



Aurion: an NwHIN Gateway Technology

Alembic Foundation

Connecting California to Improve Patient Care

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WWW.ALEMBICFOUNDATION.ORG

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Alembic Foundation: An Initiative for Better Health Data Sharing and Personal Data Management

- **Nonprofit organization (501(c)(3))**
- **Transformation through disruptive innovation using**
 - open processes in
 - open communities to create
 - open technologies that are contributed to the public commons.
- **Nurturing the Commons**
 - Open Source Custodian
 - Open Source Community Start-up and management
 - Open Source Testing and Certification
 - Custodial Agent Operations



Alembic Foundation: An Initiative for Better Health Data Sharing and Personal Data Management

The Foundation aims to accomplish this in two ways:

By serving as a neutral forum to foster collaboration with organizations and individuals from industry, the public and government to confront and solve real-world challenges

By providing a basic toolset for communities of interest to organize themselves, define their project(s) and determine the relevant governance structure that assures success

What is Aurion?

Aurion is:

- **An Alembic Foundation Community**
- **An Open Community-based Health Information Exchange (HIE) Software Project**
- **An Open Source software implementation of NwHIN service specifications supporting the secure interoperable exchange of health information**
- **An HIE Gateway**
- **An Enterprise Solution**
- **A CONNECT evolution**



Aurion: An Alembic Foundation Community

- **Communities**
 - Self-organizing, self governing groups of like-minded individuals and organizations working to solve specific business challenges
- **Projects**
 - Focused initiatives undertaken by communities to produce technologies
- **Technologies**
 - Solutions developed in projects by communities
- **The Commons**
 - Open technologies released under licensing schemes to facilitate widespread adoption and use



Aurion: An Open Community-based HIE Software Project

- **Aurion Community**
 - Chartered Alembic Foundation Community
 - Open membership
 - Board of Governors
 - Meritocratic Software development community
 - Community Website: <http://aurionproject.org/>
- **Aurion Software Development**
 - Volunteer developer community
 - Currently 18 members from 5 different companies with commit privileges
 - Agile software development lifecycle
 - 3 month release cycles
 - 2 week sprint cycles
 - Developer Resources: <http://development.aurionproject.org/sf/projects/aurion>
- **Aurion Ecosystem**
 - Companies providing support and maintenances services available on the website

Aurion: An Open Source Implementation of NwHIN Service Specifications

- Aurion is released under the BSD Open Source Software
 - Freely available for download
 - Source code and binaries available for each release on the Aurion release webpage
 - For Aurion 4.0 see Installation options:
<http://wiki.aurionproject.org/display/R40/Release+4.0+Home>
- Aurion implements the NwHIN Service Specifications
 - Each Aurion release documents the NwHIN Specifications implemented in the release notes
 - For Aurion 4.0 see:
<http://wiki.aurionproject.org/display/R40/NHIN+Specification+Reference>

Aurion: An HIE Gateway Enterprise Solution

- **HIE Gateway**
 - Designed to sit at the “border” of an organization for business to business health information exchange
 - Designed to participate in the NwHIN by installing NwHIN issued certificates and upon on-boarding services are discoverable by other NwHIN participants
 - May be used for regional or local health information exchange
- **Enterprise Solution**
 - Designed to support small to large enterprises
 - May be installed and managed locally
 - May be implemented as a cloud solution

Aurion Genealogy: Aurion's Link to CONNECT

- **Aurion is based on CONNECT**
- **Aurion releases identical to CONNECT releases of the same number**
 - Aurion 2.4
 - Aurion 3.0
 - Aurion 3.1
- **Aurion 4.0 is an evolution of CONNECT**
 - Aurion 4.0 addressed outstanding CONNECT issue tracker items
 - Added additional functionality
 - For details see: <http://wiki.aurionproject.org/display/R40/Release+Notes>

Aurion Technical Approach

- **Aurion has 3 major architectural components**
 - **Gateway**
 - Implements the NwHIN Service Specifications
 - **Adapter Framework**
 - SDK for integrating existing systems (EHRs Practice Management Systems, etc)
 - Enterprise Service Components
 - **Universal Client Framework**
 - Framework for developing new applications that leverage the capabilities of the Enterprise Service Components

Aurion Implements NwHIN Exchange Specifications and Interoperates with the NwHIN Operational Infrastructure

