Tech System Overview
Edgenuity Tech System Overview

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Welcome to Edgenuity

Edgenuity solutions have been designed for ease of use with deployment, maintenance, and functionality in a typical educational technology environment. The system predominantly runs on a hosted platform housed within secured data centers. Our customers can feel assured student data is safe and secure with absolutely no work required by school district personnel.

We have taken great care in engineering and designing a robust system with redundancy built in at every level. Multiple levels of backup are incorporated into the onsite and offsite real-time systems. As students and teachers log into our program they access servers located within the secured data centers. Student computers will access the Student Portal via the Internet with information transfer requirements equivalent to standard website interactions. School lab environments will require little Internet bandwidth to function.

The core of the Edgenuity system consists of short video lectures. To maximize program performance and minimize network impact, the Edgenuity system incorporates the use of media appliances. These appliances are self-contained, read-only devices that provide access to the Edgenuity video content library locally. Edgenuity appliances utilize custom programming requiring no backups or user maintenance.

Edgenuity Media Appliances are built on a custom service platform, adding faster performance and greater reliability to our product. Edgenuity appliances come with up to three-year warranty and service contract. Media appliances are configured for your district with an internal static IP address, subnet mask, DNS server IP address, and hostname. An internal static IP address can be used unless you will service students from outside your network (i.e., home).

Edgenuity incorporates redundancy into the media delivery system. If a local media appliance is unavailable to the user, the program automatically rolls the request to another media server, either within your network or within the Edgenuity Media Cloud. If no other appliances are available on your network the user request is sent to the media server cluster and the media is delivered via the Internet. This redundancy helps with the availability of the program to your students. The program requires a minimal set of software and plug-ins, all of which are readily available and free to download. Pre-installment of all required software on your workstations ensures students receive the best experience with this software.

Connection to power and network switch is required for use with a local media appliance. Your Edgenuity Sales Account Executives and Partnership Advisors will work to ensure you have the proper media appliances for your specific needs. Please contact Edgenuity if changes occur within your network for the appliance(s) static IP or if additional assistance is needed.
## Edgenuity Minimum System Requirements

<table>
<thead>
<tr>
<th>Operating Systems</th>
<th>Browsers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Android™ 5.0+</td>
<td>• Chrome™ OS™ 57+</td>
</tr>
<tr>
<td>• Apple iOS 10.3+</td>
<td>• Windows® 7, 8, 10</td>
</tr>
<tr>
<td>• Mac® OS X® 10.9+</td>
<td></td>
</tr>
</tbody>
</table>

**Processor**

- Processor: 2.33 GHz AMD® -or- Intel® 1.33 GHz
- Memory: 1+ GB RAM

**Sound**

- OS supported sound card
- Microphone, Speakers or Headsets

**Network / Speed Connection**

- LAN 100/1000 switched to desktop
- Internet access of 384 kbps per concurrent user
- Wi-Fi with 54 mbps access points or better

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## iPad Data Usage When Using Mobile/Cellular Data Plans

Access to an Edgenuity Media Appliance is unavailable over a mobile data connection. Mobile data usage will average **110 MB** per lesson. Semester courses consist of approximately 40-50 lessons.

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Average Download per Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>2.1 MB</td>
</tr>
<tr>
<td>Warm-up</td>
<td>11 MB</td>
</tr>
<tr>
<td>Instruction</td>
<td>73 MB</td>
</tr>
<tr>
<td>Online Content</td>
<td>10 MB</td>
</tr>
<tr>
<td>Assignment</td>
<td>8 MB</td>
</tr>
</tbody>
</table>

---

**PLEASE NOTE:**

1. The Android operating system is supported by Edgenuity, but the Android browser is not. Android users should download and only use the Chrome browser to access Edgenuity.

2. Slow Internet connections will affect the performance of multimedia elements found in the Edgenuity courses. Recommended workstation Internet access speeds are based on use of an Edgenuity Media Appliance.

3. Students will need access to audio capabilities including microphones, speakers and/or headsets.

4. Example mobile devices listed above have been tested to be functional when using Edgenuity. Devices not listed may be used providing they meet the minimum requirements. Smart phone and smart watch devices are not supported by Edgenuity.
Edgenuity Network Requirements and White List

Edgenuity has deployed an Internal Proxy System, ensuring students are on-task and remain safe when using outside content contained within course activities. This also allows Edgenuity to have a smaller, more static White List.

