

# Weight & Balance for ENOVIA V5 (WC9)

## *BPA Delivery 7 for V5R19 (V5.7)* Installation Guide

V5R19



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# Introduction

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Weight & Balance for ENOVIA V5 (WC9) is an application integrated into VPM Navigator and ENOVIA.

From a software installation perspective, the application is divided in 3 runtime views:

- VPM Navigator client programs
- ENOVIA server programs
- DMC (Data Model Customization): This runtime refers to the Weight & Balance data dictionary. Metadata must also be published in the ENOVIA database.

Depending on the operating systems (OS), the name of the runtime repository is different:

- Windows OS:
  - intel\_a
  - win\_b64
- Unix OS :
  - AIX : aix\_a
  - HP: hpux\_b

This manual is intended for administrators and provides information on how to install Weight & Balance for ENOVIA V5.

## ***Related Documentation***

- WC9\_UserGuide
- WC9\_ImplementationGuide

## ***Prerequisites for Weight & Balance for ENOVIA V5***

An ENOVIA V5 platform is the main prerequisite for running WC9 on the server computer.  
The integration of a DMC supporting Weight & Balance required attributes is also a prerequisite.  
A functional installation of ENOVIA VPM Navigator is required on client computers.

### **Information**

ENOVIA V5 R19, CATIA V5 and ENOVIA VPM V5 (i.e. VPM Navigator) GA through SP4 (SP4 is required for computing composite parts).

# WC9 for V5 Clients

The installation of the WC9 Client is done through InstallShield. A shortcut will be generated upon installation.

## Environment File

The Installshield will generate an environment file (WC9.txt) referencing the current ENOVIA VPM Navigator installation.

Other variables can be added to allow functionalities such as:

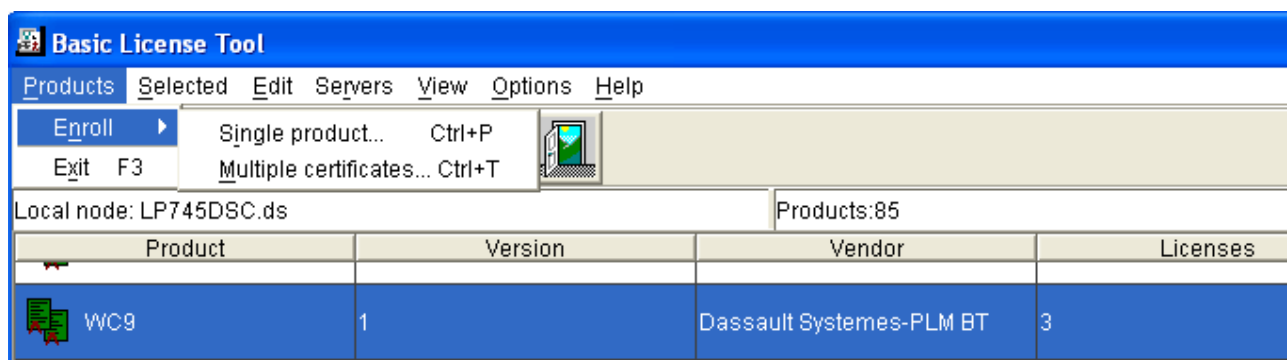
Vault : **VaultClient\_PropertiesFileName=VaultClient.properties**  
**VaultClient\_PropertiesFilePath=C:\...**  
 Traces : CNEXTOUTPUT=console

**Note:** that traces can be activated on the client and server sides. Please see **appendix 1**.

## Licensing

Licensing is based on IBM License Use Management software. LUM Server should be LUM version 4.6.8.

Concurrent (Server) and Nodelock licenses are supported and can be enrolled using the LUM Basic License Tool.



Nodelock licenses can also be enrolled by using the following procedure:

**Note:** Because the BPA licenses are not integrated into the NodelockKeyManagement, you should manually input the parameters of your License into the nodelock file.

