



# DATA MATTERS

## Solutions for Secure, Accessible Information

At Imaginea, we have developed a series of solutions to deal with industry-specific data issues, underpinned by our generic offerings.

These are designed specifically to create custom solutions that are reliable, scalable and built for the long-term.

Here are some examples of our work in

**Data Synchronization**

**SEARCH**

**BACKUP & RECOVERY**



## Peer to Peer Sharing of Media Files

*Imaginea built a product named Dekoh to enable sharing of media files, mitigating data piracy.*

### **Solution**


Dekoh, a home grown peer-to-peer sharing / Communication framework, enabled storage, synchronization and collaboration on home storage devices. Essentially, a micro web server, it provided a framework to enable communication between home storage devices. Users were able to view photos, stream music, and use any other custom application written over Dekoh. Media was successfully streamed from the remote machine with no localized repository.

## Mobile: Electronic Health Record (EHR) Synchronization (iOS/Android)

*One of Imaginea's premier customer, a large healthcare enterprise, wanted an EHR solution for mobile that included off-line data entry.*

### **Solution**

We built an EHR application for mobile devices, which optimized storage of data on the devices and leveraged intelligent synchronization to reduce the network bandwidth and latency. With innovative techniques like delta mark, our engineering team could achieve intelligent synchronization of entities between clients and server. Data that was modified after the last delta mark synced got updated.



## MOBILE: EHR Bench Optimization App

*A service company needed a solution to optimally manage its pipeline and bench. The app needed to work with the data cloud store allowing the company to better manage human resources.*

### **Solution**

The HR App provided the functionality to view and analyse human resource utilization integrated to work with the cloud storage, successfully building a dashboard .

## SugarCRM Synchronization (iOS/Android)

*The client needed better access and utilization of the data in their SugarCRM.*

### **Solution**


Sugar on Pancake is a mobile client to access remote SugarCRM server and work with the data. It also supports "offline edit" and "one-touch synchronization" enabling users to work with the app even when they are not connected to SugarCRM server online. The local data changes are pushed to server during synchronization and then the server changes are later pulled into the device.

## Synchronization using CouchDB

*Several Healthcare providers struggle with offline synchronization of data on mobile applications.*

### **Solution**

In order to achieve offline synchronization, the App uses a DB schema as defined at the Couchbase server; and any changes made to the local DB would be synchronized to server by CouchDB agent itself. We have evaluated this solution for our prospective healthcare customers.





# SEARCH

## Healthcare Search Optimization Solution

(Lucene, ActiveMQ)

*Our client needed a powerful search capability. They needed a search functionality around a set of Typologies that include provider-related data, specialty-related data, and procedure-related data, etc. The search cannot assume any format for input. It should also have option for location and radius based search, which means there will be millions of documents to search, yet optimal response time must be ensured. The size of data varies somewhere between 25 to 40 GB per typology.*

## **Solution**

We implemented a Lucene-based search for the solution. The index was built based on Lucene and it was composed of the required typologies. These indices were built to be tolerant to spelling errors, partial words, phrase searches, etc. We also allowed a dynamic algorithm to pick up the typology that was most suited to answer a query, based on the custom Lucene score and the information we had about the context of the person who searched. We provided support for geospatial search for specialities and providers while ensuring millisecond responses to the user.


## **Healthcare Rx/Dx Optimal Search**

(Solr, MySQL, iOS, Android)

