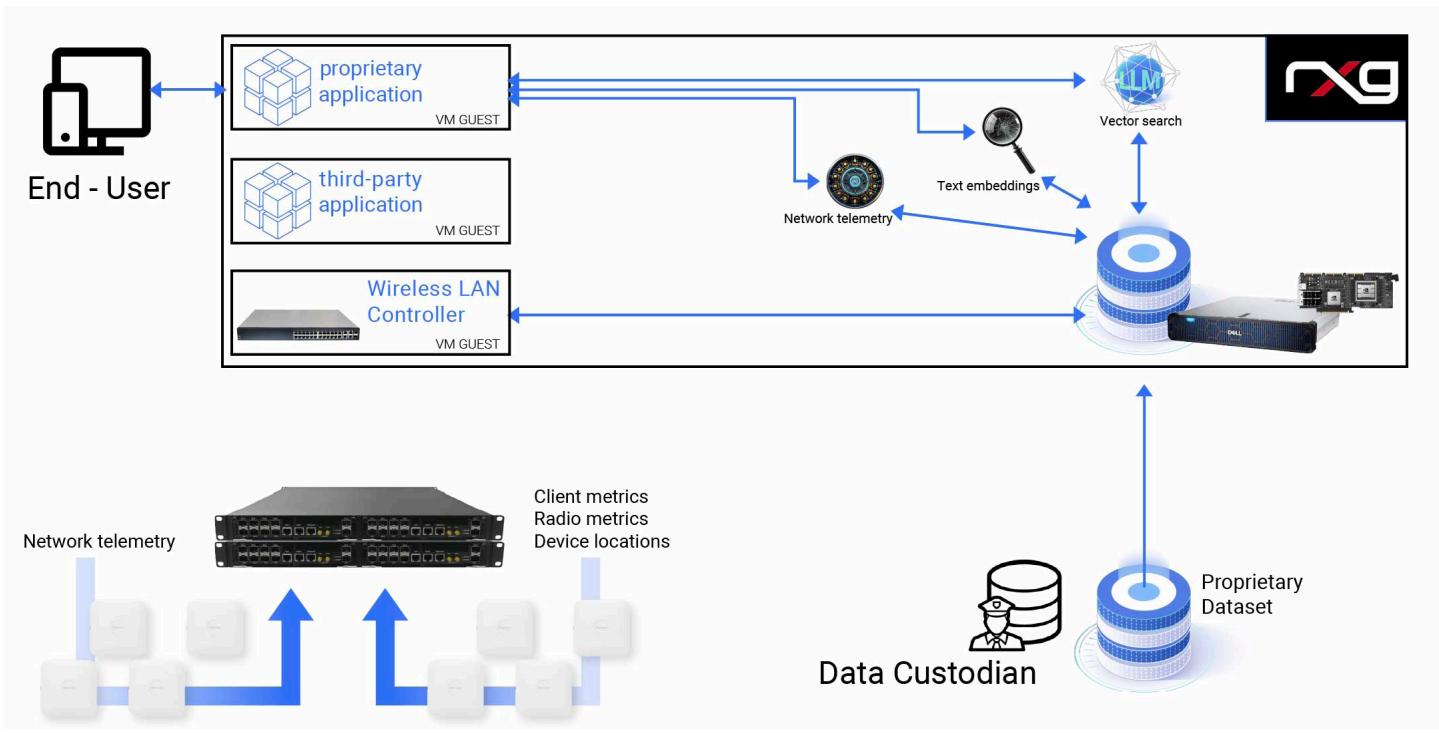




LLM MDU Solution

WITH THE REVENUE EXTRACTION GATEWAY



For property managers in multi-dwelling units (MDUs), multi-tenant facilities (MTU/MXU), hospitality venues (HSP), and large public venues (LPV), the ability to provide immediate, accurate, and secure information is paramount. LLM AI solutions offer efficient ways to interface with tenants and guests, but several challenges arise when considering using a Retrieval Augmented Generation (RAG) LLM solution, such as Microsoft Bing Copilot, for business applications, especially with regard to proprietary datasets. On-prem edge LLM AI solutions are superior for handling proprietary datasets for three key reasons:

- **Privacy and Security:** Proprietary datasets often contain private data, including personally identifiable information (PII), necessitating stringent role-based access control and segmentation. Ensuring this level of security is more feasible with on-prem solutions.
- **Data Congruence:** The proprietary dataset is vast and continuously evolving. Maintaining congruence and up-to-date information is critical and more manageable with an on-prem solution.
- **Cost Efficiency:** The recurring costs associated with storing, decrypting, analyzing, and operating an LLM can be extraordinarily high. On-prem solutions help mitigate these expenses, offering a more cost-effective approach to managing proprietary datasets.

