

ITAS 167 Project 01

Personal Data Protection

Raj Singh

28 October 2023

This project on data protection evaluates local & cloud backup solutions. Chose **EaseUS** for local and **Backblaze** for cloud due to *reliability, ease of use* and *speed*. Includes a [video demo](#) on EaseUS.

Project Overview

The primary objective of this project is to delve into the realm of data protection by researching, implementing, and evaluating various backup solutions. As the digital age advances, ensuring data security and recoverability has become paramount for both individuals and corporations. This project will encompass a multi-faceted approach:

1. **Local Backup Solutions:** Understanding and implementing traditional backup methods on a local machine. This not only serves as a primary line of defense against data loss but also provides users with quick access to restored data.
2. **Full-image Restoration Demonstration:** With the ever-increasing threat of ransomware and system failures, a full-image restoration capability ensures that systems can be brought back online swiftly, minimizing downtime.
3. **Cloud Backup Solutions:** Exploring the vast domain of cloud backups, which provide an off-site data protection method, ensuring data recoverability even in catastrophic situations, such as natural disasters.
4. **Documentation & Demonstration:** Collating research findings and practical implementations into a comprehensive package, ensuring that stakeholders can easily understand and replicate the processes.

Responsibilities

The project demands thorough research on both local and cloud backup solutions, evaluating them on a multitude of factors. This research will then be translated into a hands-on implementation, specifically with Windows 10's native backup tool and a selected third-party product. A pivotal component will be the creation of a video demonstration, showcasing the process of a full-image restoration, ensuring the content remains concise and professional. Complementing the video will be a detailed PDF documentation capturing all findings, guides, and comparisons, crafted in adherence to ITAS documentation standards. Throughout the project, careful consideration must be given to the budgetary constraints set at \$500/year. The utilization of virtual machines for demonstrations ensures safety and alignment with best practices, while external hard drives with pre-existing backup software will be avoided.

Research and implement a local backup solution

Before diving into the implementation, I've embarked on a comprehensive exploration of available local backup solutions. This encompasses understanding the nuances of each, their strengths and weaknesses, and their aptness for our specific environment.

For the purpose of this evaluation, I chose two third-party backup solutions in addition to the native Windows 10 backup and restore software:

- Veeam
- EaseUS Todo Backup
- Backup and Restore (Windows Built-in Backup)

Veeam

A versatile backup solution renowned for its robustness, Veeam is tailored for both individual users and enterprise environments, emphasizing speed and reliability. Below is more in depth research.

Veeam aspects:

- **Speed:** Fast. Veeam uses change block tracking, which can speed up incremental backups considerably.
- **Price:** Veeam offers a free version ([Veeam Backup & Replication Community Edition](#)) with essential features. The paid versions offer more advanced features and support for applications like Microsoft SQL Server, Exchange, and SharePoint.
- **Incremental and Full Backups:** Supports both. With its "Forever Forward Incremental," it takes regular incremental backups after the first full backup.

- **Cross-Platform Compatibility:** While it primarily focuses on Windows, Veeam also has solutions for Linux. It is also well-suited for virtual environments like VMware and Hyper-V.
- **Backup Size:** Features like data deduplication and compression help reduce backup storage consumption. It offers flexibility to choose between entire computer, volume level, or file-level backups. With intuitive options for scheduling and storage, it ensures critical data is safeguarded efficiently.

