Blackboard Learn Flat File Upload Middleware

This tool is intended to automate the upload of <u>snapshot flat files</u> to Blackboard.

You can run this tool as a console application or install the tool as a Windows Service.

Install As Windows Service

1. Run Windows Command Propmpt (cmd.exe) as **Administrator**
2. Run the following command to install `Bilgi.Sis.BbMiddleware.exe install`
3. And start the service with the following command `Bilgi.Sis.BbMiddleware.exe start`

Uninstalling the Windows Service

1. Run Windows Command Propmpt (cmd.exe) as **Administrator**
2. Stop the service`Bilgi.Sis.BbMiddleware.exe stop`
3. Uninstall the service `Bilgi.Sis.BbMiddleware.exe uninstall` > You can also use ServiceInstall.bat and ServiceUninstall.bat included in the distribution

File Naming and Ordering

Your generated snapshot flat files should follow this convention

`{BatchId}{BatchSeperator}{FileName}`

BatchId: BatchId is intended for grouping batch of snapshot flat files. The tool will always group files based on this value and process one batch at a time. BatchId should be an incremental value which can be sorted. For example integer values like 1,2,3 are good candidate, you can also use a sequence generator.

BatchSeperator : A charcater to seperate the BatchId from the actual file name. Underscore (_) and dash (-) characters are good candidates for batch seperator

FileName : The actual file name with file extension. The file name should represent the Blackboard entities. Courses.txt, Users.txt, Enrollments.txt are good candidates for file name.

Sample Snapshot File Names

- Files in batch 1 : **1_Users.txt**, **1_Nodes.txt**, **1_Courses.txt**
- Files in batch 2 : **2_Users.txt**, **2_Nodes.txt**, **2_Courses.txt**

Important Notes * The tool will process all files in a batch in a single run. * If a file upload fails in a batch the tool will abort processing of the remaining files. If the error is persistent the failing batch and all subsequent batches will not be processed

Service Configuration

You should configure a `Bilgi.Sis.BbMiddleware.exe.config` in the same folders as `Bilgi.Sis.BbMiddleware.exe` executable

Valid Properties

Property	Description	Mandatory
ServiceName	Name of the Windows Service	YES
DisplayName	Display name of the Windows Service	YES
Description	Descritiion about the service	NO

Sample Values

```
<appSettings>
  <add key="ServiceName" value="Bilgi.Sis.BbMiddleware" />
  <add key="DisplayName" value="Bilgi Sis-Bb Data Middleware" />
  <add key="Description" value="Post SIS data to BbLearn" />
</appSettings>
```

Data Upload Configuration

You should configure a `config.json` in the same folders as `Bilgi.Sis.BbMiddleware.exe`

executable

Batch Data Definition Properties

Property	Description	Mandatory
DryRun	Do not uplaod files to Blackboard but run the full cycle	NO
UploadTimeoutInSecs	HTTP client timeout for data file upload. **Default** is **180 seconds**. **Minimum** value can be **100 seconds**	NO
DownloadTimeoutInSecs	HTTP client timeout for status file download. **Default** is **180 seconds**. **Minimum** value can be **100 seconds**	NO
DataIntervalInSeconds	How often will data job trigger. Default is 1 hour (3600 seconds)	YES
DataJobEnabled	If 'true' data job will be triggered every DataIntervalInSeconds, if 'false' data job will not be triggered	YES
DataRootPath	Full path of the root snapshot flat file folder	YES
QueueFolderName	Queued files folder name relative to **DataRootPath**	YES
LogFolderName	Log files folder name relative to **DataRootPath**	YES
LogEnabled	If 'true' data set post result will be logged into Log Folder, if 'false' data set post result will be ignored	YES
ProcessedFolderName	Processed files folder name relative to **DataRootPath**	YES
ProcessedBackupEnabled	If 'true' processd data files will be moved to Processed folder, if 'false' data files will be deleted immediately	YES
FilePartsSeperator	Seperator character which seperates BatchId value from File Name	YES
Username	Blackboard shared username. If no username is specified in Endpoint configuration this value is used	NO
Password	Blackboard shared password. If no password is specified in Endpoint configuration this value is used	NO
EndpointUrl	Blackboard snaposhot flat file upload endpoint root url. Enpoint url is concatanated to this value if enpoint url does not start with **http** or **https**	NO
DataSetStatusJobEnabled	If 'true' data set status job is enabled. Data set status will be queried based on reference id values found in log files	YES
DataSetStatusQueryIntervalInSeconds	How often will data set status job trigger. Default is 1.5 hours (5400 seconds)	YES
DataSetStatusMaxFilesToProcess	Maximum number of log files to be processed every time data set status job is triggered	YES

