

**FUTUREWEI**

**Huawei® OceanStor Dorado CloudBackup to Scality®  
RING® & Axians® FastStorage® Cloud S3 Storage  
Test Report**

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FUTUREWEI® TECHNOLOGIES, INC.

Boston Research Center

Address: 111 Speen Street, Suite 114  
Framingham, MA 01701  
United States of America

Website: <http://www.futurewei.com/>

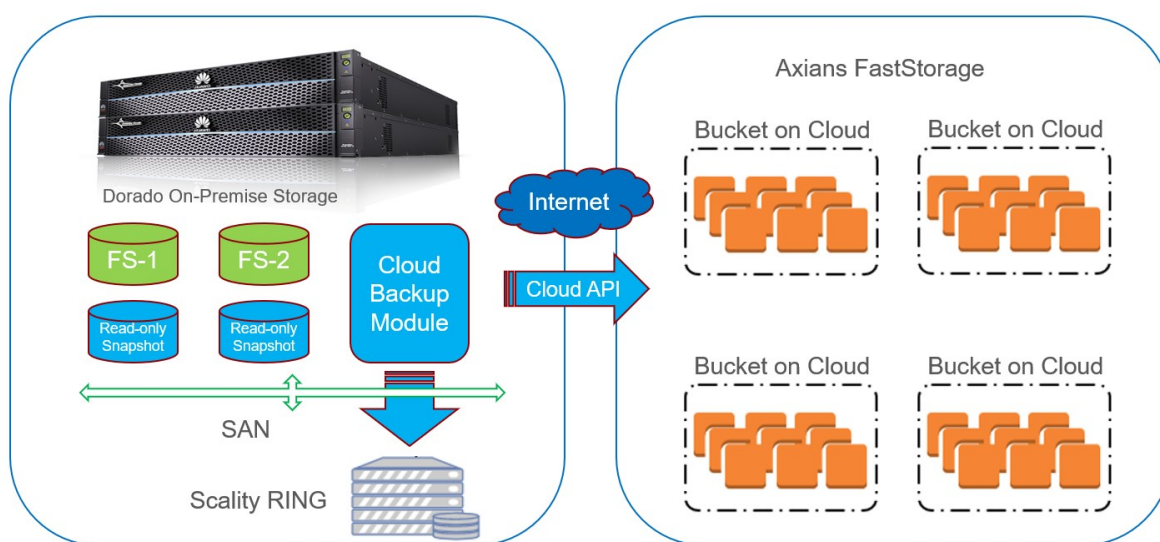
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# 1 Executive Summary

We assessed the Huawei® OceanStor Dorado NAS CloudBackup solution with Scalality® RING® on-premises S3 compatible storage, and Axians® FastStorage® S3 compatible cloud storage. Here is the high-level solution architecture of OceanStor Dorado CloudBackup:



In the assessment, compatibility issue blocked further test of Huawei OceanStor Dorado V6 NAS with these S3 compatible object storage: Axians FastStorage and Scalality RING.

Test Scenario	System Involved	Result
NAS backup to cloud	OceanStor Dorado V6 Scality RING object storage Axians FastStorage	blocked
NAS restore from cloud	OceanStor Dorado V6 Scality RING object storage Axians FastStorage	blocked

It is worth mentioning that Scalality RING is the number 1 market share holder for on-premises S3 object storage, so the market need is obvious. This compatibility gap should be resolved as soon as possible either through product enhancement, or using 3<sup>rd</sup>-party tools such as S3proxy.

# 2 Test Environment

## 2.1 Hardware and Software Configurations

### 2.1.1 Configuration of a Single OceanStor Dorado

**Table 2-1** OceanStor Dorado configuration

Name	Description	Quantity
OceanStor Dorado	Huawei OceanStor Dorado 5000 V6 with two controllers	1
10GE front-end interface module	4-port 10GE SmartIO interface module	4
25 Gbit/s RoCE I/O module	4-port FE 25 Gbit/s RoCE I/O module	2
SAS SSD	Huawei 3.84 TB SAS SSD	10

### 2.1.2 Configuration of Other Hardware

**Table 2-2** Configuration of other hardware

Name	Description	Quantity	Function
Linux server	x86 server <ul style="list-style-type: none"><li>• CPU: 8 x</li><li>• Memory: 8 GB</li><li>• Main storage disk: 60 Gb</li><li>• Network: GE and 10GE optical ports</li></ul>	1	

