firefly

Firefly Cloud
for technical leads

Firefly works best in the Cloud, taking advantage of the greater reliability and security, as well as the latest feature releases.

Firefly has provided schools with Firefly Cloud hosting for over 4 years. In that time and as the cloud has matured, we've adapted the cloud version of Firefly to make the most of evolving underlying technologies. Today, the cloud hosted version of Firefly is the most advanced version of Firefly on release, offering enhanced performance, features and reliability.

Responses to our 'smiley faces' survey in Jan 2017 showed that our satisfaction score for teachers is 13% higher at cloud hosted schools compared to those on local installations.

Technical teams are happier too as there is no requirement for continual updating of Firefly or patching of the underlying operating system.

Data security officers are also reassured, as we deal with the processes required for ICO, PEN testing and preparation for compliance with the forthcoming GDPR*.

*To view references, please go to fireflylearning.com/cloud-notes

Firefly's cloud version

Unlike some other providers who simply take their on-premise product and host it on their own infrastructure (sometimes less effectively than schools could themselves!), Firefly in the cloud is now a separate version of Firefly with significant additional functionality.

Because we have four years of experience running Firefly in the cloud and have full control over our own infrastructure, we have been able to make significant changes to the cloud version to improve the experience for teachers, students, parents and school administrators. Unfortunately it's not possible to offer these features in the local version of Firefly because of the wide variety of possible infrastructure configurations.

Firefly's cloud version natively supports being run on several web servers behind our load balancers. This means users can be served from one of a range of machines which can be taken on/offline without any user impact. Whereas Firefly locally hosted runs in a single process on a single server, meaning there is a limit to how many simultaneous requests can be served, even with very powerful hardware. The cloud version makes use of multiple servers, which significantly improves performance during periods of high load, even for a single school.

Related to this, Firefly's cloud version supports offloading of session data to a central session storage infrastructure. This means that session data (largely login information) is shared across all web servers. Using the load balanced infrastructure and the support for offloading of session
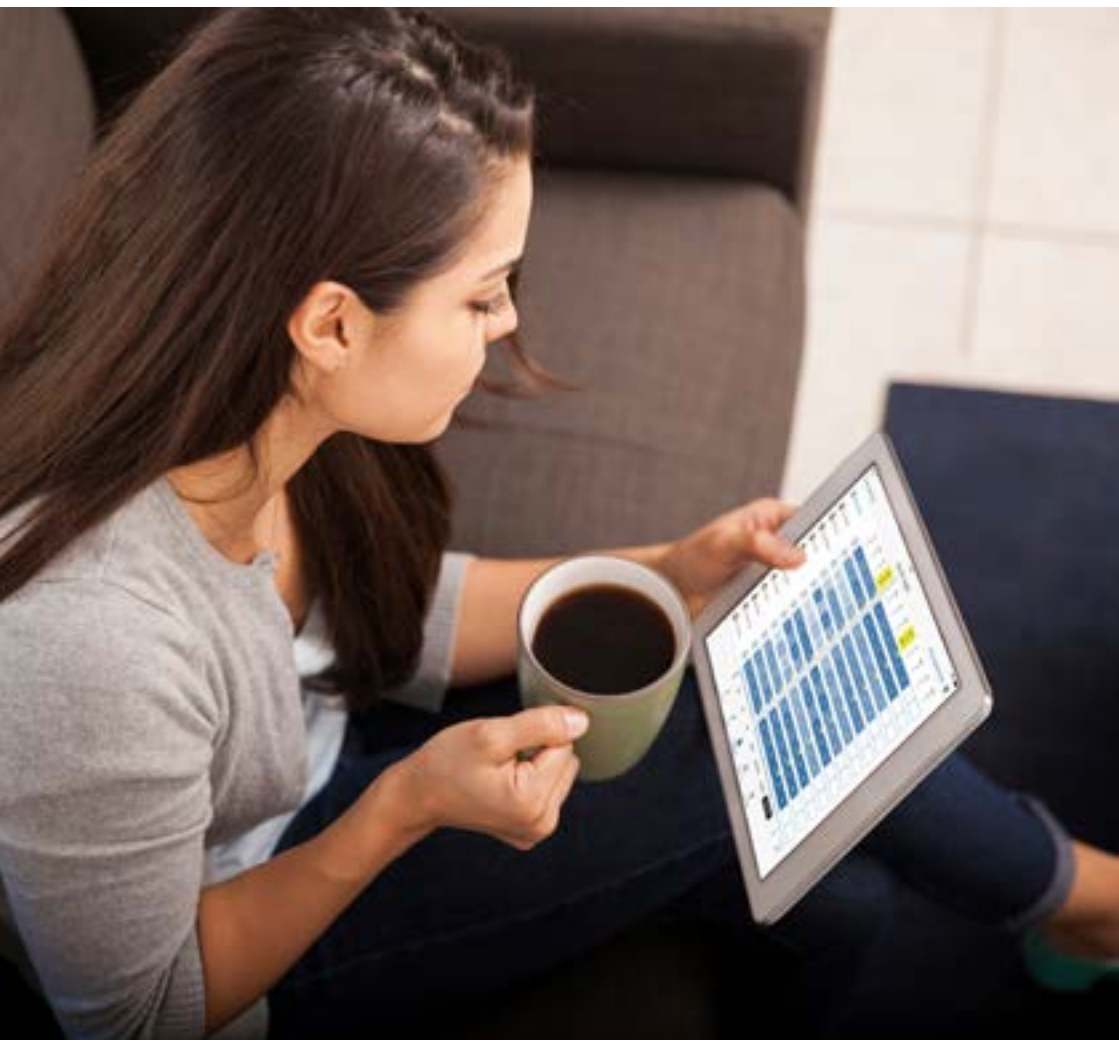
data, Firefly can be upgraded in the cloud without logging users out or any downtime. Similarly, there is no user impact from automatically restarting servers which are not performing well or need operating system patches or updates.

