



**LFM NetView**  
**Project Publishing Guide**

**V 4.4.2.0**

# LFM NetView

## Project Publishing Guide

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# 1 Introduction

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

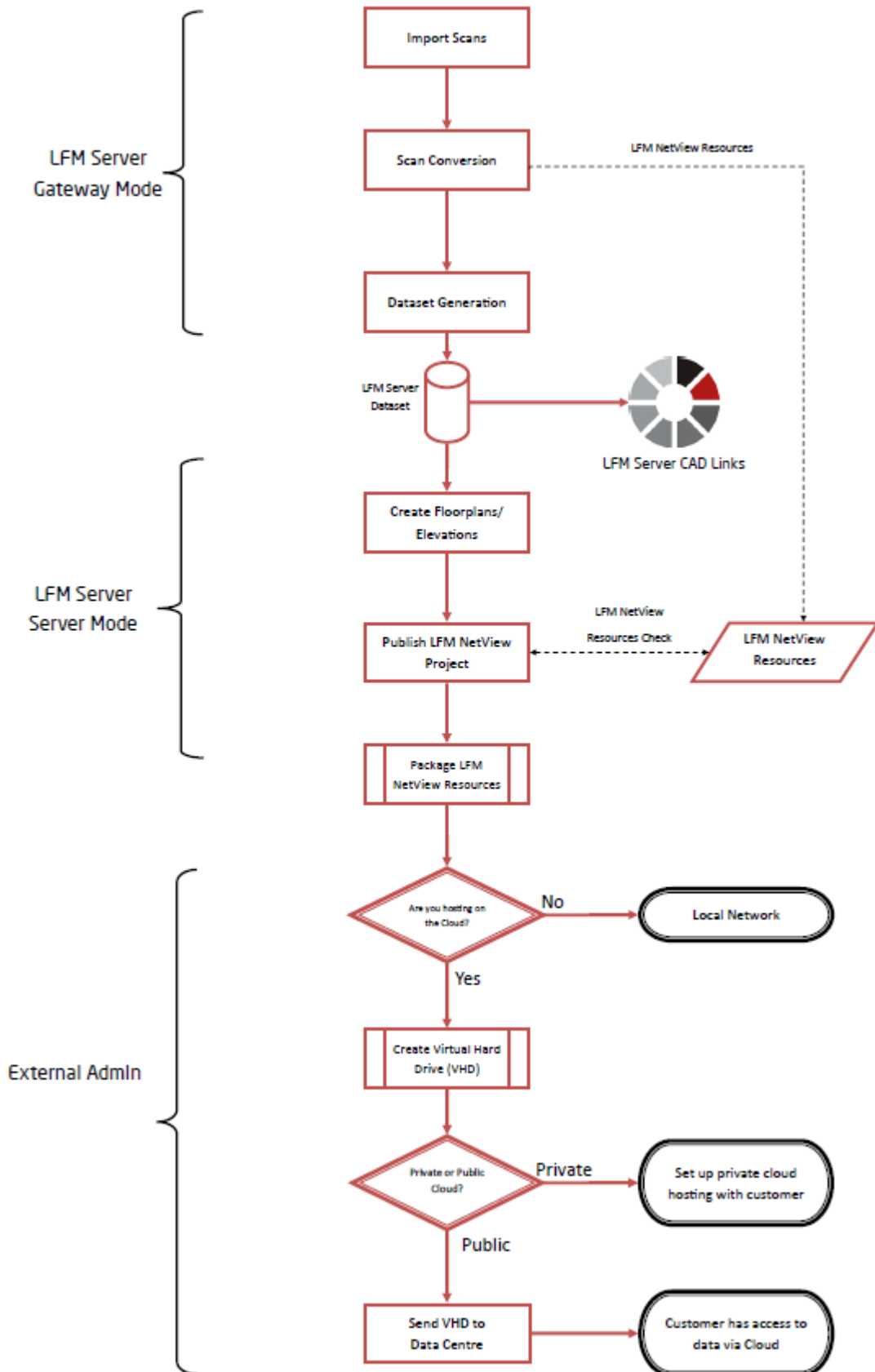
There are three different ways of hosting an *LFM NetView* project. These are:

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

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



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



## 2 Prerequisites

### 2.1 Graphical Requirements

*LFM NetView* project publishing requires a reasonably powerful graphics card with the very latest drivers. It has been developed using NVidia graphics cards, and LFM recommends using these where possible for optimum performance and reliability. 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 *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

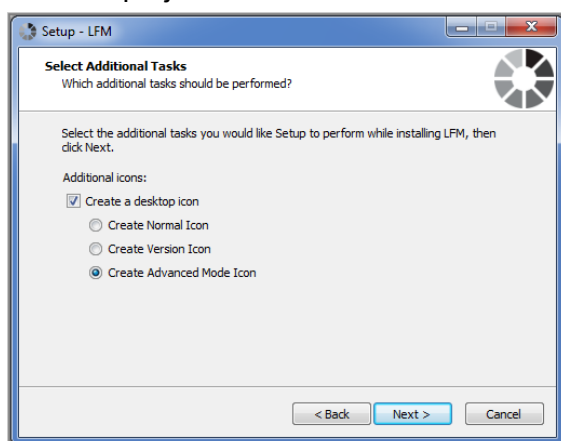
#### Supported Cards:

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.

