

Code42 Defines its Critical Capabilities Methodology

A technical analysis of top enterprise requirements from the leader in enterprise endpoint backup

"In my years using Code42, it has proven itself to be an industry leader in reliability and ease of use."

Engineer at a Global 500 Pharmaceuticals Company

—TechValidate

No enterprise technology purchase is made without scrutiny. Like all technology, endpoint backup evaluation should be judged against a comprehensive list of critical capabilities. Analysts influence technology decisions and provide valuable guidance based on their own list of criteria, but an enterprise buying team must ultimately set and prioritize the product capabilities that are most significant to its business.

More than 39,000 organizations have evaluated Code42 and chosen it as the best endpoint backup solution to protect employee data and reduce risk across the organization.

Here are five reasons why.

1. Performance

Why it matters

Performance tops the requirement list. Performance is a technical evaluation that assesses the reliability of a product in the real world. Beyond promised features, the product must perform reliably and dependably in actual use to meet business demands and deliver the most value.

Evaluation criteria and Code42

Endpoint backup is typically measured through backup efficacy and the ability to restore files, deduplication methodology to manage storage size, and network, disk I/O and CPU throttling to manage the effects of backup on worker productivity.

Backup methodology: Code42 analyzes end-user files and segments them into variable-size blocks, removing any duplicates so that only incremental, subsequent file changes are sent to the backup destination. Client-side deduplication, rather than global, reduces both storage requirements at the server level as well as network consumption between the client and server, and eliminates the need for expensive servers in the data center.

Restore: When requested, blocks are sent from the server to the client over an encrypted channel. They are then decrypted, assembled, and restored to

a location on the device. Client-side deduplication speeds the process of locating all data blocks since there is no need to aggregate data from multiple repositories to restore files. The end result is a faster, more reliable restore.

Network throttling: Code42 offers a number of options to accelerate backup while minimizing impact on network resources. These include configurable bandwidth for LAN and WAN backup destinations, specified bandwidth limits for backing up while using a VPN connection, time-based bandwidth management to control bandwidth usage during peak and off-peak hours, and TCP packet quality-

of-service (QoS) tagging which allows for advanced network tuning at the network router and switch layer.

Disk I/O: Backups run continuously in the background, as often as every minute. Client-side deduplication and compression enables Code42 to work efficiently by capturing incremental, block-level changes in real-time—thus reducing disk activity.

CPU throttling: Code42 is designed to remain invisible to end users so backups never interfere with productivity. CPU utilization can be customized to when a user is present or away, allowing CPU to scale back when a user is at work on the device.

2. Scalability

Why it matters

Scalability is vital to the success of a solution at the enterprise level—and a proven strength of Code42. Buying teams cannot afford the lost time and money of evaluating, purchasing, and deploying a solution only to have it fail in real-world application. Enterprises need assurance that a solution can scale to support its business—and has already done so for other large customers.

Evaluation criteria and Code42

Scalability is best evaluated by examining real-world examples of similar customer deployments and the product features and techniques that support scalability—such as architectural design, unified administrative capabilities, directory services integration and supported file sizes.

Current customer deployments:

Code42 has the privilege of protecting critical end-user data for Global 2000 companies, with many instances of 50,000, 75,000 and 100,000+ user deployments. Code42 operates a large-scale cloud that supports more than 1 million devices across seven global data centers.

Infrastructure: A single Code42 server can support authentication of up to 75,000 devices to the Code42 cloud. Client-side deduplication and compression enables the Code42 platform to scale from hundreds to hundreds of thousands of users with minimal overhead to enterprise IT.

Ease of administration: Global deployments are achieved through a single administrative console that consolidates and monitors all devices and aggregates statistics from all storage nodes worldwide.

Directory services integration: Integration with enterprise directory services such as Activity Directory and LDAP supports user authentication, authorization, role and destination assignment, as well as policy membership. Code42 LDAP authorization services include the ability to automatically provision users, deactivate users, assign roles and permissions, and apply device settings by group. Code42 customers use this feature to automate the assignment of legal hold status, backup destinations, and

immediate quarantine of terminated employee data with no required administrative intervention.

Supported file sizes: Code42 places no limit on the file sizes during backup, but does allow administrators to exclude certain file types. When backing up large files, Code42 has the ability to break the backup into small blocks, and process smaller blocks individually. If the backup process is interrupted, it automatically resumes with the last block rather than restarting the capture of the full file—enabling backups to complete faster.

3. Backup frequency

Why it matters

Backup frequency is one of the primary failures of legacy endpoint backup solutions. Enterprise buyers deploy automatic backup to ensure recovery point objectives and recovery time objectives are met. The value of endpoint backup immediately deteriorates if backups do not complete frequently and reliably, and therefore fail to circumvent breaks in business continuity.

Evaluation criteria and Code42

Backup frequency determines the recovery point objective (RPO), i.e., the interval of completed backups and duration of time and service level to which data must be restored following an incident. It is measured by a product's default and customizable backup intervals.

Continuous protection: Code42 continuously monitors the device for file changes, and performs a backup of deltas

every fifteen minutes by default. Backup frequency can be adjusted to occur as often as every minute. Backup settings can be set from the unified administration console and locked to prevent end users from tampering with defined policies.

Non-disruptive backups: Frequent, block-level backups and low CPU utilization mean Code42 runs in the background, without slowing the machine. The result: Code42 customers have fully completed backups to support reliable file recovery—something rarely seen with legacy backup solutions.

Granular settings: Settings and policy changes can be made for a single device, group of devices or for all devices. Enterprises that leverage Code42 to assist with legal hold and e-discovery processes often apply unique backup settings in order to perform more frequent backups or adjust retention settings.

