-as-a-Service (IaaS) cloud.
NMLS (NMLS&R)	Nationwide Mortgage Licensing System and Registry
ODBC	Open Database Connectivity
OSI	Open Systems Interconnection
PDC	Primary Data Center for State of Florida
PL/SQL queries	Procedural Language / Structured Query Language; used for operations on an Oracle database.

Term or Abbreviation	Definition
RAID	Redundant Array of Independent Disks
RFC	Request for comments
SAFE Act	Secure and Fair Enforcement for Mortgage Licensing Act of 2008.
Schema	A collection of database tables.
SIR	Systems Investigations Request
SNMP	Simple Network Management Protocol
SOAP	Simple Object Access Protocol
SSRS	SQL Server Reporting Services.
REAL	Regulatory Enforcement and Licensing
REAL Portal	A single point of access to the REAL system via the web
Redundancy	Redundancy is a fault-tolerant technique where a secondary hardware and software takes over when the primary system fails or works in conjunction to provide high performance and uninterrupted continuity.
RTF	Rich Text Format
UAT	User Acceptance Testing
UDDI	Universal Description Discovery Integration
VR	Versa Regulation – Licensing and regulation COTS package that forms the core of the REAL system.
VR Database	The Versa Regulation data schema.
Versa Regulation (VR)	Versa Regulation – Licensing and regulation COTS package that forms the core of the REAL system.
WSDL	Web Service Description Language
XML	Extensible Markup Language - a language used for the formatting of transmitted data.
XML web services	Standard method for transmitting data via XML (extensible markup language).

2.2 REAL Architecture

This section provides an overview of the system architecture, application architecture, physical infrastructure and hardware specifications required to support the development, implementation and operations of the Regulatory Enforcement and Licensing (REAL) System.

The REAL Architecture describes applications required and technology architecture to support and maintain the functions of the REAL System. It also describes surrounding architecture components that support business operations, including task management and reporting.

The end state REAL solution has the following technology characteristics:

- Self-service and State Portals implemented using C# and .NET framework technology and Oracle databases.

- The core Versa Regulation application, where the functionality, business rules and data associated with client applications is located.
- A reporting architecture provided using SQL Reporting Services and Versa Regulation DataMart.
- A batch architecture provided using the existing Versa Regulation batch architecture.
- A scanning and electronic document management system utilizing shared storage for imaged documentation.

2.3 System Architecture

The major application components comprising the REAL System are described below. These components perform specific operating functions with the overall system and are integrated tightly to provide consistent data across the enterprise.

Versa Regulation: Versa Regulation is commercial off-the-shelf software owned by Iron Data Solution, LLC. It performs license and enforcement tracking for the enterprise and is the main system of record. It is a Java based application running on the Jboss platform with Oracle 10g as its data store. Its User Interface is 508 compliant and completely browser based. In addition to interactive processing there are two major components of the product.

- *DataMart* – This Business Intelligence tool provides adhoc reporting capabilities from the Versa Regulation application on a near real time basis. It is a separate database that is populated through triggers and updates from the main Versa Regulation application.
- *Batch Scheduler* – This component of Versa Regulation provides scheduled event handling. The primary functions of the Versa Regulation Batch Scheduler are letter processing, scheduled license batch processing, scheduled report generation and interface batch processing. It is a powerful batch scheduler that can be used beyond Versa Regulation for any scheduled functions.

Online Portal: The REAL System online portal is a custom developed component to provide self service processing to the general public and licensees. It was developed in C# using a .NET architecture framework. The portal uses an Oracle 10g database strictly for user and application management. Its primary business functions are handled through web services calls to API are exposed by the Versa Regulation system.

FileNet: The FileNet application provides scanning, imaging, document management and record retention capabilities to the enterprise. Documents related to license application or license enforcement are managed by the FileNet component. Electronic documents are scanned and indexed in the FileNet database and referenced to their related license records. Versa Regulation and the Online Portal utilize symbolic links to these physical documents to provide access to them through their respective interfaces.

Payment Authorization Vendor (Bank of America): This vendor provides online payment functions for the self service channel. The Online Portal uses the vendor's common gateway to request credit card validation and processing.

Active Directory: The Active Directory structure is utilized to provide single sign on functionality for the Versa Regulation package. Versa Regulation utilizes custom built APIs to access the users Active Directory information and map it to Versa Regulation security structure.

Figure 1 below provides an overview of the system components comprising REAL System.

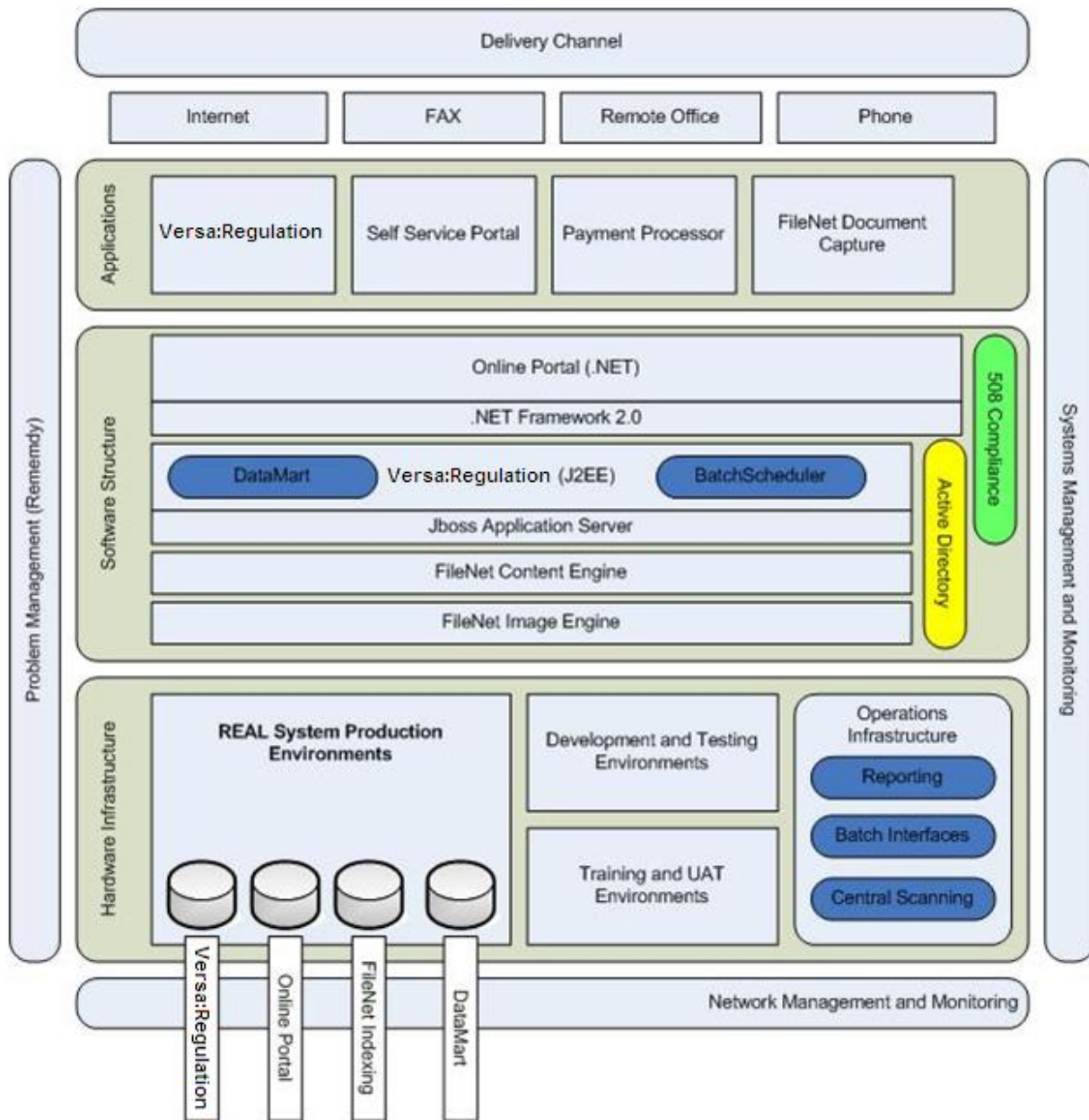


Figure 1 – System Component Overview

2.4 Architecture Layers

The REAL system is a web-based application built using .NET and JAVA technology. The architecture consists of six distinct layers. Each layer represents a logical partition of the application processing in the system. Each layer has a unique responsibility or purpose in the system and is logically separated from, and loosely couple with the adjacent layer. The following layers make up the REAL Technical System Architecture:

1. Security Layer
2. Presentation Layer
3. Business/Function Services Layer
4. Common Services
5. Data and Business Integration
6. Database Layer

Security Layer – The security layer manages user authentication, which is authenticated by Microsoft Active Directory. The security layer reduces system access threats and isolates security vulnerabilities that could reduce system reliability for REAL stakeholders.

