

4.17 Clash Service

Clash Service

- Detect all the clashes in a project
- Detect clashes between disciplines & objects/topologies
- Calculate clashes in project using particular clash filter
- Get all clashes for given project and clash filter

- Create an clash filter in the project
- Get all clash filters for a project
- Get all clash filters for a team
- Get details of single clash filter
- Update the clash filter
- Delete the clash filter

Clash Service

Clashes could be detected in a project by calling this service. The person who uploaded the model which contains the clash will get a notification along with the clash count after the clash process is completed. This process will be called during model import in the future.

Detect all the clashes in a project

URL / Resource / JSON Structure

Resource: services/postprocess

URL: https://api-stage.bimplus.net/v2/<team_slug>/services/postprocess

Example:<https://api-stage.bimplus.net/v2/bimplus/services/postprocess>

JSON Structure:

Name	Mandatory / Optional	Type	Description
runAsync	mandatory	bool	True sets the clash process to run asynchronously
postProcess	mandatory	object	It runs as a windows service in the server
projectId	mandatory	string	Id of the project

HTTP Method

POST

Description

Detects all the clashes in a project. Beware, that this will more time as they will be typically 100s of clashes in a model

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

JSON

```
{
  "runAsync": "True",
  "postProcess": {
    "projectId": "0c9b514a-5b30-4f77-b0ff-2184d079fd30"
  }
}
```

Response

Status

Status: 200 OK

JSON

```
{
  "postProcess": {
    "projectId": "0c9b514a-5b30-4f77-b0ff-2184d079fd30"
  },
  "runAsync": false
}
```

Detect clashes between disciplines & objects/topologies

URL / Resource / JSON Structure

Resource: clashdetection

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashdetection

Example: <https://api-stage.bimplus.net/v2/bimplus/clashdetection>

JSON Structure:

Name	Mandatory / Optional	Type	Description
layerid1	mandatory	string(guid)	Layer/discipline id
layerid2	mandatory	string(guid)	Layer/discipline id
tolerancex	optional	int	Id of the project
tolerancey	optional	int	Tolerance in x direction(mm)
objectsid	mandatory	JSON Array	Tolerance in y direction(mm)

HTTP Method

POST

Description

Detect clashes between disciplines & objects/topologies.

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

JSON

```
{
  "layerid1": "0F106AF0-A919-44c5-B211-15BD5EF620B6",
  "layerid2": "0F106AF0-A919-44c5-B211-15BD5EF620B6",
  "tolerancex": "15",
  "tolerancey": "25",
  "objectsid": [
    "a3105304-a785-4dff-b114-a57b665248f6",
    "f7fbde41-1c46-4c10-81cb-c97f16c9d16a",
    "aaf238a1-4a40-4185-991e-7673d82b040c"
  ]
}
```

Response

Status

Status: 201 Created

JSON

```
{
  "clashcount": 4
}
```

Calculate clashes in project using particular clash filter

URL / Resource / JSON Structure

Resource: clashdetection/filters

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashdetection/filters

Example: <https://api-stage.bimplus.net/v2/bimplus/clashdetection/filters>

JSON Structure:

Name	Mandatory / Optional	Type	Description
filterid	mandatory	guid	ID of clash filter
projectid	mandatory	guid	Project ID
tolerancex	optional	double	Tolerance by clash detection in x-direction.
tolerancey	optional	double	Tolerance by clash detection in y-direction.
tolerancez	optional	double	Tolerance by clash detection in z-direction.
boxsize	optional	double	Size of visual clash element.
renew	optional	boolean	Defines faith of previously calculated clashes. If false - clashes will be updated, if true - all clashes will be deleted and new ones will be calculated. Default value is false.

HTTP Method

POST

Description

Calculates, updates or recalculates (see "renew" property) clashes for a project, using the clash filter provided in the request json. Tolerances and boxsize are optional, if not set then the default values of the given filter will be used.

Remark: If there is only one tolerance value present - tolerancex - this value is used for all three tolerances.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

JSON
<pre>{ "filterid": "d76a6719-d858-45d1-a8e9-929efc58a356", "projectid": "738ala0a-d5e4-4639-b450-996dc5cd7e67", "tolerancex": "0.01", "tolerancex": "0.01", "tolerancex": "0.01", "boxsize": "0.4", "renew": "false" }</pre>