These factors highlight the need for an on-prem edge LLM AI solution to efficiently and securely handle proprietary business data.

Our innovative on-prem Edge LLM AI product integrates a RAG mechanism to deliver unparalleled accuracy and relevance. At its core, a sophisticated text embedding engine processes user inputs, converting them into high-dimensional vectors. These vectors are passed to a cutting-edge vector similarity search system, efficiently retrieving pertinent information from our proprietary dataset. The system then reformats the relevant data into contextual information which is fed into an open-weight LLM. Optional side-chat strategies can refine and enhance the final output. The diagram above illustrates the flow and interaction of these components within the solution.

This on-prem edge LLM AI solution is purpose-built to fulfill the requirements for digital concierge services for MDUs, MTU / MXUs, HSPs, and LPV networks. The process begins by loading data provided by the property manager into the local dataset. Our rXg software automatically generates text embeddings and stores the resulting vectors in the integrated vector database.



When a resident or guest asks a question, the system performs the previously described text embedding calculation on the query, ultimately feeding the prompt engineering system for LLM context generation. The additional context from the locally stored proprietary dataset enhances the prompt engineering process, enabling the LLM to provide accurate and helpful responses to common inquiries. Our system can quickly answer frequently asked questions about such topics as:

- Community Events
- Maintenance Schedules
- Property Regulations
- Neighborhood Tips

The digital concierge service is not limited to general information questions, however. Our on-prem vector database can store large amounts of rapidly changing proprietary data and excels at leveraging network telemetry. This functionality provides near real-time information regarding radio metrics and client metrics, offering immediate insights into client experiences, network usage, and basic client locations. By collecting and analyzing this telemetry data, our solution can:

- **Understand Client Experience:** Monitor how clients use the network and identify any issues affecting their experience.
- **Track Network Usage:** Gain insights into the volume and patterns of network usage, helping you optimize performance and resource allocation.
- **Determine Client Locations:** Approximate client locations based on their proximity to wireless access points. When within the range of multiple access points, precise trilateration of client device locations is possible.



This integration of real-time network telemetry with our on-prem vector database not only enhances the operational efficiency of MDU, HSP, and LPV networks but also contributes to a more tailored and responsive digital concierge service for residents and guests. Some examples of the kinds of questions that our system can answer that depend on this telemetry data include:

MDU / HSP SCENARIOS

- **Gym Usage:** "When is the best time to go to the gym when there will be the least people?"
- **Pool Activity:** "When is the busiest time at the pool on weekends?"

