

IBM System Storage N series



Snap Creator Framework 4.3 Release Notes

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Product overview

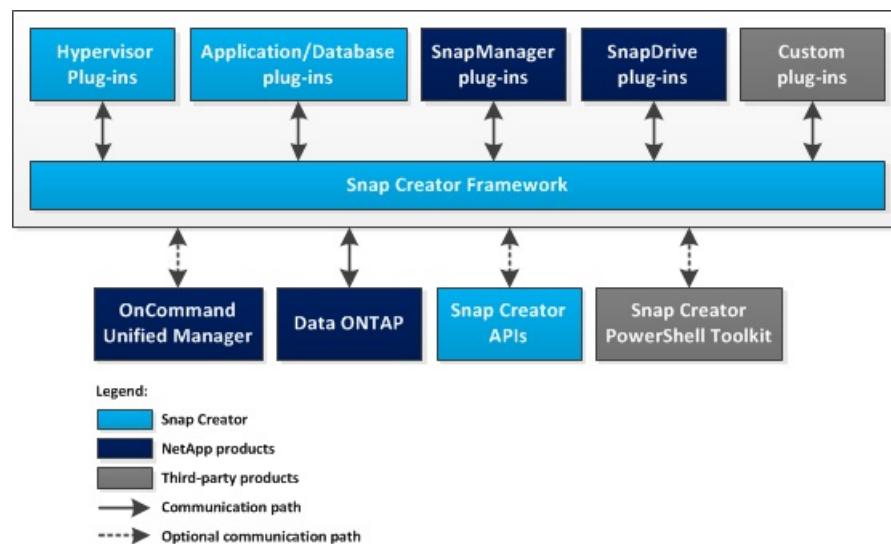
Snap Creator Framework enables you to integrate data protection with a broad range of third-party applications through the use of plug-ins (both pre-packaged and customized), which handle actions such as quiesce and unquiesce for the application or hypervisor.

This seamless integration allows you to standardize and simplify backup and restore operations in environments that use Windows or UNIX platforms (Linux, Solaris, AIX, HP-UX), providing a unified data protection solution for standard and custom applications.

Snap Creator provides:

- **Application-consistent data protection.** Back up critical information with a centralized solution, integrated with existing application architectures to assure data consistency and reduce operating costs
- **Extensibility.** Achieve fast integration using modular architecture and policy-based automation
- **Cloud readiness.** Support physical and virtual platforms with operating system-independent Snap Creator functionality that works with IT-as-a-service and cloud environments
- **Cloning capability.** Clone data efficiently for development and test purposes

The following illustration Snap Creator provides a management interface for data protection technologies (including Snapshot, SnapVault, Open Systems SnapVault, SnapMirror, IBM N series Management Console data protection capability, Operations Manager console, and FlexClone) with various third-party hypervisors, applications, and databases.



New in this release

To effectively use the product, you should know about the various new features and enhancements introduced in Snap Creator 4.3.

The following features and enhancements are new in this release:

- Support for file-based data backup using SAP HANA plug-in
- Support for SAP HANA database integrity checks at the block level
- Support for SAP HANA log housekeeping
- Support for running pre-execution and post-execution commands on multiple agents using a single configuration
- New parameter **NTAP_SNAPSHOT_DELETE_CMD** for deleting Snapshot copies
- New parameter **FAILURE_MSG** for logging Snap Creator failure messages
- Critical bug fixes

Fixed issues

It is a good practice to review the known issues fixed in a new release before upgrading to it.

- The **Recent** radio button on the Snap Creator graphical user interface (GUI) is disabled.
- Snap Creator deletes all the folders instead of logs when * is used.
- The Snap Creator configuration delete operation deletes all jobs that have similar names.
- Snap Creator backup fails when a newly created Data Fabric Manager configuration is reloaded from the graphical user interface (GUI).
- After creating a new Data Fabric Manager configuration using the OnCommand/DFM tab on the Snap Creator graphical user interface (GUI), dataset details are displayed wrongly.
- The OSDB user parameter does not work with the new HANA plug-in in Snap Creator 4.1.1.
- The Snap Creator backup operation fails in Snap Creator 4.1.2 64-bit systems.
- Snap Creator cannot parse the control character that is returned by the DB2 plug-in.
- SSLv3 non-deterministic CBC padding vulnerability in Snap Creator Framework
- Libxml vulnerabilities in Snap Creator Framework
- Quiesce of Sybase database via plug-in fails during Snap Creator backup for sybsystemb.
- SNAPCREATOR_STARTUP_PORT cannot be changed from Snap Creator properties.

