EHR.Network

Open I Scalable I Private I Secure

Services

by

HealtheLife

EHR.Network
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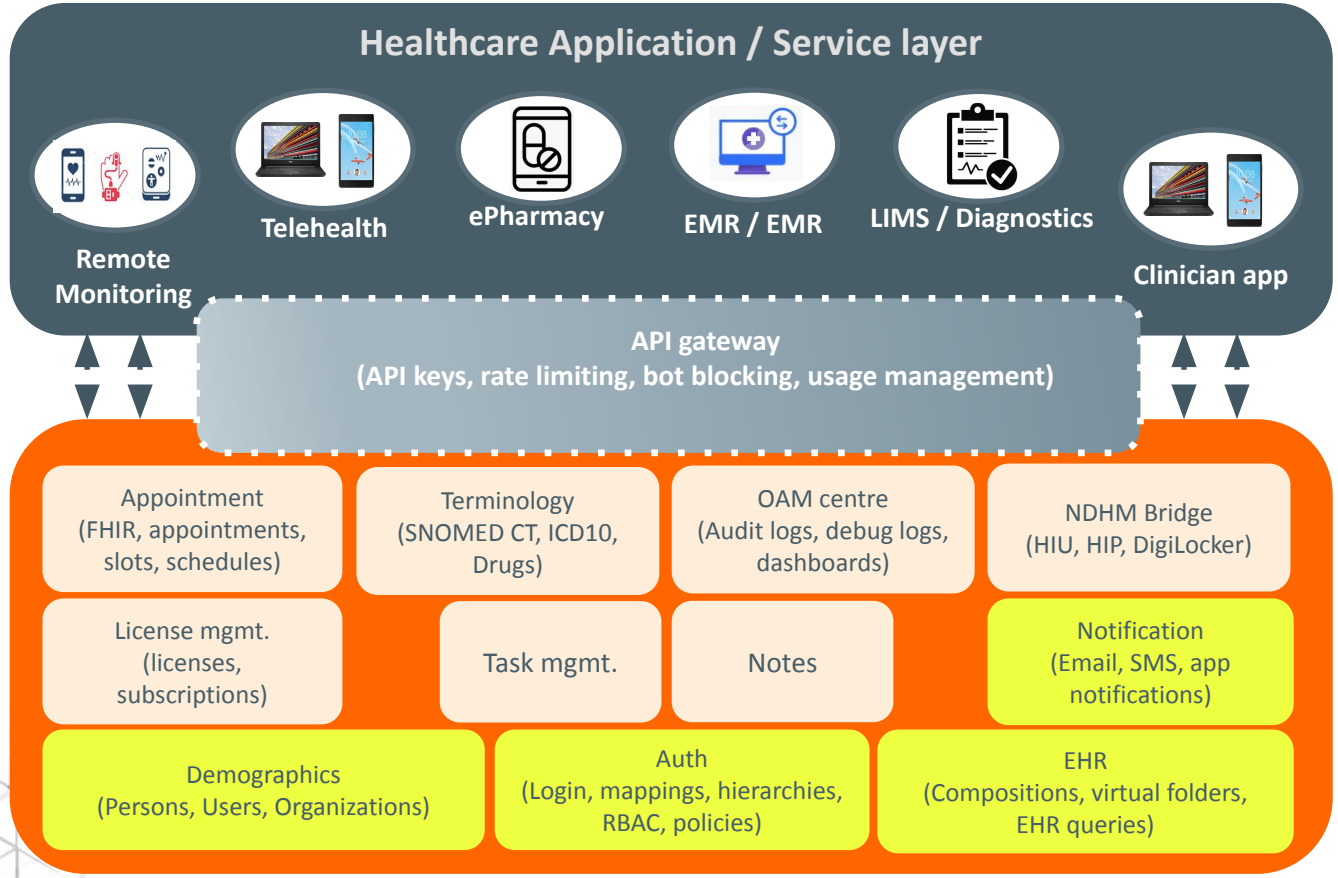
EHR.Network for Digital Healthcare solutions



