**BCF 2.0 RESTful API**

All API access is over HTTPS. Data is sent as query parameters and received as JSON.

* Every resource has a corresponding Json Schema.
* Json Hyper Schema for link definition
* Authentication OAuth2

**Paging, Sorting, Filtering**

* [Link header introduced by RFC 5988](http://tools.ietf.org/html/rfc5988#page-6).
* custom HTTP header ***X-Total-Count (HEAD)***

**page**

**page\_size**

**sort**

Only „descending“ property exits. If no descending property is there -> ascending=true

if descending=true -> descending

if descending=false -> ascending

**"&" to combine different query parameters (operations)**

Example:

*v2/projects/{guid}/topics?page=1&page\_size=5&sort=priority&descending=true*

**Filter use escape characters**  (<http://www.december.com/html/spec/esccodes.html>)

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| **Operator** | **Operation** | **Escape Characters** |
| > | Greater than | %3E |
| < | Less than | %3C |
| \* | Wild card for contains | \* |
| = | Equal to | %3D |
| >= | Greater than or equal to | %3E%3D |
| <= | Less than or equal to | %3C%3D |
| != | Is not equal to | %21%3D |
| & | And | %26 |
| | | Or | %7C |

Example:

*v2/projects/{guid}/topics?page=1&page\_size=5&sort=priority&descending=true&filter=*

*(TopicLabel%3D Architecture%7CTopicLabel%3D Structural)%26TopicStatus%21%3DClosed*

**Caching**

ETAG

ETags, or entity-tags, are an important part of HTTP, being a critical part of caching, and also used in "conditional" requests.

The ETag response-header field value, an entity tag, provides for an "opaque" cache validator.

The easiest way to think of an etag is as an MD5 or SHA1 hash of all the bytes in a representation. If just one byte in the representation changes, the etag will change.

ETags are returned in a response to a GET:

joe@joe-laptop:~$ **curl --include http://bitworking.org/news/**

HTTP/1.1 200 Ok

Date: Wed, 21 Mar 2007 15:06:15 GMT

Server: Apache

**etag: "078de59b16c27119c670e63fa53e5b51"**

Content-Length: 23081

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**Cross origin resource sharing (CROS)**

The server will put the "Access-Control-Allow-Headers" in the response header and specify who can access the server(json) resources. The client can look for this value and proceed with accessing the resources.

The server has a web config file .. "\*" means the server allow the resources for all domains.

<httpProtocol>

<customHeaders>

<add name="Access-Control-Allow-Headers" value="Content-Type, Accept, X-Requested-With, Authorization" />

<add name="Access-Control-Allow-Methods" value="GET, POST, PUT, DELETE, OPTIONS" />

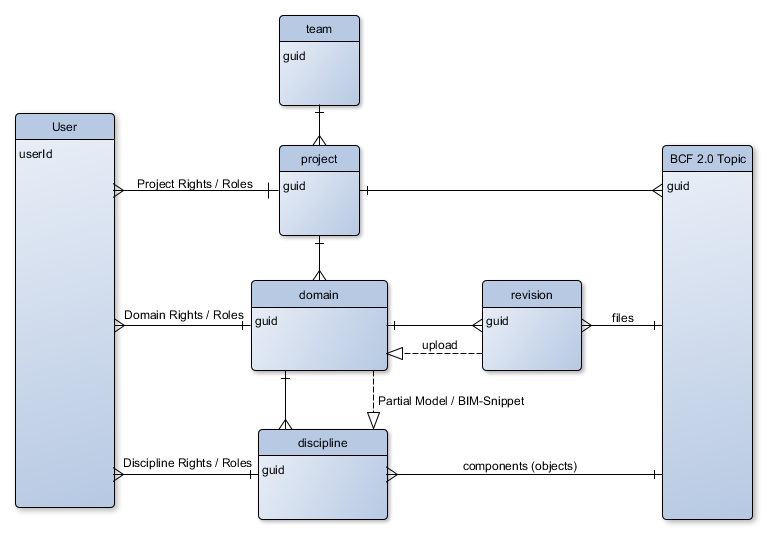
<add name="Access-Control-Allow-Origin" value="\*" />

</customHeaders>

</httpProtocol>

**Structure**

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**Resources**

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| ***Version*** | |
| /V0.99 | GET |

