NetApp

NetApp SolidFire Python SDK Release Notes

Version: v1.5

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Introduction

The NetApp SolidFire Python SDK is a collection of software modules and libraries that facilitate integration and orchestration between proprietary systems and third-party applications. The Python SDK allows developers to deeply integrate SolidFire system API with their Python programming language. The NetApp SolidFire Python SDK reduces the amount of additional coding time required for integration.

The Python SDK is available from PyPI, GitHub, and BrickFTP.

The intended audience for this document is Python developers who are responsible for integrating SolidFire into other applications.

> **NOTE:** All version 1.5 SDK languages have identical SolidFire functionality and available APIs.

Support Matrix

The SolidFire Python SDK supports the following software.

Component	Versions
Python	Python 2: 2.7 and later Python 3: 3.3 or later
SolidFire Element OS	7.0 through 10.0

Installing the NetApp SolidFire Python SDK from Source Control

You can install the NetApp SolidFire Python SDK from GitHub to edit the source code or clone the project for development purposes.

Procedure

> **NOTE:** NetApp SolidFire recommends virtualenv to isolate your Python environment to only the required libraries.

1. Install the NetApp SolidFire Python SDK:
   - Install from a branch in source control:

     ```
     pip install -e git+https://github.com/solidfire/solidfire-sdk-
     python.git@develop#egg=solidfire-sdk-python
     ```

   - Alternatively, create a local clone of the repository for development purposes or to inspect the source code:

     ```
     git clone git@github.com:solidfire/solidfire-sdk-python.git
     cd solidfire-sdk-python
     git checkout develop
     pip install -e ".[dev,test, docs, release]"
     python setup.py install
     ```

2. Append the SolidFire directory location to your `PYTHONPATH` environment variable. This enables you to use the SolidFire Python SDK in other Python scripts.

```
export PYTHONPATH=$PYTHONPATH:/path/to/sf-python-sdk/
```

3. Review the GitHub project page for examples of higher level classes and links to supplemental documentation.

Installing the NetApp SolidFire Python SDK from PyPI

You can globally install the NetApp SolidFire Python SDK from PyPI using pip.

Prerequisites

- pip version 1.3 or later must be installed globally.

Procedure

> **NOTE:** NetApp SolidFire recommends virtualenv to isolate your Python environment to only the required libraries.

1. Type the following command in pip:

```
pip install solidfire-sdk-python
```

2. Review the GitHub project page for examples of higher level classes and links to supplemental documentation.

What's New in this Release

The Python SDK version 1.5 release expands supported SolidFire Element OS API methods through version 10.0. This release also contains revised parameters for existing methods.

The following version 10.0 API methods have been added to all SDK languages:

New API Methods
CreateQoSPolicy
DeleteQoSPolicy
GetLoginBanner
GetNodeSSLCertificate
GetQoSPolicy
GetSSLCertificate
ListQosPolicies
ModifyQoSPolicy
RemoveNodeSSLCertificate
RemoveSSLCertificate
SetLoginBanner
SetNodeSSLCertificate
SetSSLCertificate

The following methods have been modified in all SDK languages.

NOTE: These new or updated parameters are optional.

Modified Method	Parameter Name	Type
AddDrives	• forceDuringBinSync	• Boolean
CreateVolume	• associateWithQoSPolicy • qosPolicyID	• Boolean • Integer
ModifyVolume	• associateWithQoSPolicy • qosPolicyID	• Boolean • Integer
ModifyVolumes	• associateWithQoSPolicy • qosPolicyID	• Boolean • Integer
ResetNode	• reboot • options	• Boolean • String

The following methods have new Result Objects fields:

Result Object	New Fields
DriveInfo	• chassisSlot
ClusterStats	• normalizedIOPS • readLatencyUSecTotal • servicesCount • servicesTotal • writeLatencyUSecTotal
GetLimitsResult	• scheduleNameLengthMax • qosPolicyCountMax
NodeStatsInfo	• count • cpuTotal • readOps • readLatencyUSecTotal • writeLatencyUSecTotal • writeOps
QoS	• curve - Attributes - optional
Snapshot	• instanceCreateTime • volumeName • instanceSnapshotUUID
Volume	• volumeConsistenctyGroupUUID • volumeUUID • enableSnapMirrorReplication • qosPolicyID • lastAccessTime • lastAccessTimeIO

All NetApp SolidFire SDK API Methods

NetApp SolidFire Python SDK version 1.5 provides SolidFire API methods in Python wrappers. The availability of each API depends on the version of Element OS. API availability for each Element release is indicated by an "x" in the following table.

