SOLIDFIRE

SolidFire PowerShell Tools Release Notes

Version: 1.2

3/22/16

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Introduction

The SolidFire PowerShell Tools is a collection of Microsoft® Windows® PowerShell functions that use SolidFire API to control a SolidFire storage system. These functions allow administrators to query for information, make changes to objects in a storage system, and develop complex scripts on a single platform. Users can implement this module with other modules and snap-ins, such as VMware® PowerCLI and Cisco® UCS PowerTool, to extend capabilities throughout the infrastructure.

Any user with a SolidFire storage system and Windows PowerShell can take advantage of the SolidFire PowerShell Tools. Users of the SolidFire PowerShell Tools should have an understanding of Windows PowerShell functions. The SolidFire PowerShell Tools module can be obtained through the SolidFire Support BrickFTP site.

Upgrading the SolidFire PowerShell Tools

To upgrade the SolidFire PowerShell Tools, download the latest MSI release from the SolidFire public GitHub repository or from BrickFTP. Once the MSI is downloaded and brought into your existing PowerShell environment, double-click the MSI file and follow the installation prompts. For a description of the installation process, see the SolidFire PowerShell Tools user guide.

Software Prerequisites

Component	Application	Description
PowerShell	PowerShell 4.0 or 5.0	Version 4.0* is the minimum recommended version to use with SolidFire PowerShell Tools. Functionality may vary on earlier versions. It is also recommended to additionally enable PowerShell 2.0 on your system. PowerShell 2.0 is a prerequisite for other PowerShell snap-ins and modules, such as PowerCLI and UCS PowerTool.
Operating system options**	Microsoft® Windows® 8.1	PowerShell is installed by default. Install the KB2883200 update.
	Microsoft® Windows® 7 SP1	PowerShell is supported but not installed.
	Microsoft® Windows® 10	PowerShell is installed by default.
	Windows® Server 2012 R2 64-bit	PowerShell is installed by default.
	Windows® Server 2008 R2 with SP1	PowerShell is supported but not installed. Install the PowerShell ISE role prior to installing Windows Management Framework (WMF) 4.0.
.NET framework		4.5.1 or later
SolidFire OS		Element versions 6, 7, and 8

*Additional components might be required in order to take full advantage of PowerShell 4.0 and the SolidFire PowerShell Tools. These components include WS-Management 3.0 and Windows Management Instrumentation (WMI) 3.0.

**The installer for SolidFire PowerShell Tools requires a 64-bit operating system to successfully complete installation.

What's New in this Release

SolidFire PowerShell Tools version 1.2 contains the following improvements:

- Added new cmdlet functionality for LDAP, scheduling, remote logging, login sessions, volume pairing, cluster pairing, and bulk volume tasks.
- Expanded `Connect-SFCluster` cmdlet functionality:
  - Added port attribute so that SolidFire Support can connect to ports other than 443/442.
  - Connections to Element OS API patch versions now available.
  - Improved error message reporting to be more descriptive and contain API cluster responses.
- Expanded available snapshot replication parameters for `Get-SFGroupSnapshot`, `Get-SFSnapshot`, `New-SFGroupSnapshot`, and `New-SFSnapshot` cmdlets.
- Expanded `Get-SFVolume` cmdlet to accept volume names as an alternate choice to volume IDs.

The following are new SolidFire cmdlets in the version 1.2 release:

- `Complete-SFClusterPairing`: [Cluster] Completes the cluster pairing processing using the encoded key created by the Start-SFClusterPairing cmdlet.
- `Complete-SFVolumePairing`: [Cluster] Completes the pairing of two volumes.
- `Get-SFClusterPair`: [Cluster] Lists all of the clusters with which a cluster is paired.
- `Get-SFLdapConfiguration`: [Cluster] Gets the active LDAP configuration on cluster.
- `Get-SFLoginSessionInfo`: [Cluster] Returns the period of time a login authentication is valid for both login shells and the TUI.
- `Get-SFNodeStats`: [Cluster] Gets the high-level activity measurements for all nodes in a cluster.
- `Get-SFPendingOperation`: [Node] Gets information about an operation on a node that is in progress.
- `Get-SFRemoteLoggingHost`: [Cluster] Gets the list of current log servers.
- `Get-SFSchedule`: [Cluster] Gets the scheduled snapshots on a cluster.
- `Get-SFVolumePair`: [Cluster] Gets a list of all of active volumes that are part of a volume pairing.
- `New-SFLdapClusterAdmin`: [Cluster] Adds a new LDAP cluster admin.
- `New-SFSchedule`: [Cluster] Creates a schedule that automatically makes a snapshot of a volume at a defined interval.
- `Remove-SFClusterFault`: [Cluster] Removes faults on the cluster.
- `Remove-SFClusterPair`: [Cluster] Closes the open connections between two paired clusters.
- `Remove-SFSchedule`: [Cluster] Deletes a snapshot schedule.
- `Remove-SFVolumePair`: [Cluster] Removes the remote pairing between two volumes.
- `Set-SFClusterFullThreshold`: [Cluster] Changes the threshold setting at which an event is generated when the storage cluster approaches a block fullness level.
- `Set-SFGroupSnapshot`: [Cluster] Modifies a point-in-time snapshot of a group of volumes.
- `Set-SFLdapAuthentication`: [Cluster] Enables or disables LDAP configuration.
- `Set-SFLoginSessionInfo`: [Cluster] Configures the period of time that a session login is valid.
- `Set-SFRemoteLoggingHost`: [Cluster] Configures remote logging from the nodes in the storage cluster to a centralized log server or servers.
- `Set-SFSchedule`: [Cluster] Modifies the intervals at which scheduled snapshot creation occurs or deletes schedule.
- `Set-SFSnapshot`: [Cluster] Modifies a point-in-time snapshot of a volume.
- `Set-SFVolumePair`: [Cluster] Pauses or restarts replication between a pair of volumes.
- `Start-SFClusterPairing`: [Cluster] Creates an encoded key from a cluster that is used to pair with another cluster.

- `Start-SFVolumeBackup`: [Cluster] Initializes a backup (bulk volume read) session on a specified volume.
- `Start-SFVolumePairing`: [Cluster] Creates an encoded key from a volume that is used to pair with another volume.
- `Start-SFVolumeRestore`: [Cluster] Initializes a restore (bulk volume write) session on a specified volume.
- `Test-SFLdapAuthentication`: [Cluster] Verifies LDAP authentication configuration.

The following are all cmdlets included in the version 1.2 release:

- `Add-SFDrive`: [Cluster] Adds available drives to the cluster.
- `Add-SFInitiatorToVolumeAccessGroup`: [Cluster] Adds initiators to an existing volume access group.
- `Add-SFNode`: [Cluster] Adds a SolidFire node to the cluster.
- `Add-SFSnmpNetwork`: [Cluster] Adds an SNMP network object that is used to configure SNMP on the cluster nodes.
- `Add-SFSnmpTrapRecipient`: [Cluster] Adds a host that receives traps generated by the cluster master.
- `Add-SFSnmpUsmUser`: [Cluster] Adds an SNMP v3 USM users object that is used to access SNMP on the cluster.
- `Add-SFVolumeToVolumeAccessGroup`: [Cluster] Adds one or more volumes to an existing volume access group.
- `Complete-SFClusterPairing`:[Cluster] Completes the cluster pairing processing using the encoded key created by the Start-SFClusterPairing cmdlet.
- `Complete-SFVolumePairing`: [Cluster] Completes the pairing of two volumes.
- `Connect-SFCluster`: [Node/Cluster] Initiates a connection sequence that establishes a SolidFire node or cluster connection.
- `Disable-SFSnmp`: [Cluster] Disables SNMP on the SolidFire cluster.
- `Disconnect-SFCluster`: [Node/Cluster] Disconnects a cluster or node connection.
- `Enable-SFSnmp`: [Cluster] Enables SNMP on the SolidFire cluster.
- `Get-SFAccount`: [Cluster] Gets information on all active volume accounts on a SolidFire cluster.
- `Get-SFAccountEfficiency`: [Cluster] Gets storage efficiency information for a given account.
- `Get-SFActiveNode`: [Cluster] Gets information about the active SolidFire nodes in the cluster.
- `Get-SFASyncResult`: [Cluster] Gets the result of an asynchronous method call.
- `Get-SFBootstrapConfig`: [Node] Gets the IP addresses of other nodes that have been configured with the same cluster information as the polled node.
- `Get-SFBulkVolumeJob`: [Cluster] Gets information about each bulk volume read and write operation occuring in the system.
- `Get-SFClusterAdmin`: [Cluster] Gets a list of all cluster administrators for the cluster.
- `Get-SFClusterCapacity`: [Cluster] Gets high-level capacity measurements of an entire cluster.
- `Get-SFClusterConfig`: [Node] Gets the cluster configuration of a node.
- `Get-SFClusterFault`: [Cluster] Gets information about faults detected on the cluster.
- `Get-SFClusterFullThreshold`: [Cluster] Gets cluster fullness levels.
- `Get-SFClusterInfo`: [Cluster] Gets configuration information about the cluster.
- `Get-SFClusterMasterNodeID`: [Cluster] Gets the ID of the node that performs cluster-wide administration tasks and holds the storage virtual IP (SVIP) and management virtual IP (MVIP).
- `Get-SFClusterPair`: [Cluster] Lists all of the clusters with which a cluster is paired.
- `Get-SFClusterState`: [Node] Gets the state of node within Cluster.
- `Get-SFClusterStats`: [Cluster] Gets high-level activity measurements for the cluster.
- `Get-SFClusterVersionInfo`: [Cluster] Gets information about the Element OS software running on each node in the cluster.

- `Get-SFConfig`: [Node] Gets the network and cluster configuration of a node.
- `Get-SFCurrentClusterAdmin`: [Cluster] Gets user information for the current cluster administrator.
- `Get-SFDefaultQoS`: [Cluster] Gets the default QoS values that are set for a volume if QoS is not supplied.
- `Get-SFDeletedVolume`: [Cluster] Gets the entire list of volumes that have been marked for deletion and purged from the system.
- `Get-SFDrive`: [Cluster] Gets a list of drives that exists in the cluster's active nodes.
- `Get-SFDriveConfig`: [Node] Gets drive information for each drive in the node.
- `Get-SFDriveHardwareInfo`: [Cluster] Gets hardware information for a specified drive.
- `Get-SFDriveStats`: [Cluster] Gets high-level activity measurements for a SolidFire drive.
- `Get-SFEvent`: [Cluster] Gets events detected on the cluster.
- `Get-SFFibreChannelPortInfo`: [Cluster] Gets information about Fibre Channel ports on all nodes in a cluster.
- `Get-SFFibreChannelSession`: [Cluster] Gets information about the active Fibre Channel sessions on a cluster.
- `Get-SFGroupSnapshot`: [Cluster] Gets information about all group snapshots that have been created.
- `Get-SFIscsiSession`: [Cluster] Gets information about the iSCSI sessions for each volume.
- `Get-SFLdapConfiguration`: [Cluster] Gets the active LDAP configuration on cluster.
- `Get-SFLimits`: [Cluster] Gets the limit values defined on the cluster.
- `Get-SFLoginSessionInfo`: [Cluster] Returns the period of time a login authentication is valid for both login shells and the TUI.
- `Get-SFLunAssignment`: [Cluster] Gets LUN mappings of a specified volume access group.
- `Get-SFNetworkConfig`: [Node] Gets the network configuration of a node.
- `Get-SFNetworkInterface`: [Cluster] Gets information about each network interface on all nodes in a cluster.
- `Get-SFNodeStats`: [Cluster] Gets the high-level activity measurements for all nodes in a cluster.
- `Get-SFNtpInfo`: [Cluster] Gets the current network time protocol (NTP) configuration information.
- `Get-SFPendingNode`: [Cluster] Gets information on pending SolidFire nodes that could be added to the cluster.
- `Get-SFPendingOperation`: [Node] Gets information about an operation on a node that is in progress.
- `Get-SFRemoteLoggingHost`: [Cluster] Gets the list of current log servers.
- `Get-SFSchedule`: [Cluster] Gets the scheduled snapshots on a cluster.
- `Get-SFSnapshot`: [Cluster] Gets the attributes of each snapshot taken on a volume.
- `Get-SFSnmpAcl`: [Cluster] Gets the current SNMP access permissions on cluster nodes.
- `Get-SFSnmpInfo`: [Cluster] Gets the current SNMP configuration information.
- `Get-SFSnmpState`: [Cluster] Gets the current state of the SNMP feature.
- `Get-SFSnmpTrapInfo`: [Cluster] Gets current SNMP trap configuration information.
- `Get-SFSyncJob`: [Cluster] Gets information about the synchronization jobs that are running on a SolidFire cluster.
- `Get-SFVirtualNetwork`: [Cluster] Gets a list of all the configured virtual networks for the cluster.
- `Get-SFVolume`: [Cluster] Gets a list of volumes from the cluster.
- `Get-SFVolumeAccessGroup`: [Cluster] Gets information about a SolidFire volume access group.
- `Get-SFVolumeAccessGroupEfficiency`: [Cluster] Gets efficiency information about all volumes in a volume access group.
- `Get-SFVolumeEfficiency`: [Cluster] Gets efficiency information about a volume.
- `Get-SFVolumePair`: [Cluster] Gets a list of all of active volumes that are part of a volume pairing.

