



# Direct management of storage, no strings attached

Include storage management in your automation strategies thanks to NetApp SolidFire's full-featured API

The days of being held back by limited legacy storage allocation practices or hindered by impossible-to-maintain management workflows are a thing of the past. With a full-featured API, NetApp SolidFire puts our entire all-flash, scale-out storage system at your fingertips for complete, robust integrations. The right storage infrastructure can help you think up the stack when optimizing your applications and workloads. The right storage APIs enable you to automate down the stack. With NetApp SolidFire, APIs are simply the beginning. Now, all complex management tasks can be abstracted from users, rendering storage an easily programmable resource—increasing your capabilities and driving your business.

## ECOSYSTEM CONNECTIVITY

VMware Docker OpenStack CloudStack

## TOOLS AND INTEGRATIONS

Windows  
Linux | Docker  
macOS

Device  
Agent

Native  
QoSSIOC



Powershell



Puppet



vCenter Plugin

### You can Consume Standard Tools

SolidFire's deep integration with industry-leading virtualization and cloud platforms helps minimize your development time and overhead, which enables more complete and agile solutions. Standard tools and integrations coupled with ecosystem plugins make direct management seamless. Future integrations are simplified when leveraging SolidFire's full-featured software development kits.

## SDKs



Python



Java



.NET  
C#

### SDKs Simplify API Consumption

SolidFire's software development kits (SDKs) and tools facilitate full automation and simplify integration of SolidFire features into existing tools, helping you do more, faster.

## FULL-FEATURED API

Quality of Service

Tenant VLANs

Group Snapshots

Clone

Replication

### Robust APIs Control All Features

SolidFire was built from the ground up to provide a complete API, putting all storage features and functionality at your fingertips. This eliminates error-prone manual tasks and troublesome scripting hacks—and builds an unrivaled foundation for scaled automation.

## CREATING A VOLUME FOR CLOUDSTACK

### BEFORE SDK

```
public static long createSolidFireVolume(SolidFireConnection sfConnection, String strSFVolumeName, long lSFAccountid, long lTotalSize,
    boolean bEnableS12e, Map<String, String> mapAttributes, long minIops, long maxIops, long burstIops)
{
    JsonObject volumeToCreate = new JsonObject();
    volumeToCreate.addProperty("method", "CreateVolume");

    JsonObject params = new JsonObject();
    volumeToCreate.add("params", params);

    params.addProperty("name", strSFVolumeName);
    params.addProperty("accountId", lSFAccountid);
    params.addProperty("totalSize", lTotalSize);
    params.addProperty("enableS12e", bEnableS12e);

    JsonObject qos = new JsonObject();

    params.add("qos", qos);

    qos.addProperty("miniOPS", minIops);
    qos.addProperty("maxIOPS", maxIops);
    qos.addProperty("burstIOPS", burstIops);

    if (mapAttributes != null && mapAttributes.size() > 0) {
        JsonObject attributes = new JsonObject();

        params.add("attributes", attributes);

        Iterator<Map.Entry<String, String>> itr = mapAttributes.entrySet().iterator();

        while (itr.hasNext()) {
            Map.Entry<String, String> pair = itr.next();
            attributes.addProperty(pair.getKey(), pair.getValue());
        }
    }

    final Gson gson = new GsonBuilder().create();
    String strVolumeToCreateJson = gson.toJson(volumeToCreate);
    String strVolumeCreateResultJson = executeJsonRpc(sfConnection, strVolumeToCreateJson);
    VolumeCreateResult volumeCreateResult = gson.fromJson(strVolumeCreateResultJson, VolumeCreateResult.class);
    verifyResult(volumeCreateResult.result, strVolumeCreateResultJson, gson);
    return volumeCreateResult.result.volumeID;
}
```

### WITH SDK

```
public static long createVolume(SolidFireConnection sfConnection, String volumeName, long accountId, long totalSize,
    boolean enableS12e, Map<String, String> mapAttributes, long minIops, long maxIops, long burstIops) {
    CreateVolumeRequest request = CreateVolumeRequest.builder()
        .name(volumeName)
        .accountId(accountId)
        .totalSize(totalSize)
        .enableS12e(enableS12e)
        .optionalAttributes(convertMap(mapAttributes))
        .optionalQos(new QoS(Optional.of(minIops), Optional.of(maxIops), Optional.of(burstIops), Optional.EMPTY_LONG))
        .build();
    return getSolidFireElement(sfConnection).createVolume(request).getVolumeID();
}
```

SolidFire SDKs enable hundreds of lines of code to be eliminated. That's hours of work and headaches saved through SolidFire's own integrations such as CloudStack. The SDKs provide easy-to-use interfaces and enable you to access and automate all aspects of your SolidFire cluster more quickly and efficiently, leveraging the tools you already know.

SolidFire APIs allow for complete integration. 1&1, a world leader in internet service providers, integrates both its management and orchestration environments with SolidFire's robust API. SolidFire's ease-of-use aligns with 1&1's mission by simplifying the use of technology and making the cloud dependable, flexible, and accessible to small businesses, enterprises, and resellers alike. 1&1 can now offer its customers two million server configurations in 55 seconds (compared to 1,000 over 10 minutes prior to a SolidFire implementation). And SolidFire's Quality of Service, enabled through the API, allows 1&1 to offer tiers of performance without having to worry about the effects of noisy neighbors. Read more about how SolidFire enabled 1&1 at [solidfire.com/1and1](http://solidfire.com/1and1).

SolidFire has long been integrated with virtualization platforms and orchestration tools to enable agile solutions. Ultimate Software chose SolidFire for its ability to integrate with two different tools: VMware and OpenStack. Integration with VMware's vSphere client was a must for existing infrastructures, and OpenStack integrations were necessary for building Ultimate Software's future roadmap. The ability to integrate with PowerShell across Ultimate Software's ecosystem today and meet the needs of its next generation data center make SolidFire the perfect fit. Read more about how the SolidFire platform served Ultimate Software's needs at [solidfire.com/ultimatesoftware](http://solidfire.com/ultimatesoftware).

To join NetApp's community of developers, visit [netapp.io](http://netapp.io) and follow @NetAppPub on Twitter.

### About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.

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