### 2.1.3 Test Software and Tools

**Table 2-3** Test software and tools

Software	Description	Quantity
Cloud storage: Axians FastStorage	S3 compatible	
Scality RING virtual appliance	S3 compatible	
S3 browser	9.9.7 Free Version	

# 3 Test Cases




## 3.1 Setting up S3 Compatible Storage

### 3.1.1 Setting up Scality RING 8.5.0 Virtual Appliance

Prerequisites:

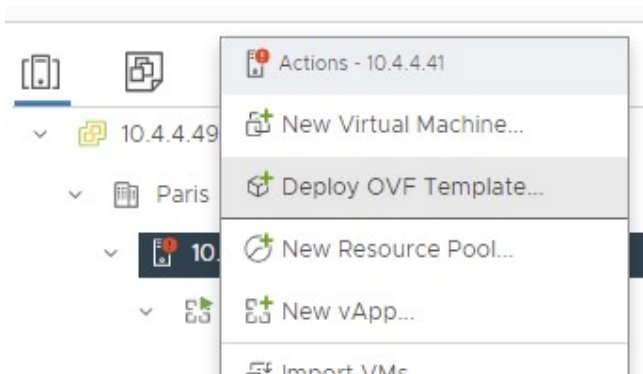
One ESXi server with at least 128GB memory (recommend 256GB), and at least 2TB of storage.

1. Collect the following binary and guides:

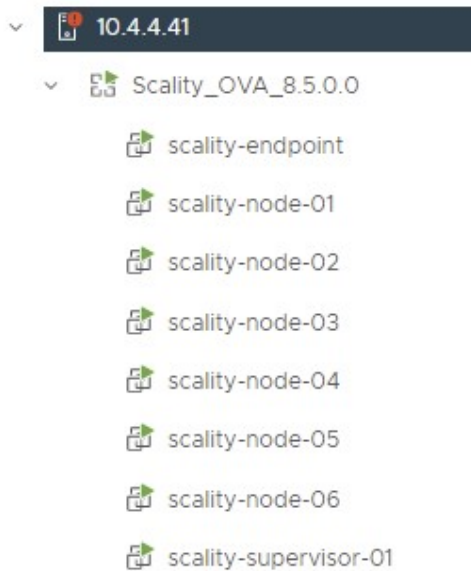
-  Scality OVA 8.5.0.0 Deployment guide - 6-server RING - 10TB.docx
-  Scality OVA 8.5.0.0 Deployment guide - 6-server RING - 10TB.pdf
-  Scality-101 - July 2022.pptx

2. Deploy the OVA

The OVA contains image of multiple VMs compiled as a unified vApp, right click a host and use the “Deploy OVF Template” menu to import the ova file.



After complete, it will look like this:



On an ESXi host with 128GB memory, it will be very tight, but still works:

	Hypervisor:	VMware ESXi, 7.0.3, 18644231	CPU	Free: 70.59 GHz
	Model:	1288H V5	Used: 12.18 GHz	Capacity: 82.76 GHz
	Processor Type:	Intel(R) Xeon(R) Gold 6140 CPU @ 2.30GHz	Memory	Free: 5.9 GB
	Logical Processors:	72	Used: 121.09 GB	Capacity: 127.59 GB
	NICs:	6	Storage	Free: 4.85 TB
	Virtual Machines:	11	Used: 1.54 TB	Capacity: 6.4 TB
	State:	Connected		
	Uptime:	101 days		

### 3. Add routable IP to supervisor and endpoint VMs

Use vmware web console, get in to the two VMs (user: root, pass: Scality), edit the IP config file to add static routable IP for these 2 VMs, example:

```
[root@scality-supervisor-01 ~]# cd /etc/sysconfig/network-scripts/  
[root@scality-supervisor-01 network-scripts]# cat ifcfg-ens192  
TYPE=Ethernet  
PROXY_METHOD=none  
BROWSER_ONLY=no  
BOOTPROTO=static  
IPADDR=10.4.4.100  
GATEWAY=10.4.4.1  
PREFIX=24  
DEFROUTE=yes  
IPV4_FAILURE_FATAL=no  
NAME=ens192
```



