



WHITE PAPER

DNS Solutions for Social Media Networks

- Introduction
- DNS Strategy
- Market Share
- DNS Process
- Cost of Outages
- Social Network Problems
- DNS Solutions
- Ensure Success



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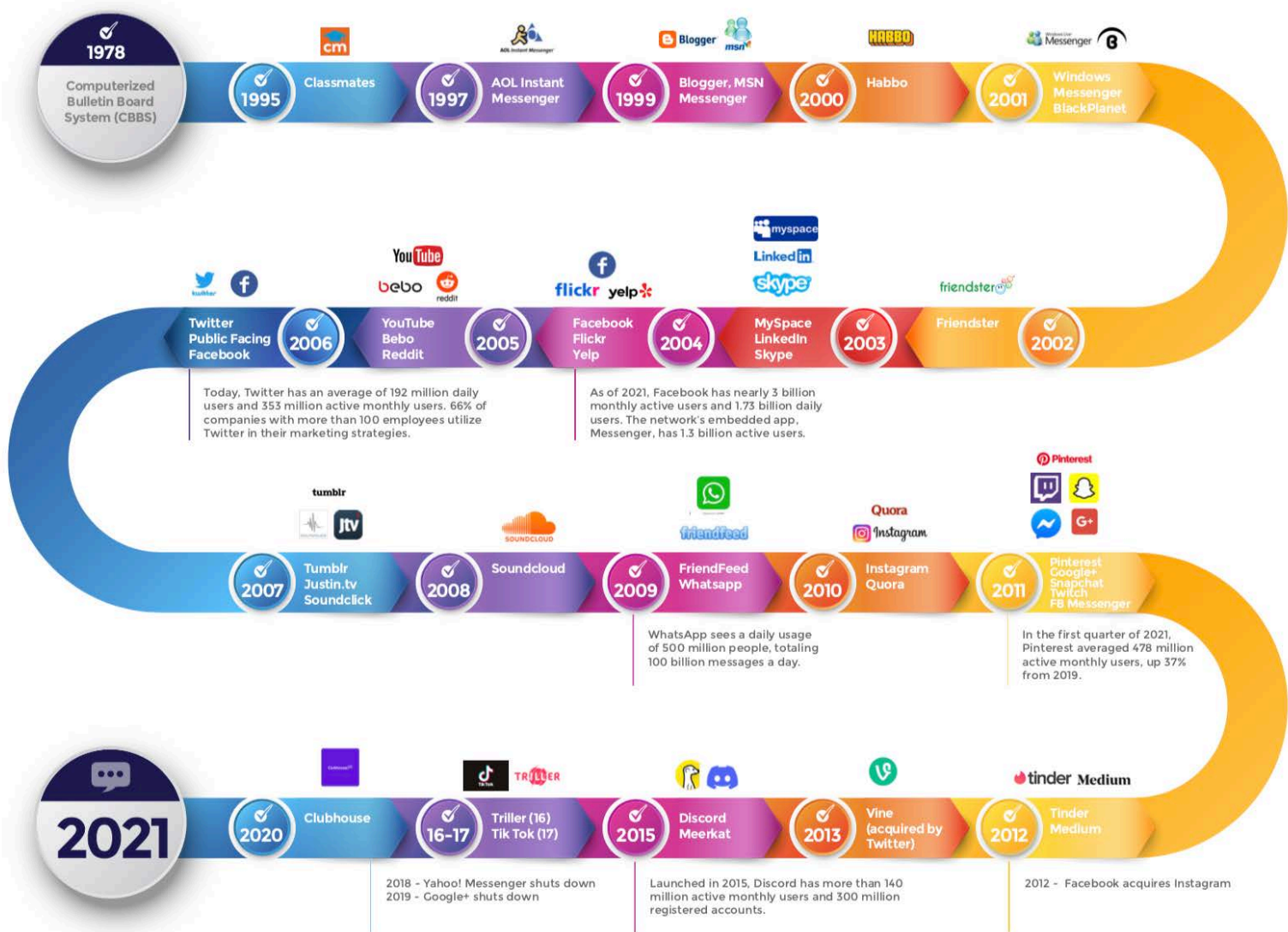


INTRODUCTION

Social media has come a long way since Ward Christensen and Randy Suess introduced the Computerized Bulletin Board System (CBBS) in 1978. In fact, it has become a way of life for home users and businesses alike. For companies, it is a way to humanize their brand, develop customer loyalty, and promote their products more effectively. For casual users, it is a means of connecting with family and friends, meeting new people, and forming relationships with businesses. With social media being such a large influence across audiences, it's vital that social platforms are accessible at all times.