### 2.2 Advanced Mode Installation

*LFM Server* no longer requires a dongle for *LFM NetView* project creation. To avoid unauthorised users taking the *LFM NetView* creation license there is now an option to install an advanced version of *LFM Server* which gives access to this feature. This is illustrated in the screenshot below. *LFM Server* should be run from the Advanced Mode shortcut in order to be able to create a new *LFM NetView* project.



## 2.3 License Requirements

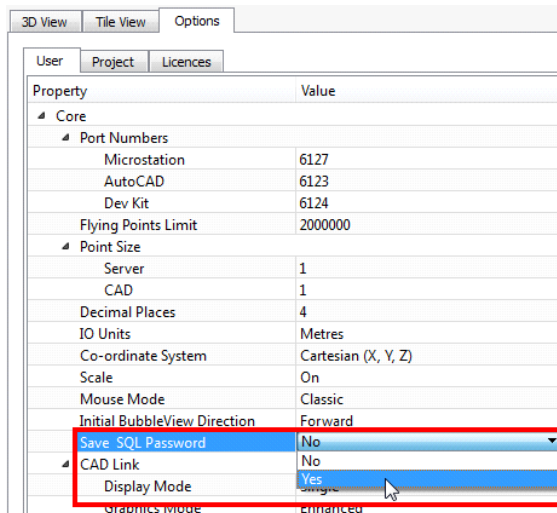
In order to publish an *LFM NetView* project an LFM NetView Creator license is required. For further information about *LFM* licenses please contact your LFM Value Added Reseller or [license.request@lfm-software.com](mailto:license.request@lfm-software.com).

### 3 User Account Creation

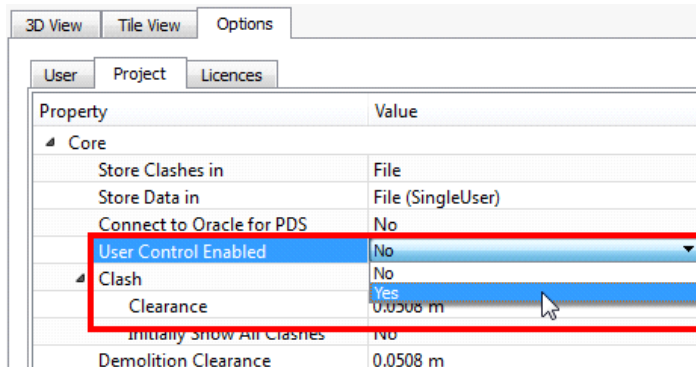
LFM NetView 4.2.1 onwards support both Single Sign On and LFM Server User authentication. If you wish to use LFM Server User authentication, this requires user accounts to be set up in LFM Server to control secure access.

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

1. Go to **Options > User** and set **Save SQL Password** to **Yes**.

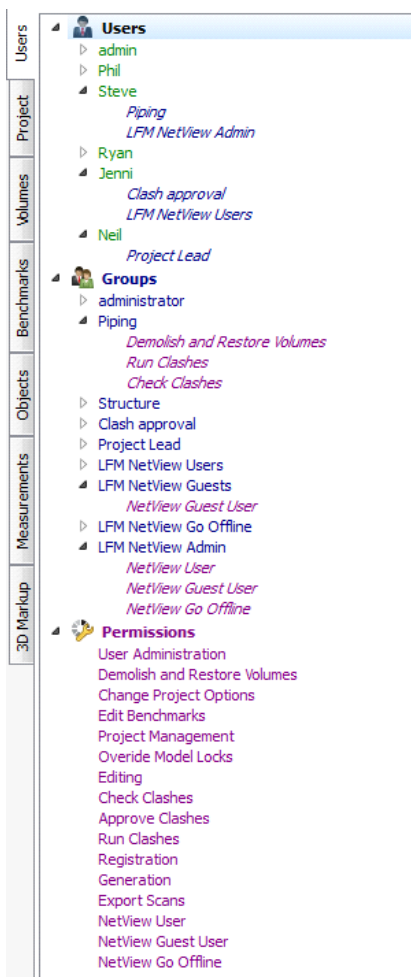


2. Switch to the **Project** tab and set **User Control Enabled** to **Yes**.





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:



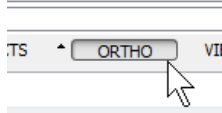
5. To set up a new group, right click on the Group entry and select **New > User Group**.
6. Name the User Group and click **OK**.
7. To set the permissions for this group, click and drag the desired permission from the Permissions section onto the appropriate group. Repeat this for all the desired permissions.
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) left click and drag the desired group from the Groups section onto the appropriate user. Repeat this for all the desired subscriptions.

