On-vessel Analytics and Traffic Management

SHAPING-AS-A-SERVICE

Cruise passengers no longer view their time at sea as an opportunity to disconnect – they want access to the same applications and services that they have on land, including video streaming, social media and messaging with friends and family. Connected guests are satisfied guests, but cruise lines are feeling the pressure that this demand for bandwidth is putting on their on-vessel Wi-Fi networks. Yet this demand can't be addressed simply by adding downstream capacity, as passengers are increasingly creating and uploading content such as high-resolution photos and videos, and smart devices often automatically back up that content to the cloud. Given that single images regularly exceed 10 MB and a seven minute iPhone video exceeds one GB of data, Apple iCloud and Google Photos can consume more than 80% of upstream links in peak time, causing contention and quality of experience issues.

Network control for an exceptional passenger experience

SES's Analytics and Insights solution addresses the challenge of ever-increasing on-board bandwidth demand, providing a detailed graphical view into cruise passengers' protocol and application usage. That data can then be used to set network policies designed to optimise network resources while ensuring a high QoE (Quality of Experience) for guests. Delivered as a managed service, the offering can prioritise, restrict or allocate traffic based on parameters such as application type, guest identity or time of day. Policy rules such as only enabling premium-level guests to stream video, or restricting iCloud photo backup during peak hours, enables cruise operators to maximise the value of their onboard networks while ensuring a consistent online guest experience.

Key features:
- Inspects and accurately identifies traffic at layer 7
- Manages individual TCP and UDP sessions and flows to their optimal throughput relative to the capacity available on the link
- Applies policy in the form of shaping that can prioritise, restrict, or share fairly, according to flow
- Increases capacity and controls cost
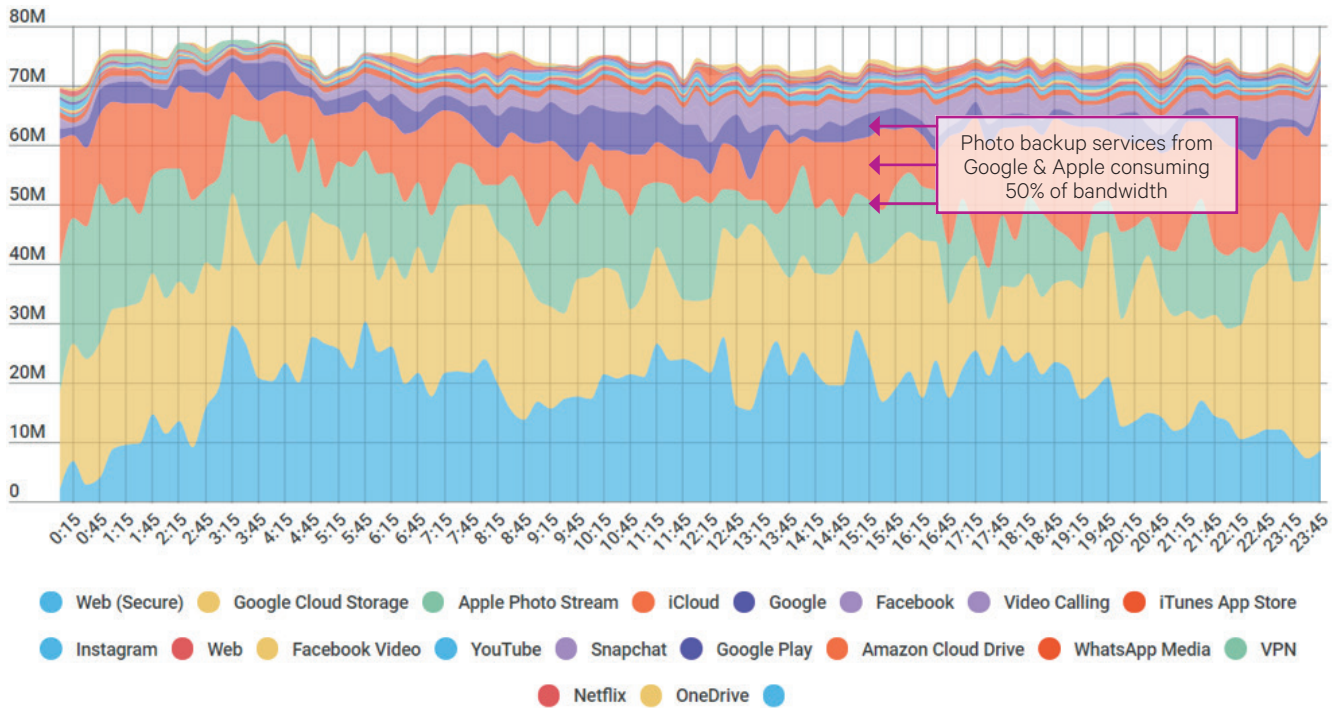- SES managed service with remote monitoring

