



# Protecting scattered data

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Backup and recovery for onsite and cloud data



Today's speaker

**Josue (ho-sway) Guzman**

Senior Technical Account Manager

Synology

# Synology

Data storage, backup, and more  
Unified hardware and software



““ Our data is always at risk from various sources...

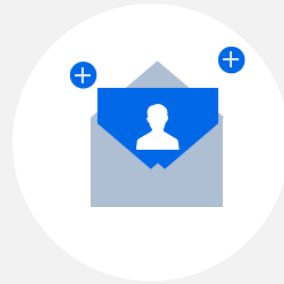
Tornadoes happen regularly, which could destroy our servers (and school). Cyber attacks often target schools like ours. And we have thousands of students who want to ‘hack’ into our systems to change their grades. ”

– Technology director, school in southeastern US

# Protecting scattered data



Servers



SaaS



PCs

# Protecting scattered data



Servers



SaaS



PCs



Faculty &  
Staff



Faculty &  
Staff



Faculty &  
Staff

# Liberal Arts College

Faculty & staff needed data storage  
Save files, collaboration, and more  
Adhere to grant guidelines

# Grant-friendly data storage?

- ✓ Separately managed
- ✓ Local and remote backup
- ✓ Limited access permissions





Synology NAS



Synology NAS



Synology NAS



Faculty &  
Staff



Faculty &  
Staff



Faculty &  
Staff

# Challenges



## Maintenance

Keeping devices updated when you don't own them



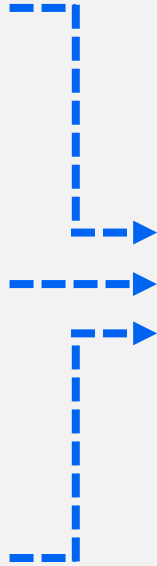
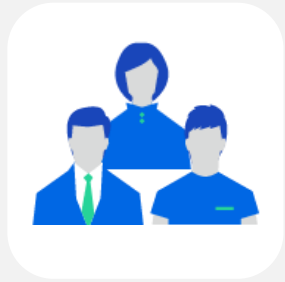
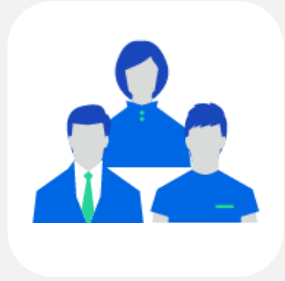
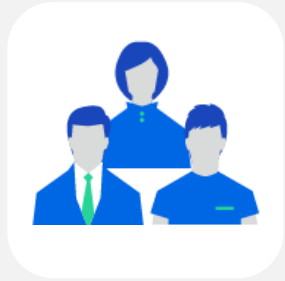
## Security

Enforcing best practices among separate teams



## Disaster Recovery

Planning for unexpected data loss and disasters



Centralized backup & management

Managed by faculty

Managed by IT



# Centralized management

Monitor status of all servers

Receive security alerts

Push system updates

The screenshot shows the 'Central Management System' interface. On the left is a navigation menu with items: Overview, Server, Group, Policy, Task, Log, Monitoring & Update (with sub-item 'DSM Update'), Storage, Service, and Package. The main area has tabs for 'Update', 'Update All', and 'Settings'. Below these is a table with columns 'Server to Update', 'Model Name', and 'Current Version'. A 'DSM Update Wizard' dialog is open, titled 'Select an update method'. It contains a note about reading release notes, two radio button options: 'Update to the latest DSM version provided on Synology's website' (selected) and 'Update .pat files manually'. The first option includes a text input field with '/homes/admin' and a 'Select' button. The second option has 'Add' and 'Delete' buttons. At the bottom right of the dialog is a 'Next' button. The table in the background shows models 1 through 8, with Model 1 having a model name of 'DS920+' and a current version of 'DSM 7.0-41870'.

Server to Update	Model Name	Current Version
Model 1	DS920+	DSM 7.0-41870
Model 2		
Model 3		
Model 4		
Model 5		
Model 6		
Model 7		
Model 8		

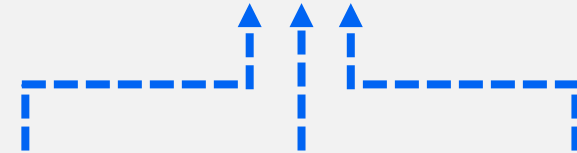
# Backup and recovery



Backup server



Cloud backup



# Recovery options

## Snapshots

Roll back overwritten or deleted files locally

## Restore from archive

Copy and restore to replacement file server

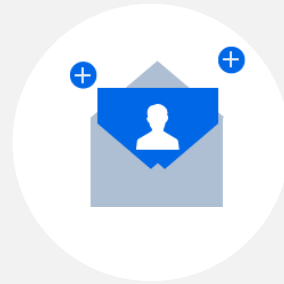
## Failover

Access files on secondary failover server

# Protecting scattered data



Servers



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# Oil pipeline ransomware attack

Paying the ransom might not help

**Data was encrypted**

Pipeline operations ceased due to ransomware attack.