Upgrade notes

Upgrade notes describe new requirements and changes in support between the last release of the product and this one, including any deprecated features. Review this information carefully before upgrading to the new release. See the IBM N series interoperability matrix for supported configurations and the product user documentation for complete system requirements.

Supported upgrade paths

You can upgrade to Snap Creator Framework 4.3 as follows:

- 4.0 to 4.1 to 4.1.1 to 4.1.2 to 4.3

Note: If you are upgrading from a version prior to Snap Creator 4.0, you must first upgrade from your current version to Snap Creator 4.0.

- 4.0.x to 4.3
- 4.1 (and all available patch levels) to 4.3
- 4.1.1 (and all available patch levels) to 4.3
- 4.1.2 (and all available patch levels) to 4.3

Important cautions

Important cautions identify issues that could severely degrade product functionality. Review these cautions carefully.

Pluggable Database state is not saved when performing offline backup operation with Oracle 12c Container Databases

When performing an offline backup operation with Oracle 12c Container Databases, the state of the Pluggable Databases (PDBs) is not saved. When the backup finishes, all PDBs are brought back to an OPEN state.

After using copy-free transition to migrate the source and destination volumes, the SnapMirror relationship must be manually set up in the clustered Data ONTAP system

If you have a configuration with a SnapMirror relationship and used copy-free transition (CFT) to transition your 7-Mode system to clustered Data ONTAP, a SnapMirror resync is required on clustered Data ONTAP to reestablish this SnapMirror relationship. You must update the NTAP_USERS parameter in the Snap Creator configuration file.

For plug-in configurations, you might need to remount the database and logs volumes properly after this transition as well.

If you rehost a volume from one SVM to another, the Snap Creator configuration file must be updated with this new information

If you rehost a volume from one SVM to another, you must update the NTAP_USERS and VOLUMES parameters in the Snap Creator configuration file with the appropriate information:

```
NTAP_USERS=storage_controller1:user_name1/password1;  
storage_controller2:user_name2/password2;  
storage_controller3:user_name3/password3  
VOLUMES=storage_controller1:vol1,vol2,vol3;storage_controller2:vol1;  
storage_controller3:vol2,vol3
```

Known limitations

Known limitations identify platforms, devices, or functions that are not supported by this release of the product, or that do not interoperate correctly with it. Review these limitations carefully.

The following list specifies which functions Snap Creator does not support:

- Snap Creator Agent versions before 4.1.x are not supported with Snap Creator Server 4.3; Snap Creator Server 4.3 is supported only with Snap Creator Agent 4.1.x and 4.3 versions.
- Snap Creator 4.3 does not support the port update option using command-line interface.
- Snap Creator does not create or manage SnapVault and SnapMirror relationships.
- Snap Creator does not support the following on clustered Data ONTAP 8.1:
 - OnCommand Unified Manager server as a proxy
 - Consistency group snapshot copy
- Snap Creator does not support vCenter heartbeat and linked mode.
- Snap Creator does not support the Fujitsu Data ONTAP-v platform.
- Consistency group snapshot with vFiler units is not supported.
- The Infinite Volumes feature for clustered Data ONTAP is not supported.
- Clustered Data ONTAP and Data ONTAP operating in 7-Mode do not support backup on Snaplock Volume.
- Snap Creator does not support the SnapVault operation on secondary clones.
- Snap Creator does not support the following Data ONTAP features and functionality:
 - Infinite Volume
 - Load Sharing Mirror (LSM)
 - SnapMirror operations between Data ONTAP operating in 7-Mode and clustered Data ONTAP (TDP)
 - Cascading SnapMirror update function
This feature is found only in Data ONTAP operating in 7-Mode and is not supported in clustered Data ONTAP.
- OSSV is only supported with Snap Creator Agent; it is recommended that you enable the Snap Creator Agent.

