Tips & Tools to Reduce Network Usage
Inmarsat Fleet Broadband / Bgan

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Purpose
The purpose of this article is to highlight strategies to manage network usage and thus the cost of your satellite terminal. Windows is assumed to be the PC operating system. You may need an experienced IT professional or navigator to get the most out of the items listed below.

Preface
This is a 7 (!) page document intends to help reduce your network traffic. The job can be tedious and time consuming, but has rewards in reduced traffic and smaller invoices.

Fleet Broadband (FBB) and Bgan services operate on the Inmarsat "I4" satellites. When a FBB / Bgan terminal connects to the internet, it is a "wide open" connection, meaning there are no restrictions where your computer can go (web pages, email, download files, etc.). This also allows background operations to use data that you didn't intend on.

 "FBB" is used to describe Fleet Broadband or Bgan terminals for the rest of the article.

Network Configuration
There are several ways to physically connect a FBB to a PC, 1) direct with an Ethernet cable, 2) on a Local Area Network (LAN) using a network switch and 3) via a router. If other "consumers" of internet data are on your network, all the items below apply to all "consumer" devices.

Managing "Standard" Sessions
A Standard Session is the most common mode when connecting to the internet with your FBB. There are two ways to start and stop a Standard Session, 1) with a web browser using the web page served by the FBB terminal and 2) Inmarsat Launchpad. Starting a session is easy enough, but knowing you are connected and stopping the session is prone to operator error.

1. There are many FBB manufacturers, the most popular being Cobham (formally Thrane & Thrane). **To start and stop a session to the internet is straight forward, with a twist**. The terminal serves a home page at the bottom of which is a link "Start Standard":
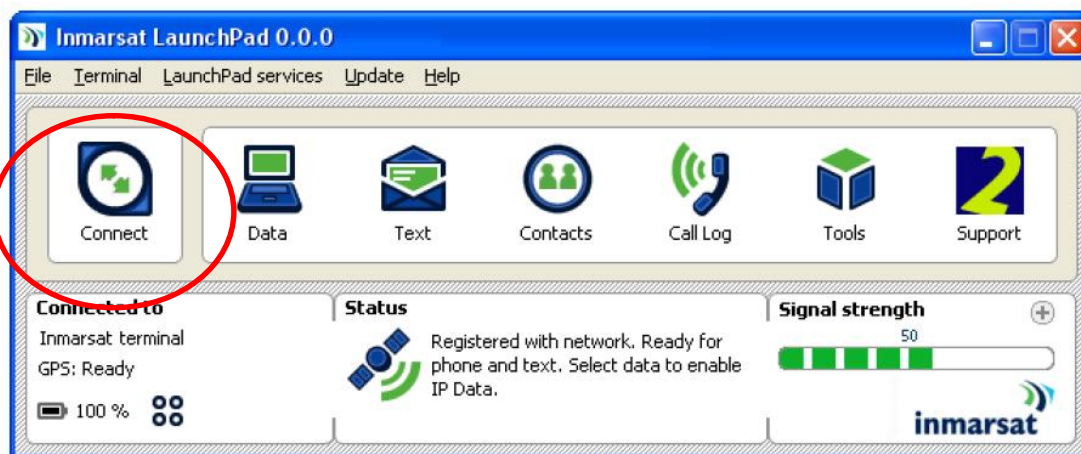
Clicking Start Standard commands the terminal to connect to the internet.

The Twist: The "Start Standard" text does not change to "Stop Standard" once you are connected – thus the Refresh button underneath.   After starting a session and connected to the internet, **you must click the Refresh button to see the Stop Standard link.**

2. **Inmarsat Launchpad** is a utility offering a simplified interface to your FBB to start and stop sessions and other useful tools. **Launchpad is the preferred way to manage your teminal connection and do Text messaging.**
3. Launchpad requires Java 1.6 or 1.7 and can be difficult to install. Try installing "as administrator". Win and Mac version download:

http://www.inmarsat.com/support/fleetbroadband-firmware/fleetbroadband-launchpad/

Download Java 1.7: https://www.dropbox.com/sh/cnw7090rmmjrqpj/AABt-fqS34N7IydzNsiBLuB3a?dl=0

Launchpad also installs TCP Accelerator, an Inmarsat application to help reduce network traffic. TCP Accelerator manual (PDF)

Network Monitoring

What is using all my data? This is a common question, usually asked after the bill arrives. Applications can be installed that tell you what is going on and once installed, the common reaction is WOW, there is a lot going on

1. Glasswire is an application that monitors and tracks network activity on your computer. It has an intuitive interface for very technical data. We suggest the $49 paid version. Features of Glasswire we like are the graphics, easy to see a new application using data, firewall settings and a selection to completely shut off the network traffic from your PC.

