



# ARE YOU CONTROLLING YOUR DATA, OR IS IT CONTROLLING YOU?

### A "BYTE-SIZED" GUIDE TO MASTERING DATA MANAGEMENT

By: Chris Watson, Vice President, Marketing and Communications, KVH Industries

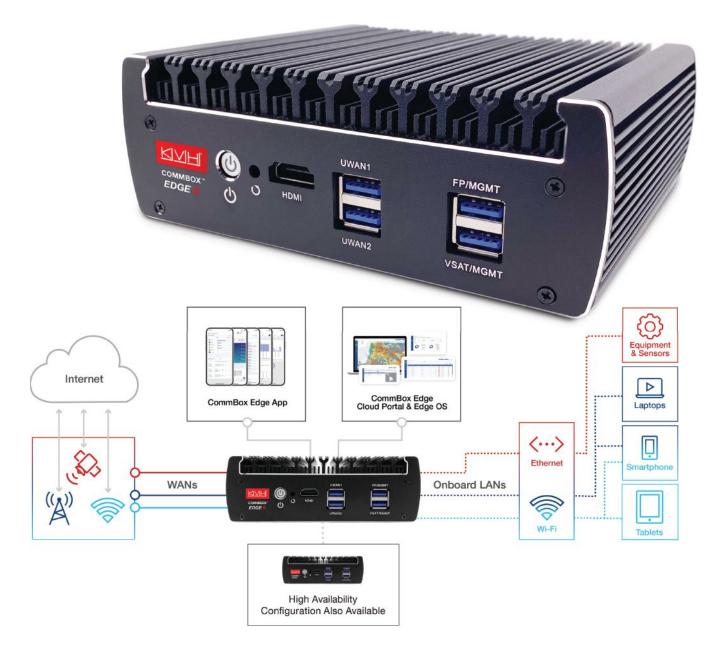
Staying connected at sea is both a luxury and a necessity. Today's boaters use their onboard data for navigation, entertainment, work, yacht management, and more, but each bit and byte counts, especially when you rely on satellite or cellular networks that may have data caps or high costs (at least compared to home Internet services). Balancing digital habits onboard requires knowing how much data popular apps and services actually use, following some practical management tips, and, for those who want robust control, taking advantage of advanced tech that offers dynamic network and data management, real-time data consumption monitoring, user permissions, and smart, stress-free, and user-friendly bandwidth control.

### DATA USE: WHAT'S EATING UP YOUR BANDWIDTH?

Every email, photo, or streamed movie contributes to your data bill. Here's a quick look at common apps and services

used at the dock, along the coast, and out on blue water, along with the real data costs you might incur at sea:

- **Netflix & Streaming:** Video streaming is by far the biggest data hog. Netflix, for example, uses about 0.3 GB/hour on low quality, 0.7 GB/hour in SD, 3 GB/hour in HD, and up to 7 GB/hour in 4K. Even the mobile "automatic" modes can chew through 0.25 GB/hour. Streaming music is lighter: Spotify or Apple Music typically uses 40 to 150 MB/hour.
- Video Chat: Video chats with the office, your kids' friends, or the grandparents back on shore are a great way to stay in touch and share your boating experience. Those videos do chew up data, though. FaceTime is typically 200 MB/hour, WhatsApp video can consume between 300 MB/hour and 1 GB/hour depending on your quality settings, and Zoom and Teams can use as much as 3 GB/hour, especially on group chats with HD quality.



- Navigation Tools: Apps like Navionics, Windfinder, or Marine Traffic can often be used offline if charts are predownloaded (highly recommended!), but real-time weather and AIS updates will eat into your usage.
- Web, Social, and Email: Expect to consume about 60 to 150 MB/hour web browsing, depending on the amount and quality of images and video content. Email is typically a light data user unless you're sending and receiving media files (those ultra-HD images taken with your new mobile of that big fish you caught look awesome, but they can be big!).
- · Cloud Sync & Messaging: Auto photo syncs, data backups, and messaging apps can quietly use a surprising amount unless managed, especially when it comes to media, such as when your phone's photo app automatically uploads those photos of that great double rainbow to your cloud storage.
- Online Gaming: That first-person shooter your kids love to play with their friends? The real casualty might be your data plan. A typical online game can chew through anywhere from 40 to 300 MB per hour.

