



# THUNDERSTORM:

## Dynamic Ad Insertion (DAI)-as-a-Service

### Enabling content monetization for OTT operators and platforms

Amagi THUNDERSTORM is the world's leading DAI-as-a-Managed-Service platform used by vMVPDs and OTT operators worldwide. THUNDERSTORM enables operators to outsource complete monetization function to Amagi, as a managed service. The platform hosts a breadth of technology systems; SSAI, ML-based mid-roll ad-point detection, analytics, automated monitoring alerts and system dashboard.

This combined with 24x7 monitoring and support service, and ad-network/ad-exchange partnerships makes it a complete DAI-as-a-service for linear OTT, live sports, news and AVOD platforms.

# Shifting of advertising dollars to OTT

Given the worldwide explosion of OTT viewership, combined with increasing connected-TV homes, the growth of vMVPDs and AVOD operators has been spectacular. These operators are starting to replace traditional cable/satellite as the TV operator of choice. This has led advertisers to start moving their TV budgets to ad-supported streaming platforms as a credible alternative that provides all the benefits of traditional TV advertising combined with targeting and transparency. For AVOD, vMVPD operators, and Connected TV platforms, advertising is becoming an important and scalable revenue source.

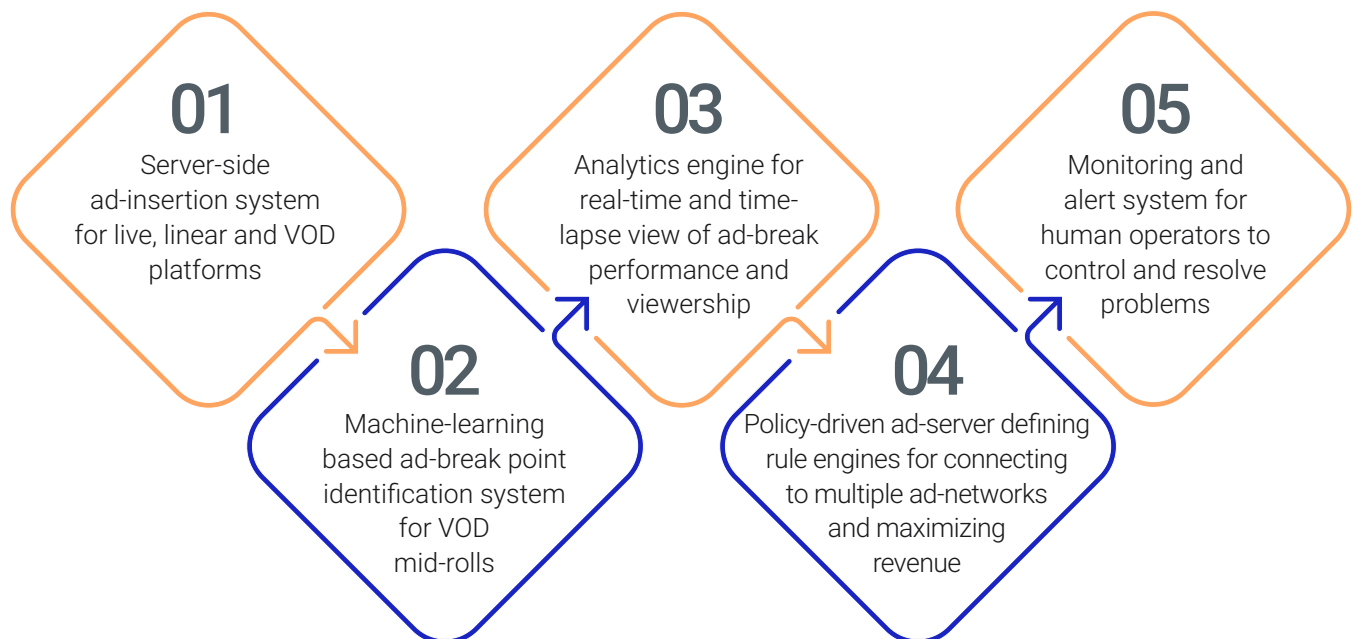
Managing ad-monetization operation is complex. It involves ad insertion and serving technologies, end-consumer device compatibilities, ad-network integrations, multiple video sources, CDN performance, authentication, encryption, ad performance analysis and real-time understanding of fill rates and generated revenue.