The following OSSV features and functionality are not supported:

 - Restore for OSSV (primary and secondary)
 - OSSV with DFM proxy
 - OSSV with OnCommand Unified Manager Core Package 5.1 and 5.2, which includes the IBM N series Management Console protection and provisioning capabilities
 - OSSV volumes (primary and secondary) LUN clone and volume clone operations
 - Performing OSSV specific operations with clustered Data ONTAP
 - Performing OSSV specific operations with the VOLUME_GROUPS parameter
- VOLUME_GROUPS is only supported for backup operations.

The following `VOLUME_GROUPS` parameter features and functionality are not supported:

- Use with LUN clone and volume clone operations
- Use with primary and secondary clone operations
- Performing volume group and volume groups operations with OnCommand Unified Manager
- Configuration from the Snap Creator GUI
 - You must use the CLI to configure this parameter.
- Grouping of MetaData Volumes for multiple Snapshot copies

The following are known limitations of Snap Creator:

- The backup list is limited to a maximum of 8,000 total Snapshot copies.
- You should run only one Snap Creator Agent on a single host.
Snap Creator does not restrict the running of multiple Snap Creator Agent, but you should run only one Snap Creator Agent on a single host.
- The Snap Creator Oracle plug-in should not be used to perform an offline backup of a Real Application Clusters (RAC) database.
- You cannot clone a Snapshot copy transitioned from Data ONTAP operating in 7-Mode to clustered Data ONTAP using the 7-Mode Transition Tool.

Note: You can clone newly created Snapshot copies on transitioned volumes. You can perform volume restore and file restore operations using transitioned Snapshot copies.

- If you are using the new parameter `NTAP_SNAPSHOT_DELETE_CMD`, you must ensure that the following requirements are met:
 - All volumes should be included in the configuration from which you want to delete the Snapshot copies.
 - You should use the volumes in the create command (drives in SnapDrive) from which the snapshot copies have to be deleted .
 - You should create or delete the snapshot copies on single or multiple volumes in a single workflow.
For example, if you create snapshot copies on volume 1 and volume 2, then you must delete the snapshot copies on both the volumes in a single workflow.
 - If you want to delete a snapshot copy manually, delete the snapshot copy on all the volumes on which the create command was used.
If you do not do so, the SnapDrive delete command will fail, as it searches for a snapshot copy name that does not exist.

Known Issues

Known issues identify problems that might prevent you from using this release of the product successfully.

Known issues identified in this release

The following issues have been added to the release notes since the last release:

- When the IBM Domino plug-in is used with the Snap Creator Framework, the backup operation of the Lotus Domino database fails.
- Snap Creator Sybase Adaptive Server Enterprise (ASE) backup in SAP environment can cause query deadlocks.
- Advanced interactive eXecutive (AIX) Snap Creator Agent fails with the error message Snap Creator agent requires Java version 1.6.0_24 or later even though Java version 1.6.0_24 is installed.
- When the network connection between the Snap Creator Server and Snap Creator Agent is lost, the database is left in the unquiesced state by Snap Creator.

Known issues identified in previous releases

The following issues were reported in previous editions of the release notes:

- The Snap Creator Framework CLI depends on out-of-date SSL libraries.
- After upgrading to Snap Creator Framework 4.1, Snap Creator backup operations with the VMware (VIBE) plug-in fail frequently due to a PerlApp utility compilation error.
- Snap Creator 4.1 SnapVault relation is ignored for multiple volumes.
- Snap Creator MySQL and Oracle backup operations fail when these operations are triggered during a MetroCluster switchback, and the error message `Connection Reset` is displayed.
- Snap Creator MySQL backup operation fails when the operation is triggered during a MetroCluster switchover, with the error message `Changes to the Vserver configuration are not permitted`.
- Snap Creator does not execute PRE/POST commands when deleting clones using the Snap Creator GUI.
- The IBM Domino plug-in does not support quiesce and unquiesce actions. These actions enable you to test application integration for any plug-in.
- When creating a configuration file by using the graphical user interface (GUI), special characters are not supported in the user name and password fields.
If you use special characters when specifying the user name and password fields in the GUI, the configuration wizard does not allow you to proceed to the next screen. This indicates that the entry format is incorrect.
- Snap Creator does not discover the datastores of all the vCenters in VMware-linked mode setup.
- The VMware plug-in can discover vCenter only if vCenter is configured on the default port (443).
- If you use special characters in the VMware or vCloud objects, Snap Creator might not work.

