Red Hat OpenShift Data Science 1

Release notes

Features, Technology Previews, and known issues associated with this release
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Abstract

These release notes provide an overview of new features, enhancements, resolved issues, and known issues in this release of Red Hat OpenShift Data Science currently available in Red Hat OpenShift Dedicated and Red Hat OpenShift Service on Amazon Web Services (ROSA).
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CHAPTER 1. NEW FEATURES

Red Hat OpenShift Data Science provides the following new features and enhancements in this release.

1.1. ENHANCEMENTS

This section describes enhancements to existing features in Red Hat OpenShift Data Science.

Support for creating OpenShift Data Science pipelines within JupyterLab

You can create data science pipelines within JupyterLab.

Support for data science project sharing

To enable you to work collaboratively on your data science projects with other users, you can share access to your project. After creating your project, you can then set the appropriate access permissions from the OpenShift Data Science user interface.

Support for older versions of notebook images

An older version of each notebook image is now available and supported. Two supported notebook images are now typically available at any given time. Notebook images are supported for a minimum of one year. Major updates to pre-configured notebook images occur approximately every six months.

Support for the TrustyAI notebook image

The TrustyAI notebook image is now available on Red Hat OpenShift Data Science. This notebook image is pre-built and usable immediately after OpenShift Data Science is installed or upgraded.

Support for data science projects

OpenShift Data Science now has the ability to create one or more projects to help organize your data science work for a project in one place. With data science projects, you can create a project workbench, add a data connection to a data source, and add cluster storage to a data science project.

Default persistent volume claim (PVC) size increased

The default size of a PVC provisioned for a data science user in an OpenShift Data Science cluster has been increased from 2 GB to 20 GB.

Improved resilience to OpenShift Dedicated node failure

OpenShift Data Science services now try to avoid being scheduled on the same node so that OpenShift Data Science components are more failure resistant.

Improved notebook controller

OpenShift Data Science now uses an improved notebook controller. This change enables future feature development and provides a better user experience in the event of errors, such as if a notebook server fails to launch correctly. If you have bookmarked the previous notebook controller URL, you will need to update your bookmark accordingly.

Support for AWS Security Token Service (STS) ROSA clusters

OpenShift Data Science now supports AWS (STS) enabled ROSA clusters.

Support for Google Cloud Platform (GCP) clusters

OpenShift Data Science now supports clusters on GCP.
NOTE

GPU-enabled notebook images are currently not supported on GCP in OpenShift Data Science.

1.2. LIMITED SUPPORT FEATURES

This section outlines features provided with limited support in Red Hat OpenShift Data Science.

NVIDIA GPU support

Enable graphics processing units (GPUs) in OpenShift Data Science and allow your data scientists to use compute-heavy workloads by installing the NVIDIA GPU Add-on. GPU support is currently available as a Field Trial feature. For more information, see the OpenShift Data Science Service Definition and Enabling GPU support in OpenShift Data Science.

Additional resources

- OpenShift Data Science Service Definition
CHAPTER 2. RESOLVED ISSUES

This section describes the fixes for notable user-facing issues in Red Hat OpenShift Data Science.

2.1. PIPELINES WITH NON-UNIQUE NAMES DID NOT APPEAR IN THE DATA SCIENCE PROJECT USER INTERFACE

If you launched a notebook from a Jupyter application that supported Elyra, or if you used a workbench, when you submitted a pipeline to be run, pipelines with non-unique names did not appear in the Pipelines section of the relevant data science project page or the Pipelines heading of the data science pipelines page. This issue has now been resolved.

2.2. DEPLOYING A CUSTOM MODEL-SERVING RUNTIME COULD RESULT IN AN ERROR MESSAGE

Previously, if you used the OpenShift Data Science dashboard to deploy a custom model-serving runtime, the deployment process could fail with an Error retrieving Serving Runtime message. This issue is now resolved.

2.3. AFTER UPGRADE, THE DATA SCIENCE PIPELINES TAB WAS NOT ENABLED ON THE OPENSShift DATA SCIENCE DASHBOARD

When you upgraded from OpenShift Data Science 1.26 to OpenShift Data Science 1.28, the Data Science Pipelines tab was not enabled in the OpenShift Data Science dashboard. This issue is resolved in OpenShift Data Science 1.29.

2.4. EXPORTING AN ELYRA PIPELINE EXPOSED S3 STORAGE CREDENTIALS IN PLAIN TEXT

In OpenShift Data Science 1.28.0, when you exported an Elyra pipeline from JupyterLab in Python DSL format or YAML format, the generated output contained S3 storage credentials in plain text. This issue has been resolved in OpenShift Data Science 1.28.1. However, after you upgrade to OpenShift Data Science 1.28.1, if your deployment contains a data science project with a pipeline server and a data connection, you must perform the following additional actions for the fix to take effect:

1. Refresh your browser page.

2. Stop any running workbenches in your deployment and restart them.

Furthermore, to confirm that your Elyra runtime configuration contains the fix, perform the following actions:

1. In the left sidebar of JupyterLab, click Runtimes ( ).

2. Hover the cursor over the runtime configuration that you want to view and click the Edit button ( ).

   The Data Science Pipelines runtime configuration page opens.

3. Confirm that KUBERNETES_SECRET is defined as the value in the Cloud Object Storage Authentication Type field.
4. Close the runtime configuration without changing it.

2.5. WHEN EDITING THE DETAILS OF A SHARED PROJECT, THE USER INTERFACE REMAINED IN A LOADING STATE WITHOUT REPORTING AN ERROR

When a user with permission to edit a project attempted to edit its details, the user interface remained in a loading state and did not display an appropriate error message. Users with permission to edit projects cannot edit any fields in the project, such as its description. Those users can edit only components belonging to a project, such as its workbenches, data connections, and storage.

The user interface now displays an appropriate error message and does not try to update the project description.