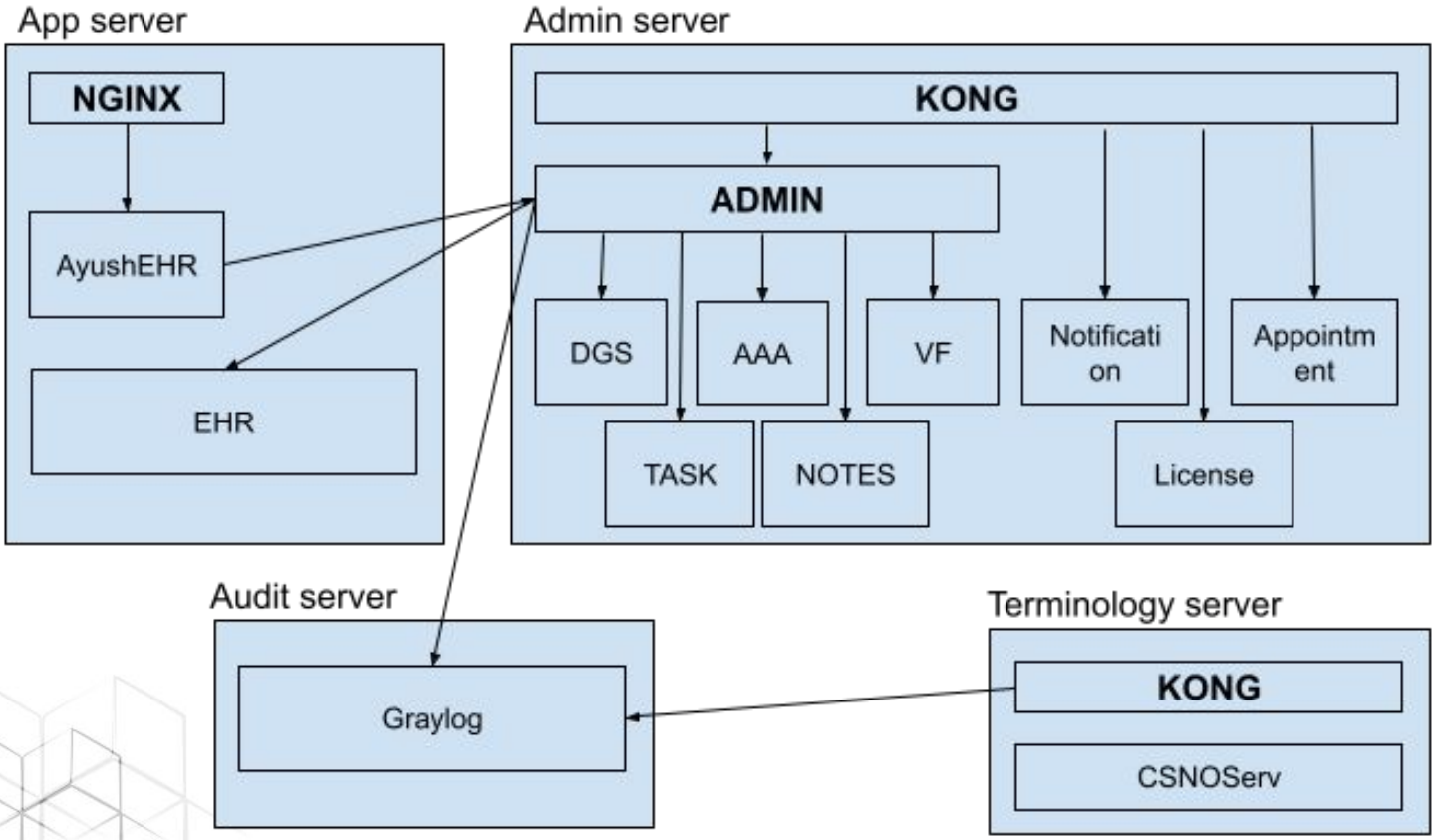
Services list

- Access Gateway(aka Admin Service)
- AAA
- Demographics (a.k.a DGS)
- Virtual Folder
- EHR
- EHR Service
- Notification

Services list - contd….

- Task Manager
- Notes
- License Management
- ABDM connect
- Appointment
- Terminology
- Audit service

Deployment of the services



Access Gateway(aka Admin Service) :

- Serves as the entry point/gateway for all the API requests which land on the platform shielding all other services beneath.
- On a successful authorization, it routes the request to the specific service internally as required to return the response.
- Implements multi-service call flows

AAA :

- AAA stands for Authentication, Authorization and Audit
- This service validates and verifies:
  - The Authorization token provided.
  - If the person/user is authorized to perform certain operations.
  - The authorization is analysed based on the role and the profession of the user.
- Manages user/person/organisation sensitive access control information.