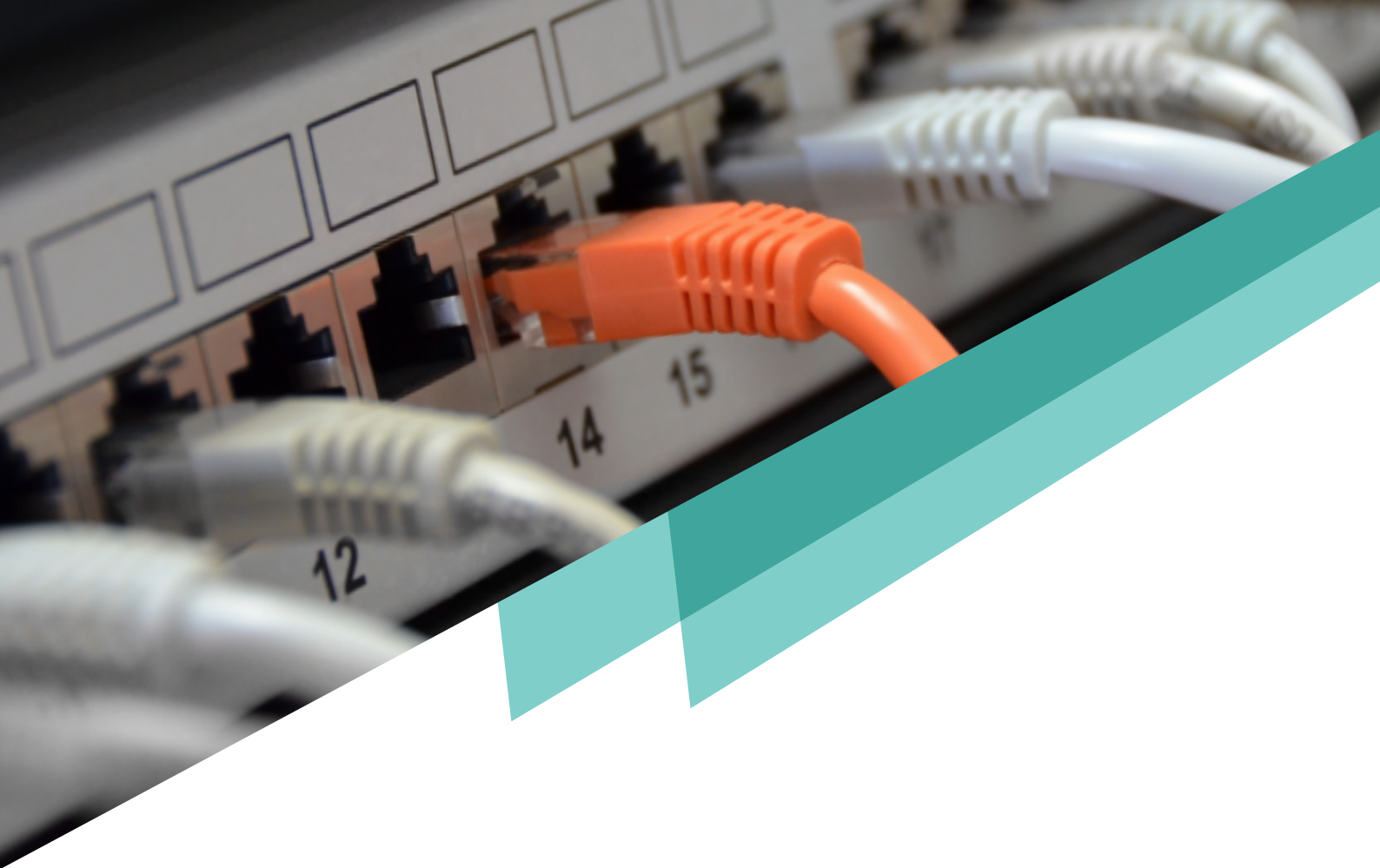
*A leading healthcare company provides an extensive registry of Rx (Drugs) and Dx (Medical conditions). An already existing EHR application that was accessed by thousands of medical professionals required search functionality for patients and related records with low latency and high scalability with optimal response time.*

## **Solution**

We set up Solr cluster for the search solution. Similar to the Lucene-based search, these indices were built to be tolerant to spelling errors, partial words, phrase searches, etc. Support for geospatial search was also provided for specialities and providers. The solution provided millisecond responses to the user.







# BACKUP & RECOVERY

## Backup, Cloud Archival and Data Protection

*A mid-size company that had built its own private cloud based on OpenStack with Swift object store, needed to backup terabytes of data per month. The data was spread across HR, finance, version control, databases and external cloud data.*

### **Solution**

Imaginea provided a redundant backup using Bacula on HP SAN and ReadyNAS. This was also archived in AWS S3 for multi-region back up. Bacula agents resided on the datastore which needed to be backed up and communicated with the Bacula server for backup. The solution crafted an intelligent back up of incremental data, optimizing time and resources.



## ABOUT IMAGINEA

Imaginea Technologies is a solutions-driven organization that helps its customers drive innovation through disruptive technologies to capture new opportunities in the marketplace.

It provides product engineering services to independent software vendors, enterprises and online SaaS businesses looking for reliable technology partner. Services stretch end to end, from interaction design to development, testing and managing clouds.

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