DATA MANAGEMENT PLAN TEMPLATE

Purpose and Intent

The Data Governance Office (DGO) of the Alabama Medicaid Agency (AMA) has implemented a Data Governance Framework consisting of activities related to ten knowledge areas of data management. The Framework defines the policies and practices required to implement the Enterprise Data Governance Program. When an external vendor hosts a module, the vendor must abide by the Agency's data governance framework and provide evidence that the required governance activities are in place. The purpose of this document is to define the requirements that the vendor must meet to demonstrate and document compliance with requisite governance activities. The Data Management Plan documents the vendor's policies and procedures for onboarding data, ensuring data quality, maintaining data security, and compliance with the AMA Data Governance Framework.

The Data Management Plan outlines how <vendor name> handles data throughout the project lifecycle. The document introduces AMA to the steps, policies, and procedures that <vendor name> will employ to ensure proper data management, metadata management, data quality, data preservation, and data security during its engagement with the AMA.

The AMA Data Governance Framework includes ten areas of concern that result in management policies and practices that ensure effective management and security of data during each phase of the data lifecycle.

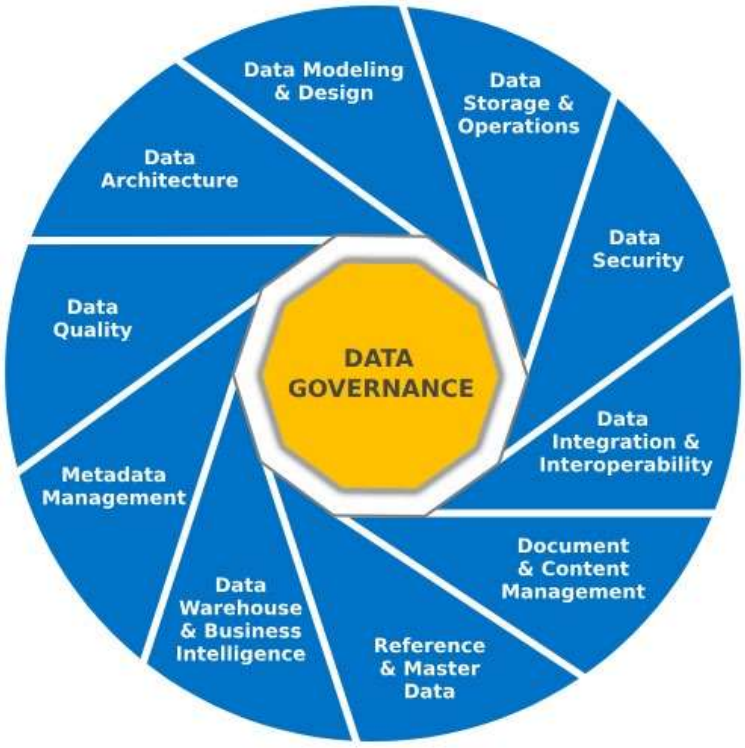


Figure 1: AMA Data Governance Framework Scope

Data Architecture

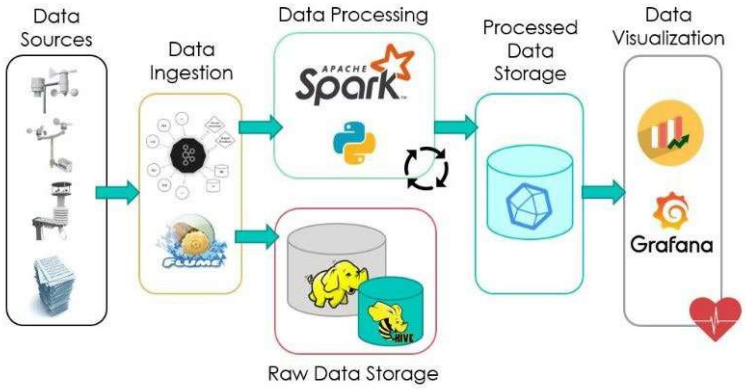
Please provide a high-level overview of the architecture implemented within your product/service. Provide information about your data architecture team, its role within your organization, and how it interacts with the rest of your team. Please include an overview of each of the following, adding diagrams and flowcharts where appropriate.

- Data Technologies Utilized
- Architecture of Data Structures
  - Multi-Tenancy
  - Logical/Physical Data Isolation
- Data Environments
  - Development
  - Test
  - Production
- Data Encryption
  - Data in Transit
  - Data at Rest
- High Availability

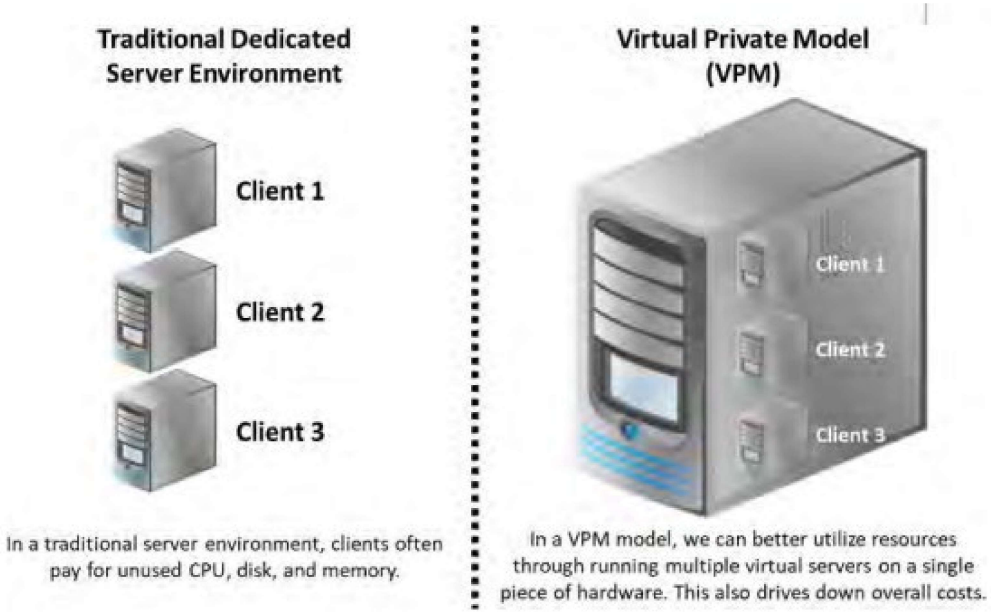
Example:

ABC Corporation has a data architecture team, led by a lead architect, who partners with the data systems and solution architects to manage overall data architecture. This team meets weekly to manage, evaluate, and provide solutions for data and system architecture initiatives across the enterprise. ABC Corporation has an internal Architecture Review Board (ARB), led by our system architect and Chief Technology Officer (CTO). The ARB meets weekly to review new technology and design initiatives to verify and validate feasibility, security, elegance, performance, etc. before approving their implementation. The data architecture team establishes best practices and standards and delivers them to employees via the ABC Corporation intranet. The ARB reviews the best practices and standards annually to ensure they are appropriate and up-to-date. Changes to standards are approved by the ARB prior to implementation.

The data technologies, storage, and visualization tools used by ABC Corporation are depicted in the high-level diagram below.



ABC Corporation's application uses a multi-tenant database architecture. Under this model, ABC Corporation stores each of its customer's data in the same physical location. However, we logically separate the data using a Virtual Private Model (VPM). The VPM creates a logical separation between each customer's data and ensures data does not leave the customer's logical storage area.



ABC Corporation classifies its databases as either primary, secondary, or audit. This classification helps ABC Corporation define policies and procedures governing data management, data security, backup, recovery, and data archival.

- *Primary Databases*
  - *Any database that holds the primary copy of the customer's data.*
  - *Most critical set of data, loss is not acceptable.*
- *Secondary Databases*
  - *Supplementary data stores that do not store primary data.*
  - *All data is either replicated or calculated, based on information in the primary database.*
  - *If a data loss occurs, it can be corrected by re-calculating or replicating the data again from the primary database.*
- *Audit Databases*
  - *Capture and maintain audit trail of all data modifications in the application.*
  - *Includes details of each change, such as the time of change, the name of the user, old value, new value, etc.*
  - *Databases are always in an "append-only" mode and no other data modifications, such as updates or deletes, are permitted.*

ABC Corporation stored Protected Health Information (PHI) and non-PHI data in separate databases. The database storing PHI is encrypted at the storage level using Transparent Data Encryption (TDE). This ensures the data and log files on disk are fully encrypted. In addition to TDE, which encrypts the entire database at the storage level, high-sensitive columns are re-encrypted at the application level. ABC Corporation uses 256-bit Advance Encryption Standard (AES) encryption to secure the columns. The

encryption key is maintained by the application and data is encrypted and decrypted at the application level. In the database, the values are stored in a VARBINARY column.