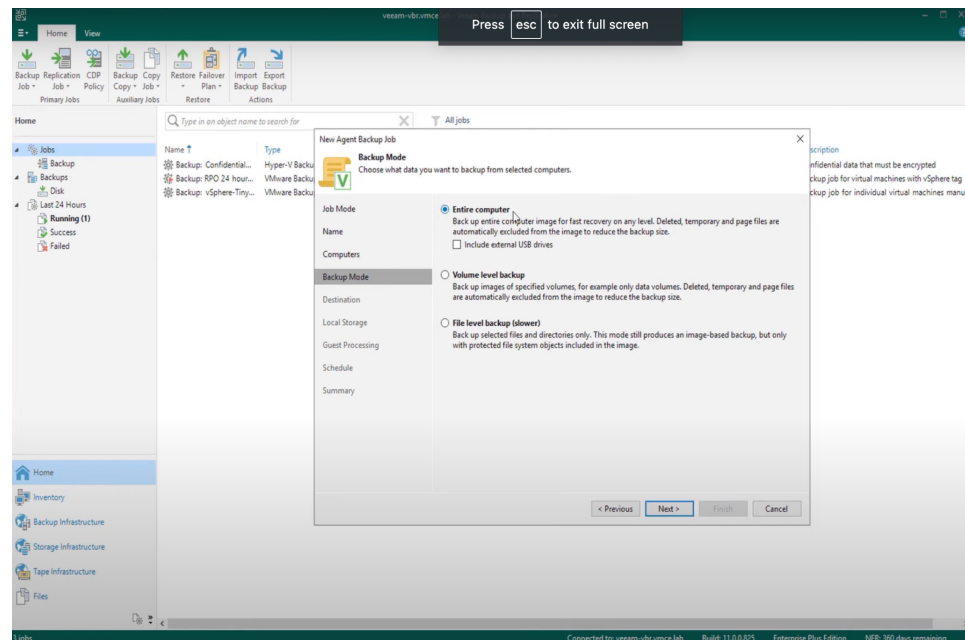


Figure 2 - Veeam Backup Management Interface: Streamlining Data Protection and Recovery Processes.

- **Scheduling:** Granular scheduling options available, allowing for more flexible backup strategies.
- **System Performance:** Designed to minimize impact. Resources can be allocated based on system availability.

EaseUS Todo Backup

A comprehensive backup and recovery solution, EaseUS Todo Backup stands out for its user-friendly interface and efficient backup capabilities, making it a popular choice among users of various skill levels.

EaseUS Todo Backup Aspects:

- **Speed:** Fast. Known for efficient backup speeds and swift recovery processes.
- **Price:** Offers a free version for basic backup needs. Advanced features are available in the paid versions. You also have a 30 day free trial to use the service. After that, 1-Year Subscription at \$83.25/month & 2-Year Subscription \$46.63/month.
- **Incremental and Full Backups:** Both supported. Incremental backups are swift, ensuring only changed data is backed up.
- **Cross-Platform Compatibility:** Tailored for Windows environments.
- **Backup Size:** Efficient backup compression ensures minimal storage consumption.
- **Scheduling:** Allows for customized backup schedules, ensuring data protection without intervention.
- **System Performance:** Designed for optimal performance, ensuring minimal system slowdown during backup operations.

Backup and Restore (Windows Built-in Backup):

A native backup utility within Windows 10, Backup and Restore offers basic data protection features without the need for additional installations.