To support the close and active reading of text for students at all reading levels, Edgenuity provides a CloseReader™ toolset for students. The toolset includes word look-up, text highlighters, annotation tools, read-aloud, and translation. Students can use these features on any HTML text within the system, including text within a third-party website accessed from within the Student Portal.

The CloseReader and Internal Proxy System both rely upon the required ports and White List provided below. Some content filters, web proxies, and/or classroom management software may also require white listing the local media appliance (if purchased). Allowing Google sites listed within the White List through a content filter will not open all Google content, as it is referencing specific directories needed for the CloseReader.

The White List for eDynamic Learning courses can be found at [https://www.edgenuity.com/support/technical-requirements/](https://www.edgenuity.com/support/technical-requirements/).

### EDGENUITY NETWORK REQUIREMENTS AND WHITE LIST

<table>
<thead>
<tr>
<th>Network Requirements ¹</th>
<th>White List ²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required Ports</strong></td>
<td><strong>Required White List</strong></td>
</tr>
<tr>
<td>The following outgoing communication ports</td>
<td><em>edgenuity.com¹</em></td>
</tr>
<tr>
<td>For required IP ranges must be applied within the network when using Edgenuity.</td>
<td><em>speechstream.net</em></td>
</tr>
<tr>
<td>Port 80</td>
<td><em>.edgenuity.us</em></td>
</tr>
<tr>
<td>Port 443</td>
<td><em>.middl.com</em></td>
</tr>
<tr>
<td></td>
<td><em>education2020.com¹</em></td>
</tr>
<tr>
<td></td>
<td><em>education2020.us</em></td>
</tr>
<tr>
<td></td>
<td><em>.explorelearning.com</em></td>
</tr>
<tr>
<td></td>
<td>emissary.edgenuity.com</td>
</tr>
<tr>
<td></td>
<td>office.microsoft.com</td>
</tr>
<tr>
<td></td>
<td>labs.edynamiclearning.com</td>
</tr>
<tr>
<td><strong>Additional PowerSpeak Protocols</strong></td>
<td><strong>Teacher Specific Required White List</strong></td>
</tr>
<tr>
<td>The following protocols are required when using courses containing PowerSpeak content.</td>
<td><em>box.com</em></td>
</tr>
<tr>
<td><em>powerspeak.edgenuity.com</em></td>
<td><em>box.net</em></td>
</tr>
<tr>
<td>RTMP/E Port 1935/TCP</td>
<td><em>boxcdn.net</em></td>
</tr>
<tr>
<td><em>.powerspeak.edgenuity.com</em></td>
<td><em>boxcloud.com</em></td>
</tr>
<tr>
<td>RTMFP Port 1935/UDP</td>
<td><em>boixelixbuzz.com</em></td>
</tr>
<tr>
<td><em>.powerspeak.edgenuity.com</em></td>
<td><em>.zopim.com</em></td>
</tr>
<tr>
<td>RTMP, RTMPT.HTTP Port 80/TCP</td>
<td><em>.zopim.io</em></td>
</tr>
<tr>
<td></td>
<td><em>.zdassets.com</em></td>
</tr>
</tbody>
</table>

**Instructional Services**

The additional sites below are required when using Instructional Services and LivePerson® for tutoring chat purposes.

<table>
<thead>
<tr>
<th>sas.elluminate.com</th>
<th>liveengage.com</th>
<th>liveper.sn</th>
</tr>
</thead>
<tbody>
<tr>
<td>server.iad.livelperson.net</td>
<td>liveperson.com</td>
<td>lpsnmedia.net</td>
</tr>
<tr>
<td>e2020.geniusiss.com</td>
<td>liveengage.com</td>
<td>liveperson.com</td>
</tr>
<tr>
<td>*.agilixbuzz.com</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COURSE-SPECIFIC WHITE LIST**

