AVECO GEMINI

Technical Reference Sheet

TRS-1031-03

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Aveco
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Table of Contents

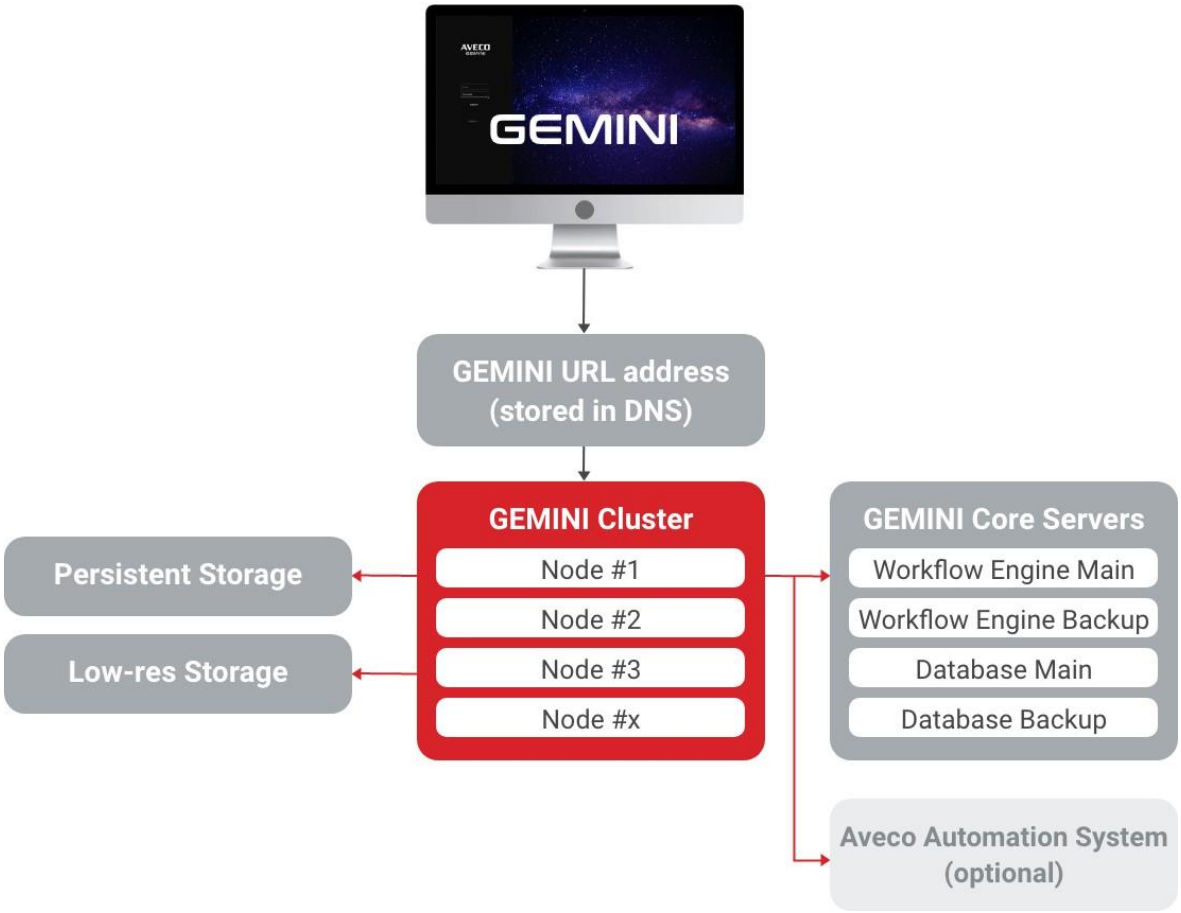
OVERVIEW

GEMINI is Aveco's new generation MAM for on-prem, in a private or public cloud and hybrid operations. Features of GEMINI are described in the GEMINI Data Sheet.

This Technical Reference Sheet created by the product team describes the architecture of GEMINI and the technical requirements necessary for GEMINI to be installed and utilized.

ARCHITECTURE

The overall architecture of GEMINI consists of the following components:



Term	Description
GEMINI Client	Is running in a web browser and provides the user experience.
GEMINI Node	Is the application server that provides the business logic of GEMINI, receives the requirements from clients, processes them, and returns data to the clients.
Persistent Storage	Stores most of the GEMINI data. The GEMINI Nodes must have NFS access to it. The storage must be persistent to keep the data safe.
Low-res Storage	Contains low-res versions of all clips managed by GEMINI, together with their thumbnails and keyframes. The GEMINI Nodes must have file access to the Low-res Storage to be able to provide the media to the GEMINI Clients.
Database Servers	Store metadata of all assets managed by GEMINI.
Workflow Engines	Automate end-to-end asset workflows, from ingests of raw material up to the delivery of the final media product.
DNS	Includes in its database the URL of GEMINI Cluster (e.g., gemini.yourdomain.com) and the IP addresses of the components.

