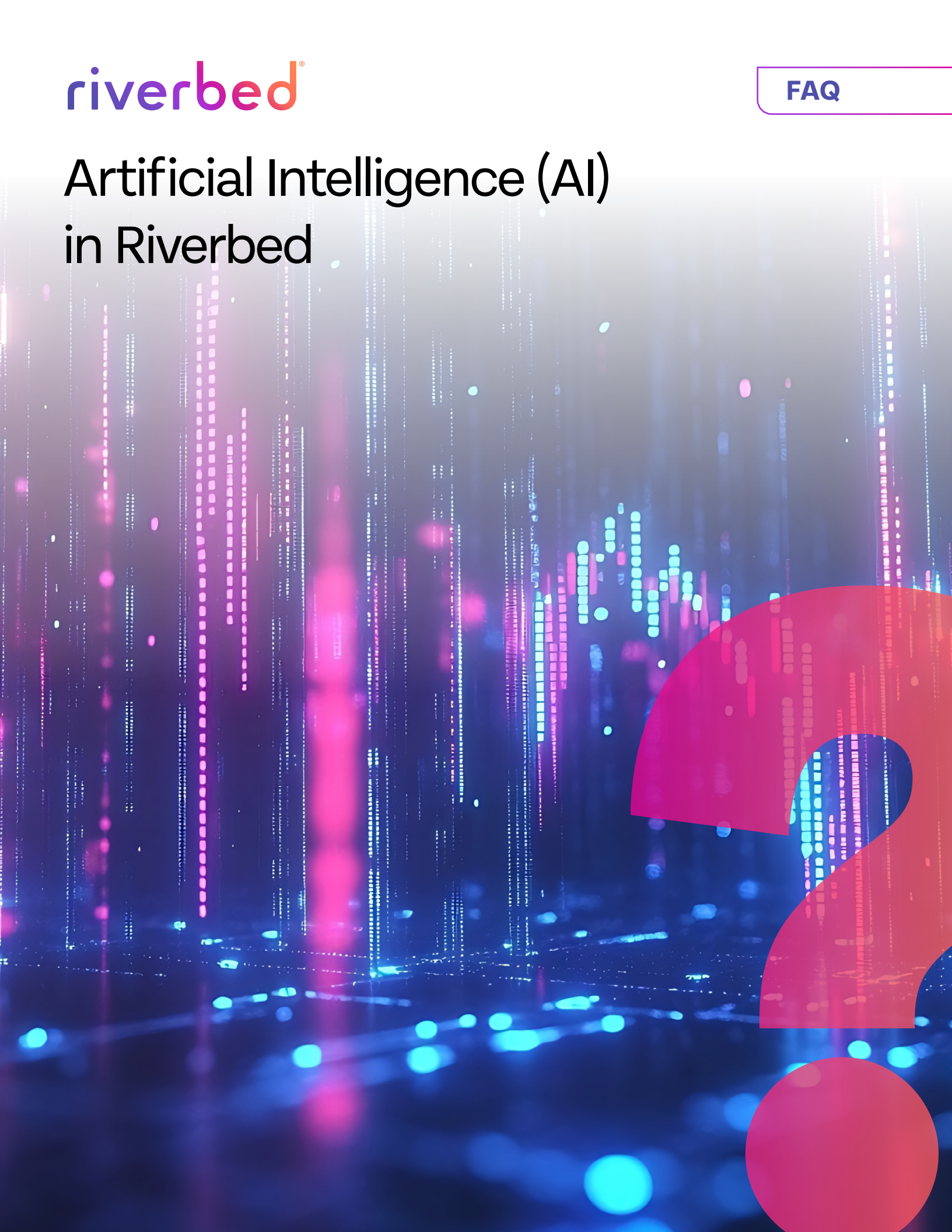


Artificial Intelligence (AI) in Riverbed



Do Riverbed products use AI?

Yes, and the following industry-wide definitions form the basis for understanding how AI is leveraged in Riverbed products or product features to improve the digital experience across its customer environments.

Artificial Intelligence (AI) is a broad field of computer science focused on creating machines that can perform tasks that typically require human intelligence. These tasks include learning, problem-solving, perception, and reasoning. AI is an overarching concept, and technologies like machine learning and natural language processing are subfields of AI.

