

Ransomware Defence Edge Cyber Resiliency

Technical Customer Presentation

Infrastructure Services CSA

Technical Marketing

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LUMEN®

Objective – From Challenge to Solution

1

Multiple threat vectors are endangering business continuity in the networked world

- Backups are no longer sufficient
- Threats need to be detected and blocked early
- Recovery needs to be fast, minimizing downtime

2

A 3-step solution to protect you and your business-critical data using an end-to-end Cyber Resiliency Solution consisting of

- Lumen NaaS, Lumen Black Lotus Labs
- Lumen Data Protect
- Lumen Network Storage

3

Cyber Resiliency made easy, seamless and configurable

- Protect data in motion using Lumen's Network Threat Insights with NaaS
- Create regular cleanroom forest-level backups for fast recovery
- Block ransomware and malware threats before they can cause any harm

Cyber Resiliency requires more than just frequent backups

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Digital threats by the numbers

ATTACK FREQUENCY

2 seconds

Projected rate of successful ransomware attack by 2031.

(Cybersecurity Ventures. Ransomware Will Strike Every 2 Seconds By 2031. September 2025)

RANSOMWARE, EVERYWHERE

$4.88M

Average global cost of a data breach ($9.3M in the US).

(IBM. Cost of a Data Breach Report 2024. July 2024)

OPERATIONAL DOWNTIME

5 months

Average reported time to recover from cyberattacks.

(Cybermaterial. Recovery from Cyber Incidents Takes 7 Months. July 2024)

HYBRID AND MULTI-CLOUD COMPLEXITY

60%

use over 25 SaaS applications, and 30% use 50+.

(Cloud Security Alliance. Survey Finds 70% of Organizations Have Dedicated SaaS Security Teams, June 2024)

NEW COMPLIANCE MANDATES

96%

are increasing cyber investment due to new regulations.

(PwC. Global Digital Trust Insights 2024. October 2024)

CLOUD NATIVE

23%

of all cloud security incidents are the result of misconfiguration.

(SentinelOne. 2024 Cloud Security Report. June 2024)

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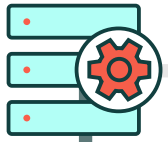
Lumen Cyber Resiliency Solution



Trusted resilience for critical customer workloads



- SaaS apps
- AD/Entra ID
- File systems
- Databases
- Kubernetes
- Virtual machines

LUMEN

SECURE, DYNAMIC NETWORKING: POWER PROTECTION AND RESPONSE OPERATIONS

Lumen NaaS and Black Lotus Labs	Port connectivity	On-demand networking	Integrated cybersecurity	Threat repulsion	Network visibility

NetApp®

THREAT-AWARE STORAGE: MAINTAIN PRISTINE, GOVERNABLE, AND ACCESSIBLE DATA COPIES

Lumen Network Storage with NetApp	Immutable snapshots	BlueXP orchestration	Data replication	Orchestration and failover	Data classification and governance

Commvault®

DATA BACKUP AND RECOVERY: ENABLE RAPID RECOVERY OF DATA AND CLOUD APPS

Lumen Data Protect with Commvault Cloud	Immutable and isolated backups	Layered security	Rapid app rebuilds	Cleanroom recoveries	Forest-level recoveries

