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Encryption Buyers Guide

Today your organization faces the dual challenges of keeping data safe without affecting user productivity. Encryption is one of the most effective ways to protect information from attackers – yet many organizations have shied away from comprehensive encryption because the technology was too complicated or onerous for end users. But things are changing.

Security companies have developed tools that make it easy to encrypt data with streamlined mechanisms, transparent to the end user. It is now possible to effortlessly protect corporate information wherever it goes, whether on Windows or Macs, laptops, USB devices, network shares or files uploaded to the cloud.

Use this buyers guide as you review the factors you should consider when evaluating the different options. It will help you choose the right encryption solution for your organization – one that offers data protection, without impacting the flow of business.

How to Use This Guide

This guide details the capabilities to look for when evaluating endpoint encryption solutions. It's separated into specific encryption features – full-disk encryption, file and folder encryption, mobile, etc. – for ease of use. It also includes key questions to ask vendors to help you identify which solution best meets your requirements.

Why Use Encryption?

Encryption makes data unusable in the wrong hands. By applying the latest cryptographic techniques, organizations gain peace of mind that attackers can't access critical information, even if they compromise data stores.

Compliance requirements across industries and geographies make it necessary to encrypt data, with penalties for breaches that lead to data compromises.

Something as simple as a lost USB drive carrying customer records could potentially put the whole business at risk for regulatory fines, loss of customer goodwill and damage to the brand.

More importantly, though, are the risk reduction benefits that encryption offers. Thieves steal devices such as laptops and smartphones. People leave iPads in pockets on the back of airplane seats and USB drives in taxis. Employees snoop in file shares they shouldn't really see. Driven by the rise of mobile devices, data is finding its way onto third-party cloud storage by the gigabyte – with or without company approval. But the speed of business today dictates that IT doesn't get in the way of data portability.

This leaves IT in a difficult position. You must allow data to freely move from device to device so users can access that data anywhere, anytime. At the same time, if mistakes are made, the business must not be severely affected by unencrypted data compromises.

Therefore, any organization with compliance demands must consider data encryption a necessary precaution to keep up with regulators. What's more, even organizations in less-regulated industries should consider encryption a solid investment for protecting intellectual property and trade secrets.

Ultimately, encryption technology should be easy to integrate into a centralized IT workflow and easy to work in sync with corporate policies. More importantly, correctly deployed encryption should be seamless for the end user, no matter what type of file, device or storage the user needs to access.

Evaluating Solutions

Centralized management and control

Encryption solutions are available from many different sources. The ability to manage, control and report on the effectiveness of the solution is vital to the success of the overall project.

When considering an encryption solution, review the individual pieces of data and how they are to be protected, and also ensure that you can centrally manage the policies and keys that enforce the protection. Client computers must be able to check in, report on their status and receive policies in return from the outside world, without relying on virtual private network (VPN) connectivity.

Keeping the responsibilities of administrators in line with their duties is also vital, as is auditing their actions. You must understand who has done what in your environment, and restrict access to sensitive areas according to roles.

With data disclosure laws becoming more and more strict, you need a consistent set of policies and management practices in place. Therefore, a centralized management architecture is the key to the successful rollout of any encryption solution.

Centralized Management and Control		
Capability to look for	**Description**	**What to ask your vendor**
Centralized key and policy management	Managing encryption keys and policies centrally for all devices and platforms.	Do you have a central solution to manage all necessary encryption keys and policies? Can you manage all encrypted devices – both file-based or full-disk?
Role-based administration	Administrator roles should provide only the privileges they need for their areas of responsibility.	Can you separate duties from AD administrators, allowing specific security officers to be created and then restrict their area of control?
Auditable management functions	All activities performed in the management console must be recorded for future audit.	Does your solution record who, for example, changed a policy, assigned keys to users, created security officers and provided recovery passwords?
Global client/server communication	Clients should be able to communicate with the encryption solution wherever they are in the world.	Does you solution provide a reliable and secure communication method that does not require users to be connected to the corporate network, either directly or by VPN, without loss of functionality?
Reporting	Provide a mechanism to see the encryption status of your organization from a single console, regardless of operating system.	Does your system provide a mechanism to report on all devices protected by the solution?

Full-Disk Encryption (FDE)

Full-disk encryption protects endpoints against loss and theft. Encompassing the entire disk or volume, from operating system to program files all the way down to temp files, it is the first line of cryptographic defense. In the past, third-party encryption technologies offered less nimble FDE options for devices, but the latest operating systems offer it natively. These built-in FDE technologies perform better and offer greater stability with a wide range of hardware.

In spite of these improvements and the performance gains attained from them, many security firms still override these built-in FDE options in favor of proprietary options that fit into an overarching endpoint encryption package. Ideally, though, an organization should be able to take advantage of built-in encryption within a centrally-managed encryption suite.

The solution should be able to cover gaps where built-in, full-disk encryption isn't enough protection – such as for legacy operating systems or file and folder encryption – while making it easy for IT to track encryption keys, and who has access to which data.

Full-Disk Encryption (FDE)		
Capability to look for	**Description**	**What to ask your vendor**

BitLocker support	Microsoft's built-in FDE technology	Do you support the Windows native encryption engine?
		• What is the impact of your solution on:
		  • Boot time
		  • System performance during runtime
		• How do you stay current with new hardware to ensure that your third-party encryption works on all new hardware?

