FUTUREWEI

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

Test Report

Trademarks and Permissions

FUTUREWEI Technologies and other Futurewei® trademarks are trademarks of Futurewei® Technologies. Huawei trademarks are trademarks of Huawei Technologies Co., Ltd. All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services, and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services, and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees, or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

FUTUREWEI® TECHNOLOGIES, INC.

Boston Research Center

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

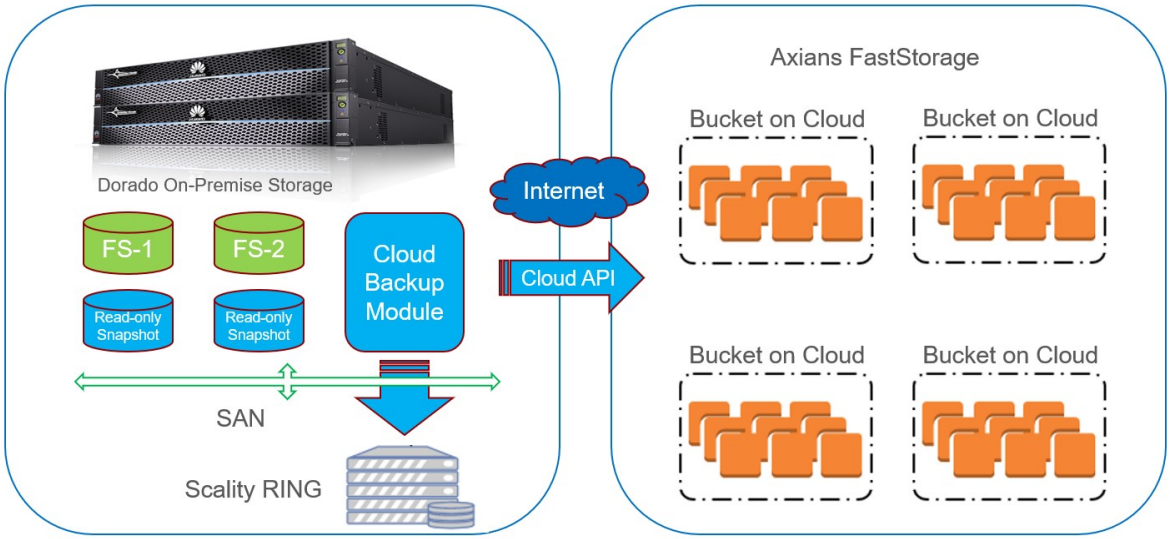
Website: http://www.futurewei.com/

Contents

Contents

1 Executive Summary

We assessed the Huawei® OceanStor Dorado NAS CloudBackup solution with Scality® 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 Scality 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 Scality 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 3rd-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 • CPU: 8 x • Memory: 8 GB • Main storage disk: 60 Gb • Network: GE and 10GE optical ports	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

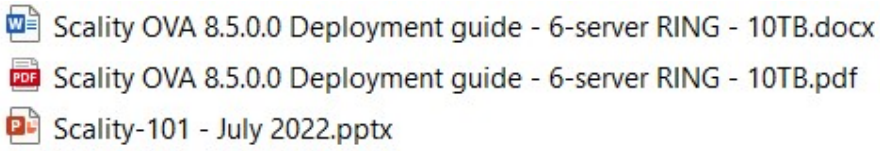
3.1 Setting up S3 Compatible Storage

3.1.1 Setting up Scality RING 8.5.0 Virtual Appliance

Prerequisites:

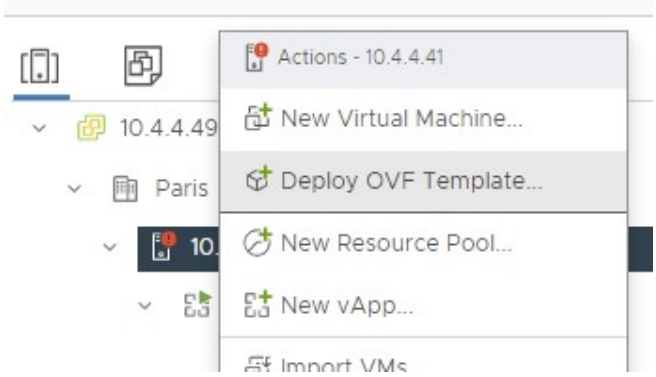
One ESXi server with at least 128GB memory (recommend 256GB), and at least 2TB of storage.