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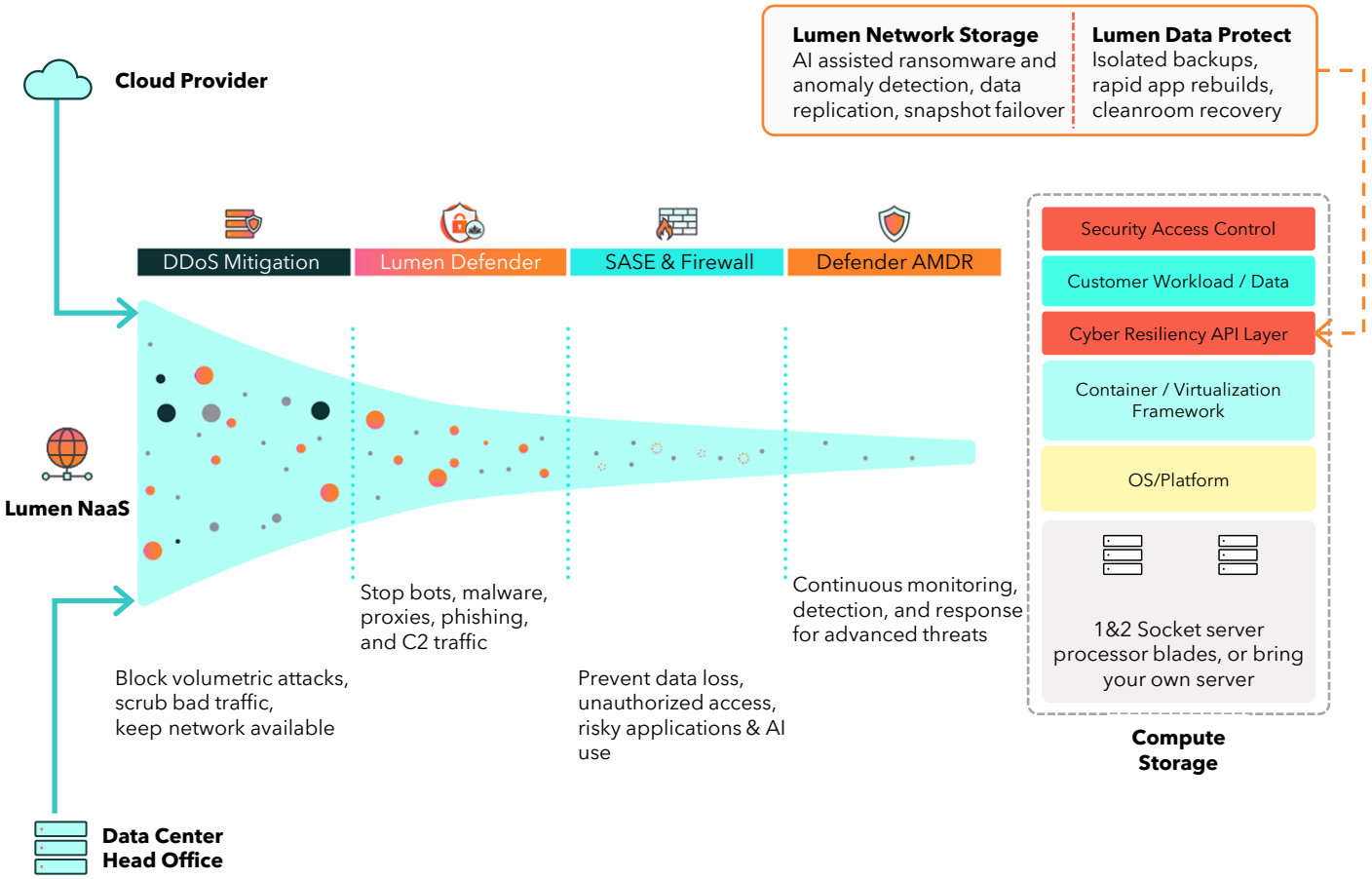
Cyber Resiliency: 3 Steps to Peace of Mind

1. Designed to Ensure Network Reliability and Security



Business Challenge

- Operational continuity expectations
- Rising cyber threats, data privacy and security concerns
- Legacy network and storage infrastructure
- Regulatory compliance pressure
- Cloud dependency risks
- Intrusion and ransomware attacks

Lumen Solution

Cyber Resiliency is a fully integrated three-step solution to monitor the network and attack surfaces of your IT infrastructure, protect your configurations and data, and recover seamlessly.