• Software Updates: On shore, with access to ubiquitous and often free high-speed Wi-Fi, we don't think twice about having our phones, tablets, or laptops download app and system updates in the background automatically. However, those updates can silently consume many GBs of data in the background as you cruise along the coast if you fail to change your settings once you're on the boat.

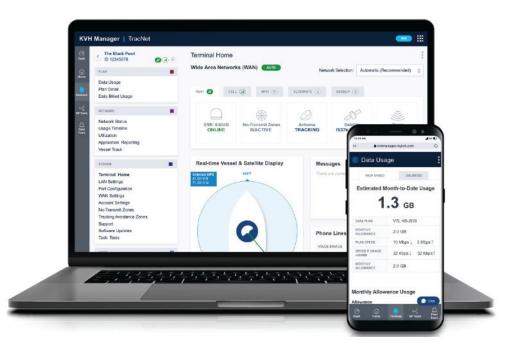
Here's a summary of the approximate data usage for a typical yacht crew/guest using digital services:

### **Activity**

Standard web browsing: Email (no attachments) Social media scrolling: YouTube SD video: Music streaming: Online gaming: Video call (Zoom/Teams): Nav/weather, app sync

### **Estimated Data Use**

60 to 150 MB/hour <1 MB/email 80 to 120 MB/hour 0.5 to 1.5 GB/hour 40 to 150 MB/hour 40 to 300 MB/hour 0.5 to 2 GB/hour Varies: 5 to 50 MB/session



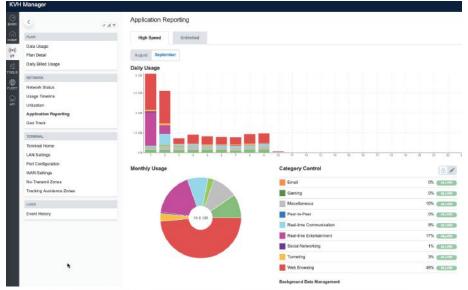




Photo backup/upload: 3 to

10 MB/photo (hi-res)

Netflix HD (per hour): 3 GB Amazon Prime 4K: 6 to

7 GB/hour

Big streaming sessions or software updates quickly add up, making data management especially important when offshore.

### BEST PRACTICE TIPS FOR ONBOARD DATA MANAGEMENT

Skippers and guests can make smarter choices and stretch their data plans with a handful of practical tactics:

#### · Download Before Departure:

Preload navigation charts, weather maps, movies, and playlists while on marina or home Wi-Fi, minimizing offshore consumption.

- App Settings: Switch video streaming, cloud backup, and navigation apps to "offline," "eco," or "data saver" modes where possible.
- Device Management: Beware those automatic update settings that allow your mobile devices to update automatically when connected to Wi-Fi. For convenience, you may have a Wi-Fi network onboard, but it still connects to and consumes data over your satellite or cellular connection. So, enjoy that Wi-Fi connection, but perhaps turn off those automatic updates until you're back on dry land. Plus, disable those background app refresh options, and restrict unnecessary devices from connecting to your yacht's network. Wi-Fi passwords are your friend!
- User Education: Brief crew and guests on basic data costs and set realistic usage guidelines.
- Data Alerts: Use routers or network management systems that can monitor real-time usage and send alerts when approaching data caps, or use one of the many available tools to limit use on a per-network, per-user, or per-device basis.

### ADDITIONAL SECURITY CONSIDERATIONS

- Implement strong password and access management. A secure password manager can limit the risk of unauthorized use by the friendly folks anchored nearby.
- Consider a Mobile Device Management (MDM) tool for remote lock/wipe if your phone is lost overboard.
- Limit sensitive online transactions when on public marina hotspots; consider using a VPN for business or banking use.

