



Aspen Cloud Server API

Development Guideline

Defining next generation of cloud based grid

Power-All Networks Ltd.

(20th October , 2010, version 2.0)

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Change Log

Changes	Page	Date
“Query extra parts plan” API supported	49	2010-10-19
“Add extra parts” API supported	52	2010-10-19
“Query subscribed parts” API supported	54	2010-10-19
“Remove subscribed parts” API supported	56	2010-10-19
Revise API 12 “Query supported IDC”.	42	2010-10-19
“Attach SASP-M disk” API supported	58	2010-10-19
“Detach SASP-M disk” API supported	60	2010-10-19
Revise API 2 (Get server information)	19	2010-10-19
Support “Super user” mode for “Cloud Server Subscription”.	30	2010-07-12
Cloud Server subscription API supported	32	2010-06-23
Cloud Server termination API supported	35	2010-06-23
“Daily Billing” API supported	37	2010-06-23
“Query city” API supported	40	2010-06-23
“Query IDC” API supported	42	2010-06-23
“Query template” API supported	44	2010-06-23
“Query template’s plan” API supported	49	2010-06-23
Enhance the XML result for function, “Server List” and “Get Server Information”	17, 19	2010-03-17
Detailed description for Cloud Server	19	2010-03-17

Overview

Aspen Cloud Server provides cloud computing virtual server to client. You can subscribe your own virtual server via <http://cserver.cloudwww.com> anytime.

Now we further provide API to each user for own development of program and integrate to existing system.

All APIs are RESTful web service call which are platform independent and for fast development. Even you are JAVA, Microsoft .NET, or PHP developer, you can easily develop without obstacle.

More about Aspen Cloud Server API

Q : Why and who need API ?

A : If you don't want to control the subscribed Cloud Server via our control panel, you can use our RESTful API to control.

You can integrate these Cloud Server functions to your existing system.

Q : What functions provided by Cloud Server API now?

A : Now only Control Panel functions are provided in API.

	API Name	Description
1	Server list	Show all subscribed Cloud Server in XML format.
2	Get server information	Show a specified Cloud Server in details.
3	Server startup	Boot up a specified Cloud Server.
4	Server soft reboot	Soft reboot a specified Cloud Server.
5	Server hard reboot	Hard reboot a specified Cloud Server.
6	Server soft shutdown	Soft shutdown a specified Cloud Server.
7	Server hard shutdown	Hard shutdown a specified Cloud Server.
8	New server subscription	Subscribe new cloud server
9	Server termination	Terminate a subscribed cloud server.
10	Get billing	Get daily billing records for specified date range.
11	Query supported cities	Show which city supports cloud server
12	Query supported IDC	Show which data center supports cloud server in a city or specified service (e.g. SASP-M).
13	Query supported templates	Show what templates are available in specified city. It includes "Standard", "Custom" templates and "Zone".
14	Query template plan	Show all plan for specified template.
15	Query extra parts plan	Show extra parts' price plan. e.g. CPU/RAM
16	Add extra parts	Add extra parts to specified server or IDC.
17	Query subscribed parts	Show what parts are subscribed.
18	Remove subscribed parts	Remove subscribed extra parts from server or IDC.
19	Attach SASP-M disk	Attach SASP-M disk to specified server.
20	Detach SASP-M disk	Detach SASP-M disk from specified server.

What skill is required ?

Before starting, everyone will ask a question, “what’s skill I should know for calling Aspen Cloud Server API”? To a programmer, this question is more important than pricing. Aspen Cloud Server API provides the world-wide popular method and powerful method. i.e. REST. All provided web services are in RESTful.

Nowadays, REST is a hot web service method because of its flexible and easy to understand. REST is similar to browse a web page via http URL only. In browser, you always utilize the GET method in HTTP to browse web page. In rest, we will take advantages of other HTTP methods such as PUT, DELETE and so on. You can visit http://en.wikipedia.org/wiki/Representational_State_Transfer for details understand of REST.

It is program independent function call so different developer can develop own program base on his/her favorite programming platform and language. Web service call uses http protocol (port 80) to communicate so it can reduce the trouble made by firewall. Besides, all result queries are in XML format.

Even you are a newbie in web service. We can sure you can understand how to start your first step via this development guideline.

What skills required?

- Basic XML knowledge
- Basic knowledge of web services especially in REST.



Which programming language platform supported?

The advantage of Aspen Cloud Server API is platform and language independent so you can use what language you like. Main point is that your language can call web services. In general, following language can call our services.

- Java
- PHP
- .Net including C# and VB.Net
- Python
- C++
- Perl
- Ruby
- Even some old language such as Visual Basic v6.0

What software required?

If programming language support general XML handling functions and http access functions (Best have specified REST call modules), then you can use Aspen Cloud Server API more easily. No any installation or add-on software is required.

Terminology and Cloud Server Status

Terminology

Terms	Description
1. Access ID	It is a global unique ID for each user a/c. It is system generated and can't be changed. Once user registers in portal, it will be generated.
2. Secret Access Key	It is a global unique key for signature generation. This key is secret except of owner. Don't share this key to other people. Use this key to generate resource signature for authorization.
3. Server ID	It is a global unique label of your subscribed server which is generated by system.
4. Locale	It is used to control the output language of xml. It includes general output and error message. Now we support English (en), Traditional Chinese (zh_TW) and Simplified Chinese (zh_CN).
5. REST Http Method	In Aspen Cloud Server, some http methods are supported. i.e. POST, GET
6. Parts Code	It is used to represent a parts. You can use the "parts code" to subscribe the parts.
7. Parts ID	After subscribe an extra parts, an unique "parts id" will be assigned to such parts. You can further handle the parts via "parts id".
8. Service type	It is used to identify what parts / service you specify in API. This is a constant value. Now only support cpu, ram, sasp6 and saspm .

Cloud Server Status

Each subscribed cloud server has a status. You can get it via API 1 and 2 but this status may not real time show your server status because you can manual change server. Not by Control Panel.

Terms	Description
PO	Power off
S	Standby i.e. your cloud server is booted up.
R	Rebooting. If your server is be rebooting. Don't try to run other process on it. It will cause error.
U	Undfined/Unclassify – Sometimes the server status can't be get well. If you get this status, you can retry after a while.

Authentication

Each request should be authenticated. Aspen Cloud Server API uses signature to identify the access user. The signature is composed in client side (i.e. your developed program) and then sends via http header “Authorization”. It is the standard http header. For security issue, most provided functions require user to provide “Access Proof” when access the resource. A valid signature is a proof.

After Aspen Cloud Server API side received the web service request from client. It will check the incoming header whether has “Authorization”.

Example:

The http header should be similar to following. From following example, the header “Authorization” is specified in header. The format is “access id + signature”.

