



LFM NetView Project Publishing Guide

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1 Preface

This chapter gives basic information about this guide, training and support.

1.1 About this Guide

This guide describes how to publish a project to *AVEVA LFM NetView*.

1.2 Audience

This set of documentation is aimed at new users and covers the use of AVEVA LFM Server: Server Mode, its associated CAD links and the production of AVEVA LFM related resources such as HyperBubble data, Solid Point Cloud data and AVEVA LFM NetView projects. The contents cover operations for both Engineering Users and Project Administrators. It is assumed that the user already has *AVEVA LFM Server* installed and has the appropriate license features available.

1.3 Related Documents

Other related documents include:

- **AVEVA LFM Server - Autodesk AutoCAD Interface**
Also covers AutoCAD MEP, CADWorx and Bentley AutoPLANT
- **AVEVA LFM Server – Autodesk Navisworks Interface**
- **AVEVA LFM Server – Autodesk Revit Interface**
- **AVEVA LFM Server - Aveva PDMS CAD Interface**
- **AVEVA LFM Server - Aveva Review CAD Interface**
- **AVEVA LFM Server - Bentley MicroStation CAD Interface**
Also covers Bentley ConstructSim
- **AVEVA LFM Server - Intergraph PDS CAD Interface**
- **AVEVA LFM Server - Intergraph SmartPlant 3D CAD Interface**
- **AVEVA LFM Server - Intergraph SmartPlant Review CAD Interface**
- **AVEVA LFM Server - COMOS Walkinside CAD Interface**
- **AVEVA LFM Server - Quick Start Guide**

The AVEVA LFM Server Quick Start Guide is not intended to cover every aspect of this package, but should provide designers with a 3D CAD background a quick introduction to common features and typical project requirements.

- **AVEVA LFM NetView Project Publishing Guide**
This guide covers the creation and deployment of an AVEVA LFM NetView project from the point that the AVEVA LFM Server dataset (.lfd) is available up until, and including the point where the VHD is created.
- **AVEVA HyperBubble and Solid Point Cloud Creation and Use Guide**
This guide covers everything related to the new HyperBubble feature including pre-requisites, publishing and use.

Note: These documents can be accessed by opening the file browser and browsing to the location where *AVEVA LFM Server* is installed. By default, they are available at the following location:

C:\Program Files\LFM Software\LFM\helpfiles

1.4 Technical Support

Online support and more information about AVEVA LFM should be requested through lfm.support@aveva.com

To aid fault diagnosis, please include the following information when contacting AVEVA LFM Support:

- Urgency
- Full version number of *AVEVA LFM Server*
- Information about any CAD package being connected to (including full version number)
- AVEVA LFM Server log files. To obtain these, go to the **File > Home** tab and click the **Copy Log Files** button. This copies a series of 5 text files to the location of your choice. These will be called `1fmServerRunA.log` - `1fmServerRunE.log`. Please send all 5 files.

AVEVA LFM Upgrades

Upgrades can be downloaded from the AVEVA LFM Software website from https://www.aveva.com/en/Services_and_Support/AVEVA_Product_Support/#LFM-Support.

1.5 Product and Training Information

For general information and commercial enquiries, please contact lfm.info@aveva.com.

For information about product training courses, see the Product Training section of AVEVA's website (<http://www.aveva.com/training>), or contact the nearest AVEVA Regional Support Centre (<http://support.aveva.com/support>).

2 Overview

AVEVA LFM NetView project creation is a one-off operation which is performed in AVEVA LFM Server: Server Mode. AVEVA LFM NetView project creation is a completely lossless process in which none of the data from the original scans is lost.

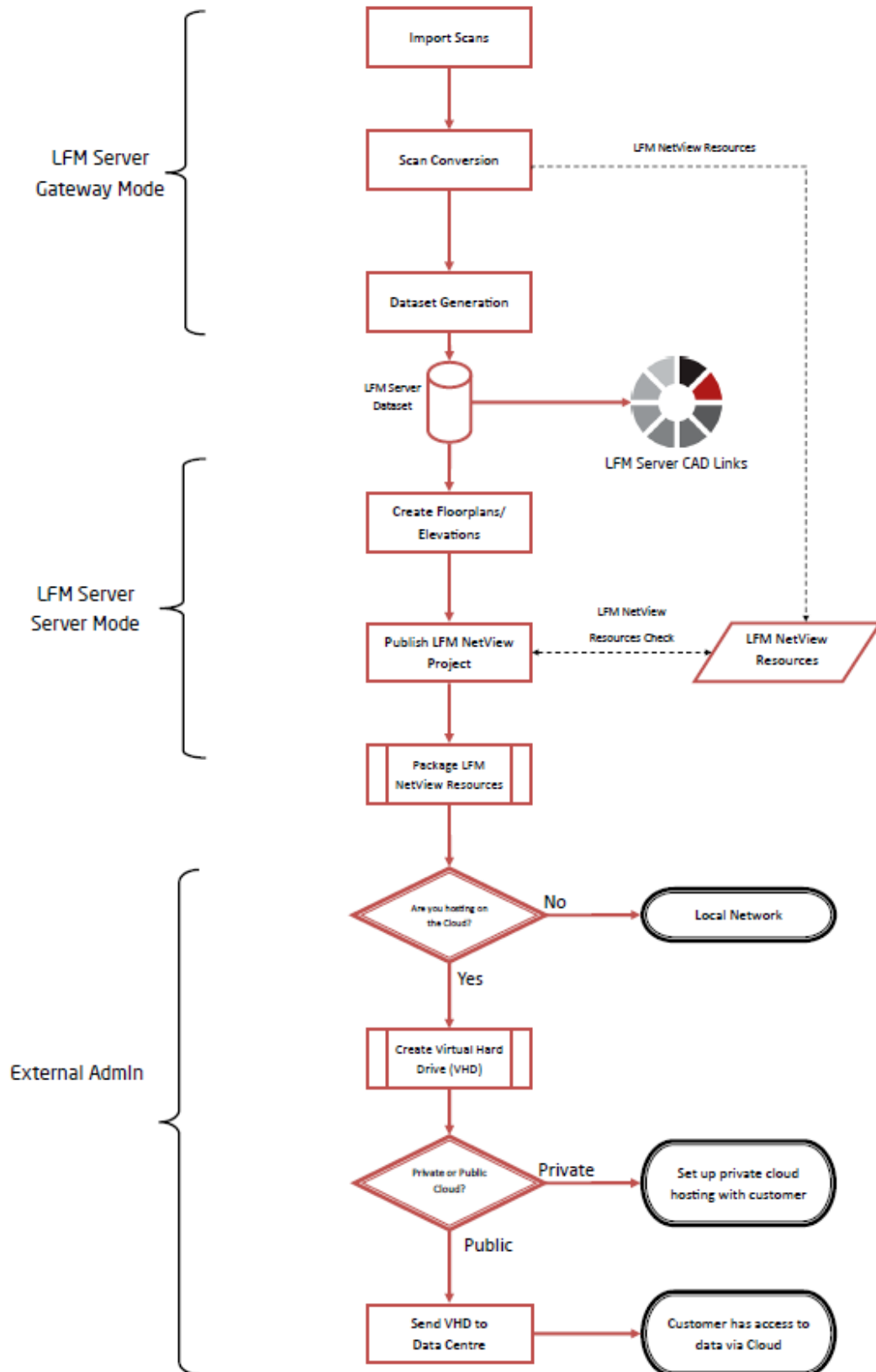
There are three different ways of hosting an AVEVA LFM NetView project. These are:

- Hosted on AVEVA LFM Software's cloud account (hosting fee applies)
- Hosted on your own cloud account
- Hosted on an in-house server

This document covers the hosting process, starting from the point where the AVEVA LFM Server dataset (.lfd) is available, up to and including the point of Virtual Hard Drive (VHD) creation. After this point, an AVEVA LFM Value Added Reseller (VAR) will provide further guidance on a one-to-one basis. To find your local AVEVA LFM VAR, please visit <http://web.lfm-software.com/en/Value-Added-Resellers.aspx>. If there is no AVEVA LFM VAR in your area, please contact lfm.support@aveva.com.



