Health Insurance Association Launches a Security & Integration Cloud Service Brokerage

The Blue Cross and Blue Shield Association is a national federation of 38 independent, community-based and locally operated Blue Cross and Blue Shield companies, which have, collectively, about 250 IT employees

Challenges:

The Blue Cross and Blue Shield Association (BCBSA) realized that it needed to adapt to the rapidly changing business and regulatory environment in the healthcare industry in order to sustain Blue Cross and Blue Shield (BCBS) companies' leadership as the premier provider of high-quality, affordable healthcare plans to the American population. Challenges include:

- Interoperability among multiple vendor solutions (e.g. consumer engagement and cost & quality information sharing) to the operations of the BCBS Licensee Plans

- Consistent, secure access to data from traditional and mobile platforms for improved health services outcomes

- Cost effective provisioning and on-boarding of value-added SaaS vendor solutions while protecting from vendor lock-in

- Leverage the business model of the 38 independent Blue Cross Blue Shield companies by utilizing an Identity Federation and Single Sign-On (SSO)

Solution:

- Development of service and data integration platform - named "Mediation Layer", that leveraged Intel® Expressway Service Gateway (Intel® ESG) - as a central point of integration for cloud-based web services from 3rd party vendors, BCBSA, and licensee plans

- "Mediation Layer" serves as a security & integration brokerage, offering consistent APIs to consumers while providing scalability, integration and security for all data transferred

Benefits:

- Onboarded multiple BCBS companies into the Cloud-based syndicated service within weeks speeding time-to-deployment and lowering the total cost of ownership (TCO)

- Provided a high degree of consumer transparency by enabling access to health care quality and cost data on both traditional web and mobile platforms

- Simplified user experience through SSO

BlueCross BlueShield Association

Problem Description

BCBSA wanted to empower the BCBS member organizations with quality data so that they could all offer similar information (health care cost calculators, etc.) to all of their customers across various plans.

BCBSA decided that a 3rd Party Partner would be the provider of health care information such as list of available doctors, expertise and practice, office information, peer reviews and awards.

While individual BCBS companies could arrange independent relationships and integrations with a 3rd Party Partner, doing so would fragment the member experience and create unnecessary vendor lock-in. BCBSA would then have been faced with several issues including building custom interfaces between all of the individual BCBS companies and the 3rd Party Partner and forced to integrate disparate technologies resulting in long drawn out IT consulting engagements, delayed time-to-deployment, and higher development costs.

API Management and Versioning

Individual BCBS companies operate using multiple messaging/data formats such as XML, SOAP, and flat file transfers. There was a need to convert incoming messaging formats from those used by BCBS companies to XML over HTTPS and convert it back on the return. This XML data needed to be transformed to JSON to be sent to the 3rd Party Partner. Intel® ESG enabled the existing BCBSA architecture by handling all of these conversions at scale without any changes to application logic. The incoming message requests are routed to different service providers based on the message / data format.

> Without a Service Gateway, BCBSA would have implemented Security and SLA Monitoring "in code" rather than as configurable policy.

Identity Federation

Only authenticated members can use the patient review tool and National consumer cost tool. Authentication is done at the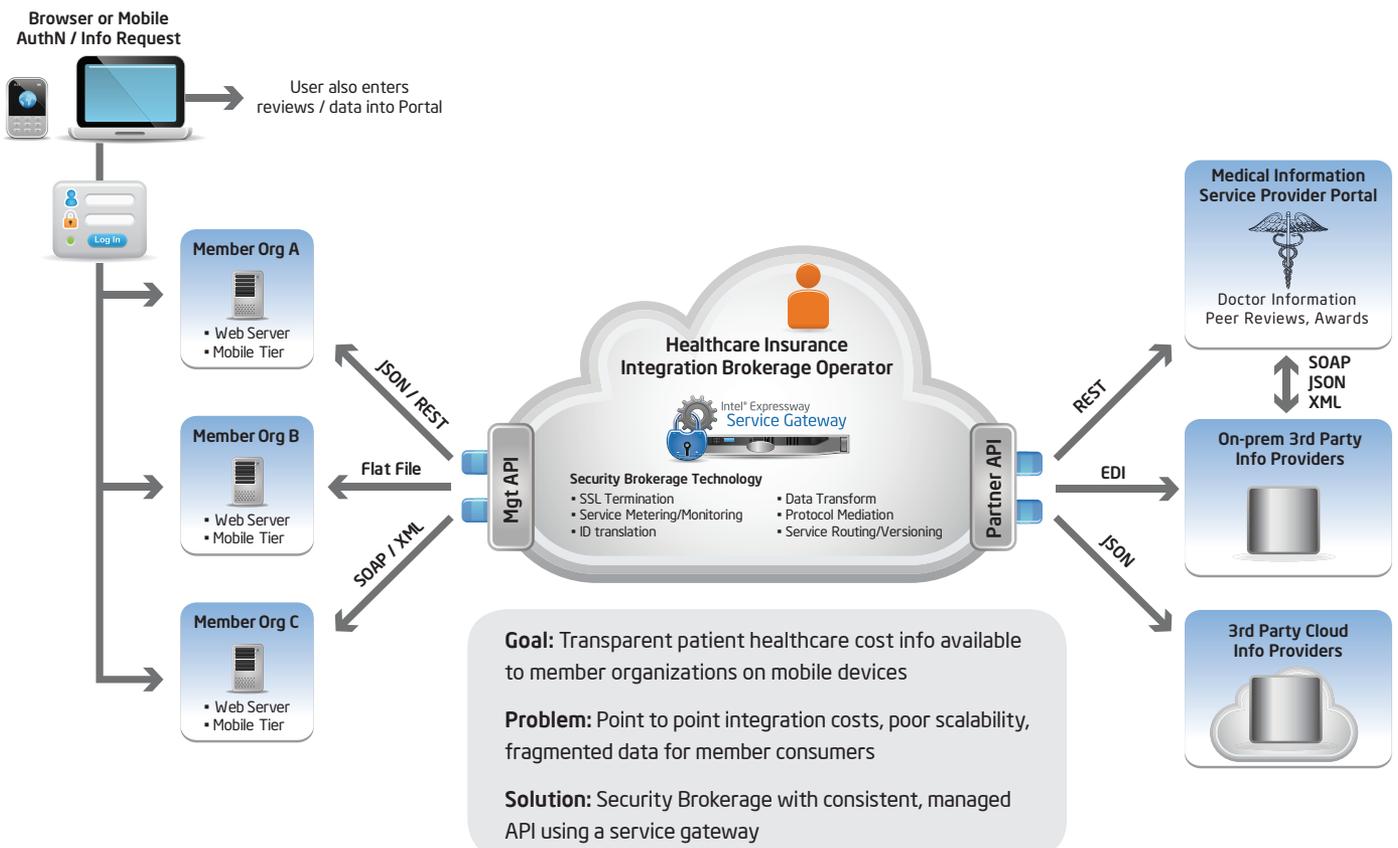 Blue Cross Blue Shield member company level which needs to be propagated to BCBSA and then to vitals.com, patient review and cost tools. Only authenticated Blue members can write reviews.

