



# Cloudbase Data Logger

Integrated vessel data collection system  
with web based access





# CLOUDBASE DATA LOGGER

## Unattended Data Collection

Remotely configurable and automatic software updates  
Ideal for collection of performance / condition monitoring data  
Interfaces to multiple 3rd party systems  
Automatically sends back collected data  
Simple pricing plan

Blue Spider Cloudbase Logger is a comprehensive and integrated data logging solution that allows data to be collected from a wide variety of external sources. The data is not only collected but is also uploaded and made immediately available to authorised users anywhere in the world. A uniquely powerful and versatile data collection system which, due to its flexible and extensible configuration, can be interfaced to almost anything. It is ideal for use on any vessel and perfect for collection of voyage, performance, engine, gearbox, cargo and condition monitoring data; designed for completely unattended operation so that configuration changes, diagnostics and software updates can be securely performed by remote control without the need of support from crew or engineer visits.

Collected data is automatically sent to a web based management system using exceptionally high compression and minimal bandwidth usage. Received data is automatically archived in an efficient database system designed for management of big data. Both live and historical data can be securely viewed online and the data can be quickly mined using a customisable report framework. Data acquisition with centralised access is invaluable for speedy decision making, preventative maintenance and analysis of cost reduction strategies, making this system the perfect solution to compliance with your current and future policy objectives.

Our simple pricing plan means that use of the system is inexpensive and easily budgeted. The annual license covers use of the data logger, the web front end, automated data transfers, bulk storage and report generation - all for a single flat rate.

On the vessel, the data can be gathered from many different sources: navigational, AIS, ECDIS, cargo monitoring systems, engine and turbine monitoring systems, water pumps, gearbox, generators, anemometers and other instruments. All incoming network or serial messages can be used as data sources, industry standard OPC DA support is built-in to simplify interfacing cargo, and other complex subsystems, along with drivers or simple scripts, which can be written to interface to anything else.

Data is easily exchangeable with other onboard systems, and this facilitates unification of otherwise disparate 3rd party products - including vessel performance optimization software.

The web management system may be configured to automatically forward collected data to your own servers, using a variety of means such as FTP, SFTP, email or database replication. Alerts can be configured and notifications sent via email or instant messaging. Users of the Cloudbase system can be assigned fine-grained permissions in order to restrict access to specific vessels, system configuration or even to particular categories of data.

The Data Logger is designed to run continuously, reliably and unattended, requiring no operator intervention or logged on user, and will restart automatically after a complete power failure. The Cloud Gateway software which is included in the package underpins the transfer of collected data back to the web management system and runs on the ship as a service process along side the data logger which is also a service process. The Gateway provides the primary means for accessing the data logger remotely and facilitates remote configuration diagnostics and maintenance. The Gateway, in another role, also runs on the web server and here it deals with processing of incoming data and automated transfer to other systems. In the event of power failure the system will automatically resume data collection as soon as power is restored. In the unlikely event that the data logger software should ever crash then it will automatically restart reporting diagnostic information which we use to quickly investigate and resolve any issues found.

## Typical Uses

- Unattended collection of data from multiple sensors of different types, and where a large number of incoming messages may need processing.
- Collection of data from OPC servers or subsystems, and even where communications protocols may be challenging our script support makes this easy.
- Where centralized, secure web based data storage and access is required or where data needs to be forwarded automatically.



## Intense PC2 i7

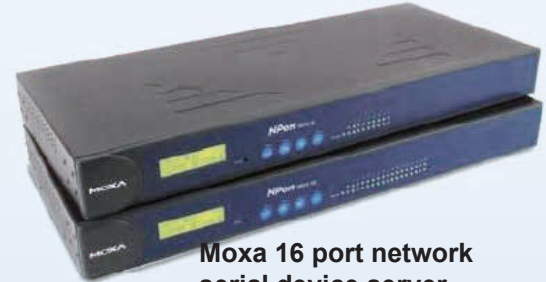


We supply a range of suitable equipment for use with the data logger such as this Intense PC2 from Tiny Green PC which is very compact and takes up minimal space.

For serial interfacing we typically use USB or Network serial devices and can supply Moxa or Startech hubs for use with RS232, 422 and 485 devices.