The AVEVA LFM NetView project deployment process can be seen in the workflow below:



3 Prerequisites

The pre-requisites cover the following requirements:

- [Graphical Requirements](#)
- [Advanced Mode Installation](#)
- [License Requirements](#)

3.1 Graphical Requirements

AVEVA LFM NetView project publishing requires a reasonably powerful graphics card with the very latest drivers. It has been developed using NVidia graphics cards, and AVEVA LFM recommends using these where possible for optimum performance and reliability. AVEVA LFM have also tested with a selection of alternate cards which are detailed below.

Do not rely on Windows graphics driver properties to update to the latest version, instead use the NVidia tools. Visit <http://www.nvidia.com/download/scan.aspx?lang=en-us> to obtain the latest version.

The supported OpenGL version information is saved in the AVEVA LFM log file on startup which can be found in the Temp folder as shown below which reports v4.5. The minimum needed is v4.3.

- 12: GL Major version supported: 4 115
- 13: GL Minor version supported: 5 127

Supported Cards:

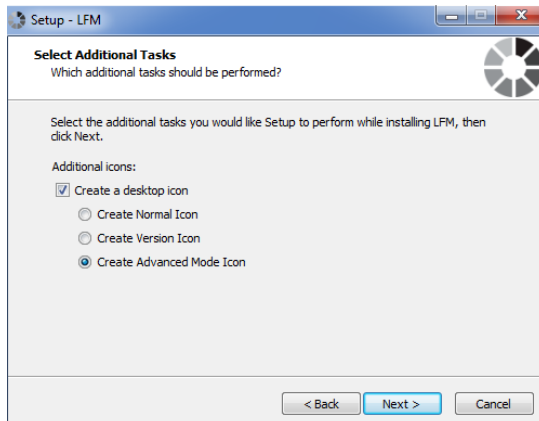
NVidia GeForce/Quadro, or AMD FirePro W Series, with at least 1GB memory and capable of supporting OpenGL version 4.3 or later.

Note: Updated graphics drivers may be needed to meet the OpenGL requirement.

3.2 Advanced Mode Installation

AVEVA LFM Server no longer requires a dongle for AVEVA LFM NetView project creation. To avoid unauthorised users from taking the AVEVA LFM NetView creation license there is now an option to install an advanced version of AVEVA LFM Server which gives access to this feature. This is illustrated in the screenshot below.

AVEVA LFM Server should be run from the Advanced Mode shortcut to be able to create a new AVEVA LFM NetView project.



3.3 License Requirements

To publish an AVEVA LFM NetView project, an AVEVA LFM NetView Creator license is required. For more information about AVEVA LFM licenses, please contact your AVEVA LFM Value Added Reseller or lfm.license@aveva.com.

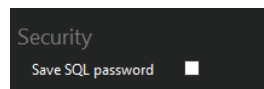
4 User Account Creation

AVEVA LFM NetView 4.2.1 and later support both Single Sign On and AVEVA LFM Server User authentication. If you wish to use AVEVA LFM Server User authentication, this requires user accounts to be set up in AVEVA LFM Server to control secure access.

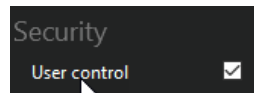
Note: This is only required for projects hosted on a network or on a user's own Cloud account. It is not required for projects hosted on AVEVA Connect.

These user accounts are created in AVEVA LFM Server and saved to the AVEVA LFM Server project:

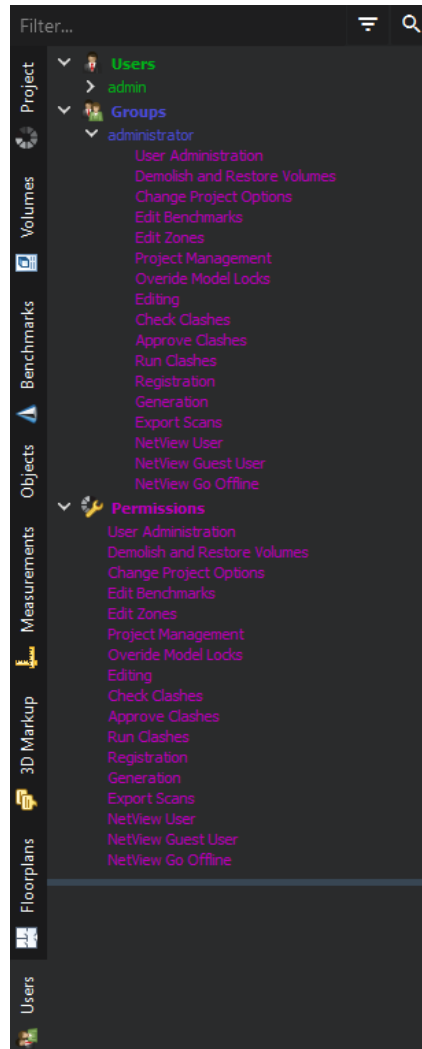
1. Go to **File > Options > Advanced** and enable **Save SQL Password**.



2. Switch to **Options > Project** and enable **User control**.



3. At this point you will be prompted for the administrator password. Enter the desired password in both boxes and click **OK**.
4. To set up the user accounts, go to the Utilities tab and click the **Users** button. This brings up the User Management Panel:



5. To set up a new group, right-click on the Group entry and select **New > User Group**.
6. Name the User Group and click **OK**.
7. To set the permissions for this group, click and drag the desired permission from the Permissions section onto the appropriate group. Repeat this for all the desired permissions.
8. After the appropriate groups have been set up, right-click on the Users entry and select **New > User**.
9. To subscribe a user to a group (which allows them rights to all the permissions within that group) click and drag the desired group from the *Groups* section onto the appropriate user. Repeat this for all the desired subscriptions.

For *AVEVA LFM NetView*, the relevant permissions are:

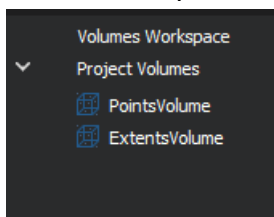
- **NetView User** - Allowed to access/view the project and save Markups/measurements to the project.
- **NetView Guest User** - Allowed to access/view the project and create Markups/measurements. However, these Markups/measurements will not be saved to the project for future use.
- **NetView Go Offline** - Allowed to take an AVEVA LFM NetView project offline for on-site work, presentations, client reviews, and so on.

5 Floorplan Volume Creation

In AVEVA LFM Server the user can define the areas that are to be used for the AVEVA LFM NetView project floorplan(s). This process replaces the need to provide a .dxf file to act as a floorplan.

The user can either select a floorplan created from the point cloud, or add a PDF floorplan, or use a combination of both. For instructions on adding a PDF floorplan, please refer to the [AVEVA LFM Server Home Guide](#).

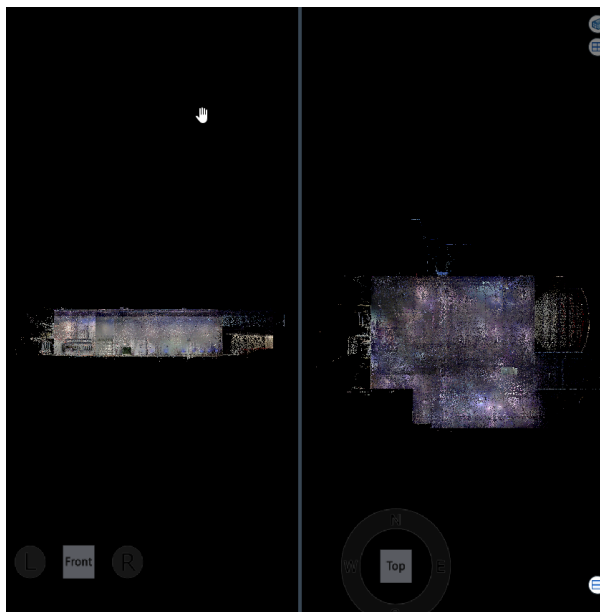
The user should switch to the 3D orthographic view to define the floorplan(s) using Volumes in the 3D View. For more information about volume creation in AVEVA LFM Server, please refer to the [AVEVA LFM Server Home Guide](#).