ABC Corporation is HITRUST certified. The Health Information Trust Alliance (HITRUST) created the Common Security Framework (CSF), which includes best practices across several industries, to produce a meaningful, robust compliance framework for the healthcare industry. By incorporating the requirements of HIPAA (Health Insurance Portability and Accountability Act), Payment card industry (PCI), International Organization for Standardization (ISO), National Institute of Standards and Technologgy (NIST), the CSF creates a certifiable baseline that promises HIPAA compliance, the protection of PHI and Personally Identifiable Information (PII), and effective security.

When ABC Corporation obtained the HITRUST certification, the certification process was based upon the NIST Cybersecurity Framework. The NIST Special Publication 800-53 serves as the parent framework that establishes the security and compliance requirements for all systems, interfaces, and connections between Affordable Care Act (ACA) mandated health exchanges and marketplaces.

All database backups are encrypted with AES 256-bit encryption.

ABC Corporation maintains five levels of system environment with different access levels and data management policies, as explained below:

- ***Production Environment***

  This is where customers and their users access their data on a day-to-day basis for business operations. The environment is restricted to authorized end users and limited internal employees. We grant internal employees access to this environment only as needed.

  Code and release deployment occurs in this environment via an independent release management team. All code changes and releases are approved by a central change management board prior to implementation in a production environment. The change control board consists of high-level representatives from our information security, database administration, infrastructure management, and development teams.

- ***User Acceptance Testing (UAT) Environment***

  This environment is used for user acceptance testing and user training. It has the same level of access restrictions and data security safeguards as a production environment. Typically, this environment is used by customers for post go-live feature testing and training new users.

- ***System Integration Testing (SIT) Environment***

  This environment is used for system integration testing and pre go-live training. It contains test data provided by customers and other third-party vendors. Production data is not allowed in this environment and it has the same access control and data security safeguards as a production environment. Code deployment to this environment does not require approval from the change control board. Developers deploy code into this environment from a development environment.

- ***Quality Assurance Environment***

  This is an internal testing and quality assurance environment that does not contain data from a customer. The environment stores mock-up data for internal quality and testing purposes related to testing our application. Code deployment to this environment does not require approval from the change control board. Developers deploy code into this environment from a development environment.

- ***Development Environment***

  This is an internal development environment that does not contain data from a customer. The environment stores mock-up data used by developers for code development and unit testing.

Data Onboarding & Operations

The AMA's business processes often rely on vendor-hosted services and data. Data acquired from and managed by external sources pose challenges to data governance, including lack of metadata, data provenance, and regulatory/legal requirements that dictate the use of data. To mitigate risks and ensure compliance with regulatory and legal requirements, the AMA establishes procedures for acquiring and distributing data.

Please provide information on the following policies and processes that will govern data onboarding and operations activities for your product/service:

- Data Sharing Agreements (DSA)
  - Document whether or not data sharing agreement(s) are required for your contract with the AMA.
  - Document the location of the data sharing agreement(s).
- Service Level Agreements (SLA)
  - Document the SLAs related to the acquisition, processing, and delivery of data to the AMA.
  - Document the location of each SLA.
- Historical Data Ingestion
  - Document the location of the business requirements that drive the data ingestion effort.
  - Document the business rules required to ensure the data ingestion is successful.
  - Provide a RACI chart that describes the resources, activities, and level of responsibility for each task required to complete the ingestion.
  - Include research, analysis, and mapping activities within the RACI matrix.
  - Include business rules and the processes required to test the business rules.
  - Include architecture diagrams and data flow charts that describe the process of data import and operations.
  - Document the location of the data ingestion documentation.
- AMA Data Lake
  - Document the location of the business requirements that drive the delivery of data to the AMA data lake.
  - Document the business rules required to ensure the data delivery is successful.

  - Provide a RACI chart that describes the resources, activities, and level of responsibility for each task required to complete the ingestion.
  - Include research, analysis, and mapping activities within the RACI matrix.
  - Include business rules and the processes required to test the business rules.
  - Include architecture diagrams and data flow charts that describe the process of data delivery.
  - Document the location of the data ingestion documentation.
- Data APIs
  - Document APIs that allow users to import data into or export data from your product/service.
  - Include access control mechanisms available to restrict access to data through the APIs.
  - Document the location of API documentation.

Example:

ABC Corporation's data engineering and interfaces team manages data onboarding, data cleansing, data validation, and overall operations for the ETL process. Members of the interfaces team will work with the AMA and the prior vendor to define the interfaces required for onboarding, integration, and delivery of data. We have submitted the proposed tasks and team responsibilities, in RACI format, to the AMA project management team via the shared intranet site.

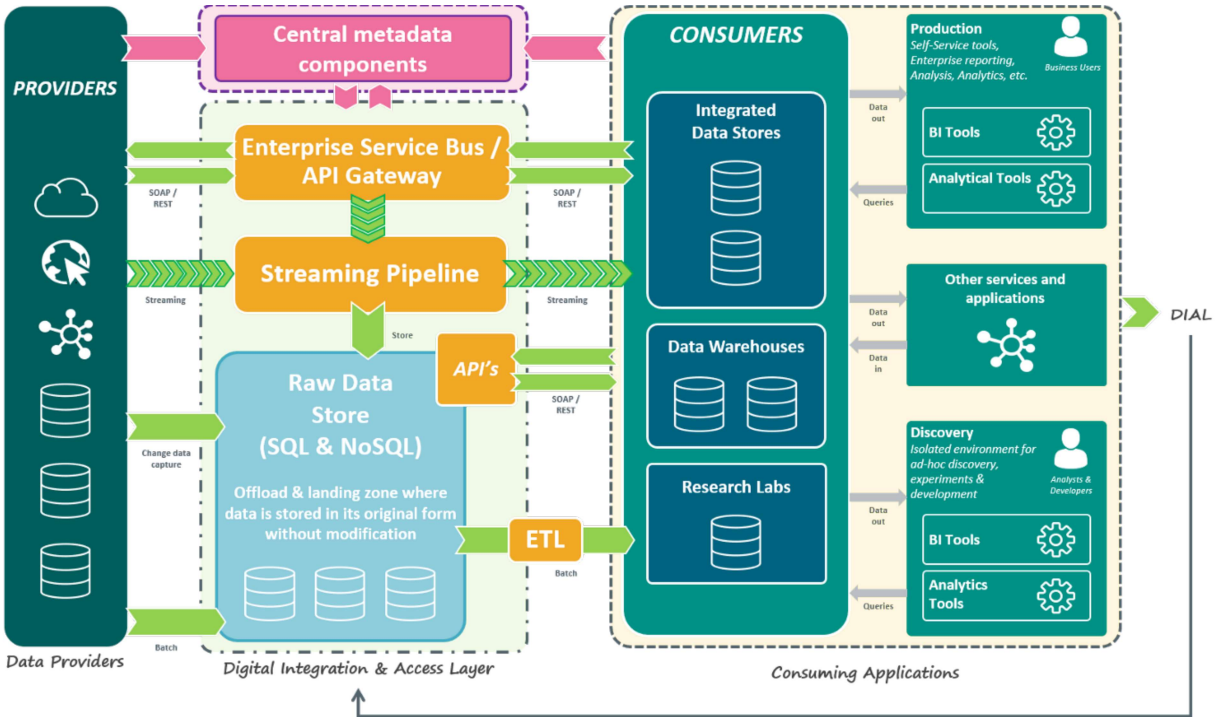


Figure 2: Sample Data Integration Diagram

Data Import/Onboarding

Data import and onboarding involves loading data into staging databases, validating data against the production database, loading the data into the production database and creating data load reports/log files for each import effort. Transfer of data, reports, and log files between the AMA and ABC Corporation is via SFTP.