- If you delete a profile or a configuration file while the schedules are running, then the scheduled jobs fail.
- After upgrading Snap Creator 3.6.x to Snap Creator 4.0, the hypervisor application-consistent configuration file from Snap Creator 3.6.x does not work.

Note: This issue is also applicable when upgrading Snap Creator 3.6.x to Snap Creator 4.1.

This is a common issue for the VMware, Xen, and KVM plug-ins.

- User names with special characters in Snap Creator 3.6.x are not visible after you upgrade to Snap Creator 4.0.

Note: This issue is also applicable when upgrading from Snap Creator 3.6.x to Snap Creator 4.1.

Special characters are not supported. Do not use them.

- After installing Snap Creator and running the Snap Creator Server as a service, the publisher name and size for Snap Creator under **Programs** in the **Control Panel** are either incorrectly displayed or not displayed.
- If you use special characters during the Snap Creator setup, the Snap Creator installation might fail. The Snap Creator Server service might not be installed, or you might not be able to connect to the graphical user interface (GUI) even when the Snap Creator Server service is running.

This issue occurs if you use pipe (|) and ampersand (&). Other special characters might also cause this issue.

- When you make changes to a configuration file in the GUI and navigate to another configuration file without saving it, the GUI does not display a warning message asking you to save the original configuration file.
- After upgrading to Snap Creator 4.0 from Snap Creator 3.6, roles other than the administrator and read-only assigned to a user in Snap Creator 3.6 change to viewer role in Snap Creator 4.0.
- SnapVault update fails if the primary volume is vaulted with multiple secondary volumes.
- Snapshot copies cannot be deleted by using the GUI when the Snapshot copies are busy.

Snap Creator does not include the force option.

- If you change the default value of the job monitor size, the new value takes effect only when the next job runs.
- When you create a new configuration in the Snapshot details step or you see existing configurations within the configuration panel under the Snapshot settings tab in the GUI, if you use special characters in the Snapshot copy name input field, actions on Snapshot copies (for example, taking a backup) might fail.
- The Snap Creator 4.0 CLI credentials are not located in the original CLI directory, and Snap Creator 4.1 cannot find them.

If you are using `-credentials` with Snap Creator 4.0, the credentials file (`snapcreator.cred`) was created in the CLI directory. In Snap Creator 4.1, the credentials file (`snapcreator.credentials`) is located in the user's home directory. If you use the Snap Creator 4.1 CLI from the same directory where the Snap Creator 4.0 CLI was installed (where the `scnapcreator.cred` is located), an error message prompts you to create a new credentials file. If you use the Snap Creator 4.0 CLI outside of the original install directory, or if you use Snap Creator 4.1 outside of that directory, this error message is not displayed.

- Jobs are still displayed as being in progress after you upgrade to Snap Creator 4.1 and start the Snap Creator Server.

For example, in Snap Creator 3.x, there are jobs in progress within Job Monitor. After upgrading to Snap Creator 4.1 and starting the Snap Creator Server, these older jobs are still displayed as being in-progress.

If the Snap Creator database from the previous version that is being migrated contains tasks marked as in-progress, the state will be the same after migration.

- The VALIDATE_VOLUMES parameter for the Oracle plug-in fails with SAN LUNs; this parameter only works with NFS volume.

If an Oracle database is created on a SAN LUN, discovery with the VALIDATE_VOLUMES parameter cannot discover the database name. However, if you create the Oracle database inside the NFS volume, the VALIDATE_VOLUMES parameter can discover the database name.

- The Snap Creator GUI is not consistently displayed in the Google Chrome web browser compared to the GUI display seen in Mozilla FireFox and Microsoft Windows Internet Explorer.

When you access the GUI using Chrome, there are duplicate scroll bars.

- Report logs do not work as expected when accessing the GUI from a local Snap Creator Server login to a remote Snap Creator Server login.

For example, you log in to the local Snap Creator Server using 10.x.x.1 and the GUI opens. While logged in, you also log in to the remote Snap Creator Server IP with credentials (for example, 10.x.x.2). When you select **Reports > Logs**, unexpected and inconsistent behavior occurs: one profile and configuration is listed, but no logs. The remaining other profiles and configurations are not listed. Despite creating 10 or more profiles with configurations and empty profiles, none of the profiles and configurations or logs corresponding to those profiles and configurations are listed.