1. Collect the following binary and guides:

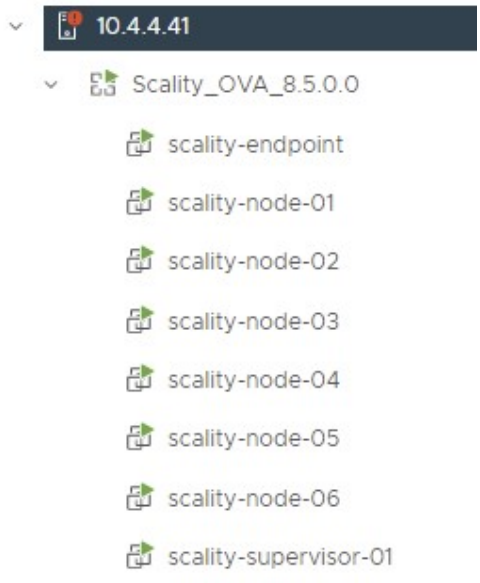


2. Deploy the OVA

   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:

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
```

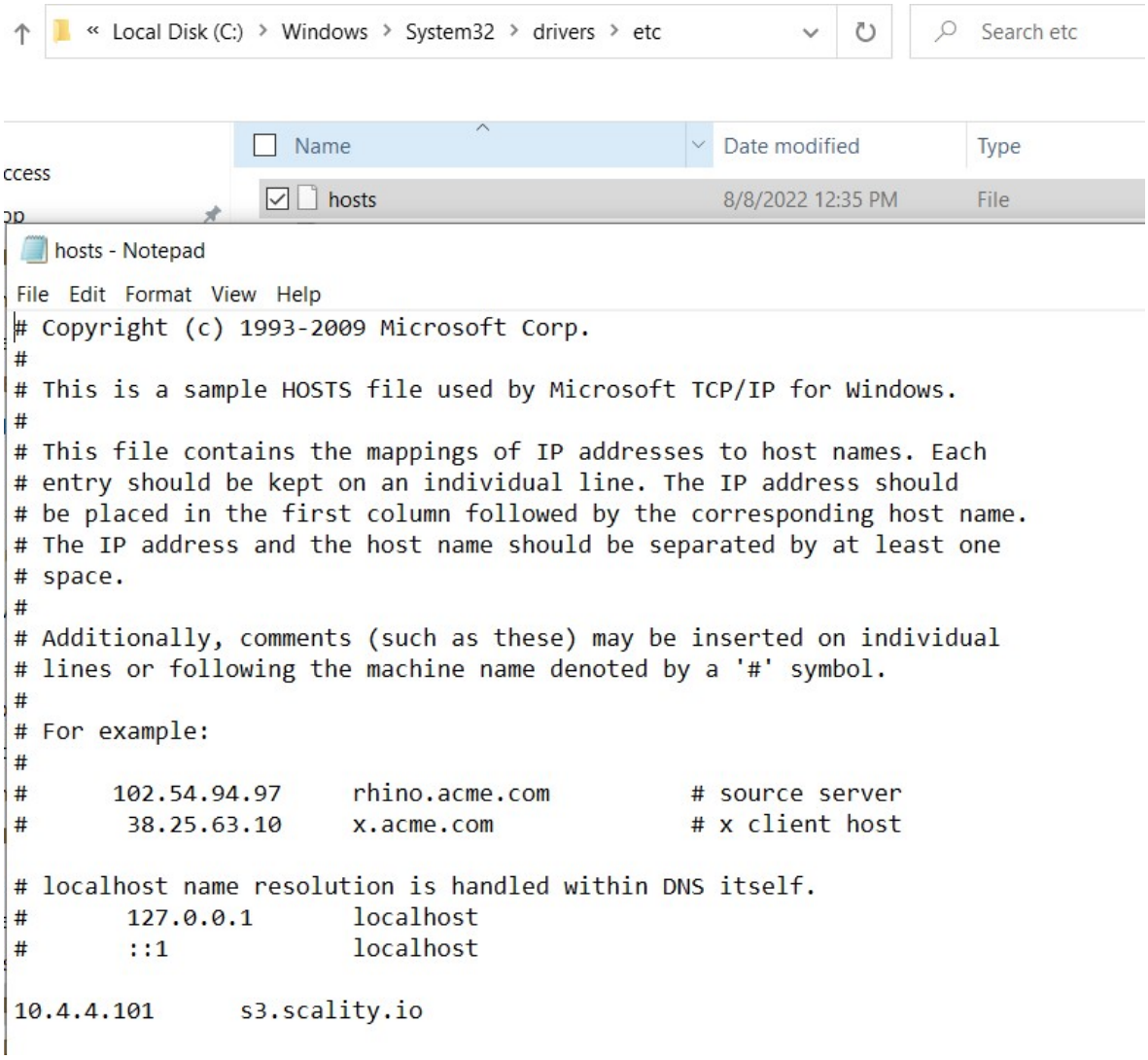
```
UUID=bd24c286-892d-427b-b31c-1a59431d02f0
DEVICE=ens192
ONBOOT=yes