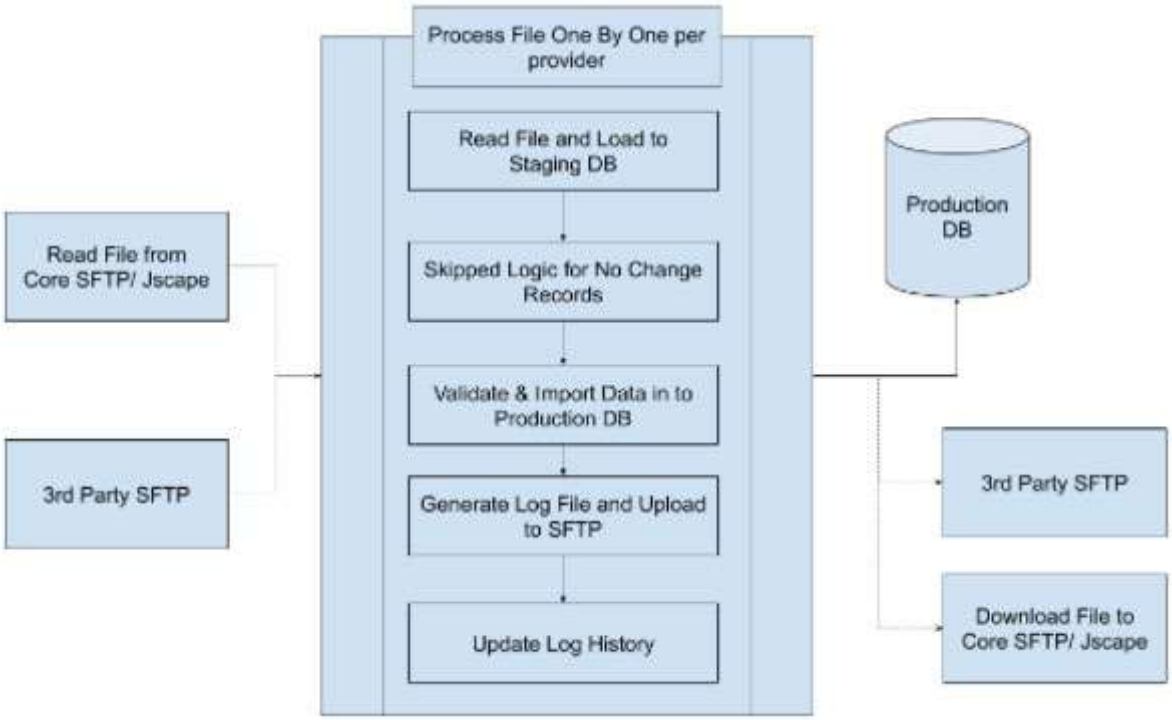
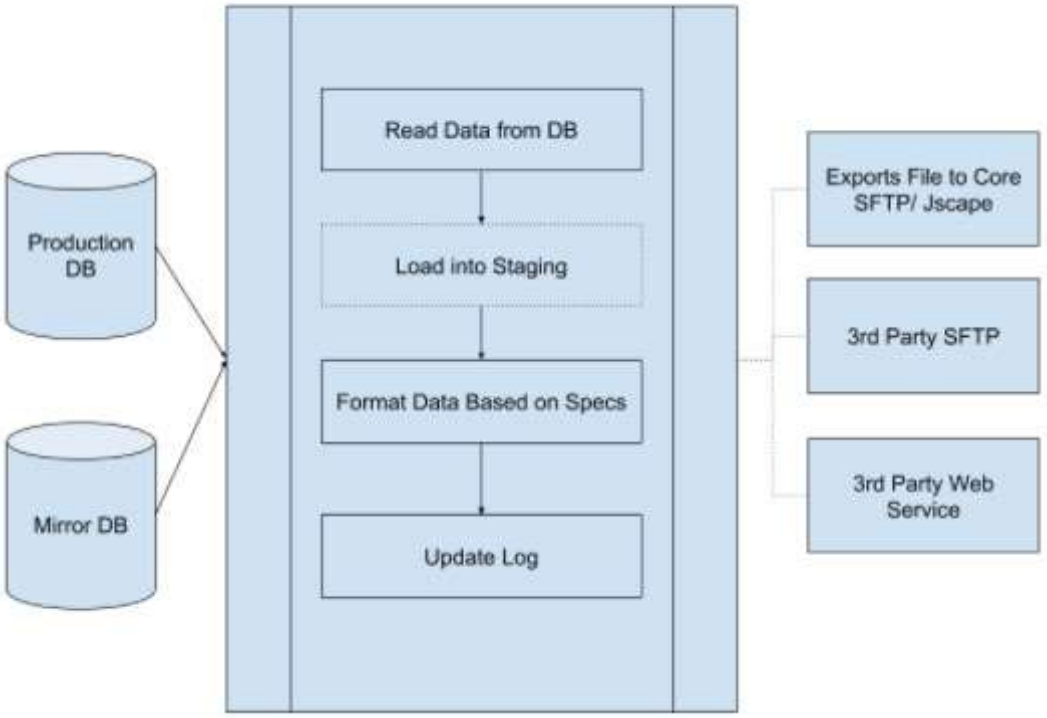


Figure 3: Sample Data Import Architecture Diagram

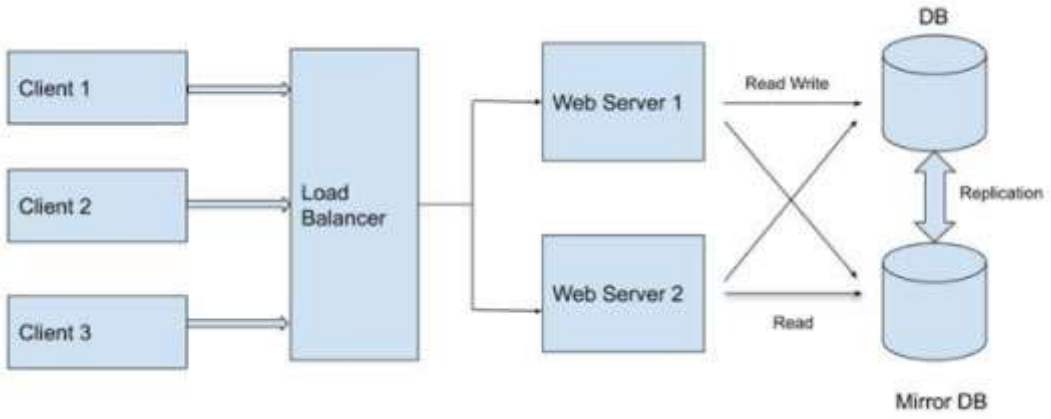
Data Export Infrastructure

Data Exports run daily and exported data files placed into the outgoing folder of the dedicated SFTP endpoint. Data exports run from production mirror databases to share the workloads. The architecture diagram below provides an overview of this process.



API Architecture

ABC Corporation offers multiple API interfaces to send and receive data. The diagram below provides an overview of what is available.



Data Security Management

Data security includes the planning, development, and execution of security policies and procedures to provide proper authentication, authorization, access, and auditing of data. Effective data security policies and procedures ensure that the right people can use and update data in the right way and that all inappropriate access and updates are prohibited. The AMA mandates vendor compliance with all DGO and Information Security data policies.

Please provide information on the following policies and processes that govern data accessibility within your product/service:

- Access Control Management
  - Document the location of access control management policies that govern the use of data within your product/service.
  - Identify the user roles and security groups available within your product/service and how they will be implemented to control user access to data.
- Information Security Policy
  - Document the location of the information security policy that governs the use of data within your product/service.
  - Include information about the policies and procedures that address information security incidents.
  - Provide a RACI chart that describes the resources, activities, and level of responsibility for each task required to complete the information security incident process.
- Security & Encryption Technologies
  - Provide information about the security and data protection policies and procedures implemented within your product/service.
    - Network/Infrastructure Security
    - Application Security
  - Include architecture diagrams and data flow charts that describe the process of data security where appropriate.
- Security Certifications/Accreditations
  - Provide information about any security certifications/accreditations that have been awarded to your product/service.