- The Oracle plug-in with the VALIDATE_VOLUMES parameter does not work for a qtree on an NFS volume.

Oracle discovery fails if the Oracle database is created on a qtree on an NFS volume.

- Oracle plug-in discovery is not working for an NFS volume that is exported through the actual path option (which specifies the actual file system path corresponding to the exported file system path) on Data ONTAP operating in 7-Mode.

The following example shows a volume exported with a different actual path name on Data ONTAP operating in 7-Mode:

```
exportfs -p actual=/vol/vol_ora_test1,rw,anon=0 /path1
```

The database is created on /path1: the VALIDATE_VOLUMES parameter on /path does not work.

- When you launch the Snap Creator GUI on a host using HTTPS, the Non Trusted Site message is displayed on the screen.

Snap Creator uses self-signed certificates for HTTPS communication. The browser clients (GUI) treat this as a non-trusted site or server because they cannot validate the self-signed certificates. Users have to explicitly trust the server.

- If the nfsAddExport API contains an invalid pattern format for Junction path, then /<volume> does not work.
- When you use unsupported storage APIs on clustered Data ONTAP, error messages are displayed.

The following APIs are not supported for clustered Data ONTAP:

- snapVaultCreateSnapshot
- snapVaultCreateSchedule

- snapVaultDeleteSchedule
- systemStartCli
- When you attempt to rename an existing configuration by using the right-click menu option, the change does not appear in the existing logs and scheduled jobs.

When right-clicking an existing configuration by using the Snap Creator GUI and selecting **Management > Configurations > Profiles and Configurations**, you have the option to rename the configuration. The rename option should only be used for new, unused configurations.

If you rename the existing configuration, existing logs and scheduled jobs are not updated with the new information.
- During installation, the Snap Creator Job Monitor supports sizes greater than 0 but equal to or less than 1,000.

Although the Job Monitor accepts a value of up to 10,000, this maximum value is not currently supported.
- The hourly schedule does not work properly if the frequency provided is less than the minutes (mm) of the time set (hh:mm) on the server.

The hourly schedule works properly if the frequency provided is equal to or greater than the minutes setting (mm) of the time set (hh:mm) on the server. For example, if the current time on the server is 12:43 PM and a frequency of 43-59 is provided, the hourly schedule works properly. However, if a frequency less than 43 (0-42) is provided, the first job runs immediately, the next job runs exactly one hour later, and so on. As a consequence, the example of using the hourly schedule while providing a frequency from 0-42 does not run as expected.
- The backup on an AIX host fails because of an SSL communication failure between the Snap Creator Server and Snap Creator Agent.

In StorageRestfulHelper and ExtendedRepositoryRestfulHelper, the setSecureSocketProtocol option is set to **SSL** instead of **TLS**, which is a higher version of SSL that is required for communication in the case of an AIX host.

If a customer writes a custom Java plug-in and makes storage proxy calls on an AIX host, a failure of this type might be an issue.
- When you perform a backup operation, Snap Creator tries to connect and verify the connection and version information of all the storage systems in the Global Configuration file.

This occurs because the backup fails when one of the storage systems contains a wrong password, even though the backup has nothing to do with this storage system.
- When you perform a restore operation from SnapMirror primary on the clustered Data ONTAP Edge and FlexArray server, the restore operation fails with the following error message: ERROR: STORAGE-02162: Restoring Snapshot copy *Snapshot copy name* of volume *volume name* failed with error NaAPIFailedException: Failed to promote Snapshot copy *Snapshot copy name* because one or more newer Snapshot copies are currently used as a reference Snapshot copy for data protection operations
- When you rename an existing configuration file by using the Snap Creator GUI, selecting **Management > Configurations > Profiles and Configurations**, and then right-clicking the configuration file to rename it, the existing logs and scheduled jobs are not updated with the new name of the configuration file.
- The Snap Creator GUI does not allow you to create new permissions for a newly created user or role.