Demographics (aka DGS) :

- Is responsible to manage the demographic information of the person and organization.
- Allows unique identification of patient with multiple external IDs.

VirtualFolder:

- Virtual folders are digital versions of physical folders that are used to store all your paper health records.
- It primarily provides the details regarding the type, reason for creating, to whom the record belongs to(person), the organization responsible for creating it and IDs of the compositions(EHR data) and not the actual data.
- Virtual folders provide a means to group clinical data sets(compositions) as per the requirements of different applications.
- Virtual folders allow a hierarchy structure.

EHR

- Stands for Electronic Health Records.
- EHR follows openEHR standards
- It gives the flexibility to design the clinical model templates
- Stores the clinical models.
- Creates a unique EHRId for each individual.
- This holds all the clinical data created for an individual against EHRId.
- The clinical data can be retrieved by querying using AQL or SQL.
- Implemented using EtherCIS https://github.com/ethercis roadmap to migrate to https://github.com/ehrbase/ehrbase

EHR Query Service

- EHR Service is an middle layer which communicates with EHR from the Access Gateway to fetch the EHR details.
- EHR Service queries on the stored procedures written in the EHR database for better performance.
- Relevant for EtherCIS large data deployment

Task Manager

- Create tasks against a person
- Schedule a task and assign to one or more users
- Track status and monitor progress
- List user task list
- List tasks linked to a person

Notes

- Used to add the notes against a person
- For use in care team collaboration and coordination
- Tag users to the note
- Add searchable hashtags

Notification:

- Unified service for notifications
- Supports following notification types:
  - Email, SMS & Push
- Scheduled & immediate delivery
- Multiple scheduled notifications
- Priority queue

License Management

- License as a Service for Healthcare Applications
- Following are few keywords to get familiar with:
  - Vendor - Indicates the owner of a product
  - Product - The product for which licenses are created.
  - Customer -Indicates the client who wants to buy the product's license from a vendor
  - Order - The request to buy the licenses for the product.
  - licenseKey -Is distributed to the customer for the product.

Appointment

- Create an appointment for an encounter between healthcare participants
- Participants could be practitioners, patient, devices, locations, organizations etc.,
- FHIR 4.x compliant
- Appointment can be created in 2 ways:
  - By creating against the slots previously created as per the schedules provided.
  - By creating providing start and end in the resource.

ABDM

- ABDM stands for Ayushman Bharat Digital Mission.
- This service provides interfaces for applications to share and receive clinical information using the ABDM network.
- The interfaces provided are HIP and HIU.
- In HIU mode, it manages the shared information to comply with the consent terms
- Maps Virtual Folders to ABDM care contexts
- Bridges openEHR clinical data to ABDM FHIR bundles

Terminology

- Terminology service provides APIs for applications to code clinical information using SNOMED-CT and LOINC.
- Some of the things that you can do with the terminology service APIs include:
  - Search for terms to provide a lookup in your application.
  - Get full details of a concept including synonyms & relationships.
  - Explore parents, children and descendants of any concept
  - Search for generic & package medications
  - Look up the generic from a package medication
  - Lookup the ICD10 code for a SNOMED terms. Please note that this will give results only where such a map exists.
- Implemented using C-DAC toolkit
  - https://www.cdac.in/index.aspx?id=hi_hs_medinfo_csno_overview
  - https://www.cdac.in/index.aspx?id=hi_hs_medinfo_loinc_home

Audit service

- Service that can support operational and audit requirements.
- Centralized solution built to open standards for capturing, storing, and enabling real-time analysis of logs.
- Ability to define triggers based on log events.
- Centralized OAM to monitor the deployment.
- Implemented using Graylog - https://github.com/Graylog2

API gateway

- Provides a flexible abstraction layer that securely manages communication between clients and microservices via API.
- API management functionalities
  - APIKey security
  - Usage logs
  - DNS protection
  - Bot detection
  - Rate Limiting
  - Port blocking
- Implemented using Kong https://github.com/Kong/kong

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