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History			
Rev.	Date	Creation or Amendment	Done by
1	10/12/2018	First version	Andrea Leonardi

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1 INTRODUCTION

The SOLIDpower Web Services provides a gateway for external users with a common access point for operations through a defined protocol. The interface allows external users access to units. This document is part of the BlueGen User Services and includes following interfaces in Figure 1: BlueGen User Services - BlueGen-net Web Services.

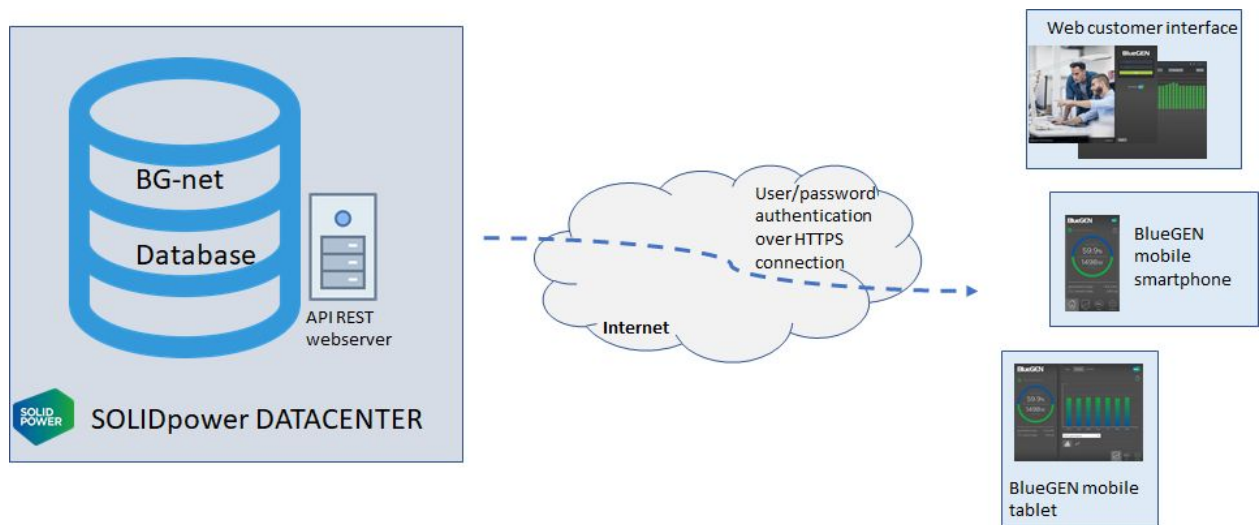


Figure 1: BlueGen User Services - BlueGen-net Web Services

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Use of WEB service API has been adopted to allow customers and third parties application to communicate and interface to BlueGen unit. Power profiling with BlueGENs has evolved from being driven via tables configured locally on individual BlueGENs to being able to take new power targets remotely from customer configured profiles established via the customer website through the “Web Services API - Customers”.

In summary, target power levels are defined by any of:

- Constant power target - Typically set to 1500W by default - can be manipulated by service team with the service GUI. This is the normal mode of operation.
- If BlueGEN unit is configured to take profiles, the target can be driven by tables that can be configured by service personnel.
- If BlueGEN unit is configured to take profiles, the target can be driven from an external source delivered from the BlueGEN-net database:
 - If Profiling is enabled on BGNet for the unit via SOLIDpower administration, then the customer website can feed the power targets;

2 RESTFUL WEB SERVICES - OVERVIEW

REST (Representational State Transfer) the operational protocol service provides a common access point for various operations.

An important concept in REST is the existence of resources (sources of specific information), each of which is referenced with a global identifier (e.g., a URI in HTTP). In order to manipulate these resources, *components* of the network (user agents and origin servers) communicate via a standardised interface (e.g., HTTP) and exchange *representations* of these resources (the actual database conveying the information).