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| ***(Version) Schemas*** | |
| /V0.99/schemas | GET Link Schema |
| /V0.99/schemas/{rel} | GET |

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| ***Teams*** | |
| /V0.99/teams | GET, POST |
| /V0.99/teams/{guid} | GET, PUT, DELETE |

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| ***Projects*** | |
| /V0.99/ teams/{ guid }/projects | GET, POST |
| /V0.99/ teams/{ guid }/projects/{guid}  /V0.99/projects/{guid} | GET, PUT, DELETE |

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| ***(Projects) Thumbnail*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/thumbnail  /V0.99/projects/{guid}/thumbnail | GET, POST, DELETE |

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| ***(Projects) Schema*** | |
| /V0.99/ teams/{ guid}/projects /{guid}/schema  /V0.99/ projects /{guid}/schema | GET,POST, PUT, DELETE (extensions.json) |

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| ***Domains*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/domains | GET, POST |
| /V0.99/ teams/{ guid }/projects/{guid}/domains/{guid}  /V0.99/ domains/{guid} | GET, PUT, DELETE |

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| ***Disciplines*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/ domains/{guid}/  diciplines | GET, POST |
| /V0.99/ teams/{ guid }/projects/{guid}/ domains/{guid}/  disciplines/{guid}  /V0.99/ disciplines/{guid} | GET, PUT, DELETE |

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| ***Revisions*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/divisions/{guid}/revisions | GET, POST |
| /V0.99/ teams/{ guid }/projects/{guid}/divisions/{guid}/revisions/{guid}  /V0.99/revisions/{guid} | GET, DELETE |

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| ***Topics*** | |
| /V0.99/teams/{ guid }/projects/{guid}/topics | GET (default sort= CreationDate),  POST |
| /V0.99/teams/{ guid }/projects/{guid}/topics/{guid}  /V0.99/topics/ {guid } | GET, PUT, DELETE |

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| ***(Topics) Revisions*** | |
| /V0.99/teams/{ guid }/projects/{guid}/topics/{guid}/revisions  /V0.99/topics/ {guid }/revisions | GET, POST |

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| ***(Topics) Divisions*** | |
| /V0.99/teams/{ guid }/projects/{guid}/topics/{guid}/devisions  /V0.99/topics/ {guid }/devisions | GET, POST |

??? is Disciplines the same as Components

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| ***(Topics) Disciplines*** | |
| /V0.99/teams/{ guid }/projects/{guid}/topics/{guid}/disciplines  /V0.99/topics/ {guid }/disciplines | GET, POST |

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| ***(Topics) Document References*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/topics/{guid}/  document\_references  /V0.99/topics/ {guid }/ document\_references | GET, POST |
| /V0.99/teams/{ guid }/projects/{guid}/topics/{guid}/  document\_references/{guid}  /V0.99/ document\_references/{guid} | GET, DELETE |

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| ***(Topic) Related Topics*** | |
| /V0.99/ teams/{ guid }/projects/{guid}/topics/{guid}/related\_topics  /V0.99/topics/{guid}/related\_topics | GET, POST |
| /V0.99/ teams/{ guid }/projects/{guid}/topics/{guid}/related\_topics/{guid}  /V0.99/ topics/{guid}/related\_topics/{guid} | GET, DELETE |

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| ***(Topics) Comments*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/comments  /V0.99/topics/{guid}/comments | GET, POST |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/comments/{guid}  /V0.99/comments/{guid} | GET, PUT, DELETE |

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| ***(Topics)( Comments) Viewpoints*** | |
| /V0.99/ teams/{id}/projects/{id}/topics/{guid}/comments/{guid}/  Viewpoints  /V0.99/ comments/{guid}/viewpoints | GET |

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| ***(Topics) Viewpoints*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/viewpoints  /V0.99/topics/{guid}/viewpoints | GET, POST |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}  /V0.99/viewpoints /{guid} | GET, PUT, DELETE |

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| ***(Topics) (Viewpoints) Bitmap*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/  bitmap  /V0.99/viewpoints /{guid}/bitmap | GET, POST, DELETE |

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| ***(Topics) (Viewpoints) Snapshot*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/  snapshot  /V0.99/viewpoints /{guid}/snapshot | GET, POST, DELETE |