In this white paper, we will discuss the problems social media platforms face in today's online climate, as well as proven DNS solutions that solve them.

SOCIAL MEDIA TIMELINE



DNS STRATEGY



SOCIAL MEDIA ADOPTION SURGES OVER THE YEARS

Since its inception, social media has only grown in popularity. The early 2000s marked the point of no return when networking sites like LinkedIn, MySpace, Facebook, and Twitter entered the market. In 2021, approximately 51% of the world's population now uses social media. That is almost 4 billion people. This is a staggering increase from just a decade ago, which had a user base of 970 million.

Social media is so mainstream that nearly everything in today's online space is socially connected in one way or another. For example, many websites offer logins through social sites rather than setting up a separate account. Businesses include commenting and social media sharing for their content. Social and messaging apps are commonly used in organizations of all sizes. In fact, 90% of employers now look at potential candidates' social media activity when hiring new employees.

In 2020, social media saw a spike in usage, averaging more than 1.3 million newly created accounts each day. This was largely due to the COVID-19 pandemic, but this increased social media adoption is here to stay. The average user spends nearly 7 hours a day online across devices. To look at it another way, that is 42% of a person's waking hours—and much of this time includes perusing social networks.



Approximately 51% of the world's population uses social media. That is almost 4 billion people.



While there are many different social platforms on the market today, the majority share is currently held by:

MARKET SHARE



Facebook and Facebook Messenger

As of 2021, Facebook has nearly 3 billion monthly active users and 1.73 billion daily users. The network's embedded app, Messenger, has 1.3 billion active users.



YouTube

More than 2.3 billion people use YouTube at least once per month and the platform has 30 million active daily users. This equates to 1 billion hours per day.



WhatsApp

WhatsApp sees a daily usage of 500 million people, totaling 100 billion messages a day.



WeChat

As of the first quarter of 2021, over 1.24 billion people actively use WeChat each month and 45 billion messages are sent through the app every day.



Instagram

Instagram has approximately 1.1 billion users as of 2021 and it is estimated that 71% of businesses in the U.S. use the platform.



TikTok

Founded in 2016, TikTok has already surpassed Twitter and Pinterest with an average monthly usership of 689 million.



Pinterest

In the first quarter of 2021, Pinterest averaged 478 million active monthly users, up 37% from 2019.



SnapChat

By the first quarter of 2021, Snapchat had 265 million active daily users who create more than 210 million snaps per day.



Twitter

Today, Twitter has an average of 192 million daily users and 353 million active monthly users. 66% of companies with more than 100 employees utilize Twitter in their marketing strategies.



Reddit

Reddit has approximately 52 million active daily users and 430 million monthly users.



Quora

Quora sees over 190 million monthly users and receives 300 million unique visitors per month.



Discord

Launched in 2015, Discord has more than 140 million active monthly users and 300 million registered accounts.



The aforementioned sites serve a variety of purposes and audiences. There is, however, some overlap and many individuals and companies use multiple social networks. According to Statista, 91.9% of businesses with more than 100 employees are predicted to use social media in their marketing strategies in 2021. This is up 14.7% from 2013.

Why a Strong DNS Strategy is Critical for Social Media Platforms

Considering today's usage and growth patterns year over year, it is imperative that social media platforms have rock-solid DNS and content delivery network strategies in place. Social media is used 24 hours a day for leisure and professional use. Add to that the growing privacy concerns that businesses and individuals share with social media usage and the problems become clear.

