

APCD TECHNICAL SOLUTION

# Understanding the technical requirements for an end-to-end solution

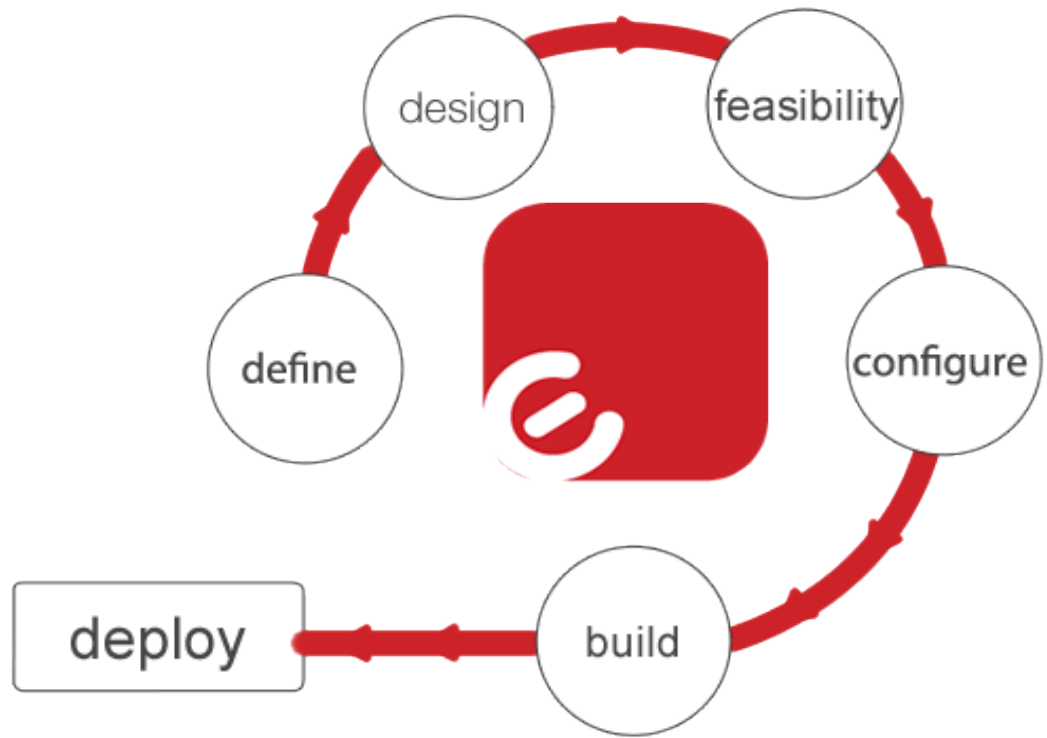
## AN eCommand WHITE PAPER

**eCommand believes the All Payers Claim Database (APCD) project, will help contain costs while providing a clear picture into how data can be used to manage overall health and quality of care. A critical success factor for eCommand & APCD will be the design and implementation of a Master Data Management system, which is scalable, reusable and has been proven.**

eCommand will work closely with clients in establishing initial schedules, milestones, communication plan, and governance (risk analysis & change control procedures), ensuring all concerns are documented, tracked, and reported on, accordingly. eCommand will assign a senior PM to oversee all project work, manage the project schedule, facilitate team communications and ensure all tasks are completed within scope, timeframe, and budget in accordance with the project schedule.

At eCommand, our teams of PMs, BAs, and SAs are trained and certified in the Energy Framework. This methodology is used by Business Analysts while gathering requirements and defining the functionality of systems and technical specifications, Project Managers to manage tasks and deliverables, and software developers for building, engineering, testing and deployment to production environments. eCommand has also been responsible for designing and implementing solutions, which consume feeds, and EDI files (834 & 837), and will allow us to reuse technology for the APCD project.

Clients who benefit from the energy approach are able to save a significant amount of time and money deploying new innovations, as it reduces the cycle time of design for completing business requirements. Energy is a flexible standards based, iterative and incremental approach to developing and implementing software. Its designed to support a broad range of project types and delivery models.



