

## APPLIC BY THE NUMBERS

- 14 app categories
- 11 app content categories
- 3500+ application signatures
- 52+ releases per year
- 122+ apps are tested daily and proactively maintained to ensure classification accuracy

## Accurate app identification, categorization, and content classification for enhanced App QoE

**Consumers and enterprises depend on the applications they use for entertainment, communications and collaboration and are therefore highly sensitive to app connectivity and performance. As a result, customer satisfaction is directly tied to application quality of experience (QoE).**

### APP QOE STARTS WITH VISIBILITY

Service Providers need to see what's going on in their networks before they can improve App QoE and hence subscriber experience. Achieving accurate visibility is increasingly challenging as applications have become increasingly complex and more and more applications use multiplexed transport encryption technologies.

AppLogic delivers the most detailed, comprehensive app identification, classification, and categorization on the market.

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### APPLIC OVERVIEW

AppLogic:

- Identifies applications
- Classifies applications
- Categorizes application content

AppLogic is foundational to Sandvine's Application and Network Intelligence portfolio, and plays a key role in delivering App QoE.

AppLogic accurately identifies applications by using multiple techniques, including advanced machine learning. AppLogic identifies, classifies, and categorizes apps with unmatched accuracy, ensuring a deep and detailed view of the content types within each application. To maintain accurate classification in multiplexed flows, AppLogic constantly reevaluates and reclassifies the content within the application flow for the life of the session.

AppLogic identifies more than 3500 applications with better than 95% coverage of your internet traffic. It does so by categorizing these applications across more than 14 app categories and 11 content categories. App Categories allows you to the most popular categories of applications within your network, and know what type of app is being used the most.

App content classification provides a view on the activity within any application. App content classification allows for more accurate subscriber and App QoE calculations.

Since a single app does not only deliver one thing any longer, App Content within the application classification is important to properly analyze and manage the applications that causing impacts to your network. App content classification allows for the most accurate subscriber and app QoE calculations.

Figure 1

App Categories	App Content Categories
Video	Browsing
Television	File Delivery
Social Media	On-demand Streaming
Communication	Live Streaming
Conferencing	Voice Call
Cloud Gaming	Video Call
Device Gaming	Messaging
Audio	Game Play
File Sharing	VR
VPN	Machine to Machine
IoT	Other Content
Other Apps	
Infrastructure Protocols	

## SANDVINE NOW OFFERS THREE LEVELS OF APPLICATION CLASSIFICATION

### App Classification

This product provides simple, accurate application classification across the growing landscape of 6M+ internet apps, and is the current App Classification of our solutions deployed today.

### AppLogic Dynamic

This new product and next generation of App Classification enables service providers to classify applications, as well as application content, for a comprehensive view of application traffic and is updated monthly for ease of deployment.

### AppLogic Precise

This new product provides the same level of detail as AppLogic Dynamic but is updated weekly to ensure the most up-to-date and accurate view possible.

App content category mapping enables a deeper understanding of how applications are being used e.g., video streaming, file delivery, or messaging. All content categories are classified and scored both upstream and downstream, for more effective decision making.

To keep AppLogic data up-to-date and the most accurate it can be, Sandvine tests and analyzes the top 122+ applications daily, on top of the normal monitoring and testing of the 3500+ applications it recognizes today.

Application Categories can be added to address any unique or region-specific applications through the provided custom categories.

## IDENTIFICATION AND CLASSIFICATION TECHNIQUES

AppLogic uses multiple techniques to achieve the highest level of application visibility and accuracy.

### State Machines

Sandvine's application visibility capabilities employ state machines to track, in real time, the state of a protocol. Knowing the state is necessary to distinguish between similar protocols and to accurately identify different traffic types within a protocol.

### Parsers and Analyzers

Parsers and analyzers take state machines a step further. Parsers extract key pieces of information to enable analyzers to link separate flows. For instance, a parser can extract fields, including application name, user agent, referrer, URL, SSL fields, QUIC fields, and others. Analyzers, beyond providing enhanced stateful capabilities, measure flow and session characteristics.

### Behavioral Correlation

Behavioral correlation links together associated flows spanning multiple protocols. As a simple example, consider a DNS request for YouTube, followed by an SSL exchange to known YouTube servers. If these are the only two flows observed during a particular period, then it is known with very high confidence that they are related. If there are many flows happening concurrently, as is more likely the case, then correctly associating related flows becomes significantly more challenging – and Sandvine's years of research and development become critical.

### Machine Learning

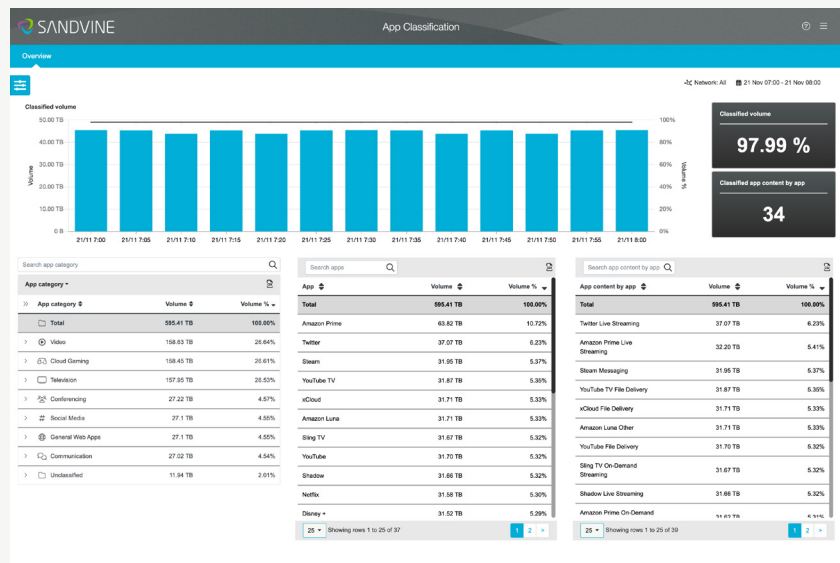
Sandvine uses supervised machine learning models which have been pre-trained in-house and validated for accuracy. These models are used to determine the type of content or traffic within an application. For example, if traffic is classified as YouTube, the AppLogic machine learning models analyze over 100+ traffic parameters to determine whether the subscriber is watching a video on-demand, downloading a video for offline viewing, or just browsing YouTube for content.

## VISUALIZATION

The AppLogic classification dashboard offers a clear historical view for each application category with details on each individual application, how they are being used, and type of usage (app content).

Figure 2

### Sandvine's App Classification



## CONCLUSION

To truly improve App QoE on the network and therefore customer satisfaction, service providers must accurately and continuously identify, classify, and categorize applications and app content. By understanding the different activities occurring within complex applications, service providers can measure and manage their networks with precision and efficiency.

## ABOUT SANDVINE

Sandvine's cloud-based Application and Network Intelligence portfolio helps customers deliver high quality, optimized experiences to consumers and enterprises. Customers use our solutions to analyze, optimize, and monetize application experiences using contextual machine learning-based insights and real-time actions. Market-leading classification of more than 95% of traffic across mobile and fixed networks by user, application, device, and location creates uniquely rich, real-time data that significantly enhances interactions between users and applications and drives revenues. For more information visit <http://www.sandvine.com> or follow Sandvine on Twitter @Sandvine.



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