Presentation Layer & Business/Function Layer – These layers work together in bringing the business functions directly to the customer/end user via one of the contact channels. The technology that enables this includes .NET and JAVA. These components are responsible for delivering and formatting of business content information to the customer.

Common Services Layer – Common Services layer processes application logic and applies expert rules based on business rules. It is also an execution layer, and a technology framework made up of multiple components that process business logic for an incoming request. This component processes all of the business services and handles information exchange between the Database Layer and the Presentation Layer & Business / Function Layer.

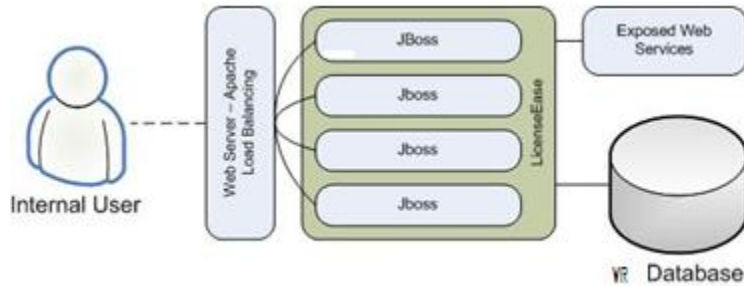
Data and Business Integration Layer – Database Layer is a layer where the actual relational database's schema exists with business data in entity-relational table structure and takes care of the persistency. The Database Layer is architected to use Oracle 10g Database software which provides stability and performance to the environment.

Database Layer – The Database Layer is a layer where the actual relational database's schema exists with business data in entity-relational table structure and takes care of the persistency. Our Database Layer is architected around the Oracle 10g Database software, and is required for the Versa regulation software solution.

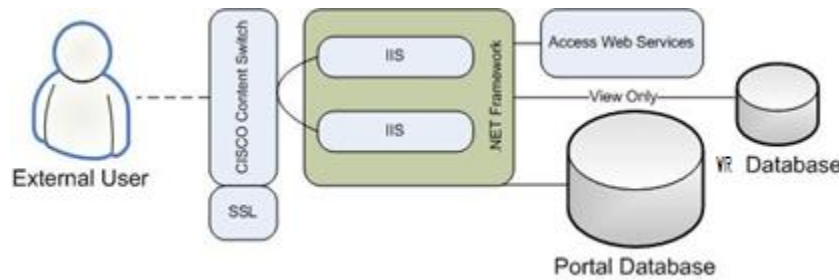
2.5 System Architecture Model

This section provides information on the specific application architectures utilized by different applications that make up the REAL system. It contains information on hardware system configuration, operating system configuration and software configuration.

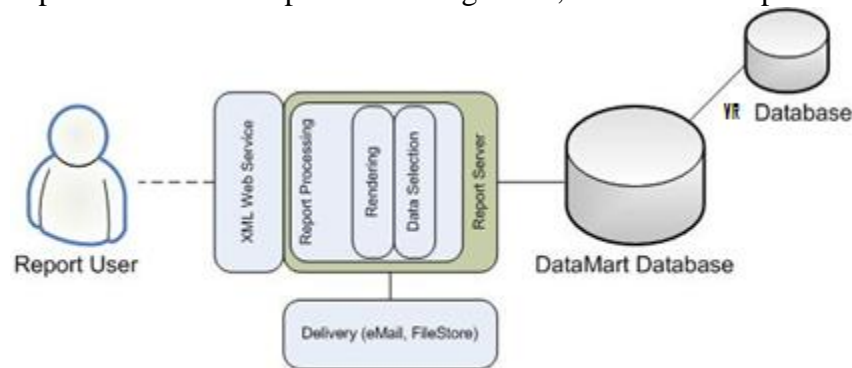
Versa Regulation: The Versa Regulation architecture utilizes an Apache webserver and Apache's plugin for Jboss application server to facilitate load balancing across the application tiers. The Apache web servers are accessed through the internal network through the Cisco Content switch. The Versa Regulation application code executes on the Jboss server and connects to its datastore through JDBC connection pooling to the Versa Regulation database.



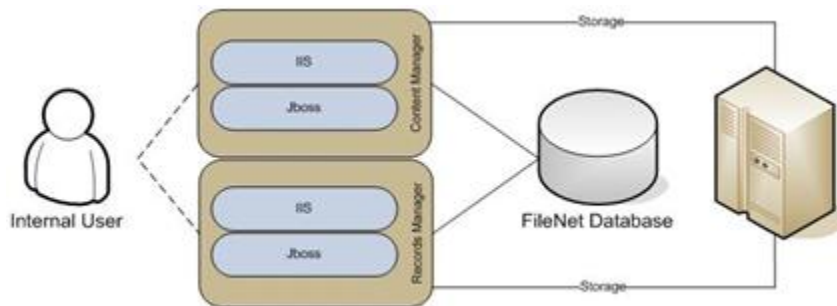
Online Portal: The online portal utilizes the Cisco content switch to manage incoming users routing to the portal application servers. The application servers use Microsoft's .NET 2.0 Framework to deliver code custom developed to meet the business requirements in C#. Calls to the Versa Regulation subsystem are handled through web services and direct SQL calls to the Versa Regulation Database may be handled through native ODBC via Microsoft ADO.



Reporting: SQL Reporting Services are utilized for ad-hoc reporting requirements of the REAL System. This Microsoft product utilizes IIS and XML webservices to drive its internal report generation, scheduling and management tools. This out of the box configuration will connect to the Versa Regulation DataMart generated from near real time Versa Regulation data transactions through standard ODBC connectivity. SQL Reporting Services contains many delivery options to provide end user reports including email, store to file or post to the web for access.



FileNet: The FileNet architecture utilizes Microsoft native IIS to serve the Content Manager and Records Manager applications running on the Jboss application server connectivity via JDBC to the database is utilized.



2.6 Redundancy and Failover

The REAL System production environment foot print is designed around redundancy and failover techniques. Two Dell PowerEdge 2950 Versa Regulation production web servers provide redundancy and failover in the web server layer. There are four Dell PowerEdge 2950 providing redundancy and failover capabilities in the Versa Regulation production application layer. In addition to Versa Regulation redundancy architecture, there is redundancy around the portal application as well. The portal web-app layer is made of three Dell PowerEdge 2950 servers and in order to interface with Versa Regulation application servers; there are two Dell PowerEdge 2950 interface servers for redundancy.

Imaging Process/Content Engine Servers and Imaging Application Engine Server are also in a redundant environment with two Dell PowerEdge 2950 in each environment. The REAL System's production database instance is also designed for failover to the training/UAT server in an event of server interruption. In the SAN (Storage Area Network) architecture there are disks which are architected for redundancy by using RAID 10 and RAID 5 technology depending on the disk operating function.

The REAL System's network topology is also architected around redundancy and failover by utilizing a content switch, which is already part of the OFR infrastructure.

2.7 Networking

Network strategy for the REAL System provides open standards compliant, multi-layered, redundant and scalable network architecture. It has major features of multi-layers, high performance, and high capacity. It is based on open standards of IEEE, OSI, and IETF RFC. It is completely based on Transport Control Protocol/Internet Protocol (TCP/IP). For this reason, it conforms to industry-acceptable network architecture standards. Figure 4 provides a symbolic representation of the REAL System physical architecture.