The web service is implemented using HTTP and the principles of REST. It is a collection of resources, with three defined aspects:

- the base URI for the web service, such as <https://ws.bluegen-net.com/version>
- the internet media type of the data supported by the web service (JSON).
- the set of operations supported by the web service using HTTP methods (e.g., POST, GET, PUT or DELETE).

All access to the services can be done by authentication with username/password + JWT authentication method.

2.1 Authentication

The SOLIDpower BGN REST API uses a HTTP scheme for authentication. To authenticate a request, you will require username/password used to gather the token to authenticate, later, in every request made to the REST webservice.

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2.2 *User Management*

SOLIDPOWER will provide the customer access id and password: storage, deployment, client delivery, replacement, and rescinding. SOLIDPOWER reserves the right to revoke access to any client, or client unit, at any time.

2.3 *Services Overview*

2.3.1 **Units**

BlueGen units can be assigned a power individually or a power profile.

2.3.2 **Profiles**

A profile consists of a set of data points made up of tick/value pairs representing 1 week. The tick is an integer index of 15 minute increments. Values are typically constrained between 500 and 1500 (Watts)¹. Profiles are asynchronous, and values of setting and getting can lag. Furthermore, retrieval of data can be seen at a resolution that does not reflect the sampling rate.

2.3.3 **Asynchronous Operation**

In asynchronous operation, data sent to a unit will be scheduled for delivery at a later time. The timing is based on absolute timing (with respect to UTC). Likewise collection from a unit is based on db query which is subject to the data type and its collection time (varying around the hour).

All profile operations are asynchronous.

¹ SOLIDpower may constrain the range of power control to maintain system reliability and/or efficiency.

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3 SOLIDPOWER WEB SERVICES API

The section covers the SOLIDPOWER Web Services API.

3.1 *Payload*

The current payload types that can be requested via the HTTP header are:

```
application/json
text/html; charset=UTF-8
text/plain
```

As the last two are only used for debugging, JSON is used throughout.

3.2 *Data Types*

The delivered JSON encapsulated data types run to:

```
integer
float
double
boolean
timestamp
```

The timestamp is in the format:
YYYY-MM-DD HH:MM:SS

3.2.1.1 Overview

Every request sent by the mobile device then has to include this header:

```
Authorization Bearer <token>
```

Where the token was returned by the server upon successful login. So a mobile request might look this:

```
GET /unit/666/history HTTP/1.1
Connection: keep-alive
Accept: */*
```

```
Authorisation:Bearer
eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpYXQiOiJ0MjU0ODg4MjEsImp0aSI6IjU0ZjhjMjU1NWQyMjMiLCJpc3MiOiJzclqd3Qtc2ltcGx1LXRlY25vbTFRMy5jOS5pbyIsIm5iZiI6MTQyNTU4ODgyMSwiZXhwIjozNDI1NTkyNDIxLCJkYXRhIjpw7InVzZXJJZCI6IjEiLCJ1c2VyTmFtZSI6ImFkbWluIn19.HVYBe9xvPD8qt0wh7rXI8bmRJsQavJ8Qs29yfvbY-A0
```

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3.3 Requests Overview

Supported HTTP verbs are: POST, GET, PUT or DELETE. These roughly translate to: CREATE, READ, UPDATE, DELETE.

3.3.1 Generic method for authentication/status/customer details

URI	GET	POST	PUT	DEL	DESC
/	X				Returns server string.
/customer/pubkey	X				Return the public key
/version	X				Get Rest server version
/units	X				List of units
/unit/<id>	X				Unit details
/unit/<id>/limits	X				Unit limits
/unit/<id>/current	X				Unit snapshot data (from curr_data)
/unit/<id>/accumulated	X				Unit accumulated data (from curr_accdata)
/unit/<id>/version	X				Get unit version
/unit/<id>/location	X				Unit location and region details
/unit/<id>/history	X				Unit history download
/customer/login		X			Login to server
/unit/<id>/clientname			X		Set unit client name
/unit/<id>/customername			X		Set unit customer name
/customer/prefs	X				Get customer preferences
/customer/prefs			X		Modify Customer preferences