**Paid \$5m ransom**

Within hours of receiving ransom notice.

**Decryption was slow**

Decryption tool provided by attacker was too slow.

**Used backups anyway**

Recovering with company backups was faster.

Case study

# University of Washington

300+



Local and remote workstations



Local backup

**Hundreds of faculty devices**

PCs were on campus and at home

**Sensitive information**

Such as student and research data

**Recovery was faster**

Wanted ability to recover devices quickly

Poll Question:

**Does your organization back up PCs locally or to the cloud?**

1. We back up to the cloud
2. We back up to an on-premises solution
3. We back up to a mixture of both
4. We do not backup PCs

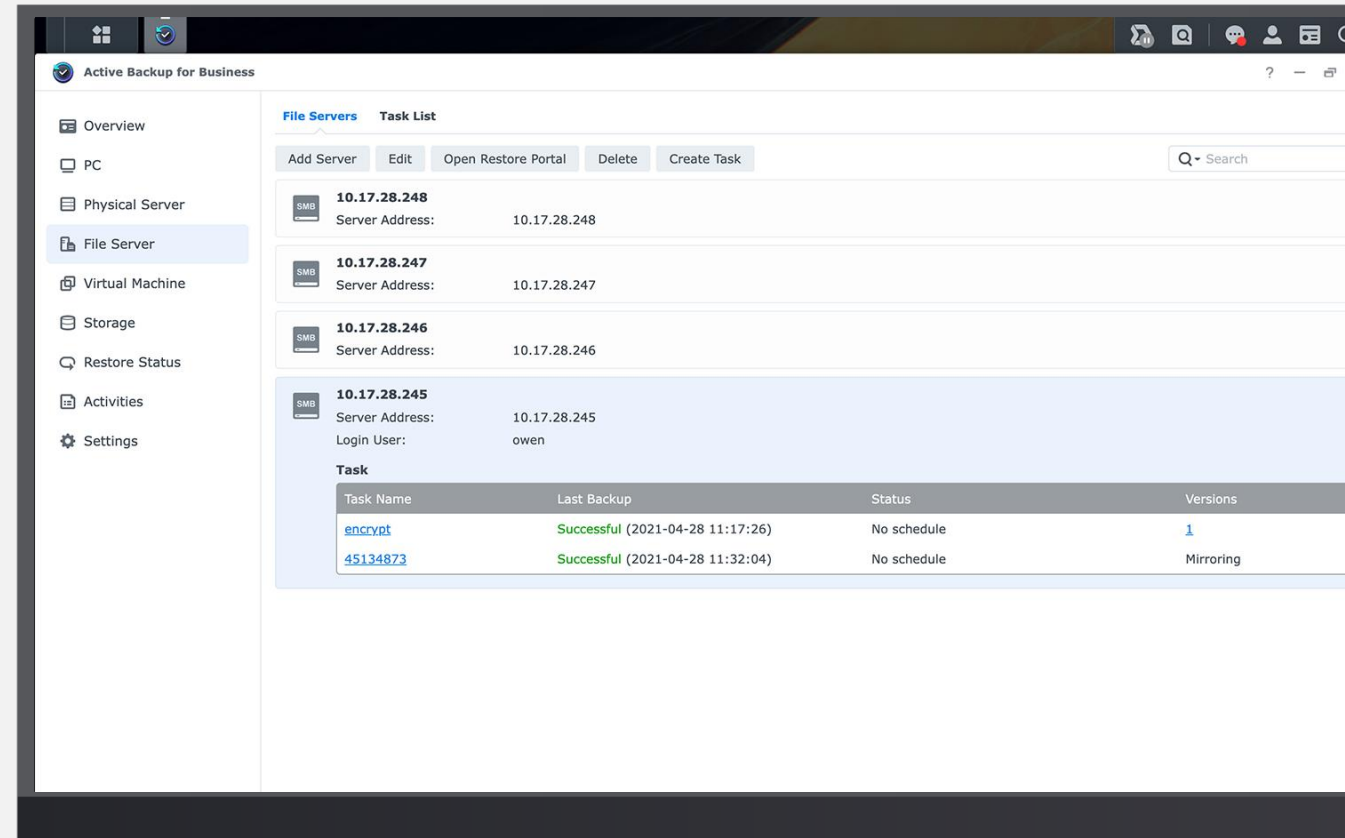


# Active Backup Suite

Local backup for PCs, VMs, servers

Centralized management

No license or subscriptions



# Why back up **locally**?



## Reduce recurring costs

The school saved \$200k compared to subscription services



## Control access to data

Admins were able to maintain control of who could access sensitive data



## Recover data faster

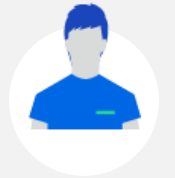
Data could be restored without waiting for downloads from the cloud

# When file recovery isn't enough...



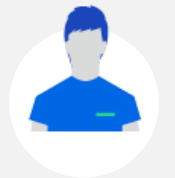
My computer died and I need an excel file on it right away.

