

# RESTful Web Services

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## General consideration

First, deploy the BioNetDB WAR file (*bionetdb.war*) following the instructions from [Deploy WAR file](#).

## Understanding the URL

The general format of the REST API web services is:

### OpenCGA RESTful URL Structure

```
http://HOST_URL/webservices/rest/{apiVersion}/{resource}/{endpoint}?  
{options}
```

where **HOST\_URL** is the name of the host machine and the name of Java **war** file deployed in web server (e.g. tomcat) over that server for example localhost:8080/bionetdb

Entities inside the curly braces **{ }** are the web service parameters, and they are treated as variables. For example the following URL:

### Quick Example

```
http://localhost:8080/bionetdb/webservices/rest/v1/table/cypher?query="  
match (n:VARIANT) return count(n)"
```

As is explained later in this documentation, this RESTful web service will execute a Cypher query returning results as a table:

- **apiVersion (v1)** : indicates BioNetDB version to retrieve information from, data models and API may change between versions.
- **resource (table)** : specifies the data type of what the user wants to retrieve. This can be one of [resources](#) listed below.
- **endpoint (cypher)** : these parameters must be specified depending on the nature of your input data; in our example, *cypher* indicates we are going to execute a Cypher query.
- **options (query)** : variables in key value pair form, passed as query parameters; in our example, it is the Cypher query itself: "match (n:VARIANT) return count(n)"

## URL parameters

### *apiVersion*

*apiVersions* are numbered as *v1*, *v2*, etc. At this moment we are heading to first stable *apiVersion* which is *v1*.

### **resource**

There are several resources implemented:

Resource	Path	Description	Main endpoints
Network	/network	Methods to work with networks	cyper, info, model
Node	/node	Methods to work with nodes	cyper, info
Path	/path	Methods to work with paths between nodes	cypher
Table	/table	Methods to get output results as tabels	cypher

### *options*

These query parameters can modify the behaviour of the query (*exclude*, *include*, *limit*, *skip* and *count*) or add some filters to some specific endpoints to add useful functionality. The following image shows the options for the previous webservice.

Parameter	Value	Description	Parameter Type	Data Type
apiVersion	v1 (default) x	Use "latest" for last stable apiVersion	path	string
query	<input type="text"/>	Cypher query	query	string

## Swagger

BioNetDB has been documented using [Swagger](#) project. Detailed information about *resources*, *endpoints* and *options* is available at your own installation:

<http://localhost:8080/bionetdb/webservices/>

