

URcast Networking FAQs – January 2015



- **How does URcast work?**

URcast is a distributed caching system that delivers educational material as 'Messages' to your students' devices. Teachers publish Messages to a URcast server, this server will replicate those Messages to one or more URcast delivery appliances, and the delivery appliances provide the information to the student device. The delivery appliances usually live inside the school; servers can be located inside the school, in a data center, or at a hosting provider.

- **How will URcast affect my network?**

Since students receive their learning materials from a delivery appliance on the local network, the outbound network for students to retrieve this content is completely eliminated. Also since the Messages are replicated to the student devices, each use does not require external network access.

- **How do I configure all of these devices to communicate?**

URcast is designed to work with minimal configuration using an announcement protocol for device discovery. Students' devices can discover the delivery appliances rather than requiring an explicit network configuration. Similarly delivery appliances can discover a URcast server on the same network instead of configuring its network address. You must enable certain networking features to allow the network announcements if you wish to use them.

- **How do I configure my network to use the announcement protocol?**

URcast supports announcements over both UDP broadcast or TCP multicast groups. You can use either or both or even a mixture of them with explicit network addresses for your student and URcast devices. For UDP broadcasting you must enable broadcast relaying on the routers in your network. For TCP multicasting you must enable multicast groups on your routers. For the specific network port numbers, see the following question.

- **What network ports are used by URcast?**

The table below shows the network ports used by student devices to communicate with the URcast infrastructure:

URcast Communications – Student Devices	Protocol	Port(s)
Message retrieval from Gateway – Windows Devices	TCP	50000
Message retrieval from Gateway – Other Devices	TCP	50003
Student Replies to Server - Windows	TCP	54325

URcast Communications – Student Devices	Protocol	Port(s)
Student Replies to Server – Other Devices	TCP	54324
Student device using Server-based Gateway Discovery	TCP	54324
Infrastructure Discovery – Broadcast Option	UDP	54328
Infrastructure Discovery – Multicast Option	TCP	54329 [address: 234.56.78.9]

In addition to the access for students described above, teacher's devices will need access to the following network ports:

URcast Communications – Teacher's Devices	Protocol	Port(s)
Message Publishing to Server – Windows Message Builder	TCP	54321, 54322
Message Publishing to Server – Web Message Builder	TCP	80
Retrieving Student Replies from Server - Windows	TCP	54325
Retrieving Student Replies from Server – Web site	TCP	80
Content Management Service – Windows	TCP	54323
Content Management Service – Web site	TCP	80

This table shows the network ports used by Servers and Gateways to communicate with each other:

URcast Communications – Servers and Gateways	Protocol	Port(s)
Gateway Appliance Replication from Server	TCP	54321, 54322
Server to Server Replication	TCP	54321, 54322
Infrastructure Discovery – Broadcast Option	UDP	54328
Infrastructure Discovery – Multicast Option	TCP	54329 [address: 234.56.78.9]

This table shows the network ports used by additional URcast system management features:

URcast Communications – Management Features	Protocol	Port(s)
Device Manager Web Site – Gateways and Servers	TCP	8000
Server Administrative Apps (Windows-based)	TCP	54321
Gateway Appliance Administrative Apps (Windows-based)	TCP	50000,50001
Infrastructure Discovery – Broadcast Option	UDP	54328
Infrastructure Discovery – Multicast Option	TCP	54329 [address: 234.56.78.9]

- **How do I manage my URcast devices?**

All URcast devices provide a Device Management web site which allows administrators to monitor the status of the device, the content stored on it, and the connections to it. URcast servers support a more extensive version of this site than the delivery appliances (Gateways) since they have a superset of the features. This web site uses port 8000 so that you may restrict its usage independently of a Server's main web interface or even disable it completely.