Response

Status
Status: 201 Created

JSON
<pre>{ "creator": { "id": "69b270be-8102-4a27-a335-ee9e579acb87", "email": "testB@test.net" }, "createdat": "2016-02-15T13:18:28.32+01:00", "status": "DONE", "tolerancex": 1.0, "boxsize": 0.4, "open": [{ "id": "620ec33c-8686-40de-a670-3de5195fed42", "elements": ["42c0c745-3dfa-4a47-9d86-0576bb37880a", "40393b5d-6ab9-4f81-8599-c46e69216a9c"], "element1": { "id": "e3bdf005-58ea-4087-b2e1-367564fe06f6", "type": "Element", "name": "<Unnamed Element>" }, "element2": { "id": "7d2f969a-0c86-4521-be7c-7cf48bb0e610", "type": "Element", "name": "<Unnamed Element>" }, "nr": 1, "volume": 22.969524192034 }, { "id": "0dfa47b8-0efb-4c57-8859-ef90b4ad6453", "elements": ["15461bb3-9994-4e54-8411-f94437e81e21", "36a5af0f-bef8-478f-bc2f-0b0e567260e2"], "element1": {</pre>

```

        "id": "4eeeb292-3672-483e-94e5-0da5bb65a1a1",
        "type": "Element",
        "name": "<Unnamed Element>"
    },
    "element2": {
        "id": "eeca2016-4fdf-4966-9143-ce94ad4b972c",
        "type": "Element",
        "name": "<Unnamed Element>"
    },
    "nr": 3,
    "volume": 0.05555000000000009
}
],
"unresolved": [
    {
        "id": "ad2bddc6-1a5d-4a0b-b815-042cec0198a5",
        "elements": [
            "75757fc1-ba76-4f64-ab29-7f5e2d85cfd1",
            "6edb8bc0-9417-4072-a375-98c11c692357"
        ],
        "element1": {
            "id": "19be02c9-2080-4f54-a545-154cc22b8628",
            "type": "Element",
            "name": "<Unnamed Element>"
        },
        "element2": {
            "id": "f3c9162d-7b4a-4eba-a86f-72404be65445",
            "type": "Element",
            "name": "<Unnamed Element>"
        },
        "nr": 2,
        "volume": 3.4398162022732786
    },
    {
        "id": "8f8c8720-2324-41d7-a669-d8cefb9328ff",
        "elements": [
            "68813fe9-ea07-41c0-9a94-5990c4bedee6",
            "9fe08223-f723-4293-b484-4b45d02a09b7"
        ],
        "element1": {
            "id": "d520d19d-3235-4eb d-934f-1dc47af9f96e",
            "type": "Element",
            "name": "<Unnamed Element>"
        },
        "element2": {
            "id": "e9a14ac4-6ee7-414a-aaf0-44cd72a68191",
            "type": "Element",
            "name": "<Unnamed Element>"
        },
        "nr": 4,
        "volume": 0.6479999999999999
    }
],
"resolved": [

]
}

```

Get all clashes for given project and clash filter

URL / Resource / JSON Structure

Resource: clashdetection/projects/filters

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashdetection/projects/<project_id>/filters

Example: <https://api-stage.bimplus.net/v2/bimplus/clashdetection/projects/3f7d2d9e-1872-4d4f-ba99-868e94d3f380/filters>

HTTP Method

GET

Description

Get all project clashes calculated using given filter.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 OK

JSON
<pre>{ "creator": { "id": "69b270be-8102-4a27-a335-ee9e579acb87", "email": "testB@test.net" }, "createdat": "2016-02-15T13:18:28.32+01:00", "status": "DONE", "tolerancex": 1.0, "boxsize": 0.4, "open": [{ "id": "620ec33c-8686-40de-a670-3de5195fed42", "elements": ["42c0c745-3dfa-4a47-9d86-0576bb37880a", "40393b5d-6ab9-4f81-8599-c46e69216a9c"], "element1": { "id": "e3bdf005-58ea-4087-b2e1-367564fe06f6", "type": "Element", "name": "<Unnamed Element>" }, "element2": { "id": "7d2f969a-0c86-4521-be7c-7cf48bb0e610", "type": "Element", "name": "<Unnamed Element>" }, "nr": 1, "volume": 22.969524192034 }, { "id": "0dfa47b8-0efb-4c57-8859-ef90b4ad6453", "elements": ["15461bb3-9994-4e54-8411-f94437e81e21", "36a5af0f-bef8-478f-bc2f-0b0e567260e2"], "element1": { "id": "4eeeb292-3672-483e-94e5-0da5bb65a1a1", "type": "Element", "name": "<Unnamed Element>" }, "element2": { "id": "eeca2016-4fdf-4966-9143-ce94ad4b972c", "type": "Element", </pre>

```

        "name": "<Unnamed Element>"
    },
    "nr": 3,
    "volume": 0.055550000000000009
  }
],
"unresolved": [
  {
    "id": "ad2bddc6-1a5d-4a0b-b815-042cec0198a5",
    "elements": [
      "75757fc1-ba76-4f64-ab29-7f5e2d85cfd1",
      "6edb8bc0-9417-4072-a375-98c11c692357"
    ],
    "element1": {
      "id": "19be02c9-2080-4f54-a545-154cc22b8628",
      "type": "Element",
      "name": "<Unnamed Element>"
    },
    "element2": {
      "id": "f3c9162d-7b4a-4eba-a86f-72404be65445",
      "type": "Element",
      "name": "<Unnamed Element>"
    },
    "nr": 2,
    "volume": 3.4398162022732786
  },
  {
    "id": "8f8c8720-2324-41d7-a669-d8cefb9328ff",
    "elements": [
      "68813fe9-ea07-41c0-9a94-5990c4bedee6",
      "9fe08223-f723-4293-b484-4b45d02a09b7"
    ],
    "element1": {
      "id": "d520d19d-3235-4eb d-934f-1dc47af9f96e",
      "type": "Element",
      "name": "<Unnamed Element>"
    },
    "element2": {
      "id": "e9a14ac4-6ee7-414a-aaf0-44cd72a68191",
      "type": "Element",
      "name": "<Unnamed Element>"
    },
    "nr": 4,
    "volume": 0.64799999999999991
  }
],
"resolved": [
]
}