```

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

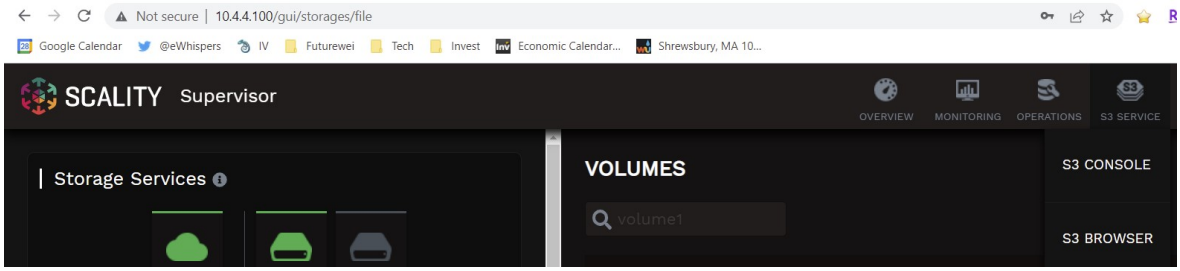
In our example deployment, we assigned static IP 10.4.4.101 to the endpoint VM, this IP need to be resolved by name **s3.scality.io** on the host where you access S3. Here is the example on Windows:



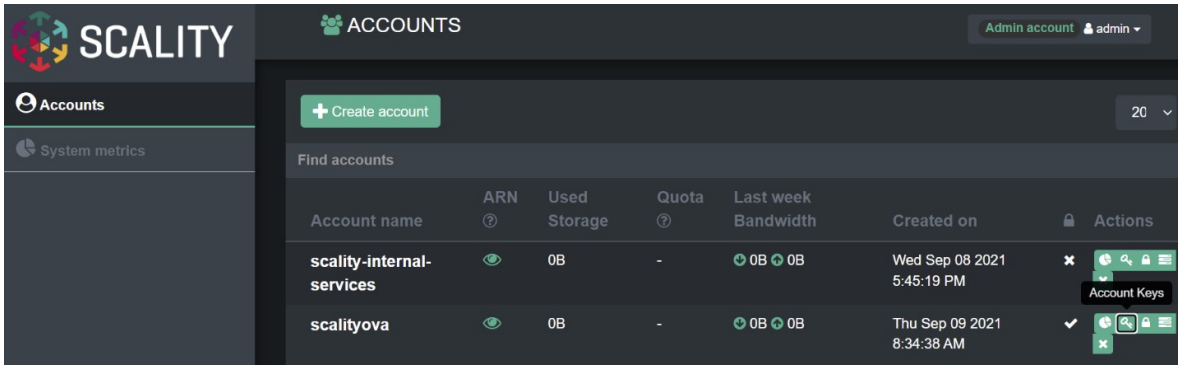
