

USA Learns Website: Overview, Technology Requirements, Security, and Transfer of Files

Overview

U.S.A. Learns was developed with funds from the U.S. Department of Education, Office of Vocational and Adult Education (OVAE). It is a free Web site that immigrants can use to study English. The site was designed to support immigrants who want to learn or improve their English as they become part of American society. While a broad range of adults can use *U.S.A. Learns*, it was developed primarily for immigrant adults with limited English language skills who cannot attend traditional classroom programs because of difficulty with schedules, transportation, or other barriers. The *U.S.A. Learns* Web site has two English courses, which target the lowest functioning English language learners. A third section is called Practice English and Reading. It includes a collection of some 40 news stories designed to provide practice in reading. Each news story has companion activities designed to build vocabulary and comprehension skills. In total the site includes more than 400 hours of learning activities. It features extensive use of video, animation and graphics, including an on-screen character that talks to users to help them get started.

Source material for the learning activities came from the *Putting English to Work 1* video series, *English For All*, and original television news stories. Because *U.S.A. Learns* includes thousands of rich media files orchestrated by a sophisticated database, it is important that the host for *U.S.A. Learns* have the correct hardware, software, and connectivity to ensure a successful user experience.

Hardware, Software and Connectivity Requirements

The new host for *U.S.A. Learns* should have the appropriate server hardware and software as well as the capacity to store a significant volume of content files of several types. Current server software include Microsoft Internet Information Services, Microsoft SQL, Adobe ColdFusion and Adobe Flash. Because *U.S.A. Learns* has only been in operation for a short time, it is not clear how much traffic the site will generate. With rich media being such an important part of the site, it is important that the host be prepared to quickly “ramp up” capacity as required by actual usage. The following table is provided as an example of one approach to providing that capacity at several levels of usage.

Tier	Estimated Capacity	Hardware	Software	Required Bandwidth
1	5,000 simultaneous users	Two Dell PowerEdge 2950 servers w/ dual quad-core 3Ghz processors, 32GB RAM,	VMWare ESX Server software to run two virtual Windows 2003 servers on each physical server (total of 4 virtual servers);	350 megabits per second

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		dual quad NIC cards, EqualLogic iSCSI SAN	ColdFusion 8 application server; Flash Streaming Server	
2	10,000 simultaneous users	F5 hardware-based load balancer, Web Accelerator and SSL Accelerator	F5 Web Accelerator license; maintenance and support for F5 load balancer hardware.	700 megabits per second
3	12,500+ simultaneous users	1 physical server per each additional 2,500 simultaneous users, each running 2 virtual servers; possibly more load balancers (if required)	VMWare ESX Server software to run at least 2 virtual web application servers for each physical server; Windows 2003; ColdFusion 8 Enterprise application server	1+ gigabit per second

Content files for *U.S.A. Learns* include HTML, images, audio and video. The table below shows the number of files of each type, and their total size. The figures are approximate and reflect the status of USA Learns prior to final launch.

File Type	Number of Files	Total Size
Flash	3864	5.5 GB
CFM (HTM)	60	NA
Audio	4372	670 MB
Images	2510	116 MB

Security

Existing security procedures incorporate physical, network, and Web application security. Security methods include personnel screening, access control policies and procedures, account management, access enforcement, supervision and review of each access control system, auditable security events, protection of audit information, information system backups, protection of data backups, restricted media access, proper media disposal, and a variety of other physical and network-related security methods.

Security measures vary depending on the assessment of the impact level of a security breach. While the impact level for *U.S.A. Learns* could need to be determined, based on the criteria set

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forth in the *Federal Information Processing Standards Publication 199*, it is possible that the host for *USA Learns* should implement security controls for low impact systems. These controls are specified in the *National Institute of Standards and Technology Special Publication 800-53*.

Transfer of Files

Sacramento County Office of Education staff will identify and download onto a quality hard drive all SQL, ColdFusion, Flash, HTML, image, audio, video and data files for the entire contents of *U.S.A. Learns*. The hard drive files will be tested to ensure that the complete file structure is intact and capable of delivering *U.S.A. Learns* in its entirety using the appropriate hardware, software and connectivity. The operating and server software will not be included with transmission of the content files. Once quality has been tested and assured, the hard drive will be packed securely and sent to the new host using a trackable shipping service such as FedEx.