```

Create an clash filter in the project

URL / Resource / JSON Structure

Resource: projects/<project_id>/clashfilters

URL: https://api-stage.bimplus.net/v2/<team_slug>/projects/<project_id>/clashfilters

Example: <https://api-stage.bimplus.net/v2/bimplus/projects/48f5f0e5-4979-4c4f-b28a-fbba01d13181/clashfilters>

JSON Structure : clash filter

Name	Mandatory / Optional	Type	Description
name	optional	string	Custom table name
description	optional	string	Custom table description
id	will be ignored	string(guid)	The id of the custom table. Will be taken from request url.

tolerancex	optional	double	Tolerance by clash detection in x-direction.
tolerancey	optional	double	Tolerance by clash detection in y-direction.
tolerancez	optional	double	Tolerance by clash detection in z-direction.
boxsize	optional	double	Size of visual clash element.
definitions	mandatory	JSON Array	Array of two clash filter definition objects for a clash filter. An example template is specified in request json section.

JSON Structure : clash filter definition

Name	Mandatory / Optional	Type	Description
name	optional	string	Name of the filter
filterid	mandatory	string(guid)	The id of the filter
selectionid	optional	string(guid)	The id of the selection
definition	mandatory	string	The definition of a filter
selection	optional	object	Object of the selection
boxsize	optional	double	Size of visual clash element.
definitions	mandatory	JSON Array	Array of two clash filter definition objects for a clash filter. An example template is specified in request json section.

HTTP Method

POST

Description

Create a new clash filter in specified project

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

JSON
<pre>{ "name": "TEST", "description": "test", "tolerancex": 0.01, "boxsize": 0.4, "definitions": [{ "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd", "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6", "selectionId": "8541a1c5-2551-4587-8fd9-ec8b59372bcd" }, { "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd", "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6" }]</pre>

Response

Status
Status: 200 OK

JSON

```
{
  "name": "TEST",
  "description": "test",
  "tolerance": 0.01,
  "boxsize": 0.4,
  "definitions": [{
    "name": "Filter1",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "selectionid": "8541a1c5-2551-4587-8fd9-ec8b59372bcd",
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  },
  {
    "name": "Filter2",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  }
],
  "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
}
```

Get all clash filters for a project

URL / Resource / JSON Structure

Resource: /projects/<project_id>/clashfilters

URL: https://api-stage.bimplus.net/v2/<team_slug>/projects/<project_id>/clashfilters

Example: <https://api-stage.bimplus.net/v2/bimplus/projects/48f5f0e5-4979-4c4f-b28a-fbba01d13181/clashfilters>

Optional query parameters

Name	Type	Default value	Description
customfilter	boolean	true	When this query parameter is not set api returns global and custom clash filters for projects. When query parameter is set as : <ul style="list-style-type: none">■ true - api returns just custom clash filters for project■ false - api returns just global clash filter for project

HTTP Method

GET

Description

Get all clash filters for a particular project.