## THE CASE FOR ADVANCED DATA CONTROL: KVH MANAGER & COMMBOX EDGE

If managing multiple users or integrating several WAN types (VSAT, Starlink, 5G/LTE, marina Wi-Fi), advanced solutions like KVH Manager and KVH CommBox™ Edge Communications Gateway provide yacht owners, guests, and a yacht's IT support staff with unprecedented flexibility.

KVH Manager: Granular User Control

KVH Manager is a cloud-based portal for vessels subscribing to KVH's VSAT, 5G/LTE, hybrid, and LEO networks (such as Starlink and OneWeb). Key features include:

• Gain visibility and control over how your data is being used. Plus, allow, restrict, or block data usage in as many as 11 application category groups, including background data, to ensure that your data is being used for the activities that

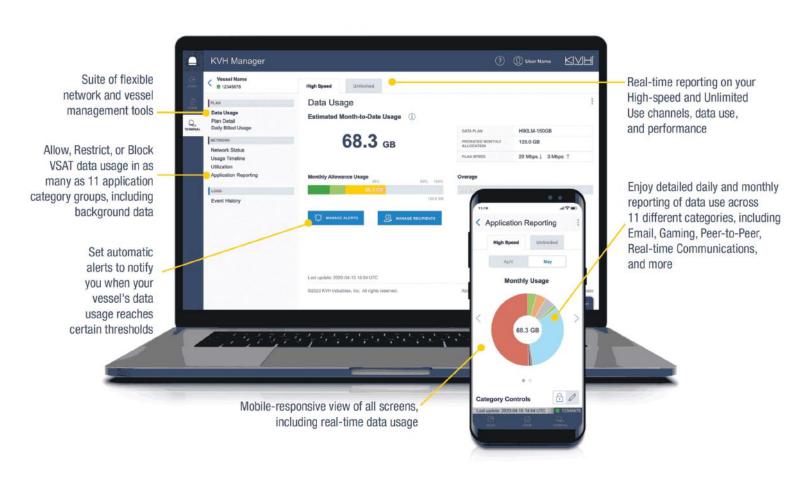
are most important to you.

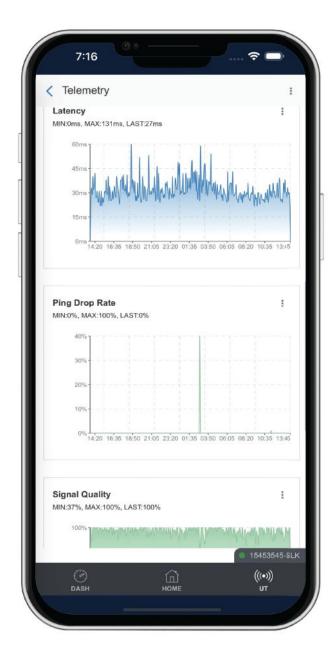
- See terminal status, automatic network switching, manual network switching override, and more.
- Enjoy real-time, daily, and monthly reports on estimated data usage in the current billing cycle, actual monthly usage, and any overages, and data usage by application category
- Stay updated with automatic alerts to notify you when your vessel's data usage reaches certain thresholds, ensuring you have complete visibility into your data use and avoiding surprises on your airtime bill.
- Keep an eye on your yacht when it's out on charter with the Geo-Tracking Service that delivers a detailed and up-todate historical track and position data you need at any time, and from any Internet-connected device.

These controls minimize the risk of unexpected overages and the resulting bill shock and help manage bandwidth use across large and small yachts alike.

### ADVANCED NETWORK AND BANDWIDTH MANAGEMENT

Yachts have always been a home-away-from-home, and with the advent of affordable, high-speed satcom, they are increasingly extensions of your home office as well.