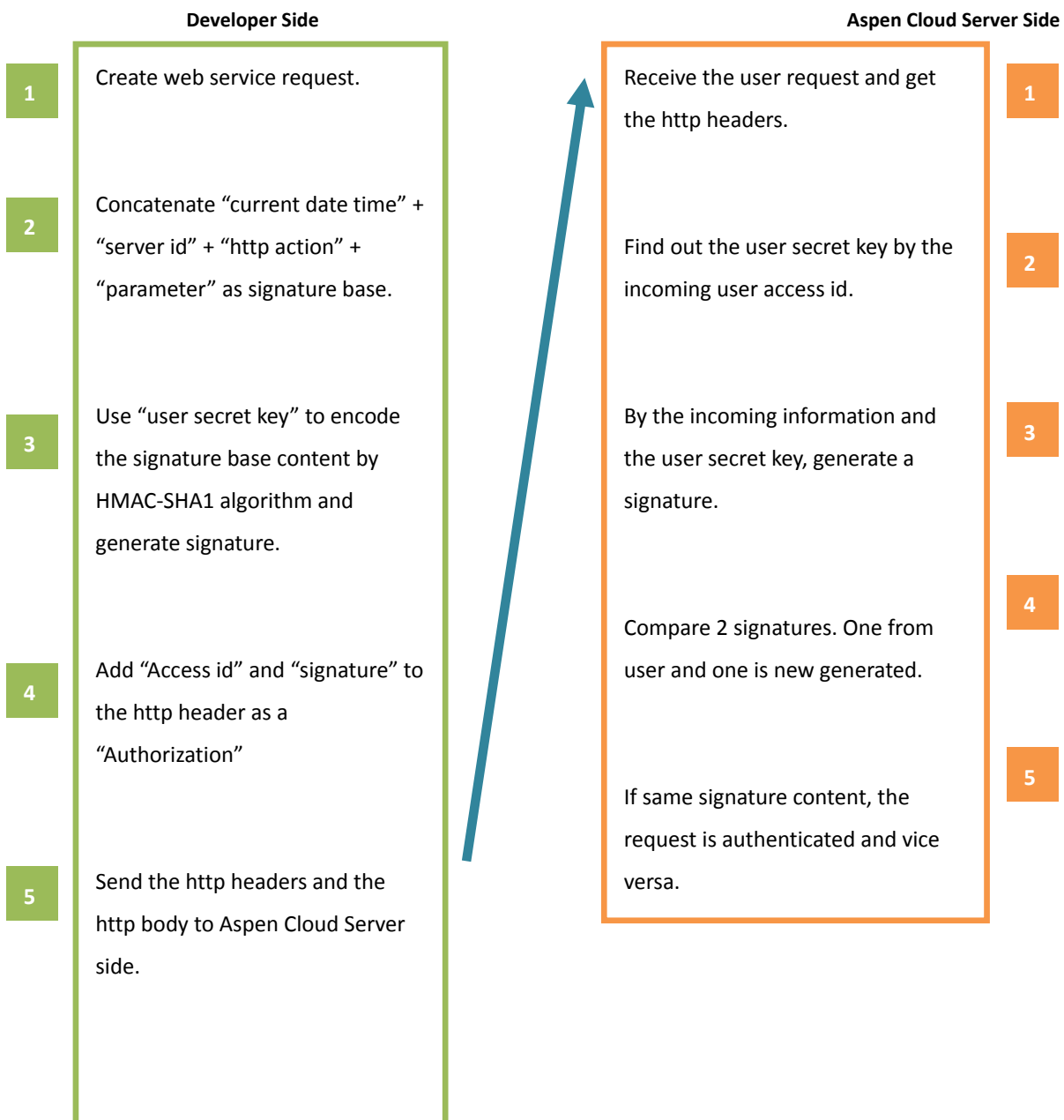
```
GET / HTTP/1.1
Host: a.cserver.mygrid.asia
Date: Wed, 01 Mar 2006 12:00:00 GMT
(or “x-pan-date” instead of “Date” because some language (e.g. C#) don’t let user to edit “Date”)
```

Formula of Authorization header

```
Authorization = access ID + colon + signature
(e.g. Authorization: 0000001:dskfjdsklfjdksljfdk9890dsffsdsf)
```

The access ID is given to user after he/she registers. The signature is generated by developer who wants to access Aspen Cloud Server API. Without “Authorization”, Aspen Cloud Server API must reject your request. Thus, developer must understand how to create a signature.

The signature is composed of date time, access api and user secret key. The access id and user secret key are global unique. After Aspen Cloud side receives the submitted http header information. Aspen Cloud will try to generate an identical signature by the provided information such as header time, host, and api and so on. Then compare the system generated signature to user provided signature. If same, that's mean the user is authenticated and vice versa.



The generated signature will be expired after 15 minutes for security issue.

Three steps to generate signature.

Step 1. Form “request content base”

```
Request Content Base = "<" + HTTP Action (PUT, GET, POST, or DELETE) + ">" +  
                      "<" + current date time (Use RFC 2822 format) + ">" +  
                      "<" + Access ID + ">" +  
                      "<" + API Name + ">" +  
                      "<" + Server ID + ">" (Optional. Server ID is depended on API)
```

Explanation:

HTTP Action is PUT or GET or DELETE or POST of your web service request. It is string. The date format is in RFC 2822 format e.g. Thu, 21 Dec 2000 16:01:07 +0800. If your API is no server ID, no need to use server ID.

“Server ID” is not a must. Depends on what API you call. If your API is not related to server, no need to assign “server ID”.

Step 2 Generate a signature

Every registered member has a “Secret Access Key”. Use it as a key and use algorithm HMAC-SHA1 to encode the “Request Content Base”. Then, use Base64 to encode the output signature. It makes the signature is ASCII string and for header data passing.

1. Incomplete Signature=HMAC-SHA1 (Request Content Base, User Secret Key)
2. Signature =Base64 (Incomplete Signature)



Step 3 Form the http authentication header

There is no “Authentication” in standard http so we only utilize the other attribute “Authorization”. Now, you have a signature and Access ID. You only concatenate together.

```
Authorization: 0000001:dskfjdsklfjdsjfk9890dsffdsf
```

Pass above “authorization” in header to Cloud Server API side.

You should know before coding

1. Before using API, you must register in <http://cserver.cloudwww.com/>. After you register, you can login and get the Access ID and Secret Access Key for authorization.
2. Adopt RFC2822 (<http://www.ietf.org/rfc/rfc2822>) date format. e.g. Fri, 30 May 2008 12:00:00 GMT (Greenwich) or Fri, 30 May 2008 08:00:00 +0800 (Hong Kong and China time zone) Both refer to same time.
“day of week” and “second” are optional. Date and time is local date time. Time zone is the difference from UT/GMT.
3. Most web services request a signature to identify the user. Each signature will be expired after 15 minutes.
4. In each request, user should send header “Date” to Aspen Cloud. For example, pass “Date: Sun, 27 Jul 2008 15:25:16 +0800”. However, some programming language such as C# protects the standard http header field including “Date”. Thus, user can’t assign “Date” directly via C#. Aspen Cloud also provides other http header to replace “Date”. i.e. x-pan-date. If both “Date” and “x-pan-date” are passed to Aspen Cloud Server API. The “x-pan-date” has higher priority than “Date”.

Provided web service API list

	API Name	Description	HTTP
1	Server list	Show all subscribed Cloud Server in XML format. e.g. http://a.cserver.mygrid.asia/server_list/locale/en	GET
2	Get server information	Show a specified Cloud Server in details. e.g. http://a.cserver.mygrid.asia/get_server_info/serverid/abcde/locale/en (General mode) or http://a.cserver.mygrid.asia/get_server_info/serverid/abcde/locale/en/admin_mode (Administrator mode)	GET
3	Server startup	Boot up a specified Cloud Server. e.g. http://a.cserver.mygrid.asia/startup/serverid/abcde/locale/en	POST
4	Server soft reboot	Soft reboot a specified Cloud Server. e.g. http://a.cserver.mygrid.asia/soft_reboot/serverid/abcde/locale/en	POST
5	Server hard reboot	Hard reboot a specified Cloud Server. e.g. http://a.cserver.mygrid.asia/hard_reboot/serverid/abcde/locale/en	POST
6	Server soft shutdown	Soft shutdown a specified Cloud Server. e.g. http://a.cserver.mygrid.asia/soft_shutdown/serverid/abcde/locale/en	POST
7	Server hard shutdown	Hard shutdown a specified Cloud Server. e.g. http://a.cserver.mygrid.asia/hard_shutdown/serverid/abcde/locale/en	POST
8	Server subscription	Subscribe a new cloud server e.g. (with zone) http://a.cserver.mygrid.asia/server_subscribe/locale/en/idc_code/nQ%40%3B/template_code/nQ%40%2/plan_code/5Dq%26q/zone_code/Sp3xH%60mKOquk	PUT