As part of the architecture, there are two Cisco 3560G – 24 port switch and Cisco 3560G – 48 port switch with 10MB/100MB/1000MB (1GB) capabilities.

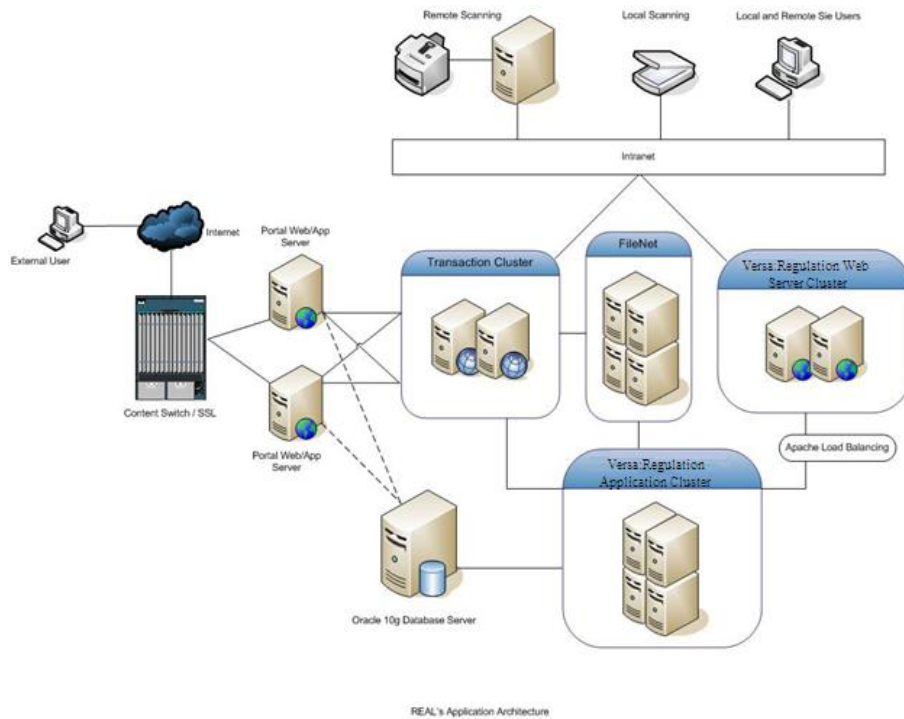


Figure 4 – Network Architecture Overview

DIS is responsible for the management of the DFS network. The vendor will be responsible for working with DIS to resolve any REAL system related issues as it relates to the network.

2.8 Interfaces

The external interfaces noted below were developed as part of the REAL System.

2.8.1 Interface Inventory

System	FileName	Location	Schedule
CRD System	CRD_FILE_[TS].txt CRD_FILE.EOT	[Root]/Batch/Incoming/CRD	Monthly
Description: This interface receives information monthly from the Central Registration Depository (CRD). This will contain uploads for Firms and Branches as well as updates to names and addresses.			
CRD System	CRD_SEMI_[TS].txt CRD_SEMIEOT	[Root]/Batch/Incoming/CRD	Semi-Annually
Description: This interface receives information semi-annually from the Central Registration Depository			

System	FileName	Location	Schedule
(CRD). This interface is used for Risk Based Targeting			
CRD System	CRD_FILE_[TS].txt	[Root]/Batch/Incoming/CRD	Annually
Description: This interface is an upload/modification for yearly renewals. A master list will be downloaded by OFR from the CRDWeb.			
IARD System	IARD_FILE_[TS].txt IARD_FILE.EOT	[Root]/Batch/Incoming/IARD	Semi-Annually
Description: This interface receives information semi-annually from the Investment Advisor Registration Depository (IARD). This interface is used for Risk Based Targeting			
CODA System	CODA_FILE_[TS].txt CODA_FILE.EOT	[Root]/Batch/Incoming/CODA [Root]/Batch/Outgoing/CODA	Daily
Description: This bi-directional interface is used to exchange cash receipts information between REAL and CODA.			
FDLE System	[FDLE Specific].txt	[Root]/Batch/Incoming/FDLE	Daily
Description: This incoming interface imports fingerprint card data results from FDLE to the Versa Regulation application.			
InVizeID System	D.FNP.FPC.D[YYDDMM].B[num]	[Root]/Batch/Incoming/INVIZE	Daily
Description: This incoming interface imports the InVizeID records to the Versa Regulation application as the first step of a two step process. The second step of the process is the import of data from the FDLE system.			
Mortgage Broker Individuals	MortgageBrokerIndv_XX_Monthly.CSV MortgageBrokerIndv_XX_Monthly.EOT	[Root]/Batch/Outgoing/MB	Daily
Description: The individual Mortgage broker record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
Mortgage Broker Businesses	MortgageFirms_XX_Monthly.CSV MortgageFirms_XX_Monthly.EOT	[Root]/Batch/Outgoing/MBB	Daily
Description: The Mortgage broker business record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
CASFCF	CF_Business_Monthly.zip Collection_CCA_COM_Monthly.zip SF_Business_Monthly.zip	[Root]/Batch/Outgoing/CASFCF	Daily
Description: CR/SF business record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
NMLS Load Originators	LoanOriginators_AI_Monthly.zip LoanOriginators_JR_Monthly.zip LoanOriginators_SZ_Monthly.zip	[Root]/Batch/Outgoing/LO	Daily
Description: The individual loan originator record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
NMLS MBR Firms	MortgageFirms_MBR- MBRB_Monthly.zip	[Root]/Batch/Outgoing/MBR	Daily

System	FileName	Location	Schedule
Description: The mortgage firm MBR record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
MLD Firms/ Branches	MortgageFirms_MLD- MLDB_Monthly.zip	[Root]/Batch/Outgoing/MLD	Daily
Description: The mortgage firm MLD record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
Money Transmitters	Money_Transmitters_monthly.zip MT_Locations_A.zip MT_Locations_B.zip	[Root]/Batch/Outgoing/MT	Daily
Description: The Money Transmitter record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
Sellers	Sellers_HI_monthly.zip Sellers_MV_MVB_Monthly.zip Sellers_RS_RSB_AJ_Monthly.zip Sellers_RS_RSB_KZ_Monthly.zip	[Root]/Batch/Outgoing/RSMVHI	Daily
Description: The seller record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
Security	Associated_Persons_Monthly.zip Firms_Branches_AI_Monthly.zip Firms_Branches_JZ_Monthly.zip	[Root]/Batch/Outgoing/SECURITY	Daily
Description: The security record exports are utilized by the Portal application to provide CSV recordsets for public consumption.			
Investigatio ns Report	InvestigationsReport-XX.zip	[Root]/Batch/Outgoing/INVST	Weekly
Description: Internal extract of investigation cases are utilized by internal OFR staff.			
OFR Private Files	Associated_Persons_Monthly_SSN.zip CF_Business_Monthly_SSN.zip Collection_CCA_COM_Monthly_SSN.zi p Firms_Branches_AI_Monthly_SSN.zip Firms_Branches_JZ_Monthly_SSN.zip LoanOriginators_AI_Monthly_SSN.zip LoanOriginators_JR_Monthly_SSN.zip LoanOriginators_SZ_Monthly_SSN.zip Money_Transmitters_monthly_SSN.zip MortgageBrokerIndv_AI_Monthly_SSN.zi p MortgageFirms_MB- MBB_Monthly_SSN.zip MortgageBrokerIndv_JR_Monthly_SSN.z ip MortgageBrokerIndv_SZ_Monthly_SSN. zip MortgageFirms_CL- CLB_Monthly_SSN.zip	[Root]/Batch/Outgoing/EXT_OFR	Weekly

System	FileName	Location	Schedule
	MortgageFirms_MBR- MBRB_Monthly_SSN.zip MortgageFirms_ML-MLB-MLS-MLST- MLTB_Monthly_SSN.zip MortgageFirms_MLD- MLDB_Monthly_ssn.zip SF_Business_Monthly_SSN.zip Sellers_HI_monthly_SSN.zip Sellers_MV_MVB_Monthly_SSN.zip Sellers_RS_RSB_AJ_Monthly_SSN.zip Sellers_RS_RSB_KZ_Monthly_SSN.zip		
Description: Internal extract of all public files but with additional information are utilized by internal OFR staff.			
NMLS Regulator System	FL-YYYYMMDD-TS.zip	[Drive]:\Transfer\NMLS_XML	Daily
Description: NMLS licensing information is downloaded from the NMLS site and loaded into the REAL system.			
NMLS Disbursement System	NMLS_DisbursementFile.csv	[Drive]:\Transfer\NMLS_XML	Daily
Description: NMLS payment information is downloaded from the NMLS site and loaded into the REAL system.			
Veritec System	VERI_FILE_[TS] .txt VERI_FILE.EOT	[Root]/Batch/Outgoing/VERI	Daily
Description: The DPP file consists of transaction data from VR that the Veritec System requires in order to properly manage and maintain a DPP record, including its branches. (NOTE: Vendor records do not receive DPP access but are included in the file only for data corrections.) A batch process shall run on a nightly basis to create a file that includes the transactions since the last run. This file shall be sent to Veritec via FTP.			