2.6. DATA SCIENCE PIPELINE GRAPHS DID NOT DISPLAY NODE EDGES FOR RUNNING PIPELINES

If you ran pipelines that did not contain Tekton-formatted Parameters or when expressions in their YAML code, the OpenShift Data Science user interface did not display connecting edges to and from graph nodes. For example, if you used a pipeline containing the runAfter property or Workspaces, the user interface displayed the graph for the executed pipeline without edge connections. The OpenShift Data Science user interface now displays connecting edges to and from graph nodes.

2.7. NEWLY CREATED DATA CONNECTIONS WERE NOT DETECTED WHEN YOU ATTEMPTED TO CREATE A PIPELINE SERVER

If you created a data connection from within a Data Science project, and then attempted to create a pipeline server, the Configure a pipeline server dialog did not detect the data connection that you created. This issue is now fixed.

2.8. WHEN SHARING A PROJECT WITH ANOTHER USER, THE OPENSHIFT DATA SCIENCE USER INTERFACE TEXT WAS MISLEADING

When you attempted to share a Data Science project with another user, the user interface text misleadingly implied that users could edit all of its details, such as its description. However, users can edit only components belonging to a project, such as its workbenches, data connections, and storage. This issue is now fixed and the user interface text no longer misleadingly implies that users can edit all of its details.

2.9. USERS WITH "EDIT" PERMISSION COULD NOT CREATE A MODEL SERVER

Users with "Edit" permissions can now create a Model Server without token authorization. Users must have "Admin" permissions to create a Model Server with token authorization.

2.10. OPENVINO MODEL SERVER RUNTIME DID NOT HAVE THE REQUIRED FLAG TO FORCE GPU USAGE

OpenShift Data Science includes the OpenVINO Model Server (OVMS) model-serving runtime by
default. When you configured a new model server and chose this runtime, the Configure model server dialog enabled you to specify a number of GPUs to use with the model server. However, when you finished configuring the model server and deployed models from it, the model server did not actually use any GPUs. This issue is now fixed and the model server uses the GPUs.

2.11. CHANGING THE HOST PROJECT WHEN CREATING A PIPELINE RAN RESULTED IN AN INACCURATE LIST OF AVAILABLE PIPELINES

If you changed the host project while creating a pipeline run, the interface failed to make the pipelines of the new host project available. Instead, the interface showed pipelines that belong to the project you initially selected on the Data Science Pipelines > Runs page. This issue is now fixed. You no longer select a pipeline from the Create run page. The pipeline selection is automatically updated when you click the Create run button, based on the current project and its pipeline.

2.12. ENVIRONMENT VARIABLES UPLOADED AS CONFIGMAP WERE STORED IN SECRET INSTEAD

Previously, in the OpenShift Data Science interface, when you added environment variables to a workbench by uploading a ConfigMap configuration, the variables were stored in a Secret object instead. This issue is now fixed.

2.13. WORKBENCHES COULD HAVE MULTIPLE DATA CONNECTIONS

Previously, if you changed the data connection for a workbench, the existing data connection was not released. As a result, a workbench could stay connected to multiple data sources. This issue is now fixed.

2.14. UPLOADING A SECRET FILE CONTAINING ENVIRONMENT VARIABLES RESULTED IN DOUBLE-ENCODED VALUES

Previously, when creating a workbench in a data science project, if you uploaded a YAML-based secret file containing environment variables, the environment variable values were not decoded. Then, in the resulting OpenShift secret created by this process, the encoded values were encoded again. This issue is now fixed.

2.15. AN ERROR WAS DISPLAYED WHEN CREATING A WORKBENCH WITH THE INTEL OPENVINO OR ANACONDA PROFESSIONAL EDITION IMAGES

Previously, when you created a workbench with the Intel OpenVINO or Anaconda Professional Edition images, an error appeared during the creation process. However, the workbench was still successfully created. This issue is now fixed.

2.16. IDLE NOTEBOOK CULLER DID NOT TAKE ACTIVE TERMINALS INTO ACCOUNT

Previously, if a notebook image had a running terminal, but no active, running kernels, the idle notebook culler detected the notebook as inactive and stopped the terminal. This issue is now fixed.
2.17. DATA CONNECTIONS COULD NOT BE CREATED OR CONNECTED TO WHEN CREATING A WORKBENCH

When creating a workbench, users were unable to create a new data connection, or connect to existing data connections.

2.18. OPENSIFT DATA SCIENCE ADMINISTRATORS COULD NOT ACCESS SETTINGS PAGE IF AN ADMIN GROUP WAS DELETED FROM CLUSTER

Previously, if a Red Hat OpenShift Data Science administrator group was deleted from the cluster, OpenShift Data Science administrator users could no longer access the Settings page on the OpenShift Data Science dashboard. In particular, the following behavior was seen:

- When an OpenShift Data Science administrator user tried to access the Settings → User management page, a "Page Not Found" error appeared.
- Cluster administrators did not lose access to the Settings page on the OpenShift Data Science dashboard. When a cluster administrator accessed the Settings → User management page, a warning message appeared, indicating that the deleted OpenShift Data Science administrator group no longer existed in OpenShift. The deleted administrator group was then removed from OdhDashboardConfig, and administrator access was restored.

This issue is now fixed.

2.19. DELETED USERS STAYED LOGGED IN UNTIL DASHBOARD WAS REFRESHED

Previously, when a user’s permissions for the Red Hat OpenShift Data Science dashboard were revoked, the user would notice the change only after a refresh of the dashboard page.

This issue is now fixed. When a user’s permissions are revoked, the OpenShift Data Science dashboard locks the user out within 30 seconds, without the need for a refresh.

2.20. A WORKBENCH’S DATA CONNECTION WAS INCORRECTLY UPDATED WHEN CREATING A DUPLICATED DATA CONNECTION

When creating a data connection that contained the same name as an existing data connection, the data connection creation failed, but the associated workbench still restarted and connected to the wrong data connection. This issue has been resolved. Workbenches now connect to the correct data connection.

2.21. WORKBENCHES FAILED TO RECEIVE THE LATEST TOLERATION

Previously, to acquire the latest toleration, users had to attempt to edit the relevant workbench, make no changes, and save the workbench again. Users can now apply the latest toleration change by stopping and then restarting their data science project’s workbench.