MTU / MXU SCENARIOS

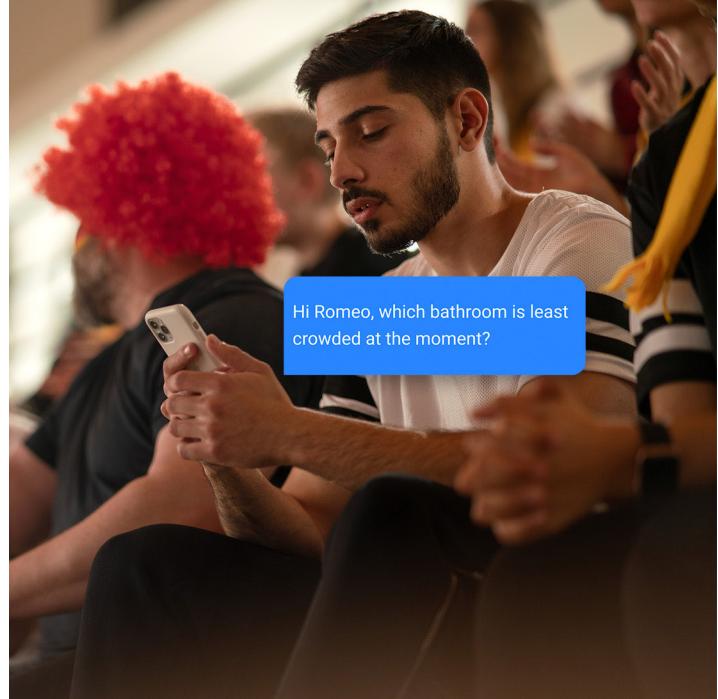
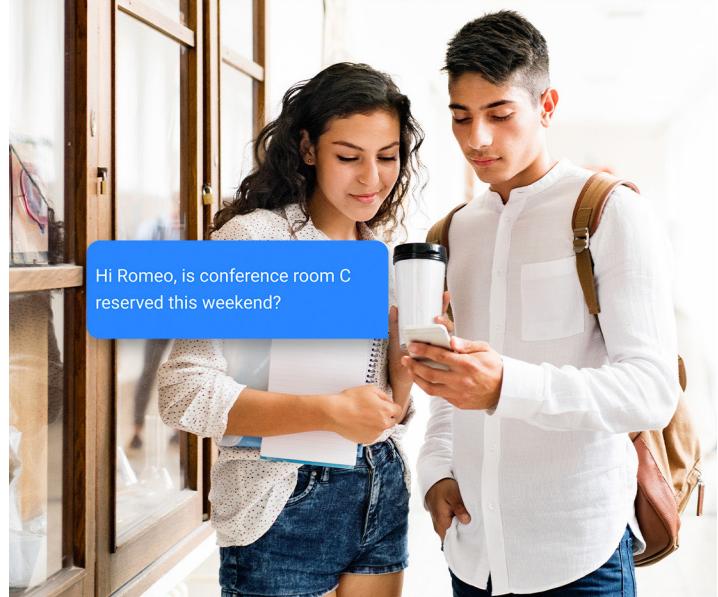
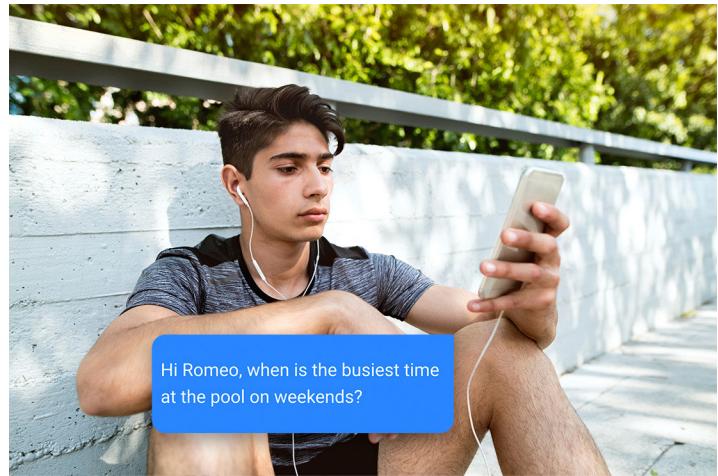
- **Coworking Space Availability:** "Are there any free desks at the coworking space right now?"
- **Conference Room Reservation:** "Is conference room C reserved this weekend?"

LPV SCENARIOS:

- **Bathroom Crowds:** "Which bathroom is least crowded at the moment?"
- **Concession Stand Lines:** "Which concession stand has the shortest line right now?"

Leveraging network telemetry to provide answers to these questions, enhances the convenience and satisfaction of residents, guests, and tenants in these environments and yields immediate insights into client experiences, network usage, and precise client locations. This, in turn, enhances operational efficiency alongside user satisfaction.

Integrating proprietary data handling, real-time telemetry, and advanced LLM technology, our solution stands out as a superior choice for businesses managing large and evolving datasets. By delivering a more responsive and personalized service to users, our on-prem edge LLM AI solution not only meets but exceeds the requirements for modern digital concierge services, while ensuring high levels of security, data congruence and cost efficiency.





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