For *LFM NetView*, the relevant permissions are:

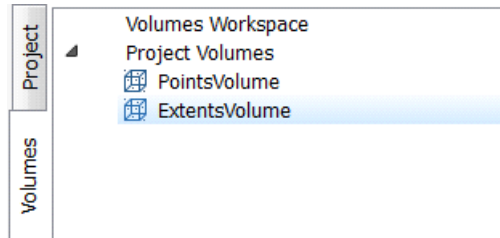
- NetView User. Allowed to access/view the project and save Markups /measurements to the project.
- NetView Guest User. Allowed to access/view the project and create Markups/measurements. However, these Markups/measurements will not be saved to the project for future use.
- NetView Go Offline. Allowed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

## 4 Floorplan Volume Creation

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



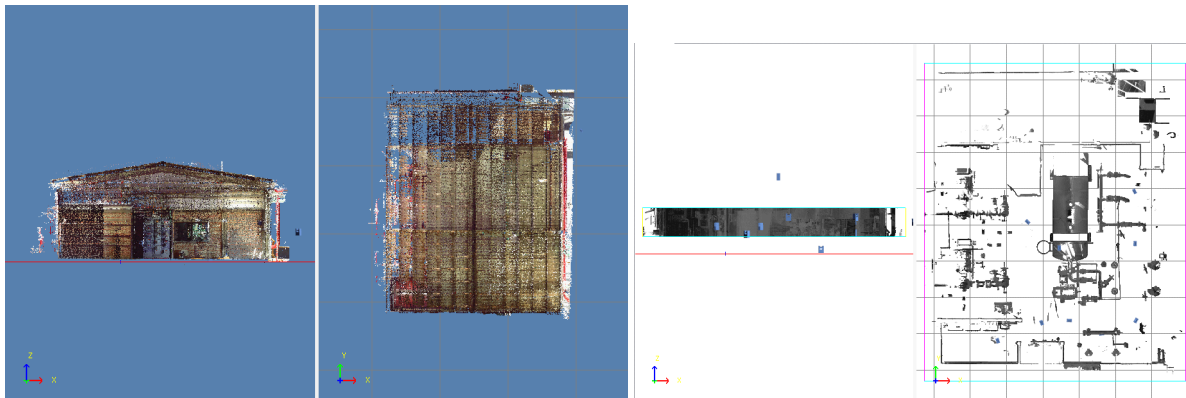
The user should select ORTHO mode in order to define the floorplan(s) using Volumes in the 3D View. For further information about volume creation in *LFM Server* please see the [LFM Server Home Guide](#).



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 a 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.

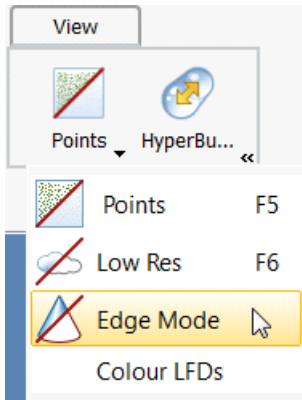
The volumes should be saved to the **Project Volumes** node and provided with a suitable name.

The screenshot below shows a sample project in the Ortho view at low resolution.



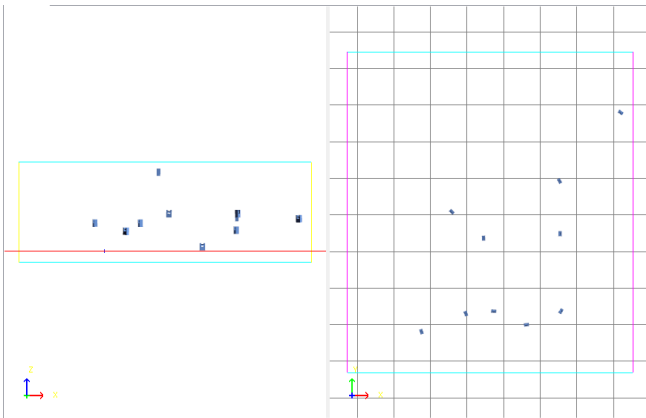
The screenshot left shows an example of a volume that is appropriate for the floorplan. Note how in the left view there are scan site markers that are outside of this volume.

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.



Edge Mode can be turned on by clicking on the **Points** drop-down menu on the **View** tab and selecting the **Edge Mode** button as shown above.

The screenshot below shows 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, click the **Points** button on the **View** tab at the top of the *LFM Server* interface.