4. Client diversity

Why it matters

Enterprise Mac usage is rapidly growing, with 92 percent of businesses supporting Macs today.¹ The enterprise ecosystem is rapidly moving from homogeneous to diversified, forcing IT to seek solutions that back up data regardless of operating system in order to reduce administration burden. Legacy endpoint backup solutions were developed primarily for Windows machines and have offered poor support for Mac and Linux endpoints—making client diversity a key capability of a modern replacement.

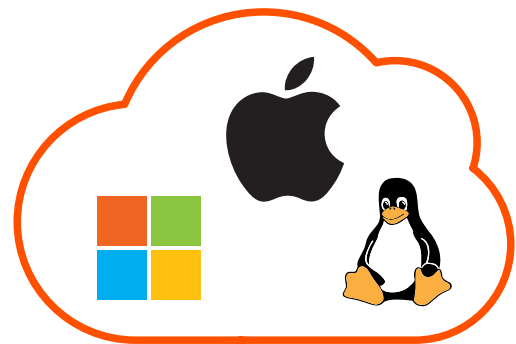
Evaluation criteria and Code42

Client diversity is measured by a product's ability to support distinct operating system platforms and perform file restores across platforms.

Cross-platform backup: Code42 works seamlessly across Mac, Windows, and Linux, enabling enterprise IT administrators

to manage and protect all end-user devices via a single solution. A consistent user interface across platforms simplifies both administration and end-user training.

Heterogeneous restores: Data can be seamlessly migrated from the cloud to a new device, even when switching platforms (such as moving from a Windows device to a Mac). This greatly simplifies tech refresh projects and provides more flexibility for end users to choose their preferred operating systems.



¹ JAMF 2015 Survey:
Managing Apple Devices
in the Enterprise

5. Security-first product development

Why it matters

Code42 acknowledges that data is the most important asset in the enterprise. Customers entrust their data to Code42 as a result of our promise to create product features that prioritize data security and the reliability of our core offering.

Evaluation criteria and Code42

Product design at Code42 adheres to the ranked principles of security, reliability, usability, and performance. Code42 develops features only when they meet our core tenet of security.

Code42 develops its products in a way that prioritizes data security and respects the best interests of its customers. These guiding principles drive innovation and give Code42 customers confidence in their investment.

PRINCIPLES OF PRODUCT DEVELOPMENT

Code42 product development is guided by four principles in which no attribute compromises the principle preceding it. These guiding principles are known at Code42 as “SRUP.”

S

Code42 products must be **secure**.

R

Code42 products must be **reliable**.

U

Code42 products must be **user-friendly**.

P

Code42 products must be **high-performing** (flexible, scalable and fast).

As an example, Code42 has strategically chosen client-side over global deduplication because global deduplication violates our core development principles.

Global deduplication compromises

security: It is a process in which all end-user data is sent to the data store server to be deduplicated against the server index. All but one identical block of data is removed from the data store, and duplicate data is replaced with a redirect to the unique data file. Global dedupe compromises security as a result of how encryption keys are handled at the data store. Unlike client-side deduplication which allows each user archive to have its own encryption key, global deduplication requires a common encryption key across all data sets so that multiple users are able to access and restore a common data block. To make matters worse, global deduplication is protected by an administrator password layered over a regular encryption key. The vulnerability of this approach is clear: if an individual with the encryption key compromises the administrator password, he or she will have immediate access to the entire data store.

Global deduplication compromises

reliability: Because files and data blocks are reduced to a single instance that can be accessed by many users, global deduplication increases the risk of data

loss. If a file or data block is corrupted in the single instance, all users will experience the same file loss or corruption.

Global deduplication compromises

usability: It makes it harder for the enterprise to choose an on-premises storage destination for its sensitive data. While it's true global deduplication will reduce the number of files in the data store, it also requires enterprises to purchase considerably more expensive hardware and additional memory in order to meet the demands of deduplication on the server.

Global deduplication compromises

performance: It slows restore speeds—especially at scale in a large enterprise. Because unique files or data blocks are not grouped by user as they come into the data store, the system must search the entire data store (rather than a user-aligned archive) to locate requested data. When the data store is small, it may be easy for the system to locate all the data blocks mapped to one user, but as the data store grows in size, the time required to locate data blocks extends. This slows the file restore process and forces the end user to wait at the most critical time—when a file is needed to continue working.

39K+

Businesses
worldwide trust their
end-user data to
Code42, including:

7/10

Largest technology
companies

10/20

Of the most
valuable brands

7/8

Ivy League
colleges

Looking ahead: Code42's investments for the enterprise

Code42 has the privilege of protecting end-user data for many of the most recognized brands in business and education. Our incumbency is evidence of Code42's enterprise performance, reliability and scale. In addition, our relationships with leading organizations enables a feedback loop that continuously informs product requirements and roadmap. We are building upon real-time backup capabilities to solve existing and future enterprise problems.

We are dedicated to:

- Strengthening our core backup performance through consistent releases that enhance enterprise endpoint backup and restore functionality.
- Continuing to unlock the value of enterprise data by investing in data governance, visibility, legal hold, data migration and other valuable advancements.

Conclusion

Endpoint data protection is an essential and fundamental security investment in an era of inevitable data breach. For this reason, enterprises are re-evaluating their endpoint security strategies and deploying endpoint backup as a means to mitigate risk and respond to data loss

Code42 delivers what the enterprise needs most—a high-performing, scalable solution to securely and continuously protect end-user data across all devices. That's why we're the chosen partner for more than 39,000 businesses worldwide.



FOR MORE INFORMATION: [CODE42.COM/CONTACT](https://code42.com/contact)

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