No problem. What is the file or folder name?



I dunno... It's in excel. Whenever I open excel, it's always at the top.

.....



# Recovery options

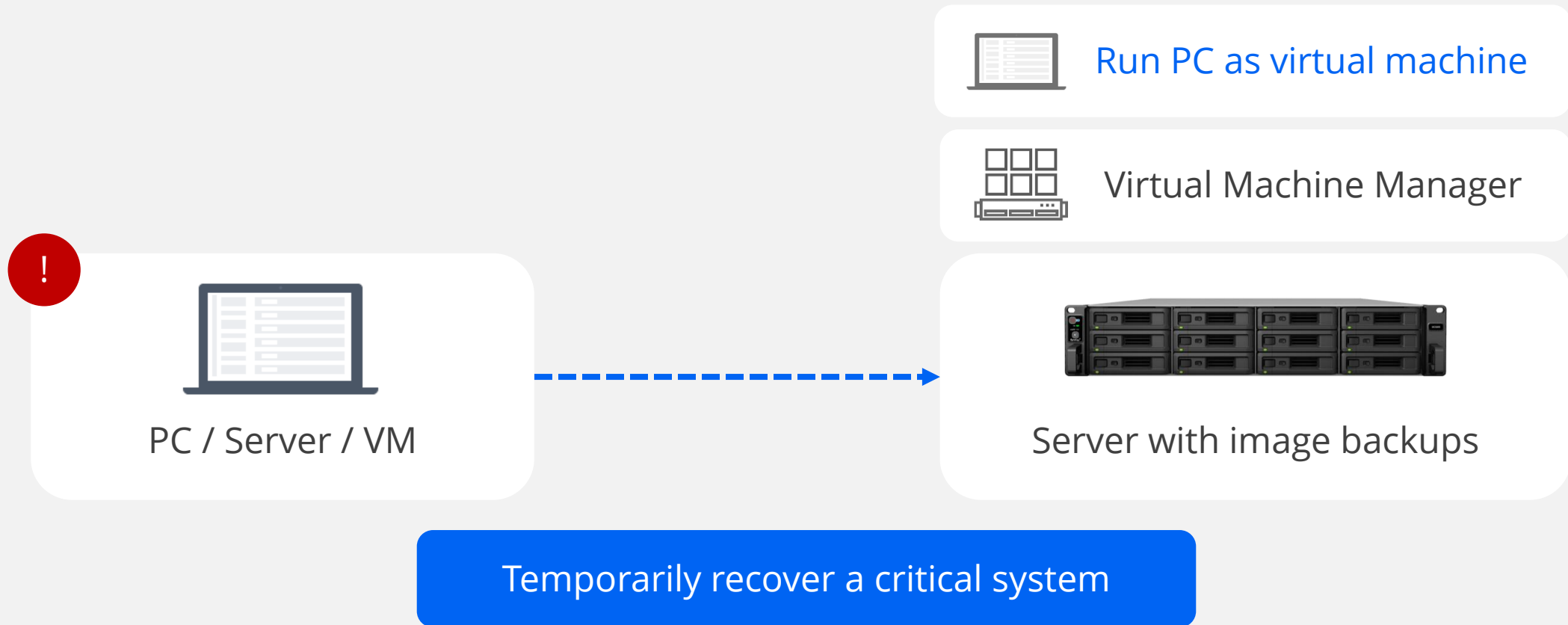
	Windows PC	Windows Server	VMware Hyper-V	File Server
Full system restore	✓	✓	✓	
File-level restore	✓	✓	✓	✓
Self-service file restore	✓	✓		
Instant restore to VM host		✓	✓	
Cross-platform recovery		✓	✓	
Instant restore to Synology VMM		✓	✓	

# Recovery options

	Windows PC	Windows Server	VMware Hyper-V	File Server
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Self-service file restore	✓	✓		
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Cross-platform recovery		✓	✓	
Instant restore to Synology VMM		✓	✓	



# Instant restore as VM



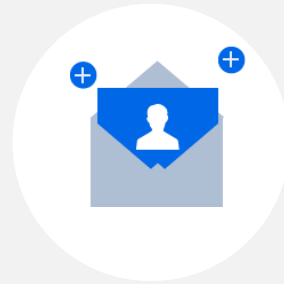
# Walkthrough

Restore a system as a virtual machine

# Protecting scattered data



Servers



SaaS

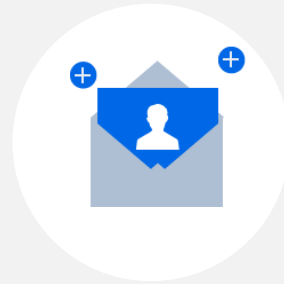


PCs

# Protecting scattered data



Servers



SaaS



PCs

# Adoption of SaaS

Remote work and learning has accelerated adoption of cloud email and collaboration.



