CloudWang Multi-Cloud RESTful APIs (DRAFT)

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Open Passion Commitment Action Courage

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1. Overview

CloudWang,

- a multi-cloud supported RESTful API that align with the HTTP principle.
- an open source project that under the Apache License, Version 2.0.
- utilizing the Dasein Cloud (http://dasein-cloud.sourceforge.net/).
- programming for fun, welcome and open to all :-)

1.1. Background Knowledge

1.1.1 RESTful Programming Model

The words below is quoting from the famous paper "Architectural Styles and the Design of Network-based Software Architectures" [1], which is written by Roy Thomas Fielding professor.

> REST (Representational State Transfer) provides a set of architectural constraints that, when applied as a whole, emphasizes scalability of component interactions, generality of interfaces, independent deployment of components, and intermediary components to reduce interaction latency, enforce security, and encapsulate legacy systems.

CloudWang utilize the RESTeasy [2] framework, which is a Jboss project.

> RESTEasy is a JBoss project that provides various frameworks to help you build RESTful Web Services and RESTful Java applications. It is a fully certified and portable implementation of the JAX-RS specification. JAX-RS is a new JCP specification that provides a Java API for RESTful Web Services over the HTTP protocol.

1.1.2 Dasein Cloud API

Stay for Tune :)

1.2 Document Revisions

Stay for Tune :)

2. URI Model

Stay for Tune :)

3. Resource Model

Note: The target cloud of sample below is AWS EC2

3.1 Server (Virtual Machine)

3.1.1 Object

```
<cloudServer providerServerId="i-a6651bc6">
	<serverMethod>getServer</serverMethod>
	<cloudProvider>CloudWang-AWS</cloudProvider>
	<cloudName>AWS</cloudName>
	<cloudAccountNumber>FIX-ME-AWS-AccountNumber</cloudAccountNumber>
	<cloudRegionId>us-east-1</cloudRegionId>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6" rel="self"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6" rel="remove"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6" rel="update"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6" rel="HEAD Server"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server" rel="add"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server" rel="list"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server" rel="HEAD ServerList"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6/console" rel="GET
ServerConsole"/>
	<atom:link href="http://127.0.0.1:8080/cloudwang/rs/server/i-a6651bc6/metrics" rel="GET
ServerMetrics"/>
	<server persistent="true" imagable="false" currentState="RUNNING" budget="0">
		<providerServerId>i-a6651bc6</providerServerId>
		<name>i-a6651bc6</name>
		<description>i-a6651bc6 (Micro Instance/64-bit (t1.micro))</description>
		<providerOwnerId>FIX-ME-AWS-AccountNumber</providerOwnerId>
		<architecture>I32</architecture>
		<platform>UNKNOWN</platform>
		<product>
			<cpuCount>2</cpuCount>
			<description>Micro Instance/64-bit (t1.micro)</description>
			<diskSizeInGb>1</diskSizeInGb>
			<name>Micro Instance/64-bit (t1.micro)</name>
			<productId>t1.micro</productId>
			<ramInMb>613</ramInMb>
		</product>
		<monitoring>enabled</monitoring>
		<clonable>false</clonable>
		<pausable>false</pausable>
		<rebootable>false</rebootable>
		<removable>false</removable>
		<creationTimestamp>1318060615000</creationTimestamp>
		<lastBootTimestamp>1318060615000</lastBootTimestamp>
		<lastPauseTimestamp>0</lastPauseTimestamp>
		<terminationTimestamp>0</terminationTimestamp>
		<providerMachineImageId>ami-7f418316</providerMachineImageId>
		<publicIpAddresses>50.16.150.132</publicIpAddresses>
		<publicDnsAddress>ec2-50-16-150-132.compute-1.amazonaws.com</publicDnsAd-
dress>
```

```
                    <privateDnsAddress>ip-10-87-9-73.ec2.internal</privateDnsAddress>
                    <privateIpAddresses>10.87.9.73</privateIpAddresses>
                    <tags>{tKey=tName}</tags>
                    <securityGroup>[sg-1f1b3676, sg-1f1b3676]</securityGroup>
                    <providerZoneId>us-east-1d</providerZoneId>
                    <keyPairName>tKey</keyPairName>
            </server>
</cloudServer>
```