Mobile Device Access

A higher consumer demand for accessing information from their mobile devices necessitated the development and maintenance of a mobile website, mobile apps, and support for iPhone and Android phones. This also added an additional requirement to support JSON, REST, AJAX, and other light-weight protocols in the front end and to convert them to SOAP messages on the backend. To perform these functions, Intel® ESG enabled mobile access with protocol mediation and data transformation.

> BCBS members are able to access quality healthcare information such as a list of in-network doctors, specialty, office locations, patient reviews and awards at no cost from a Cloud-based syndicated service regardless of their membership in a specific BCBS company's health care plan.

Figure 1: Integration and Security Brokerage

Browser or Mobile
AuthN / Info Request

User also enters reviews / data into Portal

Member Org A
- Web Server
- Mobile Tier

Member Org B
- Web Server
- Mobile Tier

Member Org C
- Web Server
- Mobile Tier

JSON / REST

Flat File

SOAP / XML

Mgt API

Healthcare Insurance Integration Brokerage Operator

Intel® Expressway
Service Gateway

Security Brokerage Technology
- SSL Termination
- Service Metering/Monitoring
- ID translation
- Data Transform
- Protocol Mediation
- Service Routing/Versioning

Partner API

REST

EDI

JSON

Medical Information Service Provider Portal

Doctor Information Peer Reviews, Awards

SOAP JSON XML

On-prem 3rd Party Info Providers

3rd Party Cloud Info Providers

Goal: Transparent patient healthcare cost info available to member organizations on mobile devices

Problem: Point to point integration costs, poor scalability, fragmented data for member consumers

Solution: Security Brokerage with consistent, managed API using a service gateway

API Security and Monitoring

BCBSA did not want to expose their APIs without application-level threat protection on the open Internet. In addition, they also wanted to monitor and control the API usage based on usage and Service Level Agreements (SLA) with their providers. Intel® ESG is now able to detect and stop API requests with harmful content such as malicious code, XPATH and SQL Injection, Denial of Service (DoS), and other common attack mechanisms.

> Intel® ESG was the key technology in enabling BCBSA to act as a brokerage, pulling together data from various sources and enabling its use to hundreds of mobile device users in a secure fashion.

Service Integration

Currently BCBSA communicates with the IT systems of the various BCBS companies using large flat file data transfers and legacy protocols. For instance, a flat file is used to let member companies in Illinois know which physicians are in the network in California. BCBSA would like to move to a real-time SOA for this integration while still maintaining the file drop capability for those companies and IT systems that cannot migrate. While this capability could be implemented with custom software, BCBSA will be poised to offer this effortlessly, as Intel® ESG can provide this out of the box as a configured policy with massive scalability, saving costs and development resources.

Intel Provides Technology Enablement to run a Cloud Service Brokerage

The high level BCBSA deployment architecture is shown in Figure 1. Users are shown on the left accessing member organization data via browsers or mobile devices. Further, authenticated subscribers can enter reviews using the API platform exposed by BCBSA. In the center of the diagram, the healthcare brokerage exposes APIs over SOAP, REST, or flat files and enables a security brokerage with capabilities including SSL, service monitoring, identity translation, data transformation, protocol mediation and service routing. The brokerage also acts as an integration brokerage by connecting to third party service providers and medical portals over REST and EDI exchanges.

Conclusion

By streamlining the integration between the member organizations and a 3rd Party Partner with API Management & Versioning, Secure API access with Identity Federation, and API Monitoring, BCBSA has provided a value added Cloud Service Brokerage that has simplified security, integration, and aggregation of healthcare information and enabled users with mobile devices to access this information.

> Intel® ESG was able to onboard multiple BCBS companies within weeks as opposed to a long drawn out custom IT coding project, saving development costs and accelerating time-to-deployment with no changes to existing application code and architecture.

SOLUTION PROVIDED BY:

Intel® Expressway
Service Gateway

More Information and Partner Program Details

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