2.8.2 Application Program Interface (API)

The REAL System solution makes use of a set of web services that enable other internal systems to take advantage of IE business services from within their own systems. Provision and use of these types of service creates interdependence between systems and organizations. The use of the services allows for the following:

- The ability to send data directly to the REAL system
- Replacement of batch interfaces with interactive interfaces that provide a faster turnaround time
- Inquiry capabilities
- Access to business rules

Several application interfaces are used to provide business functions to the Online Portal. Figure 5 below represents an overview of the API architecture employed to facilitate these function calls:

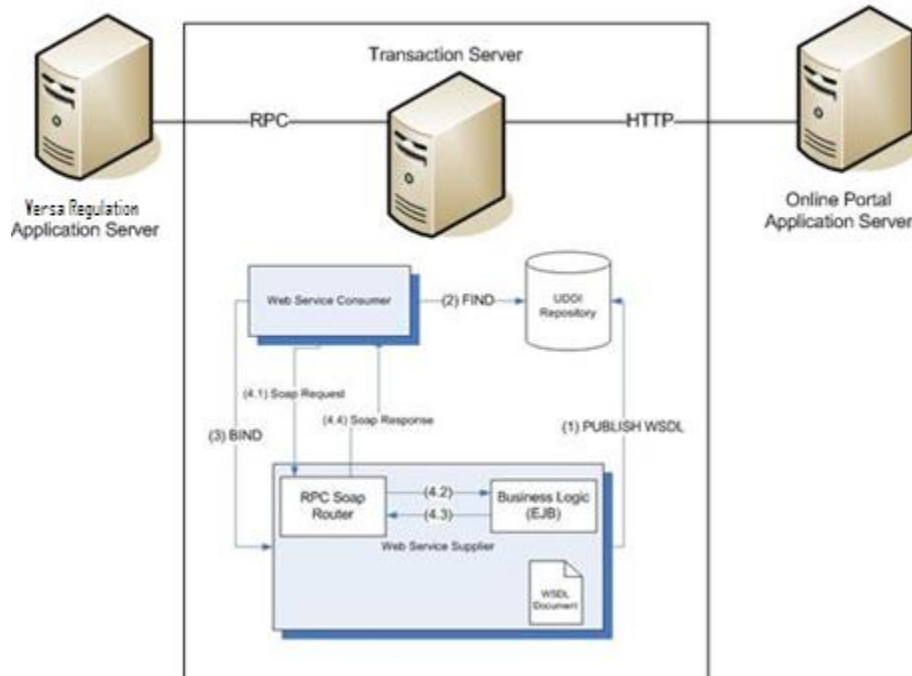


Figure 5 – Web Service/API Architecture

The Transaction Server employs UDDI native with Windows Server 2003 to catalog available web services developed as part of the Online Portal/Versa Regulation integration. The MSDE data engine is installed as the repository for UDDI entries. Messages are managed on the transactional server using MSMQ for queuing and delivery of SOAP messages

2.8.3 Batch Scheduling

Iron Data’s Batch Scheduler product determines which jobs shall be run in the Versa Regulation batch system, and in what order. It manages both scheduled jobs submitted ad-hoc from the interactive application and autonomously run jobs for which pre-determined schedules have been established. For group jobs, they ensure preset, inter-job dependencies are observed. The scheduler enforces a system of priorities and may set minimum priority levels as directed by individual jobs. It can also schedule by a calendar of priorities by which the administrator may control the system activities. The Iron Data Batch Scheduler is comprised of a ‘core’ process and a ‘job’ procedure.

The core process is started and stopped from the console program. The core first gets its controlling data from the batch control Calendar (BC_CAL) then scans its list of running jobs to see if any have completed and updates its count of active jobs accordingly. If this count is not less than the maximum allowed, the core immediately ‘sleeps’ for a length of time determined by

a parameter given in the calendar or until an alert is received from the console or from a completing task.

If there is space for another active job, the core scans the queue of waiting jobs, processing those found in order of priority. How it handles each depends on the type of task involved.

The CTRL-M product from BMC is the enterprise batch scheduling solution and is utilized as an additional tool for job scheduling.

2.9 Monitoring

The REAL System's Dell servers & Sun Solaris servers and as well as the Oracle and Windows Server software are compatible with the current monitoring tools at OFR.

A variety of monitoring applications are used, ranging from COTS software, custom scripting and 3rd party provided services. Whilst device status and notification are core capabilities of the monitoring services, performance metrics and trending analysis abilities incorporated within each of the applications enable informed decisions on the best use of infrastructure resources to be made. The core applications used to monitor the infrastructure within the REAL System solution are described below.

2.9.1 Quest Spotlight:

Spotlight® on Oracle allows you to quickly discover any performance bottleneck—in real-time or historically—using the granular record and playback function. Spotlight identifies and diagnoses thousands of performance issues, whether it's a specific user, resource-intensive SQL transaction, I/O bottleneck, lock wait or other exact source. Spotlight for Oracle automatically sets a baseline of normal activity for each instance, and can automatically set thresholds and display alerts when it detects performance bottlenecks of any kind.

2.9.2 EMC Default Alerts

REAL Systems storage infrastructure is standardized on EMC platforms. The EMC default software, Navisphere, is able to page, email, and send SNMP messages about problems that may be occurring within the SAN.

2.9.3 Big Brother

Big Brother is an application used to monitor systems and processes and can trigger events such as email notifications when problems may occur.