## ENERGY CONSISTS OF FIVE STAGES

Though there are numerous variations in how different companies use this approach, there are generally several recurring stages that can be seen in its implementation. Our energy approach consists of five main stages. These stages are as follows:

**1. Definition.** Specifies the solution’s capabilities, taking into account factors such as TCO and ROI. Energy provides documentation templates to assist the implementation participants in running and managing projects successfully. This stage defines the scope and terms, clarifies project goals and objectives, identifies people, resources, milestones and targets.

**2. Design.** Helps to prioritize business requirements and includes the design of business processes and architectural deliverables. In this stages, we develop the structure of the capabilities while maintaining the executive direction.

**3. Feasibility.** Delivers both technology and business solutions from pain points and determine the feasibility of both process and architectural deliverables. Incorporating this stage ensures the viability of the solutions that we provide to our clients.

**4. Configure.** On the specification of processes, demonstration of user interfaces (mock ups using wireframes) and planning for implementation. Most simply, we configure all of the technical aspects of the solutions and ensure that it will run smoothly. Energy powers the Unified Development Process. All the business solutions identified and designed during the solutions Design stage will be tested to ensure they meet the business needs.

**5. Deploy.** In this final stage, we deploy the solution, application or system on your network, and prepare to track its success.

Energy also supports several business solutions including Service-Oriented Architecture (SOA), Business Process Management (BPM), Enterprise Application Integration (EAI), Custom Software Development, Customer Relationship Management (CRM), Enterprise Application Implementation, and Software Upgrades. Energy is supported by eCommand's cloud based Enterprise Design Center (EDC).

### BENEFITS OF ENERGY APPROACH

Our Energy Approach has been used for more than ten years to great effect. Not only is it an excellent system to use for our IT professionals, but it also provides a variety of benefits to clients across a wide range of industries. It becomes the fundamental communication structure used between all parties engaged in the development cycle. The content of each step can be easily comprehended by functional process owners and technical consultants. The two main benefits of this approach are its efficiency and cost. The Energy Approach accelerates the deployment of new capabilities, which means that you can speed up your processes and achieve a greater amount of accomplishments in a smaller amount of time. In turn, this reduces the expenses you can expect to rack up as a result of your processes. Using our methodology instantly increases the cost-effectiveness of your business operations.

### Logical Achitecture

The first component of the APCD solution is the Logical Architecture, which provides insight / visual representation on how eCommand will develop payers, state agent, and admin portals. The payer and state agent portals will facilitate the data submission, tracking, reporting, communication log, and journal functionality. The logical architecture enables the ability to provide business functions, as services to the State of Tennessee and the applications or external parties, are supported by an Apache web server as well as a jBoss application server. Data transformations will take place in the connector data-binding layer. File validation, business rule processing, and error/exception handling will take place within the connector-processing layer. Web services and data security required to facilitate the collection of data the integration layer contains. Granular access control is provided by various user roles and operations.

Supporting Technologies of System Architecture:

Connector Data Binding Layer:

- » Data Transformations

Connector Processing Layer:

- » File Validation
- » Business Rule Processing
- » Error and Exception handling

Integration Layer:

- » Web Services
- » Data Security to facilitate collection

## LOGICAL ARCHITECTURE



Consumers



Providers



Insurance Providers



Employers



Payer Information Input



State Agents

834

837

### Payers Portal

Public Content

Tracking and Reporting

CER Standard Analytical Files (SAFs)

Other Standard Analytic Files (LDS, PUF, ect)

Communication Logs and Journals

Researcher Data Request

Data Submission

### State Agent Portal

Data Submission

Communication Logs and Journals

Tracking and Reporting

### Admin Portal

Payer Registration Activity

### Connector Data Binding Layer

Data Transformation

XML

EDI

Other Formats

### Connector Processing Layer

File Validation

Business Rules Processing

Error / Exception Handling

### Service Center

Data Store Existing System

Centralized Data Warehouse

Integration Layer

Data Security

Web Services

## System Architecture

The system architecture is comprised of user experience, integration (via connector), business services, database, and security layers. The user experience layer creates the interface needed for web, and mobile based platforms, which is powered by HTML & JQuery, while the mobile experience supports Android, iOS, and PhoneGap technologies. Bringing it all together, in the connector layer, you will find IBM Technology.