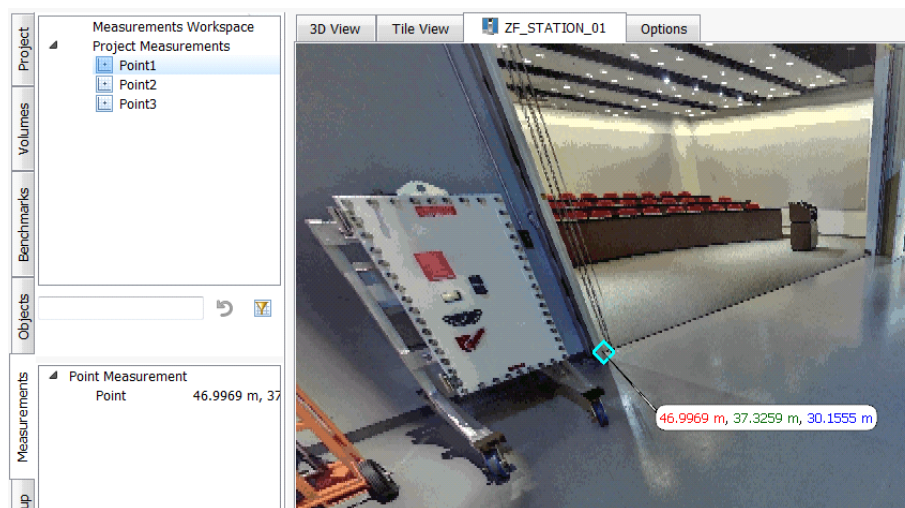
## 5 Google Maps Integration

LFM NetView 4.2.1 onwards supports the use of a Geographic Information Systems (GIS) landing page (Google Maps). The instructions below will take you through how to publish the .xml file required to enable use of this feature.

### 5.1 Creating Point Measurements

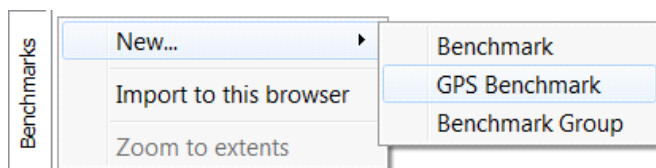
Using LFM Server's Measurement toolkit, create point measurements inside the LFM Server dataset that correspond to the known GPS coordinates. Drag the point measurements into the Project Measurements area of the Measurements Manager and rename them if desired.

**Note:** A minimum of 3 point measurements with corresponding known GPS coordinates are required to publish GIS information for LFM NetView.



### 5.2 Creating GPS Benchmarks

Within the **Benchmarks Manager**, right click in the white space and select **New > GPS Benchmark**.

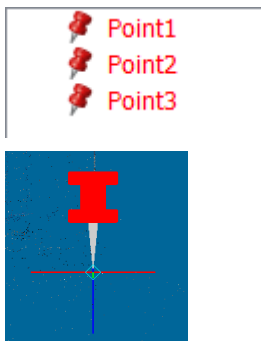


The dialog shown below appears. Enter the desired GPS Benchmark name (it is often beneficial to give a name related to the relevant point measurement).

Enter the relevant GPS position which can be copied from Google Maps. If LFM Server detects 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 will not give the elevation but this can be obtained from other sources such as <http://veloroutes.org/elevation/>.

Enter the relevant LFM Position by expanding the **Project Measurements** node of the dialog. Here you will see the point measurements created in section [Creating Point Measurements](#). Double click on the relevant point measurement to set the Benchmark to that position. Repeat this process for all the point measurements created in section [Creating Point Measurements](#).

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

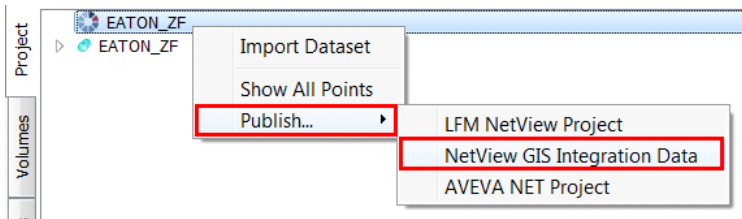


## 5.3 Publishing the .xml File

Once 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 LFM NetView project, this will be done automatically as part of the LFM NetView Project Publishing process (see below). If you are working with an already published LFM NetView project, you can publish the .xml file as a separate process.

To do this, right click on the project node within the **Project** tab and select **Publish > NetView GIS Integration Data**. Select the desired output folder and click the **Select Folder** button. A confirmation dialog appears when the publish is complete.

Please refer to the [LFM NetView 4.2.1 Deployment Guide](#) for how to proceed from this point.

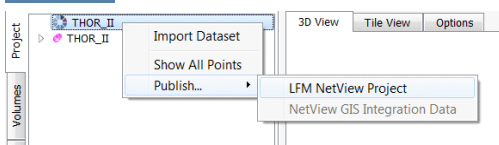


## 6 LFM NetView Project Publishing

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

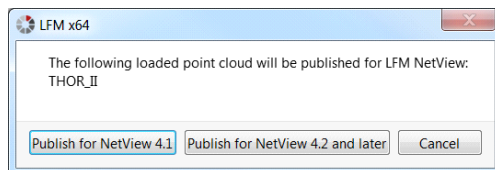
**Note:** Ensure that all of these files for all datasets being published are stored in the same folder before beginning the publishing process.

**Note:** If there is demolished data in the LFM Server datasets being published, you will need to re-produce the HyperBubble resources if you require the demolition to be reflected in the LFM NetView project before beginning the LFM NetView publishing process. For guidance on how to do this, refer to the HyperBubble Creation and Use Guide which can be accessed here – [HyperBubble Creation and Use](#).

