

Semantic-Edge

Generative AI for field operations



Making quick, well-informed decisions is mission critical for federal agencies and organizations in the field. Yet the modern technologies and tools facilitating these decisions are complex, with potentially thousands of potential points of failure. These risks can lead to mission delays and even failures. Semantic-Edge mitigates that risk with state-of-the-art generative AI workflows. By providing users with the ability to search and analyze all of their data, documents, manuals, APIs and more, users can navigate novel issues and resolve them on the fly.

Key features

Generative AI: Given a natural language question, Semantic-Edge searches through millions of documents in milliseconds to generate context-dependent responses. It is the comprehensive solution for document search, translation, summarization and question-answering, even in Denied, Disrupted, Intermittent and Limited-bandwidth (DDIL) environments or at the tactical edge.

Zero-dependence: Semantic-Edge operates entirely on the user's device to provide data protection and portability. That means zero dependence on the cloud, data centers or even internet connectivity.

Minimal hardware requirements: Semantic-Edge comfortably fits on a laptop and can be configured to run on the GPU or CPU.

Seamless integration and extensibility: With a microservice architecture and design, Semantic-Edge integrates smoothly with a variety of applications and systems, enhancing interoperability and offering a plug-and-play experience for developers. It robustly integrates with CXEdge™, oLabs' platform for data management and sensor integration at the tactical edge.

Scalable: Semantic-Edge can handle multiple concurrent users, even when deployed on a mobile, ruggedized edge server adhering to stringent size, weight and power (SWaP) requirements.

Use cases

Semantic-Edge continues to evolve, with ongoing enhancements setting new benchmarks for AI acceleration in field operations. Semantic-Edge has already proven itself through:

Accelerated personnel training: Enabling real-time interaction with technical documents, reducing training time for complex systems.

Rapid data and document exploitation: Transforming vast data into actionable intelligence, critical for informed decision-making in high-stakes, time-constrained scenarios.

If you have a use case unique to your agency or organization, contact oLabs.

Operate on the edge

IBM oLabs™ Semantic-Edge was developed by IBM oLabs. oLabs is home to a team of data scientists, ML engineers, academics, and special operations Veterans focused on operationalizing mission-specific AI and emerging technology solutions for the US Government.

oLabs features a highly experienced cadre of technical solution architects who provide reachback support to ensure their customers' solutions are scalable to meet rapidly evolving needs and technological advances. To learn more, visit ibm.com/oLabs.

