

Access Grid 3 Install Tutorial

What is Access Grid?

The Access Grid is an advanced videoconference system where people in different places meet in a 'virtual venue' using audio and video tools, and other shared applications, such as presentations [Access Grid Support Centre]

Access Grid allows users to meet with Access Grid users across the world, using freely available software.

The term 'node' is used to identify the location of an access grid client. Access Grid nodes range from a single PC with a webcam and an audio headset to a large meeting room with multiple cameras, multiple projectors and specialist audio hardware.

What are the minimum requirements for Access Grid?

There are a number of network requirements for the use of access grid

Multicast Enabled Network

This document assumes that Multicast is available. Multicast is a technology essential to the efficient broadcast of video and audio on Access Grid. If Multicast is not available an alternative is to use Unicast. This document does not detail the use of Access Grid and Unicast. Reference material is available at accessgrid.org.

Once installed, the Access Grid Client Software has a built in Multicast tester that will signify if Multicast is available. Please refer to the troubleshooting section for more information.

Firewall requirements

Access Grid software makes a number of connections to different ports on the server hosting a meeting. Due to the number of connections required, it is recommended where possible an access grid nodes bypasses any firewall. If this is not possible, a guide to ports used by access grid is available – [click here](#) (<http://www.accessgrid.org/agdp/guide/ports/1.03/index.html>)

Obtaining the Access Grid Client Software

There are two node software packages available. [Insors](#) provide a commercial solution, and accessgrid.org provide an open source free solution named AG3. This document focuses on AG3 on the Windows XP platform.

The latest AG3 software is available via the accessgrid.org website. Alternatively, [click here](#) to visit the AG3.0.2 download page. 3.0.2 is the latest version of the software available on 24/4/07.

The Access Grid software uses a number of external libraries that must be installed before use. Currently these are (in order)

Order	Library	Notes
1	Python 2.3	Ensure all available components are installed
2	Python Win32 Extensions	
3	wxPython	Carry out a full installation. On the last install screen, ensure the following are selected <ul style="list-style-type: none"> • Compile Python .py files to .pyc • Create batch files for tool scripts A black box will appear and compile .py files
4	Bonjour	Restart your computer after the install

Download and install these libraries in the order signified on the download page

Finally, download the Access Grid Client software, available as the last item on the AG3.0.2 download page (currently AGTk-3.0.2-Final-Py-2.3.exe).

Installing the Access Grid Client

If a previous version of the Access Grid client has been installed on this machine, remove it using 'add/remove programs'.

Double click the Access Grid installer (currently AGTk-3.0.2-Final-Py-2.3.exe). After agreeing to the license, it is recommended that Access Grid toolkit is installed in the default location.

First Run of Access Grid Software

Once installed, run Access Grid by either

- Clicking on the 'Access Grid 3 Venue Client' link on the desktop
- Using the Window 'Start Menu', select 'Access Grid Toolkit 3 -> Venue Client'

On the first run of AG3, A window will appear asking you for node details (pic). This window does not automatically appear. Close all other windows if it is not visible.

Please, fill in your profile

Profile

Name: <Insert Name Here>

Email: <Insert Email Address Here >

Phone Number: <Insert Phone Number Here >

Location: <Insert Postal Address Here >

Home Venue: https://vv3.mcs.anl.gov:8000/Venues/default

Profile Type: user

Ok Cancel

The home venue should be set to

<https://sam.ag.manchester.ac.uk:8000/Venues/default>.

Please note that this URL is case sensitive

Once you click OK the Venue Client interface should appear (Figure 1)

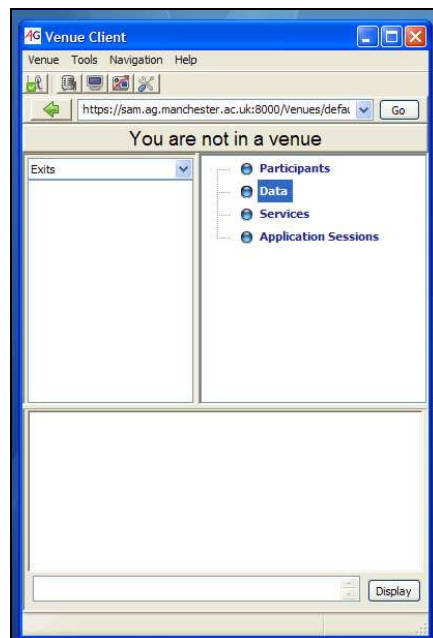


Figure 1 – Venue Client on Launch of AG3

Using Access Grid

Setting up a Web cam and Microphone

Neither a web cam or microphone are necessary to use Access Grid – Users are free to join rooms without either (this is a common configuration for viewing Access Grid based seminars/lectures).