3.1.2 Supported HTTP Methods

- GET
- HEAD
- PUT
- POST
- DELETE

3.1.3 Supported Return Data

- XML
- JSON
- PLAIN_TEXT

3.1.4 Sample HTTP Query

1) Get Server List (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/server

2) Get Server List (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/server

3) Get Server (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

4) Get Server (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

5) Get the HEAD infomation of Server List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/server/

5) Get the HEAD infomation of Server List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

6) Get the console log messages of Server
curl -v -k -X GET http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/console

7) Get the average metrics / monitoring information of Server (return XML data)

curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics

8) Get the average metrics / monitoring information of Server (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics

9) Get the average metrics / monitoring information of Server during a period of time (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics?from=***&to=***

10) Get the average metrics / monitoring information of Server during a period of time (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics?from=***&to=***

11) Get the every minutes metrics / monitoring information of Server during a period of time (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics?period=yes&from=***&to=***

12) Get the every minutes metrics / monitoring information of Server during a period of time (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id/metrics?period=yes&from=***&to=***

13) Enable the metrics / monitoring feature of Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudServer><serverMethod>enableServerMetrics</serverMethod></cloudServer>'
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

14) Disable the metrics / monitoring feature of Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudServer><serverMethod>disableServerMetrics</serverMethod></cloudServer>'
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

15) Start a Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?><cloudServer><serverMethod>startServer</serverMethod></cloudServer>'
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

16) Stop / Shutdown a Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?><cloudServer><serverMethod>stopServer</serverMethod></cloudServer>'
http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

17) Reboot a Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?><cloudServer><serverMethod>rebootServer</serverMethod></cloudServer>' http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

18) Create / New a Server
curl -v -k -X POST -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?><cloudServer><server><providerMachineImageId>FIX_ME_MachineImage_Id</providerMachineImageId><product><cpuCount>2</cpuCount><description>Micro Instance/64-bit (t1.micro)</description><diskSizeInGb>1</diskSizeInGb><name>Micro Instance/64-bit (t1.micro)</name><productId>t1.micro</productId><ramInMb>613</ramInMb></product><name>test server</name><description>test create server</description><keyPair>FIX_ME_KeyPairName</keyPair><monitoring>enabled</monitoring><securityGroup>FIX_ME_SecurityGroupName</securityGroup></server></cloudServer>' http://localhost:8080/cloudwang/rs/server/

19) Remove / Terminate a Server
curl -v -k -X DELETE http://localhost:8080/cloudwang/rs/server/FIX_ME_Server_Id

3.2 Machine Image (Template)

3.2.1 Object

```
<cloudMachineImage providerMachineImageId="ami-23bc704a">
        <machineImageMethod>getMachineImage</machineImageMethod>
        <cloudProvider>CloudWang-AWS</cloudProvider>
        <cloudName>AWS</cloudName>
        <cloudAccountNumber>FIX-ME-AWS-AccountNumber</cloudAccountNumber>
        <cloudRegionId>us-east-1</cloudRegionId>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage/ami-23bc704a" rel="self"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage/ami-23bc704a" rel="HEAD MachineImage"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage/ami-23bc704a" rel="update"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage" rel="list"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage" rel="HEAD MachineImageList"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage" rel="add"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/machineimage/ami-23bc704a/share" rel="GET machineImage share"/>
        <machineImage status="ACTIVE" removable="true" machineImageId="NULL" budget="0">
                <providermachineImageId>ami-23bc704a</providermachineImageId>
                <name>test createMachineImage-1318066960175</name>
                <description>Test</description>
                <machineImageType>VOLUME</machineImageType>
                <public>false</public>
                <sharable>false</sharable>
                <architecture>I32</architecture>
```

```
                <platform>UNKNOWN</platform>
                <providerOwnerId>FIX-ME-AWSAccount</providerOwnerId>
                <agentName>NULL</agentName>
                <software>NULL</software>
        </machineImage>
</cloudMachineImage>
```