The courses listed below have associated sites that are required for instruction

| All English Language Arts Courseware and MyPath | merriam-webster.com |
| Career Explorations and Pharmacy Technician  | onetonline.com |
| Career Planning and Development  | vark-learn.com/english/page.asp?p=questionnaire |
| 16personalities.com/free-personality-test | californiacolleges.edu/#/interest-profiler/test |
| Texas History and New Mexico History | tsl.state.tx.gov |
| Oklahoma History and Government | okhistory.org |
| MS U.S. History and MS World History | historyguide.org |
| Pre-Calculus  | historyworld.net fsmitha.com digitalhistory.uh.edu |
| All AP Courses | themathpage.com richland.edu sosmath.com wtamu.edu math.utk.edu |
| Intro to Information Technology | collegeboard.org owl.english.purdue.edu |
| ¹ Ports 80 and 443 must be opened for sites and Present Outbound Internet Addresses noted above. Port 1935 must be opened for sites utilizing Instructional Services. Proxy and content filters may disrupt communication on all ports. Ports 80 and 443 must be open for sites noted. |
| ² Whitelists must be applied within your network for optimal use. Some items will pertain to general use and/or media appliances, such as Edgenuity website wildcards. Other whitelisted items such as LivePerson and Zendesk® may be used in conjunction with tools utilized for support needs of students and educators. Edgenuity utilizes mp4 video formatting for course content videos. You will need to ensure mp4s are included for white listed sites within the network and the local Edgenuity media appliance. |
Edgenuity Media Appliance Overview

Districts can ensure minimal bandwidth requirements of less than or equal to 384 kbps on average per concurrent user on the school infrastructure by placing an Edgenuity Media Appliance at the individual school or district. When a media appliance is housed within the district or individual school firewall, student computers will access the Student Portal via the Internet with information transfer requirements equivalent to standard website interactions. Instructional Videos, when required as part of a user experience, are pulled directly from the local media appliance. This ensures reduced load times with no additional bandwidth requirements, providing a positive end-user experience with minimal delay for page downloads.

Edgenuity Media Appliances

Edgenuity offers four (4) media appliances to our customers based on concurrent user needs. Each appliance is a self-contained, read-only device rated for concurrent user connections. Appliances utilize custom programming. Backups and user maintenance is not required when routing and white list rules have been applied.

Edgenuity Media Appliances require Secure Sockets Layer (SSL) and Hyper Transfer Protocol Secure (HTTPS) security protocols. By using SSL and HTTPS protocols, Edgenuity can provide a level of security and confidence within the information being exchanged with our users.

Please contact Edgenuity for questions regarding virtual operating systems not listed. Mini and Slim Media Appliances include Kensington slot locks to stabilize and provide additional security to mounted appliances.

Edgenuity Physical Appliance Specifications

Edgenuity offers three varieties of physical media appliances: Mini, Slim, and Rackmount appliances. Each appliance is designed to be placed at or near the network backbone, optimized for read access, and rated for concurrent connections.

<table>
<thead>
<tr>
<th>Mini Appliance E250N</th>
<th>Slim Appliance E750N</th>
<th>Rack Appliance E5000R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 250 Concurrent Users</td>
<td>Up to 750 Concurrent Users</td>
<td>Up to 5,000 Concurrent Users</td>
</tr>
<tr>
<td>Designed for small or lower usage implementations</td>
<td>Designed for mid to larger usage implementations</td>
<td>Designed for larger multi-school district implementations</td>
</tr>
</tbody>
</table>

**Mini Appliance Specs**
- Intel Celeron® 3865U 1.8 GHz
- 2 core processor / 2 threads
- 8 GB DDR4 2400 MHz RAM
- 500 GB SSD
- Dual 1 GB NIC

**Mount / Power Options**
- VESA, 1U rack, desktop mount compatible
- Single power supply

**Weight**
- Approximately 2 pounds each

**Slim Appliance Specs**
- Intel Core i3 7100U 2.4 GHz
- 2 core processor / 4 threads
- 8 GB DDR4 2400 MHz RAM
- 500 GB SSD
- Dual 1 GB NIC

**Mount / Power Options**
- VESA, 1U rack, desktop mount compatible
- Single power supply

**Weight**
- Approximately 2 pounds each

**Rack Appliance Specs**
- XEON E5-2630L V3 1.8 GHz
- 8 core processor / 16 threads
- 32 GB DDR4 2133 MHz ECC RAM
- 2x 500 GB SSD in RAID1
- Quad 1 GB NIC

**Mount / Power Options**
- 1U rack
- Dual power supply

**Weight**
- Approximately 45 pounds each

Please Note:
Middlebury Powerspeak World Language courses and Sophia® Dual Credit courses do not require use of a media appliance.

If assistance is required with the configuration or installation of a Media Appliance, please contact Media Appliance Support at masupport@edgenuity.com.

Please contact Edgenuity for questions regarding virtual operating systems not listed. Mini and Slim Media Appliances include Kensington slot locks to stabilize and provide additional security to mounted appliances.