1. **Block threats and attack vectors** before they reach you:
   Lumen NaaS and **Lumen Black Lotus Labs** provide on-demand networking connectivity, advanced actor tracking, high network visibility, and automated threat repulsion.
2. **Stop bad actors and ransomware in its tracks:**
   Lumen Network Storage provides near real-time AI-assisted data access anomaly and ransomware detection, storage orchestration service, efficient data replication, and rapid failover to save configurations.
3. **Be prepared with advanced backup solutions:**
   Lumen Data Protect for scalable protection. Immutable, cleanroom backups, comprehensive workload coverage, and rapid forest-level reprovisioning of a healthy environment.
4. **Reliable, maintained and persistent tight integration:**
   Lumen Managed Services enable tight integration of all solution components and the ability to customize to your needs.

Be ready to defend your data and recover quickly when the worst happens

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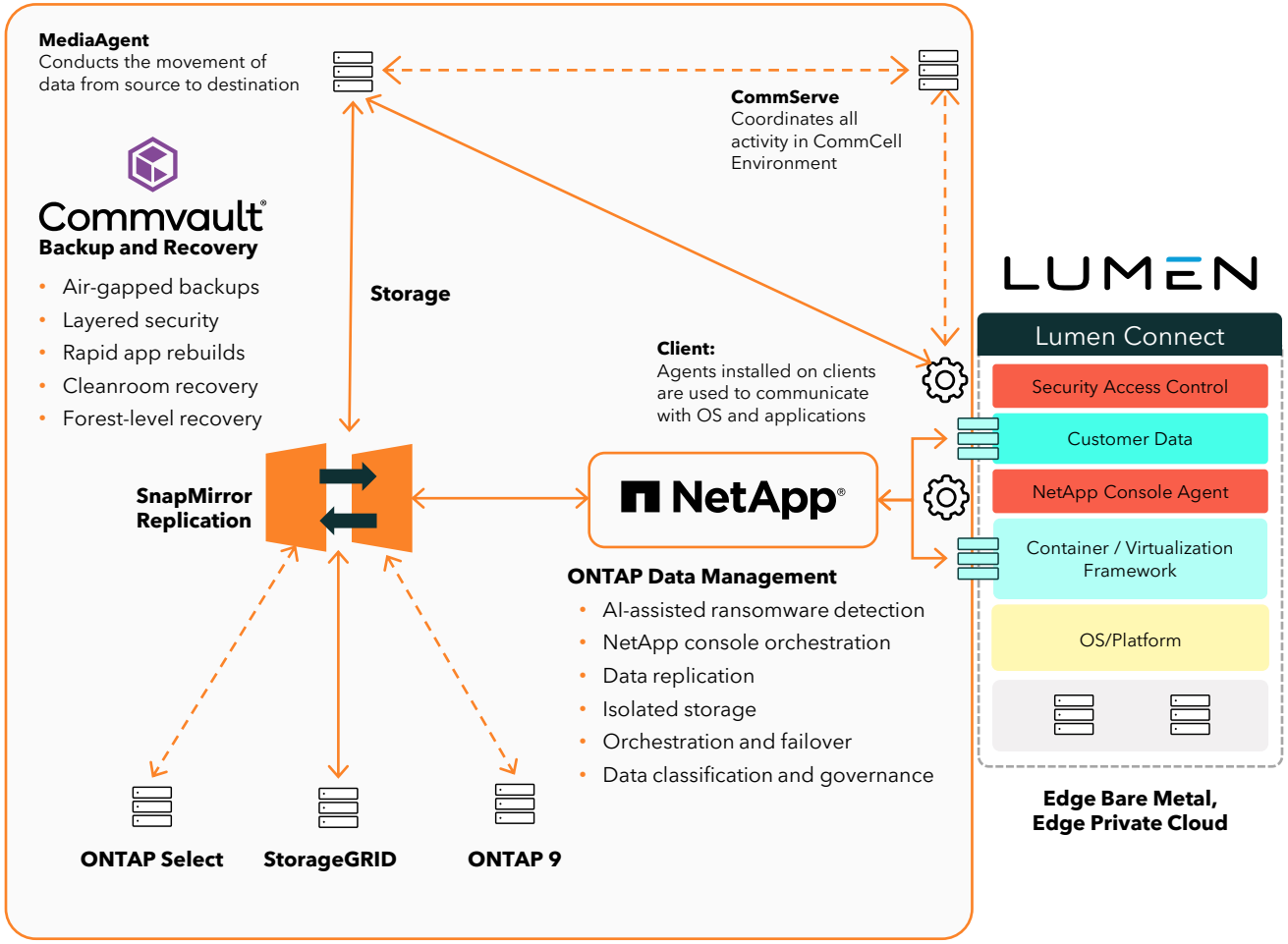
Storage & Recovery Architecture