3.3.2 Get Requests

Required headers for get requests are:

- authorization
- date

URI	/
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API Version	1.0
Parameters	None
Description	Base URL.
Return	Rest Server String
Notes	
example	<pre>/ curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/' returns: BGN Restalicious</pre>

URI	/customer/pubkey
API Version	1.3
Parameters	None
Description	Return the public key
Return	<pre>pubkey string Public key issuedon timestamp When the key was generated</pre>
Notes	The public key is base64 encoded. JWT is not required for this call. The public key can be used if storage of the password is required in a way that keeps the password secret. If this is done, this needs to be called before every login operation to ensure that the key used to encrypt the password still matches the server key. If a stored copy of the issuedon variable no longer matches that returned, then the user will need to be prompted for the password, and the new pubkey used to encrypt and store this.

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URI	/version
API Version	1.1
Parameters	None
Description	Base URL.
Return	Array [maj integer major version min integer minor version inf integer interface version pro integer api integer api version]
Notes	The major, minor, and interface versions commonly make up one string: 1.0.0
example	<pre>curl -X GET -k -H 'authorization: Bearer <TOKEN> ' -i 'https://ws.bluegen-net.com/version'</pre> returns: <pre>{"version":{"maj":1,"min":3,"inf":0,"pro":1,"api":"1"}}</pre>

URI	/units
API Version	1.0
Parameters	None
Description	Lists units for a given client.
Return	Array [idintegerUnique unit id namestringGiven name]
Notes	
example	curl -X GET -k -H 'authorization: Bearer <TOKEN> ' -i 'https://ws.bluegen-net.com/units'

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	returns: <pre>{ "units": [{ "id": "249", "name": "BG0200" }] }</pre>
--	--

URI	/unit/<id>																		
API Version	1.0																		
Parameters	None																		
Description	Unit status details																		
Return	<table><tr><td>model</td><td>string</td><td>Model of BlueGEN (BG0/BG15)</td></tr><tr><td>pp</td><td>string</td><td>Power profile active (=1)/not Active (=0)</td></tr><tr><td>status</td><td>string</td><td>Unit status</td></tr><tr><td>tz</td><td>string</td><td>Timezone</td></tr><tr><td>gid</td><td>integer</td><td>Current group id</td></tr></table>			model	string	Model of BlueGEN (BG0/BG15)	pp	string	Power profile active (=1)/not Active (=0)	status	string	Unit status	tz	string	Timezone	gid	integer	Current group id	
model	string	Model of BlueGEN (BG0/BG15)																	
pp	string	Power profile active (=1)/not Active (=0)																	
status	string	Unit status																	
tz	string	Timezone																	
gid	integer	Current group id																	
Notes	Unit status values can be: <table><thead><tr><th>Name</th><th>Description</th></tr></thead><tbody><tr><td>Off</td><td>Fuel Cell system powered up, but not running</td></tr><tr><td>Heat-up</td><td>Fuel Cell system heating</td></tr><tr><td>Power Export</td><td>Fuel Cell system exporting power</td></tr><tr><td>Self sustain</td><td>Fuel Cell system not exporting power, but electrically self sufficient</td></tr><tr><td>Cool down</td><td>Fuel Cell system cooling</td></tr><tr><td>-</td><td>Undefined</td></tr><tr><td></td><td></td></tr></tbody></table>			Name	Description	Off	Fuel Cell system powered up, but not running	Heat-up	Fuel Cell system heating	Power Export	Fuel Cell system exporting power	Self sustain	Fuel Cell system not exporting power, but electrically self sufficient	Cool down	Fuel Cell system cooling	-	Undefined		
Name	Description																		
Off	Fuel Cell system powered up, but not running																		
Heat-up	Fuel Cell system heating																		
Power Export	Fuel Cell system exporting power																		
Self sustain	Fuel Cell system not exporting power, but electrically self sufficient																		
Cool down	Fuel Cell system cooling																		
-	Undefined																		
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249'</pre> <pre>{"status":{"model":"BG15","pp":"1","status":"Power Export","tz":"Australia\Melbourne","gid":"0","pid":"570"}}</pre>																		