### Datalogger Key Features

- Full AIS support including optional sophisticated filtering which can reduce the amount of data needing to be collected.
- Fully customisable inputs, scriptable when required.
- Fully customisable outputs, also scriptable.
- Fully customisable logging, scriptable.
- Logging to CSV or other text files can be triggered by external events.
- Decode of more complex input messages can be scripted.
- Advanced Javascript engine for custom data processing in the server
- Custom server-side variables can be defined, as well as alarms and non-scalar data.
- Serial data can be routed via any computer on the network.
- Supports direct TCP/IP inputs as alternative to serial.
- Supports connections to one or more 3rd party OPC servers
- Remote web monitoring from the office (additional option)
- Alarm and Timeline applications highlight any issues with configuration, interfacing etc.
- Automatic software updates: when software updates are available they can be applied automatically at any specified time.
- Remotely configurable: updates to configuration can be applied remotely. Changes to configuration can be applied without the need for an engineer visit.
- A fully featured Javascript debugger is included so you can debug your own scripts, but of course we can write these for you as well.
- The gateway software will work happily through a firewall, only port 80, outbound TCP, needs to be open and will also work via a proxy server. This eases deployment on 3rd party vessels.
- Automatic archiving of collected data in a NoSQL database with a secure web front end for generation of reports and bulk retrieval of data. Data storage is included in the license subscription.



**Moxa 16 port network serial device server**

You are welcome to provide your own equipment and undertake the installation and commissioning yourself if you desire. We can recommend suitable equipment and advise and assist with system commissioning.

Our recommended computer equipment, the Intense PC2, comes with a SIM card slot which can be used for network access when or where satellite coverage is unavailable. Lower specification machines can also be used as for most data acquisition needs these will still be more than adequate.

The data logger and gateway software are both very high performance, use minimal systems resources, and will run reliably on slower machines. However we believe that the small additional price for a higher spec machine is worthwhile, it adds an element of future proofing, and reduces latency in data collection.



**StarTech 8 port USB to RS232**



**The Cloudbase Datalogger infrastructure provides all the necessary frameworks for a unique and complete solution to your data collection and monitoring needs. We firmly believe that you will not find a similar product which has these capabilities and are committed to working with you in order to achieve your specific goals and targets both now and in the future. The ability to collect data this way opens up a huge number of possibilities and opportunities for reducing costs and assisting in preventative maintenance.**



# GATEWAY

The gateway server, which is included with the data logger, can also handle automatic sending and receiving of emails and attachments, uploading and downloading files to a web server via FTP or HTTP and management of local or network files.

Features are available to compress zip files and run programs to perform file conversions. It is commonly used to monitor folders for new files or changes to existing files and then, according to rules you define, can send such files to a remote server. Often another instance of the gateway will actually be running on the remote server in order to deal with the arriving data and to process it accordingly.

It is completely scriptable, using Javascript, which allows the functionality to be tailored to your exact needs.

You are free to write your own scripts using the documentation and examples provided or we can do this for you as an additional service.

## Typical Uses

- Automated processing of incoming emails (attachments in these) and sending the results to a list of recipients
- Automated sending of email, web or ftp uploads when files arrive in designated folders
- Returning data generated by the Data Logger from ships or outstations.
- Zip and Unzip files automatically.
- Transform files from one format to another before sending on to a new location.

The program runs 24/7 as a Windows service and will run with or without a logged on user. It can be installed just about anywhere from web servers to machines where the internet connection is less than reliable e.g. on a ship using a VSAT or 3G connection.

The Cloud Gateway is included with the Data Logger package.

Also included with the Cloud Gateway suite is our file converter application which is a powerful scriptable file conversion utility. This provides a Javascript environment tailored specifically for facilitating conversions between different file types and formats. Examples and a detailed user manual are provided. This converter is very diverse in its capabilities and is being used for an increasingly wide variety of purposes. Generally, it is used in conjunction with the Data Logger and Cloud Gateway to transform CSV files into other formats. This file converter program (or indeed any other program) may be invoked by the Cloud Gateway in order to transform incoming data into formats suitable for sending on to 3rd party systems. It is also used to preprocess CSV files to obtain significantly higher compression ratios prior to upload of data.

Uploading and downloading is secure, operates over port 80 and can automatically work via a proxy server without configuration.



## Our recent customers



### Briggs Marine 03/06/2014

(Cable repairs and Installations, Barge Operations)  
"Briggs Marine have been using Blue Spider software for over a year, where it has been successfully employed on over 10 cable repairs and installations. The software has proven itself in complex operations, whilst working in close proximity to seabed structures with project support vessels in attendance. It's intuitive operation enables our vessel operators to utilise the system with little instruction."