2. Protect your IT Infrastructure and Data at Rest



Business Challenge

Minimize downtime, when malware can corrupt multiple generations of backups:

- Maintain a known, good cleanroom copy to ensure full recovery
- Require multi-layer security to air-gap backups
- Include the full configuration and functional forest-level installation in backups
- Enable rapid rebuild and reprovisioning once threat vector is addressed

Lumen Solution

Air-Gapped Protection and Rapid Cleanroom Recovery

1. **Lumen Network Storage on NetApp StorageGRID** with NetApp data management ***handles*** isolated backup copies, regular ***data replication, orchestration of scenario responses***, governance and classification of data types, and automated responses to unusual data movement including the orchestration of rapid recovery using Commvault backups.
2. **Lumen Data Protect** with **Commvault Cloud *takes*** forest-level installation and data ***snapshots of your data center***, uploads the data to a secure isolated location under NetApp governance, and keeps it ready for rapid redeployment.
3. **Recover quickly if the worst happens.** Corruption is halted using NetApp data management intelligence and your installation is rebuild using a Commvault cleanroom recovery image with minimal downtime.
4. **Flexible and composable** to meet your exact requirements.

Keep your data safe and ready for rapid reprovisioning

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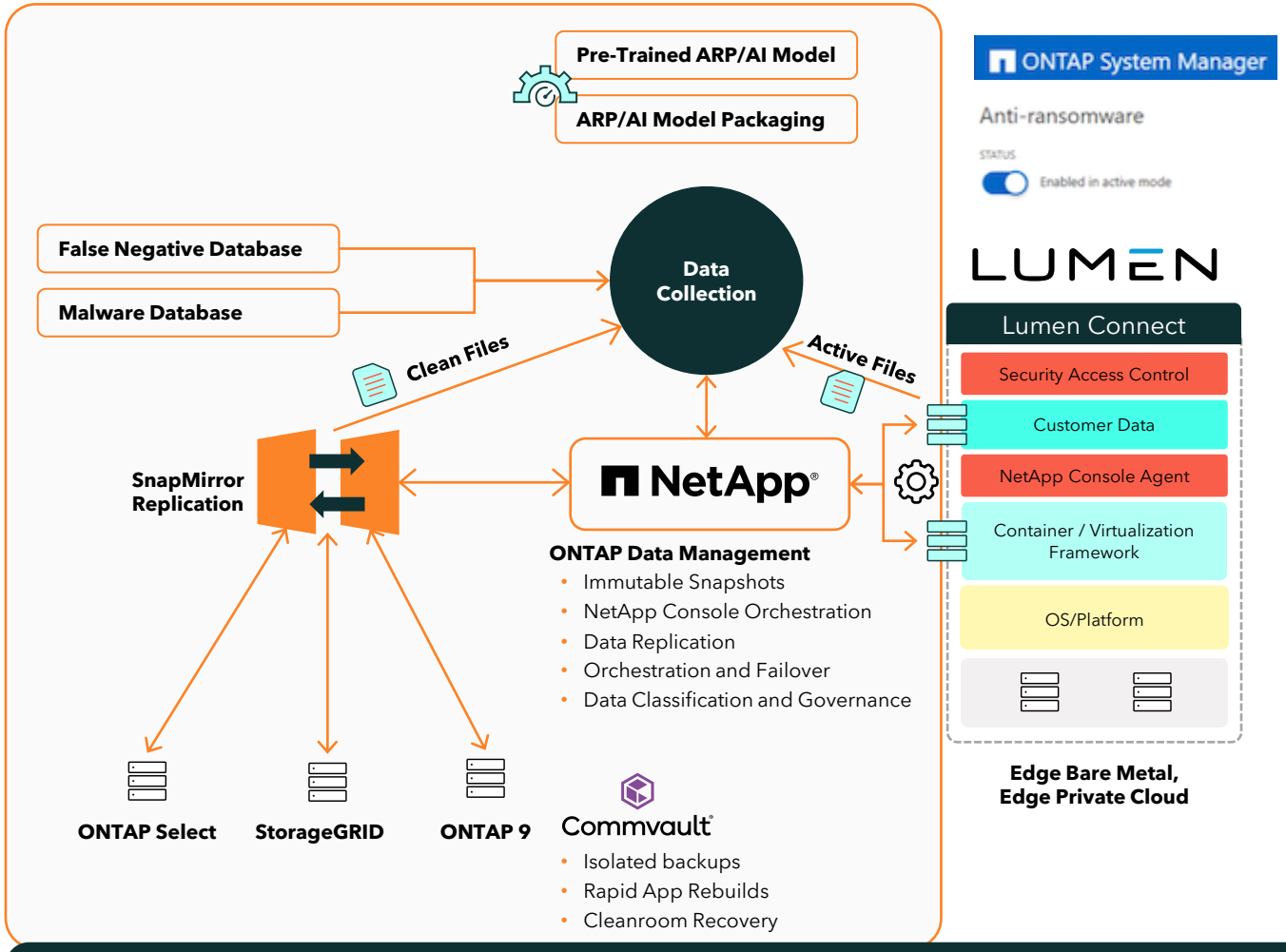
Ransomware Detection and Recovery