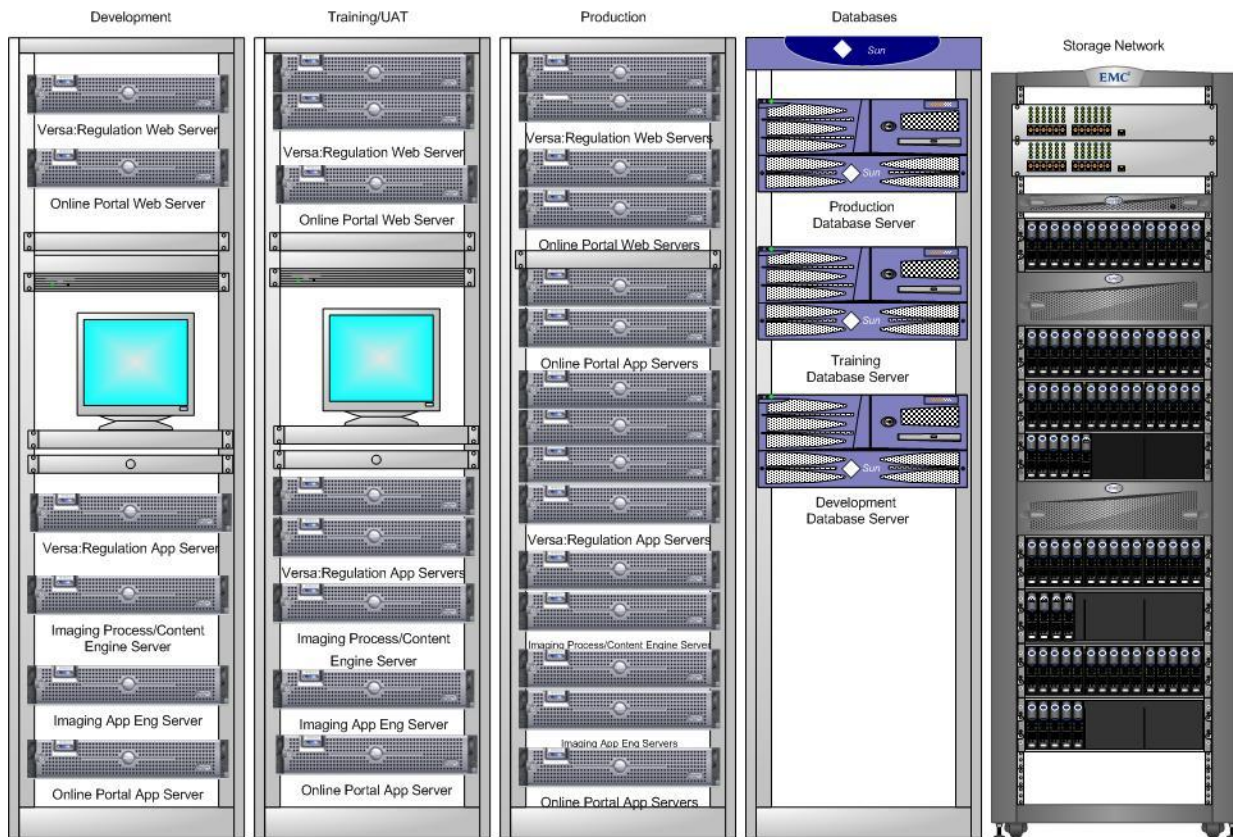
2.9.4 Custom Scripting

Custom scripting is used to integrate the various monitoring and tracking applications. While many applications incorporate SNMP based alerting that can be correlated within NIMBUS, others without this capability must be monitored exclusively with custom scripts. The widest

used example of custom scripting is keyword monitoring within system log files. Scripts are written to look for particular words or instances which then trigger an email/pager notification upon discovery. Scripting is also used to automate the response of services such as LDAP and DNS to ensure query responses are received within specified timeframes.\

2.10 Architecture Component Summary

2.10.1 REAL Physical Rack layout



Physical Hardware Blueprint

2.10.2 Storage Area Network (SAN) Specifications

Storage Area Network (SAN) Specification

To support the REAL System, the EMC SAN device is partitioned into three sections: the report and the document management database, the physical data stores and application server storage. The solution provides a matching BCV for each database that enables a snapshot in time and offloads the backup process with minimal application downtime.

As shown in Figure 6, the data tier is redundant for high availability. The REAL System solution will have clustered server pairs with two network cards. For each server, one network cable connects to an active McData switch and the other to a passive switch. Similar to the servers, the McData switches have a redundant connection to the EMC SAN. This approach mitigates the risk of business user downtime due to a hardware failure.

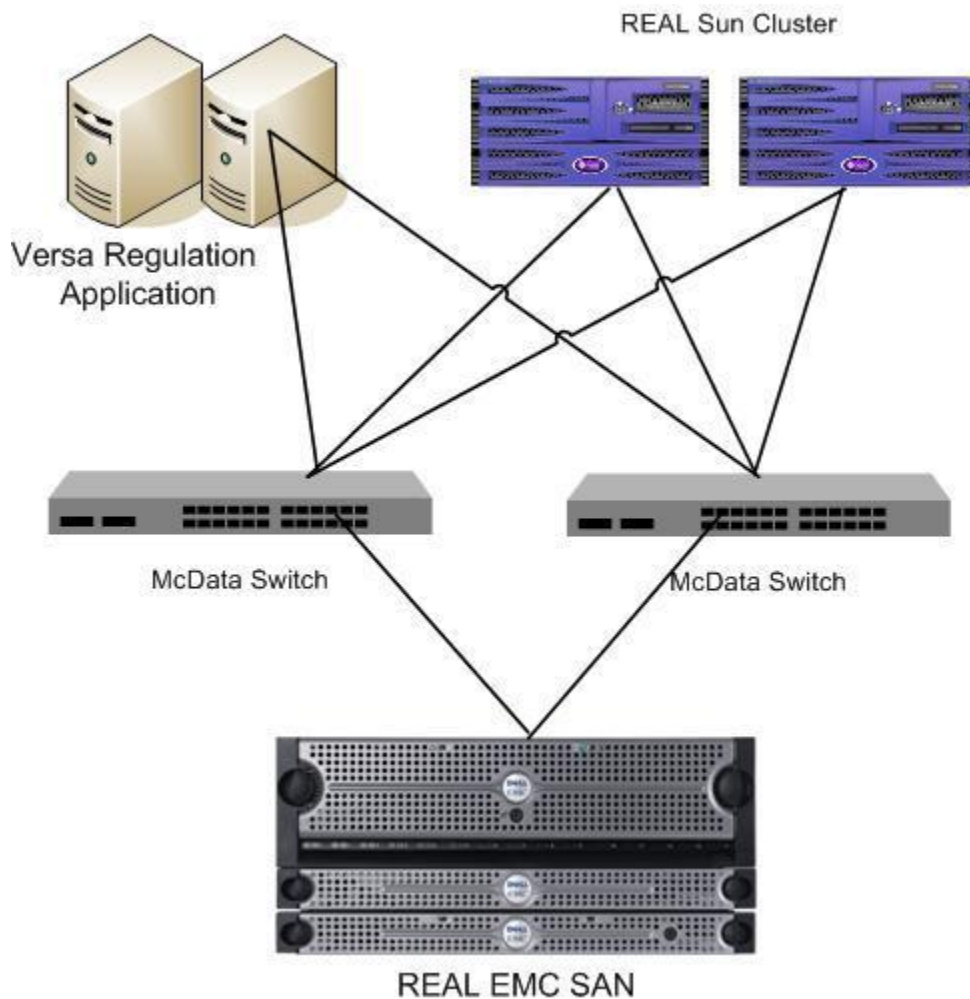
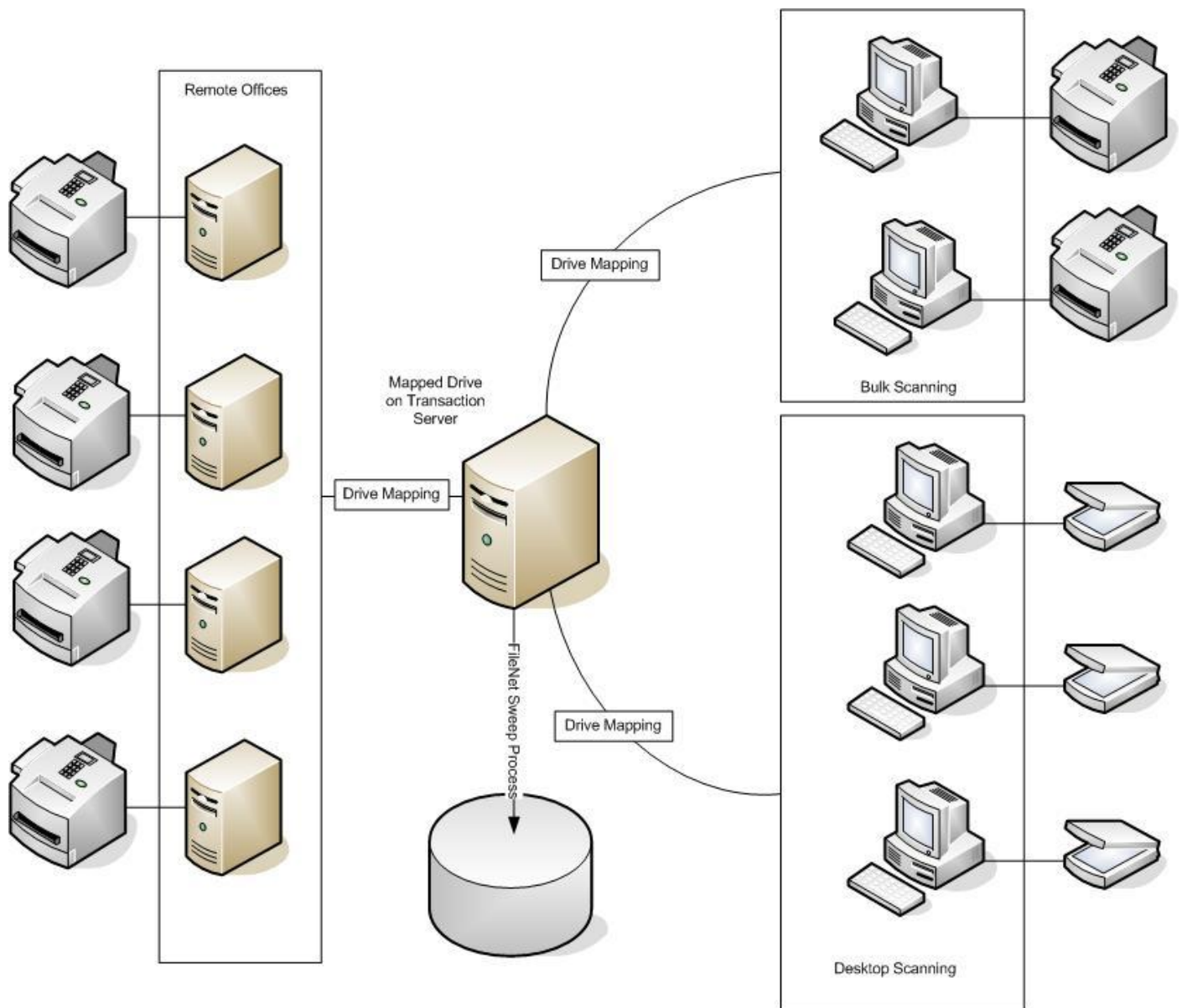


