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# The Eloqua Platform Architecture

*Not All SaaS Vendors Are Created Equal*

Global marketing teams require stable marketing infrastructure to execute, automate, and measure highly effective marketing programs. At the same time, IT stakeholders need to be assured that a vendor will meet the same reliability, scalability, and manageability they would expect from their own infrastructure. Your organization can rest assured that Eloqua’s platform has consistently demonstrated exceptional reliability and scalability to support global marketing organizations’ large-scale, high performance needs.

## Introduction

Eloqua is a Software-as-a-Service provider, meaning the entire software stack is managed by Eloqua and delivered to its customers via the Internet. Savvy business and IT buyers understand the inherent benefits of a SaaS platform which offloads much of the cost, risk, and overhead of software ownership to the vendor. However, not all SaaS platforms apply the same rigor to the design of their infrastructure. As a pioneer in the SaaS market, Eloqua has built a comprehensive platform to ensure high availability, reliability, scalability and transparency for its customers.

SaaS is not purely a software delivery mechanism, but rather an entire business model that cultivates a culture of customer success. As a subscription-based service provider, Eloqua is only successful if its customers are successful. To ensure ongoing success, Eloqua has built a robust technology stack to meet the ongoing needs of both business users and IT and administrative staff as well.

### **Proven reliability ensures a seamless user experience**

SaaS differs from the traditional hosting model in that a single instance of the software runs on Eloqua's servers, serving multiple client organizations (tenants). Multi-tenancy allows Eloqua to cost effectively serve companies of all sizes, while enabling frequent innovation, enterprise-class scalability and regular automatic upgrades. As of the publication date of this overview, Eloqua has achieved 99.98% uptime for the trailing 12 months while averaging nearly 7B transactions per day. Eloqua regularly publishes transaction volumes, email deliverability, and up-time statistics on [trust.eloqua.com](https://trust.eloqua.com).

### **Complete transparency and control via central management**

Within any enterprise software solution, administrators must be able to manage and configure the functionality of the system as a whole, set the properties of individual or groups of users, and define permissions that guide the user experience. Eloqua empowers administrators with enterprise functionality that allows them to configure and maintain thousands of marketing assets even when deployed to users across multiple departments, roles, geographies and languages.

### **Data preservation via comprehensive disaster prevention and recovery**

A robust infrastructure and reliable platform is of no value unless the basics such as continuous power, frequent backups, and Internet connectivity are taken care of. Disasters, small or large, can potentially interrupt power or continuity unless properly managed. Eloqua has partnered with Verizon Business Canada to ensure that any network or power-related incident or disaster will not interrupt service. A network operations team is on alert around the clock to monitor, diagnose, and quickly respond to any alerts, issues, or unforeseen problems.

## Reliability

Eloqua's multi-tenant architecture was built from the ground up to provide rock solid reliability, while also handling spikes in transactions or demand for additional capacity. A load balanced infrastructure handles surges in marketing activities that occur when a single marketing event drives a large number of page views in a short period of time. Horizontal scaling architecture enables the platform capacity to expand seamlessly without impacting existing customers.

### A. Architecture

The Eloqua technology stack is divided among three tiers along functional boundaries common in modern web applications. Each tier is architected to take advantage of horizontal scaling to ensure optimal performance (see Figure 1).

- **Web Tier** - web servers provide the user interface to the application as well as web form processing and data collection.
- **Application Tier** - application servers manage the execution of outbound marketing and workflow processing.
- **Database Tier** - customer data is isolated to a dedicated database instance.

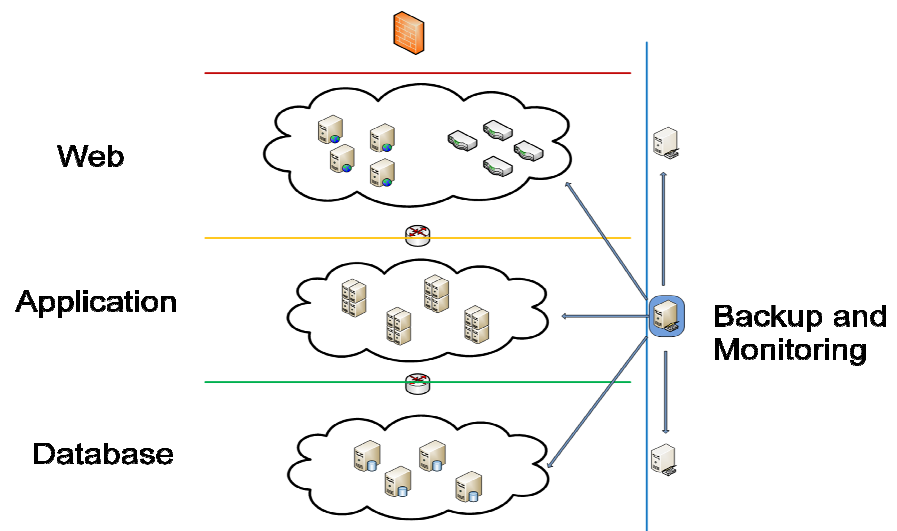


Figure 1: Network architecture

Eloqua's platform is built on a Microsoft technology stack that includes

- Windows 2003/2008
- SQL Server 2005/2011
- IIS 7.5

## B. Scalability

Eloqua makes use of industry-leading intelligent hardware load-balancing to maintain scalable and responsive Web, application, and database tiers. Many of the systems in the Web and management layers are also virtualized to maintain the most effective use of hardware.