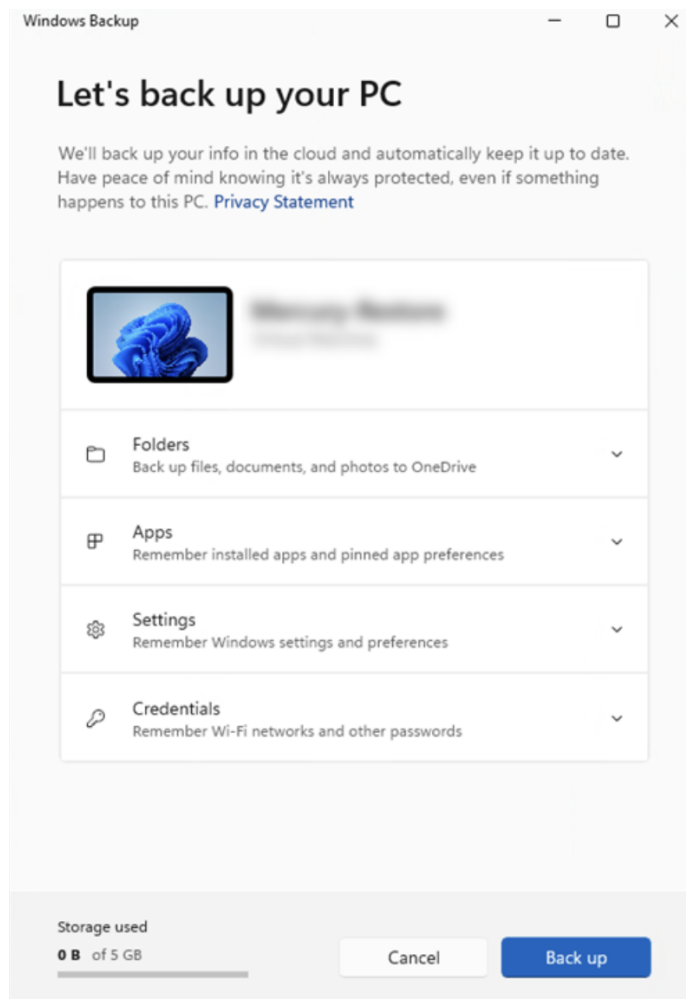


Figure 1 - Windows Backup Interface: A Comprehensive Guide to Safeguarding Your PC Data and Preferences

Backup and Restore (Windows built-in Backup) aspects:

- **Speed: Moderate.** Backup and Restore functions at a decent speed but may not be as fast as dedicated third-party solutions.
- **Price: Free.** It comes built into Windows 10 without any additional costs.
- **Incremental and Full Backups:** Primarily creates full system images. While File History (another Windows feature) can back up files incrementally.
- **Cross-Platform Compatibility:** Limited to Windows environments.
- **Backup Size:** Full backups can be large, consuming significant storage. No data deduplication features.
- **Scheduling:** Provides automatic backup scheduling options, though not as granular as third-party solutions.
- **System Performance:** Minimal impact on system performance but could be more resource-intensive during backups compared to optimized third-party solutions.

Choice and Justification

When selecting the optimal backup solution, my decision-making revolved around key attributes: reliability, versatility, speed, and cost-effectiveness. After thorough research, **Veeam** and **EaseUS Todo Backup** both stood out, but I gravitated more towards EaseUS Todo Backup for the following reasons:

- **User-Friendly Interface:** EaseUS Todo Backup offers an intuitive interface, ensuring that I can efficiently set up and manage my backups without a steep learning curve.
- **Efficient Backup and Recovery:** The software provides swift backups and ensures that recovery processes are just as efficient, minimizing potential downtime.

- **Cost-Effectiveness:** With a competent free version available, I can initiate a comprehensive backup strategy without initial costs. As my requirements grow, I have the option to upgrade to advanced versions.
- **Customizable Scheduling:** Having the flexibility to set my backup schedules ensures that my operations remain uninterrupted, and data is safeguarded as per my preferences.
- **Positive User Reviews:** EaseUS Todo Backup enjoys a good reputation among its user base, reinforcing its reliability and performance in real-world scenarios.

Conclusion:

Balancing advanced features, usability, efficiency, and cost, *EaseUS Todo Backup* offers a compelling package that aligns with my requirements. As I prioritize ease of use, data protection and swift recovery, this software positions itself as a reliable pillar in my backup strategy.

Video Demonstration & Document a recovery

In this segment, I produced a detailed video tutorial showcasing the step-by-step processes of both creating a backup and subsequently recovering from it using the EaseUS Todo Backup software. [Watch the video tutorial here.](#)

Introduction:

The video commences by emphasizing the importance of data protection in today's digital age. It then provides a rationale for selecting EaseUS Todo Backup over other alternatives. Citing its advanced features, user-friendly interface, efficiency, and cost-effectiveness, it's presented as an ideal solution for individuals who prioritize easy-to-use tools while ensuring maximum data protection and swift recovery.

Backup Process:

The demonstration begins with a guided tour of how to initiate and complete a backup using EaseUS Todo Backup. The software's intuitive design is highlighted, ensuring even novices can navigate its

features with confidence. Key features such as scheduling, backup speed, and data compression are showcased.