FileVault 2 support	Apple's built-in FDE technology	• What is the impact of your solution on:
		  • Boot time
		  • System performance during runtime
		• How do you stay current with new hardware to ensure that your third-party encryption works on all new hardware?
		• How do you handle Apple Extensible Firmware Interface and firmware updates?
		• How do you handle major OS upgrades?

Full-disk encryption support for legacy operating systems

While the latest versions of Windows and Mac include native full-disk encryption embedded in the operating system, there are many older Windows and Mac OS versions currently installed in businesses today.

Even though Microsoft is ending support for Windows XP in 2014 and Windows Vista in 2017, it will still take some time for many organizations to migrate to newer, supported versions of Windows. And even organizations on Windows 7 may not be completely in the clear, as BitLocker is included on only Ultimate and Enterprise versions of that OS.

Full-Disk Encryption Support for Legacy Operating Systems		
Capability to look for	**Description**	**What to ask your vendor**
Full-disk encryption for all Win7 versions	Advanced FDE for Windows 7 versions that do not include BitLocker	Do you have a non-native solution for FDE on Windows 7?
Full-disk encryption for WinXP and Windows Vista	Advanced FDE for Windows XP and Windows Vista	Do you have a non-native solution for FDE on Windows XP or Vista?

File-level encryption

File and folder encryption offers further flexibility in protecting data on running systems. This type of encryption includes protection of data on removable media like USB drives, CDs and DVDs, network file shares and even information stored in the cloud.

In the case of removable media, a solid encryption solution will make it possible to easily share data on approved devices or among approved users on Windows or Macs while prohibiting unauthorized access, should the removable device be lost or stolen.

Meanwhile, encryption of file shares makes it easy to enforce role-based access to information. For example, encryption keys used for securing sensitive salary documents would be held by only human resources personnel, protecting IT administrators from accidentally accessing this sensitive data during the course of day-to-day activities.

File-Level Encryption		
Capability to look for	**Description**	**What to ask your vendor**
Encryption for removable media	Protection for data on USB devices, CDs, DVD, etc.	Does your solution provide a mechanism to encrypt data being placed on removable media with the option to leave existing data intact (e.g., not affect users' personal information)?
Encryption for network files shares	Protection for sensitive data stores authorized to be seen by only selective users	How do you prevent data from being accessed via elevated privileges or accidentally by privileged users?

Cloud storage and mobile encryption

More mobile and personal technology in the workplace, particularly the phenomenon of BYOD, has contributed to end users increasing their use of cloud-based storage for work-related files and data. While this improves the ease and simplicity of sharing data both inside and outside an organization, it also poses a threat in that confidential information may be exposed inadvertently.

Encryption of cloud-based storage lets your organization's staff use public cloud storage services, as it offers more inaccessibility of data than a cloud provider would.

Organizations need an encryption solution that can safely shield sensitive data from attackers' eyes. Mobile encryption features should allow your organization to encrypt all of the data stored on a device, while offering a safe way to remotely access already-encrypted data stored on file shares or cloud storage.

Cloud Storage and Mobile Encryption		
Capability to look for	**Description**	**What to ask your vendor**
Encryption for cloud storage	Protection for data stored in private, hybrid or public clouds	How can users access encrypted data stored in a cloud-based service from any device they use?
Provide access for mobile devices to encrypted data stored in the cloud, regardless of device	An application for accessing encrypted data stored in the cloud from iOS, Android, Windows and Mac systems	Can you protect data being shared in the cloud among users, while allowing them access to work on different operating systems and hardware platforms?
MDM support	Integration with broader mobile device management capabilities. Encryption of all data stored on the mobile device	Does your vendor provide an MDM solution? Can it integrate in any way with the encryption solutions? Can you make this part of your broader security strategy?

Comparing Solutions

Specific needs of your organization

Depending on your industry and geography, standards and compliance needs may change over time. Encryption is the de facto standard for meeting the strict data protection guidelines laid out by most regulators, but the specific encryption needs may vary depending on business drivers and existing technology deployments.

You're encouraged to use the above questions as a good way to benchmark encryption solutions based on your specific needs.

Ease of use/ease of deployment

Old perceptions about encryption's once-difficult nature may still linger, but the truth is that many of today's encryption suites have advanced beyond previous limitations. As you evaluate encryption solutions, consider how easy the technology is to use for two distinct populations within the business: end users and IT administrators.

End users should be able to communicate, share data and collaborate without even being aware that the encryption is working. IT administrators should be able to roll out the technology without long deployment times. In the end, you should seek encryption that just works.

Future-proofing your encryption solution

Older encryption technologies were built with perimeter-centric security regimes in mind. Future-proof your encryption investments by seeking a platform that can handle yesterday's operating systems yet still easily incorporate the latest in native encryption capabilities.

The platform should also be able to accommodate sharing and portability by covering encryption of the removable drives, mobile devices and cloud storage options that today's employees depend on to collaborate and be productive.

Conclusion

Users today want to access corporate information from more places than ever: home PCs, mobile devices, USB sticks, network shares and cloud storage. Choose encryption solutions that make it easy to stay compliant and protect sensitive data across all platforms without getting in the way of your users.

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