DNS-based Problems and Solutions

DNS-based Problems and Challenges

DNS-based Solutions

Downtime and outages

Multi-CDN, Redundancy, Failover

DDoS attacks

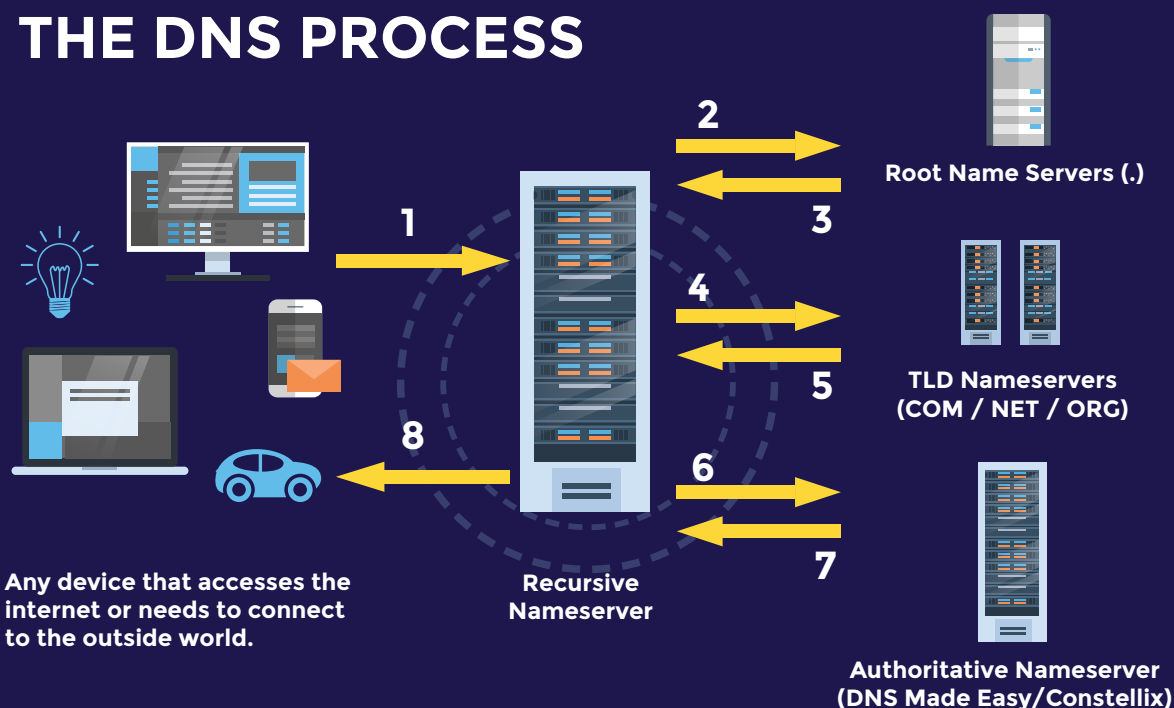
Real-time Traffic Anomaly Detection, IP Filtering, DNS Query Logs and Statistics

Site Performance

Multi-CDN, Global Load Balancing

DNS PROCESS

THE DNS PROCESS



Problem: Downtime and Outages

Unexpected downtime or an outage is detrimental for businesses that require the internet to operate. The damages far exceed the length of time your domain or application is down. In fact, downtime leads to approximately \$26.5 billion in losses for businesses each year. To understand the true cost of downtime, you must also factor in the cost of mitigation, decreased employee activity for affected internal systems, the hit to brand reputation, and possible loss of ad revenue from advertisers and partners.

Not only do outages come at an enormous cost for your platform, but there are millions (or billions depending on the network) of users that depend on social networks for both casual and business use. For personal or casual users, downtime is more of an inconvenience, but for businesses and individual entrepreneurs, it disrupts their ability to promote their products or services and decreases their ad or boosted post visibility.

Approximately 73% of brands include social media in their marketing strategies. The average company spends between \$72,000 and \$126,000 or 13% of its budget on social media campaigns each year. According to Statista, nearly 41 billion was spent on social media advertising in 2021 in the U.S. alone, a significant increase from 15.63 billion in 2016. It's predicted that spending will increase to nearly 57 billion in 2022.

FACT:

Downtime leads to approximately \$26.5 BILLION in losses for businesses each year.



DNS SOLUTIONS



1

Solution: Multi-CDN and Multi-CDN Management

Having multiple content delivery networks (CDNs) is crucial for websites and applications like social media networks. This ensures your domains are safe from unexpected downtime or provider outages. If one CDN service is experiencing issues, traffic is distributed across the healthy CDNs in your configuration. Multi-CDN is a viable choice for platforms that run their own CDN or rely on an external provider.

The challenge with implementing multiple CDNs is management. To be effective, regular health checks must be performed across various regions. Configurations are also complex. To alleviate these challenges, Constellix developed a Multi-CDN management tool that allows administrators to maintain all of their CDNs in one place. This works by creating one record pool that contains the hostnames of your CDN endpoints. Once the pool is created and enabled, Constellix monitors all your CDNs across all regions automatically. This saves time and money, but also provides redundancy. If one of your endpoints is unhealthy, traffic will be diverted to a healthy resource, which avoids unnecessary downtime. For social media platforms, this is an incredibly beneficial tool as your website and apps remain accessible even if one of your CDN providers experiences an outage.

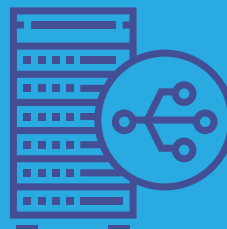
USE CASE:

Prevent outages with multiple CDN management and automated health checks.