Figure 6– EMC SAN Redundancy Overview

2.10.3 Peripherals

In the REAL System application architecture there are two Canon DR9080-C scanners, 400 DPI Duplex Shiftscan with Kofax Accelerator 650i peripheral cards. These are attached to 2 DELL scanning stations to accommodate bulk scanning requirements. In addition there are four DocuMate 632 duplex flatbed scanners attached to local user desktops as required.

In the remote office locations, the multi-function machines in the local offices are utilized for document scanning to a sweep location configured on the online transactional server. The FileNet application will then sweep the location and pass the scanned documents into the FileNet repository server.



2.10.4 Hardware Specifications

The table below contains a detailed list of the hardware specifications comprising the REAL system.

Development Servers:

Detailed Specification	Environment	Quantity
Versa Regulation/Imaging/OnlinePortal Database Servers - Sun Fire V490 - Qlogic PCI-X HBA - DVD-ROM/Floppy drive - 8GB RAM - 2x146 GB 10K-RPM HD - 2 Power Supplies (N+1) - 2xUltraSPARC IV+	Development	1
Versa RegulationApplication Server - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Development	1
Versa Regulation Web Server - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Development	1
Imaging Process Engine/Content Engine Servers - Dual Core Xeon Processor PE 2950 - 12GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold - Will be used for both development and UAT	Development	1
Imaging Application Engine Servers - Dual Core Xeon Processor PE 2950 - 12GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold - Will be used for both development and UAT	Development	1

Detailed Specification	Environment	Quantity
Online Portal Web/Application Servers - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Development	1
Transaction Server - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Development	1

Training Servers:

Detailed Specification	Environment	Quantity
Versa Regulation Application Servers - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Training/UAT	2
Versa Regulation Web Servers - Dual Core Xeon Processor PE 1950 - 2GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Training/UAT	2
Imaging Process/Content Engine Servers - Dual-Core Intel Xeon PowerEdge 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt. - Dual Cooling and Power Supply - Premier Enterprise Support – Gold - Will be used for both development and UAT	Training/UAT	1

Detailed Specification	Environment	Quantity
Imaging Application Engine Servers - Dual-Core Intel Xeon PowerEdge 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold - Will be used for both development and UAT	Training/UAT	1
Online Portal Web/Application Servers - - Dual Core Xeon Processor PE 2950 - 2GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Training/UAT	1
Transactional Servers - - Dual Core Xeon Processor PE 2950 - 2GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Training/UAT	1
Versa Regulation/Imaging/OnlinePortal Database Servers - Sun Fire V490 - 2xQlogic PCI-X HBA - DVD-ROM/Floppy drive - 16GB RAM - 2x146 GB 10K-RPM HD - 2 Power Supplies (N+1) - 4xUltraSPARC IV+ - GigaSwift NIC	Training/UAT Prod Secondary	1

Production Servers:

Detailed Specification	Environment	Quantity
Versa Regulation/Imaging/OnlinePortal Database Servers - Sun Fire V490 - 2xQlogic PCI-X HBA - DVD-ROM/Floppy drive - 16GB RAM - 2x146 GB 10K-RPM HD - 2 Power Supplies (N+1) - 4xUltraSPARC IV+ - GigaSwift NIC	Production	1

Detailed Specification	Environment	Quantity
Versa Regulation Application Servers - Dual Core Xeon Processor PE 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	4
Versa Regulation Web Servers - Dual Core Xeon Processor PE 2950 - 2GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	2
Imaging Processing/Content Engine Servers - Dual-Core Intel Xeon PowerEdge 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt. - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	2
Imaging Application Engine Servers - Dual-Core Intel Xeon PowerEdge 2950 - 8GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	2
Online Portal Web/Application Servers - - Dual Core Xeon Processor PE 2950 - 8 GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	2
Online Transaction Servers - - Dual Core Xeon Processor PE 2950 - 2GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Production	2

Reporting Server:

Detailed Specification	Environment	Quantity
Online Portal Web Servers - Dual Core Xeon Processor PE 2950 - 16GB RAM - 3 x 146 GB Raid5 - 2 100/1000 NIC - Windows 2003 R2 Enterprise Edt - Dual Cooling and Power Supply - Premier Enterprise Support – Gold	Reporting	1

Network:

Detailed Specification	Quantity
Cisco 3560G – 24 Switch 10/100/1000 with CATALYST SERIES 1000BSX GBIC	2
Cisco 3560G – 48 Switch 10/100/1000 with 2 CATALYST SERIES 1000BSX GBIC	2

Storage (SAN):

Detail Specification	Quantity
EMC Clarion CX3-40 - 1 – CX3-40 SPE-Factory Install 1 – 40U COMMON RACK – 4PDP 1 – CX3-40 DAE OS 3 – 4G DAE FACTORY INSTALL 19 – 500GB 7200RPM 2GB FC DISK 20 – FC 146GB 10K 520B 2GB 15 – 300GB FCL 10K 2GB 1 – Rack – 40U-C PWR CORD – US 36 – FCHNL 5M 50/125 LC-LC 1 – CLRN 40UC ANTI-MOVE KIT 1 – CX3-40 DOCS AND RTU KIT 2 – DS24M MOUNT-CLAR 408 RACK 2 – 32-PORT SW W/16 ACT 1 – CLARIION SERVICE MODEM-US 1 – NAVI ENTERPRISE MEDIA 1 – SNAPVIEW MEDIA CX3-XX SER 16 – NAVI AGENT WINDOWS MEDIA 4 – POWERPATH WINDWOS KIT 16 – Windows Software Utilities 16 – PPATH WINDOWS ENT 1 – NAVI MGR CX3-40 ENTPR LIC 1 – SNAPVIEW CX30-40 4 – POWERPATH 4HOST QS 4 – SNAPVIEW INSTALL QS 1 – PREPAID HW/SW MAINTENANCE 36/mo	1

Rack & KVM:

Detailed Specification	Environment
PE4210 Rack, 42U Frame, Front and Rear Doors, Side Panels, Must Ground Ship (220-4494) Type 6 Contract – Extended Business Day Parts Delivery Initial Year (981-6830) Type 6 Contract – Extended Business Day Parts Delivery 2Year Extended (981-9232) Dell Hardware Warranty Plus Onsite Service Initial Year (985-7657) Dell Hardware Warranty, Extended Year (985-7667) On-Site Installation Declined (900-9997) Inside Delivery Service for Dell PowerEdge Rack System (460-0566) Rack Multiselect Option (465-5796) 24Amp, Hi-Density Power Distribution Unit, 120V, w/ IEC to IEC cords (310-1879) 42U Rack,Cost Red,Side Stabilizer (310-1791)	3
SR9-2XKM038AIP Cabinet, Sun Rack 900-38 with Front Door and PDS Installed. This Product is Hazard Class Y, RoHS compliant X6828A Power Cable, No. Amer., Sun Rack PDS. Plug NEMA L6-20P (Four 20A cables) This Product is Hazard Class Y, RoHS compliant.	1
16 Port Keyboard/Video/Mouse Digital Switch, 2161DS/2 PowerEdge (222-1659) 16 x USB connection Server Interface Pod, includes CAT5 cable (310-8127) DECLINED CRITICAL BUSINESS CRITICAL SERVER OR STORAGE SUPPORT PACKAGE- CALL YOUR DELL SALES REP IF UPGRADE NEED (960-1305) Type 11 Contract – Extended Business Day, Parts, 2 Year Extended (981-2782) Type 11 Contract – Extended Business Day, Initial Year (981-8550) Dell Hardware Warranty, Initial Year (985-7929) Dell Hardware Warranty, Extended Year (985-7939)	2

Scanners:

Detail Specification	Quantity
Canon model DR9080-C -400DPI DUPLX SHTFEDSCAN USB 2.0 and SCSI III interface for enhanced connectivity options.	2
DocuMate 632 - Duplex Flatbed Scanner.	4

Developers Workstations:

Detail Specification	Quantity
Developer Workstations - P4 Duo Core Chip - 80 GB Internal Drive - Monitor - Gold Support	10

2.10.5 Software Specifications

The table below contains a detailed list of the software comprising the REAL system.

#	Software Description	Version	Purpose
1.	Oracle DB 10g Enterprise Toolkits	Oracle 10g	Oracle monitoring work
2.	Sun Clustering for 2 V490 8 Core Sun Machines	SunCluster v 3.2	Solaris clustering software
3.	Jboss	4.0.5.GA	Application Server for Versa Regulation
4.	Oracle DB 10g Enterprise 2	10.2.0.3.0	Oracle Database
5.	Java	JDK-1.5.0.11	Version of Java that Jboss runs on
6.	FileNet P8 Professional Server Package Includes: content engine, application engine, content search engine and process engine.	P8/4.0 AE – 4.0.2-005 CE – 4.0.1-011 CSE – 4.5.0-002 PE – 4.0.3-002	Scanning and imaging Software
7.	FileNet Record Manager	4.0.0-005	Records management software
8.	Canon Capture Perfect	V3.0	Capture and scanning Software
9.	FileNet Suite for Development	Same as production.	Development version for FileNet
10.	Versa Regulation (380 users)	Versa:Regulation 5.0 2.3-#FLOFR-80	Versa Regulation COTS package
11.	Visual Studio .net developer	Visual Studio 2005 framework 2.0	Developer's toolkit
12.	Apache	2.2.4-Win32-x86-no-ssl	Web server for Versa Regulation
13.	IIS	v6.0	Portal Web Server
14.	Quest Toad	10.6.1.3	Oracle DBA and development tool
15.	VeriSign Certificate	Digital ID Class 3 for MS server type.	SSL
16.	IBM Tivoli Storage Manager	TSM v5.4	Backup for Oracle
17.	IBM Tivoli Storage Manager – Oracle agent	TSM v5.4	Backup for Oracle
18.	Galaxy Software Agent	8.0.0(Build68)	Backup for Windows

#	Software Description	Version	Purpose
	for Windows Servers		
19.	Microsoft SQL Server for Reporting Services	MS Sql Server 2005-9.00.4035.00 Intel.	Creating Ad-Hoc Reports

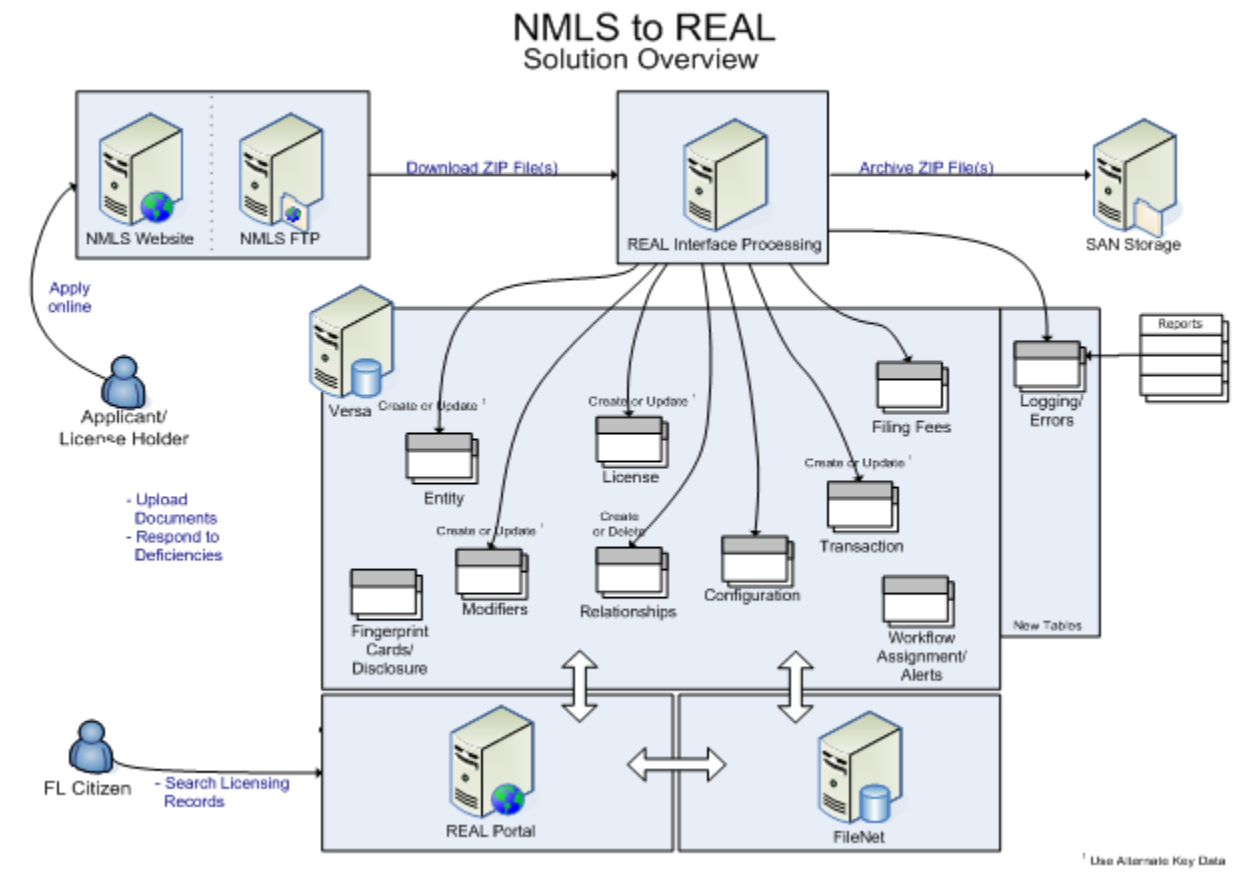
2.11 REAL Integration with NMLS

The “Secure and Fair Enforcement for Mortgage Licensing Act of 2008”, or “S.A.F.E. ACT”, mandated that all Mortgage Brokers, Lenders, and Loan Originators in the United States be licensed or registered through the Nationwide Mortgage Licensing System and Registry (NMLS).

To meet Florida’s obligation to enact the SAFE Act, the Florida Regulatory Enforcement and Licensing (REAL) System was updated in 2010 to integrate with the NMLS.