#### Craig English

Operations Director - Subsea Services, Briggs Marine



### SBSS 04/06/2014

(Cable repairs and Installations)  
"Blue Spider has run on our ship Fu An for about 2 months, Fu An has done 4 cable repairs in YZ using the Blue Spider. Compare to other software, Blue Spider is easy to handle and had some function that the other software don't have for the cable repair. We are planning to install it for the other two ships: Fu Hai and Bold Maverick soon."

#### Alex Zhouyeqi

Cable Engineering Manager, S.B.Submarine Systems, Shanghai

Note SBSS later went on to install and use the software on their other ships.

## DEEPOCEAN

### DeepOcean 2014

(Cable repairs and Installations)  
DeepOcean have been using the Blue Spider survey positioning software for over a year now.



### Viking SeaTech 01/01/2015

(Rig positioning)

Viking have recently started using Blue Spider survey positioning for rig move operations. We have also been working on improving the cable catenary modelling and developing features specific to their requirements.



### Shell 2015 (Data Logger)

Shell Shipping & Maritime have been using the Data Logger product on some of its LNG carriers. The software is being used to gather performance and general condition data which is then automatically sent back from the ship.

## Support

We offer a full range of support services including assistance with data logger configuration, training, site visits when required for installation and remote support via TeamViewer. We can set up your configuration for you or work through more complex requirements with you. We are also happy to provide equipment such as industrial PC's suitable for use with the Data Logger. We can host web based services for you or assist you in setting up your own in-house.



# CLouDBASE WEB FRONT END

## Data Logger Alarms for NavSystems TestShip2

[<< View Details](#)   [<< Query Again](#)

Refresh

### Active Alarms

31/10/15 12:14:18 #156 BSPLogger.INI: line 265 [CustomDataOutputFormat3] expected CustomOutputChannel= (and/or LogToFile=) specifier(s)

Save as CSV

Once you are logged in to the Cloudbase Control Centre you will have a list of all of the ships in your fleet(s). Individual users can be given access to all or just some of your ships. Similarly permissions to perform configuration changes and view details can be granted or denied to each user. Click on a vessel and you will be taken to the main page for viewing summary details with links to various commands, options for configuring, uploading and downloading data and much more. When you try to make changes to the configuration for a ship your changes are automatically validated and you wont be allowed to apply a configuration that isnt correct. All configuration changes are automatically version controlled so if you make a change you later want to revert you may do so. It also means you can see who made the changes and who to blame. Various details regarding the status of each ship are shown and commands can be sent to the gateway in order to carry out various diagnostics functions such as viewing the status of alarms, capturing data arriving on serial ports.

### Cloudbase Process Status for Shell Gallina

[<< View Details](#)   [<< Query Again](#)   Refresh

Show all processes

PID	Image	CPU %	VM size	Peak VM	Threads	Handles
764	BSPGateway.exe	12.0000	162971648	315039744	13	192
3252	BSPLogger.exe	0.0000	142934016	152072192	12	213
1748	BSPNet.exe	12.0000	76791808	79413248	13	516
1788	BSPUpdater.exe	0.0000	73203712	75825152	4	83
1840	BSPWorkstation.exe	0.0000	80334848	89497600	6	106

Save as CSV

### Cloudbase Serial Data from NavSystems TestShip2

[<< View Details](#)   [<< Capture Again](#)

#### Captured serial port data: COM8

AMI VDR K965 Startech port #4  
 \$VFHED,5,0,0,0000,5,0,0,0001,5,0,0,0002,5,0,0,0003\*70  
 \$GPDTH,184,,00.0000,N,00.0000,E,,184\*41  
 \$VRACK,227\*5B  
 \$VFHOD,5,0,0,0,0804,5,0,0,0805,5,0,0,0806,5,0,0,0807\*4B  
 \$GPRMB,A,0.00,L,0000,000\*,3043.0000,N,00115.5000,W,10.9,77.8,0.0,V,A\*48  
 \$VTWMB,T,,11,000,5,H,,K\*E5  
 \$VFHED,5,0,0,0,0000,5,0,0,0000,5,0,0,0010,5,0,0,0011\*4B  
 \$GPGBS,152544.00,001.9,001.8,003.9,,,\*49  
 \$PARIV,C,-INT1,000,000,000,\*22  
 \$SHEGT,030.0,T\*2C

### Cloudbase File Upload for NavSystems TestShip

[<< File Transfer for NavSystems TestShip](#)

Endpoint: NavSystems/TestShip/DataLogger Configuration

✔ "TestShip\_BSPLogger.zip" is valid and ready to send to the vessel

Briefly describe the reason for upload and changes made

Commit and Send to Ship   Cancel

Enter your version control comment...