Example:

ABC Corporation utilizes a centralized security and compliance department, managed by the Chief Security Officer (CSO), to oversee data security, compliance, and incident management. ABC Corporation has published several security-related documents that provide the information requested in this section and we have included links to those documents below:

- *Access Control Management*
- *Information Security Policy*
- *Information Security Incident Management*
- *Business Continuity Management*

User access and security roles are configured in collaboration with each customer and are reviewed by the customer prior to implementation of our product.

ABC Corporation's architecture includes stringent security protocols and strategies, as shown in the diagram below. Our requirement for data encryption while in transit and at rest is the core of the overall security stature.

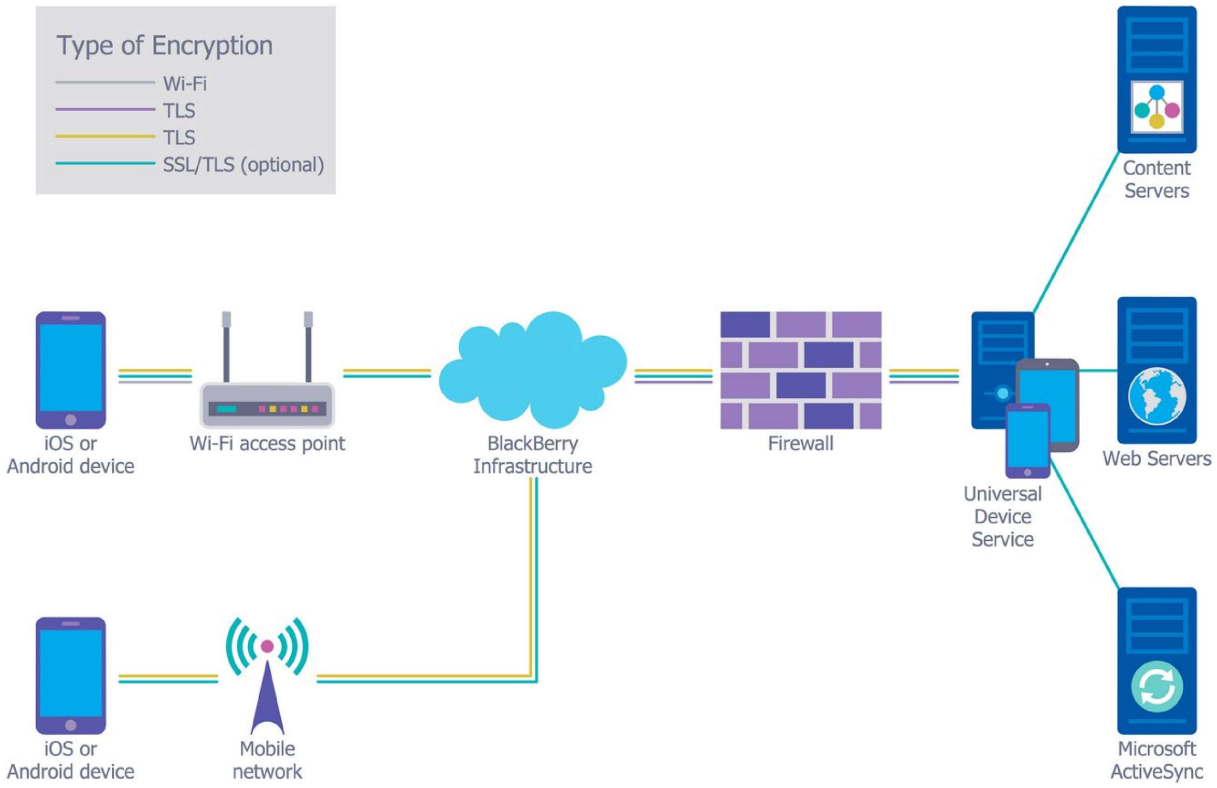


Figure 4: Sample Security Architecture Diagram

Document & Content Management

Document and content management entails controlling the capture, storage, access, and use of data and information stored outside of relational databases. Its focus is on maintaining the integrity of and enabling access to documents and other unstructured/semi-structured information. Laws and regulations require the AMA to maintain records of certain activities, some of which are stored outside of relational databases.

Please provide information the following components of your document and content management program:

- Records Management Processes/Procedures
  - Content Management Policy & Procedures
  - Content Repository
  - Audit Processes
- Product/Service User Guides
  - Delivery Mechanism/Format

  - Search-ability
  - Frequency of Review/Updates
- Job Aids
  - Delivery Mechanism/Format
  - Search-ability
  - Frequency of Review/Updates
- Release Notes
  - Delivery Mechanism/Format
  - Search-ability
- System Workflow Documentation
  - Delivery Mechanism/Format
  - Search-ability
  - Frequency of Review/Updates
- User Training
  - Delivery Mechanism/Format
  - Search-ability
  - Frequency of Review/Updates

Example:

ABC Corporation's education and content management team, led by the Vice President of Content Management, focuses on creating and managing all content, education and training material for the product/service. The Content Management team prepares and manages comprehensive training materials, including User Guides, Process Guides, System Workflow documents, Quick Reference Guides, Job Aids, and Release Notes. Much of the content is available online, through ABC Corporation's knowledgebase:

- *Admin Function Process Guide*
- *Caregiver Mobile App Process Guide*
- *Homecare Videos & Webinars*
- *Claim Tracker Process Guide*
- *Aggregation Portal User Guide*
- *Caregiver Bulk Import Process Guide*

ABC Corporation also employs a state-of-the-art Learning Management System (LMS) to provide online delivery of training, with real-time tracking and certification. This service optimizes the learner's time and reduces the costs associated with traditional learning methods.

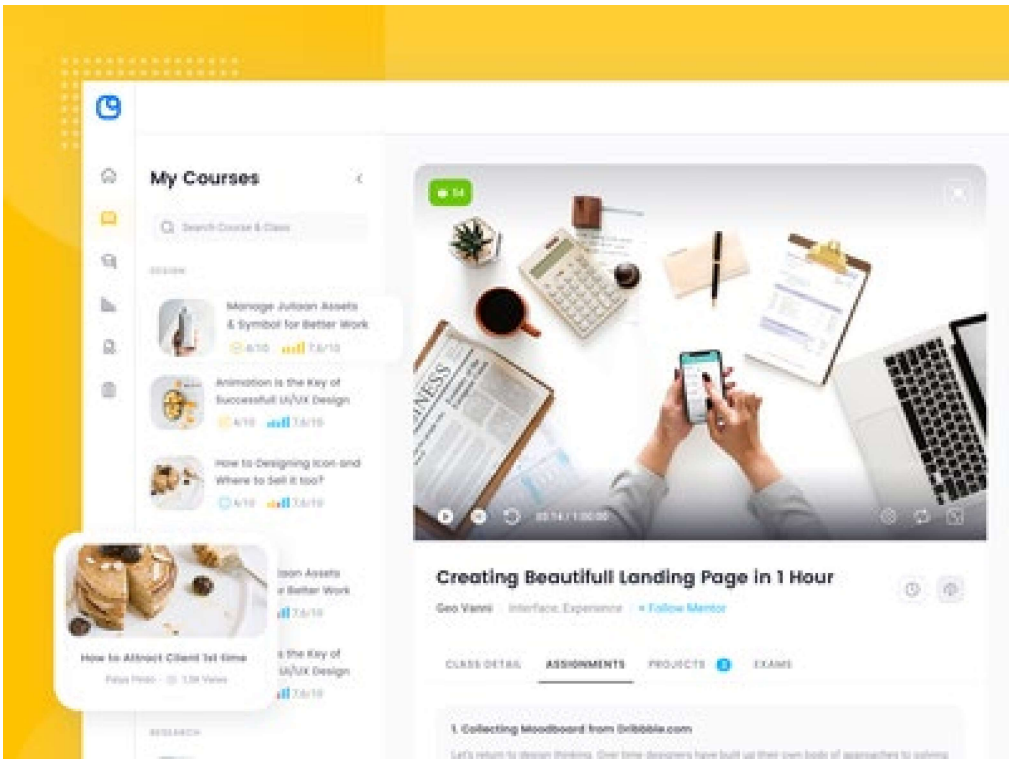


Figure 5: Sample LMS Homepage

Data Warehousing

Please provide a high-level overview of the tools and technologies used for data warehousing, data aggregation, business analytics, and business intelligence functions within your product/service. Include information on the following components:

- Reference Data Management Program
  - Reference Data Elements
  - Processes and procedures for integrating/ingesting reference data from the AMA into your product/service (when required)
  - Process for ongoing management of reference data
- Master Data Management Program
  - Master Data Elements
  - Processes and procedures for integrating/ingesting master data from the AMA into your product/service
  - Process for ongoing management of master data
- Data Stewardship
  - Processes and procedures for collaboration between AMA data stewards and your technical stewards
- Data Warehouse & Business Intelligence Practices
  - Business Requirements

        - Processes and procedures for AMA data owners to submit new business requirements or changes to existing business requirements
    - Data Warehouse Load Process
        - High-level overview of the steps required to load the warehouse
        - Information on the frequency of data warehouse loads
        - Documentation of SLAs between AMA and the vendor
    - Architecture
        - Data Warehouse Architecture
        - Business Intelligence Architecture
    - Change Management
    - Release Management
    - Production Support
    - End-User Training
    - Security
- Data Validation Practices
    - Documentation of the validation processes included with the product/service.
    - Documentation of the results from validation testing efforts.

Example:

ABC Corporation provides data warehousing, data aggregation, business analytics and business intelligence functions within its product/service. Our data warehousing and BI teams oversee data aggregation, data warehouse architecture, and management of BI functions. Details about the features and functionality available are provided below:

Data Warehousing

ABC Corporation uses the Greenplum MPP database for data warehousing and data aggregation purposes. Apache NiFi is used for ETL and data loads. Data from transactional databases is pulled through Kafka, based on a data event queue.

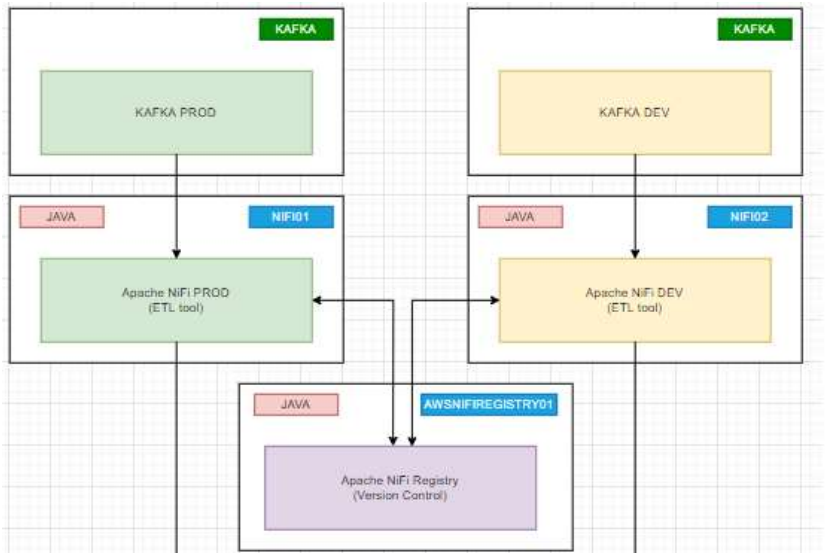
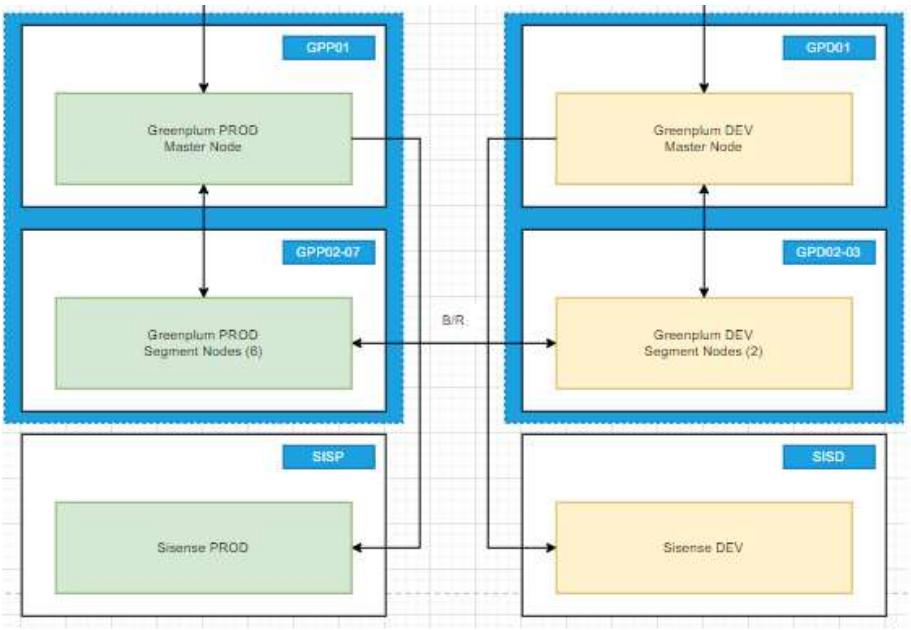


Figure 6: Sample Data Warehouse Architecture Diagram



Aggregation Dashboards

ABC Corporation uses the SiSense platform to build aggregation portals for customers. This business intelligence (BI) tool runs on our data warehouse database using massively parallel processing in the Greenplum version of PostgreSQL. The platform includes pre-built reports and dashboards in addition to the ability to create and publish custom reports.

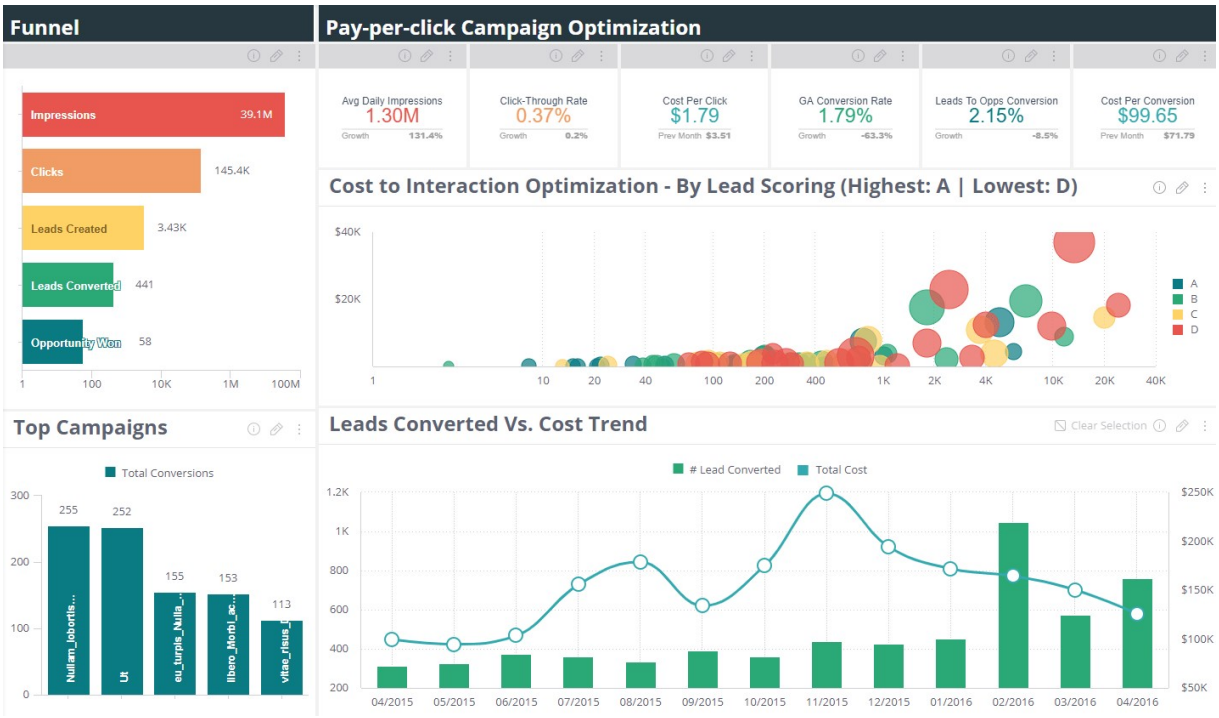


Figure 7: Sample Business Intelligence Dashboard

Data Quality Management

The AMA manages its business assets, including business terms and business rules, within an enterprise metadata repository. Data stewards manage asset definitions and identify rules and policies that govern the usage and quality of data. AMA expects vendors to be capable of ingesting business rules from the enterprise repository and incorporating them into the vendor's data quality management program.

