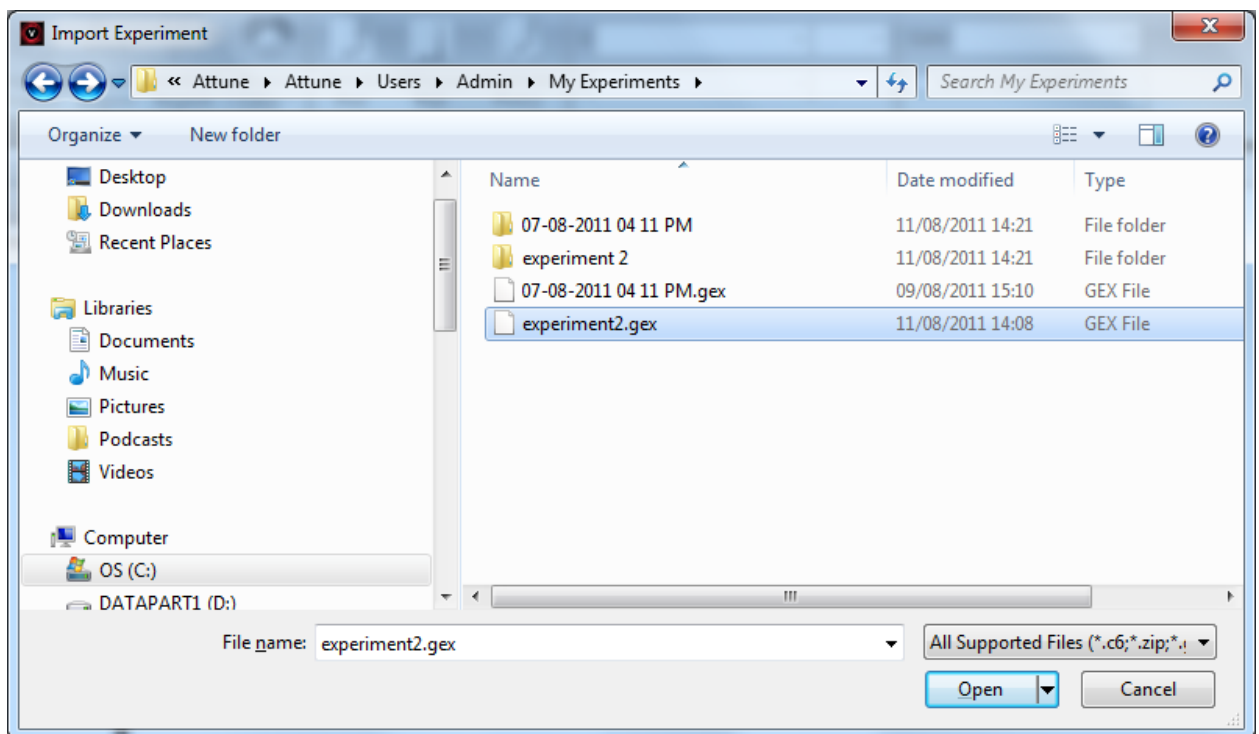


Import Files from Other Applications

VenturiOne allows you to import plots, gates and regions from other manufacturer's software. The supported options are Becton Dickinson experiment .zip files, Accuri .c6 experiment files, Beckman Coulter single file protocols, Becton Dickinson experiment folder exported files and template files. Experiments and workspaces from the Applied Biosystems Attune system can also be imported.

Import Accuri CFlow .c6 files, BD FACSDiva .zip experiments and Applied Biosystems Attune .gex experiments

To import an Accuri CFlow .c6 file, BD FACSDiva .zip experiment or AB Attune experiment, select **Import** and then **Import Experiment** from the **VenturiOne Menu**. This launches the **Import Experiment** dialog:



In this dialog locate and select the desired Accuri CFlow .c6 file, BD FACSDiva .zip file or AB Attune .gex experiment file and click **Open**. The file is imported into VenturiOne. If the import fails for any reason an error message is displayed describing the reason for the failure.

If the experiment file does not contain LMD files it cannot be imported. Similarly if you attempt to import a zip file you have created that is not in the expected format an error message will be displayed.

If anything that you should be aware of happens during the import, an entry is added to the **Import Log**, which is displayed at the end of the import.

Import of Accuri CFlow Files

As a first part of the import, the c6 file is decompressed. The LMD files in the c6 file are extracted to a directory with the same name as the source zip file. The directory will reside within a folder specified on the **VenturiOne Options Import** dialog.

When an Accuri .c6 file is imported, one playlist item is created for each listmode file present. The workspace for each of the items reproduces the layout used in the Accuri CFlow Collect tab. The playlist items are appended to the **Playlist**.