3.2.2 Supported HTTP Methods

- GET
- HEAD
- PUT
- POST
- DELETE

3.2.3 Supported Return Data

- XML
- JSON

3.2.4 Sample HTTP Query

1) Get MachineImage List (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/machineimage/

2) Get MachineImage List (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/machineimage/

3) Get MachineImage List owned by an account (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/machineimage?accountNumber=***

4) Get MachineImage List owned by an account (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/machineimage?accountNumber=***

5) Get MachineImage List with more searching conditions (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/machineimage?keyword=***&platform=***&architecture=***

6) Get MachineImage List with more searching conditions (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/machineimage?keyword=***&platform=***&architecture=***

7) Get MachineImage (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

8) Get MachineImage (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

9) Get the HEAD infomation of MachineImage List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/machineimage/

10) Get the HEAD infomation of MachineImage
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

11) Get the shared account list that have access permission to the MachineImage (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id/share

12) Get the shared account list that have access permission to the MachineImage (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id/share

13) Make public of MachineImage
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudMachineImage><machineImage><public>true</public></machineImage></cloudMachineImage>' http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

14) Make privatec of MachineImage
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudMachineImage><machineImage><public>false</public></machineImage></cloudMachineImage>' http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

15) Share MachineImage to an account
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudMachineImage><machineImage><public>true</public><share>FIX_ME_ShareAccountId</share></machineImage></cloudMachineImage>'
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

16) Withdraw the MachineImage access permission from an account
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudMachineImage><machineImage><public>false</public><share>FIX_ME_ShareAccountId</share></machineImage></cloudMachineImage>'
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

17) Create a MachineImage from a Server
curl -v -k -X POST -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudMachineImage><machineImage><description>Test</description><name>test

createMachineImage</name><serverId>FIX-ME-
ServerID</serverId></machineImage></cloudMachineImage>'
http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

18) Remove a MachineImage
curl -v -k -X DELETE http://localhost:8080/cloudwang/rs/machineimage/FIX_ME_MachineImage_Id

3.3 Volume

3.3.1 Object

```
<cloudVolumes providerVolumeId="vol-f3154299">
        <volumeMethod>getVolume</volumeMethod>
        <cloudAccountNumber>FIX-ME-AWSAccount</cloudAccountNumber>
        <cloudProvider>CloudWang-AWS</cloudProvider>
        <cloudName>AWS</cloudName>
        <cloudRegionId>us-east-1</cloudRegionId>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume" rel="list"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume" rel="HEAD VolumeList"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume" rel="add"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume/vol-f3154299" rel="self"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume/vol-f3154299" rel="HEAD Vol-
ume"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume/vol-f3154299" rel="update"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/volume/vol-f3154299" rel="remove"/>
        <volume volumeId="tbd" removable="false" encrypted="false" budget="0">
                <providerVolumeId>vol-f3154299</providerVolumeId>
                <volumeName>vol-f3154299</volumeName>
                <sizeInGb>8</sizeInGb>
                <creationTimestamp>1317405504000</creationTimestamp>
                <volumeStatus>IN-USE</volumeStatus>
                <description>vol-f3154299</description><
                <serverId>i-a6651bc6</serverId>
                <deviceId>/dev/sda1</deviceId>
                <zoneId>us-east-1d</zoneId>
                <snapshotId>snap-133fd370</snapshotId>
        </volume>
</cloudVolumes>
```

3.3.2 Supported HTTP Methods

- GET
- HEAD
- PUT
- POST
- DELETE

3.3.3 Supported Return Data

- XML

- JSON

3.3.4 Sample HTTP Query

1) Get Volume List (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/volume

2) Get Volume List (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/volume

3) Get Volume (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

4) Get Volume (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

5) Get the HEAD infomation of Volume List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/volume/
6) Get the HEAD infomation of Volume
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

7) Attach Volume to a Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudVolumes><volumeMethod>attachVolume</volumeMethod><volume><serverId>FIX_ME_ServerId</serverId><deviceId>FIX_ME_DeviceId</deviceId></volume></cloudVolumes>'
http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

