

Project Design Phase-II Technology Stack (Architecture & Stack)

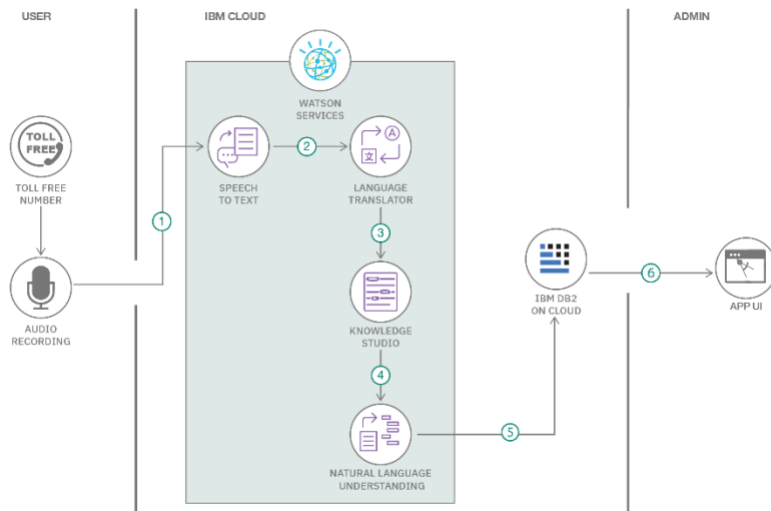
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| Date | 29 th June 2025 |
| Team ID | LTVIP2025TMID31063 |
| Project Name | Importing and securing Data in servicenow |
| Maximum Marks | 4 Marks |

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- Provide infrastructural demarcation (Local / Cloud)
- Indicate external interfaces (third party API's etc.)
- Indicate Data Storage components / services
- Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---------------------------------|---|---|
| 1. | User Interface | Service Portal for admins and users to upload/import data. | HTML, CSS, JavaScript in ServiceNow (UI16/Service Portal) |
| 2. | Application Logic-1 | Transform Maps and Scripts for data validation, mapping, and transformation | ServiceNow Transform Scripts (JavaScript) |
| 3. | Application Logic-2 | Data policies and Business Rules to enforce data integrity | ServiceNow Business Rules, Data Policies |
| 4. | Application Logic-3 | Notification workflows for success/failure of imports | ServiceNow Flow Designer / Workflow Engine. |
| 5. | Database | Tables where imported data is stored securely with ACLs | ServiceNow MySQL-based internal database. |
| 6. | Cloud Database | Optional cloud archive for backup or compliance | IBM Cloudant/AWRDS |
| 7. | File Storage | Temporary storage for uploaded CSV/Excel files before imports | IBM Block Storage ,S3,or ServiceNow Attachments. |
| 8. | External API-1 | Fetching reference data or validating data during import. | REST APIs with HRIERP Systems. |
| 9. | External API-2 | Identity/Authentication integrations (SSO, IAM | LDAP,SAML,OAuth providers |
| 10. | Machine Learning Model | Optional anomaly detection on imported data (e.g., detect unusual patterns) | Python-based ML models(if extended outside SN) |
| 11. | Infrastructure (Server / Cloud) | Deployment and integration infrastructure for ServiceNow | ServiceNow SaaS(cloud-native)+optional MID Serve |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|--|---|
| 1. | Open-Source Frameworks | List the open-source frameworks used | Technology of Opensource framework |
| 2. | Security Implementations | List all the security / access controls implemented, use of firewalls etc. | e.g. SHA-256, Encryptions, IAM Controls, OWASP etc. |

| S.No | Characteristics | Description | Technology |
|------|-----------------------|---|-----------------|
| 3. | Scalable Architecture | Justify the scalability of architecture (3 – tier, Micro-services) | Technology used |
| 4. | Availability | Justify the availability of application (e.g. use of load balancers, distributed servers etc.) | Technology used |
| 5. | Performance | Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc. | Technology used |

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>