The Accuri CFlow software **Analyze** tab allows multiple LMD files to be displayed on one layout. When layouts from the **Analyze** tab are imported, a single playlist item is created and appended to the end of the **Playlist**.

Import of Plots

All plot types in Accuri CFlow software have a corresponding plot type in VenturiOne and therefore all plots are imported.

The import is as follows:

- All dual parameter plots (Dot Plot and Density Plot) are imported as Density plots.
- Histogram and Overlay plots are imported as Single Parameter Histogram plots.

The zoom settings in the CFlow software are transitioned to VenturiOne zoom settings. Plots created in VenturiOne are shown using the full range of the available data, regardless of CFlow software zoom setting.

Histogram Y scaling is a function of data bin size. Because of this, count values in VenturiOne may appear less than their CFlow software counterpart, but region statistics will remain comparable.

For plots imported from the **Analyze** tab of the CFlow software, where the same plot is shown multiple times in the CFlow software, only a single instance of it is reproduced in VenturiOne.

Import of Regions

The import of regions is as per the table below:

CFlow software Region	VenturiOne Region
Polygonal Region	Polygonal Region
Rectangular Region	Rectangular Region
Quadrant region – perpendicular quads	Quadrant region – perpendicular quads
Linear Region	Linear Region
Vertical region	2 Linear regions

If any of the coordinates of the imported regions are outside the plot space they will be cropped at 0 and 1023 as appropriate.

! Due to differences in region placement and methods of calculation there might be differences in the values of statistics calculated in between other applications and VenturiOne.

Region and Gate names

CFlow software region names are fully compatible with VenturiOne with the exception of Vertical Regions and Quadrants.

Vertical Regions in CFlow software are shown as (for example) V1-L, and V1-R. Since the “-“ character is not allowed in VenturiOne region names, it is replaced with the “>” character. Similarly Quadrants follow the scheme Q1-UL, QR-LR etc. These are reproduced as Q1>1, Q1>2 etc.

Gates are reproduced using incrementing alphabetical names: A, B, C etc. Every gated plot will result in the production of a new VenturiOne gate definition upon which it will be gated.

Import of Gates

When possible, gate logic is reproduced in VenturiOne as it is in the CFlow software.

When the CFlow software gate logic cannot be reproduced, (e.g. if there is cross gating between the **Analyze** and **Collect** tabs), gates will not be imported. The following entry is added to the **Import Log**:

“Unable to import Gates” Gate logic could not be reproduced because required plot(s) could not be imported. Gates have not been imported.”

Import of BD FACSDiva .zip Experiments

A FACSDiva .zip experiment contains LMD files and an xml file that details all worksheet information.

If the FACSDiva zip experiment does not contain LMD files it cannot be imported. Similarly if you attempt to import a zip file you have created that is not in the expected format an error message will be displayed.

FACSDiva zip experiments have to be decompressed as the first stage of the import. The LMD files from the zip file will be extracted to a directory with the same name as the source zip file. The directory will reside within a folder specified on the **VenturiOne Options Import** dialog. If a directory with this name already exists, then a number will be appended to it to provide a unique directory name.

One playlist item is created for each LMD file referenced in the zip experiment. The playlist items are appended to the existing **Playlist**.

The LMD files in the FACSDiva zip experiment have a numeric name that was assigned to them during the export of the experiment. When placed in the **Playlist** they are renamed to use the experiment tube name.

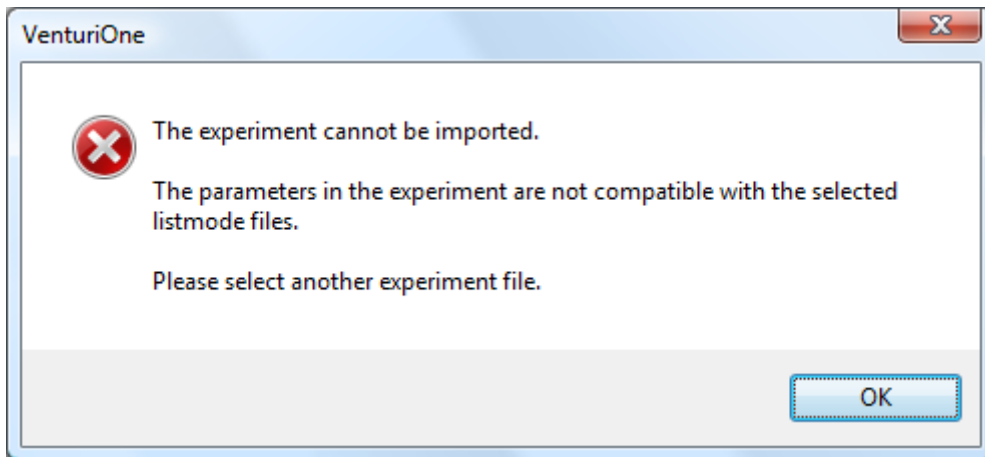
The order of the LMD files in the **Playlist** matches the order of the files in the zip.

