

# SatNAG

Satellite Network Advisory Group

2019 UNOLS UPDATE



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# SatNAG - Year in Review

- Working toward identifying next-generation firewalls
- Internet Use Policy being applied on SatNAG members' vessels
  - [satnag.unols.org/internet-use-policy](https://satnag.unols.org/internet-use-policy)
- Metrics gathering continues
- Continue to engage our user communities at key meetings
- SatNAG wiki
  - Testing new software for improved user experience
  - Working on community documentation for Bandwidth Limiters



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# Milestones: SatNAG Next-Generation Firewalls

- Cyberoam is going away
  - **End of Sale:** March 31, 2019
  - **End of Life:** March 31, 2022
- Group purchases will be explored to ease fleet logistics
- We are investigating a new choice that matches key criteria
  - Common commercial solution for better assurance of easier lifecycle management is desirable
  - Security Appliance functionality is needed to be able to meet modern security standards
  - Easy to configure and manage in low-bandwidth scenarios
  - Application Programming Interface (API) for custom viewing/auditing/reporting



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# Milestones: Internet Use Policy in the field

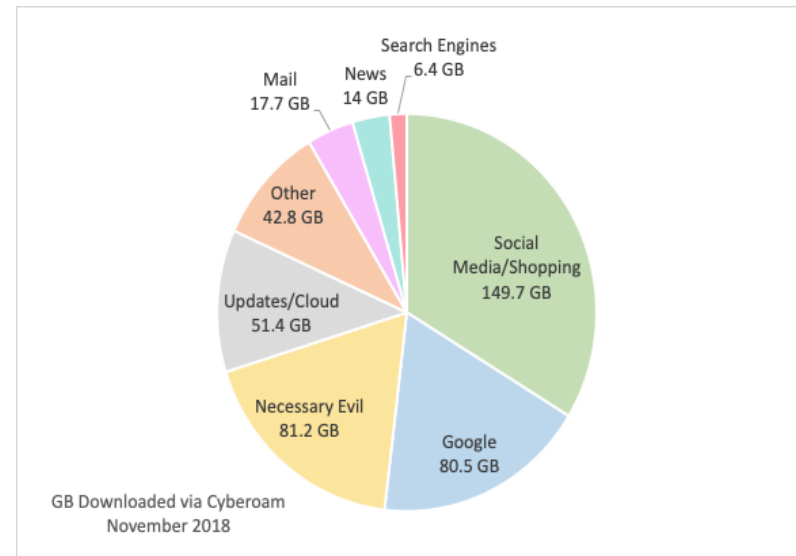
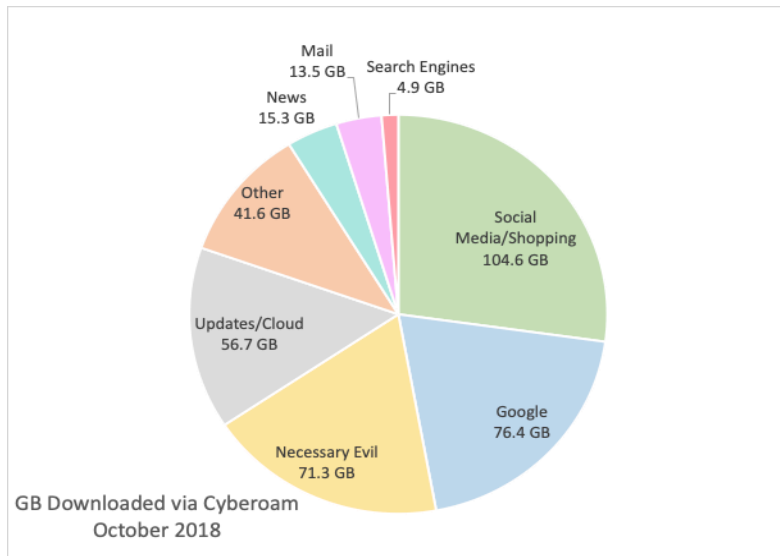
- Being applied aboard SatNAG members' vessels:
  - R/V Atlantis
  - R/V Neil Armstrong
  - R/V Roger Revelle
  - R/V Sikuliaq
  - R/V Sally Ride
  - R/V Thomas G. Thompson
- Metrics continue to be collected and analyzed
- Actively working with a few other operators to have them try the policies and practices aboard their ships.