While it would be possible, at considerable cost and time, for a school administrator to set up load balancing clusters, redundancy or failover on the school's own infrastructure, the locally hosted version of Firefly does not support this so would not function correctly and it would likely lead to data loss or other unexpected behaviours. Further to this, our support team would not be able to support or troubleshoot such installations.

With Firefly's cloud version, a small 'agent' (the Cloud Uploader) is installed on your local network to extract relevant data from your school MIS/SIS/SMS and push it to the cloud. This reduces stress on your MIS server as it is only queried on a regular interval rather than throughout the day. It also means you retain complete control over the flow of this data. Disabling the agent at any time prevents Firefly from receiving further updates. Because these cloud based MIS integrations are different from the legacy integrations on premise, we are building exclusive new features for Firefly Cloud.

As well as improved reliability, performance and integrations, there are an increasing number of user facing features for the cloud version of Firefly. We are unfortunately not able to provide these in our locally hosted version because of other services we are able to run within our cloud infrastructure.

Firefly's cloud infrastructure

Our advanced cloud infrastructure runs on top of the industry leading Amazon AWS and Microsoft Azure platforms. We make use of a wide range of features in the platform to manage load balancing, automatic failover, server security, encryption at rest and more. Our infrastructure is monitored around the clock by automated tools and our teams in London and Sydney. Just as with local installations, our support staff must perform an audited process to access your site when needed in order to support you.

> We had concerns about how smooth this process was going to be and the impact on our end users. However with the management and support from Firefly, it all went far better than expected.

Thomas Bliss, ICT Manager
Cathedral Schools Trust

Our uptime figure in Q1 of 2017 has been 99.98%. This is a figure that is unachievable on a local server that is kept fully up to date with security updates and operating system patches. Firefly Cloud is monitored and supported around the clock by teams based in London and Sydney and not relying on school IT support responding out of hours.

Amazon and Microsoft also ensure industry leading physical and technical data centre security and redundant internet connectivity. We run several sets of infrastructure in different regions including Europe, the US, Singapore and Sydney to ensure your data is stored in the right location for relevant local regulations and also performance.

Your Firefly data is still stored in a segregated SQL Server database so it is not mixed with other schools' data and can be provided to you on request. This also helps ensure a smooth transition when you migrate from a local installation to the cloud.

Our automated deployment tools on our cloud infrastructure allow us to roll out new versions of Firefly in minutes, as well as move quicker to fix bugs and add new features.

> There are huge benefits to being cloud-based. With updates automated, we removed the server, making us greener and requiring only MIS maintenance. Downtime has been non-existent and things are running faster. I wish we had used the cloud from the start.

John Walton, IT Department
Cokethorpe School

Table of benefits

Benefit	Firefly Cloud	Local installation
Performance under load	Load balancing across auto-scaling clusters of servers to give great performance even at times of peak demand	Local version of Firefly does not support load balancing configurations. Because of the single process architecture, performance from a single server can never match load balancing across multiple servers at peak load
Connections to internet	Lightning-fast to the Internet backbone via multiple redundant internet links	Limited to ISP performance and functional internet connection
Redundancy	Redundancy built-in	Redundancy is not possible on the local version of Firefly as it does not support failover without all users having to log in again and risking data loss
Service reliability	Self-healing servers automatically rebuild in the event of a performance problem	Failover not possible on local version of Firefly. All users would be logged out and some data might be lost if attempted
Managed data backup	Hourly, daily and weekly backups with scripted rollback	Highly recommended prerequisite to self host Firefly. Labour intensive with significant storage requirements
Updates & session reliability	Cloud managed sessions mean code updates without disruption. Version can be updated without forcing a logout or any downtime	Downtime while server is updated. Security risks, lack of features or bugs while running out of date version
Monitoring & management	Round the clock by the Firefly operations team in London and Sydney	Out of hours support rarely possible

Benefit	Firefly Cloud	Local installation
Data integrity	Each school's data is kept separate with encryption at rest	School's own data only
Physical security	State-of-the-art data centre security	School's own security
Service Level Agreement	Available on 'Firefly Unlimited'	N/A

Feature difference

Feature	Firefly Cloud	Local installation
Product feature	As of July 2017 – Annotation on the web and custom groups from SIMS	Not possible due to technological and licensing restrictions
AD custom groups (in addition to classes, year groups, etc)	Selected custom groups from SIMS & iSAMS	Any AD group
MIS integration	Daily scheduled updates of MIS data. Can be manually run when data has changed significantly. All new MIS integration functionality being added to cloud integrations	Live connection. Some of the data is cached on the server
Single Sign On	SSO via Office 365 or Google Account	SSO for active directory when accessed from a domain machine
Other integrations	SSO API enables displaying of local data sources	SSO API and DB connection to Structured Data Viewer

Learn more together

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