3. Detect and Mitigate Data Access Anomalies Quickly with AI



Ransomware detection with automatic backup recovery trigger

Business Challenge

The frequency of ransomware has been increasing rapidly in recent years, causing

- Downtime of critical and sensitive systems in Finance, Healthcare, Security and Services
- Financially stress on organization
- Exposure of confidential and critical data to bad actors

The solution must

- Identify ransomware and malware intrusion quickly
- Protect data from corruption
- Recover to a clean known good installation quickly

Lumen Solution

Lumen Network Storage with NetApp Ransomware Resilience

1. **Trained** expandable **AI models *detect*** unauthorized data access, ***anomalous data movement and*** malware in your data center automatically using agents in your data center as part of NetApp's Open Network Technology for Appliance Products (ONTAP).
2. NetApp's Automated Ransomware Protection (ARP/AI) analytics detects constantly evolving forms of ***ransomware with 99% accuracy*** in network attached storage (NAS) environments.
3. ***These findings are compared with a database of known malware*** and a customer configurable database of false negatives (known harmless code).

   If ransomware is detected, live ***data access is blocked.***
4. ***Data is recovered using* Commvault *cleanroom recovery images.***

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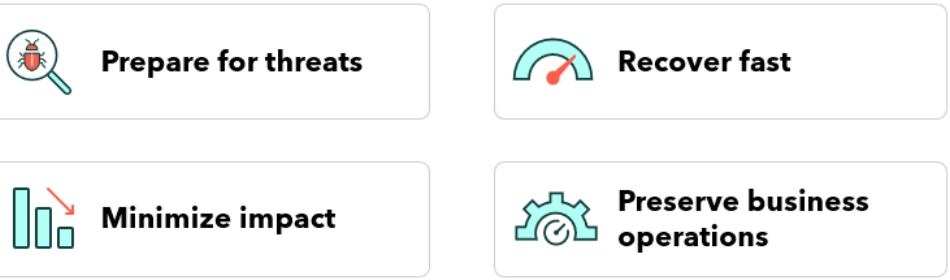
Cyber Resiliency Solution Summary