These specifications are subject to change.
Virtual Server Media Appliance Specifications

Edgenuity offers a virtual media appliance solution to assist customers in an ever-changing educational technology arena. Two (2) platform formats of Edgenuity Virtual Media Appliances (VMA) are available and supported based on the customer’s implemented virtual infrastructure. Platform formats include VMware 5.0+ and Microsoft Hyper-V Server 2012 R2 (or newer). Edgenuity VMAs include programming and multimedia content.

# Virtual Media Appliance Specifications

<table>
<thead>
<tr>
<th>Up to 5,000 Concurrent Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designed for districts who wish to use their VM environment for a Media Appliance instead of a physical device.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Edgenuity VMA Server Image Size</th>
<th>Virtual Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 GB</td>
<td>VMware 5.0+</td>
</tr>
<tr>
<td></td>
<td>Microsoft Hyper-V Server 2012 R2 or newer</td>
</tr>
<tr>
<td></td>
<td><strong>Minimum Virtual Platform Requirements</strong></td>
</tr>
<tr>
<td></td>
<td>4 Processors</td>
</tr>
<tr>
<td></td>
<td>8 GB RAM</td>
</tr>
<tr>
<td></td>
<td>500 GB available disk space</td>
</tr>
</tbody>
</table>

## Software Specifications – Virtual Media Appliances

- Edgenuity will supply a download link for the virtual image within the customer’s virtualization network platform.
- Edgenuity requires an IP for the Edgenuity VMA.
- Edgenuity VMAs require minimal maintenance.
- Locations using web filtering **MUST** apply the Edgenuity white list for necessary updates.
- There is no limit to customer replication (within the same district) of a VMA image.
- Additional resources, if needed, can be committed to increase power of an Edgenuity VMA for larger installations.
- Upon request a virtual image can be supplied on a returnable, USB capable portable memory device after verification of a customer’s virtualization network platform.
- Edgenuity Media Appliances requires Secure Sockets Layer (SSL) and Hyper Transfer Protocol Secure (HTTPS) security protocols. By using SSL and HTTPS protocols, Edgenuity can provide a level of security and confidence within the information being exchanged with our users.

**Please Note:**

Middlebury Powerspeak World Language courses and Sophia® Dual Credit courses do not require use of a media appliance.

If assistance is required with the configuration or installation of a Media Appliance, please contact Media Appliance Support at masupport@edgenuity.com.

Please contact Edgenuity for questions regarding virtual operating systems not listed. Mini and Slim Media Appliances include Kensington slot locks to stabilize and provide additional security to mounted appliances.

**These specifications are subject to change**
SSL Protocols

Edgenuity Media Appliances requires Secure Sockets Layer (SSL) and Hyper Transfer Protocol Secure (HTTPS) security protocols. By using SSL and HTTPS protocols, Edgenuity can provide a level of security and confidence within the information being exchanged with our users.

Additional configuration will be required for customers using an Edgenuity Media Appliance. Instructions for deploying SSL within an Edgenuity Media Appliance will complete the installation of an appliance locally.

What is SSL?

SSL encrypts information to create secure transactions online. X.509 certificates and asymmetric cryptography are used to verify the counterparty with whom they are communicating with, and to exchange a symmetric key. The session key is then used to encrypt data being exchanged between the Edgenuity website and the student session. This allows for data / message confidentiality, and message authentication codes for message integrity, establishing message authentication as a by-product.

SSL is becoming required by most internet browsers. Not applying SSL settings within a network may disrupt media delivery from Edgenuity to the students within your school(s).

What are HTTPS URLs?

HTTPS is a communication protocol for secure communication over a computer network. HTTPS is designed to withstand and help prevent insecurity and weaknesses within a network. Standard HTTP URLs are insecure. This insecurity could result in weakness within a network, allowing others to gain access to website accounts and sensitive information without permission.

FQDN and Changes to DNS

A fully qualified domain name (FQDN), also referred to as an absolute domain name, is a domain name that specifies its exact location in the tree hierarchy of the Domain Name System (DNS). It specifies all domain levels, including the top-level domain and the root zone. A fully qualified domain name is distinguished by its lack of ambiguity: it can only be interpreted one way.

The certificate, *.ma.edgenuity.com, has been established for use by our customers for DNS and SSL settings and has been applied to the media appliance. Please contact Media Appliance Support to verify the FQDN has been set up for appliance(s) within the network. Only then will the students be able to access media from the appliance without receiving a warn-level error from their browser.