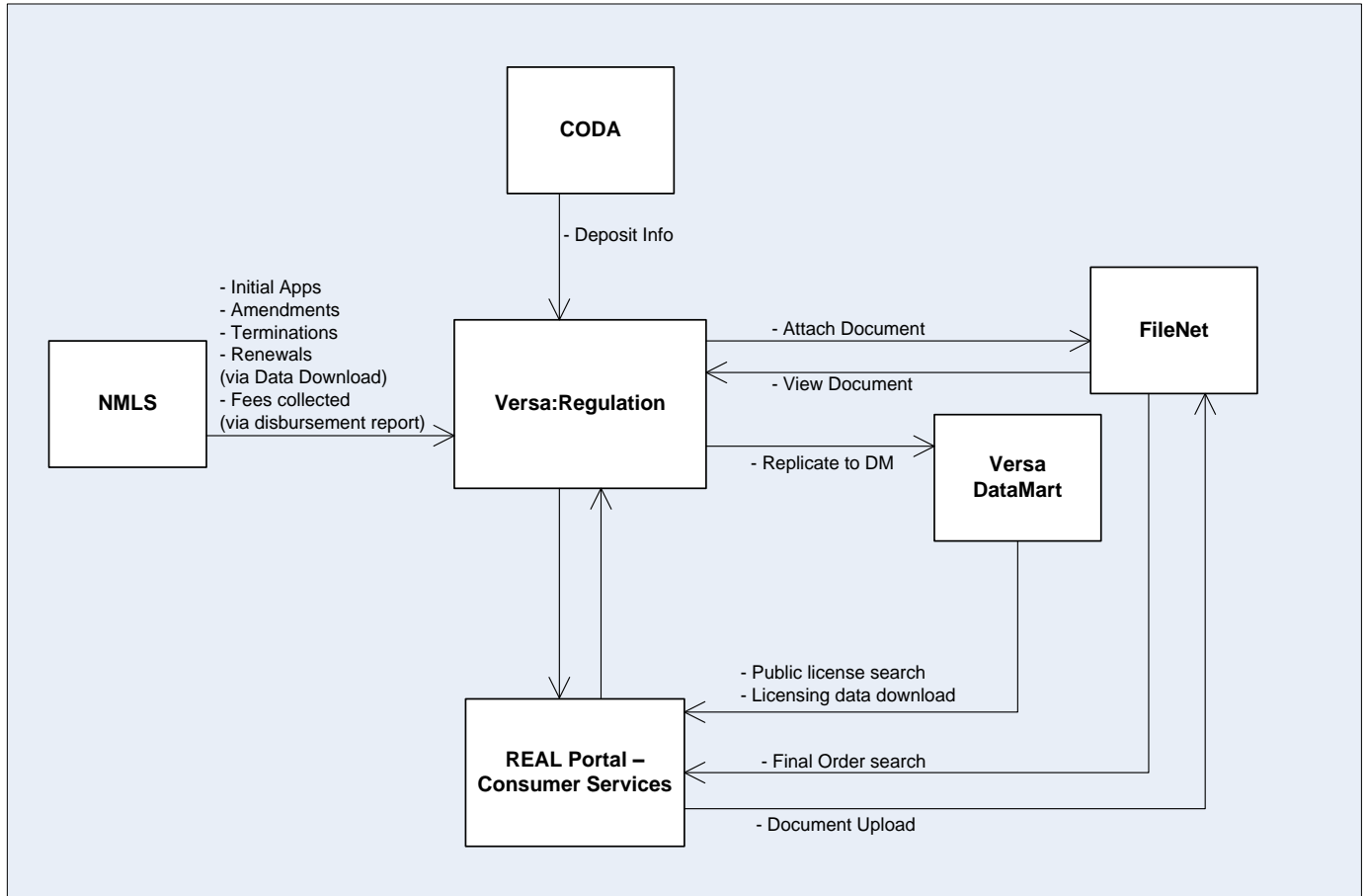
2.11.1 NMLS to REAL Solution Overview

The diagram below depicts the NMLS to REAL system overview.



2.11.2 Data Flow Diagram

The figure below depicts a Data Flow Diagram showing how data flows between each system. The diagram is intended to show only the flow of data for mortgage-related licenses, not licenses outside the scope of the NMLS integration. (In addition, this diagram is not intended to show the sequencing of the data flow.)

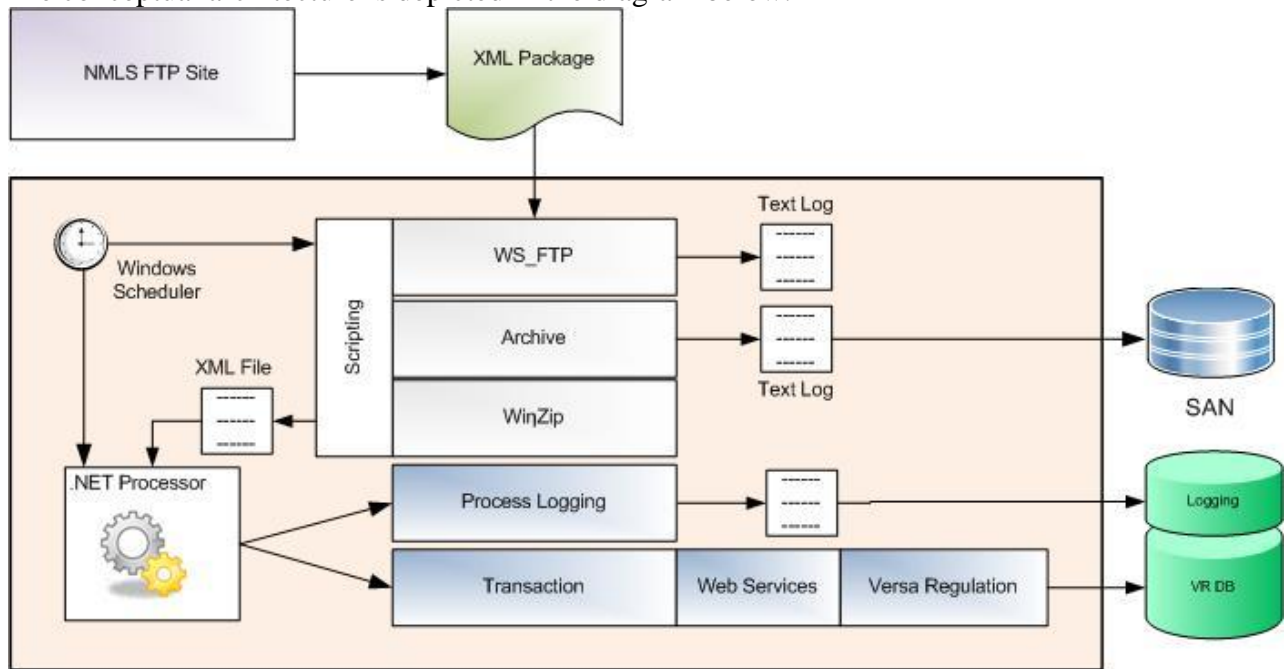


2.11.3 Technical Execution Environment

The existing transaction servers are leveraged as the execution architecture for the NMLS interface functions. The following components exist on the transaction cluster to support these functions:

- iPswitch WS_FTP
- .NET Runtime Libraries
- Windows Schedule
- Physical SAN drive mapping
- Versa Regulation Web Services
- Oracle Client

The conceptual architecture is depicted in the diagram below.



2.11.4 Scripting

Windows scripting is used as the primary file handling application for the NMLS system. A single batch program is leveraged to securely retrieve the NMLS packaged export files from the NMLS hosted secure FTP site. This scripting program also handles the logging of the file transaction, the archival of the received file and unpacking the file to a specified location.

2.11.5 Processing

The processing of the unpacked XML files is handled through a custom .NET application compiled to run in a standalone mode. This .NET code retrieves and parses the various XML files, transacts with the existing Versa Web Services and generates the required business transactions in the Versa system. The .NET application also executes process logging to verify the completion of each data set within the provided XML file. This logging provides the restart ability in the case of application failure and the reporting ability to retrieve details on the transaction executions.

2.11.6 Scheduling

The built in Windows Scheduler is leveraged to schedule and execute both the scripting component of the process as well as the execution of the .NET processor code.

2.11.7 Logging

Logging of both the file retrieval and archival of physical data files is written from the execution of the batch script. Logging of the individual data components within the XML files is handled through the .NET Processor code and is written to a log table within the Oracle Database. Some typical log events tracked are:

- File Received (success/fail)
- File Archived (success/fail)
- File Extracted (success/fail)
- File Committed (success/fail)
- [filename] processed
- [filename] row [data key] processed