

# Knowledge Base

Information



## Abaqus/CAE plug-in to create an airfoil part by importing point cloud data from Eblade

**Portfolio / Domain:** SIMULIA Abaqus Unified FEA / SIMULIA Abaqus Unified FEA  
**Product:** SIMULIA Abaqus/CAE

**QA Article:** QA00000020013e  
**Applicable Level:** 6.10 and higher  
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**Views:** 282

QUESTION

**How can I create an airfoil part in Abaqus/CAE by importing point cloud data from Eblade?**

ANSWER

(The following applies to Abaqus 6.10 and higher)

An Abaqus/CAE plug-in application for this purpose is attached below. The plug-in imports, reads, and creates a part from Eblade data.

**Installation**

To install the plug-in, save the attached archive file to one of the following directories:

*abaqus\_dir*\abaqus\_plugins where *abaqus\_dir* is the Abaqus parent directory

*home\_dir*\abaqus\_plugins where *home\_dir* is your home directory

*current\_dir*\abaqus\_plugins where *current\_dir* is the current directory

Note that if the abaqus\_plugins directory does not exist in the desired path, it must be created. The *plugin\_dir* directory can also be used, where *plugin\_dir* is a directory specified in the abaqus\_v6.env file by the environment variable **plugin\_central\_dir**. You can store plug-ins in a central location that can be accessed by all users at your site if the directory to which **plugin\_central\_dir** refers is mounted on a file system that all users can access. For example, `plugin_central_dir = r'\\fileServer\sharedDirectory'`

On Windows platforms, right click on the archive file and select **WinZip** → **Extract to here**. On Linux platforms, type **unzip createAirfoilPart.zip** at the command prompt. A folder named `abq_AirfoilPart` and a file named `airfoilPart_plugin.py` will be extracted. Note that the plug-in will not function properly if this procedure is not followed.

**Usage**

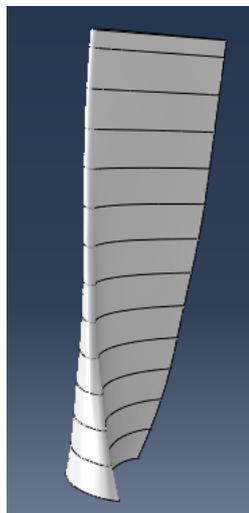
The plug-in requires an Eblade data (.dat) file. We will refer to one as the base result, and the other as the test result. The difference is computed as the test result subtracted from the base result.

From **Part** module, select **Plug-ins** → **Tools** → **Create Airfoil Part...** to open the following dialog:



Type in or select the data file name in **Data file**. If partitions are needed, check the box next to **Number of partitions**. The partitions are evenly created in the part.

An example data file is attached below. Executing the plug-in with the attached data file with the option for 12 partitions, we get a part similar to the one shown below.



**Disclaimer**

The attachments to this article are subject to certain usage conditions. Please [click here](#) for details.

Revision History

12 Aug 11	Release of Version 1.1-1
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KEYWORDS **point clouds, Eblade, solid, mesh, airfoil, blade, 4802**

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ATTACHMENT

[points\\_from\\_eblade.dat](#)

[answer\\_4802\\_fig1.png](#)

[createAirfoilPart.zip](#)

[answer\\_4802\\_fig2.png](#)

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