



# System Hosting & Business Continuity Provision in Arbor Portfolio Manager

With increased attention from clients and their investors on high availability, cost effective system resilience, business continuity and reduced operational overheads, we have developed a hosting solution specifically to meet these needs.

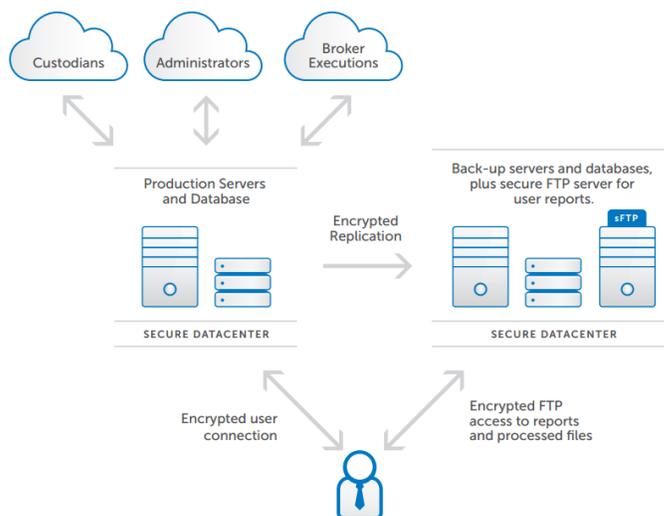
Typical fail over strategies suggest a duplication of hardware, network, software and systems at another site with extended restore times. This is expensive to purchase, install and maintain with fail over often taking many hours (or days) to complete.

Arbor has developed its hosted failover solution which does not require you to manage any of the above. By hosting a highly tolerant fault solution in its data centre with continual and secure data replication from the production system, fail over can be completed efficiently.

Even if the whole client site is unavailable, access to the hosting system from laptops / home PCs can be made available very easily. System replication and data integrity is all managed by Arbor as part of the fail over solution. Additional hardware, software or operating systems do not need to be purchased by the client.

## Hosting

Arbor’s hosted environment is designed for secure, resilient and cost effective system provision. The following diagram summarizes how we achieve this:



Arbor manages the functions of operating in the hosted environment such as the backup, operating systems, hardware and connectivity.

In the hosted environment the full application is available including trade import and batch job execution. The client merely requires an internet connection to Arbor and Windows XP/7/8/10.

## System Connectivity

The application interface is made available via an encrypted remote desktop protocol (RDP) session which has secure links to the Arbor database. As the application is on a dedicated terminal server next to the database, performance is excellent and does not place demands on the users own computer.

Data is secure as the RDP session is encrypted and for additional security, Arbor will only open the firewall to known IP addresses for office based access. If a client wishes to connect whilst out of the office, the VPN can be configured to allow this.

Connectivity to the report store is via an encrypted secure ftp (sFTP) connection to a VSFTPD server. This will host the scheduled reports and any processed files from / to third parties (i.e. Trade Files) in a folder for each distinct day for easy recovery.

From the hosted environment the batch jobs will operate (trade reporting, reconciliation etc.) and connect to the relevant Custodians and Administrators. The client does not need dedicated hardware or leased lines, all connectivity will operate over the internet.

## Real Time Market Data

For clients requiring their portfolios to have real time market data feeds, many options are available depending on budget and the client's current market data infrastructure.

### **Clients with Bloomberg Desktop:**

For clients that have Bloomberg Professional installed on their desktop a 'thin' application install is available. This is a real time position reporting console that runs on the same PC that runs Bloomberg. The console loads the position data from the hosted environment and loads the price data from Bloomberg.

The price (and position) data does not leave this machine and stays within memory. This methodology is approved by Bloomberg.

The Arbor install on the clients PC is simple and easily installed. No data is stored on the machine.

### **Clients without Bloomberg Desktop:**

For clients without Bloomberg desktop but still requiring a real time data feed, Arbor is able to connect its servers to server data feeds. The client is responsible for the market data costs.

## Backup

All systems have a full scheduled backup. All intraday data changes in the database are replicated to the backup servers in the backup data centre every 30 minutes. The replicated data is encrypted and compressed.

All data files downloaded and sent between Arbor and third parties are also encrypted and replicated to the secure FTP (sFTP) site in the backup data centre. All data is retained in the backup data centre. We do not delete production data.

Along with encryption, this is an important feature of the FCA and SEC standard.

As all data will be online via the sFTP site or current or archive database, users will have instant access to all their historic data. Easy access to historic data is another important feature of the FSA standard.

## Recovery Options

Where possible, localized recovery will be the preferred option and in most cases will have no or little impact on availability. But in the event of serious, catastrophic failure in the production hosted environment, the full system fail over process will be activated. In such an event all hosted clients will be immediately informed and advised of the expected recovery time.

This could take up to 3 hours, but will often be much less. From this point the client will have full system access as before. Possible loss of data is up to 30 minutes.

Once the main production site has recovered and is deemed stable, the fail back will be scheduled out of hours. Full notice and coordination with clients will be made. The system will not be available during the fail back process.

## Data Centres

The production and backup servers are provisioned for maximum availability. We have servers located in both Europe and the US. The backup data centre is in the dedicated machine control room on site at Arbor (West London). Key features include:

- Security
- Multiple (diverse) fibre connections
- Multiple (diverse) power feeds
- Temperature controlled data floor
- Full system monitoring

## Hardware

All hardware in the hosted environment is monitored. Any failures are addressed as soon as they are identified. Data storage is on RAID enabled servers to allow hot swap in the event of a disk failure.

