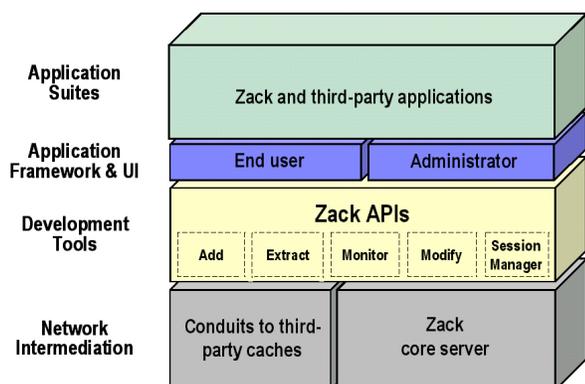


ZACK EDGE APPLICATION SERVERS

Zack has developed the first, comprehensive edge application server designed as a platform for a complete suite of edge services. The power of this unique platform is the result of four attributes:

- A highly scalable, high performance proxy engine.
- The ability to add, extract, monitor or modify information from content streams in real-time with no perceived latency on a user specific basis.
- A persistent user interface and communication channel that requires no client-side software.
- A comprehensive set of APIs that enables Zack or third-party developers to port applications.



At the foundation of each Zack edge application server is a four-level architecture that enables the extension of an ISP's capabilities.

ARCHITECTURE

Network Intermediation - Enables Zack to integrate directly with existing network architecture or to operate in conjunction with the caching servers that are already in place.

Development Tools - Application Programming Interfaces (APIs) allow control over Zack's core server. These APIs give Zack the ability to add and extract information from Web pages and to monitor and modify that data in real time on a user-by-user basis.

Application Framework & User Interface - There are two types of interfaces contained within Zack's edge application servers. The first is the subscriber interface, which operates through dynamic HTML (DHTML) and gives Zack the ability to create new real estate on top of existing Web traffic. The second interface is the one that is intended for the system administrator. This interface allows an ISP's designate to configure the system as needed.

Application Suites - Contain applications designed by Zack and those ported to the edge application server by third-party developers. Regardless of the applications currently deployed at a particular ISP, the edge application server is configured such that an upgrade is possible at any time to any other Zack edge application server.



INTERNET SERVICE PROVIDER SOLUTIONS

End users have traditionally identified the Internet with portals and destination sites, not with their Internet Service Provider. However, ISPs possess two unique and valuable assets that they have yet to leverage. They have a billing relationship with the subscriber — allowing the ISP to easily capitalize on initiatives to **enhance revenue**. They also control the edge of the network — giving them the last opportunity to **affect the Web experience** of the end user. Zack's ISP product suite capitalizes on these two assets to create new revenue streams and more profitable subscriber relationships for the service provider. It allows the ISP to move beyond providing just access to building a **value-added relationship with the subscriber**.

BUILDING A SMARTER INTERNET

Zack enables Internet Service Providers to harness the power of the edge of their network to drive a more profitable, productive and persistent relationship with subscribers. Zack's patent-pending edge platform sits between the Internet and end users enabling real time Web page modification. This position at the network edge gives Zack the unique ability to deliver timely and targeted information and provide value-added services with no client-side download required.

INTERNET SERVICE PROVIDER CHALLENGE:

Increase direct revenue per subscriber.

SOLUTION:

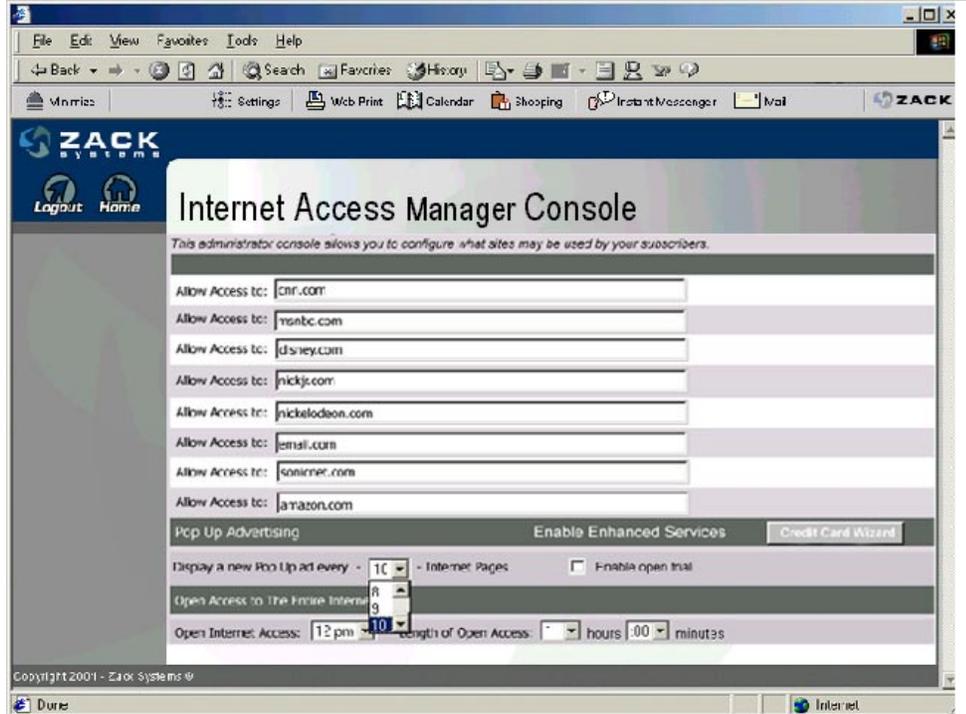
The ES Server is designed to create new opportunities for ISPs to generate revenue directly from subscribers' experiences on the Web, primarily through enhanced services (ES). This server features a multi-tabbed communications panel for enhanced service offerings, such as content filtering, virus scanning, language translation and automatic compression, and community features such as shared browsing and server-side bookmarks. The ES server also features a Tiered Services Manager, which enables an ISP to offer multiple subscriber classes of service based on a variety of input: enhanced service availability, walled garden functionality, open Internet access, time limitations, and frequency of advertisements. Depending on the particular business need, an ISP may also want to incorporate Zack's just-in-time marketing interface. Zack also offers reporting tools and a billing integration service in this server.