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# WEB USAGE: Top Domains Oct & Nov 2018

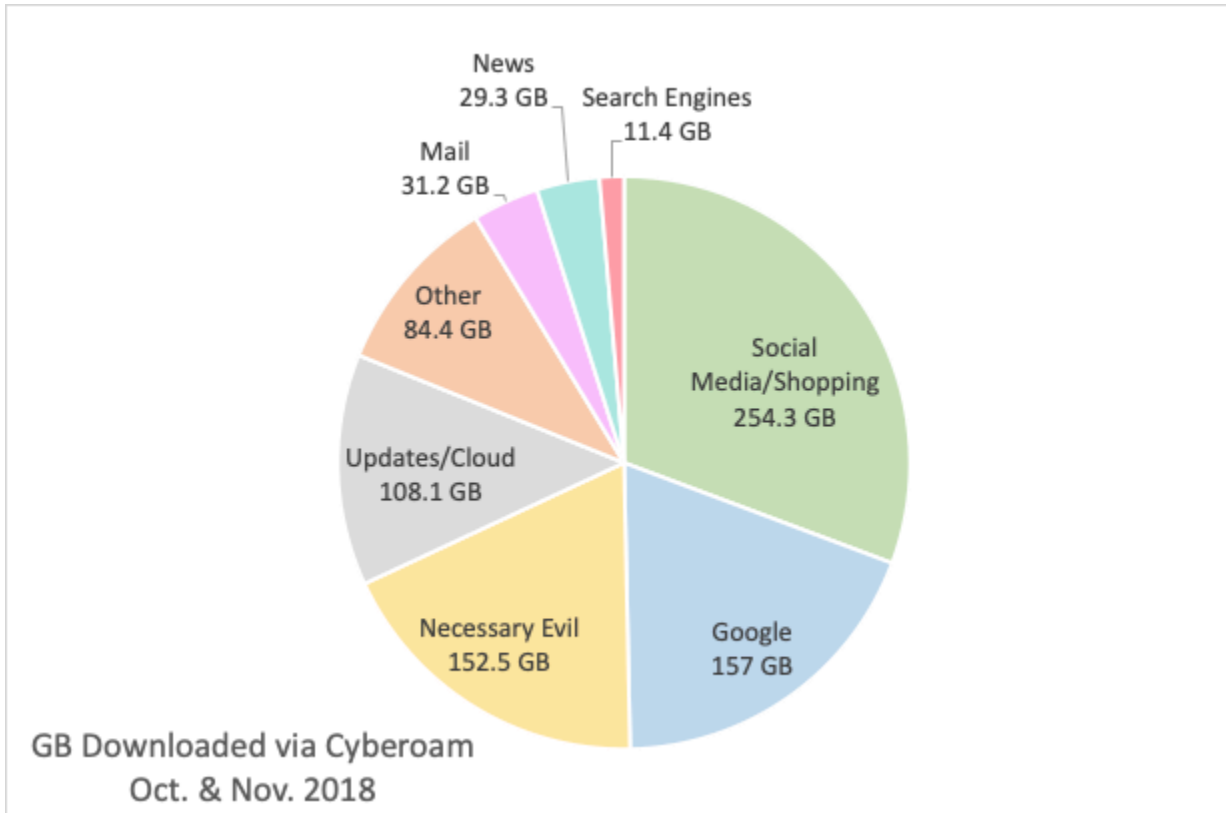


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# WEB USAGE: Top Domains Total Oct and Nov



# Milestones: Key Meetings

- Presenting at UNOLS 2019 Spring Council Meeting
  - <https://www.unols.org/document/2019-spring-council-meeting-agenda>
- Presenting at UNOLS 2019 RVOC Meeting
  - <https://unols.org/event/meeting/2019-rvoc-meeting>
- Information gathering at 2019 NSF Cybersecurity Summit
  - <https://trustedci.org/2019-nsf-cybersecurity-summit/>
- Presenting at 2019 RVTEC Meeting
  - <https://www.unols.org/event/meeting/2019-rvtec-meeting>



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# Milestones: SatNAG wiki

- In development
- Outcomes
  - Web based documentation and searchable knowledge base
  - Documented procedures
  - Links to online resources
    - Internet Use Policy
    - Expectations Memo
  - Helpful Tips and Tricks for working in low bandwidth environments



