

MATLAB® Online Server™ Release Notes



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MATLAB® Online Server™ Release Notes

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R2023a

Version: 1.6

New Features

Bug Fixes

mosadm Commands: Install MATLAB, uninstall NGINX Ingress controller, renew Kubernetes nodes, and set additional configuration options

mosadm now supports these commands:

- `mosadm install-matlab` — Install MATLAB® releases onto MATLAB Online Server™.
- `mosadm uninstall-ingress` — Uninstall the NGINX® Ingress controller. This command applies only if you installed the MATLAB Online Server controller using `mosadm install-ingress`.
- `mosadm renew-node` — Renew single-node Kubernetes® certificates for one year.

mosadm also supports additional configuration options across all commands. For example, use the `--verbose` option to print additional details for the mosadm function being run. For details on available options, call `mosadm help`.

R2022b

Version: 1.5

New Features

Bug Fixes

Delegated Storage: Mount storage drives using a script

By specifying the "delegated" mount option in your storage profile, you can specify a script to perform the storage mount process.

R2022a

Version: 1.4

New Features

Bug Fixes

Enable differentiated access to drives, directories, and files based on user groups

You can now configure which groups are authorized to access various drives, directories, and files based on the groups that they belong to. For example, you can provide access to certain drives based on the teams or departments of users. In the `resourceDefinition` section of each storage profile of your MATLAB Pool YAML configuration file, specify the groups in the `allowedGroups` field. Wildcard patterns are supported. For example, this sample YAML enables access to any "team1" user and any user whose team name starts with "team3" (team31, team32, team3abc, and so on).

```
resourceDefinition:
  allowedGroups:
  - "team1"
  - "team3*"
```

Monitoring: Support for Grafana and Prometheus and dashboards

MATLAB Online Server now supports Grafana and Prometheus® dashboards. You can use these dashboards to monitor resource usage on your server.

MATLAB Mount Configuration: Mount MATLAB directly from installation source without embedding MATLAB image on server

You can now configure the source of the MATLAB pool installation. To specify the installation source, update the `mountType` field of each MATLAB Pool YAML configuration file. You can specify these options:

- "embedded" (default) - Embed a MATLAB Docker® container image within MATLAB Online Server. Previously, embedding the image was the only option. This option is the simplest and speeds up performance but requires building a large image installation.
- "host" - Mount MATLAB directly from another Kubernetes host. This option does not require a large image installation, but export across Kubernetes clusters is more difficult.
- "nfs" - Mount MATLAB from a network file system (NFS) server. This option does not require a large image installation but performance might be slower because the installation is on a network drive.
- "pvc" - Mount MATLAB from a persistent volume claim (PVC). This option enables you to mount MATLAB from cloud-provided Kubernetes clusters but performance might be slower because the installation is on a network drive.

Kerberos Delegation: Authenticate users using Kerberos

To authenticate users signing into MATLAB Online Server, you can now delegate authentication to the Kerberos authentication protocol.

R2021b

Version: 1.3

New Features

Bug Fixes

Dynamic Folder Creation: Specify user storage in folders dynamically created when users log in

When specifying storage profiles, if you do not have user-specific storage drives (for example, `/home/username/`) set up, you can now specify folder names that do not exist and the server will dynamically create them when provisioning storage. To use this feature, specify the `createIfNotExist: true` field for each mount in the storage profile.

Persistent Volume Claims: Mount data volumes stored in the cloud

By specifying the "pvc" mount option in your storage profile, you can mount data volumes stored in cloud-based volumes such as Azure® Files, AWS® Elastic Block Storage (EBS), and Elastic File Storage (EFS).

Base Image Selection: Use either Debian or Red Hat Enterprise Linux container image to install and configure MATLAB Online Server

You can now select the base container image used to install and configure MATLAB Online Server. You can also switch between images after installation. Previously, to specify or change the image, you had to manually hard-code container image tag names and versions.

Specify your image in the `BASE_IMAGE` property in the `install.config` file. You can specify either the Debian® image (`BASE_IMAGE=debian`) or Red Hat® Enterprise Linux™ image (`BASE_IMAGE=rhel`).

R2021a

Version: 1.2

New Features

Bug Fixes

Red Hat: Support for Red Hat OpenShift Container Platform 4.x installation

You can now install MATLAB Online Server on Red Hat OpenShift® Container Platform 4.x.

