**Project Design Phase Solution Architecture**

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| Date | 26 June 2025 |
| Team ID | LTVIP2025TMID53123 |
| Project Name | ResolveNow: Your Platform for Online  Complaints |
| Maximum Marks | 4 Marks |

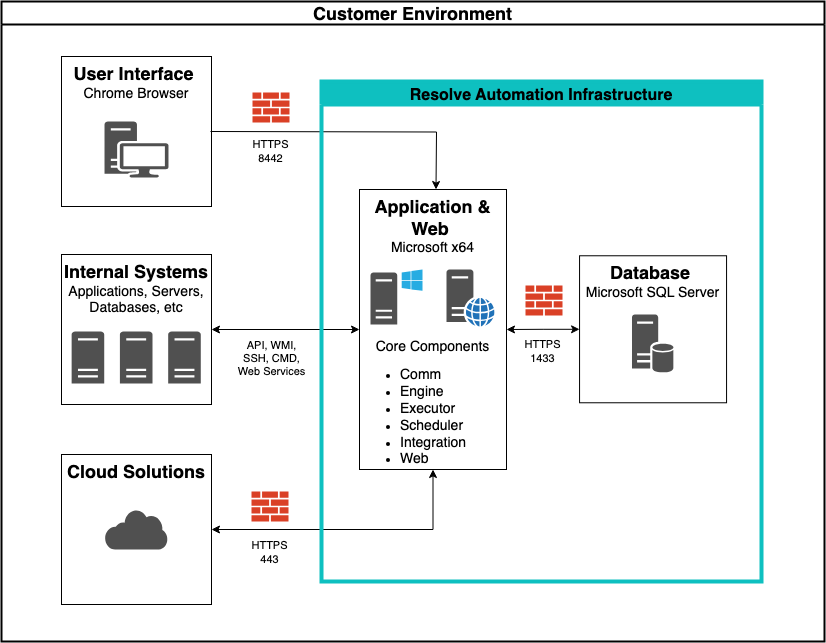
**Solution Architecture – ResolveNow**

The solution architecture for **ResolveNow** bridges real-world complaint handling challenges with a scalable, tech-driven system. It ensures the platform is structured, user-centric, and capable of growth.

**Goals of the Architecture:**

* Deliver the **best-fit technology solution** for managing and resolving user complaints.
* **Visualize and describe** the system's components, interactions, and behaviors to all stakeholders.
* **Define core features**, development phases, and technical requirements for each module.
* Ensure the solution is **modular, scalable, and maintainable** for future upgrades or integrations.

**Solution Architecture Diagram:**

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**Figure 1**: Architecture and Data Flow of the ResolveNow Application

**Key Architecture Components:**

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| **Layer** | **Technologies / Responsibilities** |
| **Frontend** | Built using **React.js**, styled with **Material UI** and **Bootstrap** for responsive design. |
| **Backend** | Developed in **Node.js** with **Express.js**, responsible for APIs, routing, authentication, etc. |
| **Database** | **MongoDB** for storing users, complaints, chats, and feedback in structured collections. |
| **Authentication** | **JWT** based secure login for users, agents, and admins. |
| **Real-time Chat** | Enabled via **Socket.IO** to allow users and agents to communicate on complaint threads. |
| **Email/SMS Alerts** | Uses **Nodemailer** and optionally **Twilio** for notifications and updates. |
| **Hosting** | Frontend and backend can be deployed on **Vercel**, **Render**, or **MongoDB Atlas** (cloud DB). |

**Reference**

**AWS Blog – Voice Applications in Clinical Research (Architecture and Design Considerations)**

[https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-](https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/) [by-ai-on-aws-part-1-architecture-and-design-considerations/](https://aws.amazon.com/blogs/industries/voice-applications-in-clinical-research-powered-by-ai-on-aws-part-1-architecture-and-design-considerations/)