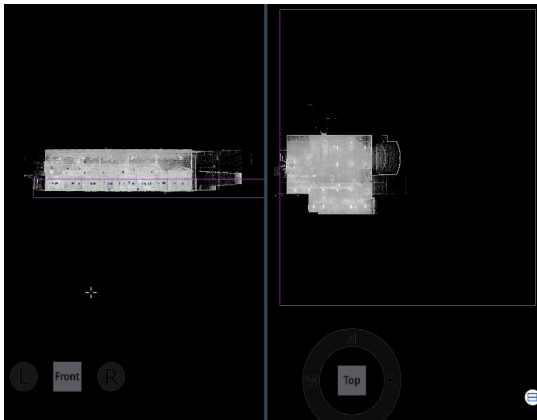
The volume(s) should be saved in the **Volumes** tab. It is common to create two volumes, one to define the required display of the points in the floorplan, with the second volume being used to capture all of the scan sites that should be displayed in the floorplan. Scan sites that are not defined in this volume will not be displayed in the floorplan.

The volumes should be saved to the **Project Volumes** node and provided with a suitable name.

The following screenshot displays a sample project in the Ortho view at low resolution.



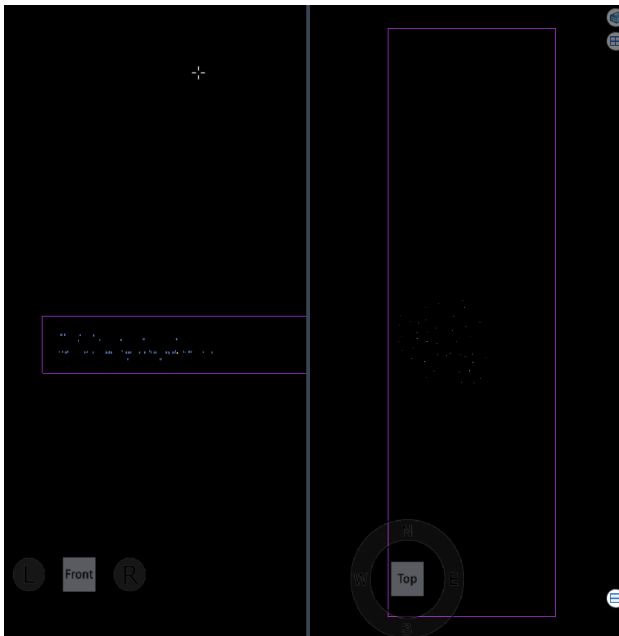
The following screenshot displays an example of a volume that is appropriate for the floorplan. Note how in the left view there are scan site markers that are outside this volume.



It is often useful to turn on **Edge Mode** when selecting the floorplan volume. Edge Mode highlights areas where points are highly concentrated such as surfaces of pipes, walls, edges of structure, and so on.

To turn on the Edge Mode, in the **Visualisation** tab, click the **Points** drop-down menu and select the **Edge Mode** button:

The following screenshot displays an example of a volume that is appropriate for the extents. Note how all scan sites are included in this volume as opposed to the volume selected in the screenshot above.



It is often useful to turn the 3D points off when selecting the extents volume. To do this, in the **Visualisation** tab at the top of the AVEVA LFM Server interface, click **Points**.

6 Google Maps Integration

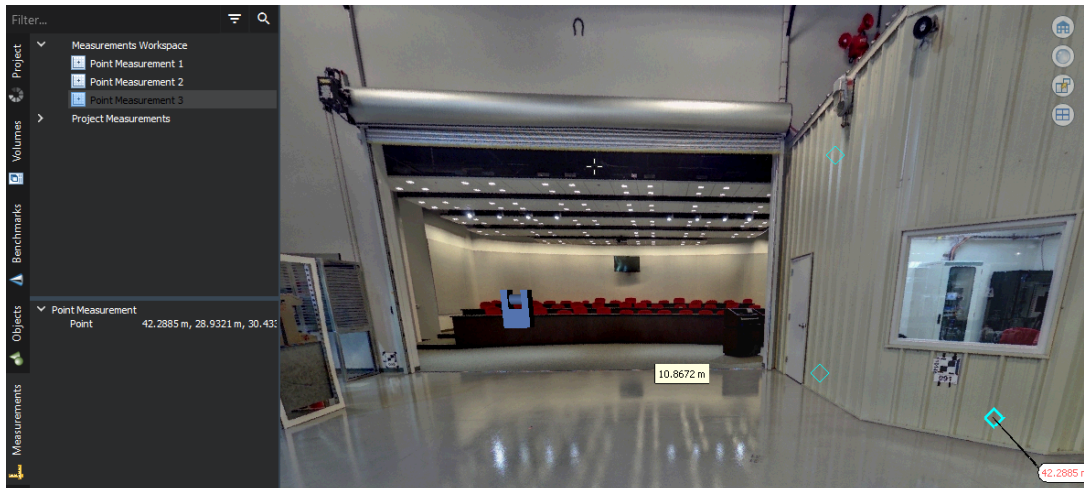
AVEVA LFM NetView 4.2.1 and later support the use of a Geographic Information Systems (GIS) landing page (Google Maps). The instructions that follow will take you through how to publish the .xml file required to enable the use of this feature.

6.1 Creating Point Measurements

Using the AVEVA LFM Server Measurement tool kit, create point measurements inside the AVEVA LFM Server dataset that correspond to the known GPS coordinates.

Note: A minimum of 3 point measurements with corresponding known GPS coordinates are required to publish GIS information for AVEVA LFM NetView. The three point measurements are required to form a triangle such that it spans the entire dataset and covers all points within that dataset.

The following image displays the Point Measurements created in the Measurements panel:



Note: The workflow that follows can be used only for a rough estimate of the alignment of points, as the values obtained from Google Maps and the elevation finder tools are not accurate. For precise positioning, it is advised to use a GPS device while scanning a site area.

Create a point measurement by switching to the BubbleView of a particular scan and selecting a point to measure. To do this:

1. In the Orthographic view or in the Perspective view, right-click a given point and select **Show BubbleView**. The BubbleView image of the scan is displayed.
2. Under **Tools**, select **Point** and then click a point on the BubbleView that you wish to measure. The x, y, z coordinates of that point are displayed in the Point Measurement workspace.
3. Then, drag the Point Measurement from the *Measurements Workspace* into the *Project Measurements* area to save the measurement. You may rename the Point Measurement to a relevant name.
4. Compare the BubbleView image of the point selected to the image on Google Maps by entering the name of the scan location in the Search box and navigating to the specific location using **Browse Street View images**.
5. After you have identified the location, note down the latitude and longitude values.

Note: To obtain the latitude and longitude values, you could either make a note of the values from the browser address bar or duplicate the Google Maps tab on your browser. Then, on the duplicate tab, right-click a point around the scan location that matches the exact location in the BubbleView and click **What's here?**. The latitude and longitude values are displayed at the bottom of the screen.

6. After you have obtained the latitude and longitude values, you can then use these values to find the height in meters from sources such as <http://veloroutes.org/elevation/>.