Poll Question:

**Does your organization backup Microsoft 365 or Google Workspace?**

1. Yes
2. No, but we will use one in the next year
3. No, and we don't plan to use one

Case study

# Vocational college



60k email accounts  
30k drive accounts



SaaS platform



18,000 students



1,000 faculty

## Greater flexibility

SaaS helped with remote work and learning

## Retention obligations

Must keep current and former student data

## Cloud ≠ backup

Seeking a backup solution for SaaS data

Isn't cloud data backed  
up already?



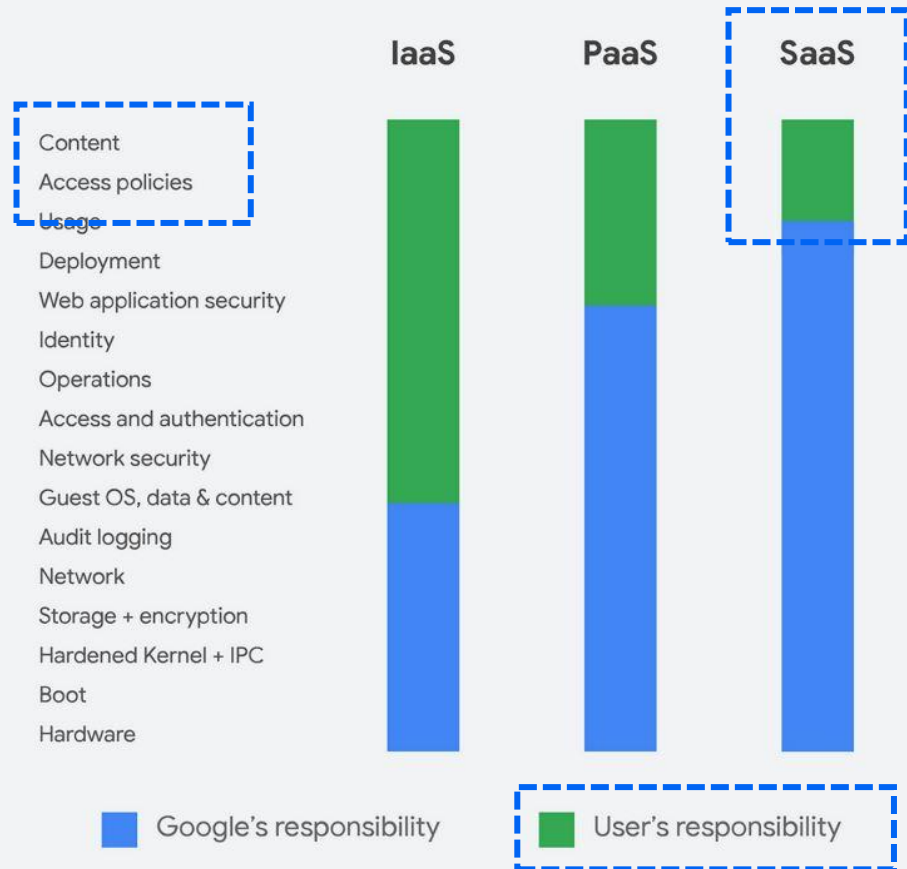
# Data protection is your responsibility

## Google Shared Responsibility Model

Data protection is not only the responsibility of the business using Google Workspace for Education services; nor is it only that of Google in providing those services. Data protection in the cloud is instead a shared responsibility; a collaboration between the customer and the Cloud service provider (CSP).

The Google Shared Responsibility Model visually describes the various security responsibilities that our customer and Google are together responsible for. Google Workspace for Education is software as a service (SaaS) where almost everything except the content and its access policy is the responsibility of the CSPs. In the SaaS model, CSPs manage all of the physical and virtual infrastructure and the platform layer while delivering cloud-based applications and services for customers to consume. Internet applications that run directly from a web browser or mobile applications are SaaS applications. With this model, customers don't have to worry about installing, updating, or supporting applications—they simply manage system and data access policies.

**Important:** As a Google Workspace for Education customer, you are responsible for the security of components that you provide or control, such as the content you put in Google Workspace for Education services, and establishing access control for your users.