		or (without zone) http://a.cserver.mygrid.asia/server_subscribe/locale/en/idc_code/nQ%40%3B/template_code/nQ%40%2/plan_code/5Dq%26g	
9	Server termination	Terminate a subscribed cloud server e.g. http://a.cserver.mygrid.asia/server_terminate/serverid/111111/locale/en	DELETE
10	Daily billing	Get daily billing record e.g. http://a.cserver.mygrid.asia/daily_billing_report/locale/en/start_date/2010-06-21/end_date/2010-06-30/offset/1/max/10	GET
11	Query supported cities	Show which city supports cloud server e.g. http://a.cserver.mygrid.asia/query_support_city/locale/en	GET
12	Query supported IDC	Show which data center supports cloud server in a city. 2 formats supported e.g. http://a.cserver.mygrid.asia/query_support_idc/locale/en/citycode/nQ%40%3B or, http://a.cserver.mygrid.asia/query_support_idc/locale/en/service_type/saspm	GET
13	Query supported templates	Show what templates are available in specified city. It includes “Standard”, “Custom” templates and “Zone”. e.g. http://a.cserver.mygrid.asia/query_support_template/locale/en/idc_code/nQ%40%3B	GET
14	Query template plan	Show all plans for specified template. e.g. http://a.cserver.mygrid.asia/query_template_price/locale/en/idc_code/nQ%40%3B/template_code/nQ%40%28F.%5Dq%26g	GET
15	Query extra parts plan	Show extra parts’ price plan. e.g. CPU/RAM/SASP-6/SASP-M 2 formats supported. e.g. http://a.cserver.mygrid.asia/query_extra_parts_plan/locale/en/serverid/111111/service_type/cpu or	GET

		http://a.cserver.mygrid.asia/query_extra_parts_plan/locale/en/idc_code/111/service_type/saspm	
16	Add extra parts	<p>Add extra parts to specified server or IDC.</p> <p>2 formats supported</p> <p>e.g.</p> <p>http://a.cserver.mygrid.asia/add_extra_parts/locale/en/serverid/11111/service_type/ram/parts_code/xyz</p> <p>or</p> <p>http://a.cserver.mygrid.asia/add_extra_parts/locale/en/idc_code/00001/service_type/saspm/parts_code/xyz</p>	PUT
17	Query subscribed parts	<p>Show what parts are subscribed.</p> <p>e.g.</p> <p>http://a.cserver.mygrid.asia/query_extra_subscribed_service/locale/en/service_type/cpu</p>	GET
18	Remove subscribed parts	<p>Remove subscribed extra parts from server or IDC.</p> <p>2 formats supported</p> <p>e.g.</p> <p>http://a.cserver.mygrid.asia/remove_extra_parts/locale/en/serverid/11111/service_type/cpu/parts_id/abcdef</p> <p>or</p> <p>http://a.cserver.mygrid.asia/remove_extra_parts/locale/en/service_type/saspm/parts_id/zyx</p>	DELETE
19	Attach SASP-M disk	<p>Attach SASP-M disk to specified server.</p> <p>e.g.</p> <p>http://a.cserver.mygrid.asia/attach_disk/locale/en/serverid/111111/parts_id/abcdefg</p>	PUT
20	Detach SASP-M disk	<p>Detach SASP-M disk from specified server.</p> <p>e.g.</p> <p>http://a.cserver.mygrid.asia/detach_disk/locale/en/serverid/111111/parts_id/abcdefg</p>	DELETE

API 1 – Server List

Web Service Name	server_list (ID_1)	REST http method	GET																														
Description	Get the subscribed cloud server list in XML																																
REST example	http://a.cserver.mygrid.asia/server_list/locale/en																																
Http Code if success	200																																
Request Signature	Yes																																
Anonymous access	Not accept																																
Possible Error	<p>General errors</p> <table border="1"> <thead> <tr> <th>Error Description</th> <th>Error Code</th> <th>Http Status Code</th> </tr> </thead> <tbody> <tr> <td>1. Expired signature</td> <td>ExpiredSig</td> <td>400 Bad Request</td> </tr> <tr> <td>2. Invalid headers</td> <td>InvalidHeader</td> <td>400 Bad Request</td> </tr> <tr> <td>3. Incorrect Locale code passing</td> <td>InvalidLocale</td> <td>400 Bad Request</td> </tr> <tr> <td>4. No such member</td> <td>NotExistMem</td> <td>400 Bad Request</td> </tr> <tr> <td>5. Fail Authentication</td> <td>FailAuth</td> <td>403 Forbidden</td> </tr> <tr> <td>6. Account problem or suspended</td> <td>ACPrb</td> <td>403 Forbidden</td> </tr> <tr> <td>7. Unsupported REST action</td> <td>NoRestMethod</td> <td>405 Not allowed method</td> </tr> <tr> <td>8. Server unexpected error</td> <td>UnexpectedError</td> <td>500 Server error</td> </tr> <tr> <td>9. Service unavailable</td> <td>UnavailableService</td> <td>503 Service Unavailable</td> </tr> </tbody> </table>			Error Description	Error Code	Http Status Code	1. Expired signature	ExpiredSig	400 Bad Request	2. Invalid headers	InvalidHeader	400 Bad Request	3. Incorrect Locale code passing	InvalidLocale	400 Bad Request	4. No such member	NotExistMem	400 Bad Request	5. Fail Authentication	FailAuth	403 Forbidden	6. Account problem or suspended	ACPrb	403 Forbidden	7. Unsupported REST action	NoRestMethod	405 Not allowed method	8. Server unexpected error	UnexpectedError	500 Server error	9. Service unavailable	UnavailableService	503 Service Unavailable
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REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i>																																

	Authorization: 112122334214:dsfdksfdklsfjklfsfd= <i>(access_id : signature)</i>
REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result	<pre> <?xml version="1.0" encoding="UTF-8" ?> <SubscribedServer> <Profile> <AccessID>dsfsdfCga6Ug8ORWyayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterpan</LoginName> <NoOfServer>1</NoOfServer> </Profile> <ServerList> <Server> <ServerID>dsfjksdfjksdjfdjfkdsjfkds</ServerID> <ServerDescription>first server</ServerDescription> <Location>Malaysia</Location> <IDC>AIMS IDC</IDC> <Plan>Plan A</Plan> <OSType>Linux</OSType> <OSName>Centos 5.2 (64bit)</OSName> <Template> Centos 5.2 (64bit)</Template> <DNS>29-h99.my00001.cserver.mygrid.asia</DNS> <ServerZone>Zone A</ServerZone> <IsSuspended>Y</Suspended> (Y-YES / N- NO) <ServerStatusCode>PO</ServerStatusCode> <ServerStatusDescription>Poweroff</ServerStatusDescription> </Server> </ServerList> </SubscribedServer> </pre>

API 2 – Get Server Information

Web Service Name	get_server_info (ID_2)	REST http method	GET																																	
Description	Get the subscribed cloud server list in XML																																			
REST example	2 modes General mode : http://a.cserver.mygrid.asia/get_server_info/serverid/abcde/locale/en or, Administrator mode (for super user only. General user can't use): http://a.cserver.mygrid.asia/get_server_info/serverid/abcde/locale/en																																			
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REST Request	GET / HTTP/1.1																																			