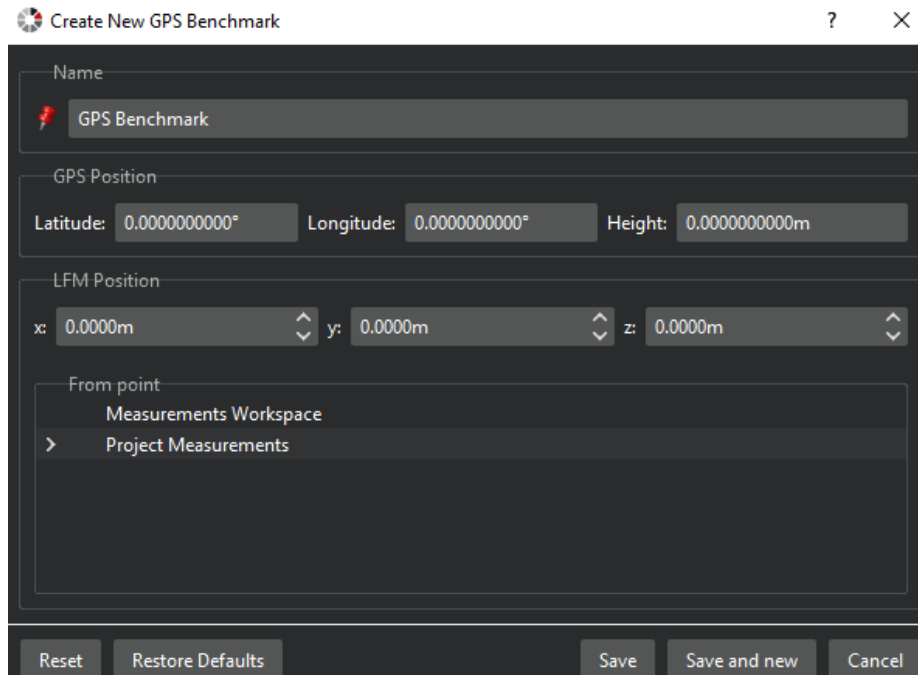
Note: When you have obtained the elevation for one point, you can estimate the elevation for the second and third points by taking the difference of the measurements. For example, consider points 1 and 2 that have z coordinates of 30.46 and 31.67, the difference being one meter approximately. So if the elevation for point 1 is 31.2, the elevation for point 2 can have the same value plus/minus one meter based on whether the z coordinate is higher or lower relative to point 1. Similarly, if point 3 has a z coordinate of 35.04, the difference thereof from the two points is approximately 4m. It can be estimated that the elevation value is 4m higher than the other two points.

7. After you have a point measurement, you can then create a GPS Benchmark.

6.2 Creating GPS Benchmarks

To create a GPS Benchmark:

1. Within the **Benchmarks** panel, right-click in the blank space and select **New > GPS Benchmark**:
2. The following dialog appears. In **Name**, enter a name for the GPS Benchmark. It is beneficial to give a name relevant to the point measurement.

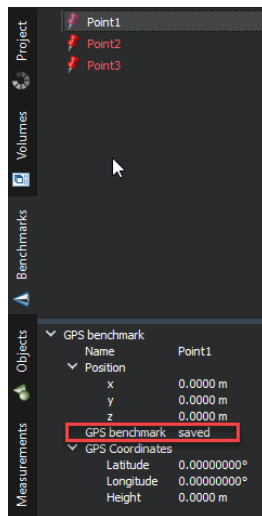


3. In **GPS Position**, enter the **Latitude**, **Longitude** and **Height** values obtained from Google Maps. If AVEVA LFM Server detects that a latitude/longitude coordinate is copied on the clipboard, it will ask you if you want to paste these values into the dialog. Google Maps does not give the elevation but this can be obtained from other sources such as <http://veloroutes.org/elevation/>.
4. Enter the relevant **LFM Position** by double-clicking the point measurement in **From point** to set the Benchmark to that position. Repeat this process for all the point measurements created. For more information, see [Creating Point Measurements](#).

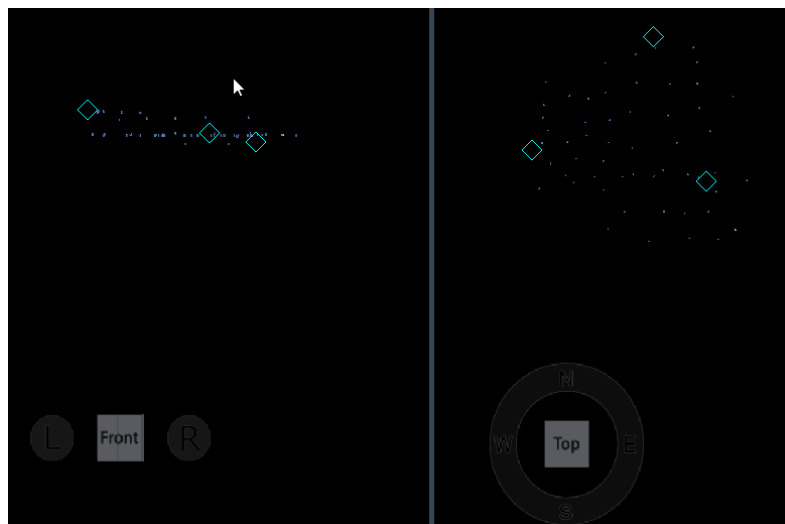
- You should now have a minimum of 3 GPS Benchmarks in the Benchmarks panel. Each Benchmark will also be shown in the 3D View by a red pin object as shown below:



- To save GPS Benchmarks, click the Point Measurements in the Benchmark panel, and in the workspace below set **GPS benchmark** to **saved**.



This maintains the correct position of the benchmarks when used in another project. You can view the benchmark pins in the 3D View as shown in the following image:



6.3 Publishing the .xml File

When you have a minimum of 3 GPS Benchmarks in the Benchmarks Manager, you are ready to publish the GIS .xml file. If you are yet to publish your AVEVA LFM NetView project, this will be done automatically as part of the AVEVA LFM NetView Project Publishing process. If you are working with an already published AVEVA LFM NetView project, you can publish the .xml file as a separate process.

To do this:

1. In the **Project** tab, right-click on the project node and select **Publish > AVEVA LFM NetView GIS Integration Data**.
Note: You must run *AVEVA LFM Server* in the Advanced mode to access the AVEVA LFM NetView GIS Integration Data feature.
2. Select the desired output folder and click **Select Folder**. A confirmation dialog appears when the publish is complete and a .xml file is created at the selected location.
3. In the .xml file that is created, you must edit the following xml tags:

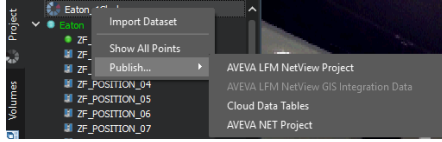
- `<projectLink/>` - Enter the project name
- `<siteLink/>` - Enter the URL for the AVEVA LFM NetView landing page

Note: In the .xml file that is generated, ensure the order of the xml tags is `<projectLink/>` and `<siteLink/>` respectively.

For how to proceed from this point, please refer to the [AVEVA LFM NetView 4.2.1 Deployment Guide](#).

7 AVEVA LFM NetView Project Publishing

The AVEVA LFM NetView publishing process requires access to the .zfc, .int and (if there is colour data in the project) colour panoramic_color.jpg files.



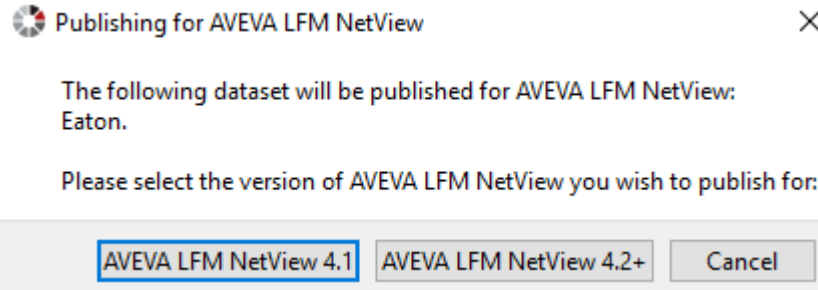
Note: Ensure that all the files for all datasets being published are stored in the same folder before beginning the publishing process.