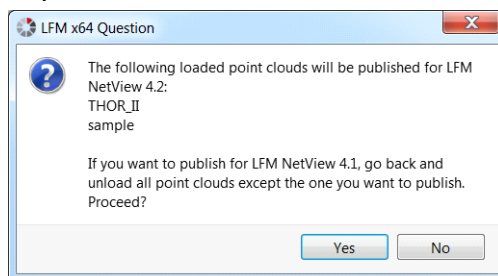


To begin the publishing process:

1. Right click on the project node and select **Publish > LFM NetView Project**. The *LFM NetView* project publish will look to publish any datasets that are currently loaded.



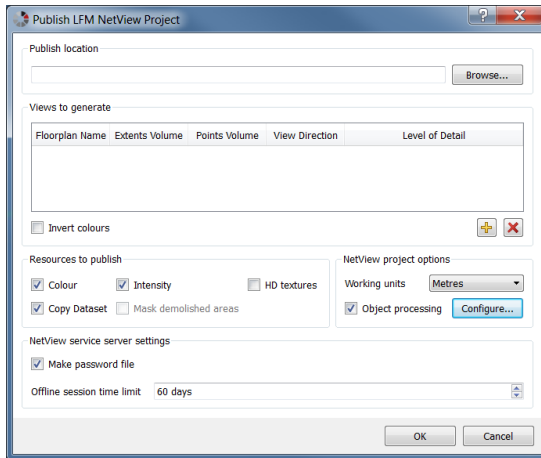
2. If only one dataset is loaded the message shown above appears. Select whether you wish to publish for *LFM NetView 4.1* or *LFM NetView 4.2+*.



3. If multiple datasets are loaded the message shown above appears. Multi-dataset *LFM NetView* projects are supported in LFM NetView 4.2. **Note:** For *LFM NetView 4.0/4.1* only one point cloud can be loaded at the point of publishing the *LFM NetView* project.



4. This brings up the dialogue as shown below. Fill in the details including pointing to the volumes created in the previous chapter for the points extents and scan site extents.



**Publish location:** The folder where the resulting files are stored.

**Views to generate:** These components are what will make up the floorplans displayed in the LFM NetView project.

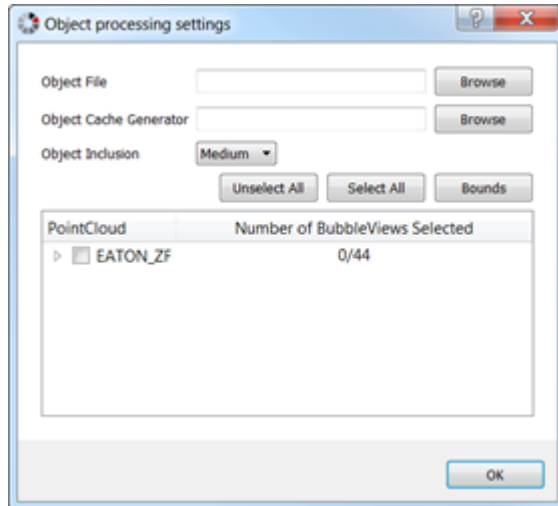
- **Floorplan name:** The name of the floorplans as displayed in LFM NetView.
- **Extents volume:** The volume that determines which scan locations will be displayed in that floorplan. Any scan sites outside this volume will not be displayed in the *LFM NetView* floorplan.
- **Points volume:** The volume that determines which points will be displayed in that floorplan. Any points outside this volume will not be displayed in the *LFM NetView* floorplan.
- **View direction:** The direction from which **Points Volume** is viewed in the LFM NetView floorplan.
- **Level of detail:** Specify the level of detail for each floorplan. For larger floorplans this should be set to **High**. For small projects **Low** is usually adequate.
- **Invert colours:** Floorplans in LFM NetView display as either white points on a black background or black points on a white background. By default floorplans will take on the current setting for the Edge Mode background in *LFM Server* (this can be configured in the **Options > User** tab). If you wish to invert these colours, enable **Invert colours**.

**Resources to publish:** These options control which resources will be published for the LFM NetView project.

- **Colour:** Tick to generate colour LFM NetView BubbleViews (only available for colour scans).
- **Intensity:** Tick to generate intensity LFM NetView BubbleViews.
- **HD Textures:** Tick this to produce the required resources for the magnification window in LFM NetView.
- **Copy dataset:** Copy the LFM Server dataset (.lfd) into the publish location. This is most useful for cloud hosted projects. For locally hosted project a copy of the LFM Server dataset is likely to already be available.
- **Mask demolished areas:** Mask any demolished points from the LFM Server project as black in the LFM NetView BubbleViews.