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
AddAccount	x	x	x	x
AddClusterAdmin	x	x	x	x
AddDrives	x	x	x	x
AddInitiatorsToVolumeAccessGroup	x	x	x	x
AddLdapClusterAdmin	x	x	x	
AddNodes	x	x	x	x
AddVirtualNetwork	x	x	x	x
AddVolumesToVolumeAccessGroup	x	x	x	x
CancelClone	x	x		
CancelGroupClone	x	x		
ClearClusterFaults	x	x	x	x
CloneMultipleVolumes	x	x	x	x
CloneVolume	x	x	x	x
CompleteClusterPairing	x	x	x	x
CompleteVolumePairing	x	x	x	x
CopyVolume	x	x		
CreateBackupTarget	x	x	x	x
CreateCluster	x	x	x	x
CreateGroupSnapshot	x	x	x	x
CreateInitiators	x	x		
CreateQoSPolicy	x			
CreateSchedule	x	x	x	
CreateSnapshot	x	x	x	x
CreateStorageContainer	x	x		
CreateSupportBundle	x	x	x	
CreateVirtualVolumeHost	x	x		
CreateVolume	x	x	x	x
CreateVolumeAccessGroup	x	x	x	x
DeleteAllSupportBundles	x	x	x	
DeleteGroupSnapshot	x	x	x	x

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
DeleteInitiators	x	x		
DeleteQoSPolicy	x			
DeleteSnapshot	x	x	x	x
DeleteStorageContainers	x	x		
DeleteVolume	x	x	x	x
DeleteVolumeAccessGroup	x	x	x	x
DeleteVolumes	x	x		
DisableEncryptionAtRest	x	x	x	x
DisableLdapAuthentication	x	x	x	
DisableSnmp	x	x	x	
EnableEncryptionAtRest	x	x	x	x
EnableFeature	x	x		
EnableLdapAuthentication	x	x	x	
EnableSnmp	x	x	x	
GetAccountByID	x	x	x	x
GetAccountByName	x	x	x	x
GetAccountEfficiency	x	x	x	x
GetAPI	x	x	x	x
GetAsyncResult	x	x	x	x
GetBackupTarget	x	x	x	x
GetBootstrapConfig	x	x	x	x
GetClusterCapacity	x	x	x	x
GetClusterConfig	x	x	x	x
GetClusterFullThreshold	x	x	x	x
GetClusterHardwareInfo	x	x	x	x
GetClusterInfo	x	x	x	x
GetClusterMasterNodeID	x	x	x	x
GetClusterState	x	x	x	x
GetClusterStats	x	x	x	x
GetClusterVersionInfo	x	x	x	x
GetCompleteStats	x	x	x	x
GetConfig	x	x	x	x
GetCurrentClusterAdmin	x	x	x	x

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
GetDefaultQoS	x	x	x	x
GetDriveConfig	x	x	x	x
GetDriveHardwareInfo	x	x	x	x
GetDriveStats	x	x	x	x
GetFeatureStatus	x	x		
GetHardwareConfig	x	x	x	x
GetHardwareInfo	x	x		
GetLdapConfiguration	x	x	x	
GetLimits	x	x	x	x
GetLoginBanner	x			
GetLoginSessionInfo	x	x	x	x
GetNetworkConfig	x	x	x	x
GetNodeHardwareInfo	x	x	x	x
GetNodeSSLCertificate	x			
GetNodeStats	x	x	x	x
GetNtpInfo	x	x	x	x
GetNvramInfo	x	x	x	x
GetPendingOperation	x	x	x	x
GetQoSPolicy	x			
GetRawStats	x	x	x	x
GetRemoteLoggingHosts	x	x	x	x
GetSchedule	x	x	x	
GetSnmpACL	x	x	x	
GetSnmpInfo	x	x	x	x
GetSnmpState	x	x	x	
GetSnmpTrapInfo	x	x	x	x
GetSSLCertificate	x			
GetStorageContainerEfficiency	x	x		
GetSystemStatus	x	x	x	
GetVirtualVolumeCount	x	x		
GetVirtualVolumeTaskUpdate	x	x		
GetVirtualVolumeUnsharedChunks	x	x		
GetVolumeAccessGroupEfficiency	x	x	x	x