Redundancy



Traffic Management



Save Time and Money



DNS SOLUTIONS



2 **Solution: Redundancy With Primary/Primary or Hidden Primary DNS**

The most effective way of preventing DNS-related downtime is by having two providers. Constellix's Primary/Primary option achieves the same result as traditional secondary DNS, but is set up through API calls. With this configuration, you can incorporate redundancy even if another provider does not support secondary DNS. This is especially useful for social media networks using internal DNS as you can configure Constellix to be a hidden primary. With a hidden primary, you will have two authoritative sources and the added security of redundancy while only publishing your nameservers for DNS queries.

Alternatively, you can configure your servers to be the hidden primary and publish Constellix's nameservers to protect your servers from being targeted by a cyber attack.

Use Case:

Use Case: Prevent outages with a second DNS provider. A primary/primary configuration can also benefit performance as some resolvers prefer the fastest server, regardless of whether it is primary or secondary. Hidden primaries provide the same benefit, but offer protection from direct attacks against your nameservers.

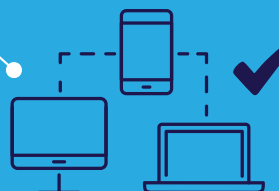
1 provider down



2nd provider kicks in



No impact on end users



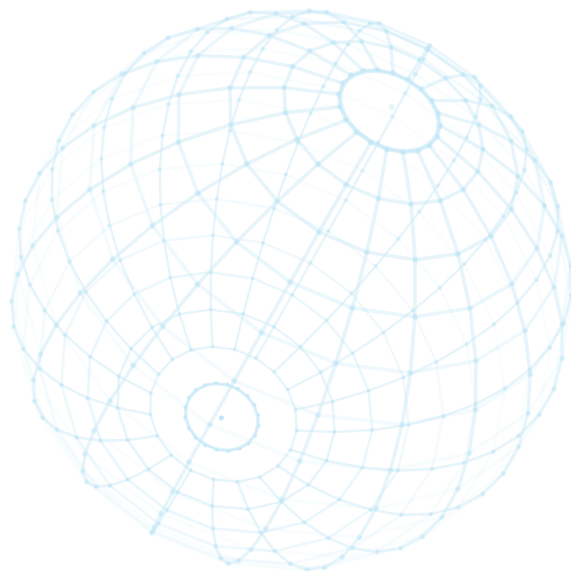
DNS SOLUTIONS



3

Solution: DNS Failover

Failover is one of the most popular load balancing options available. It is also an effective and economical way for social media platforms to remain up 100% of the time. Utilizing Constellix's Sonar health checks, web traffic is automatically and intelligently rerouted to a healthy resource if the primary IP is down or unstable. Constellix takes one additional step in this process and verifies the integrity of an alternative resource before sending traffic to it. This prevents unnecessary downtime in the event one of your backup hosts or IP addresses is unavailable.



Use Case:

When your primary IP or host appears unhealthy or goes offline, your traffic will automatically cycle to the IP/host in your configuration.

**Health Checks
for Resources**



**Automatically
Failover to next
healthy IP/host**



**Back to Primary IP
once available**
(unless configured otherwise)





4

Real-Time Traffic Anomaly Detection

Real-time Traffic Anomaly Detection (RTTAD) is a fully scalable, intelligent service that utilizes machine learning to detect unusual or malicious activity based on your domain's normal traffic patterns. Your IT team will receive instant notifications when anomalies occur, which affords the opportunity to respond proactively and prevent disruptions. This is especially useful for combating DDoS attacks or for identifying misconfigurations that are causing query spikes. RTTAD can be configured to monitor domains by city, region, or world, and provides organizations ultimate protection and peace of mind.

Use Case:

Receive alerts any time suspicious spikes in queries are detected. See where traffic is coming from and make decisions based on your unique, real-time DNS data to ensure optimal server performance or to block malicious traffic before it damages your domain(s).