    Download Glasswire: https://www.glasswire.com/

Firewalls

A firewall is essentially a filter allowing various types of traffic to pass or be blocked. This can be function / application specific or by network "ports". Think of a network port as a channel and the firewall enabling or disabling channels. There are software and hardware firewalls; we focus on software, though the use of hardware may be better suited for your network configuration.

Windows Firewall is built into the Windows operating system and can be used very effectively. There are many 3rd party firewall applications, such as Glasswire. Glasswire also has the feature to easily stop all network traffic from the PC and only allow apps that you specify.

A comprehensive discussion of setting up Windows Firewall (for Sailmail) :
http://www.saildocs.com/sailmail/firewall

Kill Unwanted Activity

Windows Update, Adobe Acrobat, virus software, even your web browser… all of these applications rejoice seeing an internet connection. In our land based broadband life, software is designed to help themselves to internet bandwidth. Finding and disabling these features is time well spent.

Use an application like Glasswire (see above) to identify applications using bandwidth without your permission.

We also suggest the use of **Malware detection software** to find unwanted activity. Look at Malwarebytes. The free version needs to be updated manually, which is good in that you should update the app and run a scan before your voyage. https://www.malwarebytes.org/

Email Client Applications

When using an email client such as Outlook, you can reduce network traffic by:

1. Use IMAP instead of POP email protocol
2. Disable automated sending and receipt of new mail
3. Send messages as text, not HTML
4. Disable signatures and read receipts

TCP, Browser Performance Enhancements

1. Install Launchpad (page 2 above) which will install TCP Accelerator
2. Advanced users - Optimize TCP/IP by setting window size to 131071

3. Some key browser settings are discussed below. Also **check for Add-In apps for your browser designed to reduce data usage!**

Chrome and Firefox are the most popular browsers, we like both. For low bandwidth use, also look at Opera. The **"Opera Turbo" mode** is specifically intended to reduce data use.

 a. Turn off cache or history deletion and increase the cache volume to the maximum recommended by your browser.
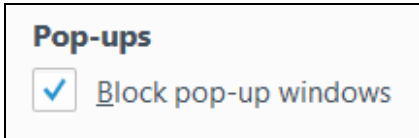 b. Turn off download of images
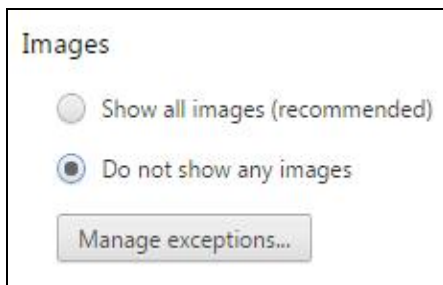
(Chrome > Privacy > Content Set)   (Firefox Add-Ins)

 c. Play animations in web pages "OFF"
 d. Play sounds in web pages "OFF"
 e. Show pictures "OFF"
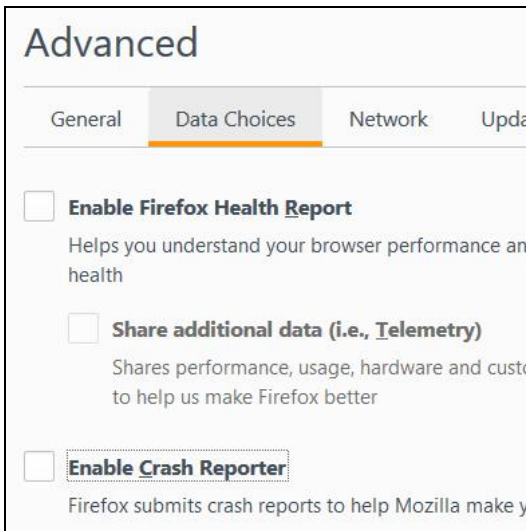 f. Pop-up blocker "ENABLE"