Transaction Profiles

Utilize exchange patterns for specific transactions

CMS CARE
Doc Submission

CDC GIPSE
HIEM

MITA
Eligibility Verification

Discovery and Information Exchange Services

Rely on foundations to enable exchange patterns

Discovery

Patient
Discovery

Services
Registry

Pull

Query & Retrieve
Docs

Eligibility
Verification

Push

Doc
Submission

Pub/Sub

HIEM

Messaging, Security, & Privacy Foundations

Enable private, secure, and interoperable communication of health information

Messaging Platform

Authorization
Framework

Access Control Policy

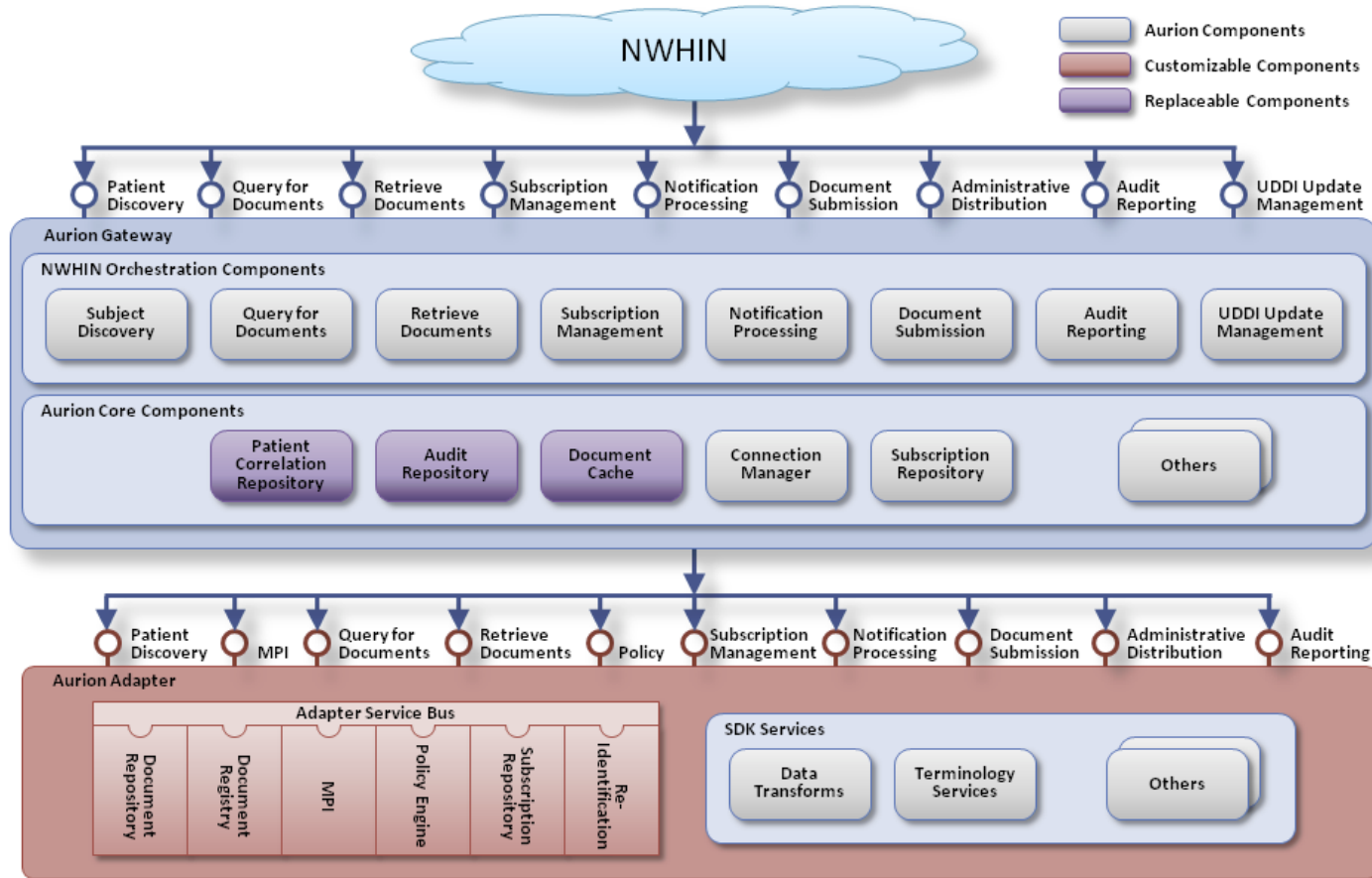
Operational Infrastructure

Runtime systems that support the NHIN Limited Production Exchange

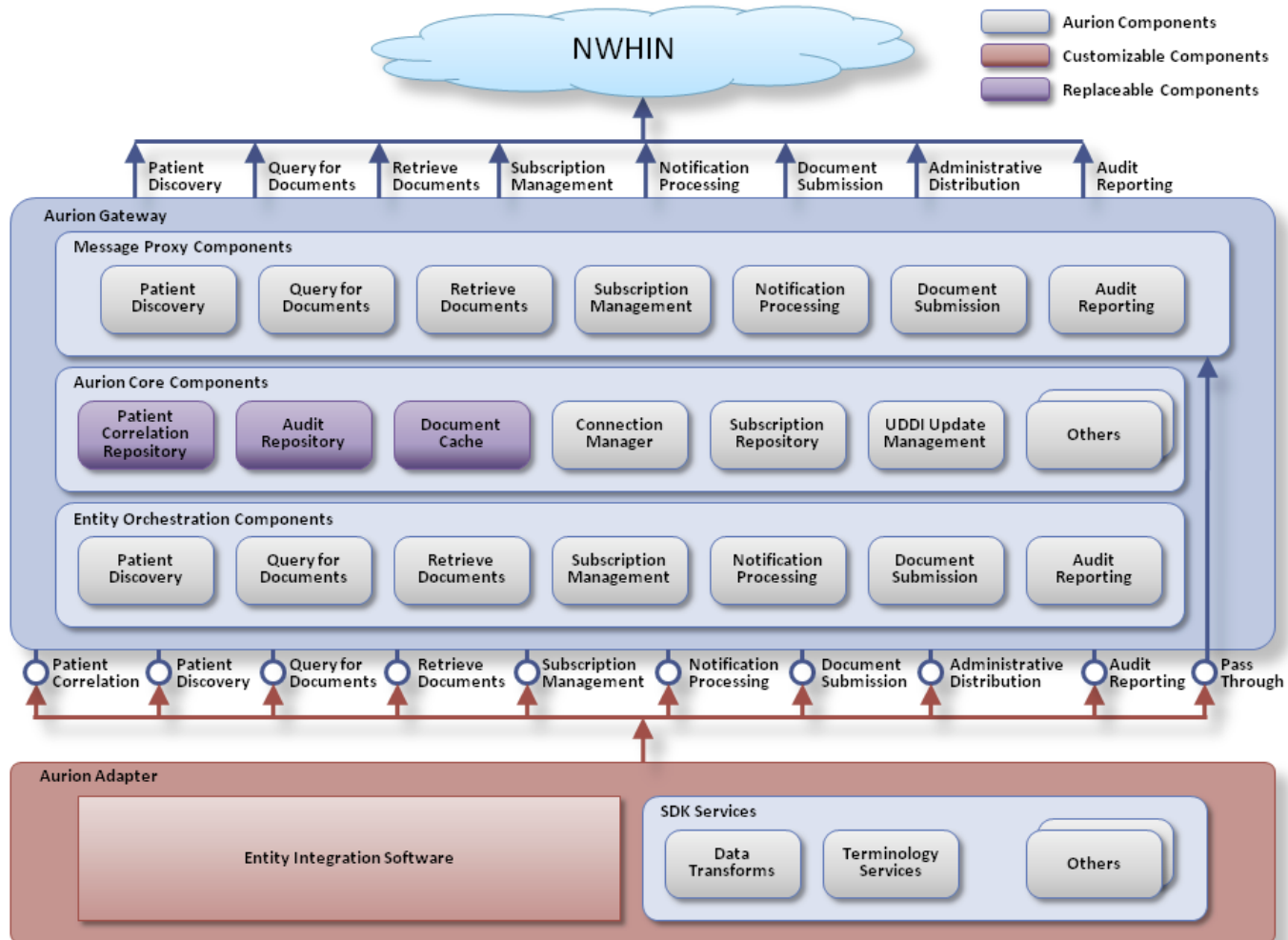
Security Infrastructure
(managed PKI)

Web Services Registry

Aurion Architecture: Message from NwHIN



Aurion Architecture Message to NwHIN



Aurion Development Environment Version 4.0

Item	Version
Java JRE/JDK	1.6 Update 25 (32-bit version)
GlassFish	2.1.1
NetBeans	6.7.1
Metro	1.5
MySQL	5.1.41
SoapUI	3.5.1
NSS FIPS Library	3.12.4

Aurion Technical Requirements

- **Download Software**

- Choose Source Code or Binaries
- Pick OS: Windows, Solaris or Linux/JBOSS
- Download Third Party Components (eg Glassfish)
- Select Enterprise Service Component Plug-Ins as needed
- Aurion Validation Test Suites

- Install Software in your environment

- Install Certificates

- Perform Validation Testing

- For details on using Aurion to support HIE see:

[http://wiki.aurionproject.org/display/R40/Using+the+Aurion+Solution+to+Support+Health+Information+Exchange+\(HIE\)](http://wiki.aurionproject.org/display/R40/Using+the+Aurion+Solution+to+Support+Health+Information+Exchange+(HIE))

Aurion Licensing and Support Model

- **Aurion is made freely available under the BSD License**
 - See: <http://aurionproject.org/products/licensing>
- **Aurion Support Model**
 - Support and Maintenance provided by Aurion Ecosystem
 - See:
- **Budgetary Estimates**
 - Negotiate with Aurion Ecosystem Business Partners
 - If specific functionality required on a specific timeline
 - Negotiate priority with community
 - Hire a contractor to develop
 - Contract with Alembic Foundation to develop and deliver

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