- The Web tier consists of a bank of dedicated multiprocessor servers that maintains the necessary business rule processing for a highly responsive user interaction. By employing a fully stateless architecture for all elements of the platform, no server affinity is required. This allows the load balancers to route requests to the optimal server on the basis of processor utilization, thus ensuring customers always get the best possible performance.
- The application tier stores no customer data and is therefore shared among all installed customers. This allows for usage spikes from individual customers to be distributed among all available processor resources. For example, a special event such as a key product launch may result in five times the typical activity for the customer, but the system as a whole is able to handle the increased load without compromising performance.
- Eloqua's database tier has been implemented with a locator-based, multi-server, multi-tenant architecture. The in-memory locator directs each request to the correct server for a given customer. Redundant system-wide metadata supports the locator service, and new servers can be added to the system by allocating them in the locator engine. What this means is that as a customer's capacity grows, new database server hardware can be added without interrupting the system availability or user experience.

## C. Backup and Monitoring

All production systems are backed up frequently. Random data recovery tests are also performed on a weekly basis to ensure backups are working properly and recovery data is fully useable. Each hardware component generates real-time performance information that is aligned with application processing data and then fed into monitoring tools. This allows production performance teams to trend performance and scale hardware components in advance of need.

## System Management and Transparency

Within any enterprise software solution, administrators need to manage and configure the functionality of the system as a whole. This includes the properties of individuals or groups, as well as the experience and permissions of system users. Eloqua empowers administrators with enterprise level functionality that allows them to configure and maintain thousands of marketing assets even if deployed to users across multiple departments, roles, geographies and languages.

### A. Transparency

System downtime, application unresponsiveness, and delayed campaigns waste time and money. Eloqua understands the importance of the high availability required for marketing users to perform their jobs without delay. Eloqua publishes a public dashboard detailing system transactions, email deliverability rates, and system up-time. Audited by [Gomez](#) to confirm consistent performance and stability, Eloqua has maintained a track record of 99.98% system-wide uptime over the prior twelve months as of publication of this document (see Figure 2).



Figure 2: [trust.eloqua.com](http://trust.eloqua.com)

## B. Innovation and success

Eloqua is committed to customer success by continuously improving and innovating on the platform. Because Eloqua is built on a multi-tenant architecture, all customers enjoy the benefit of always upgrading to the latest most current release of the software. Customers are alerted of impending upgrades but no technical effort is required to physically perform the update. This means IT resources can spend their time on strategic initiatives, rather than tactical software maintenance and updates. This eliminates the need for ongoing maintenance and also eliminates the concept of “shelfware”.

An Eloqua subscription also includes free standard support and success coaching with every edition of the product. Higher tiers provide even greater levels of support and success coaching. This eliminates the need to manage and fund additional maintenance and support services. Many Enterprise software vendors are now charging over 20% of license fees for annual support and maintenance. Eloqua, however, believes support and maintenance is a right, not an add-on feature.

## Disaster Recovery

The first step in planning for disasters is prevention. Eloqua is built from the ground up to ensure reliability by eliminating or mitigating any potential disasters before they can happen. The Eloqua infrastructure is built with redundancy and failover throughout to ensure that there is no single point of fault that could potentially impact the user experience.

Eloqua has also partnered with Verizon Business Canada to ensure that any network or power-related incident or disaster does not interrupt service:

- **Uninterruptable Power** – The Verizon facilities provide power through redundant UPS systems backed by redundant diesel generators served by two fuel resupply contracts. In addition, dual power supplies managed on separate circuits feed each hardware element. This provides continuous power to the Network Operating Center (NOC) and its systems in the event of even a total power failure
- **Uninterruptable Network** – The Toronto data center facility is part of Verizon’s AS701 Autonomous System, the original UUNet network, and one of only 10 Tier 1 networks globally. This facility provides full redundancy of the entire network from the switches and routers to the transport level infrastructure.
- **Redundant Pathways** – In the event of a disaster that affects connection to the network hub, dual network pathways connect over separate fiber lines that take different physical pathways configured to provide instant failover.

## Benefits Summary

Eloqua maximizes flexibility, scalability, and availability while minimizing the need for teams of IT resources to manage the application and associated infrastructure. Users can rest assured the application will be available to perform key business functions and IT can be comfortable relying on a time tested, enterprise-grade infrastructure regardless of company size.

### Key Benefits:

- 99.98% uptime over the prior 12 months
- Full system transparency through [trust.eloqua.com](https://trust.eloqua.com)
- A load balanced infrastructure that readily handles spikes in activity
- Horizontal scaling which allows for seamless capacity expansion
- Automatic upgrades
- Included customer support
- Redundancy for comprehensive disaster prevention and recovery