URI	/unit/<id>/limits
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API Version	1.1														
Parameters	None														
Description	Unit limits														
Return	<table><tr><td>minpower</td><td>float</td><td>The minimum power a unit can be set to.</td></tr><tr><td>maxpower</td><td>float</td><td>The maximum power a unit can be set to.</td></tr><tr><td>slew_up</td><td>float</td><td>The maximum attack slew.</td></tr><tr><td>slew_dn</td><td>float</td><td>The maximum decay slew.</td></tr></table>			minpower	float	The minimum power a unit can be set to.	maxpower	float	The maximum power a unit can be set to.	slew_up	float	The maximum attack slew.	slew_dn	float	The maximum decay slew.
minpower	float	The minimum power a unit can be set to.													
maxpower	float	The maximum power a unit can be set to.													
slew_up	float	The maximum attack slew.													
slew_dn	float	The maximum decay slew.													
Notes															
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/limits'</pre> returns: <pre>{"limits":{"minpower":"800","maxpower":"1500","slew_up":"133.333","slew_dn":"133.333"}}</pre>														

URI	/unit/<id>/current		
API Version	1.0		
Parameters	None		
Description	Current unit parameters		
Return	when	timestamp	Capture time of variables
	power	float	Output power
	gas	float	Gas Flow
Notes	Current data is captured at regular intervals, but the timing reference differs with each BlueGen unit.		
example	curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/current'		

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	returns: <pre>{ "current": { "timestamp": "2018-08-21 07:05:00", "power": "1493.599976", "gas": "4.237735" } }</pre>
--	--

URI	/unit/<id>/accumulated		
API Version	1.0		
Parameters	None		
Description	Accumulated unit parameters		
Return	when	timestamp	Capture time of variables
	power	double	Output energy
	gas	double	Accumulated gas flow
Notes	Accumulated data is captured at regular intervals, but the timing reference differs with each BlueGen unit. Accumulated data will typically be sampled 30 seconds after the current data.		
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/accumulated'</pre> returns: <pre>{"acc":{"timestamp":"2018-08-21 07:05:30","power":"91920.303897","gas":"13722.913771"}}</pre>		

URI	/unit/<id>/version		
API Version	1.1		
Parameters	None		
Description	Unit version		
Return	ccp integer Ccp Version.		

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	<table><tr><td>maint</td><td>integer</td><td>Maint version.</td></tr><tr><td>alarm</td><td>integer</td><td>Alarm Version.</td></tr><tr><td>protocol</td><td>integer</td><td>Protocol Version.</td></tr></table>	maint	integer	Maint version.	alarm	integer	Alarm Version.	protocol	integer	Protocol Version.
maint	integer	Maint version.								
alarm	integer	Alarm Version.								
protocol	integer	Protocol Version.								
Notes										
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/version'</pre> returns: <pre>{"version":{"ccp":"34","maint":"3","alarm":"2","protocol":"5"}}</pre>									

URI	/unit/<id>/location		
API Version	1.3		
Parameters	None		
Description	Unit location and region details.		
Return	location	string	Unit location
	region	string	Unit region
	LHV	double	Lower Heating Value for the region
Notes			
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/location'</pre> <pre>{"location":"Dandenong South, Australia","region":"Melbourne - Victoria","lhv":"10.21046"}</pre>		

URI	/unit/<id>/history		
API Version	1.3		
Parameters	from	timestamp	Start timestamp
	to	timestamp	End timestamp

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	format string Download format
Description	Unit history download
Return	The requested data
Notes	Download formats: json csv
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/history?from=2018-06-25&to=2018-06-26&format="csv"'</pre> returns: <pre>{ "data": [DATA_RECEIVED...] }</pre>