Machine Learning (ML) is a subfield of AI that enables a system to automatically learn and adapt based on historical and real-time data without being explicitly programmed. ML algorithms use statistical techniques to identify and classify patterns in this data, allowing them to make predictions or decisions based on new, unseen data.

Natural Language Processing (NLP) is a subfield of AI that focuses on the interaction between computers and human language. This enables systems to understand, interpret, and generate human language in a way that is useful and meaningful. NLP is used as a part of GenAI for the interaction between humans and AI.

Natural Language Understanding (NLU) is a subfield of NLP that deals with a machine's ability to understand the intent and meaning behind human language. NLU focuses on interpreting unstructured text or speech, including handling ambiguities and nuances, to accurately grasp the meaning of what is said or written. NLU is used as a part of GenAI for the interaction between humans and AI.

Large Language Model (LLM) is a class of generative AI model trained on massive datasets of text and code. Due to the vast amounts of training data used (typically, the public Internet), they can understand, summarize, translate, predict, and generate human-like text with remarkable fluency and coherence. Examples include models like GPT-4 and Gemini.

Small Language Model (SLM) is a more compact and efficient version of an LLM. SLMs are trained on smaller datasets (e.g., a single enterprise's data vs. the public Internet) and have fewer parameters, making them faster to train and deploy. SLMs are often specialized for specific tasks which makes them suitable for use cases where efficiency, cost, and a smaller footprint are critical.

Retrieval Augmented Generation (RAG) is an AI technique that enhances the output of a generative model, such as an LLM, by retrieving relevant information from a separate, trusted knowledge base. Instead of relying solely on the model's pre-trained knowledge, RAG finds and uses specific, up-to-date information to formulate a more accurate and contextual response, reducing the risk of generating false or outdated information.

AI Reasoning refers to the ability of an AI system to process information, form logical connections, and draw conclusions. It is the core cognitive process that allows an AI to solve problems, make decisions, and achieve goals by applying rules, logic, and knowledge to new situations, much like a human would.

Explainable AI (XAI) is a set of processes and methods that allows humans to understand and trust the results and outputs created by AI/ML. Its goal is to provide clear and coherent explanations for why an AI system made a specific decision or prediction, making its behavior more transparent and understandable to people.

Applications of AI that are based on the above definitions, and relevant to Riverbed products are:



Causal AI uses AI and ML to understand cause-and-effect relationships rather than just correlations. Unlike traditional AI that identifies patterns in data, Causal AI determines what factors are truly responsible for an outcome. This allows them to answer “what if” questions and make more robust decisions by understanding the underlying mechanisms of a system.



Predictive AI is a subfield of AI that uses historical data to forecast future outcomes. It employs statistical algorithms and machine learning models to identify patterns and trends in data, which are then used to make predictions about future events or behaviors. Common applications include network resource availability, potential application performance issues, and risk assessment.



Generative AI (GenAI) is a type of AI that can create new content, such as text, images, audio, video, and code. Unlike machine learning that is used to classify or predict, Gen AI learns the patterns and structures of the training data to create new outputs that are similar to, but not a copy of, the original data. GenAI in the context of IT Ops is typically used to generate reports, make recommendations, explain analysis of observability data, and simplify IT support processes.



Agentic AI is an autonomous system that can perceive its environment, reason, and take a series of actions to achieve a specific goal. Agentic AI differs from other AI models by having the ability to use various tools (e.g., agents, skills, integrations, etc.) to plan, execute multi-step tasks, and adapt its behavior in response to feedback or changes in the environment. An AI agent might break down a complex request into a series of sub-tasks and independently use the various tools available to complete the overall objective.

How is AI/ML used by Riverbed?

Riverbed provides Observability and AI for IT Operations (AIOps) products that leverage Causal AI, Predictive AI, Generative AI, and Agentic AI to automate and simplify IT operations. Riverbed collects observability data such as network device metrics, interface health, and application performance, from within the customer’s enterprise network by using Riverbed’s own products and third-party solutions that may be deployed by the customer. Using AI and ML, Riverbed analyzes and correlates this data to detect incidents. The system provides insights into these incidents and automates various operational tasks, such as incident investigations, ticket management, and remediation. The results of this analysis and automation are displayed to the user via a dashboard and can also trigger additional investigative or corrective actions through automated workflows.

Riverbed does not use any public AI frameworks or models that need training and sharing of data with a service provider.



How does Riverbed use GenAI?

For GenAI to be used in any part of the solution, Riverbed's implementation of GenAI is controlled by opt-in functionality that customers must choose to enable.