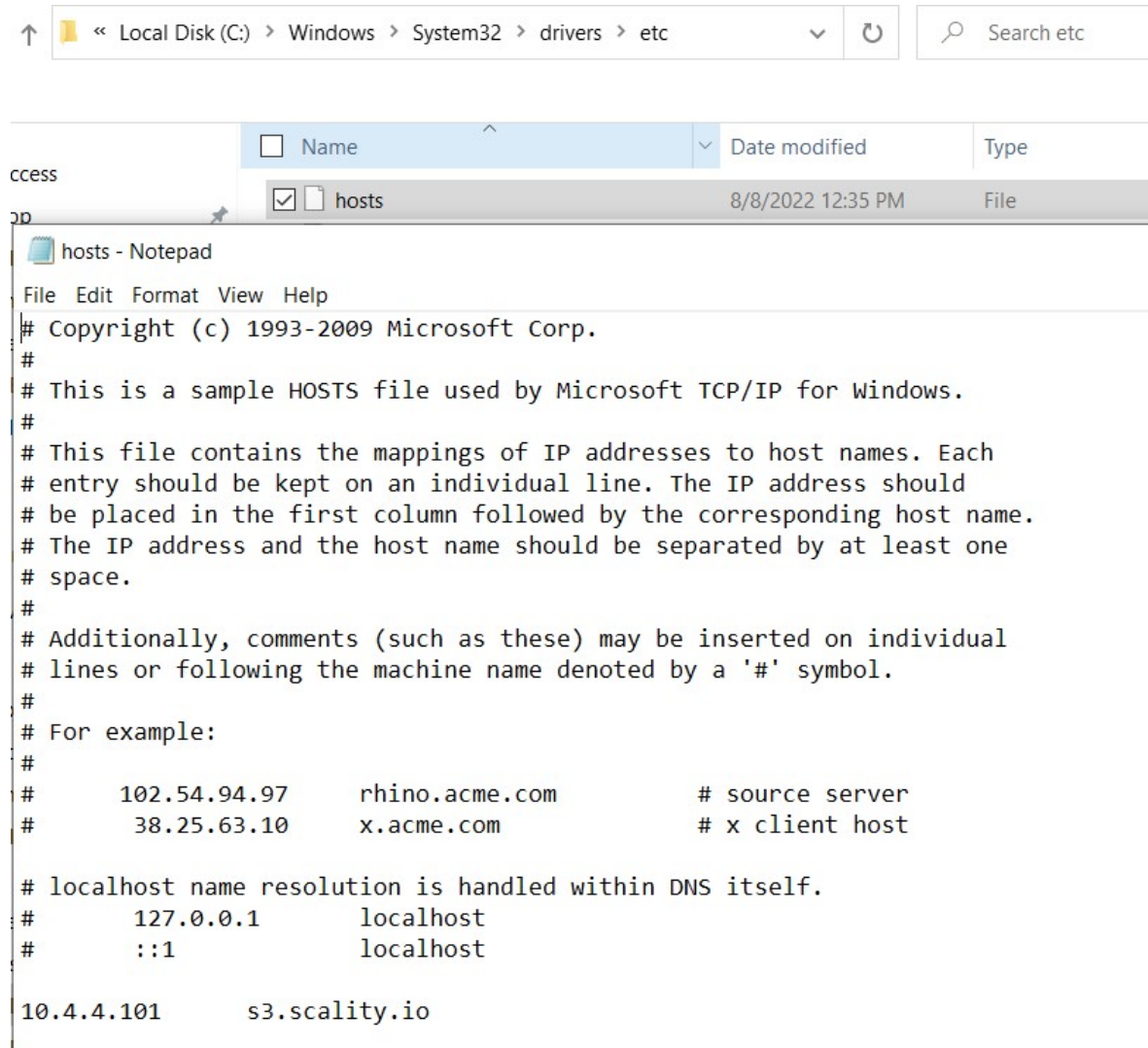
```
UUID=bd24c286-892d-427b-b31c-1a59431d02f0  
DEVICE=ens192  
ONBOOT=yes
```