URI	/customer/prefs
API Version	3
Parameters	None
Description	Base URL.
Return	<pre>{ "fname": "Test", "lname": "Pilot", "email": "user.name@solidpower.com" }</pre>
Notes	
example	<pre>curl -X GET -k -H 'authorization: Bearer <TOKEN>' -i 'https://ws.bluegen-net.com/customer/prefs'</pre> returns: <pre>{ "fname": "Test", "lname": "Pilot", "email": "user.name@solidpower.com" }</pre>

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3.3.3 Post Requests

Required headers for post requests are:

- authorization
- content-length
- content-md5
- content-type
- date

Optional headers are:

- accept-encoding
- accept

URI	/customer/login		
API Version	1.3		
Parameters	username	string	user name
	password	string	user password
Description	Login to server.		
Return	jwt	string	token
	eula	boolean	1 for eula agreed to
	lastlogin	timestamp	blank if first login
	timezone	string	i.e. 'Europe/Berlin'
	language	string	2 letter ISO code
	dateformat	string	Format of date
Notes	The JWT is the token to be used in all subsequent requests to the server in the authentication header. The password can be plaintext, or a base64 of an RSA encoded version using the public key and pkcs1_oaep_padding..		

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example	<pre>curl -X POST -k -i 'https://ws.bluegen-net.com/customer/login' --data '{"username":"<username>","password":"<password>"}</pre> returns: <pre>{"jwt":"<token>","eula":"1","last_login":"2018-08-21","timezone":"Australia\Melbourne","dateformat":"d-m-Y","language":"en"}</pre>
----------------	--

3.3.4 Put Requests

Required headers for put requests are:

- authorization
- content-length
- content-type
- date

Optional headers are:

- accept-encoding
- accept

URI	/unit/<id>/clientname			
API Version	1.0			
Parameters	<table><tr><td>name</td><td>string</td><td>Name to set to</td></tr></table>	name	string	Name to set to
name	string	Name to set to		
Description	Sets the unit client name.			
Return	200 Ok			
Notes				
example	<pre>curl -X PUT -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/clientname' --data '{"name":"nome"}'</pre>			

URI	/unit/<id>/customername
API Version	1.0

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Parameters	name string Name to set to
Description	Set unit customer name.
Return	200 Ok
Notes	
example	<pre>curl -X PUT -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/customername' --data '{"name":"nome"}'</pre>

URI	/customer/prefs
API Version	1.0
Parameters	fname string name of customer lname string surname of customer email string customer email language string language of customer (i.e. en) dateformat string d-m-Y graph_tooltip string graph_popup string
Description	Set unit customer preferences.
Return	200 Ok
Notes	
example	<pre>curl -X PUT -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/customer/prefs' --data '{ "fname": "name", "lname": "Leonardi", "email": "andrea.leonardi@solidpower.com", "language": "en", "dateformat": "d-m-Y", "graph_tooltip": "", "graph_popup": "" }'</pre>

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3.3.5 Power profile functionality

URI	GET	POST	PUT	DEL	DESC
/unit/<id>/profile	X				Get unit profile
/profile/<id>	X		X	X	Profile details, edit, delete
/profiles/<id>/members	X				Profile members list, member add
/profiles	X	X			List of profiles, create
/profiles/<id>/points		X			Get, add profile points
/unit/<id>/profile/<id>			X		Set unit profile
/profiles/<id>/range/<start>:<end>				X	Delete range of profile points
/profiles/<id>/point/<id>			X		edit or delete single profile point

3.3.6 Get Requests

Required headers for get requests are:

- authorization
- date

URI	/unit/<id>/profile
API Version	1.0
Parameters	None
Description	Current profile
Return	when timestamp Profile since this timestamp pid integer Current profile id
Notes	
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/unit/249/profile'</pre>

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	returns: { "pid": "366", "when": 0 }
--	--

URI	/profile/<id>
API Version	1.0
Parameters	None
Description	Profile details
Return	name string Profile name description string Profile description points [id integer point id tick integer point tick power integer point power]
Notes	
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profile/<id>'</pre> returns: <pre>{ "profile": { "id": "374", "name": "AltroProfilo4", "description": "Profil o modificato", "points": [{ "id": "39094", "tick": "1", "power": "1500" }, { "i d": "39096", "tick": "16", "power": "1450" }, { "id": "39098", "tick": "18", "p ower": "1500" }] }</pre>

