



Release guide

Octave Alto Server

2026.1

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About this release

Octave Alto Server 2026.1 expands standards support, strengthens enterprise security and streamlines development workflows. The release adds support for APP-6E military symbology, DAFIFT 8.1, Mapbox-styled MBTiles data and OAuth 2.0 authentication for secure integration with corporate identity providers. Together with new AI-assisted development capabilities and other platform enhancements, these improvements help customers deploy, secure and develop geospatial solutions more efficiently.

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Figure 1. The Octave Alto portfolio

Benefits of the new features

Standards upgrades

Support for APP-6E military symbology

This release adds support for version 2 of the NATO APP-6E military symbology standard to Alto Server, in line with Octave Alto Lightspeed and Octave Alto Browser. This lets you create, style and edit symbols using the latest joint military symbology defined by APP-6E. Alto Server's support covers air, land, sea, space and cyberspace domains, and includes symbol identifiers for dismounted individuals and stability and civil support operations.

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Figure 2. A fictional military scenario visualized in Alto Lightspeed using APP-6E symbology

Sample code/documentation to get you started

The existing [Defense: Military Symbology](#) section has been updated to reflect this addition. Notably, the overview article [What are the supported standards?](#) provides the full and up-to-date list of supported standards and versions. Likewise, all samples referring to the Defense Symbology option for the Pro tier of Alto Server have been updated to reflect this upgrade.

Support for DAFIFT 8.1

Alto Server 2026.1 supports the decoding of DAFIFT 8.1 datasets, in addition to the existing DAFIF 7 and DAFIFT 8.0 support.

To this end, several DAFIFT 8.1 properties have been introduced, as listed below. See the corresponding Javadoc for details on their semantics and usage.

The new properties relate to these features:

- Aerodrome
- ATS Route
- Helipad
- Heliport
- Navaid
- Procedure
- Runway
- Waypoint

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Additionally, a new runway surface type AM2 has been added to `TLcdRunwaySurfaceType`, representing a surface type consisting of metal planking.

The DAFIFT decoder `TLcdDAFIFTProcedureDecoder` now also decodes additional DAFIFT 8.0 procedure properties. See the Javadoc of these DAFIFT procedure properties for more information on their content and usage.

Sample code/documentation to get you started

For this update to an already supported format, only a small amount of changes is visible to the developer. For more information, see the [release notes](#) and the `TLcdDAFIFModelDecoder` class in the product documentation.

Style MBTiles data with Mapbox style files, in addition to OGC SE/SLD

When we added support for MBTiles data to Alto Server, we already allowed styling through OGC SE/SLD. In response to popular demand, we've added support for Mapbox style files to this 2026.1 release. Alto Server automatically detects and publishes a Mapbox style file if:

- It is located in the same directory as the MBTiles file
- It has the same base file name, for example a data.json style file that matches the data.mbtiles data file

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Figure 3. Visualization of OpenStreetMap data on an Alto Lightspeed map, styled with different Mapbox styles — ©OpenStreetMap contributors, ©OpenMapTiles

Sample code/documentation to get you started

The article [Working with MBTiles data](#) has been updated to reflect this new styling option.

Improved support for OGC standards

OGC SLD/SE

The SLD implementation now supports the interpretation of the rotation parameter in model space. This capability can be enabled on SLD Text and Point Symbolizers by configuring an SLD vendor option.

OGC WMS and WMTS

The Alto Server WMS service now advertises a new map format image/geotiff, which lets you request maps in the GeoTIFF format. The article [Which image output formats do WMS and WMTS services support](#) describes the supported image output formats in more detail.

Moreover, a new GetFeatureInfo output format has been added to the WMS and WMTS servers. This format encodes features using a GML 3.1.1-based application schema and is identified by the MIME type `application/vnd.ogc.gml/3.1.1`.

OGC WFS

The WFS server now supports a new SHAPE-ZIP output format for GetFeature and GetFeatureWithLock requests. This format encodes the requested features as an ESRI Shapefile (.shp, .shx, .dbf, .cpg, .sbn/.sbx and .prj), and combines all of these files into a single application/zip archive. The .shp file and its companion files are named after the requested feature type. We also added an article to guide you in adding your own additional output formats, for example KML. See [How to add your own vector output format](#) for the details.