# Accidents (and attacks) happen

## Accidental deletion

Admins might delete important email, documents, and other items by accident

## Malicious deletion

A disgruntled IT consultant deleted 1,200 email Microsoft 365 accounts of former employer

## Cyber attacks

Hackers may gain access to email accounts and delete data to cover their tracks



Google Workspace / Microsoft 365



Local backup



Cloud backup

## Cloud-to-cloud backup

No hardware maintenance

Easily scale capacity



Google Workspace / Microsoft 365



Local backup



Cloud backup

## Cloud-to-local backup

No subscription or license costs

Access and privacy control

## Case study

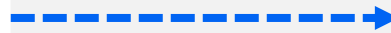
# Vocational college



60k email accounts  
30k drive accounts



SaaS platform



On-premises backup



18,000 students



1,000 faculty

# Why **local** backup of SaaS?

## Recovery

Restore files regardless of internet service

## Archiving

Control how institutional data is retained

## Costs

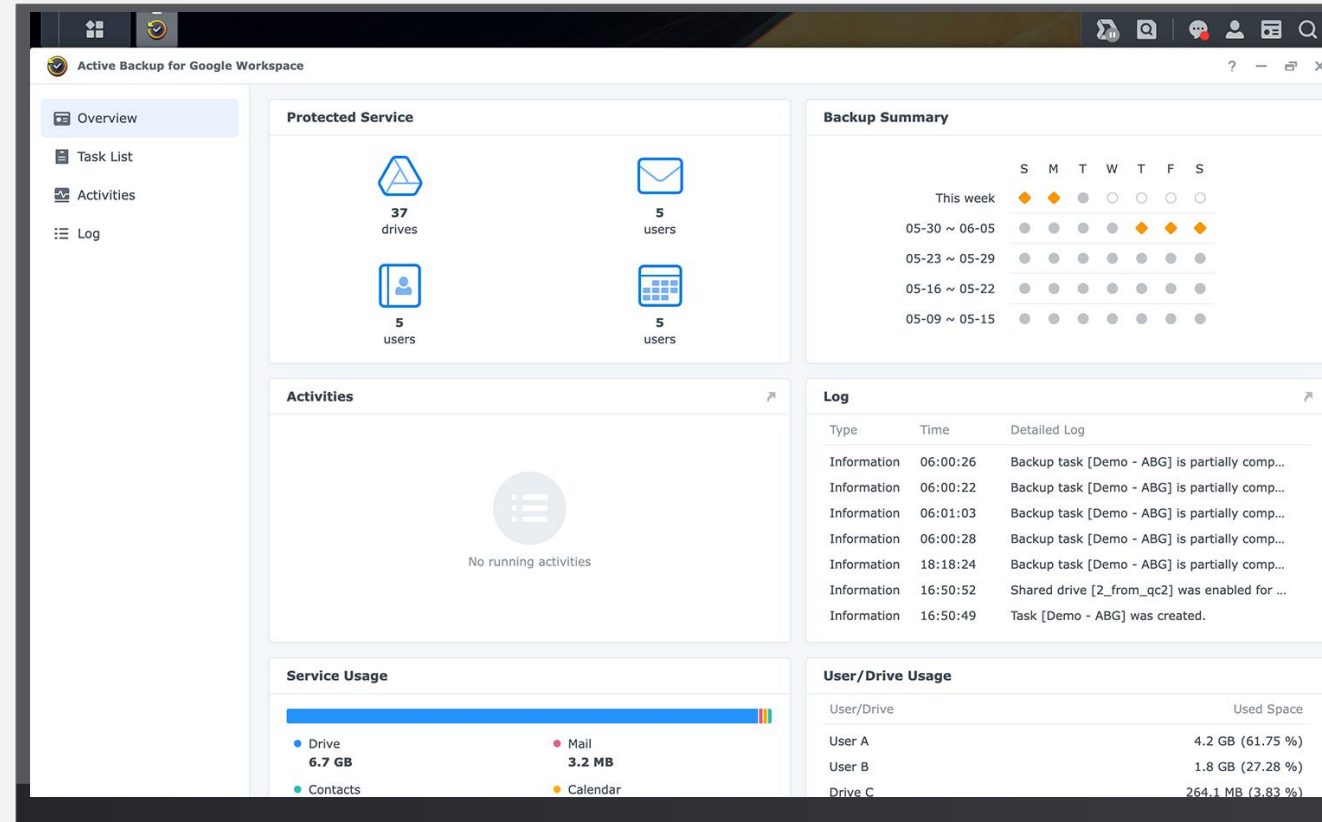
One organization saved \$60K annually on fees



# Active Backup Suite

Local backup for...