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URI	/unit/<id>/chart?period=<parameter>																				
API Version	1.0																				
Parameters	<table><tr><th>Parameter Value</th><th colspan="2">Description</th></tr><tr><td>d</td><td colspan="2">Chart for last 24 hrs</td></tr><tr><td>w</td><td colspan="2">Chart for 1 week</td></tr><tr><td>m</td><td colspan="2">Chart for 1 month</td></tr><tr><td>y</td><td colspan="2">Chart for year wise</td></tr><tr><td>t</td><td colspan="2">Unit efficiency in total for last year</td></tr></table>			Parameter Value	Description		d	Chart for last 24 hrs		w	Chart for 1 week		m	Chart for 1 month		y	Chart for year wise		t	Unit efficiency in total for last year	
Parameter Value	Description																				
d	Chart for last 24 hrs																				
w	Chart for 1 week																				
m	Chart for 1 month																				
y	Chart for year wise																				
t	Unit efficiency in total for last year																				
Description	Unit Charts																				
Return	<table><tr><td>o</td><td>float</td><td>Output Energy of unit</td></tr><tr><td>i</td><td>float</td><td>Input Energy of unit</td></tr><tr><td>e</td><td>float</td><td>Efficiency of unit</td></tr><tr><td>coe</td><td>float</td><td>Co2 emissions of unit</td></tr><tr><td>cos</td><td>float</td><td>Co2 savings of unit</td></tr></table>			o	float	Output Energy of unit	i	float	Input Energy of unit	e	float	Efficiency of unit	coe	float	Co2 emissions of unit	cos	float	Co2 savings of unit			
o	float	Output Energy of unit																			
i	float	Input Energy of unit																			
e	float	Efficiency of unit																			
coe	float	Co2 emissions of unit																			
cos	float	Co2 savings of unit																			
Notes	<pre>curl -X GET -k -H 'authorization: Bearer <TOKEN>' -H 'content-length: 0' -i 'https://ws.bluegen-net.com/unit/2582/chart?period=d'</pre> returns: <json containing daily data>																				

URI	/profiles/<id>/members
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API Version	1.0
Parameters	None
Description	List of units using this profile.
Return	<pre>members [id integer unit id name string unit name]</pre>
Notes	
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profiles/249/members'</pre> returns: <pre>{ "members": [{ "id": "249", "name": "BG0200" }] }</pre>

URI	/profiles
API Version	1.0
Parameters	None
Description	Lists profiles for a given client.
Return	<pre>profiles: [id integer Unique profile id name string Profile name]</pre>
Notes	
example	<pre>curl -X GET -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profiles'</pre> returns: <pre>{ "profiles": [{ "id": "366", "name": "New profile" }, { "id": "374", "name": "test profile1" }, { "id": "398", "name": "Test8" }] }</pre>

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3.3.7 Post Requests

Required headers for post requests are:

- authorization
- content-length
- content-md5
- content-type
- date

Optional headers are:

- accept-encoding
- accept

URI	/profiles		
API Version	1.0		
Parameters	name	String	Profile name
	description	String	Profile description
	points [		
	ticks	Integer	Data points ticks
	power	Integer	Data points power
	]		
	unit_id	Integer	ID of unit
Description	Create new profile.		
Return	Id	integer	New unique ID of created profile.
Notes	The points list can be omitted.		
example	<pre>curl -X POST -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profiles' --data '{"name":"Test9", "description":"Test PProfile", "points":[{"tick":"0", "power":"1500"}, {"tick":"24", "power":"1500"}, {"tick":"36", "power":"1400"}, {"tick":"48", "power":"1400"}, {"tick":"60", "power":"1450"}, {"tick":"72", "power":"1400"}, {"tick":"84", "power":"1500"}], "unit_id":"249"}'</pre> returns:		