All incoming and outgoing media in Access Grid is treated as a service. For example, if you want to send video to a Venue, you will need a ‘video producer’ service (which represents a single web cam). To view video being send to a Venue, you will need a ‘video consumer’ service.

To manage your services, click on ‘Tools’ from the main venue client interface (Figure 2) and select ‘Configure node services...’. The Node Management window should appear (Figure 2).

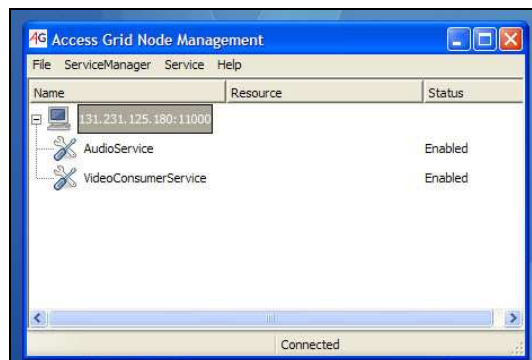


Figure 2 – Access Grid Node Management Window

All currently installed services are listed in this window. By default an Audio Service and Video Consumer Service should be installed and enabled.

To add a Video Producer Service (web cam) click on ‘Service’ and then ‘Add...’. A list of service types should appear. Select the service type (VideoProducerService) and click ok. Finally, select a Video Resource (Figure 3). Your web cam type should be listed. Select it and click OK. If there are multiple listings for your web cam, a ‘WDM’ resource is preferred.

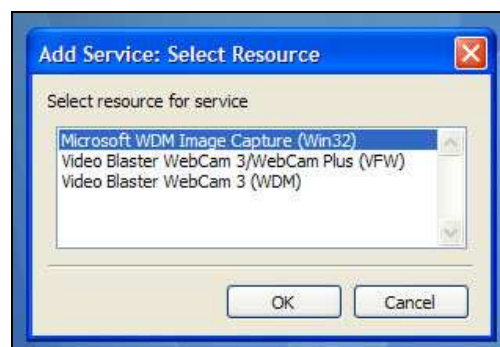


Figure 3 – Select Video Producer Resource Window

Once all services have been configured, save them by selecting 'File' -> 'Store Configuration' on the 'Access Grid Node Management' window. The default configuration can be overwritten, or a new configuration can be created.

What are Virtual Venues?

A Virtual Venue is analogous to a meeting room. When holding a meeting on the Access Grid, a Virtual Venue must be specified. Virtual Venues are persistent, that is, they do not disappear after a meeting has finished. Each Virtual Venue has a unique URL (like a webpage).

A Virtual Venue Server hosts one or more Virtual Venues. Within a given server, the venues are organised into relevant groups. When setting up AG3, we specified a Home Venue (Virtual Venue Server) as '<https://sam.ag.manchester.ac.uk:8000/Venues/default>'. This is the Virtual Venue Server provided by the JANET Access Grid Support Centre.

The Virtual Venue Server provides a list of all available Virtual Venues, arranged into logical groups. For example, the JANET Access Grid Support Centre Virtual Venue Server organises venues as such

- AGSC Venues
- Original Venues
- SC Global 06 Lobby
- Test Venues
- UK Shared Virtual Venues
- UK Venues
- University of Manchester

The Access Grid Support Centre host a Virtual Venue for Loughborough. This is available in the UK Venues group, and is called 'Loughborough University (Computer Science)'

All Virtual Venues have 'exists' to other Venues. For example, the Loughborough University venue has an exit leading to the 'UK Venues' group.

Joining a Virtual Venue (Meeting)

For the first meeting we'll join the Access Grid Support Centre lobby. If you set the Access Grid Support Centre as your Home Venue, this address should already be in the address field (next to the 'go' button). If not, enter the following URL into the box to the left of the 'go' button

<https://sam.ag.manchester.ac.uk:8000/Venues/default>

To join the venue, click the 'go' button.