And with the increasing use of multiple communication networks (aka Wide Area Networks or WANs) onboard, your yacht's connectivity may require an upgrade to manage those networks and your bandwidth. Well, you're in luck. There are some outstanding tools out there to deliver exceptional control and versatility. Many of these rely on dynamic network technology such as Software-defined WAN (or SD-WAN), which enables the management tool to automatically adjust which networks are being used, how they are used, who gets to use them, and more. One such solution is the KVH CommBox Edge Communications Gateway. Its network and bandwidth management capabilities include:

• Flexible WAN & LAN Integration: Seamlessly combine VSAT, Starlink, OneWeb, 5G/LTE, and marina Wi-Fi; load-balance, prioritize, or bond connections for higher reliability and speed. Have two Starlink terminals on board? Bond them to double your download and upload speeds. Have a 5G cellular system

as well? The system can prioritize using 5G when a signal is available, then automatically switch your communications to your OneWeb network when you head offshore.

- Dynamic Policy & Quota Setting: Create segmented networks (e.g., owner, crew, charter guests, operations) with custom rules for each. Assign bandwidth priority or block usage types, automatically shifting allocations, access, allowed data speeds, and permitted applications based on data usage, WAN availability, Local Area Network (LAN)-specific permissions (e.g., no limits for the owner while crew have daily, weekly, or monthly data allocations), and other parameters.
- Real-time Alerts & Deep Analytics: Monitor all network traffic and see data use by user, device, and app. Block specific apps on a dynamic basis (have you consumed 80% of your monthly data, and you still have two weeks left in the month? Let CommBox Edge adjust permissions to restrict streaming to standard def or restrict the use of specific applications until your new monthly data allocation is available. Plus, you can get proactive notifications as you consume your data over the course of the month.
- Remote Access & Security: Administer your communications system remotely for troubleshooting, updating policies, or adding users. Reduce your risk and stress by using the CommBox Edge "Secure Suite" with advanced cybersecurity features for peace of mind.
- Cloud-based Management: Best of all, CommBox Edge is designed with your mobile devices in mind. No programming, no coding, no 20-minute tutorials to make a single change. Just an easy drag-and-drop user interface so you can spend more time enjoying your boat, not fretting over how to get your onboard Internet to work.

Best of all, the CommBox Edge, like other available options, is network-agnostic, making it suitable for any vessel wanting fine-grained data management regardless of what networks you want to use.

### CHOOSING THE RIGHT APPROACH FOR YOUR YACHT

Every boat is different: a day cruiser near shore may get by with 5G/LTE connections in the marina and along the coast, while cruisers, charter vessels, or yachts with a demanding guest itinerary could face real challenges in data budgeting and prioritization.

### FOR SIMPLE NEEDS

- Use a 5G/LTE router with a generous data plan and set up device-specific limits.
- Preload as much content and work data as possible while ashore.

### FOR TECH-SAVVY OR MULTI-USER YACHTS

- Consider an onboard network manager for guest/crew controls and bandwidth controls.
- Invest in cyber hygiene and cloud backups for essential systems and documents.

### FOR LARGE. CONNECTED. OR CHARTER YACHTS

- Deploy an all-in-one SD-WAN network and bandwidth management system to blend multiple WANs, control your onboard networks, manage permission hierarchies, dynamically adjust to network and data use changes, and maximize redundancy.
- Integrate with vessel management platforms for holistic oversight covering navigation, engineering, entertainment, and compliance, all in one dashboard.

### STAYING FLEXIBLE. SECURE. AND IN CONTROL

The expanding demand for data on the water makes disciplined data management more essential than ever. Taking charge of onboard data starts with:

• Knowing Your Apps' Appetite: Get familiar with the data requirements of the apps and services you rely on and enjoy, and plan accordingly.

- Setting Up Smart Controls: Use app settings and user permissions at the device level, and build policies into your onboard router or advanced gateway.
- Embracing Advanced Tools: For larger or more complex yachts, take advantage of advanced yet easy-to-use network and bandwidth management tools that offer the blend of granular control, user management, dynamic routing and permissions, and cybersecurity needed for confidence offshore.

Balance convenience, cost, and control, and you and your yacht can stay smart, safe, and always connected.

### AUTHOR NOTE:

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