Header	Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjklfsfd= <i>(access_id : signature)</i>
REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result for “General Mode”.	<pre> <?xml version="1.0" encoding="UTF-8" ?> <ServerInformation> <Profile> <AccessID>MUg8ORWyayE51eQ1ke58sbyaCO</AccessID> <LoginName>davidchan</LoginName> </Profile> <Server> <ServerID>e80211f0-7aa6-44b5-bc80-ba47f06bb42d</ServerID> <ServerDescription>test server</ServerDescription> <Group /> <Zone>Zone A</Zone> <DNS>29-h99.my00001.cserver.mygrid.asia</DNS> <PublicIP>202.x.x.x </PublicIP> <PrivateIP>192.168.10.1</PrivateIP> <IsSuspended>N</IsSuspended> <ServerStatusCode>PO</ServerStatusCode> <ServerStatusDescription>Power Off</ServerStatusDescription> <ActivationDate>2010-10-19 GMT</ActivationDate> <City>Malaysia</City> <IDC>Sapura, Malaysia </IDC> <OSType>Linux</OSType> <OSName>Centos 5.2 (64bit)</OSName> <Template>Centos 5.2 (64bit)</Template> <Plan>Plan A</Plan> </Server> <HardwareConfig> <Virtual_CPU_NO>2</Virtual_CPU_NO> </pre>

```

<RAM_Size_In_MB>768</RAM_Size_In_MB>
<Local_Disk_Size_In_GB>10</Local_Disk_Size_In_GB>
<SASP_6>
<SASP_6_Drive>
<SASP_6_Parts_ID>645761ab-9f1d-4f1d-86a4-fba26e2b8904</SASP_6_Parts_ID>
<SASP_6_Name>sdf</SASP_6_Name>
<SASP_6_Size_In_GB>50</SASP_6_Size_In_GB>
</SASP_6_Drive>
</SASP_6>
<SASP_M>
<SASP_M_Drive>
<SASP_M_Parts_ID>cc419757-04c2-4db0-bab7-953d07b33c72</SASP_M_Parts_ID>
<SASP_M_Name>sdg</SASP_M_Name>
<SASP_M_Size_In_GB>100</SASP_M_Size_In_GB>
</SASP_M_Drive>
</SASP_M>
</HardwareConfig>
<ExtraHardware>
<ExtraCPUList>
<ExtraCPU>
<CPU_Parts_ID>ff8d5708-3207-4805-8454-916d04b22991</CPU_Parts_ID>
<No_Of_CPU>1</No_Of_CPU>
</ExtraCPU>
</ExtraCPUList>
<ExtraRAMList>
<ExtraRAM>
<RAM_Parts_ID>03ce5b29-53a8-4360-b8ae-7dc045f7e626</RAM_Parts_ID>
<RAM_Size>256</RAM_Size>
</ExtraRAM>
<ExtraRAM>
<RAM_Parts_ID>d30f653e-cefa-4a69-ab52-ac5ac0775550</RAM_Parts_ID>
<RAM_Size>256</RAM_Size>
</ExtraRAM>
</ExtraRAMList>
</ExtraHardware>
</Server>
</ServerInformation>

```



Aspen Cloud Server API – Development Guideline

REST XML Expected Result for “Administrator Mode”.	<pre><?xml version="1.0" encoding="UTF-8" ?> <ServerInformation> <ServerID>e812324f0-7aa6-44b5-bc80-ba47f06bb42d</ServerID> <IsSuspended>N</IsSuspended> <IsReserved>N</IsReserved> <IsLocked>N</IsLocked> <IsTerminated>N</IsTerminated> <ServerStatusCode>PO</ServerStatusCode> <IsSubscribed>Y</IsSubscribed> <HasVG>Y</HasVG> <AccessID>MUg8ORWyayE51eQ1ke58sbyaCO</AccessID> </ServerInformation></pre>
---	--

API 3 – Server Startup

Web Service Name	Startup (ID_3)	REST http method	POST																																							
Description	Boot up a specified server																																									
REST example	http://a.cserver.mygrid.asia/startup/serverid/abcde/locale/en																																									
Http Code if success	200																																									
Request Signature	Yes																																									
Anonymous access	Not accept																																									
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Aspen Cloud Server API – Development Guideline

	Authorization: 112122334214:dsfdksfjdklsfjklfsfj-dsfd= <i>(access_id : signature)</i>
REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result	<?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>

API 4 – Server Soft Reboot

Web Service Name	soft_reboot (ID_4)	REST http method	POST																																							
Description	Soft reboot the cloud server																																									
REST example	http://a.cserver.mygrid.asia/soft_reboot/serverid/abcde/locale/en																																									
Http Code if success	200																																									
Request Signature	Yes																																									
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Aspen Cloud Server API – Development Guideline

REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result	<?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>

API 5 – Server Hard Reboot

Web Service Name	hard_reboot (ID_5)	REST http method	POST																																							
Description	Hard reboot the cloud server																																									
REST example	http://a.cserver.mygrid.asia/hard_reboot/serverid/abcde/locale/en																																									
Http Code if success	200																																									
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Aspen Cloud Server API – Development Guideline

REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result	<?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>

API 6 – Server Soft Shutdown

Web Service Name	soft_shutdown (ID_6)	REST http method	POST																																							
Description	Soft shutdown the cloud server																																									
REST example	http://a.cserver.mygrid.asia/soft_shutdown/serverid/abcde/locale/en																																									
Http Code if success	200																																									
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REST Respond Header if success	HTTP/1.1 200 OK Date: Mon, 03 Mar 2008 12:00:00 GMT Content-Length: 112 Connection: close Content-Type: application/xml
REST XML Expected Result	<pre><?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI></pre>

API 7 – Server Hard Shutdown

Web Service Name	hard_shutdown (ID_7)	REST http method	POST																																							
Description	Hard shutdown the cloud server																																									
REST example	http://a.cserver.mygrid.asia/hard_shutdown/serverid/abcde/locale/en																																									
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REST XML Expected Result	<pre><?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI></pre>

API 8 – Server Subscription

Web Service Name	server_subscribe (ID_8)	REST http method	PUT																																													
Description	Subscribe new cloud server																																															
REST example	With Zone http://a.cserver.mygrid.asia/server_subscribe/locale/en/idc_code/nQ%40%3B/temp_late_code/nQ%40%28F/plan_code/nQ%40%28/zone_code/Spc3xH%60mKOqukM0yyDGe Without Zone http://a.cserver.mygrid.asia/server_subscribe/locale/en/idc_code/nQ%40%3B/temp_late_code/nQ%40%28F/plan_code/nQ%40%28 Administration Mode (for super user only. General user can't use) http://a.cserver.mygrid.asia/server_subscribe/locale/en/idc_code/nQ%40%3B/temp_late_code/nQ%40%28F/vm_uuid/dsfjdskfjkslfdksfjdkif																																															
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Invalid Zone Code	InvalidZoneCode	400 bad request																																														

	<table border="1"> <tr> <td>Insufficient balance to subscribe</td> <td>InsufficientBalance</td> <td>400 bad request</td> </tr> <tr> <td>Over the maximum subscription server number.</td> <td>OverMaxSubscribedServers</td> <td>400 bad request</td> </tr> <tr> <td>No stock for such template</td> <td>NoStock</td> <td>400 bad request</td> </tr> <tr> <td>No stock for template in specified zone</td> <td>NoStockInZone</td> <td>400 bad request</td> </tr> <tr> <td>No administration right</td> <td>NoAdminAccessRight</td> <td>400 bad request</td> </tr> <tr> <td>Invalid server ID you provided</td> <td>InvalidServerID</td> <td>400 bad request</td> </tr> <tr> <td>No IDC approval</td> <td>NoApproval</td> <td>400 bad request</td> </tr> <tr> <td>The demo a/c has no quota to add</td> <td>DemoACNotAllowed</td> <td>403 Forbidden</td> </tr> <tr> <td>Must provide the “Server Description”</td> <td>NotProvideServerDescription</td> <td>412 Precondition Failed</td> </tr> </table>	Insufficient balance to subscribe	InsufficientBalance	400 bad request	Over the maximum subscription server number.	OverMaxSubscribedServers	400 bad request	No stock for such template	NoStock	400 bad request	No stock for template in specified zone	NoStockInZone	400 bad request	No administration right	NoAdminAccessRight	400 bad request	Invalid server ID you provided	InvalidServerID	400 bad request	No IDC approval	NoApproval	400 bad request	The demo a/c has no quota to add	DemoACNotAllowed	403 Forbidden	Must provide the “Server Description”	NotProvideServerDescription	412 Precondition Failed
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Invalid server ID you provided	InvalidServerID	400 bad request																										
No IDC approval	NoApproval	400 bad request																										
The demo a/c has no quota to add	DemoACNotAllowed	403 Forbidden																										
Must provide the “Server Description”	NotProvideServerDescription	412 Precondition Failed																										
More details	<p>“Zone” is optional parameter. If not passing, system will random assign a zone. “idc_code”, “plan_code”, and “template_code” can be get from other “Query” API. i.e. API 11 – 14.</p>																											
REST Request Header	<p>PUT / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkl dsfj-dsfd= <i>(access_id : signature)</i></p>																											
Possible result	<p>Even the status code is “200”. There are many possible situations will be returned to requester via XML.</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>condition_1</td> <td>Subscribe the server successfully. The subscribed server configuration information will be returned.</td> </tr> <tr> <td>condition_2</td> <td>The server is no stock but accept the order. It will return the template details in XML.</td> </tr> <tr> <td>condition_3</td> <td>Return error XML e.g. no stock, insufficient balance and so on.</td> </tr> </tbody> </table>	Condition	Description	condition_1	Subscribe the server successfully. The subscribed server configuration information will be returned.	condition_2	The server is no stock but accept the order. It will return the template details in XML.	condition_3	Return error XML e.g. no stock, insufficient balance and so on.																			
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condition_3	Return error XML e.g. no stock, insufficient balance and so on.																											
Returned XML for condition 1	<pre><NewSubscribedServer> <Profile> <AccessID>MCgA6Ug851eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> <EMail>peter@jmail.com</EMail> </Profile> <Server> <ServerID>938d410a-8d6-8880-cbae48b2ebef</ServerID></pre>																											