High Availability: Reduce server downtime by replicating services in case one fails

MATLAB Online Server now supports high availability (HA). High availability replicates MATLAB Online Server pods so that if the service running in one pod fails, the server switches to a replicated pod to keep the server running. The improved reliability of the server comes at the expense of using additional computing resources.

To enable high availability, in the `install.config` file of your MATLAB Online Server installation, set the `IS_HA_ENABLED` property to `true`.

Ingress Controller: Specify the controller used by your organization

You can now use the ingress controller used by your organization to process incoming requests to the Kubernetes cluster. This controller acts as a load balancer for MATLAB Online Server. Previously, you had to use the preconfigured NGINX ingress controller that you installed with the server.

Resource Pool Definitions: Configure session settings and environment variables for each MATLAB resource pool

When configuring one or more versions of MATLAB on your server, you can now specify customized session timeout settings and MATLAB environment variables for each version. You can also specify user metadata using Kubernetes tags and annotations. Specify this information in the `resourceDefinition` section of the MATLAB pool YAML configuration file for each version.

In the `resourceDefinition` section, you can specify usernames and other metadata dynamically using placeholders. These placeholder variables enable the authorization and authentication services to dynamically populate user metadata when that user signs in. For example:

```
resourceDefinition:
  ownerMetadata:
    podLabels:
      - name: username
        value: ${subject.subjectId}
      - name: environment
        value: "prod"
    podAnnotations:
      - name: username
        value: ${subject.subjectId}
  env:
    - name: MOS_USERNAME
      value: ${subject.subjectId}
    - name: environment
      value: "prod"
```

R2020b

Version: 1.1

New Features

Bug Fixes

Differentiated MATLAB Versions: Enable users to select which versions of MATLAB to log in

If your server supports multiple versions of MATLAB, you can enable users to select which version of MATLAB they want to log in to. Users can log in to versions of MATLAB corresponding to a specific release (for example, R2020b) or to a specific configuration of a MATLAB release (for example, R2020b with GPU support). To support multiple MATLAB versions, instead of specifying a single MATLAB resource pool using the `matlab-pool.yaml` file, you can specify multiple configuration files in a `matlab-pool` folder.

Kubernetes: Support for Helm 3

MATLAB Online Server now supports Helm[®] 3 for managing Kubernetes resources. Previously, the server supported only Helm 2.

Red Hat: Support for Red Hat Enterprise Linux 7.x installation and UBI containers

You can now install MATLAB Online Server on Red Hat Enterprise Linux 7.x. You can also use Red Hat universal base images (UBI) as the container infrastructure instead of using the default Docker containers.

Authentication: Support for Okta and Ping 3 SAML identity providers

When specifying server authentication details to enable users access to MATLAB Online[™], you can now specify the Okta and Ping 3 identity providers.

R2020a

Version: 1.0

New Features

Bug Fixes

Introducing MATLAB Online Server: Get Instant Access to MATLAB

When you host MATLAB Online Server in your organization, your users can run MATLAB from their web browsers without downloading, installing, or configuring desktop software on their own computers.

Co-Locate MATLAB with Data

Perform in-place analysis of data and eliminate overhead associated with downloading large datasets. Preserve data integrity and ensure alignment with data governance principles by complying with organizational requirements on data export and other industry-standard regulations.

Install On-Premises or in the Cloud

Install and centrally host MATLAB Online Server on-premises, including offline, in air-gapped scenarios, and in cloud environments on virtual or bare-metal infrastructure.

Integrate with Your Infrastructure

Define user access by integrating with your identity management systems through LDAP or SAML. Specify storage profiles on your NFS drives or persistent volumes to provide per-user storage, shared storage, or a combination of the two.

Provide Differentiated Access to Resources

Configure MATLAB Online Server to provide access to high-performance instances with resources like GPUs. Create multiple resource pools to provide flexibility in versions of MATLAB and hardware capabilities.

Acceleration and Deployment

Speed up your code by using GPU and multicore processors for supported functions. Use MATLAB Coder™ to generate standalone ANSI-compliant C/C++ code from functions in Wavelet Toolbox™ that have been enabled to support C/C++ code generation. Generate optimized CUDA® code to run on NVIDIA® GPUs for supported functions.