Supporting Technologies of System Architecture:

Business Services Layer:

- » J2EE Framework
  - \* Struts2
  - \* Spring Source
- » ORM Framework
  - \* Hibernate
  - \* iBatis

Database Layer:

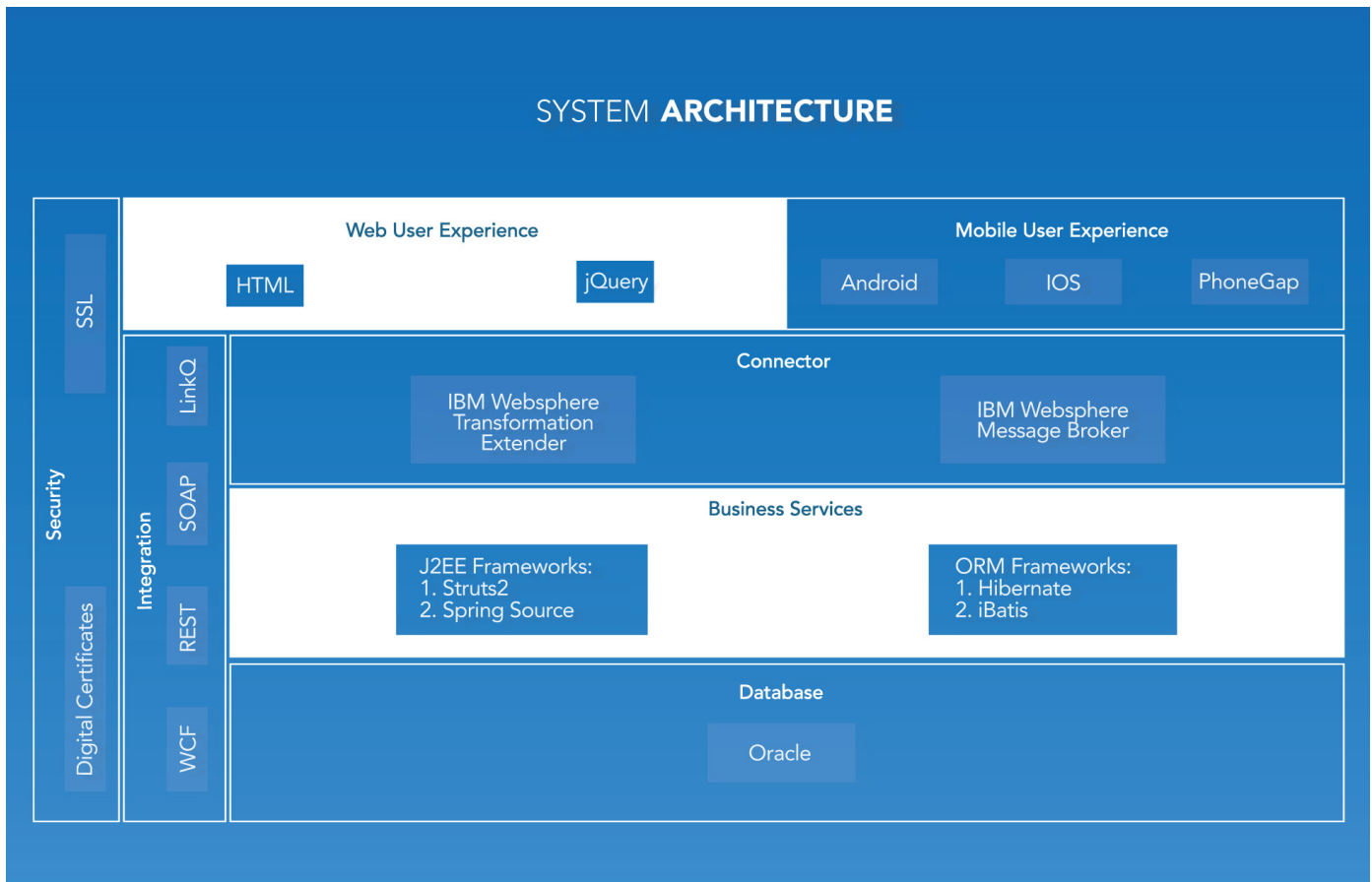
- » Oracle Database

Integration Layer:

- » WCF
- » REST
- » SOAP
- » LinkQ

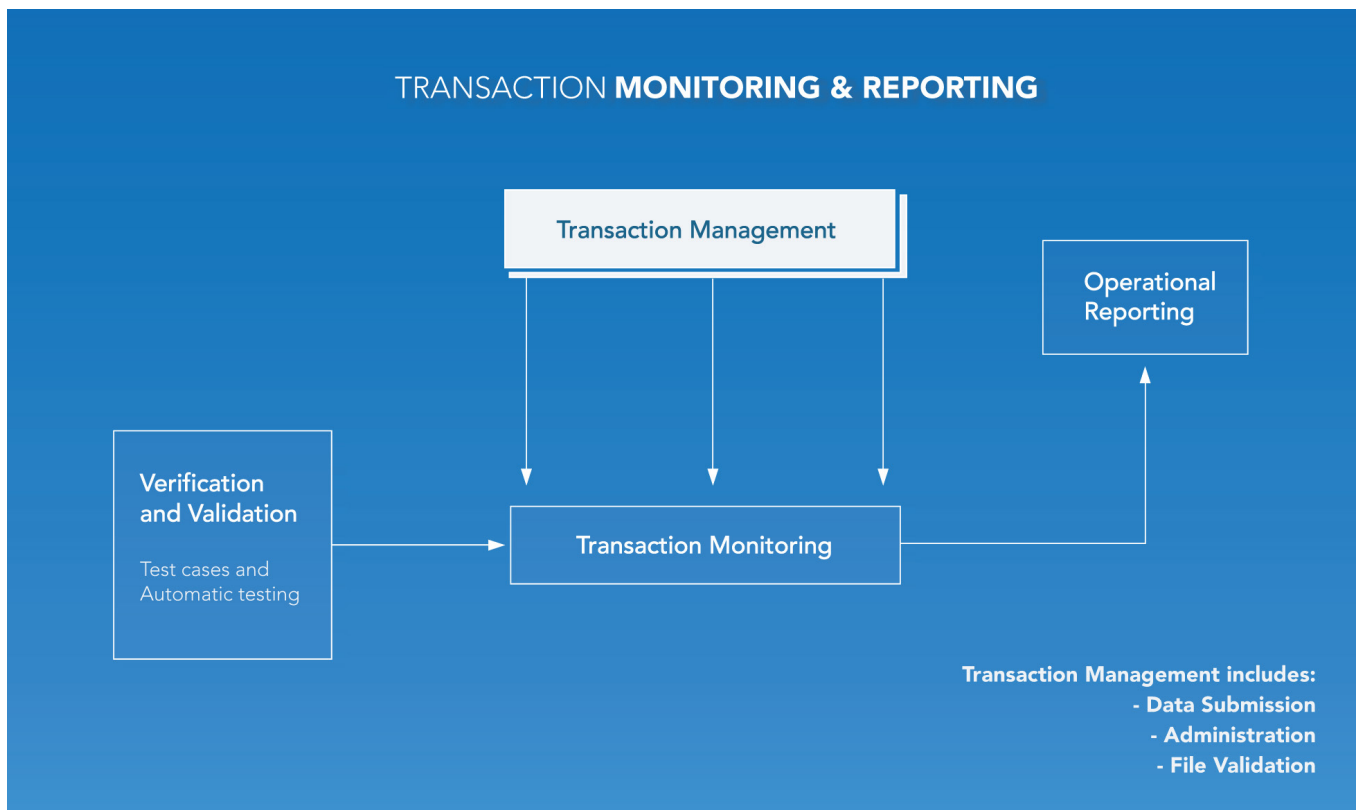
Security Layer:

- » Digital Certificates
- » SSL



## Transaction Monitoring

A key aspect of the APCD is to perform monitoring and reporting for all data and transactions. eCommand has developed an industry leading Transaction Management System, which manages, monitors, verifies, validates, and generates reports for all APCD data (and could be customized).



## Security Model

The Security Model is designed to address the commonly exploited vulnerabilities of the proposed system will be addressed through a combination of Service Orientated Architecture and access control. The necessary segregation & isolation is achieved through componentized development and is designed to support specific business functionality. The application will be hosted inside a firewall with a proper authentication mechanism for all users. Applications, devices, and critical databases will be housed inside multiple layers of firewalls. A final attribute to the security model is to execute incremental, and complete system backups, periodically (per the clients service level agreement). ■