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
GetVolumeAccessGroupLunAssignments	x	x	x	x
GetVolumeEfficiency	x	x	x	x
GetVolumeStats	x	x	x	x
InvokeSFApi	x	x		
ListAccounts	x	x	x	x
ListActiveNodes	x	x	x	x
ListActivePairedVolumes	x	x	x	x
ListActiveVolumes	x	x	x	x
ListAllNodes	x	x	x	x
ListAsyncResults	x	x	x	
ListBackupTargets	x	x	x	x
ListBulkVolumeJobs	x	x	x	x
ListClusterAdmins	x	x	x	x
ListClusterFaults	x	x	x	x
ListClusterPairs	x	x	x	
ListDeletedVolumes	x	x	x	x
ListDriveHardware	x	x	x	x
ListDrives	x	x	x	x
ListDriveStats	x	x		
ListEvents	x	x	x	x
ListFibreChannelPortInfo	x	x	x	
ListFibreChannelSessions	x	x	x	x
ListGroupSnapshots	x	x	x	x
ListInitiators	x	x		
ListISCSISessions	x	x	x	x
ListNodeFibreChannelPortInfo	x	x	x	x
ListNodeStats	x	x	x	x
ListPendingNodes	x	x	x	x
ListProtocolEndpoints	x	x		
ListQoSPolicies	x			
ListSchedules	x	x	x	
ListSnapshots	x	x	x	x
ListStorageContainers	x	x		

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
ListSyncJobs	x	x	x	x
ListTests	x	x	x	x
ListUtilities	x	x	x	x
ListVirtualNetworks	x	x	x	x
ListVirtualVolumeBindings	x	x		
ListVirtualVolumeHosts	x	x		
ListVirtualVolumes	x	x		
ListVirtualVolumeTasks	x	x		
ListVolumeAccessGroups	x	x	x	x
ListVolumes	x	x	x	
ListVolumesForAccount	x	x	x	x
ListVolumeStats	x	x		
ListVolumeStatsByAccount	x	x	x	x
ListVolumeStatsByVirtualVolume	x	x		
ListVolumeStatsByVolume	x	x	x	x
ListVolumeStatsByVolumeAccessGroup	x	x	x	x
ModifyAccount	x	x	x	x
ModifyBackupTarget	x	x	x	x
ModifyClusterAdmin	x	x	x	x
ModifyClusterFullThreshold	x	x	x	x
ModifyGroupSnapshot	x	x	x	
ModifyInitiators	x	x		
ModifyQoSPolicy	x			
ModifySchedule	x	x	x	
ModifySnapshot	x	x	x	
ModifyStorageContainer	x	x		
ModifyVirtualNetwork	x	x	x	x
ModifyVolume	x	x	x	x
ModifyVolumeAccessGroup	x	x	x	x
ModifyVolumeAccessGroupLunAssignments	x	x	x	x
ModifyVolumePair	x	x	x	x
ModifyVolumes	x	x	x	
PrepareVirtualSnapshot	x	x		

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
PurgeDeletedVolume	x	x	x	x
PurgeDeletedVolumes	x	x		
RemoveAccount	x	x	x	x
RemoveBackupTarget	x	x	x	x
RemoveClusterAdmin	x	x	x	x
RemoveClusterPair	x	x	x	x
RemoveDrives	x	x	x	x
RemoveInitiatorsFromVolumeAccessGroup	x	x	x	x
RemoveNodes	x	x	x	x
RemoveNodeSSLCertificate	x			
RemoveSSLCertificate	x			
RemoveVirtualNetwork	x	x	x	
RemoveVolumePair	x	x	x	
RemoveVolumesFromVolumeAccessGroup	x	x	x	x
ResetDrives	x	x	x	x
ResetNode	x	x	x	x
RestoreDeletedVolume	x	x	x	x
RollbackToGroupSnapshot	x	x	x	x
RollbackToSnapshot	x	x	x	x
SecureEraseDrives	x	x	x	x
SetClusterConfig	x	x	x	x
SetConfig	x	x	x	x
SetDefaultQoS	x	x		
SetLoginBanner	x			
SetLoginSessionInfo	x	x	x	x
SetNetworkConfig	x	x	x	x
SetNodeSSLCertificate	x			
SetNtpInfo	x	x	x	x
SetRemoteLoggingHosts	x	x	x	x
SetSnmpACL	x	x	x	
SetSnmpInfo	x	x	x	x
SetSnmpTrapInfo	x	x	x	
SetSSLCertificate	x			

API	Element OS 10	Element OS 9	Element OS 8	Element OS 7
SnmpSendTestTraps	x	x	x	
StartBulkVolumeRead	x	x	x	x
StartBulkVolumeWrite	x	x	x	x
StartClusterPairing	x	x	x	x
StartVolumePairing	x	x	x	x
TestConnectEnsemble	x	x	x	x
TestConnectMvip	x	x	x	x
TestConnectSvip	x	x	x	x
TestDrives	x	x	x	x
TestLdapAuthentication	x	x	x	
TestPing	x	x	x	x
UpdateBulkVolumeStatus	x	x	x	x

For more detail on SolidFire API methods, refer to the SolidFire Element API Reference Guide for your operating system.

Contacting NetApp SolidFire SDK Support

If you have any questions or comments about this product, open an issue on our GitHub repo or reach out to the online developer community at ThePub. Your feedback helps us focus our efforts on new features and capabilities.