Please provide an overview of the data quality policies and processes employed by your organization. Include information on the following components:

- Data Quality Management Program
  - Overview of Data Quality Strategy
  - Process for identifying critical data and business rules
  - Process for performing data quality assessments
  - Process for identifying and prioritizing improvements to the quality of data
  - Process for developing and deploying data quality operations
  - Process for measuring and monitoring data quality
- Data Quality Technologies
- Process for implementing business rules defined by AMA
  - During data ingestion/onboarding
  - During normal business operations
- Process for sharing results of data quality checks with AMA
- Process for reporting and remediating data issues
  - AMA data stewards reporting issues to the vendor
  - Vendor reporting issues to AMA
- Document the location of data quality SLAs

Example:

ABC Corporation's data quality management team is overseen and coordinated Quality Assurance (QA) teams. One QA team focuses on data onboarding and operations. Operations includes data quality related to data onboarding and ETL processes. The other QA team oversees data and systems quality and partners with ABC Corporation product and development teams.

All data quality initiatives work within the ABC Corporation's master test plan framework.

Programmatic Data Quality Assurance Methods

Programmatic data quality assurance methods are applied at the time of data onboarding through API and/or flat-file interfaces. Similar and relevant programmatic data quality methods are applied by the application itself on all data entry screens.

An example of our data quality checks is provided below. When we load patient visit data, various data quality checks are executed.

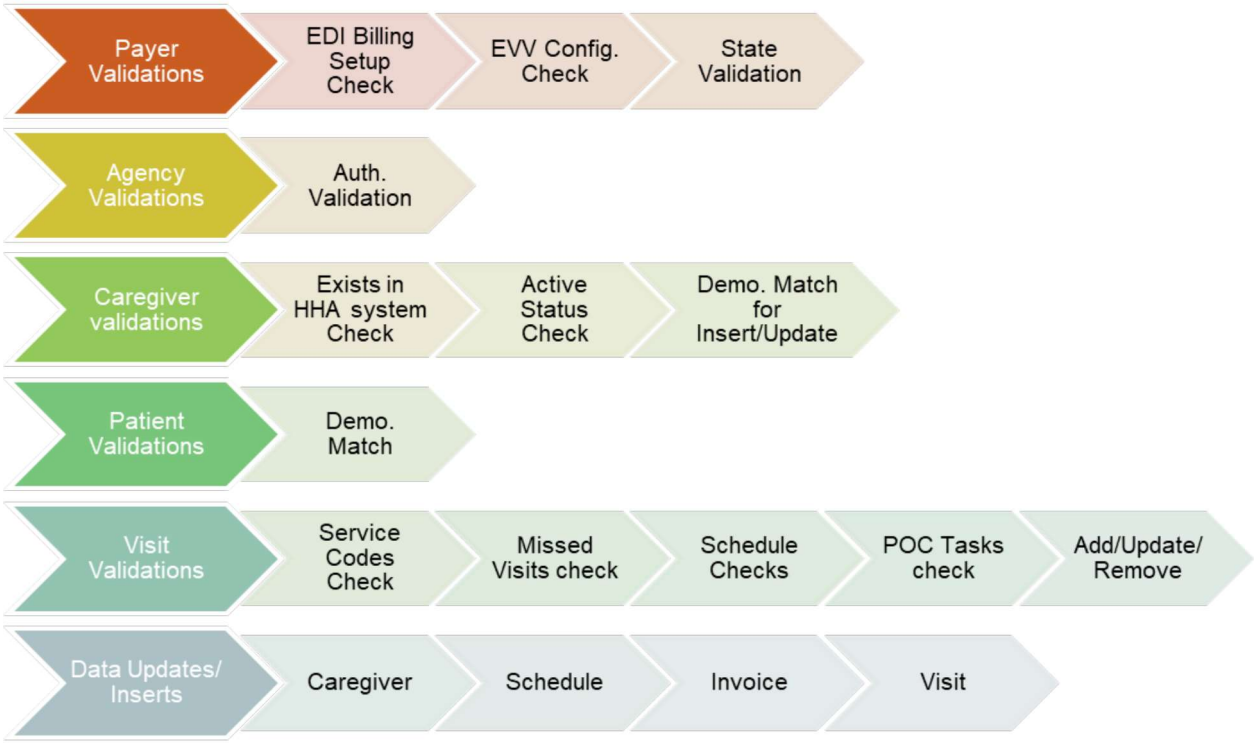


Figure 8: Sample Data Quality Checks

Data Quality Assurance Test Cases

Manual test cases are created for data validations along with the sequence of quality checks to be performed and expected results documented.

Sr. I	Scenario to be Tested	Precondition	Step	Step Performed	Expected Result
1	Validate format for Member import file.	File must be available.	1	Login to FileZilla or any tool use to login Iscape.	FileZilla should be logged in successfully.
			2	Verify File is available in the Processed folder of respective payer.	File should be displayed in the Processed folder.
			3	Verify File name and format.	File naming convention and format should be as per the specification document.
2	Validate file header.	File must be downloaded in the system.	1	Open file in Note++	File should be opened successfully.
			2	Verify header of the file.	Column header should be as per the specification document.
3	Validate File import process with mandatory data.	File should be available.	1	Import file with all the mandatory data.	File should be processed successfully.

Figure 9: Sample Manual Test Cases

Data Validations & Cleansing

ABC Corporation utilizes the following data validation and cleansing guidelines when working with customer data. These data validation principles are used through various activities, such as data onboarding/ingesting, ETL, data input (UI), reporting, and data aggregation functions.

Functional Validations

Data validations that pertain to business function /requirement are to be done across the data movement through the system. Examples of these validations are:

- *Valid schedule for a confirmed visit load*
- *Caregiver Status should be active as of the data of confirmed visit*
- *Service codes to be part of payer defined Plan of Care (PoC); if applicable*

Comprehensive list of such business rules and validations are documented in relevant program documentation and test cases.

Format Validations

Data formatting related validations should not only consider the data value but also time and location-based format validations. Some of such format examples are:

- *Date formats (based on location of the users)*
- *Phone number formats*
- *Zip Codes*
- *State codes*
- *Allowed Characters/Numbers*

Missing & Duplicate Values

Making sure of eliminating duplicate values where needed and checking for missing values in mandatory data columns is critical to maintain data integrity.

Data Standardization

Data standardization includes cross reference checks, maintaining up to date reference values such as CPT (Current Procedural Terminology), ICD (International Classification of Diseases) codes. Any lookup values or list of drop-down values in the system user interfaces should be standardized as per internal standard list and/or external/industry specific standardization.

Data Integration & Interoperability

Data integration and interoperability describes processes related to the movement and consolidation of data within, and between, data stores and applications. The DGO has identified eight practices for planning, implementation, monitoring, and enforcement activities related to data integration and interoperability. The practices ensure alignment between data integration and interoperability activities and the AMA data strategy.

Please provide an overview of the data integration and interoperability capabilities, policies, and processes utilized within your organization. Include information on the following components:

- Data Integration & Interoperability Architecture
  - Data Interaction Model
  - Data Services
  - Message Layouts
  - Source-to-Target Mapping
  - Data Lineage
  - Data Orchestration
- Data Exchange Specifications
- Device Access Agreements
- Data Sharing Agreements
- Service-Oriented Architecture (SOA)
- List of data elements deemed to be proprietary

Example:

ABC Corporation's data services layer is described in the diagram below.