Plots relevant to each listmode file are imported into the workspace for this listmode file.

Parameters

Parameter names and stain names will be taken from the worksheets, when available. If any parameter for a plot is not available that plot is not imported.

If the parameters required for the creation of any region in the experiment are missing from the selected listmode files, the import will be abandoned and the following error message will be displayed:



Select **OK** to close the message; the file is not imported.

For plots containing regions, if the parameters required for the creation of any plots in the experiment are missing or miss-matched from the selected listmode files, the plots containing those missing or miss-matched parameters will not be imported.

For plots containing no region, all plots will be imported; if there is a parameter mismatch a parameter mismatch will be indicated in the **Playlist**.

For both scenarios this is performed on a per file basis.

Import of Plots

The import of plots is as follows:

- All dual parameter plots (Dot Plot, Contour Plot and Density Plot) are imported as Density plots.
- Histogram plots are imported as Single Parameter Histogram plots.

When importing some FACSDiva files additional plots need to be created in VenturiOne in order to maintain the gating strategy. These plots will have the title 'Created Plot'. The following message is added to the **Import Log**:

“Additional plots have been created to support the gating strategy within the software. These plots have the title 'Created Plot'.”

Whether a parameter is displayed as Linear or Logarithmic and the number of decades for logarithmic display is imported from the FACSDiva worksheet.

Bi-Exponential scatter parameters are imported as log. All other Bi-Exponential parameters are imported as V-Log. The following entry is added to the **Import Log**:

“The position of events of imported TrueView/Bi-Exponential data may have changed. Please check and adjust all region positions and V-Log settings.”

The Y axis scaling for histogram plots will be set to Automatic when imported.

Zoom settings are not imported.

No support is included for plot smoothing.

No support is included for the replication of color precedence plot settings.

Import of Gates and Regions

The import of gates and regions is as per the table below:

FACSDiva gate	VenturiOne region
Polygonal gate	Polygonal region
Rectangular gate	Rectangular region
Quadrant gate – perpendicular quads	Quadrant region – perpendicular quads; same centre point as original
Quadrant gate – pivoted segments	Quadrant region – perpendicular quads; same centre point as original
Quadrant gate – offset handle	Quadrant region – perpendicular quads; centre point as per bottom left quad of offset handle quad
Interval gate on histogram plot	Linear region
Interval gate on dual parameter plot	Rectangular region
Autopolygon gate	Polygonal region
Autointerval gate on histogram plot	Linear region
Autointerval gate on dual parameter plot	Rectangular region
Snap-to gate	Polygonal region
Snap-to Interval gate on histogram plot	Linear region
Snap-to Interval gate on dual parameter plot	Rectangular region

If any of the coordinates of the imported regions are negative they will be cropped at 0 but regions are not cropped at the top end.

Regions on Bi-Exponential plots when imported as V-Log are cropped at 0 and 1023.

All regions, regardless if visible or not in FACSDiva software, are imported and visible in VenturiOne.

! Due to differences in region placement and methods of calculation there might be differences in the values of statistics calculated between other applications and VenturiOne.

Tethering of regions is not imported.

Region and Gate names

Region and gate names will be imported from the worksheet and used in VenturiOne. The following rules apply when importing the names:

- For a region on a FACSDiva software global sheet the sheet name is appended to the region and gate name in the form “[<region/gate name>]_<sheet name>”. This is in order to identify which worksheet the region/gate has come from.
- ‘(’ and ‘)’ in FACSDiva software region and gate names are replaced with ‘{’ and ‘}’ in VenturiOne. The ‘(’ and ‘)’ can occur in FACSDiva software region names for example when a gate that is the inverse of another gate is created.
- If a quadrant region name starts with a digit or has a digit at the end after it has been renamed during the import then the name is placed in [].
- Characters in FACSDiva software gate / region names that are invalid in VenturiOne are replaced with a ‘_’ when imported. These are the following characters: / * ^ ! & | “ and Tab.

- Each consecutive space in FACSDiva software gate / region names is replaced with a ‘_’ when imported.
- If a FACSDiva software region name contains any spaces it is placed in “ ” when used in a gate equation.
- If the replacement of characters and spaces results in a name that is not unique, an incrementing number is appended to it to ensure uniqueness.