	<pre> <ServerDescription>first server</ServerDescription> <ServerPassword>abcd</ServerPassword> <Group /> <Zone>Zone A</Zone> <DNS>vm1.abc.com</DNS> <PublicIP>202.85.1.1</PublicIP> <IsSuspended>N</IsSuspended> <ServerStatusCode>PO</ServerStatusCode> <ServerStatusDescription>Power Off</ServerStatusDescription> <ActivationDate>2010-06-24 GMT</ActivationDate> <City>Taiwan</City> <IDC>ACT, Taiwan</IDC> <OSType>Linux</OSType> <OSName>Centos 5.2 (64bit)</OSName> <Template>Centos 5.2 (64bit)</Template> <Plan>Plan A</Plan> </Server> </NewSubscribedServer> </pre>
Returned XML for condition 2	<pre> <?xml version="1.0" encoding="UTF-8" ?> <OrderedServer> <IDCCode>nQ%40%3B</IDCCode> <IDCName>ACT, Taiwan</IDCName> <TemplateCode>nQ%40%28F.%5Dq%26q</TemplateCode> <TemplateName>Centos 5.2 (64bit)</TemplateName> <PlanCode>nQ%40%28F.%5Dq%26q</PlanCode> <PlanName>Plan A</PlanName> <ZoneCode>Spc3xH%60mKOqukM0P</ZoneCode> <ZoneName>Zone A</ZoneName> <WaitingDays>10</WaitingDays> <ServerDescription>First linux server</ServerDescription> </OrderedServer> </pre>
Returned XML for condition 3	<pre> <?xml version="1.0" encoding="UTF-8" ?> <Error> <ErrorCode>NoStockInZone</ErrorCode> <ErrorMessage>No stock in this zone.</ErrorMessage> <HttpStatusCode>400</HttpStatusCode> </Error> </pre>

API 9 – Server Termination

Web Service Name	server_terminate (ID_9)	REST http method	DELETE																																													
Description	Terminate a subscribed server																																															
REST example	http://a.cserver.mygrid.asia/server_terminate/serverid/938d410a-8de2-42a6-8880-cba/locale/en																																															
Http Code if success	200																																															
Request Signature	Yes																																															
Anonymous access	Not accept																																															
Possible Error	<p>General errors</p> <table border="1"> <thead> <tr> <th>Error Description</th> <th>Error Code</th> <th>Http Status Code</th> </tr> </thead> <tbody> <tr> <td>Expired signature</td> <td>ExpiredSig</td> <td>401 bad Request</td> </tr> <tr> <td>Invalid headers</td> <td>InvalidHeader</td> <td>401 bad Request</td> </tr> <tr> <td>Incorrect Locale code passing</td> <td>InvalidLocale</td> <td>400 Bad Request</td> </tr> <tr> <td>No such member</td> <td>NotExistMem</td> <td>401 bad Request</td> </tr> <tr> <td>Fail Authentication</td> <td>FailAuth</td> <td>404 Forbidden</td> </tr> <tr> <td>Account problem or suspended</td> <td>ACPrb</td> <td>403 Forbidden</td> </tr> <tr> <td>Unsupported REST action</td> <td>NoRestMethod</td> <td>404 not allowed method</td> </tr> <tr> <td>Server unexpected error</td> <td>UnexpectedError</td> <td>500 Server error</td> </tr> <tr> <td>Service unavailable</td> <td>UnavailableService</td> <td>503 Service Unavailable</td> </tr> </tbody> </table> <p>Conditional Errors</p> <table border="1"> <thead> <tr> <th>Error Description</th> <th>Error Code</th> <th>Http Status Code</th> </tr> </thead> <tbody> <tr> <td>No such cloud server</td> <td>NoSuchVM</td> <td>400 bad request</td> </tr> <tr> <td>The server is locked by other process.</td> <td>VMLocked</td> <td>403 Forbidden</td> </tr> <tr> <td>The server was suspended.</td> <td>VMSuspended</td> <td>403 Forbidden</td> </tr> <tr> <td>Fail to terminate in server side.</td> <td>FailTerminateVM</td> <td>500 internal error</td> </tr> </tbody> </table>			Error Description	Error Code	Http Status Code	Expired signature	ExpiredSig	401 bad Request	Invalid headers	InvalidHeader	401 bad Request	Incorrect Locale code passing	InvalidLocale	400 Bad Request	No such member	NotExistMem	401 bad Request	Fail Authentication	FailAuth	404 Forbidden	Account problem or suspended	ACPrb	403 Forbidden	Unsupported REST action	NoRestMethod	404 not allowed method	Server unexpected error	UnexpectedError	500 Server error	Service unavailable	UnavailableService	503 Service Unavailable	Error Description	Error Code	Http Status Code	No such cloud server	NoSuchVM	400 bad request	The server is locked by other process.	VMLocked	403 Forbidden	The server was suspended.	VMSuspended	403 Forbidden	Fail to terminate in server side.	FailTerminateVM	500 internal error
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REST Request Header	DELETE / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkl dsfj-dsfd= <i>(access_id : signature)</i>
Returned XML for success termination	<?xml version="1.0" encoding="UTF-8" ?> <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>