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

Response

Status

Status: 200 Ok

JSON

```
[{
  "name": "Reinforcement",
  "description": "Clashes between reinforcement objects.",
  "tolerance": 0.002,
  "boxsize": 0.05,
  "id": "a9971843-0418-4ac4-a392-1bf5043fb562"
},
{
  "name": "TEST",
  "description": "test",
  "tolerance": 0.01,
  "boxsize": 0.4,
  "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
}
...
]
```

Get all clash filters for a team

URL / Resource / JSON Structure

Resource: clashdetection/filters

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashdetection/filters

Example: <https://api-stage.bimplus.net/v2/bimplus/clashdetection/filters>

HTTP Method

GET

Description

Get details of all clash filters for a particular team

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

Response

Status

Status: 200 Ok

JSON

```
[
  {
    "name": "Shell",
    "description": "Clashes of all main building elements objects. For example walls, floors, roof, stairs, openings, columns...with each other.",
    "tolerancex": 0.01,
    "boxsize": 0.4,
    "id": "d76a6719-d858-45d1-a8e9-929efc58a356"
  },
  {
    "name": "Window/Door",
    "description": "Clashes of all doors/windows objects with all building elements objects.",
    "tolerancex": 0.01,
    "boxsize": 0.4,
    "id": "ffc6ab25-b3a9-1ecd-95be-35b5e7475fad"
  }
  , ...
]
```

Get details of single clash filter

URL / Resource / JSON Structure

Resource: clashdetection/filters

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashdetection/filters/<filter_id>

Example:<https://api-stage.bimplus.net/v2/bimplus/clashdetection/filters/c9d5ca15-2561-4c58-85da-870a89242b87>

HTTP Method

GET

Description

Get details of single clash filter for a particular team

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

Response

Status

Status: 200 Ok

JSON

```
{
  "name": "Test",
  "description": "test",
  "tolerance": 0.01,
  "boxsize": 0.4,
  "definitions": [{
    "name": "Filter1",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "selectionid": "8541a1c5-2551-4587-8fd9-ec8b59372bcd",
    "selection": {
      "id": "8541a1c5-2551-4587-8fd9-ec8b59372bcd",
      "projectid": "2191084f-dd8f-407c-b47d-f1f4c9256ddc",
      "divisionid": "00000000-0000-0000-0000-000000000000",
      "revisionnr": null,
      "type": "RevisionElements",
      "elements": null,
      "revisionelements": [{
        "objectId": "e2c7c0e8-8524-445d-8f55-98fbd515271f",
        "revisionNr": 1
      }, {
        "objectId": "e2c7c0e8-8524-445d-8f55-98fbd515271f",
        "revisionNr": 1
      }
    ],
      "topology": null,
      "filter": null,
      "structure": null,
      "topologystructure": null
    },
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  }, {
    "name": "Filter2",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  }
],
  "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
}
```

Update the clash filter

URL / Resource / JSON Structure

Resource: clashfilters/<clashfilter_id>

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashfilters/<clashfilter_id>

Example: <https://api-stage.bimplus.net/v2/bimplus/clashfilters/c9d5ca15-2561-4c58-85da-870a89242b87>

JSON Structure: see [Create a clash filter in project](#)

HTTP Method

PUT

Description

Update the specified clash filter

Request

Headers

Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088
Content-Type: application/json

JSON

```
{
  "name": "TEST",
  "description": "test",
  "tolerancex": 0.01,
  "boxsize": 0.4,
  "definitions": [{
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "selectionId": "8541a1c5-2551-4587-8fd9-ec8b59372bcd"
  },
  {
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6"
  }
]
```

Response

Status

Status: 200 OK

JSON

```
{
  "name": "TEST",
  "description": "test",
  "tolerancex": 0.01,
  "boxsize": 0.4,
  "definitions": [{
    "name": "Filter1",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "selectionid": "8541a1c5-2551-4587-8fd9-ec8b59372bcd",
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  },
  {
    "name": "Filter2",
    "filterid": "0c39a1c5-2551-4587-8fd9-ec8b59372bcd",
    "definition": "[I]0F106AF0-A919-44C5-B211-15BD5EF620B6",
    "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
  }
],
  "id": "c9d5ca15-2561-4c58-85da-870a89242b87"
}
```

Delete the clash filter

URL / Resource / JSON Structure

Resource: clashfilters/<clashfilter_id>

URL: https://api-stage.bimplus.net/v2/<team_slug>/clashfilters/<clashfilter_id>

Example: <https://api-stage.bimplus.net/v2/bimplus/clashfilters/c9d5ca15-2561-4c58-85da-870a89242b87>

HTTP Method

DELETE

Description

Deletes a specified clash filter.

Request

Headers
Authorization: BimPlus 9c1874a62c974dcfa75e0132c423a088 Content-Type: application/json

Response

Status
Status: 200 OK