This file is located in:

For windows: C:\Documents and Settings\All Users\Application Data\IBM\LUM\nodelock  
 For AIX : /var/ibm/nodelock  
 For HP : /var/lum/nodelock

1. Extract from the .lic file the following information:  
 VendorID (looks like an UUID)  
 ProductPassword (a crypted key)  
 ProductAnnotation (should be unset)  
 ProductVersion (should be set to 1)

2. Insert them in the nodelock file respecting their order.

```
# comment : put your BPA trigram and its range date  
vendorID ProductPassword ProductAnnotation ProductVersion
```

Example :

```
# WC9 from 15-Jul-08 to 14-Jul-09  
c6c8ef44bcb7.4a.74.95.13.1f.00.00.00 r8ezikjzgsvk9fzf7fe3p2gn3eaa "" "1"
```

## ***Report Path Variable***

In order to save an XML report, the Weight & Balance reporting command uses a pre-defined path that can be overridden by the user-defined global variable *ISPWC9REPORTPATH* located in the ENOVIA VPM Navigator environment file. If this variable is not set, the default path is used (for windows: C:\Temp)

Example: **ISPWC9REPORTPATH = C:\ISPWC9WBClient\Reports**

An XML style sheet file (XSL) is also provided with the Weight & Balance package to allow displaying the XML report in a HTML format.

# ENOVIA Server

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Two WB data storage models are available.

The first model uses customized ENOVIA attributes on the Part Master, Part Version, Document Master and Document Revision objects to store WB-related information. The second model uses ENOVIA properties. Using ENOVIA attributes requires an update to the data model.

## Data Model Customization

The Data Model Customization (DMC) and the ENOVIA LCA runtime views need to be applied on the ENOVIA server. Therefore, the environment file located on the server computer combines both runtime views paths.

A metadata file is provided as an example of attributes required by Weight & Balance (see code/dictionary/WBProduct.metadata).

Two data dictionary files, the WBProduct.metadata and WBDoc.metadata, are shipped with the server-side package under code/dictionary. They provide an example of customized PRODUCT and DOCDIR domains. Yet the names of the attributes must be exactly the same as the ones defined in these files.

The PRODUCT domain has been extended in order to customize three of its classes: VPMPartMaster, VPMPartVersion and VPMLtemInstance.

In our example, the new domain is named WBProduct. It contains the following entity definitions: WBPartMaster, WBPartVersion and WBItemInstance along with their attributes used by WC9.

**Note:** *There is no customized attribute on the ItemInstance object required for WC9.*

The DOCDIR domain has been extended in order to customize five of its classes: VPMTTPDocumentMaster, VPMDocumentRevision, VPMDocumentIteration, VPMDocumentIterationFormat and VPMDocSecuredFile.

In our example, the new domain is named WBDoc. It contains the following entity definitions: WBDocMaster, WBDocRevision, WBDocIteration, WBDocFormat and WBDocSecuredFile along with their attributes used by WC9.

**Note:** *There is no customized attribute on the Iteration, Format and Secured File objects required for WC9.*

Whether the supplied DMC is implemented as is in the customer's environment and database (in case of no other data model customization is present) or integrated within an existing DMC, these operations should be performed by the administrator. The environment variable CATDictionaryPath should point to where the metadata file for DMC is located.

## Masks and Security Processes

Weight & Balance users will have to analyze the Parts throughout the lifecycle of the product. Therefore, Weight & Balance is able to analyze parts that may be locked by other users or that may be in the final state of their lifecycle.

Weight & Balance is also able to override the ENOVIA security and update its own attributes on these parts. These changes can be made persistent in the database through the Weight&Balance Save command which

will allow the user to commit the current ENOVIA session from cache to database. To make sure that no other changes than the Weight & Balances attributes are modified, the appropriate mask and security processes should be applied for the role of the Weight & Balance user.

Weight & Balance also provides means to protect the properties associated with parts and documents when storage of the WB-related information based on ENOVIA properties is selected. Thus, four security methods are available: WBBrowse, WBEEdit, WBCompute, and WBReport.

The security in W&B relies on the default ENOVIA security mechanism, so these methods can be used to define privileges just like any other security method. As of this delivery, the security is only available for parts. Yet they need to be registered with the runtime view and the P&O must be updated accordingly.

The WBBrowse method is checked again when using the WB Part command at the GUI. If the user has not been granted the corresponding privileges (i.e. the object type + WBBrowse + data group), the WB Part panel will not be displayed.

The WBEEdit is also related to the WB Part command, but the security check against this method is performed when the user attempts to edit the W&B properties on a part (i.e. when clicking the Save).

The other two methods are used to secure the computing/reporting.

## ***ENOVIA Runtime View***

In order to set up the W&B runtime environment on the ENOVIA server, the orbix daemon can be launched using one of the following two methods.