Note: If there is demolished data in the AVEVA LFM Server datasets being published, you must publish the HyperBubble resources. That will enable the demolition to be reflected in the AVEVA LFM NetView project before beginning the AVEVA LFM NetView publishing process. For guidance on how to do this, refer to the [HyperBubble and Solid Point Cloud Creation and Use Help Guide](#).

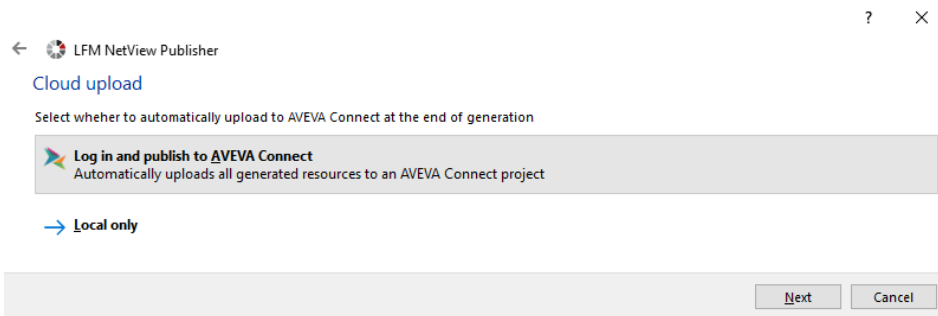
You can access this document by browsing to the location where *AVEVA LFM Server* is installed and opening the "helpfiles" folder. By default, it is available at this location: **C:\Program Files\LFM Software\LFM\helpfiles**.

To begin the publishing process:

1. Right-click the project node and then click **Publish > AVEVA LFM NetView Project**. This displays a window that enables you to select the version of AVEVA LFM NetView you wish to publish for.



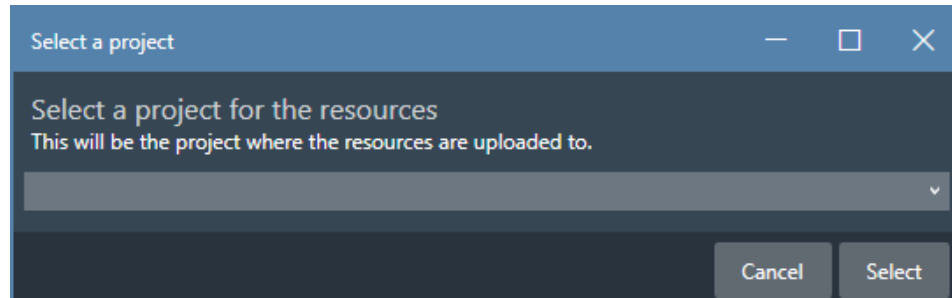
2. Click the **AVEVA LFM NetView 4.2+** button. The AVEVA LFM NetView Publisher window that is displayed enables you to enter a location where the completed project can be published to.
3. Click **Browse** and select an empty folder. Then, click **Next**. The Cloud upload window is displayed.



4. To publish to the Cloud, select **Log in and publish to AVEVA Connect** and click **Next**. This should display the AVEVA Connect login page with a list of accounts. Selecting this option publishes the project to the local destination and also uploads the project to AVEVA Connect.

Note: To publish to a local destination, click the **Local only** option. After the project is published locally, if you wish to upload the project to AVEVA Connect, you can do so through the upload app that is available on AVEVA Connect.

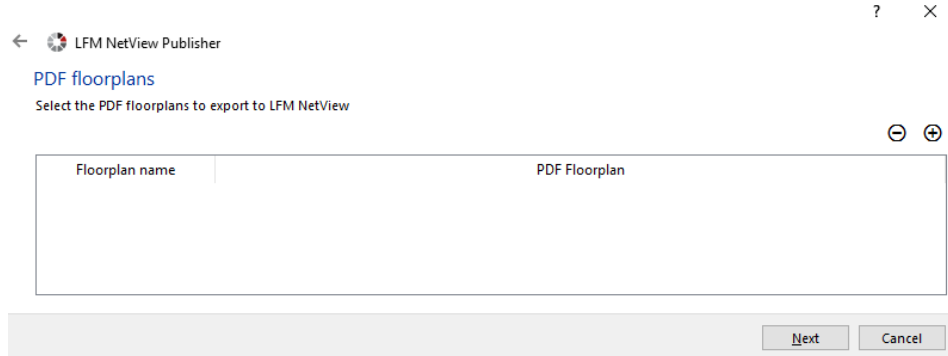
5. On the AVEVA Connect login page that is displayed, select the appropriate account. In the **Select a Project** window, from the drop-down box, select an asset where the resources should be uploaded to and click **Select**.



Note: If you are already logged in to AVEVA Connect, the system verifies your account and displays the **Select a Project** window directly.

6. In the **Laser Data Floorplans** page, add volumes for floorplans. The components that will make up the floorplans displayed in the AVEVA LFM NetView project include:
 - **Floorplan name** - The name of the floorplans as displayed in *AVEVA LFM NetView*.
 - **Extents volume** - The volume that determines which scan locations will be displayed in that floorplan. Any scan sites outside this volume will not be displayed in the AVEVA LFM NetView floorplan.
 - **Points volume** - The volume that determines which points will be displayed in that floorplan. Any points outside this volume will not be displayed in the AVEVA LFM NetView floorplan.
For more information about volume creation in *AVEVA LFM Server*, please refer to the [AVEVA LFM Server Home Guide](#).
 - **View direction** - The direction from which Points volume is viewed in the AVEVA LFM NetView floorplan.
 - **Level of detail** - Specifies the level of detail for each floorplan. For larger floorplans, this should be set to **High**. For smaller projects, **Low** is usually adequate.
 - **Floorplan style** - Provides two options: **Black points on a white background** and **White points on a black background**.

- To include PDF floorplans to be published to *AVEVA LFM NetView*, on the **PDF floorplan** page, click the **Add** button. You can include PDF floorplans after you have imported your PDF files through the **Floorplan** tab on the Management panel and placed them to match the dataset. Multiple PDF files can be included.

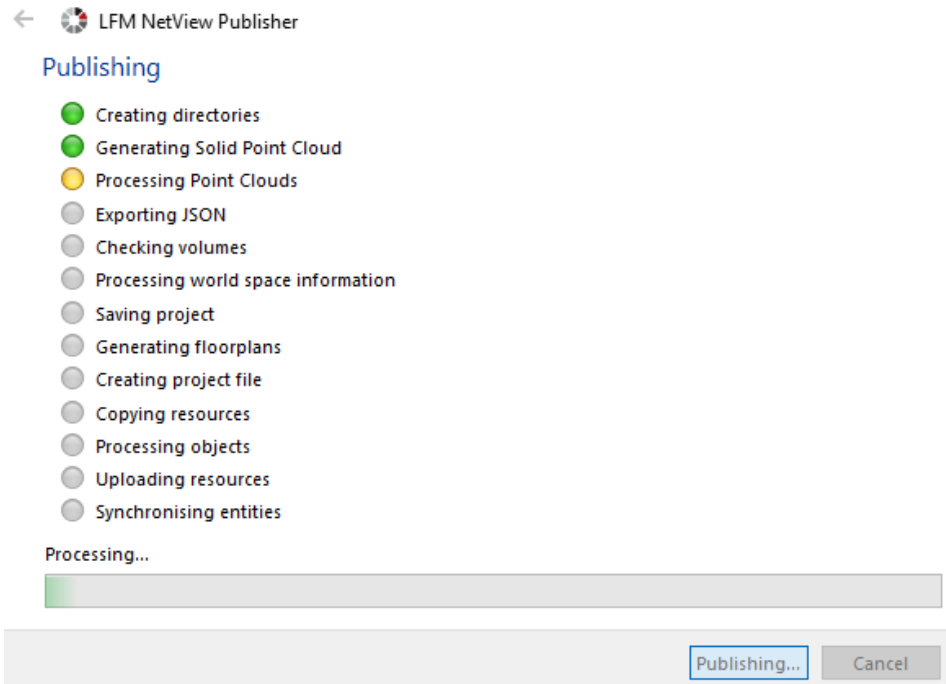


Note:

