3.4: Considerations for Cloud Versus On-Premise Software and Storage

When data or software are being "hosted on the cloud," the information (data) is stored on a network of servers and is available through the internet. Cloud software is also known as **software as a service (SaaS)**. On-premise software, **on-prem**, is a data system software running on computers owned and managed by the organization and stored on its premises.

If your team is considering the purchase or development of a new system, the goal of this guide is to describe some of the differences between cloud and on-prem data systems to assist you in making a thoughtful decision. If your team is already working with a data system, this guide will provide more information on the strengths and limitations based on where it is hosted.

The 1.2: Scan of COTS Systems includes information on whether a COTS system utilizes either cloud or on-prem (on premise) storage.

When determining where to host a data system, agencies consider cost and data security. Typical information on cost and security and on differences in system features and functions are included below, but there can be exceptions.

Consideration	Cloud	On-Prem
Implementation Cost	Cloud implementation costs are usually much less. Data systems are preconfigured and require less installation.	Implementation costs are often more than Cloud options. All hardware and software are maintained in-house.
Support Cost	Support is included as part of the data system license.	Support requires both in-house informational technology (IT) and additional consulting, as needed.
Data Ownership	Ownership varies based on the software. Some cloud software companies acquire ownership rights over data stored in their	In most cases, on-prem software ensures data are

Consideration	Cloud	On-Prem
	system while others are willing to negotiate ownership terms with customers.	owned by the agency that hosts the software.
Data Security	Security depends on the protocols and protections put in place by the software company. Cloud software often serves a larger client base, which allows for more security infrastructure but also may mean a greater risk for cyber-attacks.	Security depends on the protocols and protections in place by the developer or IT team. Typically, on-prem software is less vulnerable to outside breaches but is more vulnerable to security concerns related to human error.
Upgrade or Enhancement Cost	Upgrades and enhancements are included as part of the data system license.	Upgrades require purchasing a new license. Features are limited to options available at time of purchase.
Hardware and Software Requirements	Minimum hardware and software will support an internet connection with adequate bandwidth.	On-prem solutions require providing server hardware and software, storage solutions, network connectivity, and backup options.
Staffing Needs	Limited or no additional internal staffing is needed.	Use existing internal IT staff with backup and recovery options or contracted support services are needed.
Customization	This is limited; some configuration changes may be available.	Many on-prem solutions are designed and built as custom data systems. Even off-the-shelf solutions may offer customization options.
Mobile Access	Cloud options are available on any device with internet access and a Web browser.	On-prem options occasionally offer mobile interfaces and access. This will vary by vendor.
Offline Access	Most cloud options offer little or no access to data while off-line.	On-prem options rarely require internet access for data availability.