- Drive
- Email
- Contacts
- Calendar



# Walkthrough

Backing up and recovering SaaS data



# Avoid single points of failure



## Retain weekly, monthly, and yearly versions

Malicious actors and malware is often undetected for months



## Back up data to multiple devices or locations

If a disaster compromises the primary backup, recover from secondary backups



## Maintain good IT admin practices

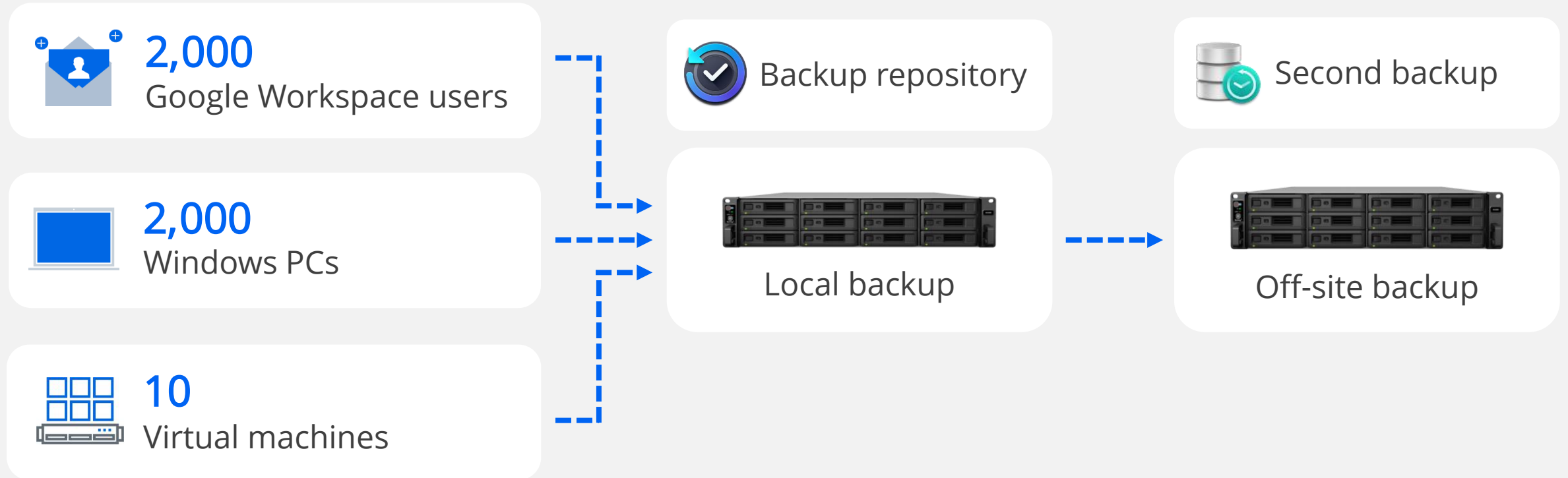
Don't save login credentials, use remote desktop software for critical systems, and others

Poll Question:

**When was the last time you tested your backups for restoration?**

1. One (1) month ago
2. Three (3) months ago
3. About a year ago
4. I have not tested my backups

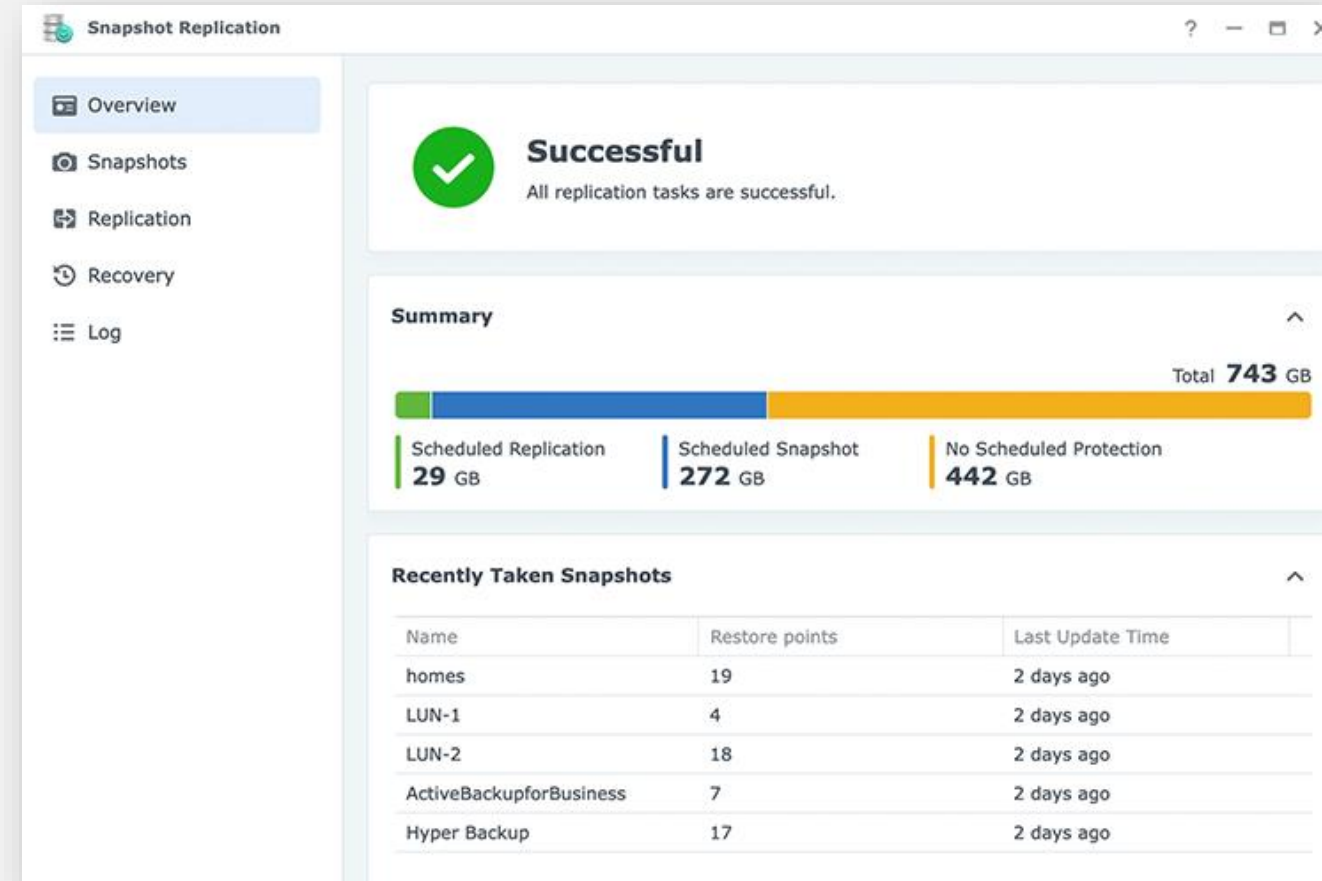
# Disaster and recovery planning





# Snapshot Replication

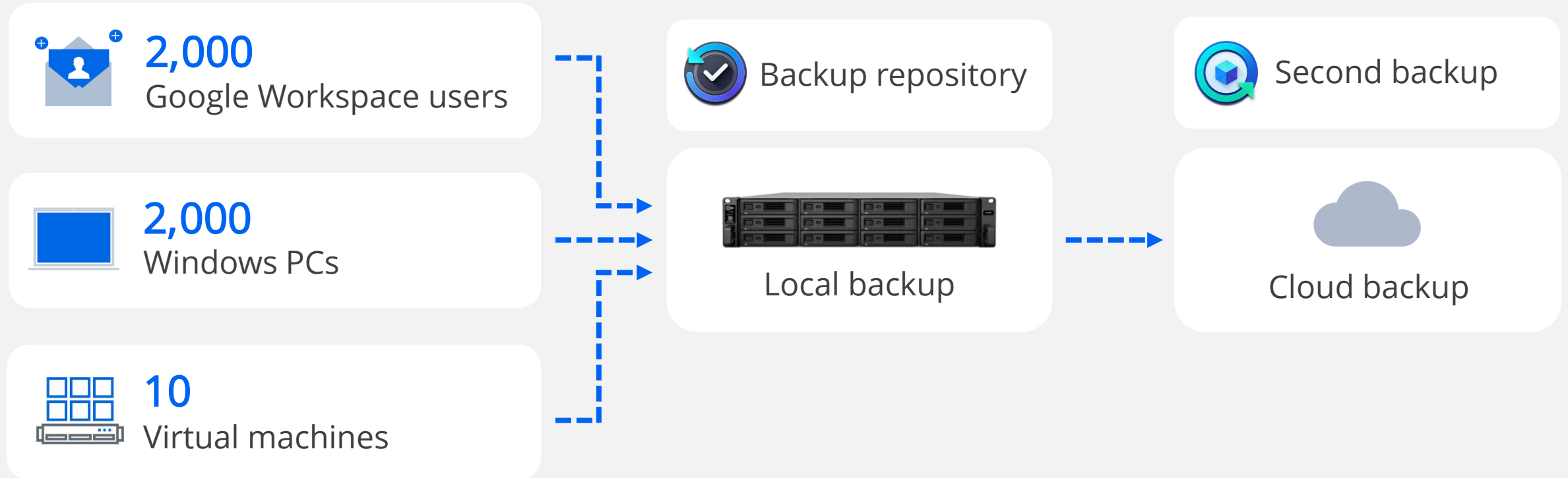
Replicate backups to second server  
Good for failover to second site



# Walkthrough

Setting up replication to second Synology NAS

# Disaster and recovery planning





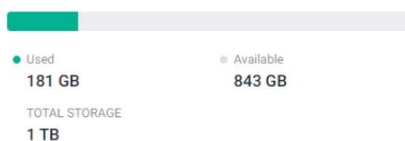
# Hyper Backup

Works with major providers:

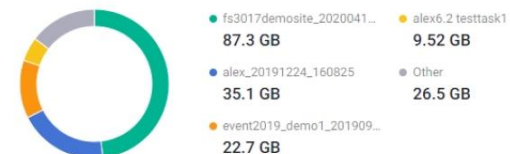
Amazon, Microsoft, Google, S3-compatible services, and more

The screenshot displays the Hyper Backup web interface. On the left, a sidebar lists four backup targets, each with a green checkmark: Dropbox 1, Local Storage 1, Synology C2, and Synology NAS 1. The main content area shows a 'Success' message with a green checkmark icon, indicating the last successful backup was on 2019-01-03 at 15:19 and the next scheduled backup time is 'None'. Below this, there is a 'Back up now' button and a search icon. The 'Target - On-line' section provides details for the selected target: IP address (10.17.195.61), Username (admin), Shared Folder (files), Directory (DS416PlayAngel\_1), Size (Not available), and Integrity check (Not performed yet). The 'Task Settings' section shows: Shared Folder (ActiveBac), Application (None), File Filters (Off), and Backup Schedule (There is n). At the bottom of each section, there are buttons for 'Version List' and 'Task Settings'.