- Each floorplan should have a unique name.
 - If you wish to remove a child floorplan, you must first remove the master floorplan. The system does not allow you to remove a child floorplan alone.
- Click **Next** to select the resources you wish to publish. These resources include:
 - **Publish colour images** - Generates colour AVEVA LFM NetView BubbleViews (only available for colour scans)
 - **Publish intensity images** - Generates intensity AVEVA LFM NetView BubbleViews
 - **Publish HD images** - Produces the required resources for the magnification window in *AVEVA LFM NetView*
 - **Publish Solid Points** - Generates Solid Pointcloud data
 - **Copy dataset files** - Copies the AVEVA LFM Server dataset (.1fd) into the publish location. This is most useful for cloud hosted projects. For locally hosted projects, a copy of the AVEVA LFM Server dataset is likely to be available.
 - **Mask demolished areas** - Masks any demolished points from the AVEVA LFM Server project as black in the AVEVA LFM NetView BubbleViews.
 - On the **Project options** page, if you have an object file that you want to process, enter the required information for the following fields:
 - **Working units** - Default working units for the AVEVA LFM NetView project.

- **Object processing** - Enable to include the specified objects file in the AVEVA LFM NetView project.
 - **Object file** - Browse to the location of the objects (.zg1) file.
 - **Object cache generator** - Navigate to the AVEVA LFM NetView Object Cache Generator folder where *AVEVA LFM Server* is installed (by default C:\Program Files\LFM Software\LFM NetView Object Cache Generator).
 - **Object inclusion** - You can select one from **HIGH**, **MEDIUM** and **LOW**. For example, when set to **HIGH**, assuming you are looking at the object from the position of a scan site, you can see at least 10 pixels belonging to the object. So, it is considered visible and added to the visibility list. Similarly, it is 20 pixels for **MEDIUM** and 30 pixels for **LOW**.
 - **Select BubbleViews to process objects** - Select the BubbleViews against which the object file should be processed. It is usual for all the BubbleViews to be selected.
10. Click **Next**. The **LFM NetView service server settings** page is displayed with the following fields:
- **Make password file** - Enable to generate a password file for the users and permissions in the current project. This will also be used to create users for the AVEVA LFM NetView project and check their AVEVA LFM NetView related permissions.
 - **Offline session time limit** - Use the arrow buttons to specify the number of days an offline AVEVA LFM NetView session will remain valid for. This ensures that the users accessing an offline AVEVA LFM NetView session keep their data up to date.

- Click **Publish** to start the publishing process. The **Publishing** window is displayed that shows the progress for each step in the process. On successful completion, a message is displayed.



8 AVEVA NET Project Publishing

You can integrate your *AVEVA LFM* project into *AVEVA NET* by publishing your project using *AVEVA LFM Server*.

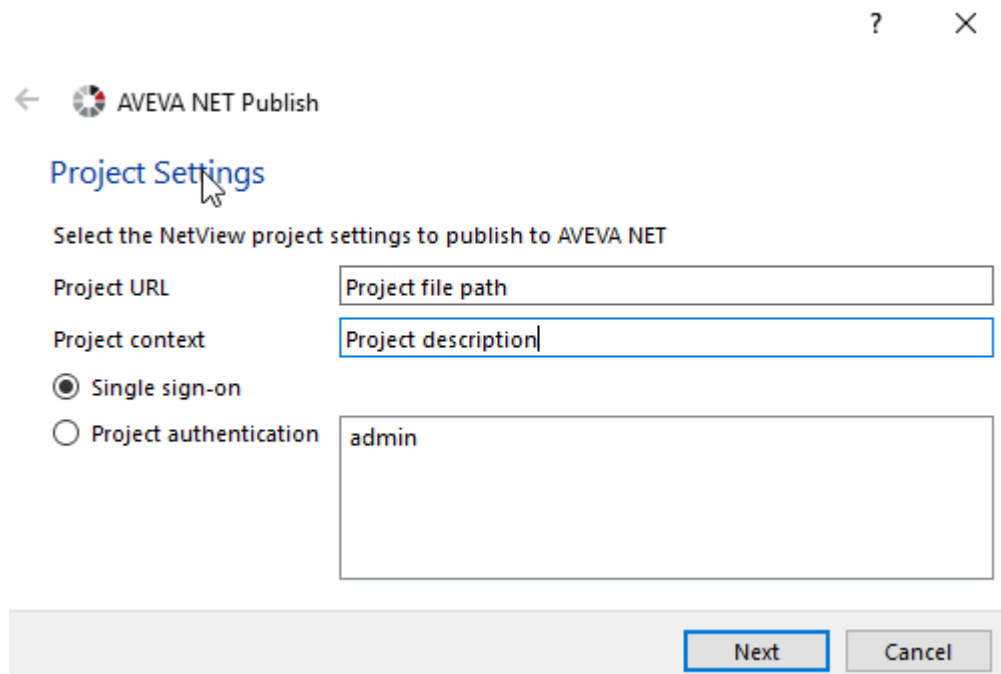
Before you begin publishing to *AVEVA NET*, ensure that you have:

- A license containing the 'Hotspot' license feature
- **User Control** enabled in **File > Options > Project**.

Note: To export to *AVEVA NET* using an object file, ensure that the object file is loaded by right-clicking the .zgl file and selecting **Show**.

To begin the publishing process:

1. Right-click on the project node and select **Publish > AVEVA NET Project**. The following dialog appears:



2. In **Project URL**, enter the project URL for your AVEVA LFM NetView project. For example, **http://machinename/LFM NetView/Project/project.proj**.
Note: You must know your project URL and project context before performing the export. If you do not, enter **DummyURL** and **DummyContext** respectively. You must then replace these strings with the actual project URL and context in the XML files that are produced. See [Publishing the .xml File](#).
3. In **Project Context**, enter the *AVEVA NET* context and then click **Next**. The *Item Selection* page is displayed, where you can select the objects or 3D markups to be exported to *AVEVA NET*.
4. You may use the following options to select, although the **Move all to included list** option is often used:
 - ➔ **Move selected to included list**
 - ➡ **Move all to included list**
 - ⬅ **Move all to not included list**
 - ⬅ **Move selected to not included list**
5. After you have moved the items to be exported, click **Finish**. You will then be directed to select a folder where you want your published files to be stored.
6. Navigate to the location you want to export to and click **Select Folder**. The export process begins, represented by the progress bar at the bottom of the AVEVA LFM Server interface.
After the process has completed, the exported AVEVA NET XML files are produced at the selected location. The resultant files can then be imported into *AVEVA NET* through the *AVEVA NET Import Controller*.

