

Keystone provides three options for acquiring, operating, and supporting KLAS:

- 1) KLAS SaaS (software as a service) and Keystone hosting services.
- 2) Purchase of perpetual KLAS licenses with Keystone hosting services.
- 3) Purchase of perpetual KLAS licenses with the customer hosting the operation on servers owned and operated by the customer.

A Comparison of Operations Options:

	Software as a Service (SaaS)	Keystone Hosted	Self-Hosted
Up-front Licensing Costs	No	Yes	Yes
Location of Server	Customer's region (via Keystone AWS)	Customer's region (via Keystone AWS)	Customer's site
Server Maintenance Costs	Included	Included	Local IT
Disaster Recovery	✓	✓	?
Database Secure (Multiple Firewalls & VPN Connection)	✓	✓	?
Very High Bandwidth (T3 Fiber Connections between database and Internet)	✓	✓	?
Easy Management of Growth (Manage & Insure Excess Capacity on Servers)	✓	✓	?
Upgrades to KLAS and Progress	Applied by Keystone	Applied by Keystone	Applied by Local IT
Need IT / Database Administrator Onsite	None Needed	None Needed	Yes

Summary of Keystone Operations Options

Option 1: SaaS (Software as a Service) and Keystone Hosting

KLAS SaaS is based on paying a monthly fee for using the software as a service and having the databases hosted on Amazon Web Servers (AWS), maintained by Keystone Systems staff.

This option has the **lowest upfront cost** as there is no licensing of software or purchase of a server. Keystone staff will provide hosting services as described in the **Keystone Hosting Services** document.

Option 2: Perpetual License with Keystone Hosting

The library purchases the software licenses and pays a monthly fee to host the database on AWS servers, with Keystone staff providing services as described in the **Keystone Hosting Services** document.

With this option, the library will not need to purchase a server, nor budget for maintenance or upgrades of the server. This provides the **stability offered by the perpetual license option plus the reliability and enhanced services** offered by Keystone hosting.

Option 3: Perpetual License and Self-Hosting

Self-hosting is based on paying a one-time fee to license the application software and installing the databases on servers at your site, or on web servers owned and maintained by your own staff. Your library will be responsible for providing appropriate servers and ensuring their proper operation. Your staff will connect to the databases over your internal network.

This option requires a **more significant up-front cost, but lower on-going operations fees**. You will also likely need to replace and/or upgrade the server every 3-5 years.

Disaster Preparedness Summary

Keystone operates AWS Cloud servers in multiple regions across the USA, with each Keystone-hosted customer database installed on the Cloud server that is geographically closest to them.

Services we provide for these customers include:

- ✓ Incremental transaction data backups every 10 minutes.
- ✓ Weekly server snapshots to our AWS backup servers.
- ✓ Database backups saved to both the local region and a fall-back region. If our East Coast server is affected by a disaster, all East Coast databases will have a backup stored in another region.
- ✓ Database backups are also copied from Amazon's data centers to Google Storage, ensuring that even an AWS-wide data issue cannot eliminate all of our backup data.
- ✓ An automated system restoration process, allowing all of our customers to be restored in the minimum amount of time.