

# WIRL Career

## Information Technology Brief

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*This document is designed to assist career advisers and I.T. Support staff and in administering the WIRL Career resource. This information can be used in the event that the users or network administrators experience technical issues with the WIRL Career. To discuss these issues or to report any difficulties contact WIRL Media.*

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### **Streaming and Firewalls**

WIRL Career segments are streamed as opposed to served on a web server. Unlike a simple webpage where the information is sent to your computer from the web server a streaming server keeps a constant link with your computer to ensure that the video is streamed reliably and that a good connection is constantly maintained.

Most school networks protect their networks using a firewall. This protection is for a number of reasons one of which is to stop the students from downloading massive amounts of videos and songs or questionable material. However there is a fine balance here in that the reason schools have internet access in the first place is to provide access to education resources.

A firewall is a piece of hardware or software that prevents data packets from either entering or leaving a network. To control the flow of traffic, numbered ports in the firewall are either opened or closed to specific types of packets. The firewall reviews two pieces of information in each arriving or departing packet: the protocol through which the packet is being delivered and the port number to which it is being sent. If the firewall is configured to accept the specified protocol through the targeted port, the packet is allowed through.

So with that in mind the recommended solution is to open up the streaming ports for a trusted site using an exceptions list. This means that the streaming ports are not open for all sites but just for sites that are trusted by the school.

When streaming Microsoft Media servers will roll through streaming protocols until the optimum protocol to stream is found. Since WIRL Career is using an embedded media player 7 then MMS will be the protocol used which will target port 1755. However if your school uses windows media player 9 then the streaming server will use RTSP TCP protocol using port 554. If for some reason TCP protocol is unavailable at the school then the streaming server will rollover to UDP and use ports 5004 and 5005.

These streams are played on Windows media player and which should be already configured to be able to view streaming media. But if you need to check. Open media player then go to Tools/Options/Network and then ensure that all the checkboxes are ticked.

### **Download Quotas**

Download quotas are used by IT teams to control internet usage and to put the onus back on to the users at a school to manage their own internet use. The daily or weekly download limit is set in accordance with a school policy and monitored using a software program.

Moving forward more and more education resources will be delivered online which is a good thing because it means that the technology is being leveraged for education rather than just advertising and entertainment. Education resources will increasingly incorporate rich media (like WIRL Career) which is heavier on internet usage but keep in mind this is what the internet was invented for in the first place. So the ideal solution to any internet quota issue is to increase the limit in recognition of these new resources.

## Download Quotas

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However changing quota limits might get difficult at some schools so here's a couple of 'work arounds'.

Firstly the WIRL Career website and our streaming server can be added to a download exceptions list within the monitoring software so that downloads from this specific site aren't included in the daily quota. (Contact WIRL for exception location details)

The next solution is to create a single specific career account that students can login to when they need to look at a media rich resource like this. That way the downloads are associated with this account rather than the students own accounts. The quota for this account can be set much larger to account for the usage. This account can be limited to career specific sites like WIRL Career to ensure that this account is not abused.

## Managing Bandwidth

WIRL Career video segments are delivered to your computers using video streaming which is dependant on the bandwidth at your school. This in turn affects the way you use the resource. If your school has a large connection then you might have 10 + students logged on at once. On the other hand if bandwidth is in short supply the best way to manage the resource is to use it when you meet with students one-on-one or send students away to explore in a computer lab or at home. When using WIRL Career in a classroom situation you may want to split the students into groups to browse the resource if you have bandwidth constraints. Other ways to manage the resource include using only a set number of designated computers where students may access WIRL. For example a row of computers in the career office, Library or computer lab may be designated as the computers to use when exploring WIRL. That way a limited number of concurrent connections may be used at any given time.

Bandwidth to schools and homes is increasing rapidly. Each year connections and capabilities dramatically increase. Which means even during the subscription period your connection speed will increase. The best way to determine this capacity is to just try how many connections you can get working at once. Or if you really want to get serious by calculating the amount of 300kbps connections possible given the school bandwidth. Career Advisers should work with the relevant I.T. Staff to determine what is reasonable.

## Bandwidth Costs

Since WIRL Career is based on media streaming some IT staff have initially felt that this that this may result in increased bandwidth charges. The following calculation shows the how minimal these downloads actually are.

Example:

*A career adviser uses this resource for all 150 students in the year 10 level. Assuming each student explores 10 segments each this would result in an annual download of 13.2 Gb given that the average video file size is 9mb.*

*150 X 10 X 9mb = 13,500 Mb or 13.2 GB.*

This usage would easily fit within most existing school internet plans especially given that it is unlikely that this usage would all occur in any single month.