2.22. MODELS FAILED TO BE SERVED AFTER UPGRADING FROM OPENSIFT DATA SCIENCE 1.20 TO OPENSIFT DATA SCIENCE 1.21

When upgrading from OpenShift Data Science 1.20 to OpenShift Data Science 1.21, the `modelmesh-serving` pod attempted to pull a non-existent image, causing an image pull error. As a result, models were unable to be served using the model serving feature in OpenShift Data Science. The `odh-openvino-servingruntime-container-v1.21.0-15` image now deploys successfully.

### 2.23. ANACONDA PROFESSIONAL EDITION COULD NOT BE ENABLED IN OPENSHIFT DATA SCIENCE

Anaconda Professional Edition could not be enabled for use in OpenShift Data Science. Instead, an `InvalidImageName` error was displayed in the associated pod’s Events page. Anaconda Professional Edition can now be successfully enabled.

### 2.24. ADMIN USERS WERE NOT WARNED WHEN USAGE EXCEEDED 90% AND 100% FOR PVCS CREATED BY DATA SCIENCE PROJECTS.

Warnings indicating when a PVC exceeded 90% and 100% of its capacity failed to display to admin users for PVCS created by data science projects. Admin users can now view warnings about when a PVC exceeds 90% and 100% of its capacity from the dashboard.

### 2.25. ERROR MESSAGE WAS NOT DISPLAYED IF A DATA SCIENCE NOTEBOOK WAS STUCK IN "PENDING" STATUS

If a notebook pod could not be created, the OpenShift Data Science interface did not show an error message. An error message is now displayed if a data science notebook cannot be spawned.

### 2.26. RETURNING TO THE HUB CONTROL PANEL DASHBOARD FROM THE DATA SCIENCE WORKBENCH FAILED

If you attempted to return to the dashboard from your workbench Jupyter notebook by clicking on `File → Log Out`, you were redirected to the dashboard and remained on a “Logging out” page. Likewise, if you attempted to return to the dashboard by clicking on `File → Hub Control Panel`, you were incorrectly redirected to the `Start a notebook server` page. Returning to the Hub Control Panel dashboard from the data science workbench now works as expected.

### 2.27. ADMINISTRATORS WERE UNABLE TO STOP ALL NOTEBOOK SERVERS

OpenShift Data Science administrators could not stop all notebook servers simultaneously. Administrators can now stop all notebook servers using the `Stop all servers` button and stop a single notebook by selecting `Stop server` from the action menu beside the relevant user.

### 2.28. WORKBENCH EVENT LOG WAS NOT CLEARLY VISIBLE

When creating a workbench, users could not easily locate the event log window in the OpenShift Data Science interface. The `Starting` label under the `Status` column is now underlined when you hover over it, indicating you can click on it to view the notebook status and the event log.

### 2.29. ISV ICONS DID NOT RENDER WHEN USING A BROWSER OTHER THAN GOOGLE CHROME
When using a browser other than Google Chrome, not all ISV icons under Explore and Resources pages were rendered. ISV icons now display properly on all supported browsers.

2.30. INCORRECT NUMBER OF AVAILABLE GPUS WAS DISPLAYED IN JUPYTER

When a user attempts to create a notebook instance in Jupyter, the maximum number of GPUs available for scheduling was not updated as GPUs are assigned. Jupyter now displays the correct number of GPUs available.

2.31. WHEN MULTIPLE PERSISTENT VOLUMES WERE MOUNTED TO THE SAME DIRECTORY, WORKBENCHES FAILED TO START

When mounting more than one persistent volume (PV) to the same mount folder in the same workbench, creation of the notebook pod failed and no errors were displayed to indicate there was an issue.

2.32. DATA SCIENCE PROJECTS WERE NOT VISIBLE TO USERS IN RED HAT OPENSOURCE DATA SCIENCE

Removing the [DSP] suffix at the end of a project’s Display Name property caused the associated data science project to no longer be visible. It is no longer possible for users to remove this suffix.

2.33. DATA CONNECTION CONFIGURATION DETAILS WERE OVERWRITTEN

When a data connection was added to a workbench, the configuration details for that data connection were saved in environment variables. When a second data connection was added, the configuration details are saved using the same environment variables, which meant the configuration for the first data connection was overwritten. At the moment, users can add a maximum of one data connection to each workbench.

2.34. THE NOTEBOOK ADMINISTRATION PAGE DID NOT PROVIDE ADMINISTRATOR ACCESS TO A USER’S NOTEBOOK SERVER

The notebook Administration page, accessed from the OpenShift Data Science dashboard, did not provide the means for an administrator to access a user’s notebook server. Administrators were restricted to only starting or stopping a user’s notebook server.

2.35. PYTORCH AND TENSORFLOW IMAGES WERE UNAVAILABLE WHEN UPGRADING

When upgrading from OpenShift Data Science 1.3 to a later version, PyTorch and TensorFlow images were unavailable to users for approximately 30 minutes. As a result, users were unable to start PyTorch and TensorFlow notebooks in Jupyter during the upgrade process. This issue has now been resolved.

2.36. ENVIRONMENT VARIABLE NAMES WERE NOT VALIDATED WHEN STARTING A NOTEBOOK SERVER

Environment variable names were not validated on the Start a notebook server page. If an invalid
environment variable was added, users were unable to successfully start a notebook. The environmental variable name is now checked in real-time. If an invalid environment variable name is entered, an error message displays indicating valid environment variable names must consist of alphabetic characters, digits, _, -, or ., and must not start with a digit.

2.37. THE NUMBER OF GPUS DROP-DOWN WAS ONLY VISIBLE IF THERE WERE GPUS AVAILABLE

Previously, Number of GPUs drop-down was only visible on the Start a notebook server page if GPU nodes were available. The Number of GPUs drop-down now also correctly displays if an autoscaling machine pool is defined in the cluster, even if no GPU nodes are currently available, possibly resulting in the provisioning of a new GPU node on the cluster.