In addition to complexity of management, issues not acted in real-time leads to revenue loss for the operator. For high-viewership channels, downtime of ad-insertion infrastructure for 10 mins could lead to losses of tens of thousands of US dollars.

Amagi THUNDERSTORM service platform is currently used by operators as a one-stop-shop for outsourcing their complete ad-monetization operations. The platform is a unique blend of ad-insertion technology, machine-learning models, rich and real-time ad-break performance analytics with system-wide automated monitoring service augmenting human operators to manage a 24x7, high SLA service that maximizes revenues from advertising for vMVPDs, AVOD operators and Connected TV platforms.

## THUNDERSTORM Essentials

The THUNDERSTORM DAI-as-a-Service has the following components:



# Technology advantages

## Monitoring automation

As THUNDERSTORM is delivered as a 24x7 managed service, it has extensive automation for alerts and logs for enabling efficient human management of the platform on a continuous basis. The system has policies for setting escalation and correction procedures based on individual errors/alerts from the system.

The service is tailored for platform needs, for supporting the following aspects:



### A Infrastructure monitoring

- Health of incoming content (VOD, linear, live)
- DAI system uptime and specific infrastructure issues
- Edge device/CDN issues that hamper the service

To manage all of these, the platform has multiple automation triggers to help human operators to take quick actions. Amagi team takes ownership in reporting issues and working with various partners in the value chain to get the issues resolved at the earliest ensuring minimum impact on monetization.

### B Service monitoring

- Input and output stream automated monitoring
- Fill rate monitoring that can impact monetization

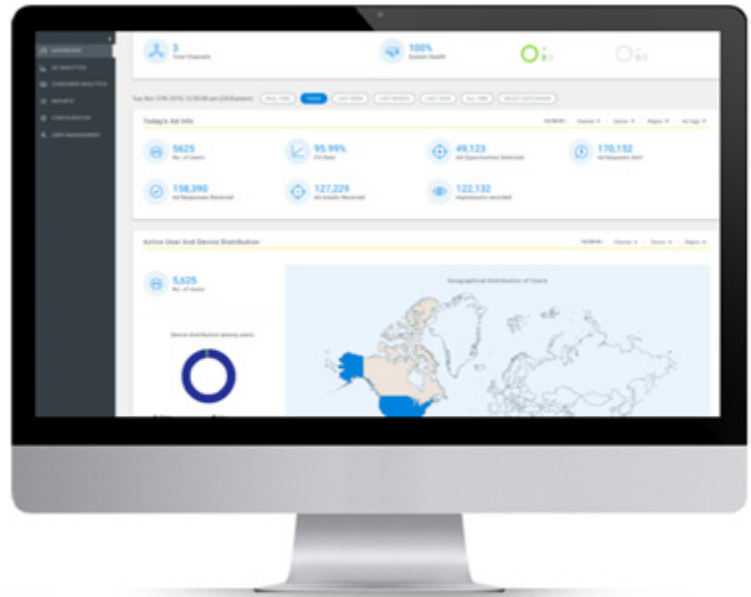
THUNDERSTORM is managed 24x7 from Amagi's operations centers in Bangalore and New Delhi, providing on-call, email, slack support for flagging and resolving video source, ad-insertion, ad-network and CDN problems in near real-time, supported by a pre-determined set of operating procedures, escalation matrices and supervisory staff.



## Advanced analytics

THUNDERSTORM is bundled with extensive analytics visualization tool that enables customers to understand the breadth of system performance from viewership, ad performance, device and geographic plurality. All of these analytics are available in real-time and across multiple periodicity and data dimensions

Following are some of the metrics that Amagi currently supports as part of advanced ad analytics and basic consumer analytics..