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| ***(Topics) (Viewpoints) Comments*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/comments  /V0.99/viewpoints /{guid}/comments | GET, POST |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/comments/{guid}  /V0.99/ viewpoints /{guid}/comments/{guid} | DELETE |

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| ***(Topics) (Viewpoints) Components*** | |
| /V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/components  /V0.99/viewpoints /{guid}/components | GET,POST |
| V0.99/ teams/{guid}/projects/{guid}/topics/{guid}/ viewpoints /{guid}/components/{guid}  V0.99/components/{guid} | GET, DELETE |

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|  | **Account**  **Owner** | **Project**  **Admin** | **Project**  **Editor** | **Project**  **Viewer** | **Model**  **Admin** | **Model**  **Editor** | **Model**  **Viewer** |
| **Create Project** | x | x |  |  |  |  |  |
| **Admin Project**  **(eg. invite)** | x | x |  |  |  |  |  |
| **Edit Project** | x | x | x |  |  |  |  |
| **Delete Project** | x | x |  |  |  |  |  |
| **View Project** | x | x | x | x | x | x | x |
|  |  |  |  |  |  |  |  |
| **Create Discipline** | x | x | x |  |  |  |  |
| **Edit Discipline** | x | x | x |  |  |  |  |
| **Delete Discipline** | x | x | x |  |  |  |  |
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| **View all Models** | x | x | x | x |  |  |  |
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| ***(Teams) Roles*** | |
| /V0.99/teams/{guid}/roles  [      {          "id": "f11d32e2-30b7-4f81-8a74-2165ecc00cf6",          "name": "Project\_Editor",          "customRole": false,          "resources": [              {                  "resource": "UserRightProject",                  "rights": [                      "Project\_Edit",                      "Project\_View",                      "Model\_ViewAll"                  ]}]},      {          "id": "2baca0e4-2eee-4f7c-bc56-22ed54a1859c",          "name": "Account\_Owner",          "customRole": false,          "resources": [              {                  "resource": "UserRightGlobal",                  "rights": [                      "AllProjects",                      "AllModels",                      "Project\_Create"                  ]}]      },      {          "id": "a298b28d-9711-4a76-9a7d-910cbf144ee5",          "name": "Project\_Admin",          "customRole": false,          "resources": [              {                  "resource": "UserRightProject",                  "rights": [                      "Project\_Admin",                      "Project\_Edit",                      "Project\_Delete",                      "Project\_View",                      "Model\_ViewAll",                      "Model\_Create"                  ]              }          ]      },      {          "id": "a618d075-7e4a-4bde-9d58-d2979696fa96",          "name": "Project\_Viewer",          "customRole": false,          "resources": [              {                  "resource": "UserRightProject",                  "rights": [                      "Project\_View",                      "Model\_ViewAll"                  ]}]}] | GET  ***Why is this team-related ?*** |
| ***(Projects) Members*** | |
| /V0.99/teams/{guid}/projects/{guid}/members  /V0.99/projects/{guid}/members  POST: Assign a project role to an existing member of a team. Only the user with "Account Owner" or "Project Owner" role can use this API call.  {    "member": {      "user\_id": "bf5b2382-1d14-b8df-8454-947f83b45c25"    },    role: {      id: "Project\_Editor"}    GET: Get the member list of a project along with their respective project roles.  [{  "member": {  "user\_id": "7aa846f2-6014-f68d-8dd4-4c7941d7cbcc",  "email": "customer1@bimplus.net"  },  "role": {  "id": "Project\_Editor" }},  {  "member": {  "user\_id": "bf5b2382-1d14-b8df-8454-947f83b45c25",  "email": "customer2@bimplus.net"  },  "role": {  "id": "Project\_Viewer“  }}]  PUT: Update the project role of a team member. Only the user with "Account Owner" or "Project Owner" role can use this API call.  {"member": {  "user\_id": "bf5b2382-1d14-b8df-8454-947f83b45c25",  "email": "customer@bimplus.net"  },  "role": {  "id": " Project\_Viewer"…… | GET,POST, PUT |

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| ***Users*** | |
| /V0.99/users  POST: Create a new user | POST |
| /V0.99/users/{user\_id}  GET: Get information about the user  PUT: Modify the user  DELETE: Delete the user; Remove from all teams and projects | GET,PUT,DELETE |

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| ***(Users) self*** | |
| /V0.99/users/self  GET all informations about the logged on user | GET |