The orbix daemon can be launched using the command

```
[ENOVIA_INSTALL_PATH]/$OS/code/command/catstart -run "runOrbix" -env "WC9" -direnv "[PATH_TO_ENV_DIR]/CATEnv", where WC9 is, in this example, the name of the environment file for Weight & Balance"
```

OR

The orbix daemon can simply be launched using the ENOVIA default environment and using a CustomEnv file which defines the W&B and the other customization paths.

If the enterprise uses Black Box documents and if the user exit "ENOVIUENamedObject" has a customized implementation on the ENOVIA\_VPMDocumentRevision (or its derived types) objects, then launching the orbix daemon must be done in the latter way.

The example below shows how to set variables inside the "WC9.txt" environment file:

```
...
LIBPATH=$CUSTOPath/code/bin:$ENOVIAPath/code/bin:$ENOVAPIPath/code/bin:$CATAPIPath/code/
bin
LD_LIBRARYN32_PATH=$CUSTOPath/code/bin:$ENOVIAPath/code/bin:$ENOVAPIPath/code/bin
SHLIB_PATH=$CUSTOPath/code/bin:$ENOVIAPath/code/bin:$ENOVAPIPath/code/bin:$CATAPIPath/c
ode/bin
CATDictionaryPath=$DMCPath/code/dictionary:$CUSTOPath/code/dictionary:$ENOVIAPath/code/dicti
onary
...
CUSTOPath, DMCPath, ENOVIAPath are the paths up to (and including) the $OS directory in the installation
repository of each one of these runtime components. Example: ENOVIAPath=
/usr/dassault/R18/V5VPM/aix_a
```



The customization path should come first in order to trigger the customization prior to the standard Dassault Systèmes implementation.

Extra variables can be added to activate functionalities such as the overnight Batch.  
Traces for the batch are available if the CNEXTOUTPUT variable is set and if WBBatchProcessor variable is set to 1

## ***Report Path Variable***

In order to save an XML report, the Weight & Balance Batch uses a path defined by the user in the *ISPMC9REPORTPATH* global variable. This path can be set in the ENOVIA VPM Navigator environment file. If this variable is not set, the default path will be taken instead (for Unix: /tmp)

Example: **ISPMC9REPORTPATH = /home/usr/WC9user/Reports**

An XML stylesheet file (XSL) is also provided with Weight & Balance in order to display the XML report in HTML format. The XSL needs to be located in the same folder as the XML file.

## ***Log Directory Variable***

It is possible to specify the directory used by the application to log messages by defining the *ISPMC9LOGPATH* global variable.

Example: **ISPMC9LOGPATH = /home/users/WC9/Log**

## ***Temporary Extraction Directory Variable***

It is possible to specify the temporary directory that will be used by the application to extract the vault documents and the black boxes by defining the *ISPMC9TEMPDIR* global variable.

Example: **ISPMC9TEMPDIR = /tmp**

## ***Batch Memory Limit Variable***

It is possible to specify the maximum memory limit for batch computation. This feature is implemented for the ENOWBComputeAssembly command. When the process reaches the memory limit specified, it will commit the changes to the database, disconnect, reconnect and resume processing. The limit specified is in Megabytes.