- The Snap Creator GUI does not allow you to assign and unassign an operation to a new permission.
- The Snap Creator GUI does not allow you to list all the assigned operations for a permission.
- After upgrading from Snap Creator 3.6 to Snap Creator 4.1 or Snap Creator 4.1p1, the **User** column on the Schedule page is not updated with the user names.
- You can create multiple jobs with the same names by clicking **Management > Schedules** in the Snap Creator GUI. However, after you upgrade to a later version of Snap Creator, the scheduled jobs with the same names do not run.
- Snap Creator allows operators to modify the super global configuration file, meaning any operator can modify any profiles that are not assigned to them. For example, there are two operators: Operator1 is assigned Profile1 and Operator2 is assigned Profile2. However, Operator2 can modify the Profile1 (configuration files) behavior that is assigned to Operator1 by editing the super global configuration file. Although the RBAC permissions only allow Operator1 (or the admin) to modify Profile1 configuration files, Operator2 can modify them by editing the super global configuration file.
- When running the PRE/POST commands with the Snap Creator Agent, the Snap Creator Agent can be controlled using the `allowed_commands.config` file (`/scAgent4.1P1/etc/allowed_commands.config`). If this file is configured properly, then the use of unwanted commands can be avoided on the Snap Creator Agent host through Snap Creator.
However, you can run the command using the SERVER option (for example, `PRE_APP QUIESCE=SERVER:<command>`) any time. This cannot be controlled as it was on the Snap Creator Agent. Whoever knows the Snap Creator credentials can trigger the OS commands such as **reboot**, **ls**, **pwd**, or they can run create and run a script on the Snap Creator Server host even if they do not know the OS credentials.
- You can log in to Snap Creator by using the encrypted password.
You can copy the encrypted password stored in the `SNAPCREATOR_PASS` parameter in the `snapcreator.properties` file, which is located at `/install_path/scServer4.1.0/engine/etc`.
- You can access the storage system from the Snap Creator GUI with the encrypted password that you copied from the configuration file.
When you create a configuration file from the Snap Creator GUI, enable the Password Encryption option. After creating the configuration file, you can copy the encrypted password from the `NTAP_USER` parameter. While creating another configuration file, when you reach the Controller/Vserver Credentials page in the wizard and are prompted for the Controller/Vserver user name and password, enter the encrypted password for the password. Snap Creator connects to the storage system and lists all of the volumes.
- Snapshots on all secondary volumes are not retained according to the retention policy.
This issue occurs because Snap Creator performs a SnapMirror update and then applies a retention policy on the primary volume. The result is that any Snapshot copies that have been deleted as part of the retention policy are still present on SnapMirror secondary volumes.
- If you are using the SnapManager for Oracle plug-in to restore or recover the database and the process runs long, the SnapManager for Oracle plug-in context that Snap Creator Agent maintains is lost. This can also occur when Snap Creator Agent and the Snap Creator Server connection time out.

- When the configuration file has a volume with a SnapMirror relationship, the Snap Creator backup operation triggers the SnapMirror update job. If the destination volume in the SnapMirror relationship is offline, the SnapMirror update operation on the controller fails.

The failed SnapMirror update operation is not captured in the Snap Creator job status because Snap Creator does not follow up on the completion status of the SnapMirror job.

- If you are using Data ONTAP 8.2 operating in 7-Mode in a SAN environment, and you try to restore VMware virtual machines and vApps by using the VMware plug-in, the operation fails. The following error message is displayed:
[vmw-00046] ONTAP API call license-list-info failed: This API is no longer supported. Use license-v2-list-info instead.
- The SnapVault relationship is ignored for multiple volumes.
- A Consistency Group Snapshot is not taken on VOLUMES and META_DATA_VOLUME if SnapDrive for Windows commands are used with Snap Creator Server.
- The Consistency Group retry logic in the backup workflow goes into an infinite loop when some of the volumes go offline.

Websites

IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. The following web pages provide N series information:

- A listing of currently available N series products and features can be found at the following web page:
www.ibm.com/storage/nas
- The IBM System Storage N series support website requires users to register in order to obtain access to N series support content on the web. To understand how the N series support web content is organized and navigated, and to access the N series support website, refer to the following publicly accessible web page:
www.ibm.com/storage/support/nseries/
This web page also provides links to AutoSupport information as well as other important N series product resources.
- IBM System Storage N series products attach to a variety of servers and operating systems. To determine the latest supported attachments, go to the IBM N series interoperability matrix at the following web page:
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