API 10 – Daily Billing Report

Web Service Name	daily_billing_report (ID_10)	REST http method	GET																																													
Description	Get daily billing records in specified date range.																																															
REST example	http://a.cserver.mygrid.asia/daily_billing_report/locale/en/start_date/2010-06-01/end_date/2010-06-30/offset/1/max/10																																															
Http Code if success	200																																															
Request Signature	Yes																																															
Anonymous access	Not accept																																															
More details	<p>“start_date” is the starting date for report. The format should be in YYYY-MM-DD. e.g. 2010-1-1 or 2010-02-29</p> <p>“end_date” is the ending date for report. The format should be in YYYY-MM-DD. e.g. 2010-1-1 or 2010-02-29</p> <p>“offset” is used to set the starting record number . Must be 1 or greater.</p> <p>“max” is used to set the maximum return record no. Must be 1 to 30. e.g. if get record from 11th to 20th. Offset = 11 and max = 10</p>																																															
Possible Error	<p>General errors</p> <table border="1"> <thead> <tr> <th>Error Description</th> <th>Error Code</th> <th>Http Status Code</th> </tr> </thead> <tbody> <tr> <td>Expired signature</td> <td>ExpiredSig</td> <td>402 bad Request</td> </tr> <tr> <td>Invalid headers</td> <td>InvalidHeader</td> <td>402 bad Request</td> </tr> <tr> <td>Incorrect Locale code passing</td> <td>InvalidLocale</td> <td>400 Bad Request</td> </tr> <tr> <td>No such member</td> <td>NotExistMem</td> <td>402 bad Request</td> </tr> <tr> <td>Fail Authentication</td> <td>FailAuth</td> <td>405 Forbidden</td> </tr> <tr> <td>Account problem or suspended</td> <td>ACPrb</td> <td>403 Forbidden</td> </tr> <tr> <td>Unsupported REST action</td> <td>NoRestMethod</td> <td>405 not allowed method</td> </tr> <tr> <td>Server unexpected error</td> <td>UnexpectedError</td> <td>500 Server error</td> </tr> <tr> <td>Service unavailable</td> <td>UnavailableService</td> <td>503 Service Unavailable</td> </tr> </tbody> </table> <p>Conditional Errors</p> <table border="1"> <thead> <tr> <th>Error Description</th> <th>Error Code</th> <th>Http Status Code</th> </tr> </thead> <tbody> <tr> <td>Incorrect starting date</td> <td>InvalidBillingStartDate</td> <td>400 bad request</td> </tr> <tr> <td>Incorrect ending date</td> <td>InvalidBillingEndDate</td> <td>400 bad request</td> </tr> <tr> <td>Incorrect starting offset</td> <td>InvalidStartingOffset</td> <td>400 bad request</td> </tr> <tr> <td>Incorrect maximum record number</td> <td>InvalidMaxRecordReturn</td> <td>400 bad request</td> </tr> </tbody> </table>			Error Description	Error Code	Http Status Code	Expired signature	ExpiredSig	402 bad Request	Invalid headers	InvalidHeader	402 bad Request	Incorrect Locale code passing	InvalidLocale	400 Bad Request	No such member	NotExistMem	402 bad Request	Fail Authentication	FailAuth	405 Forbidden	Account problem or suspended	ACPrb	403 Forbidden	Unsupported REST action	NoRestMethod	405 not allowed method	Server unexpected error	UnexpectedError	500 Server error	Service unavailable	UnavailableService	503 Service Unavailable	Error Description	Error Code	Http Status Code	Incorrect starting date	InvalidBillingStartDate	400 bad request	Incorrect ending date	InvalidBillingEndDate	400 bad request	Incorrect starting offset	InvalidStartingOffset	400 bad request	Incorrect maximum record number	InvalidMaxRecordReturn	400 bad request
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Incorrect maximum record number	InvalidMaxRecordReturn	400 bad request																																														

More details	<p>There are many “Code” applied in returned XML.</p> <p>Account Status (A – Active, S – Suspended, T – Trial)</p> <p>PaymentModeCode (D – Daily, M – Monthly (Reserved))</p> <p>ItemTypeCode (S – Cloud Server, C – CPU, R – RAM, LPS – SASP-6, NPS – SASP – M, IA – IP address, MD – Migratable Domain, FW – Firewall)</p> <p><i>P.S. Not all IDC provide same parts.</i></p>
REST Request Header	<p>GET / HTTP/1.1</p> <p>Host: a.cserver.mygrid.asia</p> <p>Content-Length: 0</p> <p>Date: Mon, 03 Mar 2008 12:00:00 +0800</p> <p><i>(or passing x-pan-date instead of Date)</i></p> <p>Authorization: 112122334214:dsfdksfjdklsfjklfsfj-dsfd= <i>(access_id : signature)</i></p>
Returned XML	<pre> <?xml version="1.0" encoding="UTF-8" ?> <BillingInformation> <Profile> <AccessID>ayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> <AccountStatus>A</AccountStatus> <CurrencyCode>USD</CurrencyCode> <CurrencyName>US Dollars</CurrencyName> <CurrencySign>\$</CurrencySign> <AccountBalance>9,751.04</AccountBalance> <OutstandingBalance>0.00</OutstandingBalance> <PaymentModeCode>D</PaymentModeCode> </Profile> <ResultSet> <TotalNoOfRecord>171</TotalNoOfRecord> <StartRecordOffset>1</StartRecordOffset> <NoOfRecordReturn>1</NoOfRecordReturn> <HasMoreRecord>YES</HasMoreRecord> </ResultSet> <Transaction> <TransactionRecord> <TransactionDate>2010-06-01T23:59:59Z</TransactionDate> </pre>



Aspen Cloud Server API – Development Guideline

	<pre><ItemTypeCode>LPS</ItemTypeCode> <ItemDescription>50GB SASP-6 Storage</ItemDescription> <IsValueAddedService>YES</IsValueAddedService> <PlanID /> <PartsCode>nQ%40%28F.%5Dq%265</PartsCode> <ResourcesUUID>APU%3FOj%282XF58jxrac</ResourcesUUID> <Amount>0.01</Amount> </TransactionRecord> </Transaction> <GrandTotal> <TotalAmount>0.01</TotalAmount> </GrandTotal> </BillingInformation></pre>
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API 11 – Query supported cities

Web Service Name	query_support_city (ID_11)	REST http method	GET																														
Description	Show which city supports cloud server																																
REST example	http://a.cserver.mygrid.asia/query_support_city/locale/en																																
Http Code if success	200																																
Request Signature	Yes																																
Anonymous access	Not accept																																
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Returned XML	<?xml version="1.0" encoding="UTF-8" ?> <QuerySupportedCity> <Profile> <AccessID>ayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> <NoOfCity>2</NoOfCity> </Profile> <CityList>																																

```
<SupporteCity>  
  <CityName>Taipei, Taiwan</CityName>  
  <CityCode>nQ%40%3B</CityCode>  
</SupporteCity>  
<SupporteCity>  
  <CityName>Beijing, China</CityName>  
  <CityCode>nQ%40L</CityCode>  
</SupporteCity>  
</CityList>  
</QuerySupportedCity>
```

API 12 – Query supported IDC

Web Service Name	query_support_idc (ID_12)	REST http method	GET																																							
Description	Show which data center supports cloud server in a city. Or, Show which data center provide specified service such as SASP-M.																																									
REST example	There are 2 URI methods. Method 1 (show IDC under specified city) : http://a.cserver.mygrid.asia/query_support_idc/locale/en/citycode/nQ%40%3B Method 2 (show IDC under specified service) : http://a.cserver.mygrid.asia/query_support_idc/locale/en/service_type/saspm																																									
Http Code if success	200																																									
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REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkljsfd= <i>(access_id : signature)</i>
Returned XML	<pre> <?xml version="1.0" encoding="UTF-8" ?> <QuerySupportedIDC> <Profile> <AccessID>ayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> <NoOfIDC>3</NoOfIDC> </Profile> <IDCList> <SupporteIDC> <IDCName>PCCW, Hong Kong</IDCName> <IDCCode>nQ%40%3B</IDCCode> </SupporteIDC> <SupporteIDC> <IDCName>TRUE, Thailand</IDCName> <IDCCode>nQ%40t</IDCCode> </SupporteIDC> <SupporteIDC> <IDCName>ACT, Taiwan</IDCName> <IDCCode>nQ%40-</IDCCode> </SupporteIDC> </IDCList> </QuerySupportedIDC> </pre>

API 13 – Query supported template

Web Service Name	query_support_template (ID_13)	REST http method	GET																																				
Description	Show what templates are available in specified city. It includes “Standard”, “Custom” templates and “Zone”.																																						
REST example	http://a.cserver.mygrid.asia/query_support_template/locale/en/idc_code/nQ%3B																																						
Http Code if success	200																																						
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Anonymous access	Not accept																																						
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REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjdklsfj-dsfd= <i>(access_id : signature)</i>																																						