Example: **WC9\_BATCH\_MEMORY\_LIMIT=1000**

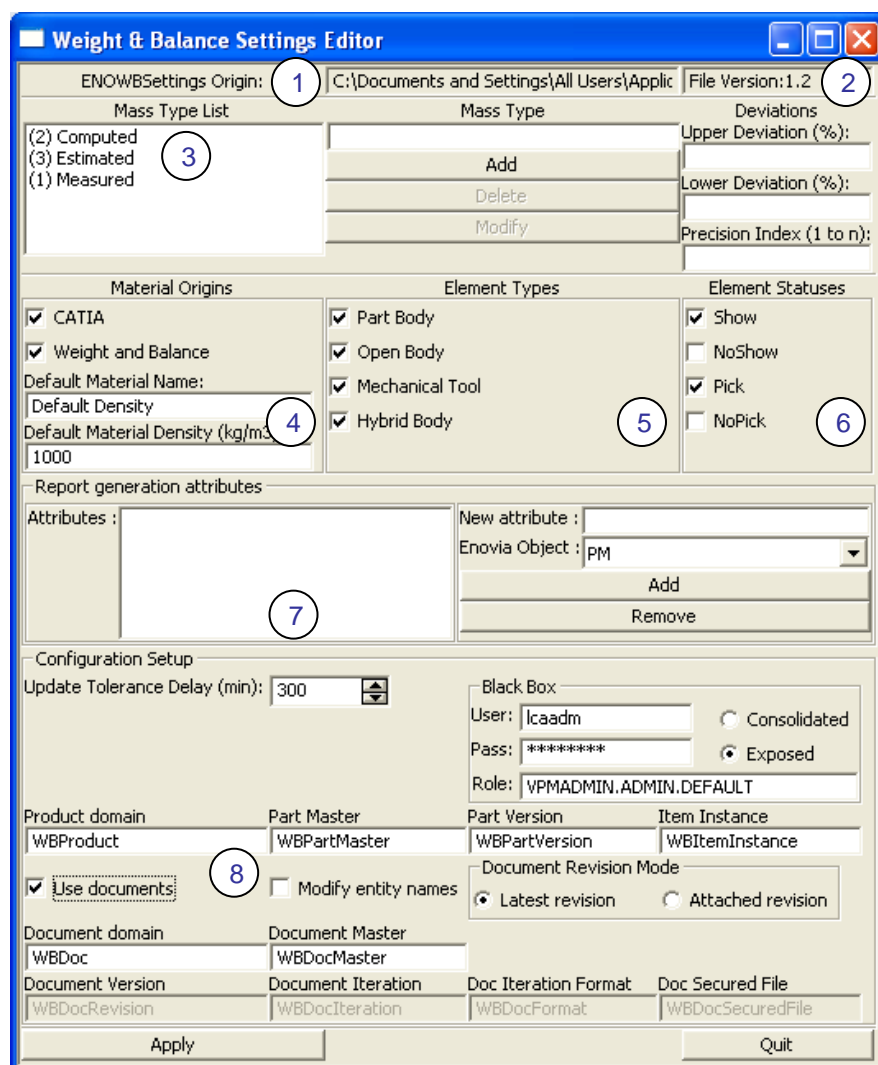
# The Weight & Balance Settings Editor

The ENOWBSettingsEditor application allows Weight & Balance administrators to create and update the ENOWBSettings.CATSettings file used by the Weight & Balance application. This CATSetting file should be shared with read only permission to all the users on the server computer.

**Note:** The presence of a valid ENOWBSettings.CATSettings file is mandatory for the application to successfully run.

This editor should only be executable by the administrator to avoid the possibility for users to generate their own CATSettings file. The resulting file should be stored in CATReferenceSettingPath if it is used.

The purpose of this interface is to offer tools to manage the W&B processing options. This interface is to be used by the Weight and Balance Administrator to define options in line with local policies.



1. ENOWBSettings location path.

2. Version of ENOWBSettings.CATSettings

3. The list of mass types defined by the company policies

4. Material origin. The density and material names can be taken or not from W&B or CATIA.

5. Element Types considered when computing

6. Element Statuses

7. Additional attributes that need to be reported (along with the WB attributes and mass properties)

8. Configuration Setup

## ***Mass Type List***

Mass types can be added, deleted or modified. Upper and lower deviation entered will become default deviations for this mass type in the W&B application. The precision index is used for the calculation of an assembly when using the MostPrecise option. It is important that the precision indices be properly correlated with the deviations assigned to the mass types in order to avoid misinterpretations of data reported.

## ***Element Types***

These are features that can be taken into account during a calculation. Part body refers to Mechanical Part, Open body refers to GSM Tool (surface) and Mechanical Tool refers to solid (volume). Hybrid Body refers to post R13 feature which combines GSM Tool and Mechanical Tool.

**Note:** *If there are CATParts from R13 and older versions, the surface and volume features are separated and hybrid bodies don't exist. If there are CATParts from the R14 version, only hybrid bodies will be recognized by the feature modeler. No updates are available to switch R13 feature models into R14 ones.*

## ***Element Statuses***

Element statuses Indicate if the Show / NoShow and Pick / NoPick bodies will be part or not of the calculation process.

## ***Report generation attributes***

The administrator can indicate non W&B attributes that will be displayed in the report. The following are ENOVIA Object possibilities: PM (Part Master), PV (Part Version) and Item Instance (II).

The administrator needs to indicate on which type of object the attribute exists.

## ***Configuration Setup***

### ***Update Tolerance Delay Parameter***

The Update Tolerance Delay Parameter can be defined on the environment on the server computer. When verifying if a Part is up to date, the time stamp of the last computation is compared with the time stamp of document and the time stamp of the part.

Weight & Balance results are stored on parts. Therefore, this modifies the timestamp on the Part object.

On one hand, this parameter has some impacts on performances.