2.38. CLUSTER ADMIN DID NOT GET ADMINISTRATOR ACCESS IF IT WAS THE ONLY USER PRESENT IN THE CLUSTER.

Previously, when the cluster admin was the only user present in the cluster, it did not get Red Hat OpenShift administrator access automatically. Administrator access is now correctly applied to the cluster admin user.

2.39. INCORRECT PACKAGE VERSION DISPLAYED DURING NOTEBOOK SELECTION

The Start a notebook server page displayed an incorrect version number (11.4 instead of 11.7) for the CUDA notebook image. The version of CUDA installed is no longer specified on this page.

2.40. ADMIN USERS COULD ADD INVALID TOLERATIONS TO NOTEBOOK PODS

An admin user could add invalid tolerations on the Cluster settings page without triggering an error. If a invalid toleration was added, users were unable to successfully start notebooks. The toleration key is now checked in real-time. If an invalid toleration name is entered, an error message displays indicating valid toleration names consist of alphanumeric characters, -, _, or ., and must start and end with an alphanumeric character.

2.41. GROUP ROLE BINDINGS WERE NOT APPLIED TO CLUSTER ADMINISTRATORS

Previously, if you had assigned cluster admin privileges to a group rather than a specific user, the dashboard failed to recognize administrative privileges for users in the administrative group. Group role bindings are now correctly applied to cluster administrators as expected.

2.42. OLD MINIMAL PYTHON NOTEBOOK IMAGE PERSISTED AFTER UPGRADE

After upgrading from OpenShift Data Science 1.14 to 1.15, the older version of the Minimal Python notebook persisted, including all associated package versions. The older version of the Minimal Python notebook no longer persists after upgrade.
2.43. EXCESSIVE "MISSING X-FORWARDED-ACCESS-TOKEN HEADER" ERROR MESSAGES DISPLAYED IN DASHBOARD LOG

The rhods-dashboard pod’s log contained an excessive number of "missing x-forwarded-access-token header" error messages due to a readiness probe hitting the /status endpoint. This issue has now been resolved.

2.44. ERROR OCCURRED WHILE FETCHING THE GENERATED IMAGES IN THE SAMPLE PACHYDERM NOTEBOOK

An error occurred when a user attempted to fetch an image using the sample Pachyderm notebook in Jupyter. The error stated that the image could not be found. Pachyderm has corrected this issue.

2.45. JUPYTER FAILED TO START A NOTEBOOK SERVER USING THE OPENVINO NOTEBOOK IMAGE

Jupyter’s Start a notebook server page failed to start a notebook server using the OpenVINO notebook image. Intel has provided an update to the OpenVINO operator to correct this issue.

2.46. A NON-STANDARD CHECK BOX DISPLAYED AFTER DISABLING USAGE DATA COLLECTION

After disabling usage data collection on the Cluster settings page, when a user accessed another area of the OpenShift Data Science dashboard, and then returned to the Cluster settings page, the Allow collection of usage data check box had a non-standard style applied, and therefore did not look the same as other check boxes when selected or cleared.

2.47. INCORRECT HEADINGS WERE DISPLAYED IN THE NOTEBOOK IMAGES PAGE

The Notebook Images page, accessed from the Settings page on the OpenShift Data Science dashboard, displayed incorrect headings in the user interface. The Notebook image settings heading displayed as BYON image settings and the Import Notebook images heading displayed as Import BYON images. The correct headings are now displayed as expected.

2.48. JUPYTER WAS UNABLE TO DISPLAY IMAGES WHEN THE NVIDIA GPU ADD-ON WAS INSTALLED

The Start a notebook server page did not display notebook images after installing the NVIDIA GPU add-on. Images are now correctly displayed, and can be started from the Start a notebook server page.

2.49. PVC USAGE LIMIT ALERTS WERE NOT SENT WHEN USAGE EXCEEDED 90% AND 100%

Alerts indicating when a PVC exceeded 90% and 100% of its capacity failed to be triggered and sent. These alerts are now triggered and sent as expected.

2.50. CLUSTER SETTINGS WERE RESET ON OPERATOR RESTART

When the OpenShift Data Science operator pod was restarted, cluster settings were sometimes reset to
their default values, removing any custom configuration. The OpenShift Data Science operator was restarted when a new version of OpenShift Data Science was released, and when the node that ran the operator failed. This issue occurred because the operator deployed ConfigMaps incorrectly. Operator deployment instructions have been updated so that this no longer occurs.

2.51. THE OPENVINO NOTEBOOK IMAGE FAILED TO BUILD SUCCESSFULLY

The OpenVINO notebook image failed to build successfully and displayed an error message. This issue has now been resolved.

2.52. STARBURST GALAXY QUICK START DID NOT PROVIDE DOWNLOAD LINK IN THE INSTRUCTION STEPS

The Starburst Galaxy quick start, located on the Resources page on the dashboard, required the user to open the explore-data.ipynb notebook, but failed to provide a link within the instruction steps. Instead, the link was provided in the quick start’s introduction.

2.53. CHANGING ALERT NOTIFICATION EMAILS REQUIRED POD RESTART

Changes to the list of notification email addresses in the Red Hat OpenShift Data Science Add-On were not applied until after the rhods-operator pod and the prometheus-* pod were restarted.

2.54. RED HAT OPENSSHIFT API MANAGEMENT 1.15.2 ADD-ON INSTALLATION DID NOT SUCCESSFULLY COMPLETE

For OpenShift Data Science installations that are integrated with the Red Hat OpenShift API Management 1.15.2 add-on, the Red Hat OpenShift API Management installation process did not successfully obtain the SMTP credentials secret. Subsequently, the installation did not complete.

2.55. GPU TUTORIAL DID NOT APPEAR ON DASHBOARD

The "GPU computing" tutorial, located at Gtc2018-numba, did not appear on the Resources page on the dashboard.

2.56. GPU SELECTION PERSISTED WHEN GPU NODES WERE UNAVAILABLE

When a user provisioned a notebook server with GPU support, and the utilized GPU nodes were subsequently removed from the cluster, the user could not create a notebook server. This occurred because the most recently used setting for the number of attached GPUs was used by default.