The XML files that are produced as part of publishing to AVEVA NET are shown in the following image:

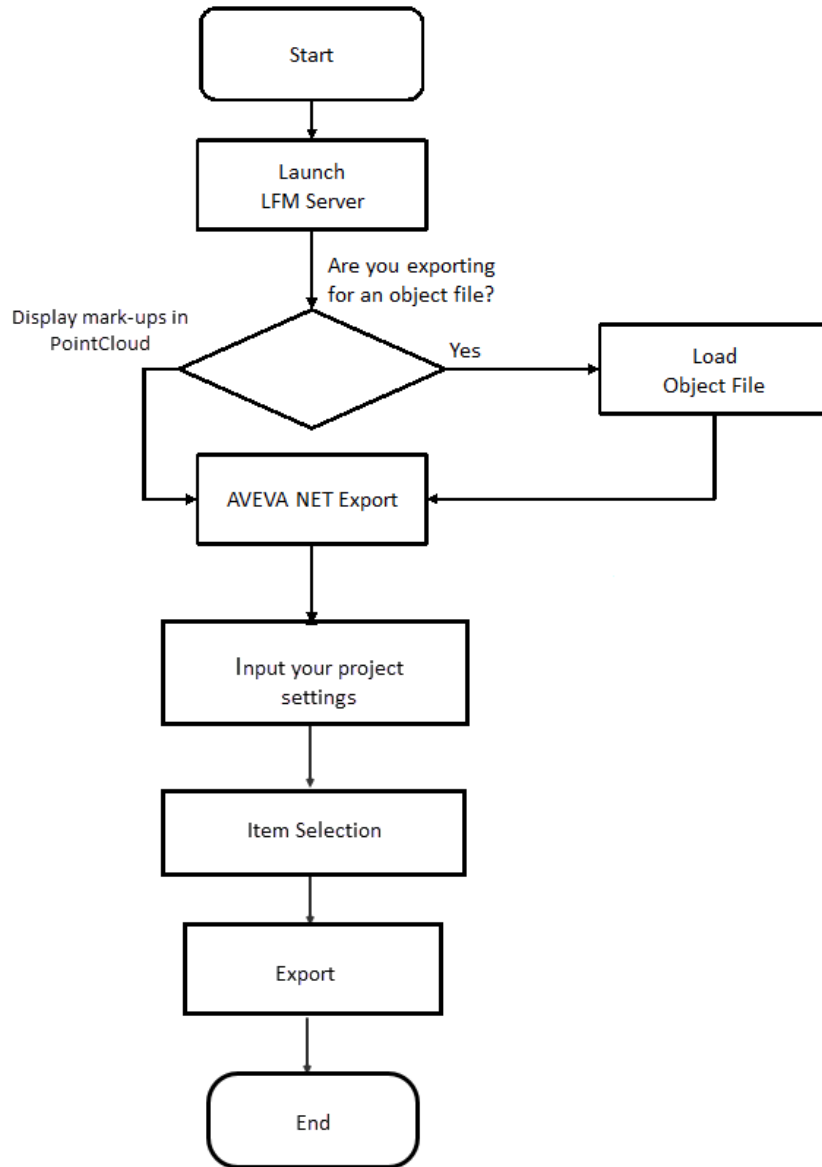
Name	Date modified	Type	Size
01_ExtraClasses_null.xml	10/10/2017 08:50	XML Document	1 KB
AssociationsPermissibles_null.xml	10/10/2017 08:50	XML Document	1 KB
NetViewProject_Eaton_TLP_null.xml	10/10/2017 08:50	XML Document	44 KB

- **01_ExtraClasses_null.xml** - Contains a classification of different objects
- **AssociationsPermissibles_null.xml** - Provides a hierarchy for objects inside *AVEVA NET*
- **NetViewProject_Eaton_TLP_null.xml** - Contains information about all the objects in the export.

Note: This file contains the Project authentication user, which includes the strings DummyURL and DummyContext that should be replaced.

Alternatively, you can publish an AVEVA NET project using 3D markup objects. To use this method, ensure the AVEVA LFM Server dataset is loaded with the Pointcloud displayed, and then add the 3D markup objects. The rest of the procedure is as outlined above.

The workflow for exporting to AVEVA NET is shown below:



9 VHD Creation (Cloud deployment only)

For small AVEVA LFM NetView projects (less than 100 scans) it is possible to copy the project from the local AVEVA LFM NetView Publishing machine to a Virtual Hard Drive (VHD) that is created at the hosting centre. However, for large projects, it is required that the VHD is created locally and shipped to the appropriate hosting centre. This document deals with the latter scenario.

In all cases a VHD should be used to hold the AVEVA LFM NetView project data.

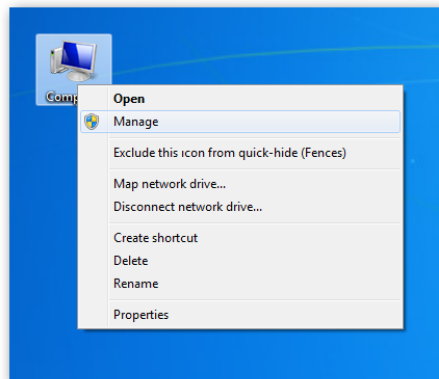
9.1 Creating the VHD (Windows 7)

If there is not enough space on the local PC, it is possible to create a VHD on a network drive and attach it to the local PC as if it were a local disk.

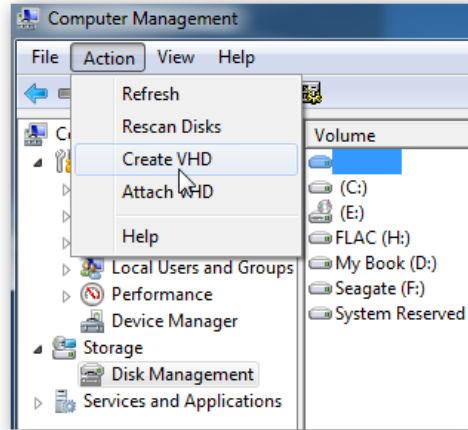
This process creates virtual disks in the .VHD format where the minimum size is 3MB.

To begin:

1. Right-click on **My Computer** and select **Manage**.
2. Alternatively, you can type `diskmgmt.msc` into the **Windows Start** search box and press **Enter**.

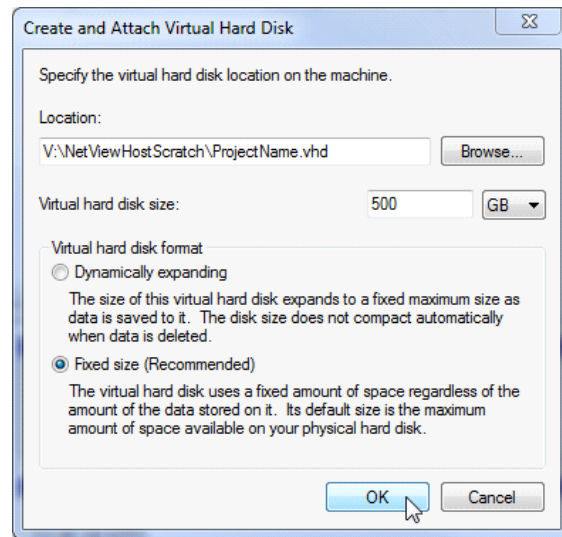


3. The Computer Management screen opens. Select **Disk Management > Action > Create VHD**.



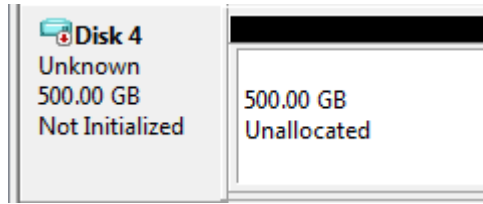
4. Browse to the directory where you want the disk to reside, select the size you want it to be (based on the estimation given at the beginning of the AVEVA LFM NetView publishing process), and select dynamic or fixed.
5. If you want the disk to expand in size as you add files to it, then select **Dynamically expanding**. Otherwise, if you want a consistent specific size, select **Fixed size**.

Note: AVEVA LFM recommends selecting Fixed size. Click **OK** to begin the VHD creation process.

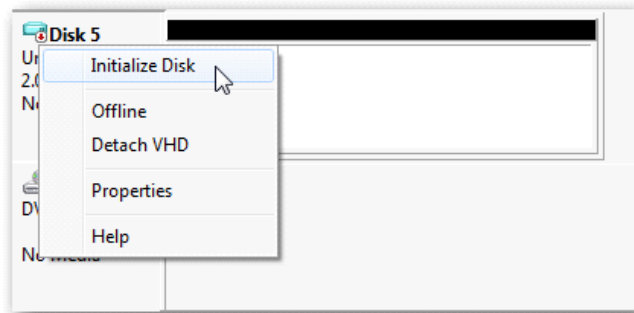


6. The VHD will now be created. You can track the progress by observing the status bar at the bottom of the interface.
- Note:** Creating large VHDs on network drives can take a few hours to complete. As a guide a 500GB VHD will take about 1.5 hours to create.