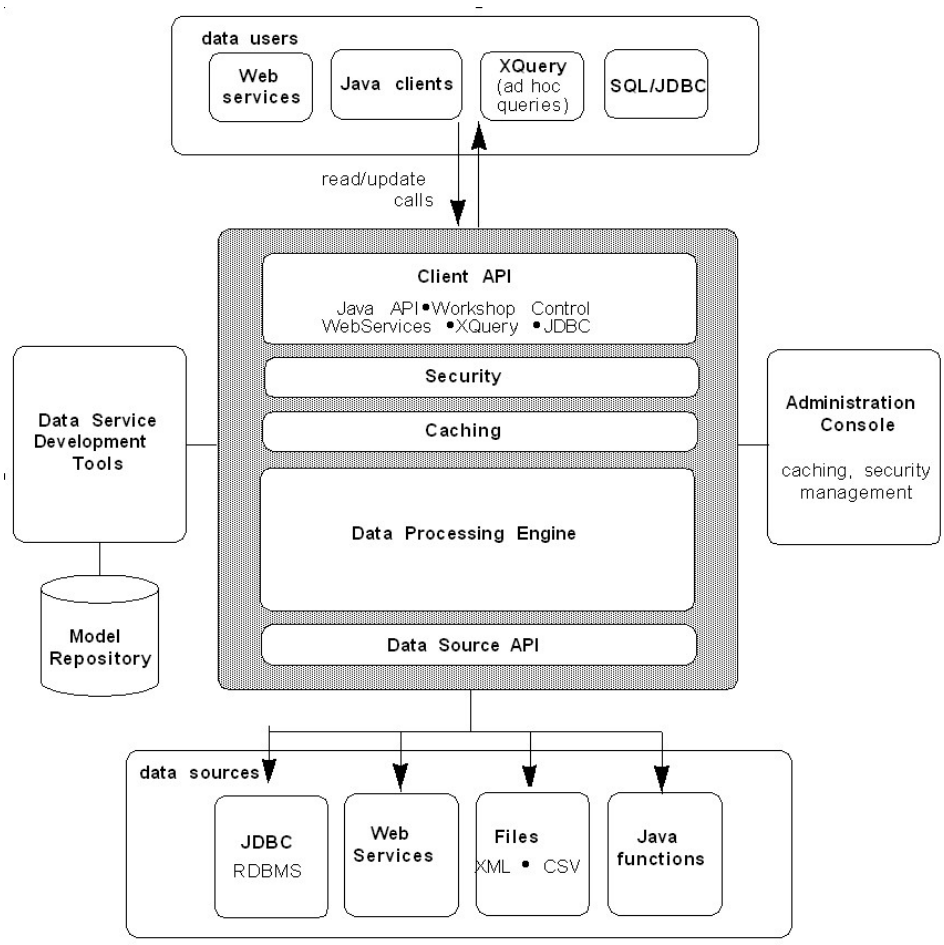


Figure 10: Sample Data Services Architecture

Business Continuity/Disaster Recovery

Disasters or adverse events may negatively affect the services that AMA provides. Therefore, the DGO evaluates all systems that support AMA business processes to ensure appropriate business continuity and disaster recovery plans are developed and implemented. Please provide a high-level overview of the disaster recovery architecture and processes implemented within your product/service. Please add diagrams and flowcharts where appropriate.

Example:

ABC Corporation has a disaster recovery plan that complies with federal guidelines (45 CFR 94.62[f]) and identifies each resource that requires backup and to what extent backup is required. Backups include off-site electronic and physical storage within the United States and we perform full backups daily, with differential backups every four hours. We perform transactional backups every five minutes.

We validate the integrity of each backup prior to sending it to its storage location. We maintain three copies of the backups locally and in an external cloud store. We retain our backup archive for seven years.

All network/hardware equipment is set up in pairs of two and configured in an active/passive mode. If the active equipment fails, an automatic failover to the passive equipment will occur. We configure all network equipment, including routers, firewalls, switches, and load balancers, to recover automatically when the primary equipment experiences a failure. In such an event, the passive node automatically assumes the active role and the recovery occurs transparently to users.

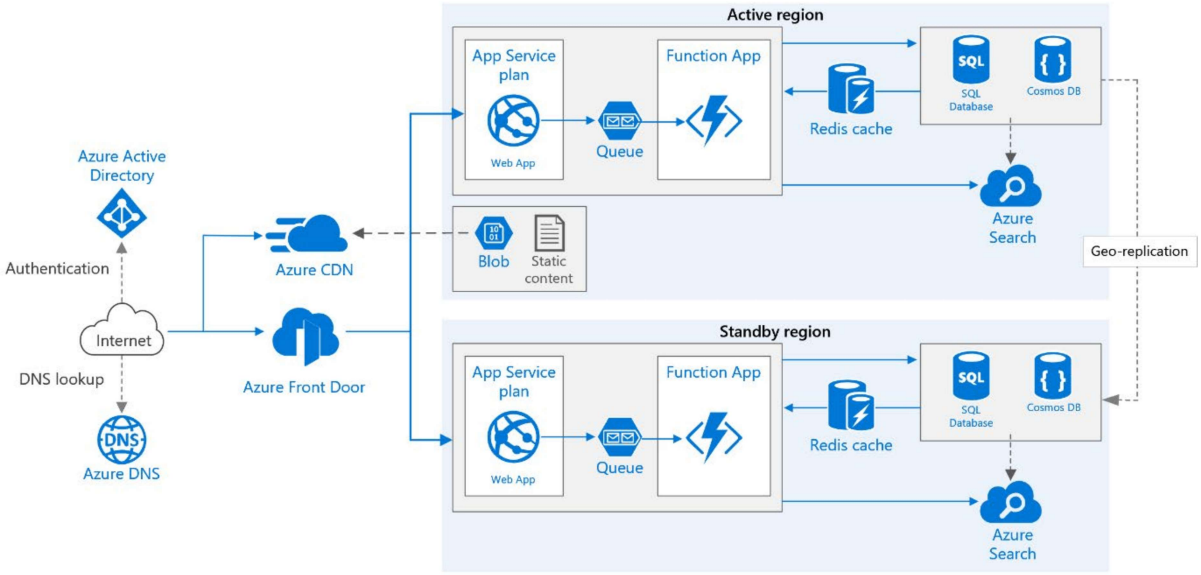


Figure 11: Sample Diagram of Redundant Architecture

Database Monitoring

ABC Corporation uses many tools and dashboards to proactively monitor various databases that support the product/service. Examples of these tools are provided below.