2.57. PACHYDERM NOW COMPATIBLE WITH OPENSSHIFT DEDICATED 4.10 CLUSTERS

Pachyderm was not initially compatible with OpenShift Dedicated 4.10, and so was not available in OpenShift Data Science running on an OpenShift Dedicated 4.10 cluster. Pachyderm is now available on and compatible with OpenShift Dedicated 4.10.
2.58. UNINSTALL PROCESS FAILED TO COMPLETE WHEN BOTH OPENSFiTH DATA SCIENCE AND OPENSFiTH API MANAGEMENT WERE INSTALLED

When OpenShift Data Science and OpenShift API Management are installed together on the same cluster, they use the same Virtual Private Cluster (VPC). The uninstall process for these Add-ons attempts to delete the VPC. Previously, when both Add-ons are installed, the uninstall process for one service was blocked because the other service still had resources in the VPC. The cleanup process has been updated so that this conflict does not occur.

2.59. IMAGES WERE INCORRECTLY UPDATED AFTER UPGRADING OPENSFiTH DATA SCIENCE

After the process to upgrade OpenShift Data Science completed, Jupyter failed to update its notebook images. This was due to an issue with the image caching mechanism. Images are now correctly updating after an upgrade.

2.60. INCORRECT TENSORFLOW AND TENSORBOARD VERSIONS DISPLAYED DURING NOTEBOOK SELECTION

The Start a notebook server page displayed incorrect version numbers (2.4.0) for TensorFlow and TensorBoard in the TensorFlow notebook image. These versions have been corrected to TensorFlow 2.7.0 and TensorBoard 2.6.0.

2.61. QUICK START LINKS DID NOT DISPLAY FOR ENABLED APPLICATIONS

For some applications, the Open quick start link failed to display on the application's card on the Enabled page. As a result, users did not have direct access to the quick start tour for the relevant application.

2.62. INCORRECT PYTHON VERSIONS DISPLAYED DURING NOTEBOOK SELECTION

The Start a notebook server page displayed incorrect versions of Python for the TensorFlow and PyTorch notebook images. Additionally, the third integer of package version numbers is now no longer displayed.

2.63. TEN MINUTE WAIT AFTER NOTEBOOK SERVER START FAILS

If the Jupyter leader pod failed while the notebook server was being started, the user could not access their notebook server until the pod restarted, which took approximately ten minutes. This process has been improved so that the user is redirected to their server when a new leader pod is elected. If this process times out, users see a 504 Gateway Timeout error, and can refresh to access their server.
CHAPTER 3. KNOWN ISSUES

This section describes known issues in Red Hat OpenShift Data Science and any known methods of working around the issues described.

3.1. PIPELINE SERVERS FAIL TO START IF THEY CONTAIN A CUSTOM DATABASE THAT INCLUDES A DASH IN ITS DATABASE NAME OR USERNAME FIELD.

When you create a pipeline server that uses a custom database, if the value that you set for the dbname field or username field includes a dash, the pipeline server fails to start.

Workaround: Edit the pipeline server to omit the dash from the affected fields.

3.2. WHEN EDITING THE CONFIGURATION SETTINGS OF A WORKBENCH, A MISLEADING ERROR MESSAGE APPEARS.

When you edit the configuration settings of a workbench, a warning message appears stating the workbench will restart if you make any changes to its configuration settings. This warning is misleading, as if you change the values of its environment variables, the workbench does not automatically restart.

3.3. DATA CONNECTION DETAILS GET RESET WHEN EDITING A WORKBENCH

When you edit a workbench that has an existing data connection and then select the Create new data connection option, the edit page might revert to the Use existing data connection option before you have finished specifying the new connection details.

Workaround

To work around this issue, perform the following actions:

1. Select the Create new data connection option again.
2. Specify the new connection details and click Update workbench before the page reverts to the Use existing data connection option.

3.4. DUPLICATING A SCHEDULED PIPELINE RUN DOES NOT COPY THE EXISTING PERIOD AND PIPELINE INPUT PARAMETER VALUES

When you duplicate a scheduled pipeline run that has a periodic trigger, the duplication process does not copy the configured execution frequency for the recurring run or the specified pipeline input parameters.

Workaround: Edit the duplicated pipeline run and specify the correct execution frequency and pipeline input parameters.

3.5. DEFAULT SHARED MEMORY FOR JUPYTER NOTEBOOK MIGHT CAUSE A RUNTIME ERROR

The default shared memory for a Jupyter notebook is set to 64 Mb and you cannot change this default
value in the notebook configuration. For example, PyTorch relies on shared memory and the default size of 64 Mb is not enough for large use cases, such as when training a model or when performing heavy data manipulations. Jupyter reports a “no space left on device” message and /dev/shm is full.

**Workaround**

1. In your data science project, create a workbench as described in [Creating a project workbench](#).

2. In the data science project page, in the Workbenches section, click the Status toggle for the workbench to change it from Running to Stopped.

3. Open your OpenShift Console and then select Administrator.

4. Select Home → API Explorer.

5. In the Filter by kind field, type notebook.

6. Select the kubeflow v1 notebook.

7. Select the Instances tab and then select the instance for the workbench that you created in Step 1.

8. Click the YAML tab and then select Actions → Edit Notebook.

9. Edit the YAML file to add the following information to the configuration:

   - For the container that has the name of your Workbench notebook, add the following lines to the volumeMounts section:

     ```yaml
     - mountPath: /dev/shm
       name: shm
     ```

     For example, if your workbench name is `myworkbench`, update the YAML file as follows:

     ```yaml
     spec:
       containers:
         - env
           ...
           name: myworkbench
           ...
           volumeMounts:
             - mountPath: /dev/shm
               name: shm
     ```

   - In the volumes section, add the lines shown in the following example:

     ```yaml
     volumes:
       name: shm
       emptyDir:
         medium: Memory
     ```

     **Note:** Optionally, you can specify a limit to the amount of memory to use for the `emptyDir`.

10. Click Save.
11. In the data science dashboard, in the Workbenches section of the data science project, click the Status toggle for the workbench. The status changes from Stopped to Starting and then Running.

