

# Modular, flexible, scalable AI agent integration architecture makes managing large amounts of battle data easier.



**OVERVIEW**

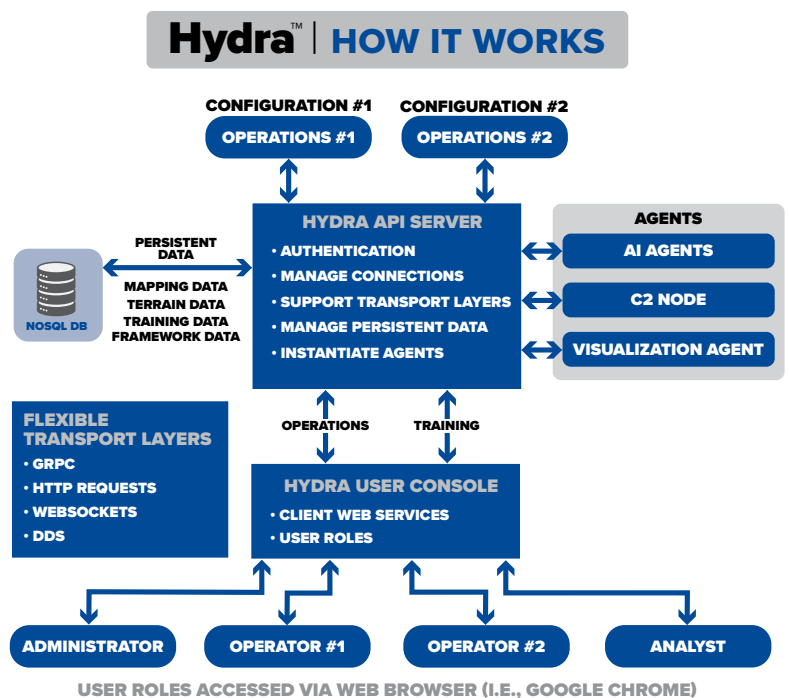
Information overload is a serious problem for the warfighter during battle execution, where large amounts of diverse data must be processed quickly and efficiently. Operators are faced with high pressures and cognitive loads — in short, tactical military organizations are drowning in waves of data, promoting increased error and indecision. Exploiting all of the potentially useful available data is impossible with existing systems of large monolithic code bases. Developed for the US Army, Hydra™ is a flexible AI agent-oriented architecture that supports C2 operators by processing multiple sources of data quickly and accurately to reduce stress and improve warfighter performance.

**TECHNICAL**

The Hydra AI architecture is modular, flexible, and massively scalable, utilizing AI-based agents to ingest large amounts of data, reason on the data and provide clear and concise information to the warfighter for better decision making.

**Hardware Architecture:** Incorporates cloud-based computing for optimal AI application performance, with modularity that supports horizontal and vertical scalability. This makes all sensor and intel data available to all agents, with scalability that accommodates all computational resources.

**Software Architecture:** Modular and flexible to work with existing software systems, it offers user scalability to support multiple operators. AI agent scalability provides additional resources to the warfighter, while ‘Plug and Play’ design increases speed to deployment. Seamless integration with C2 system saves time and money.



**Improving performance means saving lives.**

Hydra uses all available data to improve critical decisions, which improves performance and save lives. It addresses the critical gaps in current solutions which result in mismatches between inputs (such as full motion video, global positioning systems and network services) and outputs (intelligence estimates, mission orders, target lists, etc.). The platform operates on diverse hardware, includes built-in security, and provides a reliable, integrated method to:

**Ingest** — massive amounts of data.

**Autonomously Analyze** — instantly analyze data based on mission objectives.

**Recommend** — automatically notify C2 or operators via existing interfaces with course of action recommendations.

**SECURITY / OPERATION**

Hydra security features include role-based login, application authentication and message encryption. Further, the Hydra Application Programmer’s Interface (API) operates inside a docker container isolating the API from the rest of the system as an extra layer of security while ensuring the software does not conflict with other required system dependencies.

Arcarithm provides required training on how to interface the Hydra network with the database and how to understand the output, with onsite training available. A training manual is provided with each Hydra license, and Arcarithm provides call center support as well.

**LOGISTICS & LICENSING**

Hydra can be activated on up to four different computers assigned to a single named user per license. A named user may not use a program on more than two computers simultaneously.

Licensing is available with two options — Perpetual and Annual. The license is restricted to a single country of operation. Global Individual licenses are available to serve users around the world. Software Maintenance Service is included with terms based on the type of license (Perpetual or Annual), includes the latest updates to Hydra with twice-yearly updates, and worldwide technical support from specialized engineers.

**SYSTEM REQUIREMENTS**

CPU	Intel Core i5 or AMD Ryzen 5 or higher
Memory (RAM)	64-bit System: 16GB minimum 32-bit System: 8GB minimum
Operating Systems	Ubuntu 16.04 or higher Windows 10
Graphics Card	N/A
Minimum Screen Resolution	1280 x 720 pixels
Storage	64GB minimum free space required

*Hydra™ integrates with existing Big Data infrastructures via an extensible API that includes abstracted interfaces for interaction with any database type. Hydra is delivered via direct digital download or a set of DVDs.*

**PRODUCT DETAILS**

Manufacturer	Arcarithm
Product Name	Hydra™
Version	21.1
Manufacturer Part Number	A2021HYD
Product Type	Single License
Platform	Linux / Windows 10
Shipping Method	Digital delivery (or DVDs)

**ABOUT ARCARITHM**

Deep Learning and Artificial Intelligence (AI) are buzz words commonly used throughout defense and commercial markets, often without true understanding of those terms. At Arcarithm, we are defining those terms and more, with proven solutions on par with multinational tech leaders. From the big picture distinction between strong and weak (or narrow) AI, to the fine-grained focus of deep versus shallow neural networks, Arcarithm delivers a depth of understanding and operational maturity beyond the capability of most companies. Our experience with every aspect of algorithm design, training, deployment and evaluation allows Arcarithm to produce quality products quickly and effectively, with the highest levels of reliability and accessibility.



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