## Storage Usage



## Data Composition



## Tasks

Task name	Duration	Last backup	Usage
annann_home: annann_home_2020...	3 minutes	12/08/2020 14:33:58	1.49 GB
bat_deadpool: bat_deadpool_20200...	1 minutes	12/07/2020 22:41:05	43.2 MB
bat_deadpool: bat_deadpool_20200...	2 minutes	12/07/2020 23:52:42	42.5 MB
C2_EXPRESS_BOX: c2_express_box...	1 minutes	12/01/2020 20:41:57	7.7 GB
cloud_2020_3018: cloud_2020_301...	2 minutes	08/31/2019 10:32:26	229 MB
cloud_2020_3018: cloud_2020_301...	2 minutes	08/31/2019 12:42:23	603 MB
NEWC_2020_3018: cloud_2020_301...	2 minutes	05/20/2020 20:42:55	1.17 GB
Evany_918plus: evany_918plus_202...	0 seconds	-	197 KB
C2_EXPRESS_BOX: event2019_dem...	4 minutes	11/29/2020 17:44:05	22.7 GB
C2_EXPRESS_BOX: event2019_dem...	1 minutes	12/03/2020 19:41:33	638 MB

34 items

# Synology C2 Storage

Integrated cloud backup

No extra restoration costs

Encrypt data before uploading

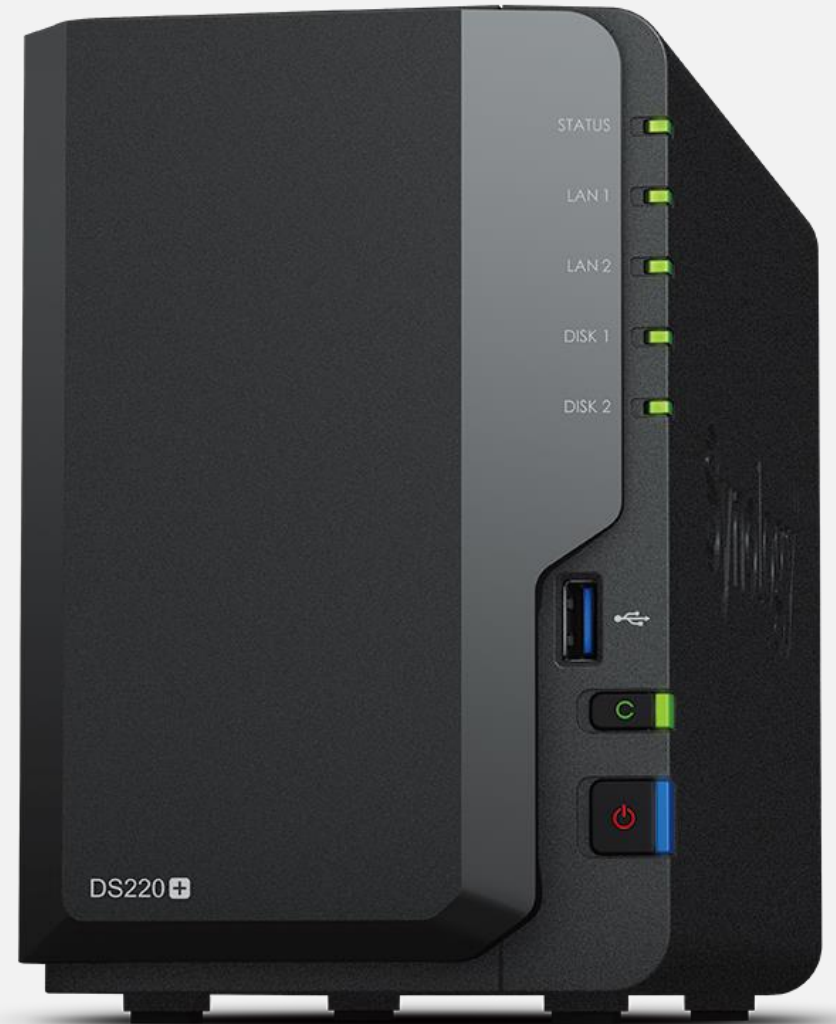


# ENTER TO WIN

Take our survey for a chance to win a Synology DS220+ NAS (\$300 value).



Scan the QR code to enter!



**Questions?**

**Thank you!**