Property	Description	Mandatory
DataSetStatusFolderName	The name of the folder where errorneous data transfers will be logged	YES
DataSetStatusEndpointUrl	Data set status query enpoint url	YES
Endpoints	Array of endpoint definitions	YES

Endpoint Definition Properties

Property	Description	Mandatory
Name	Endpoint name. Used for logging purposes	YES
Order	Used to determine the upload order of the snapshot file to the enpoint.	YES
Username	Blackboard shared username. If username is not specified **DefaultUsername** will be used	NO
Password	Blackboard shared password. If username is not specified **DefaultPassword** will be used	NO
Url	Endpoint url. Can be full url or relative path to **RootEndpointUrl**	YES
FileName	Name of the snapshot file with file extension. This value is used to match the snapshot file with the endpoint	YES
ProcessedFolderName	The name of the folder where processed files will be moved. Relative to **ProcessedFolderName** in the batch definition	NO
ProcessedBackupEnabled	If 'true' processd data files will be moved to Processed folder, if 'false' data files will be deleted immediately	YES
LogFolderName	The name of the folder where log files will be moved. Relative to **LogFolderName** in the batch definition	NO
LogEnabled	If 'true' data set post result will be logged into Log Folder, if 'false' data set post result will be ignored	YES

Sample JSON File

```
{
  "DataRootPath": "C:\\BbData\\Test\\Hybridity\\",
  "QueueFolderName": "Queue",
  "ProcessedFolderName": "Processed",
  "ProcessedBackupEnabled": false,
  "LogFolderName": "Logs",
  "LogEnabled": true,
  "FilePartsSeperator": "_", // Default is _ (underscore)
  "Username": "",
  "Password": "password",
  "DataIntervalInSeconds": 10, // Default is 1 hour
  "DataJobEnabled": true, // Default is true
  "EndpointUrl":
 "https://xyx.com/webapps/bb-data-integration-flatfile-BBLEARN/endpoint",
  "DataSetStatusMaxFilesToProcess": 5, // Default is 5
  "DataSetStatusQueryIntervalInSeconds": 15, // Default is 1.5 hours
  "DataSetStatusJobEnabled": true, // Default is false
  "DataSetStatusFolderName": "Status", // Default is Status
  "DataSetStatusEndpointUrl":
```

```
"https://xyx.com/webapps/bb-data-integration-flatfile-BBLEARN/endpoint/dataSetStatu
s/",
  "Endpoints": [
    {
      "Name": "Nodes",
      "Order": 1,
      "Username": "0d7173bd-a1f9-5b99-853f-8768f1b6c1df",
      "Password": "",
      "Url": "/node/store",
      "FileName": "Nodes.txt",
      "ProcessedFolderName": "Nodes",
      "LogFolderName": "Nodes"
    },
    {
      "Name": "Users",
      "Order": 2,
      "Username": "8bd7a8a6-3ee1-43c2-b8ae-403208842922",
      "Password": "",
      "Url": "/person/store",
      "FileName": "Users.txt",
      "ProcessedFolderName": "Users",
      "LogFolderName": "Users"
    },
    {
      "Name": "Courses",
      "Order": 3,
      "Username": "0d499b16-2984-4780-8277-635ea1eb454c",
      "Password": "",
      "Url": "/course/store",
      "FileName": "Courses.txt",
      "ProcessedFolderName": "Courses",
      "LogFolderName": "Courses"
    },
    {
      "Name": "Enrollments",
      "Order": 4,
      "Username": "96838380-070b-5527-afa0-dab324faf848",
      "Password": "",
      "Url": "/membership/store",
      "FileName": "Enrollments.txt",
      "ProcessedFolderName": "Enrollments",
      "LogFolderName": "Enrollments"
    }
  ]
}
```

Contributors

• Ali Özgür (ali.ozgur@bilgi.edu.tr) - İstanbul Bilgi University

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