- `Get-SFVolumeStats`: [Cluster] Gets high-level activity measurements for the specified volume(s).
- `Invoke-SFApi`: [Node/Cluster] A generic cmdlet that invokes any SolidFire API method.
- `Invoke-SFRestoreDeletedVolume`: [Cluster] Marks a deleted volume as active again.
- `Invoke-SFRollbackToGroupSnapshot`: [Cluster] Rolls back all individual volumes in a snapshot group to each volume's individual snapshot.
- `Invoke-SFRollbackToSnapshot`: [Cluster] Makes an existing snapshot the "active" volume image.
- `Invoke-SFSecureEraseDrive`: [Cluster] Removes any residual data from a drive using a Security Erase Unit command and resetting the encryption key on the drive.
- `New-SFAccount`: [Cluster] Adds a new account to the system.
- `New-SFClone`: [Cluster] Creates a copy of the volume.
- `New-SFCloneMultiple`: [Cluster] Creates a clone of a group of specified volumes.
- `New-SFCluster`: [Cluster] Creates a new SolidFire cluster from a list of nodes that are configured with the same cluster name.
- `New-SFClusterAdmin`: [Cluster] Adds a new cluster admin.
- `New-SFGroupSnapshot`: [Cluster] Creates a point-in-time snapshot of a group of volumes.
- `New-SFLdapClusterAdmin`: [Cluster] Adds a new LDAP cluster admin.
- `New-SFNodeSupportBundle`: [Node] Creates a support bundle file under the node's directory.
- `New-SFSchedule`: [Cluster] Creates a schedule that automatically makes a snapshot of a volume at a defined interval.
- `New-SFSnapshot`: [Cluster] Creates a point-in-time snapshot of a volume.
- `New-SFVirtualNetwork`: [Cluster] Adds a new virtual network to a cluster configuration.
- `New-SFVolume`: [Cluster] Creates a new SolidFire volume.
- `New-SFVolumeAccessGroup`: [Cluster] Creates a new volume access group.
- `Remove-SFAccount`: [Cluster] Removes an existing account.
- `Remove-SFClusterAdmin`: [Cluster] Removes a cluster admin.
- `Remove-SFClusterFault`: [Cluster] Removes faults on the cluster.
- `Remove-SFClusterPair`: [Cluster] Closes the open connections between two paired clusters.
- `Remove-SFDeletedVolume`: [Cluster] Immediately and permanently purges a volume that has been deleted.
- `Remove-SFDrive`: [Cluster] Removes drives that are part of the cluster and ensures data is migrated to other drives in the cluster prior to removal.
- `Remove-SFGroupSnapshot`: [Cluster] Removes a group snapshot and optionally preserves the individual snapshots.
- `Remove-SFInitiatorFromVolumeAccessGroup`: [Cluster] Removes initiators from a volume access group.
- `Remove-SFNode`: [Cluster] Removes one or more nodes from the cluster.
- `Remove-SFNodeSupportBundle`: [Node] Deletes all support bundles generated with the New-SFNodeSupportBundle cmdlet.
- `Remove-SFSchedule`: [Cluster] Deletes a snapshot schedule.
- `Remove-SFSnapshot`: [Cluster] Deletes an inactive snapshot.
- `Remove-SFVirtualNetwork`: [Cluster] Removes a configured virtual network from the cluster.
- `Remove-SFVolume`: [Cluster] Marks an active volume for deletion.
- `Remove-SFVolumeAccessGroup`: [Cluster] Removes a volume access group from the cluster.
- `Remove-SFVolumeFromVolumeAccessGroup`: [Cluster] Removes one or more volumes from a volume access group.
- `Remove-SFVolumePair`: [Cluster] Removes the remote pairing between two volumes.