Please contact a Media Appliance Support, masupport@edgenuity.com, for questions and/or assistance with these required updates.

Frequently Asked Questions

| Q: Is SSL required or optional when using Edgenuity? | A: SSL is required by all Edgenuity users. Additional configuration will be required for customers using an Edgenuity Media Appliance. |
| Q: What are the benefits of moving to SSL? | A: SSL encrypts the information to make the transactions more secure for users. |
| Q: If a school is using SSL to access Edgenuity but their appliance does not have a SSL certificate, what happens when they load a video? | A: Videos will not load from the local school media appliance if a school is using mixed content. Content instead will be delivered from the Edgenuity Media Cloud via the Internet. |
Edgenuity System Login and Security: Enhanced Passwords

Edgenuity provides a number of security features including Enhanced Password Security for secure student access.

Edgenuity has signed the Student Privacy Pledge developed by the Future of Privacy Forum (FPF) and the Software & Information Industry Association (SIIA). The provisions require additional security to protect student data against unauthorized third-party access.

All passwords are encrypted within Edgenuity preventing the information from being visible within the Student and Educator profile screens. Storing and transmitting encrypted passwords prevents anyone from acquiring passwords and sensitive student data.

Student and Educator passwords can be in any format you wish, and are case sensitive. For security reasons, we recommend against creating passwords with predictable patterns such as student ID numbers. Reset features are incorporated into Edgenuity for Educators assisting users in password retrieval.

User-Initiated Password Reset

Forgot Your Password

Forgot your password is a self-service feature that can be selected within the Edgenuity login screen should a user be unable to log into their account. Users receive a password reset email to the address on file to regain access.

Password reset emails will come from 'noreply@edgenuity.com'. It is recommended to check Junk or Spam folders within the email account supplied if an email is not received shortly.

Please note: Edgenuity does not require a user email address; it is recommended all educators update their Edgenuity account to include a current email address for the password retrieval feature. Alternative options are available should students not have an email address associated with their Edgenuity account.

Educator-Initiated Password Reset Features

Educators with the security permissions can assist student and fellow educator users in regaining access to their Edgenuity account with Change Educator (or Student) Password, Send Password Reset Email, and Get Temporary Password features.

Please note: When using Get Temporary Password the user’s original password is removed from the account and will no longer work.

Change Educator (or Student) Password

Change Educator (or Student) Password allows an educator to enter a new student or educator user password.

Send Password Reset Email

A password reset email can be sent if the user account has an associated email address.

Get Temporary Password

Educators can establish a temporary password for users to log in.

The user must establish a new password after log in. This feature can be used if you don’t want the person changing the password to know the final password.

Impersonate

Educators can assist students by logging into the Edgenuity account as the user. Once the account is accessed the educator can view and interact within the system as the user. Impersonation sessions are recorded and logged within Recent Actions similar to other actions that occur within the system.

Please note: When using the Impersonate feature, please be aware of the following:

• A warning will display for an active session if the student is currently logged into their account. Continuing with Impersonate will log the student off their active session.

• Any actions taken during an impersonation session will be logged as though the student completed them.

* Password encryption does not affect login credentials managed via API, LTI, LDAP, or SAML integration. Users sign in with credentials managed by a school and are not maintained by Edgenuity. Passwords will not be overwritten for users with nightly imports where manual password changes may occur.
Edgenuity System Login and Security: IP Registry

Edgenuity provides a number of security features including IP Registry for secure student access. The IP Registry feature allows schools to prevent students from logging into Edgenuity from outside the school’s network.

IP Registry can also be configured to allow student access to Edgenuity from home to complete instructional activities, but require all assessments be completed at school once students are back on the school’s network.

How Do I Prepare?

Once you’ve made the following decisions, you are prepared to enable IP Address Registry.

- For each school, decide which Educator account holders will be given the user permissions to create and administer IP Address Registry and individual student bypasses.
- For each school, determine the IP addresses (or ranges) of the firewall or edge router that represents the ‘gateway’ to the Internet. You will enter this IP address or range in the Edgenuity configuration page.
- Decide whether you want students on non-approved IP addresses to be completely blocked from accessing Edgenuity, or to be allowed access to coursework but not assessments.
- If you have individual students with permission to do coursework and assessments from home, prepare a list of those students. You will be able to put those student accounts on a bypass list that lets them access Edgenuity from outside the block of registered IP addresses.

Additional information regarding IP Address Registry is available within the Educator portal. Please contact Customer Support for more information for this feature.
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