### A Ad analytics

- Real-time updates on number of users and impressions
- Fill-rate performance
- Ad-tag performance and comparisons
- Device-based performance
- Completion rates
- Downloadable detailed reports

### B Consumer analytics

- Average user sessions
- Concurrent viewership
- Total number of unique users
- Average ads viewed

## Widest variety of device support

Various implementations of HLS-based connected TV platforms do not support time-based discontinuity (TBD) on streams, which pose a challenge for most SSAI systems. THUNDERSTORM has a unique re-timestamping workflow for ad-serving, which for earlier platforms automatically make the stream look like time-continuous event during ad insertions. By doing this, THUNDERSTORM provides uniform experience across all edge devices.



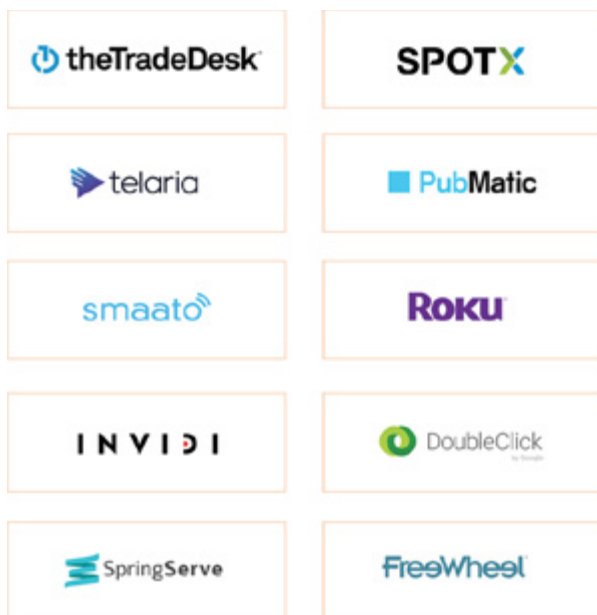
## Lower CDN costs - Single manifest served to all audience

Unlike most SSAI systems that serve personalized manifest files to edge-devices, THUNDERSTORM serves a single instrumented manifest to all devices, where the manifest has redirections for ad segments. This has an inherent advantage in terms of system performance and lower CDN costs in accessing HLS and MPEG-DASH manifests.

THUNDERSTORM does not impact performance of the platform, as CDN serving and characteristics remain the same. Alternatively, in other DAI platforms with personalized manifests, performance of the platform is dependent on the scalability and concurrency support of the SSAI manifest serving system, in turn, increasing the cost incurred on CDNs for manifest distribution.



## Multiple Ad Network configurations



As every OTT platform works with many ad network partners, THUNDERSTORM provides extensive ad network configurations dynamically. It can support multiple ad network partners with a pre-defined priority. It also supports targeting parameters based on geography and/or device types. It also facilitates adding custom query parameters and other custom field mappings that are required for better yield management. It also enables ad inventory split for revenue share if required.

This eliminates the need of managing a separate ad server by any OTT platform that needs only programmatic advertising.

## Reliability and Redundancy

THUNDERSTORM is deployed on AWS cloud with multi-region support. It follows a distributed system architecture with micro-services approach where each component has redundancy built in with autoscaling, failovers and automated recovery. It helps in making sure that in events of system failures for any reasons, the system has at least 99.5% uptime, resulting in higher monetization.



## About Amagi

Amagi is a pioneer and leader in providing cloud-based managed service for broadcast and monetization to the global media and entertainment industry. Leveraging its world-class on-cloud media technology platform, and combining with its unique blend of automation and human monitoring and support system, Amagi provides one-of-its-kind tech-enabled media services to its customers.

Amagi distributes more than 250+ channels across 40+ countries and monetizes ad inventory for some of the large OTT platforms in the US and in Asia.

The company has sales and field support offices in New York, Los Angeles, London and Singapore. Amagi has operations centers in Bangalore and New Delhi.

The company has a dedicated technology innovation team with 100+ engineers, focusing on a broad set of media technologies on the cloud - content ingest, machine-learning based content preparation, playout, live management, delivery and monetization across platforms.

# amagi

Media services | Playout services | Delivery services | Ad revenue services