Enable

Monitor

Protect



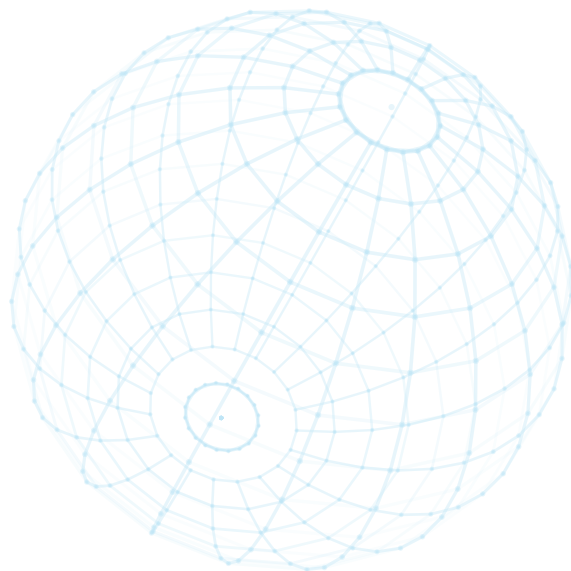
DNS SOLUTIONS



5

IP Filtering

IP filtering funnels traffic to servers based on end-user location or rules that you specify in your DNS configuration. This option benefits domains in several ways. It helps overall performance and enables faster query resolution, but it also allows users to create a firewall at the DNS level. This lets you block malicious or unwanted traffic before it can cause damage to your network. When IP Filtering rules are applied to your domain, DNS servers will be instructed to drop the query.



Use Case:

Segment traffic based on location by filtering by region to send end users to alternate websites or servers or block a specific location, ASN, or subnet from accessing your network.

Geographic filtering



Segment or block



**Improve performance
and protect**





6

DNS Query Logs and Statistics

Advanced DNS and CDN analytics is an essential resource for social media networks. Constellix's monitoring solutions transform your domain data into actionable threat intelligence. With the ability to review historical and real-time domain traffic, administrators can easily identify spikes in queries and take measures to prevent attacks from happening. Query logs and statistics help you make traffic-routing decisions based on user location and content. These tools also assist in pinpointing problematic servers and CDNs.



Use Case:

Prevent DDoS attacks, identify misconfigurations or problematic resources, and optimize your web traffic based on real user activity.

Detect

Analyze

Protect





Problem: Performance

In this digital age, end users don't just crave immediacy, they expect it. As social media networks are often image and video-driven, site and application performance is a key component of a successful online strategy. While speed is important for social audiences, it also plays a large role in SEO ranking. A mere one-second delay in load time for a website can lead to a 7% reduction in conversions. This may not seem like an issue for large established platforms, but the simple truth is new online communities keep sprouting up as technology evolves and more people become socially connected online. Just as users crave immediacy, they are also affected by shiny toy syndrome. As more social networks hit the market, social entrepreneurs need to ensure their services remain as competitive on the backend as they do with user-facing features.

Slow or poor-performing applications can also affect advertising just like outages do, albeit on a smaller scale. This can negatively affect revenue for the network and the advertiser. Ads are often rotated or are geographically targeted. If a resource is unstable or is experiencing more traffic than usual, this can affect resolution speed. This can cause display issues and limit ad or post visibility in some cases.

Solution: Global Load Balancing

Global Load Balancing techniques, such as latency routing balances web traffic across multiple servers. Some type of load balancing is a must for all modern-day systems. Constellix offers an Internet Traffic Optimization (ITO) solution that is regionally-based and uses health checks to determine which resources can best handle a domain's web traffic. This is done in a round robin fashion. It also intelligently accounts for the round trip time (RTT) of the resources in your configuration. ITO has baked-in Failover, and is especially beneficial for multi-CDN and multi-cloud environments as DNS records are automatically updated to point to the fastest endpoint. This is a true "set it and forget it" option that will save your IT team valuable time.



ENSURE SUCCESS



Conclusion

The world grows more digitized by the day and social media is an integral part of the online sphere. With such a reliance on social platforms for both casual and business use, there is a heavy responsibility on networks to remain accessible at all times. The solutions outlined in this white paper not only help protect your network from outages and attacks, but will also give it a competitive edge. Schedule a one-on-one to discuss your unique needs. Together, we can create a bulletproof strategy for your platform.

Why Constellix?

Constellix is an advanced, DNS-focused platform with highly sophisticated features, such as proprietary, in-depth analytics, Real-time Anomaly Detection, Multi-CDN decisions, IP filtering, GeoDNS, weighted load balancing, and more. We're backed by the same network as our sister company, DNS Made Easy, which has dominated the industry in performance and uptime since 2001.

No other authoritative DNS provider has such a powerful set of features, consistent, lightning-fast speeds, and such a long outage-free history.

For information on Constellix's products and services contact us. Our specialists will be happy to discuss your specific needs and work with you to find the perfect DNS solutions for your business.

DID YOU KNOW:

Nearly 41 billion was spent on social media advertising in 2021 in the U.S. alone

Resource: Statista



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