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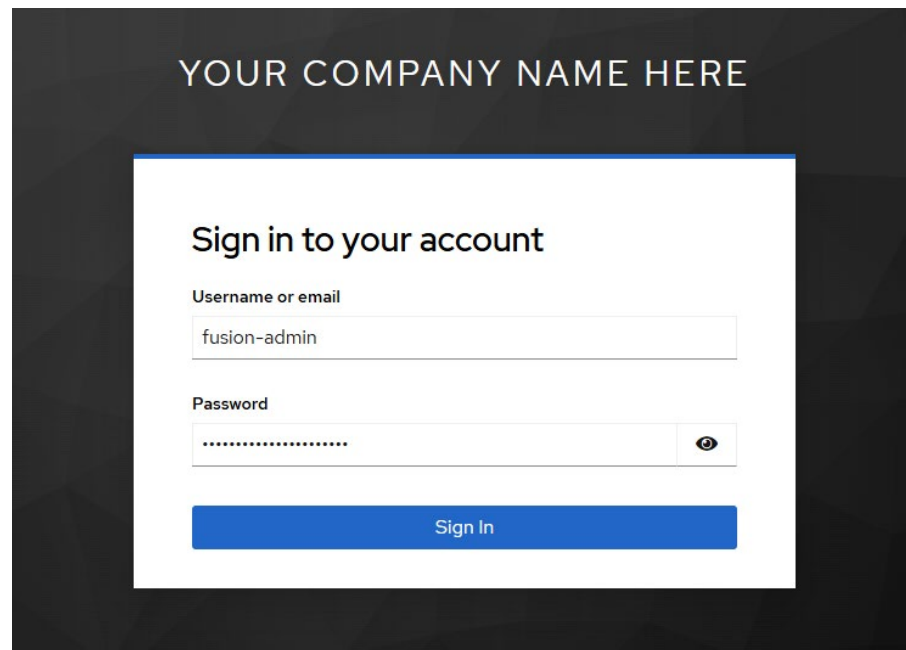
Security improvements

OAuth 2.0 authentication

OAuth 2.0 enables secure enterprise authentication, seamless single sign-on and integration with existing corporate identity providers. It reduces administration effort while improving security and user experience.

Alto Server 2026.1 supports two distinct OAuth 2.0 authentication modes: OAuth2 Login and OAuth2 Resource Server. Both modes delegate identity verification to an external identity provider (IdP) such as Keycloak, Microsoft Entra ID or Auth0.

You can set up one of these authentication modes for the Alto Server Studio web application, its REST API and the geospatial services that Alto Server publishes, such as OGC WMS, WCS, 3D Tiles and others. You can make those services accessible without authentication, or you can restrict them to authenticated users. The choice of authentication mode determines which clients can reach those authenticated services.



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Figure 4. External log-in form integrated in Alto Server using Keycloak

Sample code/documentation to get you started

The new guide [OAuth 2.0 authentication in Alto Server](#) is your entry point for this new feature. From there, you can consult dedicated articles for each of the supported authentication modes.

Other improvements

This Alto Server release also features a number of smaller improvements, for example:

AI-assisted development

Modern development teams increasingly rely on AI-powered coding assistants to accelerate onboarding, reduce development effort and improve code quality. To support this trend, Alto Server 2026.1 [helps you set up](#) dedicated skills files that help AI coding tools understand the Alto Server architecture, APIs, samples and development patterns. The AI skills guide developers toward the most relevant documentation and code examples, enabling faster and more accurate application development. Such skills can be integrated into a variety of popular development environments and AI-assisted workflows.

WebP support

The TLcd3DTilesProcessorBuilder can now process GLB files that use the EXT_texture_webp glTF extension. This support increases compatibility with exporters that optimize GLB files for file size.

3D Tiles Processing Engine CLI convenience improvement

The Meshup CLI can now automatically clean an output directory. Only output directories located within the system's temporary files folder will be cleaned. This allows for faster iteration when experimenting with the Meshup CLI.

Non-georeferenced point clouds

You can now pre-process non-georeferenced point clouds. You can create an OGC 3D Tiles service from a non-georeferenced point cloud through the API as well as through Alto Server Studio. For more information and limitations, see the [Pre-process point cloud data](#) article.

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Support for Azure SQL

Azure SQL Database is now supported as a database for Alto Server Studio.

Series of new articles related to the S-100 protection scheme

Now that Alto Server allows you to work with data in the S-101 format, it is important that you can correctly handle S-101 ENC data protected through the S-100 scheme. To guide you, the following articles have been added to the documentation:

- [What is the S-100 protection scheme?](#)
- [How to order encrypted S-101 data](#)
- [Decoding encrypted S-101 data](#)

Assistance with creating multidimensional OGC WMS and WMTS services

If the data points of a multidimensional datasets are scattered among different files, you must instruct Alto Server on how to group them together so that they can be treated as a single multidimensional dataset. We added the article [How to group files and serve them as multi-dimensional data](#) to guide you.

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