12. Restart the notebook.

**WARNING**
If you later edit the notebook’s configuration through the Data Science dashboard UI, your workaround edit to the notebook configuration will be erased.

3.6. DATA SCIENCE DASHBOARD DOES NOT DETECT AN EXISTING OPENSIFT PIPELINES INSTALLATION

When the OpenShift Pipelines operator is installed as a global operator on your cluster, the Data Science dashboard does not properly detect it.

An alert icon appears next to the Data Science Pipelines option in the left navigation bar. When you open Data Science Pipelines, you see the message: “To use pipelines, first install the Red Hat OpenShift Pipelines Operator.” However, when you view the list of installed operators in the openshift-operators project, you see that OpenShift Pipelines is installed as a global operator on your cluster.

**Workaroon**

Follow these steps as a user with cluster-admin permissions:

1. Log in to your cluster using the oc client.

2. Enter the following command to update OdhDashboardConfig in the redhat-ods-applications application namespace:

   ```
   $ oc patch OdhDashboardConfig odh-dashboard-config -n redhat-ods-applications --type=merge -p '{"spec": {"dashboardConfig": {"disablePipelines": false}}}'
   ```

3.7. ELYRA PIPELINE FAILS TO RUN IF WORKBENCH IS CREATED BY A USER WITH EDIT PERMISSIONS

If a user who has been granted edit permissions for a project creates a project workbench, that user sees the following behavior:

- During the workbench creation process, the user sees an Error creating workbench message related to the creation of Kubernetes role bindings.

- Despite the preceding error message, OpenShift Data Science still creates the workbench. However, the error message means that the user will not be able to use the workbench to run Elyra data science pipelines.

- If the user tries to use the workbench to run an Elyra pipeline, Jupyter shows an Error making request message that describes failed initialization.
Workaround: A user with administrator permissions (for example, the project owner) must create the workbench on behalf of the user with edit permissions. That user can then use the workbench to run Elyra pipelines.

3.8. UNINSTALL PROCESS FOR OPENSSHIFT DATA SCIENCE MIGHT BECOME STUCK WHEN REMOVING KFDEFS RESOURCES

The steps for uninstalling the OpenShift Data Science managed service are described in Uninstalling OpenShift Data Science.

However, even when you follow this guide, you might see that the uninstall process does not finish successfully. Instead, the process stays on the step of deleting kfdefs resources that are used by the Kubeflow Operator. As shown in the following example, kfdefs resources might exist in the redhat-ods-applications, redhat-ods-monitoring, and rhods-notebooks namespaces:

$ oc get kfdefs.kfdef.apps.kubeflow.org -A

<table>
<thead>
<tr>
<th>NAMESPACE</th>
<th>NAME</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-anaconda</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-dashboard</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-data-science-pipelines-operator</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-model-mesh</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-nbc</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-applications</td>
<td>rhods-osd-config</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-monitoring</td>
<td>modelmesh-monitoring</td>
<td>3h6m</td>
</tr>
<tr>
<td>redhat-ods-monitoring</td>
<td>monitoring</td>
<td>3h6m</td>
</tr>
<tr>
<td>rhods-notebooks</td>
<td>rhods-notebooks</td>
<td>3h6m</td>
</tr>
<tr>
<td>rhods-notebooks</td>
<td>rhods-osd-config</td>
<td>3h5m</td>
</tr>
</tbody>
</table>

Failed removal of the kfdefs resources might also prevent later installation of a newer version of OpenShift Data Science.

Workaround: To manually delete the kfdefs resources so that you can complete the uninstall process, see the "Force individual object removal when it has finalizers" section of the following Red Hat solution article: https://access.redhat.com/solutions/4165791.

3.9. INCORRECT CRON FORMAT DISPLAYED BY DEFAULT WHEN SCHEDULING A RECURRING PIPELINE RUN

When you schedule a recurring pipeline run by configuring a cron job, the OpenShift Data Science interface displays the following incorrect format by default:

```plaintext
cron = 0 0 0 * *
```

The correct format must comply with the CRON expression format for the Go cron package. By default, the correct format is:

```plaintext
cron = 0 16 16 * * *
```

The following example shows a pipeline run that executes daily at 16:16 UTC using the correct format, scheduled using a cron job in the user interface:
3.10. YOU CANNOT CREATE A PIPELINE SERVER WHEN CUMULATIVE CHARACTER LIMIT IS EXCEEDED

When the cumulative character limit of a data science project name and a pipeline server name exceeds 62 characters, you are unable to successfully create a pipeline server.

**Workaround:** Rename your data science project so that it does not exceed 30 characters.

3.11. A PIPELINE SERVER FAILS TO START UNLESS YOU SPECIFY AN AMAZON WEB SERVICES (AWS) SIMPLE STORAGE SERVICE (S3) BUCKET RESOURCE

When you create a data connection for a data science project, the `AWS_S3_BUCKET` field is not designated as a mandatory field. However, if you do not specify a value for this field, and you attempt to configure a pipeline server, the pipeline server fails to start successfully.

3.12. USER WITHOUT DASHBOARD PERMISSIONS IS ABLE TO CONTINUE USING THEIR RUNNING NOTEBOOKS AND WORKBENCHES INDEFINITELY

When a Red Hat OpenShift Data Science administrator revokes a user’s permissions, the user can continue to use their running notebooks and workbenches indefinitely.

**Workaround:** When the OpenShift Data Science administrator revokes a user’s permissions, the administrator should also stop any running notebooks and workbenches for that user.

3.13. ATTEMPTING TO INCREASE THE SIZE OF A PERSISTENT VOLUME (PV) FAILS WHEN IT IS NOT CONNECTED TO A WORKBENCH

Attempting to increase the size of a Persistent Volume (PV) that is not connected to a workbench fails. When changing a data science project’s storage, users can still edit the size of the PV in the user interface, but this action does not have any effect.

3.14. UNABLE TO SCALE DOWN A WORKBENCH’S GPUS WHEN ALL GPUS IN THE CLUSTER ARE BEING USED

It is not possible to scale down a workbench’s GPUs if all GPUs in the cluster are being used. This issue applies to GPUs being used by one workbench, and GPUs being used by multiple workbenches.