Quadrant regions are renamed in the default VenturiOne sequence (A, B, C etc). The following message is added to the **Import Log**:

“All of the imported quadrant gate and/or region names have been replaced with default names. Gate equations and names can be reviewed in the Edit Gates dialog. “

If any region names in the FACSDiva software experiment exceed the 50 character limit names that VenturiOne has to comply to, they are renamed in the default VenturiOne sequence (A, B, C etc). The gate logic is updated and properly imported into VenturiOne. The following message is added to the **Import Log**:

"Some of the imported gate and/or region names exceed 50 characters. These have been replaced with default names. Gate equations and names can be reviewed in the Edit Gates dialog."

Import of Applied Biosystems Attune .gex Experiments

An AB Attune experiment is stored by default in the **c:\lattune\users\yourusername\My Experiments** folder – a *.gex file is present for each experiment and contains details of all required information for that experiment, other files are stored in an associated folder labeled with the experiment name, this folder contains the FCS data files and required workspace files.

If the experiment folder does not contain FCS files the experiment cannot be imported.

One playlist item is created for each FCS file referenced in the experiment. The playlist items are appended to the existing Playlist.

The order of the FCS files in the Playlist matches the order of the files in the experiment.

Plots relevant to each FCS file are imported into the workspace for the file.

Parameters

Parameter names and stain names will be taken from the FCS file. If any parameter for a plot is not available that plot is not imported.

Attune software allows you to change the parameter name on a per plot basis; this information is not saved in the FCS file and hence is not imported into VenturiOne.

Import of Plots

The import of plots is as follows:

- Dual parameter Density plots are imported as Density plots.
- Dual parameter Dot plots are imported as Color Precedence plots.
- Histogram plots are imported as Single Parameter Histogram plots.

Plot titles will be imported.

Scaling of Plots and Parameters

All Attune axis types are imported,

Attune LinLog parameters will be imported as V-Log parameters. The V-Log Linearity setting will default to 63% and the V-Log Negative Section will default to 100%. These settings should be adjusted as required. The histogram Count axis will be imported as Linear.

The maximum scale value possible is 8388607 for all parameters.

The minimum scale value is -8388608 for V-Log, 0 for Linear and 1 for logarithmic parameters.

Zooming

Plot parameters that have a manual scaling selected but are set to the default values will not be treated as zoomed parameters.

Zooming in VenturiOne is Parameter based not plot based, if multiple zoom levels are used for one parameter the lowest "Minimum" value and the highest "Maximum" value for each parameter will be used when imported.

If an individual parameter has zooming present on multiple plots scales (Linear, Logarithmic or LinLog), the most appropriate value for the imported parameter will be selected. Imported plots not matching the selected value will be set to display as unzoomed in the workspace after import.

Import of Regions and Quadrants

The import of regions and quadrants is as per the table below:

Attune Quadrant	VenturiOne Quadrant	Notes
Histogram	Linear	Regions are equally spaced on the Y axis i.e. 1/2 plot height for 1 region, 1/3 plot height for 2 regions etc.
Rectangular	Rectangular	
Oval	Ellipse	
Polygon	Polygonal	
Bi-Marker	Linear	2 linear regions are created.
Quadrant	Quadrant	All quadrant nodes imported as vertical and horizontal lines. If lines are disjointed they are aggregated into one and positioned at half their difference.

Import of Gates

The functionality referred to as back gates in Attune software equates to per plot Color Precedence configuration. VenturiOne does not support per plot Color Precedence.

Imported gating strategy is such that parent gate is always ungated and the gate equation is the full expanded equation.

Quadrant gates will be sandwiched by brackets i.e. (R1>1).

Invalid Characters and Length

The imported workspace is checked for invalid characters and replaced with valid characters where needed. For these, non-fatal warnings are appended to the Import Log for each workspace processed. The following table details the invalid characters.

Workspace Area	Invalid Characters	Replace Characters
Plot Title	[]	{}
Regions Quads and Gates	/*^!& ()\"' \t	All replaced with ‘_’ (underscore)
Regions Quads and Gates	“ ” (Consecutive spaces)	All “__” (2 underscores)

Plot title length is limited to 50 characters.

Region names have leading and trailing spaces removed.

If a region name is truncated on import or if a region name consists entirely of invalid characters then the affected region will be renamed to the next available region letter.

Imported region names are tested for uniqueness and if necessary are appended with an incrementing suffix i.e. ‘_1’, ‘_2’, ‘_3’ etc until they are unique.

For imported quadrants, the name given to node 1 will form the basis for the remaining nodes in that quadrant. A quadrant of names R1, R2, R3 and R4 will become R1>1, R1>2, R1>3 and R1>4.