Returned XML	<pre> <?xml version="1.0" encoding="UTF-8" ?> <QuerySupportedTemplate> <Profile> <AccessID>yayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> </Profile> <ZoneList> <NoOfZone>2</NoOfZone> <ZoneRecord> <ZoneName>Zone A</ZoneName> <ZoneCode>Spc3xH%60mKOqukM%2Bld%5DU8cGF%7Br%7E6P</ZoneCode> </ZoneRecord> <ZoneRecord> <ZoneName>Zone B</ZoneName> <ZoneCode>c8j3_%2CYFGKKoYI%33%7CXT%7ER6%7DVI</ZoneCode> </ZoneRecord> </ZoneList> <StandardTemplateList> <NoOfStandardTemplate>2</NoOfStandardTemplate> <StandardTemplate> <TemplateName>Centos 5.2 (64bit)</TemplateName> <TemplateCode>nQ%40%28F.%5Dq%26q</TemplateCode> <HaveStockNow>Y</HaveStockNow> <PrepareDays>0</PrepareDays> </StandardTemplate> <StandardTemplate> <TemplateName>Centos 5.2 (32bit) (Out of Stock, need 2 days of delivery.)</TemplateName> <TemplateCode>nQ%40%28F.%5Dq%261</TemplateCode> <HaveStockNow>N</HaveStockNow> <PrepareDays>2</PrepareDays> </StandardTemplate> </StandardTemplateList> <IDCTemplateList> <NoOfIDCTemplate>1</NoOfIDCTemplate> <IDCTemplate> <TemplateName>IDC Template</TemplateName> </pre>
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Aspen Cloud Server API – Development Guideline

	<pre><TemplateCode>nQ%40%28F.%5Dq57</TemplateCode> <HaveStockNow>Y</HaveStockNow> <PrepareDays>0</PrepareDays> </IDCTemplate> </IDCTemplateList> </QuerySupportedTemplate></pre>
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API 14 – Query template’s plan

Web Service Name	query_template_plan (ID_14)	REST http method	GET																																							
Description	Show all plans for specified template.																																									
REST example	http://a.cserver.mygrid.asia/query_template_price/locale/en/idc_code/nQ%40%3B/template_code/nQ%40%28F.%5Dq%26q																																									
Http Code if success	200																																									
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REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkljsfd= <i>(access_id : signature)</i>																																									

Returned XML	<pre> <?xml version="1.0" encoding="UTF-8" ?> <QueryTemplatePrice> <Profile> <AccessID>RWyayE51eQ1ke58sbyaCO</AccessID> <LoginName>peterjason</LoginName> <Currency>USD</Currency> </Profile> <PlanList> <NoOfPlan>2</NoOfPlan> <PlanDetail> <PlanName>Plan A</PlanName> <PlanCode>nQ%40%28F.%5Dq%26q</PlanCode> <VirtualCPU>1</VirtualCPU> <RAMSize>256</RAMSize> <RAMSizeUnit>MB</RAMSizeUnit> <HardDiskSize>10</HardDiskSize> <HardDiskSizeUnit>GB</HardDiskSizeUnit> <Price>0.01</Price> </PlanDetail> <PlanDetail> <PlanName>Plan B</PlanName> <PlanCode>nQ%40%28F.%5Dq%261</PlanCode> <VirtualCPU>20</VirtualCPU> <RAMSize>512</RAMSize> <RAMSizeUnit>MB</RAMSizeUnit> <HardDiskSize>11</HardDiskSize> <HardDiskSizeUnit>GB</HardDiskSizeUnit> <Price>0.01</Price> </PlanDetail> </PlanList> </QueryTemplatePrice> </pre>
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API 15 – Query extra parts' plan

Web Service Name	query_extra_parts_plan (ID_15)	REST http method	GET																																										
Description	Show extra parts' price plan. e.g. CPU/RAM/SASP-6/SASP-M																																												
REST example	There are 2 URI formats supported. Method 1 : query for CPU/RAM/SASP-6 http://a.cserver.mygrid.asia/query_extra_parts_plan/locale/en/serverid/111111/service_type/cpu or Method 2 : query for SASP-M http://a.cserver.mygrid.asia/query_extra_parts_plan/locale/en/idc_code/111/service_type/saspm																																												
Http Code if success	200																																												
Request Signature	Yes																																												
Anonymous access	Not accept																																												
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No such service	NoSuchService	400 bad request																																											
Incorrect server ID	InvalidServerID	400 bad request																																											

REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkl dsfj-dsfd= <i>(access_id : signature)</i>
Returned XML	<p>Following is example XML output for SASP-6. If you query for other parts, the output has slightly different on content.</p> <pre> <?xml version="1.0" encoding="UTF-8" ?> <QueryExtraPartsPlan> <Profile> <AccessID>Ma6Ug8ORWyayE51eQ1ke58sbyaCO</AccessID> <LoginName>david</LoginName> <PartsType>sasp6</PartsType> <NoOfPlan>4</NoOfPlan> </Profile> <PlanList> <SupportedPlan> <PartsCode>nQ%40%28F.%5Dq%265</PartsCode> <PlanDesc>Plan A</PlanDesc> <Disk_Size_In_GB>1</Disk_Size_In_GB> <Currency>USD</Currency> <DollarSign>\$</DollarSign> <Amount>0.03</Amount> </SupportedPlan> <SupportedPlan> <PartsCode>nQ%40%28F.%5Dq%26w</PartsCode> <PlanDesc>Plan B</PlanDesc> <Disk_Size_In_GB>2</Disk_Size_In_GB> <Currency>USD</Currency> <DollarSign>\$</DollarSign> <Amount>0.01</Amount> </SupportedPlan> <SupportedPlan> <PartsCode>nQ%40%28F.%5Dq%26_</PartsCode> </pre>