Interface during a Meeting

When joining a meeting, a number of different windows will appear and the main Access Grid Venue Client will change (Figure 4)



Figure 4 – Venue Client window during a meeting

The venue client will list all participants/nodes in the meeting to the right of the room list. A chat window is provided at the bottom of the window that provides text communication to all other access grid participants/nodes in the meeting

Video Windows

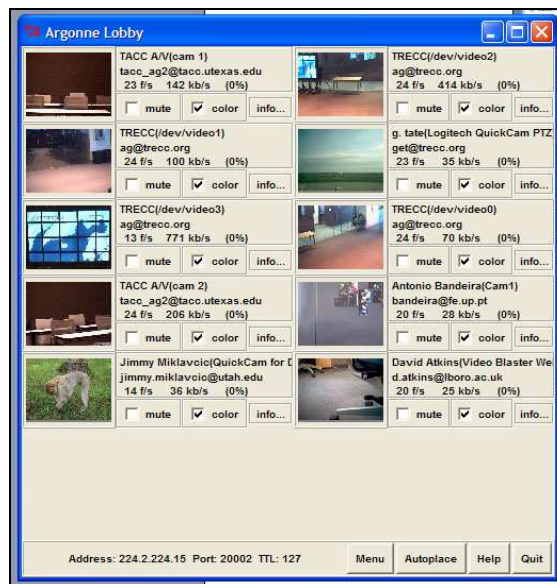


Figure 5 – Video Window

One or more video windows (also known as ‘VIC’) will appear when joining the meeting (Figure 5). One video window (always provided, Figure 5) shows the cameras of all other users in the meeting. This window will have the name of the

room in the title bar. An additional video window is shown for each camera transmitting to the room, with the name of the camera shown in the title bar. All video feeds are ‘un-muted’ in the receiving video window and all video feeds are ‘muted’ in the sending video window(s).

The sending video window(s) can generally be minimised and not used during the meeting. To view a bigger version of any other participants video, click on the image in the video receiving window. Use the keys ‘s’, ‘m’ & ‘l’ to change the size of the video window that appears.

By default video will not be automatically transmitted when joining a meeting. To enable video transmissions, click on the ‘send video’ button in the Venue Client (Figure 6)

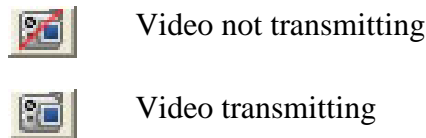


Figure 6 – Video Transmission Button States

When enabled, one or more video transmission windows should appear

Audio Window



Figure 7 – Audio Window

By default audio is not transmitted when joining a meeting. The audio window (Figure 7), also known as RAT, provides options to enable audio and control the audio level of all other participants audio.

To send audio to all other participants in the meeting, tick the ‘talk’ box. Volume for each participant can be modified by moving the slider next to the participant’s name.

Joining Other Virtual Venues

To access any Virtual Venues linked to the Venue you are currently in, double click on its name in the left hand side of the Venue Client window.

Troubleshooting

There are a number of reasons why Access Grid may not be behaving as expected (not joining rooms / locking up). Closing and restarting the access grid software can solve many common problems

The message 'Error entering the venue. Operation timed out' appears

Ensure that a valid venue URL is being used. Venue URLs are case sensitive. This message can also appear if a firewall is blocking access services.

Check Multicast Is Working

The AG3 software has a built in Multicast tester. Look at the first icon on the AG3 toolbar and refer to Figure 3 for its state.



Multicast Available



Multicast Not Available

Figure 8 – Multicast Button States

Multiple Network Cards

If you have more than one network card installed, try removing Ethernet connections from all cards apart from the one connected to the internet. Once connected to a room, the connections can be returned

If you receive the message 'NTVDM CPU has encountered an illegal instruction'

In some cases, files left from an older AG installation causes this problem. Please try following:

- Rename directory C:\Documents and Settings*Username*\Application Data\AccessGrid\ApplicationDatabase
- Rename directory C:\Documents and Settings*Username*\Application Data\AccessGrid\Config\ApplicationDatabase
- Rename directory C:\Documents and Settings*Username*\Application Data\AccessGrid\SharedApplications
- Restart AG3

Useful Links

AccessGrid.org

Home of the AG3 Client Software

[Access Grid Venue Client Manual](#)

Official AG3 manual. Please note that this is slightly out of date.

[UK Access Grid Support Centre](#)

JANET Access Grid Support Centre, based at Manchester

[inSors](#)

Providers of commercial access grid solutions

Tutorial prepared by Mr. David Atkins.

This report is intended for internal use at Loughborough University, please use the web to search for any updates/modifications on access grid installation/usage.