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	{"pid": "400"}
--	----------------

URI	/profiles/<id>/points		
API Version	1.1		
Parameters	points [ticks Integer Data points ticks power Integer Data points power] unit_id Integer ID of unit		
Description	Replaces all data points in a profile.		
Return	200 Ok, or error code.		
Notes			
example	<pre>curl -X POST -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profiles/400/points' --data '{"points":[{"tick":"0","power":"1500"}, {"tick":"24","power":"1450"}, {"tick":"36","power":"1400"}, {"tick":"48","power":"1400"}, {"tick":"60","power":"1450"}, {"tick":"72","power":"1400"}, {"tick":"84","power":"1500"}], "unit_id":"249"}'</pre> returns: HTTP/1.1 200 Ok		

3.3.8 Put Requests

Required headers for put requests are:

- authorization
- content-length
- content-md5 (not requested for Bearer Authentication method)
- content-type
- date

Optional headers are:

- accept-encoding
- accept

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URI	/profiles/<id>/point/<id>		
API Version	3.0		
Parameter	tick	integer	New tick
	power	integer	New value
Description	Edit an existing data point in a profile.		
Return	200 Ok, or error code.		
Notes	If the point is not found, or the point parameters are the same as the current point, 400 point not found will be returned.		
example			

URI	/unit/<id>/profile/<id>
API Version	1.0
Parameters	None
Description	Set Current profile
Return	200 Ok, or error code.
Notes	
example	<pre>curl -X PUT -k -H 'authorization: Bearer <token>' -H 'content-length:0' -i 'https://ws.bluegen-net.com/unit/1234/profile/4321'</pre>

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3.3.9 Delete Requests

Required headers for delete requests are:

- authorization
- date

URI	/profile/<id>
API Version	1.0
Parameter	None
Description	Delete the profile.
Return	200 OK, or an error code.
Notes	This will fail if the profile is being used by a unit.
example	<pre>curl -X DELETE -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profile/400'</pre> returns: HTTP/1.1 200 Ok

URI	/profiles/<id>/range/<tickstart>:<tickend>
API Version	1.0
Parameter	None
Description	Delete a range of data points in a profile.
Return	200 OK, or an error code.
Notes	The start and end are inclusive.
example	<pre>curl -X DELETE -k -H 'authorization: Bearer <token>' -i 'https://ws.bluegen-net.com/profiles/374/range/40:50'</pre> returns: HTTP/1.1 200 Ok

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3.4 Data Type Units

Type	Unit	Notes
Power	W	
Gas	SLM	
Slew rate	W/m	
Ticks	15 minutes	
Accumulated Values		
Power	kWh	
Gas	kL	

The parameters, and returns are shown below in tables, these translate to JSON key/value pairs.

3.5 Appendix A - Error Codes

Error Code	HTTP Status Code
InvalidAccessKeyId	403
Malformed unit id	400
Malformed request	400
Malformed request clientname	400
Malformed request customername	400
Malformed request timestamp	400
Malformed request power	400
Number of requests per day exceeded	503
Request out of range	403
NegativeTimestamp	403
UnitRequestTimeout	408
ShonkyRampRate	403
UnitInvalid	400
InvalidURI	400
MalformedRequest	400
GroupNotEmpty	400
Group exists	409

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Malformed request profile point	400
Malformed request profile owner	409
Profile exists	409
PermissionDenied	409
ProfileInUse	409
Malformed request profile point range	409
SockFellOff	500
UnitNotRespondng	500
UnitTimedOut	500
UnitAtRequestedPower	403
UnitCommsError	403
UnitRespondedIncorrectly	403
Malformed request fname	400
Malformed request lname	400
Malformed request email	400
Malformed request lang	400
Malformed request tz	400
Malformed request dformat	400
User doesn't exist	400
Malformed request graph tooltip	400
Malformed request graph popup	400
Bad Credentials	400
Too many attempts	400
Account suspended	400
Naughty IP	400
Bad Token	400
Invalid data range	400
No profile points	400
Max profile count reached	400