Real-Time Disk Capacity Monitoring

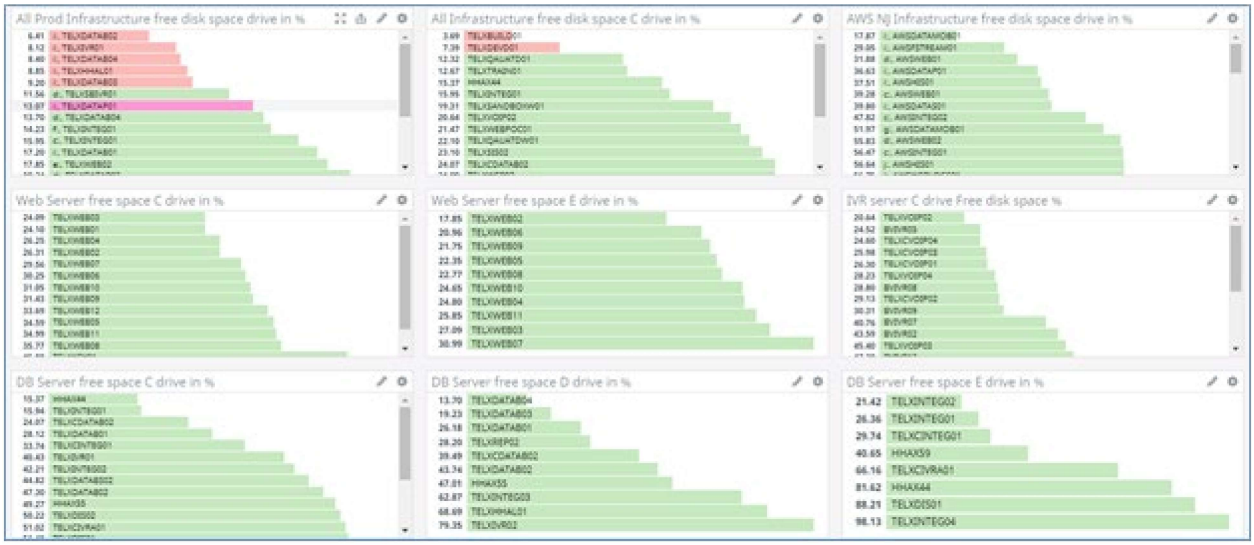


Figure 12: Sample Disk Capacity Monitoring Dashboard

Database CPU & Memory Usage Patterns

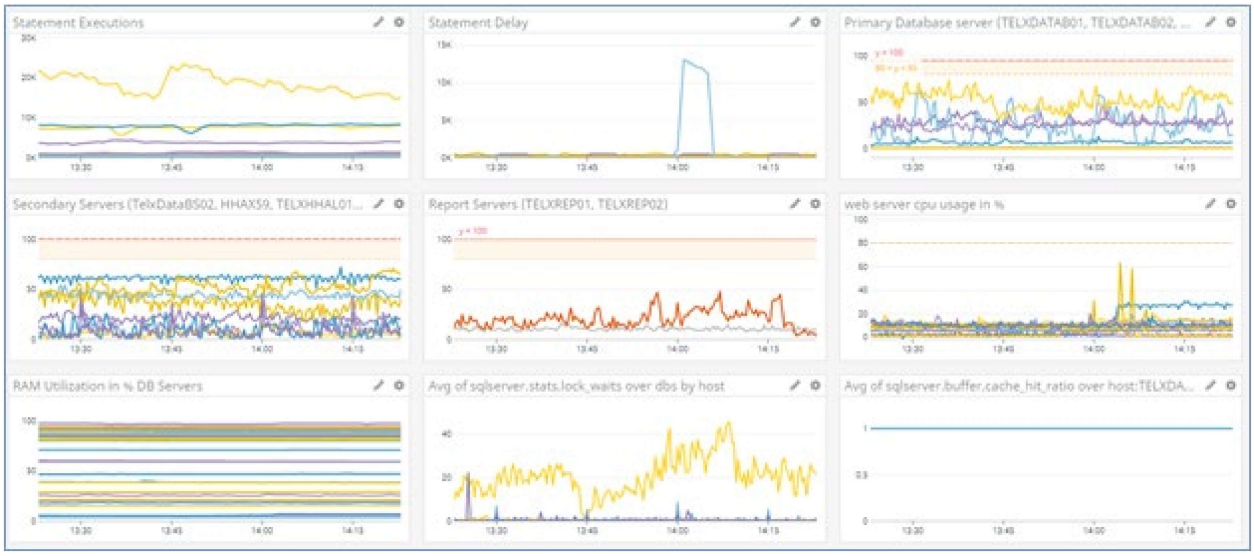


Figure 13: Sample CPU/Memory Usage Dashboard

Cluster Health Monitoring

Figure 14: Sample Cluster Health Dashboard

System Volume Monitoring

Figure 15: Sample System Volume Dashboard

Planned System Maintenance/Outages

"Planned Maintenance" means any maintenance (i) for which the Customer receives a Maintenance Notice; or (ii) that is performed during ABC Corporation's standard maintenance windows, which maintenance windows shall be performed between 12 am EDT/EST and 5 am EDT/EST Monday – Friday and on weekends. Planned Maintenance is done to (a) support on-going product and operational projects to ensure optimal performance; (b) deploy non-critical service packs or patches; or (c) to perform periodic redundancy testing. Where possible Planned Maintenance will be posted to the website homepage 5-days prior; however, certain circumstances may preclude us from doing so, such as an external vendor issuing a change control to ABC Corporation (e.g., the power Customer alerting ABC Corporation to its performance of power testing forty-eight (48) hours ahead of time). ABC Corporation shall use commercially reasonable efforts to limit Planned Maintenance.

Data Backup & Recovery

ABC Corporation utilizes industry standard recovery procedures for retention and storage of backup files and software plus ongoing mirroring of all key data in a disparate location.

- *We conduct a full backup of all production databases every night.*
- *We conduct a differential backup of all production databases every four hours during business hours.*
- *We conduct a transaction backup of all production databases every five minutes.*
- *We validate and verify full backups before storing them in the archive location.*
- *The backup archive maintains full backups for the following:*
  - *The last 30 days*
  - *Weekly backup of the last 52 weeks*
  - *Monthly backup of the last seven (7) years*
- *We maintain backups in the local storage attached to the servers, NAS storage within the data center, and an external location (Amazon Cloud).*

We mirror primary application data to a secondary data center as an external Disaster Recovery Setup. In the event of a catastrophic failure of the primary data center, the most critical sets of operational data are readily available in the secondary location, normally within a few minutes but always within the four-hour window stated in our Service Level Agreement.

Backup Locations

Copies of backups are maintained in two locations:

- *On-site Backup Location – Central NAS*
- *Off-site Backup Location – AWS Cloud S3*

Failover/Fallback Functionality

ABC Corporation's infrastructure and applications follow an architecture that provides checkpoint/restart capabilities naturally. The primary databases are configured for high availability using a technology called HADR (High Availability Disaster Recovery) provided by the Microsoft SQL Server database management system. Under this configuration, databases are configured as High Availability Groups.

The High Availability Group configuration includes one read/write server and multiple readable replicas. The HADR configuration provides real-time data synchronization between all the servers in the High Availability group.

In case of a failure of the primary database server, all transactions up to the point of failure will be available in the read-only servers. One of the read-only servers can be promoted to the "active" role, and the application can restart without data loss.

Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO)

ABC Corporation offers a 24-hour RTO and a 4-hour RPO.

Data Retention & Archive

FTP Files

These are EDI files exchanged through the SFTP environment.

- *Archival/Purging: EDI Files exchanged through SFTP are purged after 90 days. An automated nightly process runs every day at 1 am EST that scans the SFTP folders and deletes the files older than 90 days.*
- *Security and Access Control: The SFTP environment is hosted in the AWS cloud. Files are stored in AWS S3 buckets encrypted with AWS native encryption using 256-bit Advanced Encryption Standard (AES). SFTP endpoint is provided by JSCAPE SFTP service. Access Control is managed using JSCAPE's native user authentication and authorization process. SFTP protocol ensures that all data exchange between the customer and ABC Corporation goes through a secure protocol.*
- *AWS Region: AWS S3 buckets are setup within US East (Northern Virginia) as primary and Secondary/DR region is setup as US West (Oregon). All data stays within the continental United States always.*

Databases

- *Archival/Purging: Currently there is no data archival process in place for this type of data. All the data loaded into the database tables stay there perpetually. However, ABC Corporation engineering team is currently working on building a data archival process that is currently in the early stages. The timeline for this is not yet available.*
- *Hosting Location: All data stays within the United States always.*

Turnover Plan

ABC Corporation's approach to project turnover is designed to be efficient and flexible and to accommodate stakeholders. Our Turnover Plan help assist in the transition of all project-related documentation at the end of our service term.

ABC Corporation will provide the following turnover services as follows:

1. *Four months prior to the end of the contract or any extension thereof:*
    a. *ABC Corporation will appoint, a manager to coordinate and supervise all turnover activities.*
    b. *The Turnover Project Manager will coordinate and supervise all turnover activities.*
2. *Three months out from end of contract or any extensions thereof:*
    a. *ABC Corporation will provide detailed functional organization charts for each subcomponent of this project.*
    b. *Each functional organization chart will include detailed job descriptions and the recommended level of experience for each position.*
    c. *ABC Corporation will provide with all of the documents that we currently use to train staff.*
    d. *ABC Corporation will begin training client's staff or its designated agent in the operation of nonproprietary systems and business processes.*
3. *Throughout the Turnover Period:*
    a. *ABC Corporation will not reduce operational staffing levels during the turnover period without prior approval.*
    b. *All staff will be maintained at their current employment levels during the turnover period.*
    c. *Additional staff, such as the Turnover Project Manager, will be added to augment and direct the turnover process.*
4. *Within three working days of the expiration of the contract or any extensions thereof:*
    a. *ABC Corporation will provide with copies of all relevant nonproprietary data and all documentation, including but not limited to the following:*
        i. *Description of functional business process flows.*
        ii. *Documentation of ongoing outstanding issues.*
        iii. *Other documentation necessary to support contract operations.*
        iv. *Other pertinent information necessary to take over and operate the project or to assume the operational activities successfully.*