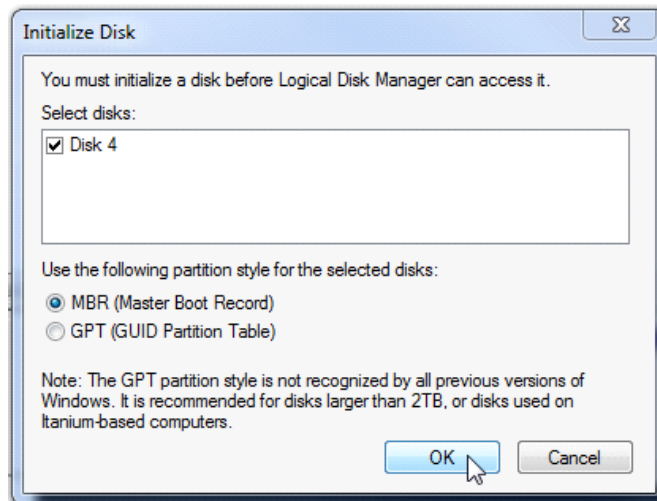
- After it is complete, you will see the virtual drive listed in Disk Management as unallocated space.



- To begin using the VHD you will need to right-click on the disk and select **Initialize Disk**.



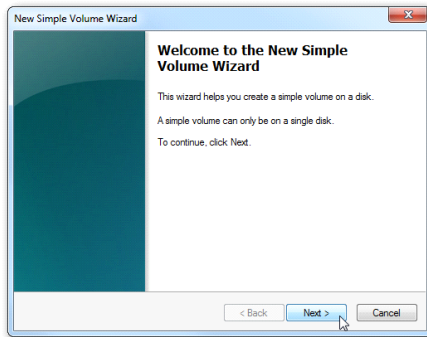
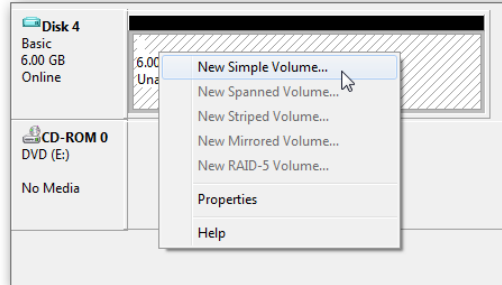
- In the **Initialize Disk** box, select **MBR (Master Boot Record)** and click **OK**.



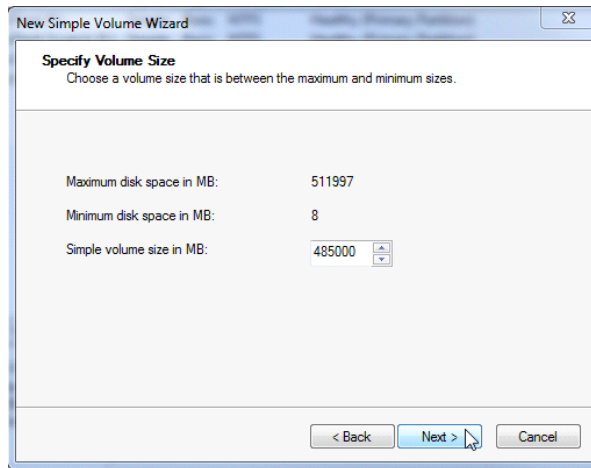
9.2 Create a Volume

To create a volume:

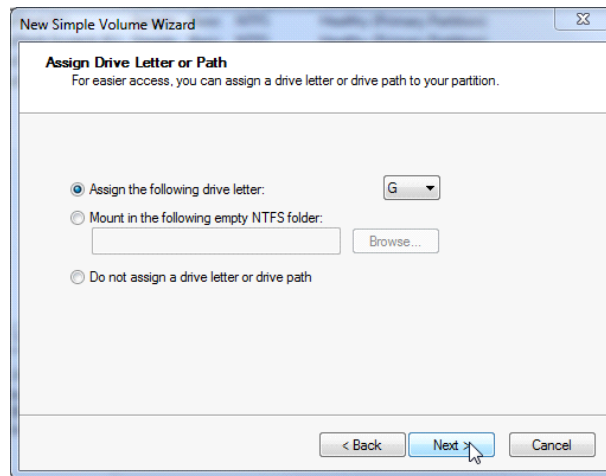
1. Right-click the unallocated space and select **New Simple Volume**. The wizard shown below appears.



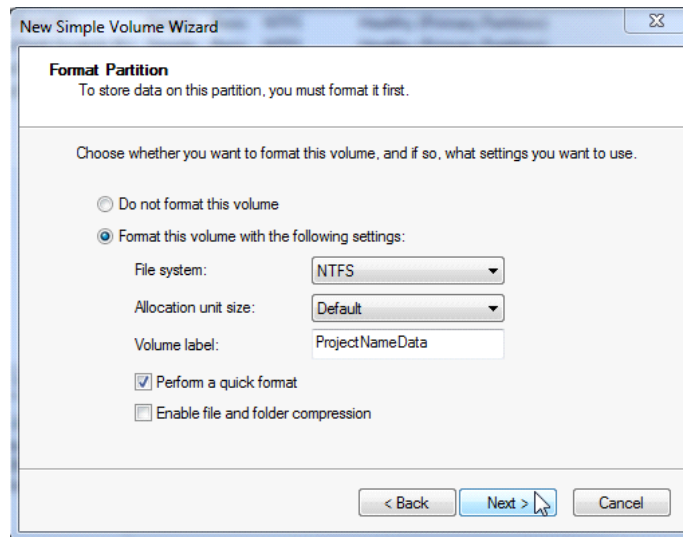
2. Click **Next**.



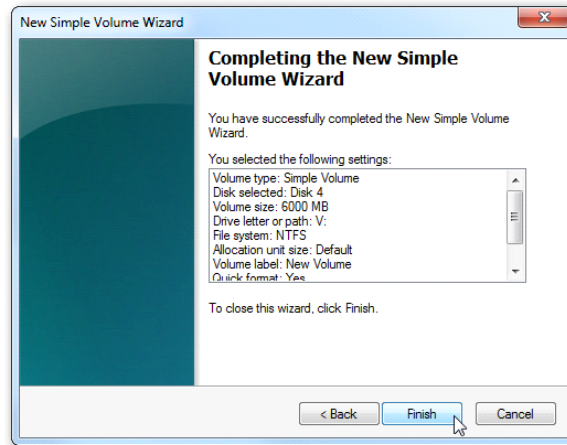
3. Select the amount of space you want to use for the volume. For example, the maximum disk space is 511 GB, make the simple volume size 485 GB.



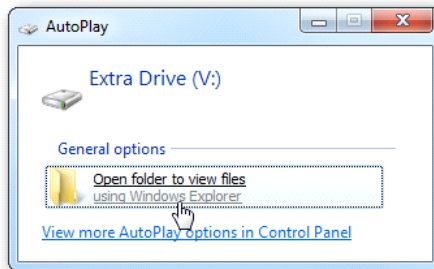
4. Assign the volume a drive letter that is not currently being used.
5. Format the new volume as **NTFS**. Enable the relevant boxes if you want a quick format and file compression.



6. The wizard is complete, click **Finish**.



If you have AutoPlay enabled, Windows displays the pop-up shown below for you to open up your new virtual hard disk.



The disk will be listed in the **Windows Disk Management** utility. It will also be listed on **My Computer**.

For further assistance, you may contact your local AVEVA LFM Value Added Reseller (VAR). To find your local AVEVA LFM VAR, please visit <http://web.lfm-software.com/en/Value-Added-Resellers.aspx>. If there is no AVEVA LFM VAR in your area, please contact lfm.support@aveva.com.



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