After 'systemctl restart network', you should see following results:

```
[root@scality-supervisor-01 network-scripts]# ip addr  
  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default  
qlen 1000  
  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
  
2: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default  
qlen 1000  
  
    link/ether 00:50:56:a5:f5:3e brd ff:ff:ff:ff:ff:ff  
    inet 10.4.4.100/24 brd 10.4.4.255 scope global noprefixroute ens192  
        valid_lft forever preferred_lft forever  
    inet6 fe80::250:56ff:fea5:f53e/64 scope link  
        valid_lft forever preferred_lft forever  
  
3: ens224: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default  
qlen 1000  
  
    link/ether 00:50:56:a5:6a:40 brd ff:ff:ff:ff:ff:ff  
    inet 172.16.254.100/24 brd 172.16.254.255 scope global noprefixroute ens224  
        valid_lft forever preferred_lft forever  
    inet6 fe80::250:56ff:fea5:6a40/64 scope link  
        valid_lft forever preferred_lft forever  
  
[root@scality-supervisor-01 network-scripts]# route -n  
  
Kernel IP routing table  
  
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface  
0.0.0.0          10.4.4.1         0.0.0.0          UG    100    0      0 ens192  
10.4.4.0         0.0.0.0          255.255.255.0    U     100    0      0 ens192  
172.16.254.0     0.0.0.0          255.255.255.0    U     101    0      0 ens224
```

#### 4. Add static DNS to S3 client host

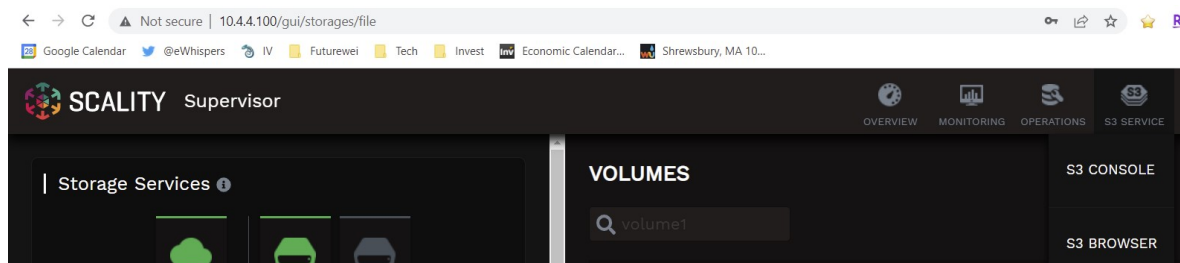
In our example deployment, we assigned static IP 10.4.4.101 to the endpoint VM, this IP need to be resolved by name [s3.scality.io](http://s3.scality.io) on the host where you access S3. Here is the example on Windows:



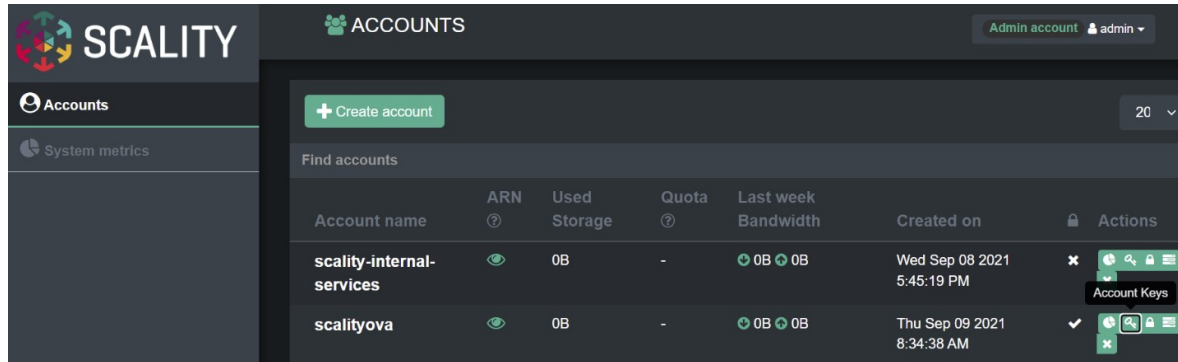
##### 5. Add S3 access account

Visit web GUI of the supervisor at <http://10.4.4.100> (replace the IP as needed), login as admin/Scality.