**Workaround:** To workaround around this issue, perform the following steps:

1. Stop all active workbenches that are using GPUs.
2. Wait until the relevant GPUs are available again.
3. Edit the workbench and scale down the GPU instances.
3.15. ANACONDA PROFESSIONAL EDITION CANNOT BE VALIDATED AND ENABLED IN OPENSIFT DATA SCIENCE

Anaconda Professional Edition cannot be enabled as the dashboard’s key validation for Anaconda Professional Edition is inoperable.

3.16. UNCLEAR ERROR MESSAGE DISPLAYS WHEN USING INVALID CHARACTERS TO CREATE A DATA SCIENCE PROJECT

When creating a data science project’s data connection, workbench, or storage connection using invalid special characters, the following error message is displayed:

the object provided is unrecognized (must be of type Secret): couldn't get version/kind; json parse error: unexpected end of JSON input ("apiVersion":"v1","kind":"Sec ...

The error message fails to clearly indicate the problem.

3.17. AN ERROR CAN OCCUR WHEN TRYING TO EDIT A WORKBENCH

When editing a workbench, an error similar to the following can occur:

Error creating workbench
Operation cannot be fulfilled on notebooks.kubeflow.org "workbench-name": the object has been modified; please apply your changes to the latest version and try again

3.18. AN IMAGEPULLBACKOFF ERROR MESSAGE IS NOT DISPLAYED WHEN REQUIRED DURING THE WORKBENCH CREATION PROCESS

Pods can experience issues pulling container images from the container registry. If an error occurs, the relevant pod enters into an ImagePullBackOff state. During the workbench creation process, if an ImagePullBackOff error occurs, an appropriate message is not displayed.

Workaround: Check the event log for further information on the ImagePullBackOff error. To do this, click on the workbench status when it is starting.

3.19. WORKBENCHES FAIL TO START WHEN CUMULATIVE CHARACTER LIMIT IS EXCEEDED.

When the cumulative character limit of a data science project’s title and workbench title exceeds 62 characters, workbenches fail to start.

3.20. THE NOTEBOOK CREATION PROCESS FAILS FOR USERS WHO HAVE NEVER LOGGED IN TO THE DASHBOARD

The dashboard’s notebook Administration page displays users belonging to the user group and admin group in OpenShift. However, if an administrator attempts to start a notebook server on behalf of a user who has never logged in to the dashboard, the server creation process fails and displays the following error message:

Request invalid against a username that does not exist.
Workaround: Request that the relevant user logs into the dashboard.

3.21. THE MODELMESS OAUTH-PROXY CONTAINER IS INTERMITTENTLY UNSTABLE

ModelMesh pods do not deploy correctly due to a failure of the ModelMesh oauth-proxy container. This issue occurs intermittently and only if authentication is enabled in the ModelMesh runtime environment. It is more likely to occur when additional ModelMesh instances are deployed in different namespaces.

3.22. THE NVIDIA GPU OPERATOR IS INCOMPATIBLE WITH OPENSIFT 4.11.12

Provisioning a GPU node on an OpenShift 4.11.12 cluster results in the nvidia-driver-daemonset pod getting stuck in a CrashLoopBackOff state. The NVIDIA GPU Operator is compatible with OpenShift 4.11.9 and 4.11.13.

3.23. INCORRECT PACKAGE VERSION DISPLAYED DURING NOTEBOOK SELECTION

The Start a notebook server page displays an incorrect version number for the Anaconda notebook image.

3.24. WHEN USING THE NVIDIA GPU ADD-ON, MORE NODES THAN NEEDED ARE CREATED BY THE NODE AUTOSCALER

When a pod cannot be scheduled due to insufficient available resources, the Node Autoscaler creates a new node. There is a delay until the newly created node receives the relevant GPU workload. Consequently, the pod cannot be scheduled and the Node Autoscaler’s continuously creates additional new nodes until one of the nodes is ready to receive the GPU workload. For more information about this issue, see When using the NVIDIA GPU Operator, more nodes than needed are created by the Node Autoscaler.

Workaround: Apply the cluster-api/accelerator label in machineset.spec.template.spec.metadata. This causes the autoscaler to consider those nodes as unready until the GPU driver has been deployed.

3.25. NOTEBOOK SERVER ADMINISTRATION PAGE SHOWS USERS WHO HAVE LOST PERMISSION ACCESS

If a user who previously started a notebook server in Jupyter loses their permissions to do so (for example, if an OpenShift Data Science administrator changes the user’s group settings or removes the user from a permitted group), administrators continue to see the user’s notebook servers on the server Administration page. As a consequence, an administrator is able to restart notebook servers that belong to the user who’s permissions were revoked.

3.26. GPUS ON NODES WITH UNSUPPORTED TAINTS CANNOT BE ALLOCATED TO NOTEBOOK SERVERS

GPUs on nodes marked with any taint other than the supported nvidia.com/gpu taint cannot be selected when creating a notebook server. To avoid this issue, use only the nvidia.com/gpu taint on GPU nodes used with OpenShift Data Science.
3.27. TENSORBOARD REQUIRES MANUAL STEPS TO VIEW

When a user has TensorFlow or PyTorch notebook images and wants to use TensorBoard to display data, manual steps are necessary to include environment variables in the notebook environment, and to import those variables for use in your code.

Workaround: When you start your notebook server, use the following code to set the value for the TENSORBOARD_PROXY_URL environment variable to use your OpenShift Data Science user ID.

```python
import os
os.environ['TENSORBOARD_PROXY_URL'] = os.environ['NB_PREFIX']+'/proxy/6006/
```

3.28. THE INTEL® ONEAPI AI ANALYTICS TOOLKITS QUICK START REFERENCES NONEXISTENT SAMPLE NOTEBOOKS

The Intel® oneAPI AI Analytics Toolkits quick start, located on the Resources page on the dashboard, requires the user to load sample notebooks as part of the instruction steps, but refers to notebooks that do not exist in the associated repository.