5. Add S3 access account

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

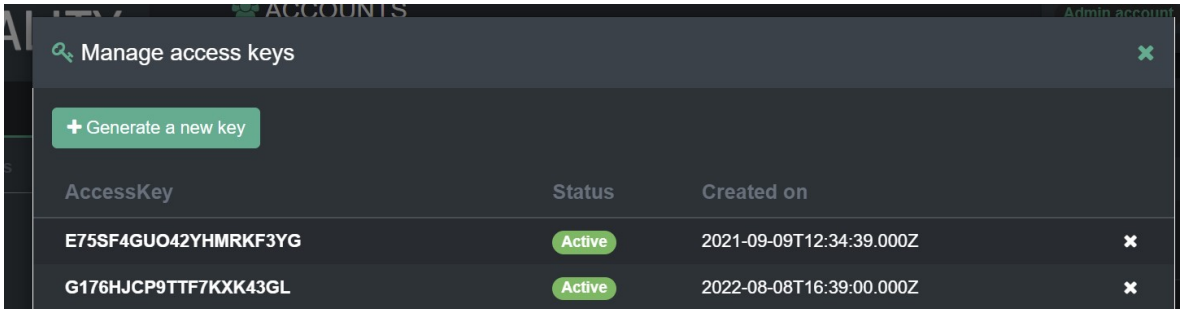
   Use the S3 Service -> S3 Console menu to open S3 admin console:



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



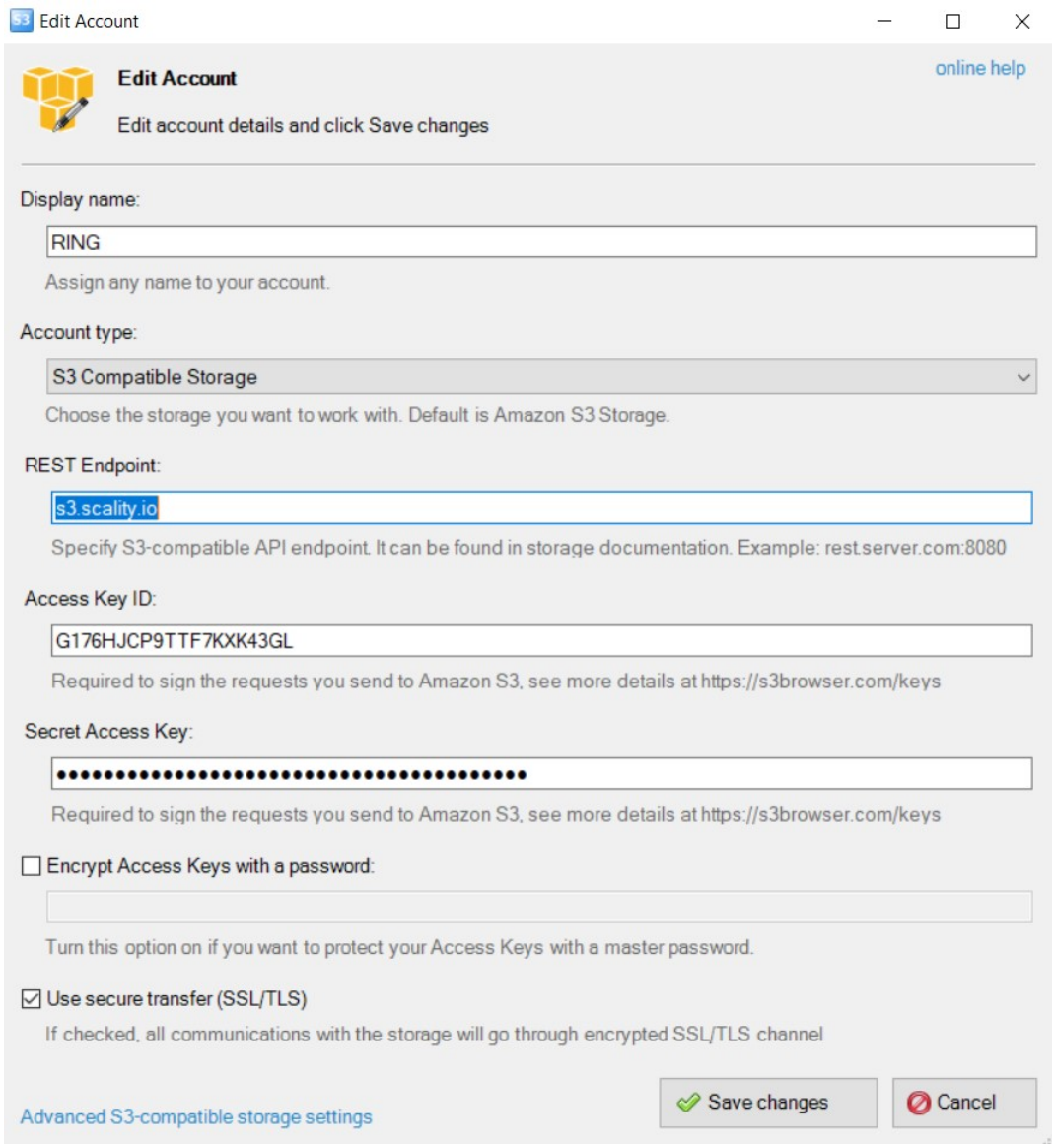
From the access keys list, click “generate a new key”:



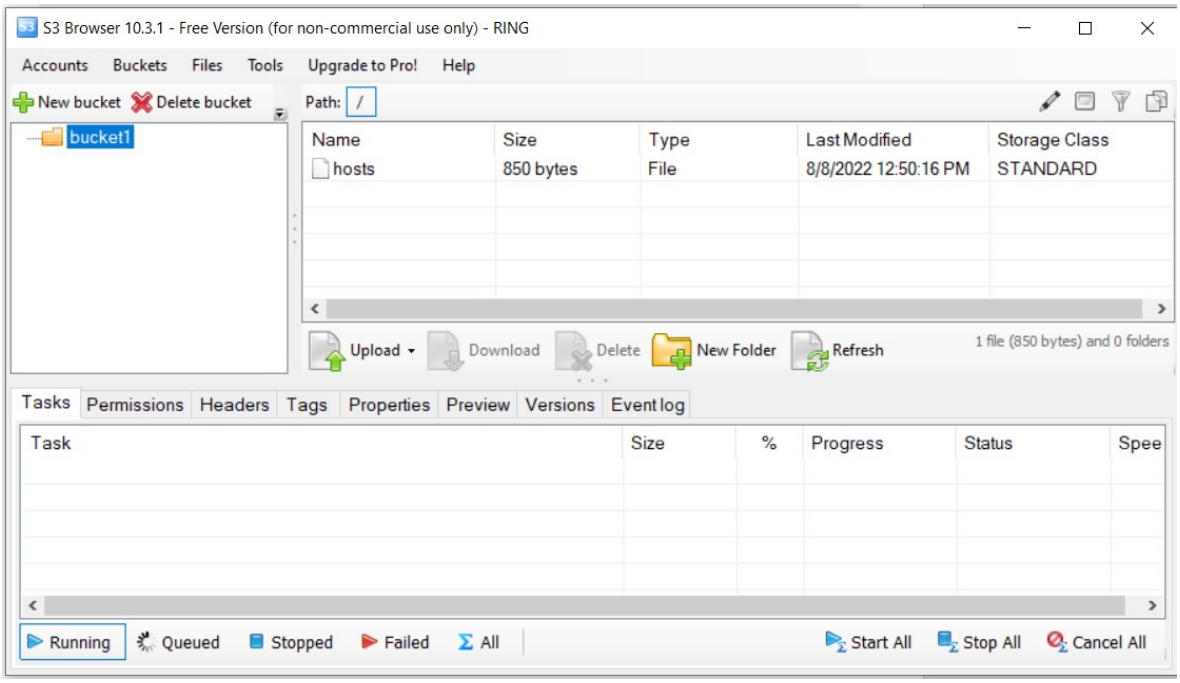
Save the keys for later use. This is the only time you will see the secret key.

6. Test S3 browser access

Use the information above, create new account in S3 browser:

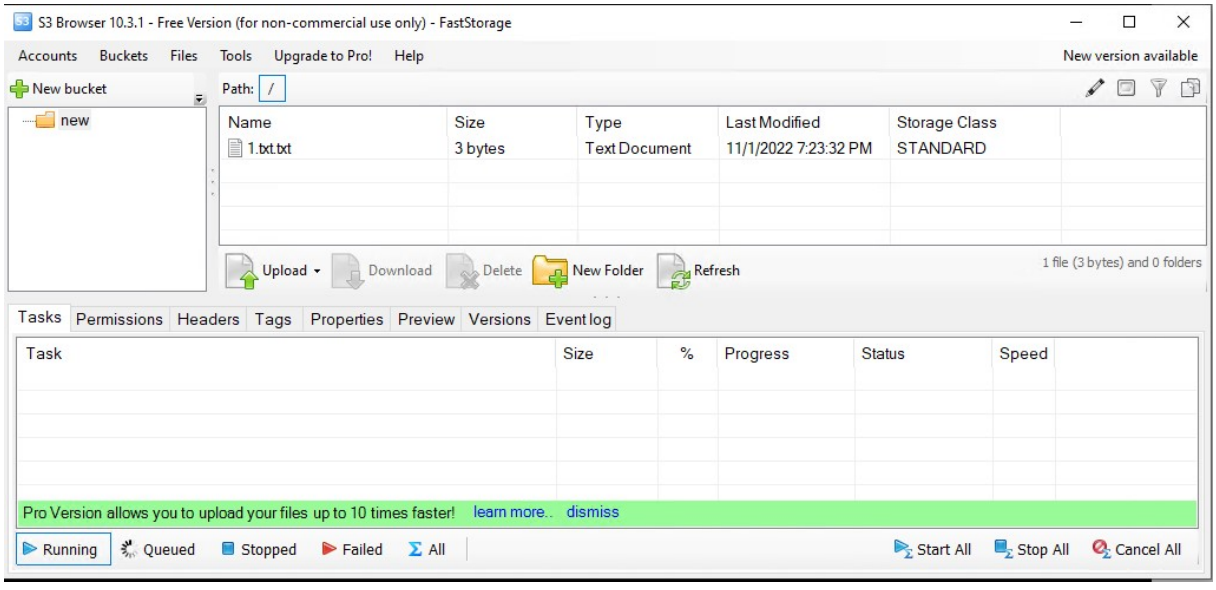


Buckets should be visible now:



3.1.2 Verify Axians FastStorage S3 compatible cloud storage

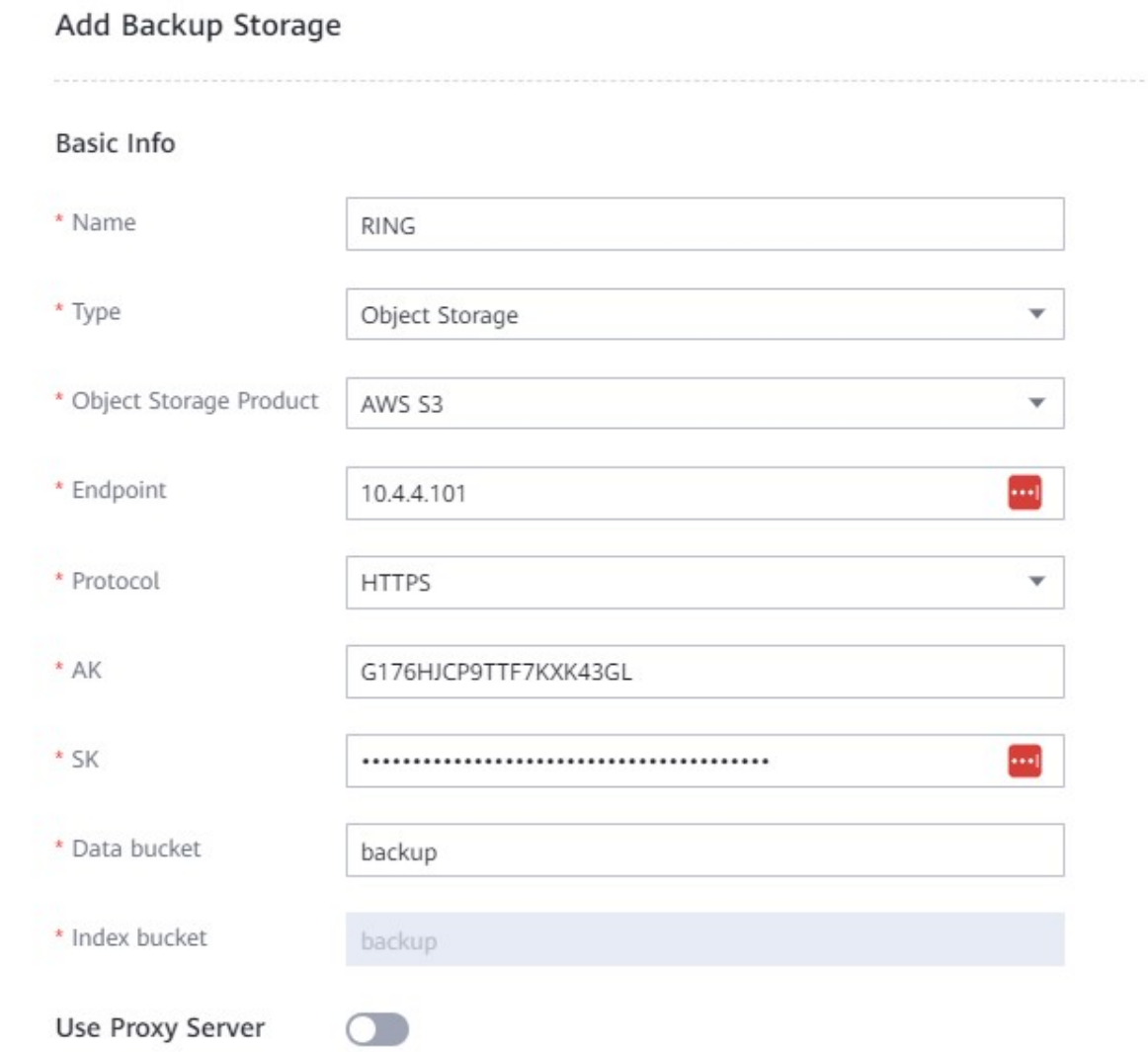
FastStorage bucket is working find in S3 browser as shown below:



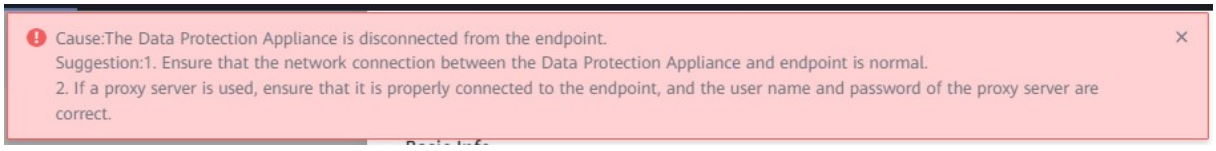
3.1.3 Add S3 compatible storage to OceanStor Dorado CloudBackup

For both Scality 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.



Following error showed up:



More detailed logging and troubleshooting will require vendor support.

4 Results

4.1 Basic Information

Table 4-1 Basic information

Vendor	Huawei Technologies Co., Ltd.
Product	Huawei OceanStor Dorado V6
Location	Ecosystem lab Paris
Other Information	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.