- `Set-SFAccount`: [Cluster] Modifies an existing account.
- `Set-SFClusterAdmin`: [Cluster] Modifies properties on a cluster admin account (password and access).
- `Set-SFClusterConfig`: [Node] Sets the cluster configuration options for a node.
- `Set-SFClusterFullThreshold`: [Cluster] Changes the threshold setting at which an event is generated when the storage cluster approaches a block fullness level.
- `Set-SFGroupSnapshot`: [Cluster] Modifies a point-in-time snapshot of a group of volumes.
- `Set-SFLdapAuthentication`: [Cluster] Enables or disables LDAP configuration.
- `Set-SFLoginSessionInfo`: [Cluster] Configures the period of time that a session login is valid.
- `Set-SFLunAssignment`: [Cluster] Defines custom LUN assignments for specific volumes.
- `Set-SFNetworkConfig`: [Node] Sets the network configuration options for a node.
- `Set-SFNtpInfo`: [Cluster] Configures the NTP on cluster nodes.
- `Set-SFRemoteLoggingHost`: [Cluster] Configures remote logging from the nodes in the storage cluster to a centralized log server or servers.
- `Set-SFSchedule`: [Cluster] Modifies the intervals at which scheduled snapshot creation occurs or deletes schedule.
- `Set-SFSnapshot`: [Cluster] Modifies a point-in-time snapshot of a volume.
- `Set-SFSnmpAcl`: [Cluster] Configures SNMP access permissions on the cluster node.
- `Set-SFSnmpInfo`: [Cluster] Configures SNMP v2 and v3 on the cluster nodes.
- `Set-SFSnmpTrapInfo`: [Cluster] Enables and disables generation of SolidFire SNMP notifications (traps) and specifies the set of network host computers that receive notifications.
- `Set-SFVirtualNetwork`: [Cluster] Modifies various attributes of a VirtualNetwork object.
- `Set-SFVolume`: [Cluster] Configures settings of an existing volume.
- `Set-SFVolumeAccessGroup`: [Cluster] Configures the name or attributes of a VAG.
- `Set-SFVolumePair`: [Cluster] Pauses or restarts replication between a pair of volumes.
- `Start-SFClusterPairing`: [Cluster] Creates an encoded key from a cluster that is used to pair with another cluster.
- `Start-SFVolumeBackup`: [Cluster] Initializes a backup (bulk volume read) session on a specified volume.
- `Start-SFVolumePairing`: [Cluster] Creates an encoded key from a volume that is used to pair with another volume.
- `Start-SFVolumeRestore`: [Cluster] Initializes a restore (bulk volume write) session on a specified volume.
- `Test-SFLdapAuthentication`: [Cluster] Verifies LDAP authentication configuration.

Contacting SolidFire PowerShell Tools Support

If you have any questions or comments about this product, reach out to the SolidFire PowerShell Tools Development Community. Your feedback helps us focus our efforts on new features and capabilities.

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