### LFM NetView project options:

- **Working units:** Default working units for the LFM NetView project.
- **Object processing:** Tick to include the specified objects file in the LFM NetView project.
- **Configure:** This will present the Object Processing Settings window as shown below:



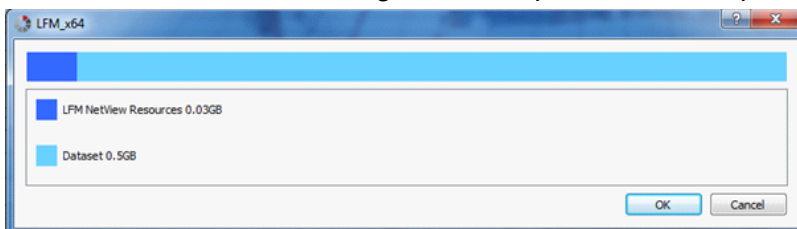
- **Object File:** Browse to the location of the objects (.zgl) file
- **Object Service:** Navigate to the Object Service executable. This is installed with *LFM Server* and can be found in the “**LFM NetView Object Cache Generator**” folder where *LFM Server* is installed (by default **C:\Program Files\LFM Software\LFM NetView Object Cache Generator**).
- **Object inclusion:** You can select either **HIGH**, **MEDIUM** or **LOW**. This informs the object service to decide whether certain objects should be included in the visibility list. From a technical perspective if this is set to HIGH then imagine if you are looking at the object from the position of a scan site. If you can see at least 10 pixels belonging to the object, then it would be considered visible and added to the visibility list. 20 pixels for MEDIUM and 30 pixels for LOW.
- **Generate LFM Object Service configuration file template:** This will offer to create an immature object server configuration file, setup to serve object files rather than process the data. This is a useful starting point when setting up a new object service.
- **Select / Unselect buttons:** Select the BubbleViews the object file should be processed against. It is usual for all the BubbleViews to be selected.

### LFM NetView service server settings:

- **Make password file:** Tick to generate a passwords file for the users and permissions in the current project. These will also be used to create users for the LFM NetView project and check their LFM NetView related permissions.
- **Offline session time limit:** Specify how many days an offline *LFM NetView* session will remain valid for. This is useful for ensuring that users accessing an offline LFM NetView session keep their data up to date.

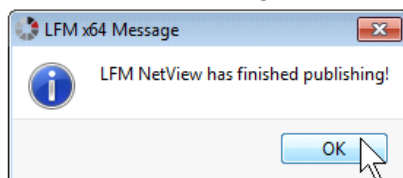
On clicking **OK** you will be prompted for the location of the .zfc files. Browse to the folder and click **Select Folder**.

An overview of the required space is presented. Click **OK** and the publishing process will begin. While the LFM NetView Publishing process completes, the implementer can start to prepare the Virtual Machine at the hosting centre for private cloud implementations.



Your LFM Value Added Reseller (VAR) will provide further guidance on how to set up the Virtual Machine. To find your local LFM VAR please visit <http://web.lfm-software.com/en/Value-Added-Resellers.aspx>. If there is no LFM VAR in your area please contact [support@lfm-software.com](mailto:support@lfm-software.com).

When the publishing process is complete the message shown below is displayed:



## 7 VHD Creation (Cloud deployment only)

For small *LFM NetView* projects (less than 100 scans) it is possible to copy the project from the local *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 *LFM NetView* project data.

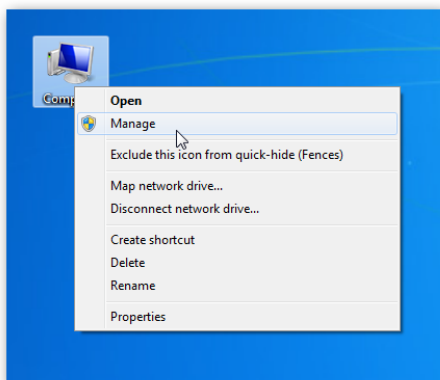
### 7.1 Creating the VHD (Windows 7)

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.

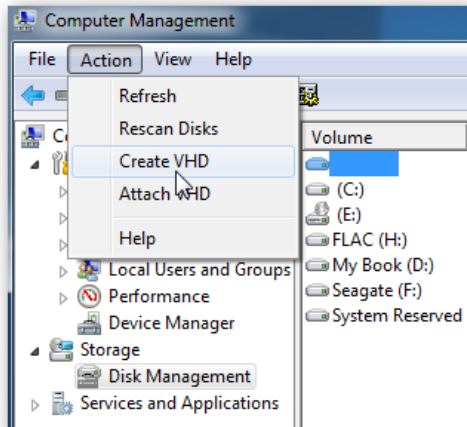
This process creates virtual disks in the .VHD format where the minimum size is 3MB.

To begin:

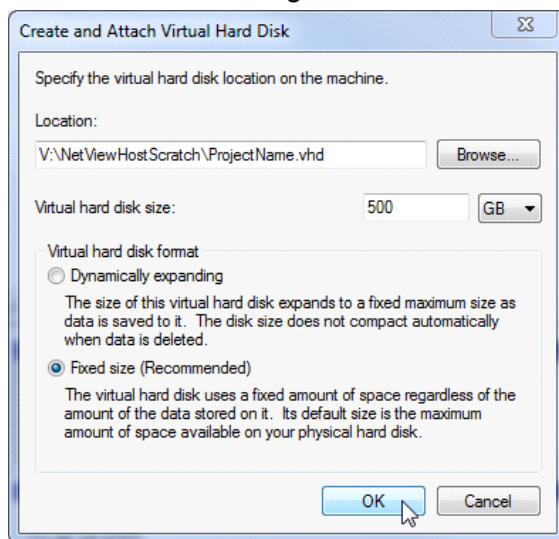
1. Right-click on **My Computer** and select **Manage**.
2. Alternatively, you can type `diskmgmt.msc` into the **Windows Start** search box and press **Enter**.