ES SERVER OVERVIEW

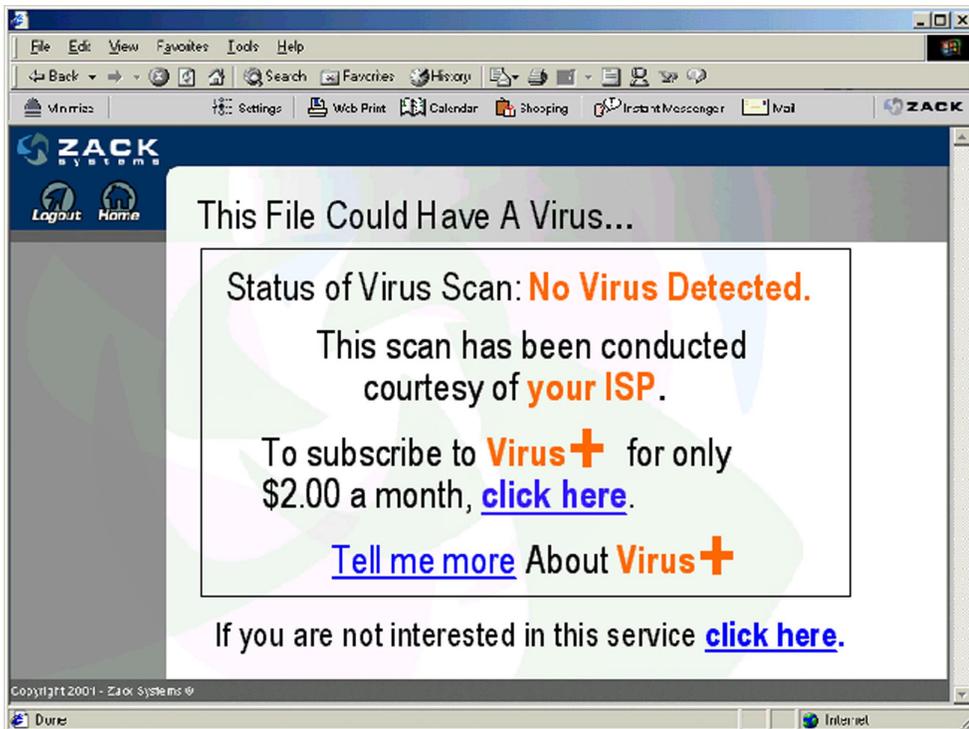
With the Zack ES Server, it's easy for ISPs to generate more revenue from their subscribers with Zack's value-added applications suite. ISPs can bundle these applications in a premium level of service or sell them on an individual basis for a small monthly fee. Because all of the enhanced services are deployed through the network, there is no need for installation on multiple clients or any software downloads. Zack also helps to spread the word to the ISP's entire subscriber base through its just-in-time marketing interface, which is built into the server. The ES server offers:

- Enhanced services suite
- Tiered Service Manager
- Just-in-time marketing interface
- SDK for application development

Tour these solutions at Zack.com.



[Manage stratified service layers with the ease of Web based administration.]



[Deliver value-added services at the time of greatest need with just-in-time marketing.]

ENHANCED SERVICES

Content Filtering: This application gives subscribers the ability to filter Internet content based on a variety of factors. This service is developed by 8e6 Technologies and ported onto the Zack platform.

Virus Protection: This application offers server-side virus scanning from Sophos Anti-Virus. Subscribers will know they have a virus before it reaches their hard drive.

Automatic Content Compression: Content compression makes it easy to optimize Internet bandwidth use, saving time and money.

Shared Browsing: This application turns surfing the Internet upside down. Subscribers can search simultaneously in pairs or groups, fostering community and assisting in technical support.

Server-side Bookmarks: Because this service is offered through the network, it makes bookmarks available on any client anytime the subscriber is logged in.

For a complete list of applications please contact your Zack sales associate.