Setting this parameter too small might prevent parts to be seen as being up to date. On the other hand, if this parameter is set to a large value and if some attributes on the part are modified within the allowed delay, parts may be seen as up to date even if they are not. This is why it is strongly recommended to force a compute on a Part when attribute from the Material tab are modified (See User Guide for more details).

The Default value is 30 minutes. The range is 1 min to 1439 minutes (23 h 59 min).

### ***Black Box Settings***

This is where the User, Password and Context for the Black Box extraction batch are defined. The Black Box Modes, consolidated or exposed, can be chosen.

### *Product Domain, Part Master, Part Version and Item Instance*

This is where the Custom ENOVIA environment mapping is defined. Weight & Balance is looking for attributes defined on the Part Master, Part Version and Item Instance. If the environment is already customized with other attributes, a merge of the environment can be defined. The resulting customized Part Master, Part Version and Item Instances names should be specified here.

### *Document Domain, Document Master and Modify Entity Names*

This is where the Custom ENOVIA environment mapping is defined on the document. Weight & Balance is looking for attributes defined on the Document Master and Document Version. If the environment is already customized with other attributes, a merge of the environment can be defined. The resulting customized elements names should be specified here.

### *Document Version, Iteration, Iteration Format and Secured File*

The naming of these attributes is usually derived from the Document Master. However, they can be modified manually if necessary.

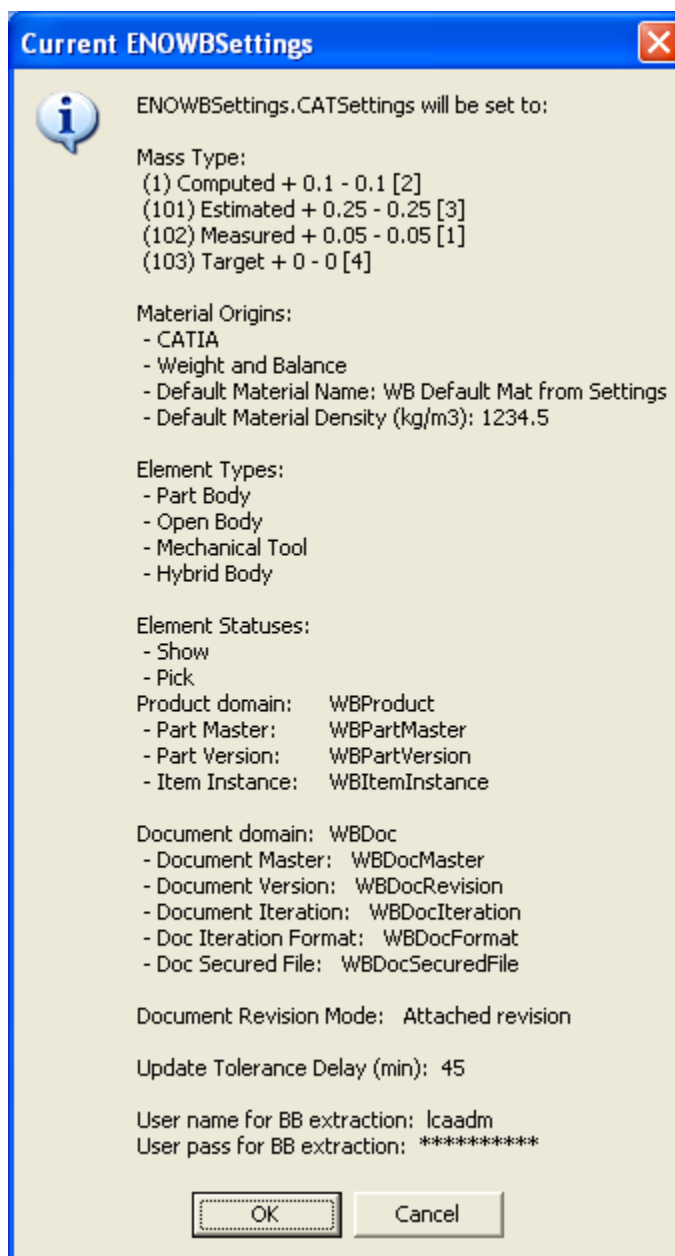
### *Document Revision Mode*

This is where the Administrator defines if the latest revision is the attached revision or the latest revision available in the database.

## ***Apply***

When all information has been updated by the user, the Apply button needs to be clicked. An information dialog appears and gives details on the values that will be stored in the Weight & Balance settings.

Example:



If the OK button is clicked, values will be written in the settings file.