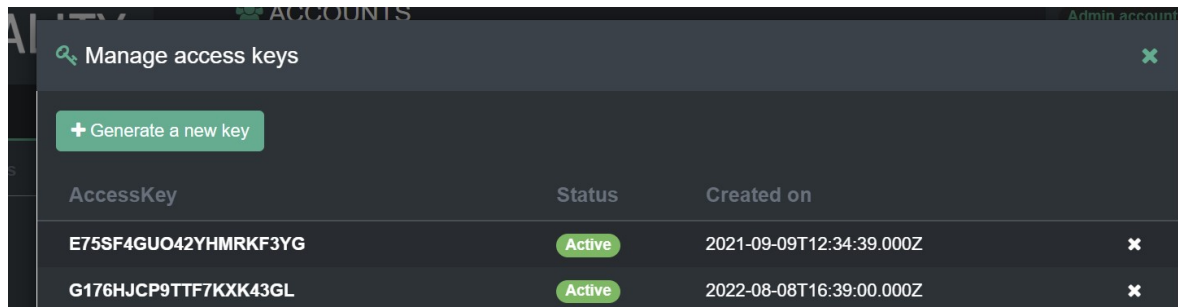
Use the S3 Service -> S3 Console menu to open S3 admin console:



Then click the “key” icon for “scalityova” account to bring up access key list:







From the access keys list, click “generate a new key”:




Save the keys for later use. This is the only time you will see the secret key.

6. Test S3 browser access  
Use the information above, create new account in S3 browser:

 Edit Account

 **Edit Account** [online help](#)

Edit account details and click Save changes

Display name:

Assign any name to your account.

Account type:

Choose the storage you want to work with. Default is Amazon S3 Storage.

REST Endpoint:

Specify S3-compatible API endpoint. It can be found in storage documentation. Example: rest.server.com:8080

Access Key ID:

Required to sign the requests you send to Amazon S3, see more details at <https://s3browser.com/keys>

Secret Access Key:

Required to sign the requests you send to Amazon S3, see more details at <https://s3browser.com/keys>



☐ Encrypt Access Keys with a password:

Turn this option on if you want to protect your Access Keys with a master password.

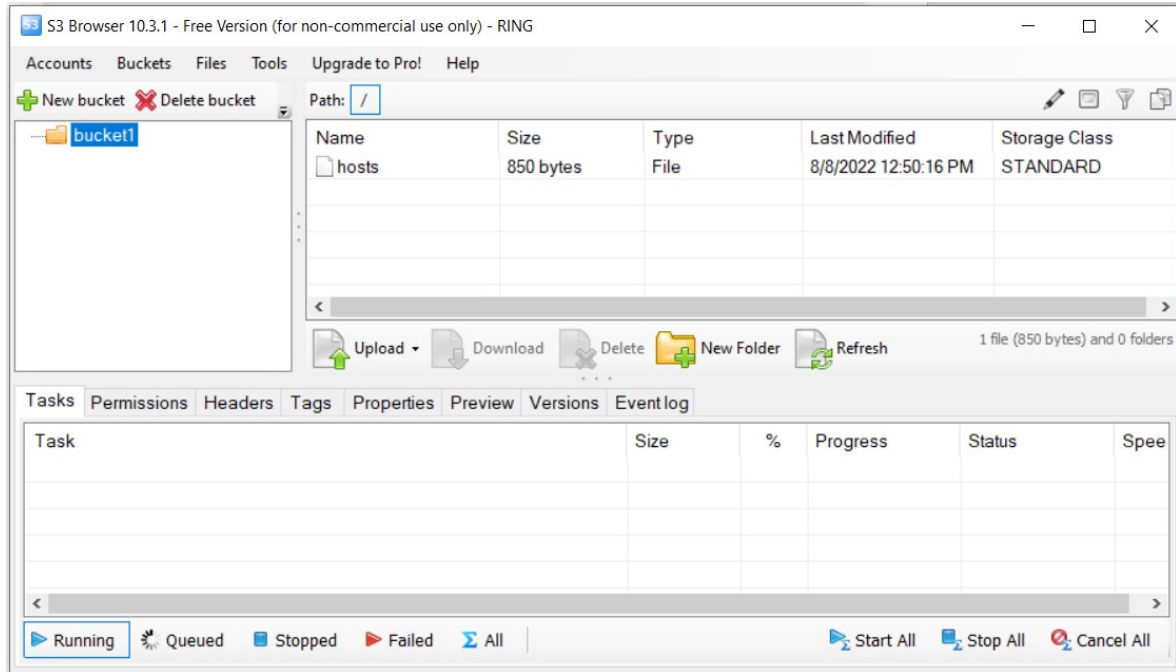
☒ Use secure transfer (SSL/TLS)

If checked, all communications with the storage will go through encrypted SSL/TLS channel

[Advanced S3-compatible storage settings](#)