HIGH-AVAILABILITY

GEMINI NODE

BASIC

- 1 Node
- Non-redundant
- External Persistent Storage is optional

STANDARD

- 3 Nodes
- Built-in redundancy - if only minority number of the Nodes fail, the system is still up and running
- External Persistent Storage is required to reliably store and maintain the data utilized by the nodes

ENTERPRISE

- 5 or more odd number Nodes
- Maximum redundancy and performance - if only minority number of the Nodes fail, the system is still up and running
- External Persistent Storage is required to reliably store and maintain the data utilized by the Nodes

COMPARISON TABLE

	Basic	Standard	Enterprise
Cloud support	Yes	Yes	Yes
Physical Node support	Yes	Yes	Yes
Virtual Node support	Yes	Yes	Yes
Hybrid Cluster support	No	Yes	Yes
Number of Nodes	1	3	5 or more
Fault tolerance	0	1	Minority of Nodes[1]

[1] Minority of Nodes means, that more than half of Nodes in the cluster need to be operational to have a fully functional cluster.

DATABASE SERVER

Typically, main and mirror Database Servers are used. The metadata is automatically replicated.

WORKFLOW ENGINE

Typically, main and mirror Workflow Engine servers are used. The active-active redundancy ensures the continuity of the operation in case of any server failure.

REQUIREMENTS

GEMINI CLIENT

GEMINI Client runs in a web browser and thus almost any platform allows one to utilize GEMINI, anytime and anywhere. It works on devices with Windows, Linux or macOS as well as Android tablets and iPads.

The following recommended web browsers have been tested by Aveco:

- Mozilla Firefox
- Google Chrome
- Microsoft Edge
- Apple Safari

Other browsers may work also, as Aveco uses platform-agnostic technologies, but Aveco does not guarantee the functionality.

GEMINI NODE

GEMINI Nodes can run on dedicated hardware, on a virtual machine, as well as in a hybrid environment.

	Basic	Standard	Enterprise
Operating system	openSUSE LEAP 15.5 or newer	openSUSE LEAP 15.5 or newer	openSUSE LEAP 15.5 or newer
CPU[1]	8-core or more	8-core or more	8-core or more
SSD[1]	256GB or more	256GB or more	256GB or more
RAM[1]	32GB	16GB	16GB
Network[1]	1Gbps or more	1Gbps or more	1Gbps or more
Persistent Storage[2]	512GB Local or External	512GB External	512GB External

[1] Requirements apply for each Node.

[2] Persistent storage is used for storing all cluster data. Only in Basic option, this node can be used as a local persistent storage. The other options require external persistent storage. The external persistent storage must be provided by the customer. Aveco does not guarantee data protection for local persistent storage in Basic option.

Resources should be increased as the system size increases to ensure optimal performance to manage large metadata or timeline annotation properly.

DATABASE SERVER

Hardware requirements depend on the scale of the solution as well as on the optional integration with ASTRA. Aveco team will define the requirements during the specification of the project.

WORKFLOW ENGINE

Hardware requirements depend on the scale of the solution as well as on the optional integration with ASTRA. Aveco team will define the requirements during the specification of the project.

NETWORK REQUIREMENTS

During the system installation, update or upgrade, each Node must be connected to the internet.

DNS

DNS is provided and configured by a local IT administrator. It is mandatory to have a working DNS, as the whole GEMINI cluster is working with URL addresses.

The advantage of using a DNS is that each machine can have multiple IP addresses. This is solved by a local IT administrator. If any IP is unreachable, the system automatically uses another IP assigned, as the system is only using DNS names.

TRUSTED CERTIFICATE

As secure web (HTTPS) is used - the use of a signed and trusted certificate is mandatory.

This certificate can be self-signed, signed by in-house authority or 3rd party certificate.

Preferable one is provided by the customer.

FIREWALL RULES

GEMINI requires several ports to be accessible and it is therefore necessary to configure any network firewall to allow access to these ports:

- 22 (TCP)
- 80 (TCP)
- 111 (UDP)
- 139 (TCP)
- 443 (TCP)
- 445 (TCP)
- 2049 (TCP)
- 2376 (TCP)
- 2379 (TCP)
- 2380 (TCP)
- 6443 (TCP)
- 8472 (UDP)
- 9099 (TCP)
- 10250 (TCP)
- 10254 (TCP)
- 30000-32767 (TCP)
- 30000-32767 (UDP)

WORKING WITH ASTRA

GEMINI can be supplied and run as a standalone solution integrated with third-party systems.

GEMINI can be also integrated with Aveco ASTRA automation systems, either as an end-to-end project or as an expansion of the already installed ASTRA automation. The Database servers can be shared with ASTRA. If an existing ASTRA automation has the Database servers installed, GEMINI just connects to them and utilizes the existing metadata.

The Workflow Engine software modules can be shared with ASTRA, they can be installed on the ASTRA automation servers.

The fact that there is one database used by both GEMINI and ASTRA means that there is no additional integration. Both work together as a unified platform where any metadata change can be seen everywhere without any boundaries, and all workflows span seamlessly across MAM and automation systems.