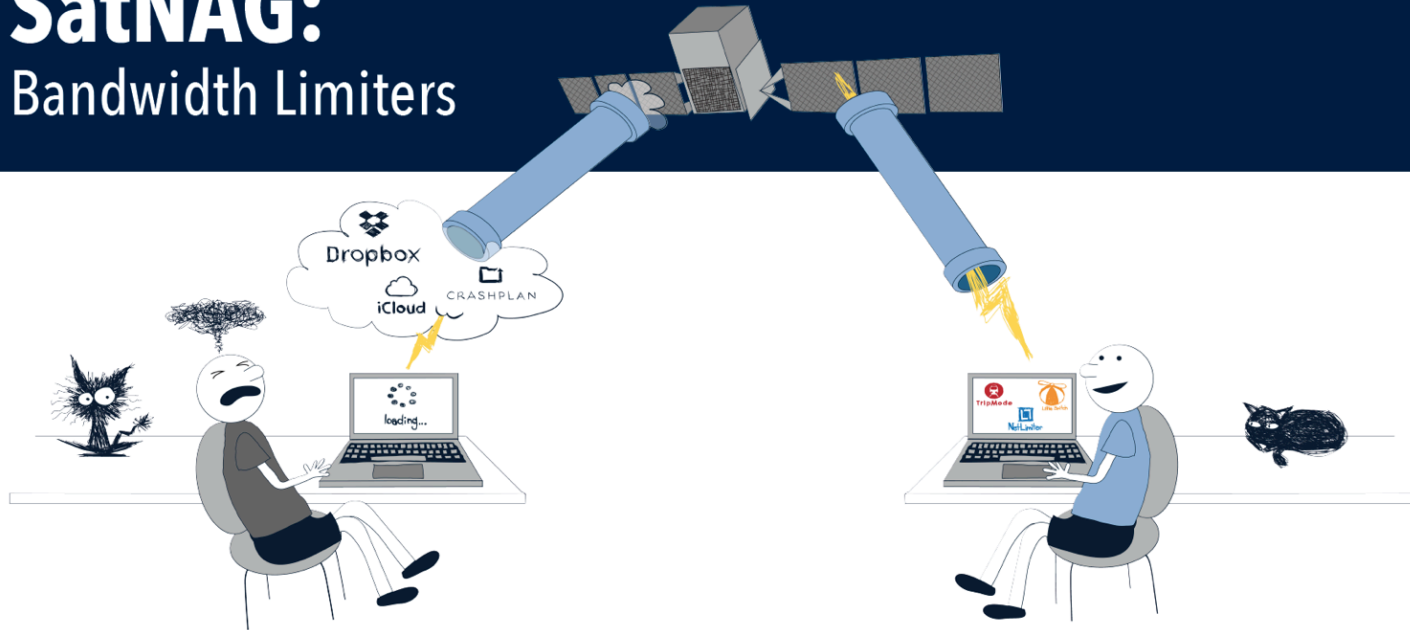
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# SatNAG: Bandwidth Limiters



## Don't let this be you!

... so, you are headed off to sea with your brand new state of the art laptop, all loaded up with the latest and greatest software, instantaneously jetting you off to the far reaches of the Internet. Unfortunately, you never seem to manage to leave the confines of your screen and you have become intimately familiar with the little spinning orb in the corner of your browser.

This is an all too familiar story. Bandwidth is finite, the more users, the more applications accessing the cloud, the more congested the satellite connection becomes, and the more frustrating the users experience.

## Bandwidth limiters

... can monitor and control bandwidth usage on a per application basis, and can be a big help in controlling individual device bandwidth usage.

Bandwidth Limiters including TripMode (MAC and Windows), Little Snitch (MAC), and Netlimiter (Windows only) are useful for blocking unwanted network access while at sea. They can also show you what connections your computer is making to the outside world. They will not limit bandwidth per se, but will allow you to see what connections are being made and thus allowing the user to stop unwanted activities.

## Bandwidth management

... is the process of measuring and controlling the communication on a network link to avoid filling the link to capacity. A full link can result in network congestion and poor performance. SatNAG is currently working on a program to use individual quotas (captive portal), application/ web filtering rules (cyberoom), and analyzing metrics (cyberoom) to mitigate the congestion. If all parties, including individual users and their devices, ship IT, Institution IT, satellite IT, work together, a more viable internet experience can be our future.



Laura Stolp, Woods Hole Oceanographic Institution  
 Ken Feldman, University of Washington  
 Jon Meyer, SCRIPPS/University of California San Diego  
 John Haverlack, University of Alaska Fairbanks



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# 2019-2020 Goals

- Continued wiki work to updating user-facing SatNAG website content
- Identify next-generation firewalls
- Develop testing strategy prior to deployment
- Define a deployment strategy for the next-generation firewalls, at scale
- Revisit a coding effort to produce metrics collection, which will drive facts-based decisions
- Explore practices for scalable deployments and security



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Thank You!

Questions?



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