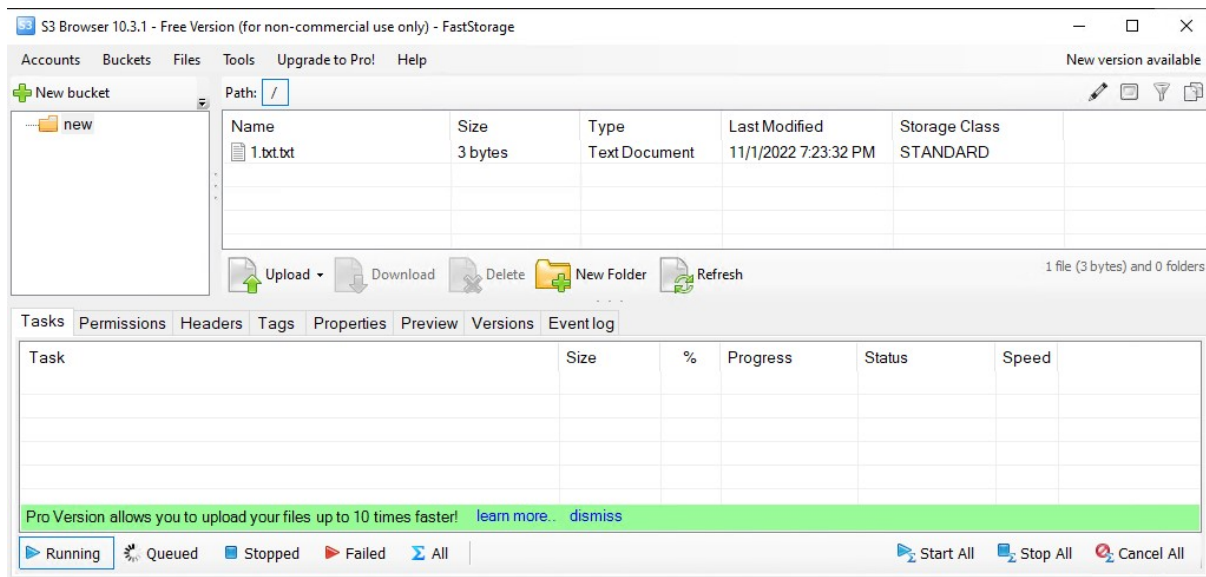
 Save changes  Cancel

Buckets should be visible now:



### 3.1.2 Verify Axians FastStorage S3 compatible cloud storage

FastStorage bucket is working find in S3 browser as shown below:



### 3.1.3 Add S3 compatible storage to OceanStor Dorado CloudBackup

For both Scalify RING and Axians FastStorage, this step failed with error.

Further functional test is impossible without being able to add the S3 storage to OceanStor Dorado.

#### Add Backup Storage

##### Basic Info

* Name	<input type="text" value="RING"/>
* Type	<input type="text" value="Object Storage"/>
* Object Storage Product	<input type="text" value="AWS S3"/>
* Endpoint	<input type="text" value="10.4.4.101"/>
* Protocol	<input type="text" value="HTTPS"/>
* AK	<input type="text" value="G176HJCP9TTF7KXK43GL"/>
* SK	<input type="text" value="....."/>
* Data bucket	<input type="text" value="backup"/>
* Index bucket	<input type="text" value="backup"/>
Use Proxy Server	<input type="checkbox"/>

Following error showed up:

! Cause:The Data Protection Appliance is disconnected from the endpoint.  
Suggestion:1. Ensure that the network connection between the Data Protection Appliance and endpoint is normal.  
2. If a proxy server is used, ensure that it is properly connected to the endpoint, and the user name and password of the proxy server are correct.

More detailed logging and troubleshooting will require vendor support.

# 4 Results

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## 4.1 Basic Information

**Table 4-1** Basic information

<b>Vendor</b>	Huawei Technologies Co., Ltd.
<b>Product</b>	Huawei OceanStor Dorado V6
<b>Location</b>	Ecosystem lab Paris
<b>Other Information</b>	S3 compatible cloud storage included in this report: Axians FastStorage Scality RING

## 4.2 Conclusion

There are compatibility issues between OceanStor Dorado CloudBackup and the two S3 compatible storage tested in this report, which made it impossible to add the two mentioned S3 storage to CloudBackup feature as a backup target, and hence blocked further functional test of CloudBackup feature.