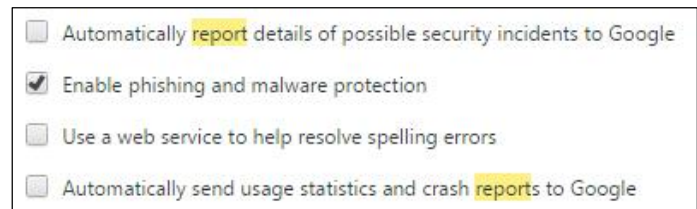(Firefox)   (Chrome > Privacy)

g. Enable content control
h. Turn off Sync features
i. Enable Click-To-Play Plugins. Enabling click-to-play plugins in Chrome and enabling click-to-play plugins in Firefox.
j. Disable reporting

(Firefox)   (Chrome > Privacy)

VOIP & Messaging (Skype etc.)
It is recommended to turn off all instant messaging applications when not in use - Skype, Messenger, Yahoo, Gmail, AOL etc. These apps constantly run data in the background and do large bursts when an internet session is opened up. Furthermore, VOIP (e.g. Skype calls) are not recommended as the data costs are typically higher than regular voice calls.

Typical Data Hogs

1. Facebook, Yellow Brick tracking, CNN (and similar) websites are graphic intensive and require a lot of data to fill your browser webpage.
2. Uploading to Facebook can be very data intensive. Solutions:
   a. Look to blogs designed for low bandwidth such as SailBlogs to post text and photos from ship to shore. SailBlogs will also post to Facebook!
   b. Email posts to Facebook instead of using the Facebook webpage. In doing so, your email client software can be set to reduce the size of pictures before sending.
3. Dropbox, Google Drive etc. are constantly checking for new files. We don't recommend using these types of cloud services. Worse case is a large file gets added on land and the ships PC tries to sync through the Inmarsat connection.

3rd Party Services

There are several fee-for-service 3rd parties that help reduce satellite data usage by batching and compressing data and limiting internet traffic. The vendors' services require you install their software and when used, the programs can invoke firewall and proxy settings to only allow traffic through their servers.

1. Sailmail – known for comprehensive weather and email over SSB, Sailmail works just as well (or better) over a satellite connection. Email "batching" and compression reduce the number of bits sent. http://www.sailmail.com
2. Global Marine Net – X-Gate services from GMN are similar to Sailmail but extends offerings to Android and IOS. GMN also offers hardware firewall devices and web browsing filtering to reduce data usage. http://www.globalmarinenet.com
3. UUPlus – Similar to Sailmail and GMN for their "batching" and compression of email sessions and offers month to month subscriptions. http://www.uuplus.com
4. SailBlogs – Designed for low bandwidth use. Blog with text, pictures and position tracking. SailBlogs can POST TO FACEBOOK. http://www.sailblogs.com
5. Sailblogs to Sailmail or Global Marine Net integration is probably the most efficient way of updating a blog and Facebook.

Windows, Mac, IOS, Android – is one operating system better than another?

This is big question with almost infinite possibilities. From our experience, Windows and Windows applications are more aggressive about going to the internet when a link is open, but a parallel is an Iphone which has a core philosophy of always having a network connection.

The bottom line is precautions need to be put in place no matter what platform you are running.

Terminal Global Settings

If your terminal will only be used for email, contact LinkWav and request your "trench rules" be set for email only. Web browsing and other services will be blocked.

Text (SMS) messaging

SMS is an inexpensive way to communicate without going online. SHORE to SHIP is free via the LinkWav website. Ship to shore = 50 cents.

http://linkwav.com/send-free-text.php

Send a FREE Text Message   Next

Data Usage Tech Support

1. LinkWav offers Call Data Records CDRs upon request and will soon be accessible via your account pages. CDRs list every call, data session and text reported from Inmarsat. Seeing minute by minute account activity can help diagnose unwanted computer activity.

2. Inmarsat tech support can be reached 24/7 at 800-563-2255 or best at maritimesupport@inmarsat.com. As with all big organizations, there are layers to their support, but it is typical to reach someone that is intent on getting your issues solved.

3. TeamViewer is software for your PC that allows remote access to the PC. By appointment, LinkWav support can remote into your machine, provided you have a good land based internet connection. https://www.teamviewer.com

   The light weight version on TeamViewer which only runs on your machine without actually installing software:
   http://download.teamviewer.com/download/TeamViewerQS_en.exe

4. Additional resources / articles
   http://www.howtogeek.com/138658/how-to-make-your-computers-browser-use-less-data-while-tethering/