8) Detach volume from a Server
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudVolumes><volumeMethod>detachVolume</volumeMethod></cloudVolumes>'
http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

9) Create a volume
curl -v -k -X POST -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudVolumes><volumeMethod>createVolume</volumeMethod><volume><zoneId>FIX_ME_ZoneId</zoneId><sizeInGb>FIX_ME_Volume_Size_INT</sizeInGb></volume></cloudVolumes>'
http://localhost:8080/cloudwang/rs/volume/

10) Remove a volume
curl -v -k -X DELETE http://localhost:8080/cloudwang/rs/volume/FIX_ME_Volume_Id

3.4 Snapshot

3.4.1 Object

```
<cloudSnapshots providerSnapshotId="snap-c2fc64a1">
        <snapshotMethod>getSnapshot</snapshotMethod>
        <cloudAccountNumber>FIX-ME_AWSAccount</cloudAccountNumber>
        <cloudProvider>CloudWang-AWS</cloudProvider>
        <cloudName>AWS</cloudName>
        <cloudRegionId>us-east-1</cloudRegionId>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot" rel="add"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot" rel="list"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot" rel="HEAD SnapshotList"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot/snap-c2fc64a1" rel="self"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot/snap-c2fc64a1" rel="HEAD
Snapshot"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot/snap-c2fc64a1" rel="update"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/snapshot/snap-c2fc64a1" rel="remove"/>
        <atom:link href="http://127.0.0.1:8080/cloudwang/rs/machineimage/snap-c2fc64a1" rel="re-
move"/>
        <snapshot snapshotId="tbd" removable="false" encrypted="false" budget="0">
                <providerSnapshotId>snap-c2fc64a1</providerSnapshotId>
                <name>snap-c2fc64a1</name>
                <description>snapshot</description>
                <sizeInGb>8</sizeInGb>
                <snapshotTimestamp>1318019467000</snapshotTimestamp>
                <currentState>AVAILABLE</currentState>
                <progress>100%</progress>
                <sharable>true</sharable>
                <public>false</public>
                <shareProviderAccounts>[]</shareProviderAccounts>
                <providerOwnerId>FIX-ME-AWSAccount</providerOwnerId>
                <volumeId>vol-f3154299</volumeId>
        </snapshot>
</cloudSnapshots>
```

3.4.2 Supported HTTP Methods

- GET
- HEAD
- PUT
- POST
- DELETE

3.4.3 Supported Return Data

- XML
- JSON

3.4.4 Sample HTTP Query

1) Get Snapshot List (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://localhost:8080/cloudwang/rs/snapshot

2) Get Snapshot List (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://localhost:8080/cloudwang/rs/snapshot

3) Get Snapshot (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

4) Get Snapshot (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

5) Get the HEAD infomation of Snapshot List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/snapshot/

6) Get the HEAD infomation of Snapshot
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

7) Make a snapshot public
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8"
standalone="yes"?
><cloudSnapshots><snapshot><public>true</public></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

8) Make a snapshot private
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8"
standalone="yes"?
><cloudSnapshots><snapshot><public>false</public></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

9) Share a snapshot to an account
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8"
standalone="yes"?
><cloudSnapshots><snapshot><public>true</public><shareProviderAccounts>FIX_ME_Shared_Acc
ount</shareProviderAccounts></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

10) Withdraw the snapshot access permission from an account
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8"
standalone="yes"?
><cloudSnapshots><snapshot><public>false</public><shareProviderAccounts>FIX_ME_Shared_Acc
ount</shareProviderAccounts></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

9) Create a snapshot

curl -v -k -X POST -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudSnapshots><snapshot><volumeId>FIX_ME_VolumeId</volumeId><description>test created snapshot from volume</description></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot

10) Remove a snapshot
curl -v -k -X DELETE http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

