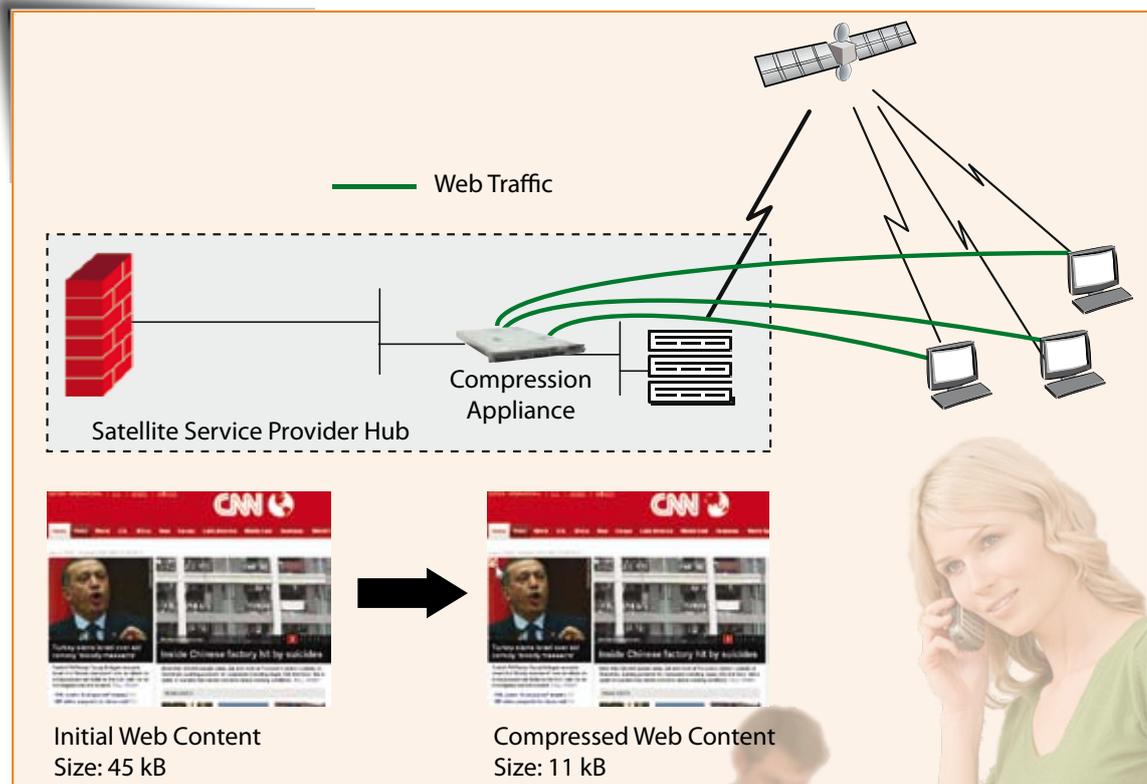# WEBcompress

WEBcompress is an application software module, which runs on the Central Site Service Platform (CSP) designed to enhance web user experience. WEBcompress accelerates web page loading time by optimizing and compressing web content. Operating in the satellite hub HTTP traffic is intercepted inline on the path between the Internet and remote sites.

TECHNOLOGY OVERVIEW

All latest web browsers support GZIP compression, i.e. they are able to receive HTML, css or other content compressed in GZIP format instead of downloading them in their full-size, clear-text format. This is critical performance requirement since only a small fraction of web content today is already pre-compressed.

WEBcompress technology includes:

- Inline HTTP interception and text compression in GZIP format (HTML, JS, CSV, CSS, text).

- Image downsizing (JPG, GIF and PNG) with configurable quality degradation impact: the administrator can select the desired trade-off between image quality preservation and compression ratio.
- Content filtering (for example advertising, flash animations, video) which consumes bandwidth and impacts the user's experience.
- Per-user optimization policies: the network operator can assign web optimization profiles per remote user.
- TCP acceleration helps in improving HTTP transfer rates.

Web Traffic

Satellite Service Provider Hub

Compression Appliance

Initial Web Content
Size: 45 kB

Compressed Web Content
Size: 11 kB

WEBcompress Technology

Tests were performed on a selection of most popular websites. The following table shows the compression benefits for text content. The compression ratios shown below translate into accelerated page downloaded times.

Site	Direct Access	WEBcompress text only	Compression ratio
amazon.com	1 024 417	708 645	31 %
cnn.com	2 403 240	1 230 955	49 %
fickr.com	314 792	245 020	22 %
microsoft.com	578 218	294 883	49 %
wikipedia.org	815 186	384 958	53 %
yahoo.com	1 253 657	618 009	51 %
youtube.com	662 960	325 252	51 %
Total	**7 052 470**	**3 807 722**	**46 %**

Web designers frequently include images whose picture quality exceeds user requirements for standard web browsing. Picture recompression can reduce image sizes up to a factor of four without noticeable impact on the image quality. For very low bandwidth links, the service provider can elect to degrade picture quality further, thereby improving web browsing responsiveness.

WEBcompress allows the administrator to select globally or on a per-user basis which user experience criterion needs to be improved, i.e. the trade-off between picture quality preservation, bandwidth saving and browsing performance. Full image resolution can be viewed at any moment by clicking on an image logo to restore the original image resolution.

Full size, original quality: 379 kB

Optimized size: 42 kB

High compression: 26 kB

Saving bandwidth enables more users to browse the web simultaneously. Content removal is a good technique to reduce web traffic, while preserving user satisfaction. The following content categories are supported:

executables, flash animations, sound, text, video as well as content from specific web sites such as Google analytics and advertising web sites.

Why OneAccess

Best-in-class web optimization and compression technology

Infrastrusture consolidation in satellite hub:
UDgateway is a feature-rich service delivery platform, which encompasses several types of service optimization techniques. It includes fair bandwidth sharing between users (advanced QoS), remote site bandwidth management, application-aware reporting, QoS & firewall policies and much more!

Tailored web user experience:
The service provider is able to customize user experience according to their marketing objectives, which could be for instance improving web surfing speed or maximizing bandwidth usage. The service provider can customize the desired behaviour according to its service offer and the associated user profile.