Cloudbase helps you avoid the need to be able to make a remote desktop connection to the ship. Often making a remote desktop connection can be frustrating and performance, if you succeed, is often not good. Cloudbase is designed for high latency, low bandwidth networks which are inherently unreliable. If you want to send a command to a ship and it has no internet connection at present then you can queue the command and just let cloudbase wait until its connected again.

There are plenty of new features coming soon and in particular were working on combining the web monitoring and cloudbase to give you a single login for both and so that the same HTTP connection can be shared between them. This will make it easier for you to connect via a web proxy and further reduce bandwidth requirements.

## Try it out for yourself

Just drop us a message using the contact form on our website and we will send you login credentials to give you access to a demonstration account.

We can also arrange for an evaluation of the data logger software suite running on your own computer connected to a Cloudbase account.



# PRICE LIST

## Schedule of fees

Annual License charge per vessel (datalogger instance)

£3860 (ex VAT)

Includes 2 man days prepaid support

Additional support days can be added pre-paid at discounted rate of £585/day providing this is ordered at the time of license purchase or renewal.

As well as the use of the data logger software on the ship itself, each license subscription fee also includes network transfer of all incoming and outgoing data, storage of logged data in a Mongo database server up to a fair limit of 50Gb (compressed data) per ship / year (total maximum of 150Gb per ship e.g 3 years if you're at the upper end of the fair limit and longer if you use less, limited however to 5 years regardless, up to 64 cloudbase user accounts with access to the logged data, access to configuration data for each ship to authorised users. Automated data transfers can be set up for you according to your requirements.

The only additional costs that might be applicable to you are for:

- a) Installation and/or initial set up of configuration for your ships where you request this service from us.
- b) major revisions of configuration for data collection on the ship or for automated data transfer or processing if you need to make such changes and ask us to do this for you.
- c) If your bulk storage or server side data processing needs are far greater (or longer) than those we would normally expect then we may negotiate an additional fee to cover our increased costs such as adding additional storage capacity or adding additional load balanced servers. Since data is stored in a compressed format you are not likely to exceed our fair usage policy.
- d) If you wish to host the cloudbase gateway and other web services on your own web servers.
- e) For any additional development, customisation or configuration according to your specific requirements.

In many cases your pre-paid support time can be used for these purposes.

Additional development work:

£650 per engineer day (8 hour day)

On site support

£700 per engineer day + expenses (8 hour day)

Discount for multiple vessels/dataloggers:

1 to 7 licenses: 0%

8 to 23: 10%

24 or more: 15%

We can tailor quotations to suit your exact needs. If you have special requirement or are interested in the web monitoring features then please just let us know and we are happy to discuss this with you.



# WEB MONITORING

Watch your vessels during their operations in near real time. With our web based monitoring service you can locate them precisely and see the job in progress. Typically, vessels are shown on a chart background along with relevant data from the ship. Additional panels may be customised upon request to display any other job specific information on a per ship basis. The connection uses very low bandwidth over the link from the ship to the web server and automatically reconnects if the satellite link fails. The web monitoring features were originally developed to monitor vessels with the full Survey Positioning suite installed (see Survey Positioning brochure). Web Monitoring can also be used with the Data Logger product and the ability to define custom panels is a great benefit here. The lower screenshot shows a simple example of a customised panel.

Web monitoring is an optional extra currently provided on a subscription basis. However we are working on integrating it more closely with the Cloudbase front end and plan to offer the service free to existing Cloudbase customers.

Please contact us for details and we will be more than happy to discuss your requirements.



The Blue Spider product family is engineered to meet your ever changing and evolving needs. Electronic architecture is a term used in the automotive industry to describe frameworks within which subsystems from different vendors are easily able to coexist and communicate. Our software products for the marine sector follow this same principle of modularity and interoperability.

The Cloudbase Data Logger combines all the components you need with no hidden costs. Simple yet powerful configuration options enable diverse subsystems to be easily interfaced. Unattended operation reduces the need for engineer visits to ships which, as vessels often only have short stays in port, can be difficult to arrange.

## NAVSYSTEMS IOM LIMITED

We are a small, software development and consultancy company, providing innovative design services and products mainly for use within the Marine and Automotive sectors. Our experience extends into many other areas but particularly those relating to industrial automation and embedded systems. Producing applications which are versatile, durable and adaptable to ever changing requirements is always our primary objective. It is our aim and intention that the product range should continue to evolve and grow in accordance with industry needs and aspirations, and we are striving purposefully toward this goal.



NAVSYSTEMS is a member of the Society of Maritime Industries

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