Benefits:
- No need to retain staff skilled in traffic management
- Determine guest access to applications and services
- Control percentage of bandwidth given for specific applications and services
- Prevents background applications from degrading the user experience

MANAGING UPSTREAM CONGESTION

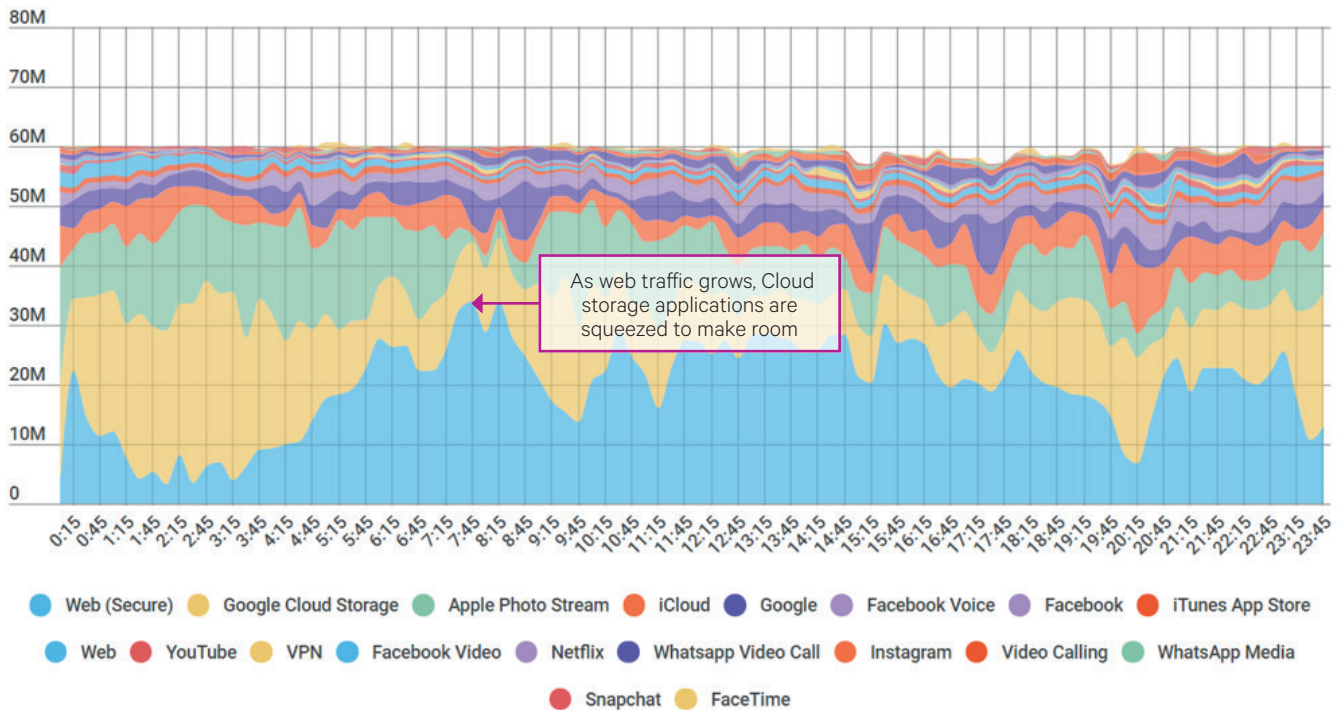## *Before* Shaping-as-a-Service was applied to this cruise ship

Photo backup services such as Google Cloud, Apple Photo Stream and iCloud exceeding 50% of bandwidth consumption and impacting the user experience for the web.

Photo backup services from Google & Apple consuming 50% of bandwidth

Legend: Web (Secure) · Google Cloud Storage · Apple Photo Stream · iCloud · Google · Facebook · Video Calling · iTunes App Store · Instagram · Web · Facebook Video · YouTube · Snapchat · Google Play · Amazon Cloud Drive · WhatsApp Media · VPN · Netflix · OneDrive

After Shaping-as-a-Service was applied to this cruise ship

Policy: Reduce upstream bandwidth to 60 Mb/s while prioritising web traffic.

Overall service level reduced to 60 Mb/s (a 25% saving) while web traffic bursts up to 30 Mb/s, as Cloud backup is shaped to free capacity.

As web traffic grows, Cloud storage applications are squeezed to make room

Legend: Web (Secure) · Google Cloud Storage · Apple Photo Stream · iCloud · Google · Facebook Voice · Facebook · iTunes App Store · Web · YouTube · VPN · Facebook Video · Netflix · Whatsapp Video Call · Instagram · Video Calling · WhatsApp Media · Snapchat · FaceTime

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Learn more about SES's full portfolio of services and solutions.
Website: **ses.com**