Recovery Process:

To solidify the effectiveness of the recovery process, a *practical* demonstration is provided. *After* creating the backup, **a test text file is added to the desktop**. *Following* the recovery process, **this text file disappears**, clearly illustrating the software's capability to revert the system back to its state at the time of the last backup. This practical example emphasizes the importance of understanding the recovery impact and the software's precision in restoring data.

Conclusion:

The video concludes by reiterating the merits of EaseUS Todo Backup. By marrying advanced functionalities with ease of use and swift operations, this tool stands as a robust asset in any backup strategy. My personal favorite features are highly customizable automatic backup scheduling and the ~~ease~~ breeze of use.

Research and evaluate a cloud backup solution

With the ever-growing importance of cloud technology, I delved into various cloud backup solutions, aiming to find one that not only ensured data security but also provided swift recovery independent of local infrastructure. My assessment focused on a spectrum of factors, ranging from cost and speed to backup methodologies and scheduling.

In my research, two leading cloud backup solutions stood out: **Backblaze and Carbonite**. Here, I've compared them based on the specified criteria:

Backblaze

- **Cost:** Backblaze has a straightforward pricing model offering unlimited backup at \$6/month (or \$60/year) per computer.
- **Speed:** It's known for its impressive backup speeds, especially during the initial backup. The speed, however, can be influenced by my internet connection and the amount of data.

- **Incremental and Full Backups:** While the initial backup is full, subsequent backups are incremental, implying only changed files are uploaded, conserving time and bandwidth.
- **Cross-Platform Compatibility:** It supports both Windows and macOS.
- **Backup Size:** Offers unlimited backup storage, meaning I don't have to worry about restrictions on file size or type.
- **Scheduling:** Provides flexible backup scheduling options. I can set backups to be continuous, once a day, or on-demand.

Carbonite

- **Cost:** The Basic plan for one computer starts at \$6/month (billed annually). More advanced plans are available for multiple computers and servers.
- **Speed:** Fairly fast, but the initial backups might be more time-consuming due to large amounts of data. Subsequent backups are swifter due to incremental backups.
- **Incremental and Full Backups:** After the full initial backup, Carbonite employs incremental backups for efficiency.
- **Cross-Platform Compatibility:** While it supports Windows and macOS, some features may differ between the platforms.
- **Backup Size:** There's no storage limit on the Basic plan, but files larger than 4GB need to be backed up manually unless using a higher tier.
- **Scheduling:** Continuous backup is the default setting, but I have the flexibility to adjust if I prefer scheduled or manual backups.

Choice and Justification

After a thorough review, I've chosen Backblaze as my cloud backup solution, and here are the primary reasons:

- **Simplicity in Pricing:** Backblaze's transparent and simple pricing model, along with unlimited backup, offers me great value for money.

- **Unlimited Storage:** The peace of mind that comes with backing up without any storage constraints, irrespective of file size or type, is invaluable.
- **Cross-Platform Support:** Both solutions support Windows and macOS, but Backblaze offers a more consistent experience across platforms.
- **Ease of Use:** Navigating and using Backblaze is intuitive and simple, ensuring ease of use for users at any tech level.
- **Reputation:** Backblaze has earned a good reputation in the industry, backed by positive user reviews and acknowledgments for its reliable service.

Conclusion:

Although both Backblaze and Carbonite offer strong cloud backup solutions, Backblaze's combination of simplicity, unlimited storage, and competitive pricing resonates more with my requirements. It promises to be a robust solution tailored to meet the diverse backup needs of a modern digital setup.

Citations:

Veeam Official Site. "Veeam Backup & Replication." [Veeam.com](https://www.veeam.com)

EaseUS Official Site. "EaseUS Todo Backup." [Easeus.com](https://www.easeus.com)

Microsoft Support. "Backup and Restore in Windows 10." [Dell.com](https://support.microsoft.com)

Backblaze Official Site. "Cloud Backup & Data Storage Solutions." [Backblaze.com](https://www.backblaze.com)

Carbonite Official Site. "Cloud Backup Solutions." [Carbonite.com](https://www.carbonite.com)

TechRadar. "Best Backup Software." [TechRadar.com](https://www.techradar.com)