Challenge / Pain Point

- Increased risk of ransomware, black hat actors
- Protection against DDoS attacks and cyber threats
- Privacy and regulatory requirements for data integrity and protection
- Resilience from data corruption due to hardware failures
- Ever larger amounts of data stored in the cloud or off-prem

Solution

- Integrated protection against network threats, data access anomalies Observability, Identification, Repulsion
- Monitoring of data changes quickly and efficiently to recover to known-clean environments
- On-demand networking, Isolated recovery environments, rapid restores, secure data connections, avoid idle capacity costs



Implementation

- End-to-end network traffic and network awareness built into NaaS.
- **Network and storage-based detection** provides multiple layers of protection against threats.
- **Isolated and pristine data backup environments** support rapid restores to help reduce business downtime.
- **Security-centric storage** services help classify data, detect, identify and remediate vulnerabilities and enable recovery readiness.

Lumen Services

- **Lumen NaaS** and **Lumen Black Lotus Labs** provide on-demand networking connectivity, advanced actor tracking, high network visibility, automated threat repulsion, and **protection of data in motion.**
- **Lumen Network Storage** with **NetApp** provides real-time ransomware detection and response, efficient data replication, rapid orchestration and failover, and built-in classification and governance.
- **Lumen Data Protect** with **Commvault Cloud** provides immutable and isolated backups, comprehensive workload coverage, rapid cloud app rebuilding, and automatic provisioning.
- **Lumen Managed Services** enable tight integration of all solution components and the ability to customize it to your needs.
- Fully Integrated with **Lumen Connect, Edge Bare Metal and Edge Private Cloud** with ~60 Lumen data center locations and over 2000 (public, private, 3rd party) data centers connected to Lumen's network.

Protect your network and data at rest and in motion.

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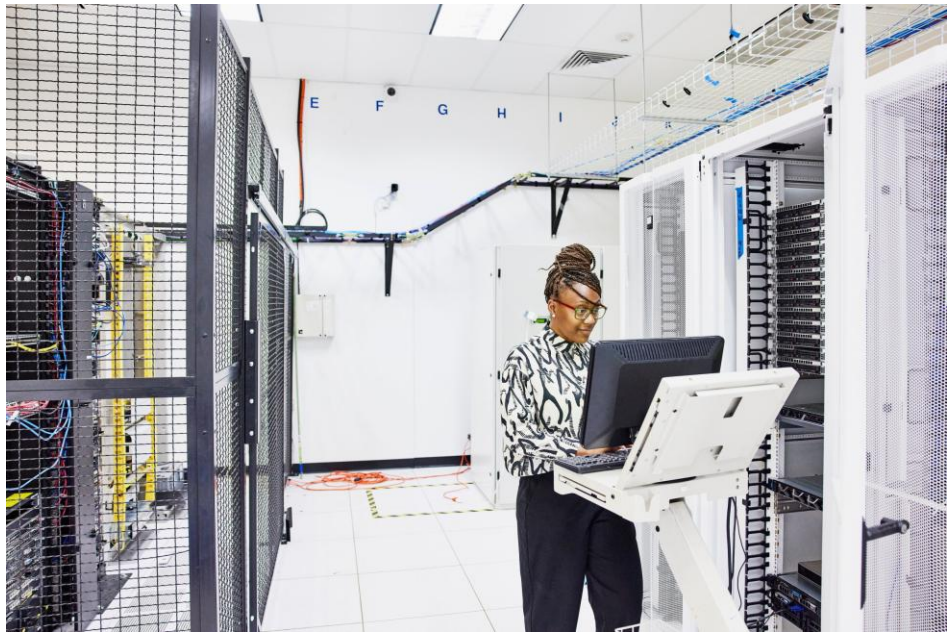
Next Steps to Cyber Resiliency

Collateral and reference links

- Lumen Cyber Resiliency
- Cyber Resiliency Infographic
- Cyber Resiliency Data Sheet
- Spotlight: Cyber Resiliency and Managed Services
- Network as a Service
- Edge Network Storage
- Edge Data Protect

Protect your data and respond to threats efficiently



using the 3 steps to Cyber Resiliency

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