3.29. THE CRONJOB RESPONSIBLE FOR VALIDATING ANACONDA PROFESSIONAL EDITION’S LICENSE IS SUSPENDED AND DOES NOT RUN DAILY

The CronJob responsible for validating Anaconda Professional Edition's license is automatically suspended by the OpenShift Data Science operator. As a result, the CronJob does not run daily as scheduled. In addition, when Anaconda Professional Edition's license expires, Anaconda Professional Edition is not indicated as disabled on the OpenShift Data Science dashboard.

3.30. THE NVIDIA GPU ADD-ON CARD ON THE DASHBOARD DISPLAYS BUTTON UNNECESSARILY

GPUs are automatically available in Jupyter after the NVIDIA GPU add-on is installed. The Enable button, located on the NVIDIA GPU add-on card on the Explore page, is therefore redundant. In addition, clicking the Enable button moves the NVIDIA GPU add-on card to the Enabled page, even if the add-on is not installed.

3.31. DASHBOARD DOES NOT DISPLAY ENABLED PAGE CONTENT AFTER ISV OPERATOR UNINSTALL

After an ISV operator is uninstalled, no content is displayed on the Enabled page on the dashboard. Instead, the following error is displayed:

```
Error loading components
HTTP request failed
```

Workaround: Wait 30–40 seconds and then refresh the page in your browser.

3.32. INCORRECT PACKAGE VERSIONS DISPLAYED DURING NOTEBOOK SELECTION
In the OpenShift Data Science interface, the **Start a notebook server page** displays incorrect version numbers for the JupyterLab and Notebook packages included in the oneAPI AI Analytics Toolkit notebook image. The page might also show an incorrect value for the Python version used by this image.

**Workaround:** When you start your oneAPI AI Analytics Toolkit notebook server, you can check which Python packages are installed on your notebook server and which version of the package you have by running the `!pip list` command in a notebook cell.

### 3.33. ERROR CAN OCCUR WHEN CREATING A NOTEBOOK INSTANCE

When creating a notebook instance in Jupyter, a **Directory not found** error appears intermittently. This error message can be ignored by clicking **Dismiss**.

### 3.34. ACTIONS ON DASHBOARD NOT CLEARLY VISIBLE

The dashboard actions to re-validate a disabled application’s license, and to remove a disabled application’s card are not clearly visible to the user. These actions only appear when the user clicks on the application card’s **Disabled** label. As a result, the intended workflows may not be clear to the user.

### 3.35. LICENSE RE-VALIDATION ACTION APPEARS UNNECESSARILY

The dashboard action to re-validate a disabled application’s license appears unnecessarily for applications that do not have a license validation or activation system. In addition, when a user attempts to re-validate a license that cannot be re-validated, feedback is not displayed to state why the action cannot be completed.

### 3.36. ERROR CAN OCCUR DURING PACHYDERM DEPLOYMENT

When creating an instance of the Pachyderm operator, a webhook error appears intermittently, preventing the creation process from starting successfully. The webhook error is indicative that, either the Pachyderm operator failed a health check, causing it to restart, or that the operator process exceeded its container’s allocated memory limit, triggering an Out of Memory (OOM) kill.

**Workaround:** Repeat the Pachyderm instance creation process until the error no longer appears.

### 3.37. IBM WATSON STUDIO NOT AVAILABLE IN OPENSSHIFT DATA SCIENCE

IBM Watson Studio is not available when OpenShift Data Science is installed on OpenShift Dedicated 4.9 or higher, because it is not compatible with these versions of OpenShift Dedicated. Contact [Marketplace support](#) for assistance manually configuring Watson Studio on OpenShift Dedicated 4.9 and higher.

### 3.38. UNNECESSARY WARNINGS ABOUT MISSING GRAPHICAL PROCESSING UNITS (GPUS)

The TensorFlow notebook image checks for graphical processing units (GPUs) whenever a notebook is run, and issues warnings about missing GPUs when none are present. These messages can safely be ignored, but you can disable them by running the following in a notebook when you start a notebook server that uses the TensorFlow notebook image.
import os
os.environ["TF_CPP_MIN_LOG_LEVEL"] = '3'

### 3.39. OpenShift Data Science Hyperlink Still Visible After Uninstall

When the OpenShift Data Science Add-on is uninstalled from an OpenShift Dedicated cluster, the link to the OpenShift Data Science interface remains visible in the application launcher menu. Clicking this link results in a "Page Not Found" error because OpenShift Data Science is no longer available.

### 3.40. User Sessions Persist in Some Components

Although users of OpenShift Data Science and its components are authenticated through OpenShift, session management is separate from authentication. This means that logging out of OpenShift Dedicated or OpenShift Data Science does not affect a logged in Jupyter session running on those platforms. When a user’s permissions change, that user must log out of all current sessions so that changes take effect.
CHAPTER 4. SUPPORT REMOVALS

This section describes major changes in support for user-facing features in Red Hat OpenShift Data Science.

4.1. KUBEFLOW NOTEBOOK CONTROLLER REPLACES JUPYTERHUB IN OPENSHIFT DATA SCIENCE 1.16

In OpenShift Data Science 1.15 and earlier, JupyterHub was used to create and launch notebook server environments. In OpenShift Data Science 1.16 and later, JupyterHub is no longer included, and its functionality is replaced by Kubeflow Notebook Controller.

This change provides the following benefits:

- Users can now immediately cancel a request, make changes, and retry the request, instead of waiting 5+ minutes for the initial request to time out. This means that users do not wait as long when requests fail, for example, when a notebook server does not start correctly.

- The architecture no longer prevents a single user from having more than one notebook server session, expanding future feature possibilities.

- The removal of the PostgreSQL database requirement allows for future expanded environment support in OpenShift Data Science.

However, this update also creates the following behavior changes:

- For IT Operations administrators, the notebook server administration interface does not currently allow login access to data scientist users' notebook servers. This is planned to be added in future releases.

- For data scientists, the JupyterHub interface URL is no longer valid. Update your bookmarks to point to the OpenShift Data Science Dashboard.

The JupyterLab interface is unchanged and data scientists can continue to use JupyterLab to work with their notebook files as usual.