3.5 Firewall (Security Group)

3.5.1 Object

```
<cloudFirewall providerFirewallId="sg-c2adbfae">
        <firewallMethod>getFirewall</firewallMethod>
        <cloudProvider>CloudWang-AWS</cloudProvider>
        <cloudName>AWS</cloudName>
        <cloudAccountNumber>FIX_ME_AWSAccount</cloudAccountNumber>
        <cloudRegionId>us-east-1</cloudRegionId>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall/sg-c2adbfae" rel="update"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall/sg-c2adbfae" rel="self"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall/sg-c2adbfae" rel="HEAD Fire-
wall"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall/sg-c2adbfae" rel="remove"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall" rel="list"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall" rel="HEAD FirewallList"/>
        <atom:link href="http://localhost:8080/cloudwang/rs/firewall" rel="add"/>
        <firewall firewallId="tbd" budget="0" available="true" active="true">
                <providerFirewallId>sg-c2adbfae</providerFirewallId>
                <name>default (VPC vpc-a491becd)</name>
                <description>default VPC security group</description>
                <providerVlanId>vpc-a491becd</providerVlanId>
                <firewallRules>
                        <providerRuleId>sg-c2adbfae:0.0.0.0/0:INGRESS:TCP:1024:2048</provider-
RuleId>
                        <providerFirewallId>sg-c2adbfae</providerFirewallId>
                        <direction>INGRESS</direction>
                        <protocol>TCP</protocol>
                        <cidr>0.0.0.0/0</cidr>
                        <startPort>1024</startPort>
                        <endPort>2048</endPort>
                        <permission>ALLOW</permission>
                </firewallRules>
        </firewall>
</cloudFirewall>
```

3.5.2 Supported HTTP Methods

- GET
- HEAD
- PUT

- POST
- DELETE

3.5.3 Supported Return Data

- XML
- JSON

3.5.3 Sample HTTP Query

1) Get Firewall List (return XML data)
curl -v -k -X GET -H "Accept: application/xml" http://127.0.0.1:8080/cloudwang/rs/firewall/

2) Get Firewall List (return JSON data)
curl -v -k -X GET -H "Accept: application/json" http://127.0.0.1:8080/cloudwang/rs/firewall/

3) Get Firewall (return XML data)
curl -v -k -X GET -H "Accept: application/xml"
http://127.0.0.1:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

4) Get Firewall (return JSON data)
curl -v -k -X GET -H "Accept: application/json"
http://127.0.0.1:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

5) Get the HEAD infomation of Firewall List
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/firewall/

6) Get the HEAD infomation of Firewall
curl -v -k -X HEAD http://localhost:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

7) Add firewall rule
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudFirewall><firewallMethod>addFirewallRules</firewallMethod><firewall><firewallRules><protocol>TCP</protocol><cidr>192.168.1/25</cidr><startPort>22</startPort><endPort>80</endPort></firewallRules></firewall></cloudFirewall>'
http://localhost:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

8) Remove firewall rulee
curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudFirewall><firewallMethod>removeFirewallRules</firewallMethod><firewall><firewallRules><protocol>TCP</protocol><cidr>0.0.0.0/0</cidr><startPort>22</startPort><endPort>22</endPort></firewallRules></firewall></cloudFirewall>'
http://localhost:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

9) Share a snapshot to an account

curl -v -k -X PUT -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudSnapshots><snapshot><public>true</public><shareProviderAccounts>FIX_ME_Shared_Account</shareProviderAccounts></snapshot></cloudSnapshots>'
http://localhost:8080/cloudwang/rs/snapshot/FIX_ME_Snapshot_Id

9) Create a firewall
curl -v -k -X POST -H "Content-Type: application/xml" --data '<?xml version="1.0" encoding="UTF-8" standalone="yes"?
><cloudFirewall><firewallMethod>addFirewallRules</firewallMethod><firewall><name>test firewall</name><description>test create firewall</description></firewall></cloudFirewall>'
http://localhost:8080/cloudwang/rs/firewall

10) Remove a firewall
curl -v -k -X DELETE http://localhost:8080/cloudwang/rs/firewall/FIX_ME_FirewallId

More ... Stay for tuning :)

4. Reference

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