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

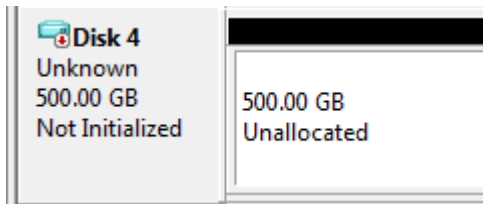


4. Browse to the directory where you want the disk to reside, choose the size you want it to be (based on the estimation given at the beginning of the *LFM NetView* publishing process), and select dynamic or fixed.
5. If you want the disk to expand in size as you add files to it, then pick Dynamically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

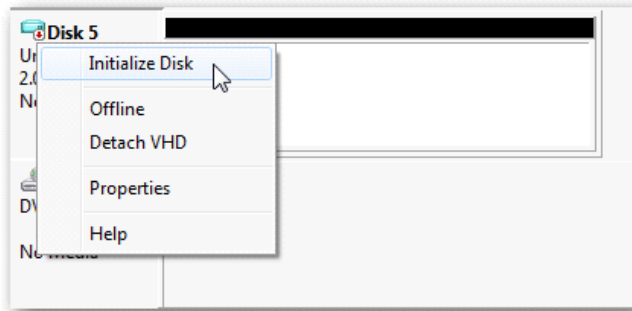


6. The VHD will now be created; you can follow progress by observing the status bar at the bottom of the interface. **Note:** Creating large VHDs on network drives can take a few hours to complete. As a guide a 500GB VHD will take about 1.5 hours to create.

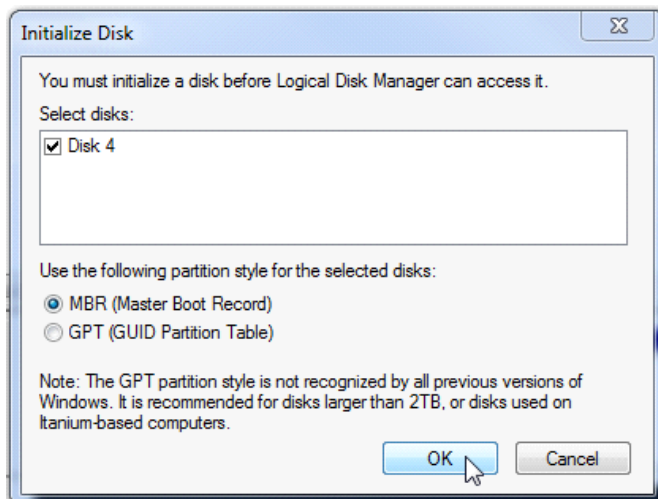
7. After it is complete, you will see the virtual drive listed in Disk Management as unallocated space.



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



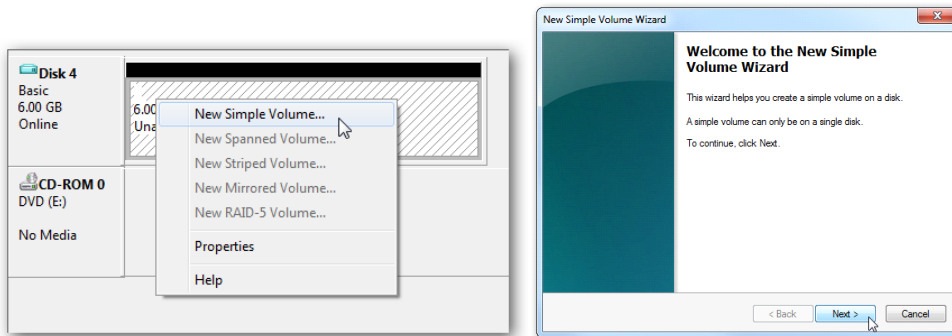
9. In the Initialize Disk box select **MBR (Master Boot Record)** and click **OK**.



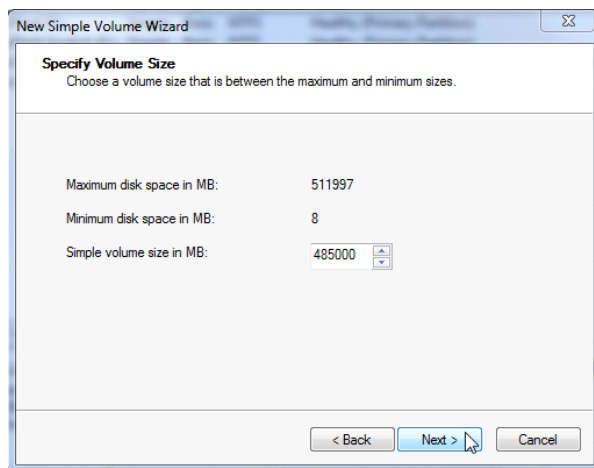
## 7.2 Create a Volume

To create a volume:

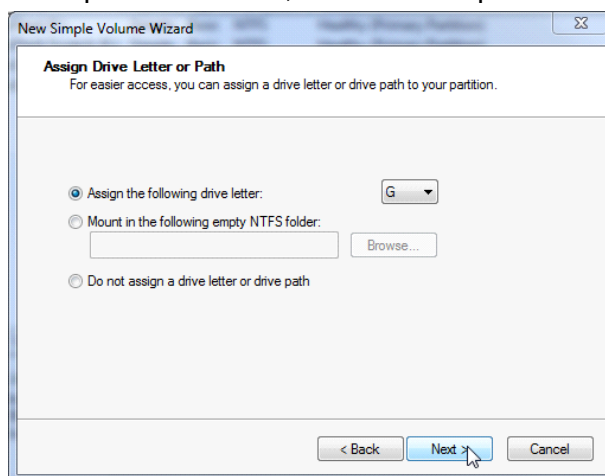
1. Right click the unallocated space and select **New Simple Volume**. The wizard shown below appears.



2. Click **Next**.

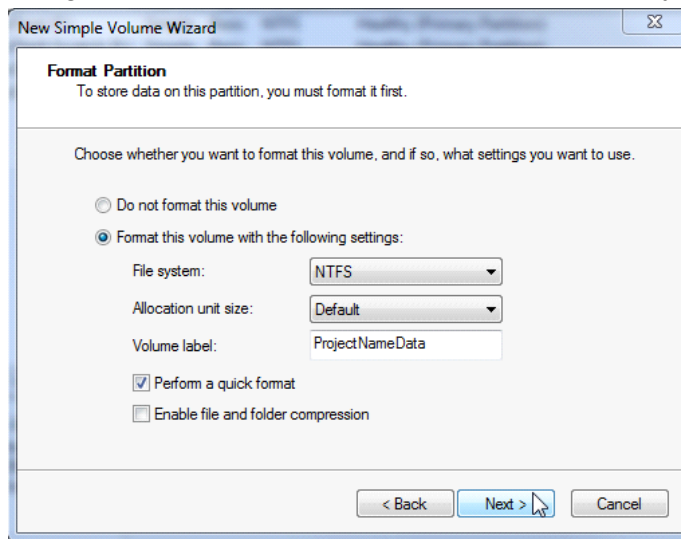


3. Select the amount of space you want to use for the volume. For example, the maximum disk space is 511 GB, make the simple volume size 485 GB.

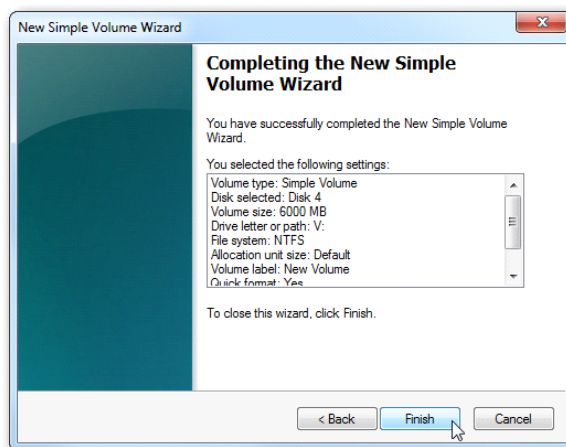




- Assign the volume a drive letter that is not currently being used.

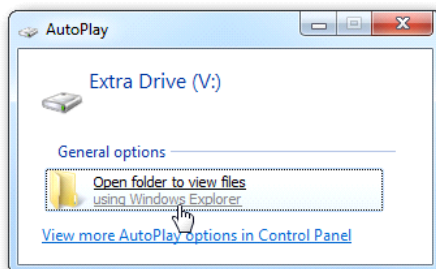


- Format the new volume as NTFS. Tick the relevant boxes if you want a quick format and file compression.



- The wizard is complete, click on **Finish**.

If you have AutoPlay enabled Windows will display 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.

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At this point you should contact your local LFM Value Added Reseller (VAR) for further assistance. To find your local LFM VAR please visit <http://web.lfm-software.com/en/Value-Added-Resellers.aspx>. If there is no LFM VAR in your area please contact [support@lfm-software.com](mailto:support@lfm-software.com).

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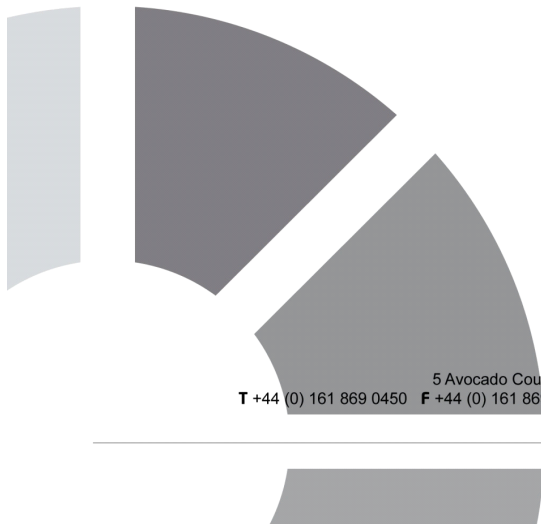
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