Riverbed provides GenAI functionality based on an LLM that is specific to each customer and contains general knowledge about IT problems to assist in the identification of the issue for which customer is seeking assistance. Additionally, Riverbed allows the customer to specify and use an LLM or SLM that it has tested and approved for its own use, rather than using the LLM that Riverbed leverages by default. Riverbed uses GenAI to provide customers with human-language explanations of the root cause for network, application and endpoint issues, a simple way to identify potential remediations for end-point issues from a list of potential remediations, and the ability to integrate an LLM into an automation workflow.

Customers may choose to use Riverbed's GenAI implementation for a wide variety of use cases based on their needs. The customer is in complete control of the inputs (e.g., the prompts provided to GenAI) used by Riverbed and the outputs (e.g., results of the analysis, recommendations, etc.). The prompts are only used in the context of that conversation or automation, and no training of the model is conducted. Neither the prompts nor any output is used beyond the specific conversation or automation. Riverbed does not retain any memory of the GenAI prompts or responses.

Riverbed does not use any public AI frameworks or models that need training and sharing of data with a service provider.

Does Riverbed support Explainable AI?

All decisions of the AI/ML engine in Riverbed that is used for Causal, Predictive, and Agentic AI uses are presented to the user in a clear, simple, human-language manner with all decisions and steps documented for transparency and ease of understanding. When the Generative AI node or customer-specified LLM is used in the automation engine, explainability of its output is the responsibility of the user, since the user ultimately controls the prompts and also controls how the output is used.

Does Riverbed's AI present any ethical risks that require monitoring?

Riverbed only performs AI and machine language analysis on network, application, and endpoint data within the customer's environment. It does not track any personal traits or behaviors and does not use or share any data with public Large Language Models (LLMs) which can be subject to bias, hallucinations, and/or ethical risks.



What data is used by Riverbed for AI?

The data collected from observability tools such as Aternity (as configured by the user) may include (i) performance measurements, like wait times, response times, or resource consumption (“Performance Data”); and (ii) non-measurable descriptive attributes, which add context to the performance measurements to help troubleshoot the problem, e.g., device name, username, location name, application name (“Descriptive Data”). Descriptive Data may include without limitation certain categories of personal data¹

- Host name
- IP address
- Subnet
- Wi-Fi
- Username
- Full username and email
- User title
- User role
- Office
- Department
- Serial number
- Login credentials
- Phone number
- Device name
- Location
- Browser version
- Network activity
- Title
- Feature flag configuration

Riverbed does not collect personal data beyond the data collected by the observability solution as described above.

No data is ever shared outside of the customer environment automatically. The only way for the customer to share data is for the customer to explicitly share their data using APIs available within Riverbed products, which requires the customer to set up and control the export and sharing.

¹ For more information about Riverbed’s commitments to privacy and security please view the <https://www.riverbed.com/privacypolicy/> and other information in the <https://www.riverbed.com/trust-center/>.

How are data privacy and confidentiality of customer data protected?

Riverbed takes the protection of personal and customer data seriously. All personal data (as defined previously in this document) and all customer data used by Riverbed remains within the customer’s environment and is subject to the data processing and confidentiality protections in the contract between the customer and Riverbed.

Riverbed is SOC 2 Type 2 and ISO 27001 compliant. Please refer to Riverbed Trust Center at <https://www.riverbed.com/trust-center/> for details.

Does the Riverbed AI conform to the requirements of the EU AI Act?

Riverbed’s AI is considered low risk under the European Union’s Artificial Intelligence (AI) Act. As a low-risk AI system, Riverbed complies with the transparency and accountability requirements outlined in the EU AI Act.



Get started with Riverbed today.
Visit [Riverbed's website](https://riverbed.com)



About Riverbed

Riverbed, the leader in AI observability, helps organizations optimize their users' experiences by leveraging AI automation for the prevention, identification, and resolution of IT issues. With over 20 years of experience in data collection and AI and machine learning, Riverbed's open and AI-powered observability platform and solutions optimize digital experiences and greatly improve IT efficiency. Riverbed also offers industry-leading Acceleration solutions that provide fast, agile, secure acceleration of any app, over any network, to users anywhere. Together with our thousands of market-leading customers globally – including 95% of the FORTUNE 100 – we are empowering next-generation digital experiences. Learn more at riverbed.com

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