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<DollarSign>$</DollarSign>
<Amount>0.01</Amount>
</SupportedPlan>
<SupportedPlan>
<PartsCode>nQ%40%28F.%5Dqqq</PartsCode>
<PlanDesc>Plan D</PlanDesc>
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<Currency>USD</Currency>
<DollarSign>$</DollarSign>
<Amount>0.01</Amount>
</SupportedPlan>
</PlanList>
</QueryExtraPartsPlan>
```

API 16 – Add extra parts

Web Service Name	add_extra_parts (ID_16)	REST http method	PUT																																																
Description	Add extra parts to specified server or IDC.																																																		
REST example	There are 2 URI formats supported. Method 1 : Add CPU/RAM/SASP-6 http://a.cserver.mygrid.asia/add_extra_parts/locale/en/serverid/11111/service_type/ram/parts_code/xyz or Method 2 : Add SASP-M http://a.cserver.mygrid.asia/add_extra_parts/locale/en/idc_code/00001/service_type/saspm/parts_code/xyz																																																		
Http Code if success	200																																																		
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Insufficient balance to subscribe	InsufficientBalance	400 bad request																																																	

	No such server	NoSuchVM	400 bad request
	Server should be shutdown	MustShutdownServer	400 bad request
	Over max allowed CPU no.	ExceedMaxCPU	400 bad request
	Over max allowed RAM size	ExceedMaxRAM	400 bad request
	Over max allowed connect drive no.	ExceedMaxDriveNo	400 bad request
	Fail to adjust CPU	FailAdjustCPUNumber	400 bad request
	Fail to adjust RAM size	FailAdjustRAMSize	400 bad request
	Fail to add hard drive	FailAddDrive	400 bad request
	Server was suspended before	VMSuspended	403 forbidden
	Server is locked by other procedure	VMLocked	403 forbidden
REST Request Header	PUT / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjklfsfd= <i>(access_id : signature)</i>		
Returned XML for	- <CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>		

API 17 – Query subscribed parts

Web Service Name	query_extra_subscribed_service (ID_17)	REST http method	GET																																				
Description	Show what parts are subscribed.																																						
REST example	e.g. http://a.cserver.mygrid.asia/query_extra_subscribed_service/locale/en/service_type/cpu																																						
Http Code if success	200																																						
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No such service	NoSuchService	400 bad request																																					
REST Request Header	GET / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjklfsj-dsfd= <i>(access_id : signature)</i>																																						

Returned XML	<pre> <?xml version="1.0" encoding="UTF-8" ?> <QueryExtraSubscribedService> <Profile> <AccessID>M6Ug8ORWyayE51eQ1ke58sbyaCO</AccessID> <LoginName>david</LoginName> <PartsType>cpu</PartsType> <NoOfRecord>2</NoOfRecord> </Profile> <ExtraList> <ExtraParts> <IDC>Sapura, Malaysia</IDC> <ServerID>e80224f0-7aa6-44b5-bc80-ba47f06bb42d</ServerID> <CPU_Parts_ID>f4a2c788-48ea-41a3-843b-8df0fbc6973c</CPU_Parts_ID> <No_Of_CPU>1</No_Of_CPU> </ExtraParts> <ExtraParts> <IDC>Sapura, Malaysia</IDC> <ServerID>e80224f0-7aa6-44b5-bc80-ba47f06bb42d</ServerID> <CPU_Parts_ID>ff8d5708-3207-4805-8454-916d04b22991</CPU_Parts_ID> <No_Of_CPU>1</No_Of_CPU> </ExtraParts> </ExtraList> </QueryExtraSubscribedService> </pre>

API 18– Remove subscribed parts

Web Service Name	remove_extra_parts (ID_18)	REST http method	DELETE																																																
Description	Remove subscribed extra parts from server or IDC.																																																		
REST example	There are 2 URI formats supported. Method 1 : query for CPU/RAM/SASP-6 http://a.cserver.mygrid.asia/remove_extra_parts/locale/en/serverid/111111/service_type/cpu/parts_id/abcdef or Method 2 : query for SASP-M http://a.cserver.mygrid.asia/remove_extra_parts/locale/en/service_type/saspm/parts_id/zyx																																																		
Http Code if success	200																																																		
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Aspen Cloud Server API – Development Guideline

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REST Request Header	<p>DELETE / HTTP/1.1</p> <p>Host: a.cserver.mygrid.asia</p> <p>Content-Length: 0</p> <p>Date: Mon, 03 Mar 2008 12:00:00 +0800</p> <p><i>(or passing x-pan-date instead of Date)</i></p> <p>Authorization: 112122334214:dsfdksfjdklsfjklfsfj-dsfd= <i>(access_id : signature)</i></p>																		
Returned XML	<pre><CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI></pre>																		

API 19 – Attach SASP-M disk

Web Service Name	attach_disk (ID_19)	REST http method	PUT																																																															
Description	Attach SASP-M disk to specified server.																																																																	
REST example	e.g. http://a.cserver.mygrid.asia/attach_disk/locale/en/serverid/11111/parts_id/abcdefg																																																																	
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Returned XML	<pre><?xml version="1.0" encoding="UTF-8" ?> <<CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI></pre>

API 20 – Detach SASP-M disk

Web Service Name	detach_disk (ID_20)	REST http method	DELETE																																																												
Description	Detach SASP-M disk from specified server.																																																														
REST example	e.g. http://a.cserver.mygrid.asia/detach_disk/locale/en/serverid/1111/parts_id/abcdefg																																																														
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REST Request Header	DELETE / HTTP/1.1 Host: a.cserver.mygrid.asia Content-Length: 0 Date: Mon, 03 Mar 2008 12:00:00 +0800 <i>(or passing x-pan-date instead of Date)</i> Authorization: 112122334214:dsfdksfjdklsfjkl dsfj-dsfd= <i>(access_id : signature)</i>
Returned XML	<?xml version="1.0" encoding="UTF-8" ?> <<CloudServerAPI> <Status>SUCCESS</Status> </CloudServerAPI>

Error Handling

In Aspen Cloud, it returns the error in XML format and takes advantages of http status code.

Besides, Aspen Cloud Server API also returns the error in XML format. If you require more details about your failure call, you can refer to the XML content.

The XML error message can be English, Traditional Chinese and Simplified Chinese due to user request. All unrecognized error will be shown in English.

Following are the sample returned XML format.

http header sample :

```
Date: Mon, 03 Mar 2008 06:08:42 GMT
Content-Type: application/xml
Content-Length: 112
Connection: close
```

XML Body sample :

```
<Error>
  <ErrorCode>FailAuth</ErrorCode>
  <ErrorMessage>Fail to authentication</ErrorMessage>
  <HttpStatusCode>400</HttpStatusCode>
  (The http status code also be shown in XML)
</Error>
```

Error Code Table

Error Description	Error Code	Http Status Code	Related Functions
Expired signature	ExpiredSig	400 Bad Request	All APIs
Invalid headers	InvalidHeader	400 Bad Request	All APIs
Incorrect Locale code passing	InvalidLocale	400 Bad Request	All APIs
No such member	NotExistMem	400 Bad Request	All APIs
No such Cloud Server	NoSuchVM	400 Bad Request	ID 3 – 7, 16
Invalid IDC code	InvalidIDCCode	400 bad request	ID 8, 13, 14, 15, 16
Invalid Template Code	InvalidTemplateCode	400 bad request	ID 8, 14
Invalid Plan Code	InvalidPlanCode	400 bad request	ID 8
Invalid Zone Code	InvalidZoneCode	400 bad request	ID 8
Insufficient balance to subscribe	InsufficientBalance	400 bad request	ID 8, 16
Over the maximum subscription server number.	OverMaxSubscribedServers	400 bad request	ID 8
Incorrect starting date	InvalidBillingStartDate	400 bad request	ID 10
Incorrect ending date	InvalidBillingEndDate	400 bad request	ID 10
Incorrect starting offset	InvalidStartingOffset	400 bad request	ID 10
Incorrect maximum record number	InvalidMaxRecordReturn	400 bad request	ID 10
Incorrect city code	InvalidCityCode	400 bad request	ID 12
No administration right	NoAdminAccessRight	400 bad request	ID 8
Invalid server ID you provided	InvalidServerID	400 bad request	ID 8, 15, 16, 18, 19, 20
No IDC approval	NoApproval	400 bad request	ID 8
No such service	NoSuchService	400 bad request	ID 12, 15, 16, 17, 18
Invalid parts	InvalidParts	400 bad request	ID 16, 18
Should shutdown server	MustShutdownServer	400 bad request	ID 16, 18, 19, 20
Over max allowed CPU no.	ExceedMaxCPU	400 bad request	ID 16
Over max allowed RAM size	ExceedMaxRAM	400 bad request	ID 16
Over max allowed connect drive no.	ExceedMaxDriveNo	400 bad request	ID 16, 19
Fail to adjust CPU	FailAdjustCPUNumber	400 bad request	ID 16, 18
Fail to adjust RAM size	FailAdjustRAMSize	400 bad request	ID 16, 18
Fail to add hard drive	FailAddDrive	400 bad request	ID 16
Fail to remove hard drive	FailRemoveDrive	400 bad request	ID 18
Parts was removed before	PartsRemovedBefore	400 bad request	ID 18, 19, 20
Parts type incorrect	InvalidPartsType	400 bad request	ID 18, 19, 20
Parts ID incorrect	InvalidPartsID	400 bad request	ID 19, 20



Aspen Cloud Server API – Development Guideline

Disk drive was attached before	DiskAttachedBefore	400 bad request	ID 19
Fail to attach drive	FailAttachDrive	400 bad request	ID 19
Disk drive was detached before	DiskDetachedBefore	400 bad request	ID 20
Fail to detach drive	FailDetachDrive	400 bad request	ID 20
Fail Authentication	FailAuth	403 Forbidden	All APIs
Account problem or suspended	ACPrb	403 Forbidden	All APIs
The cloud server is locked by other process.	VMLocked	403 Forbidden	ID 3 – 7, 16, 18, 19, 20
The cloud server was suspended.	VMSuspended	403 Forbidden	ID 3 – 7, 16, 18, 19, 20
Unsupported REST action	NoRestMethod	405 Not allowed method	All APIs
Server unexpected error	UnexpectedError	500 Server error	All APIs
Fail to terminate in server side.	FailTerminateVM	500 Server error r	ID 9
Service unavailable	UnavailableService	503 Service Unavailable	All APIs