



Data Driven Digital Transformation: How the National Pandemic changed healthcare

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Welcome

Welcome

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THE PRESENTATION TITLE GOES HERE (To edit, View > Slide Master)

Veritas | Top Health Care Systems Customers



THE DIGITAL HEALTH REVOLUTION

Infographic by Paul Sonnier

DIGITAL
REVOLUTION
+
GENOMIC
REVOLUTION

WIRELESS SENSORS & DEVICES

MOBILE CONNECTIVITY

SOCIAL NETWORKING

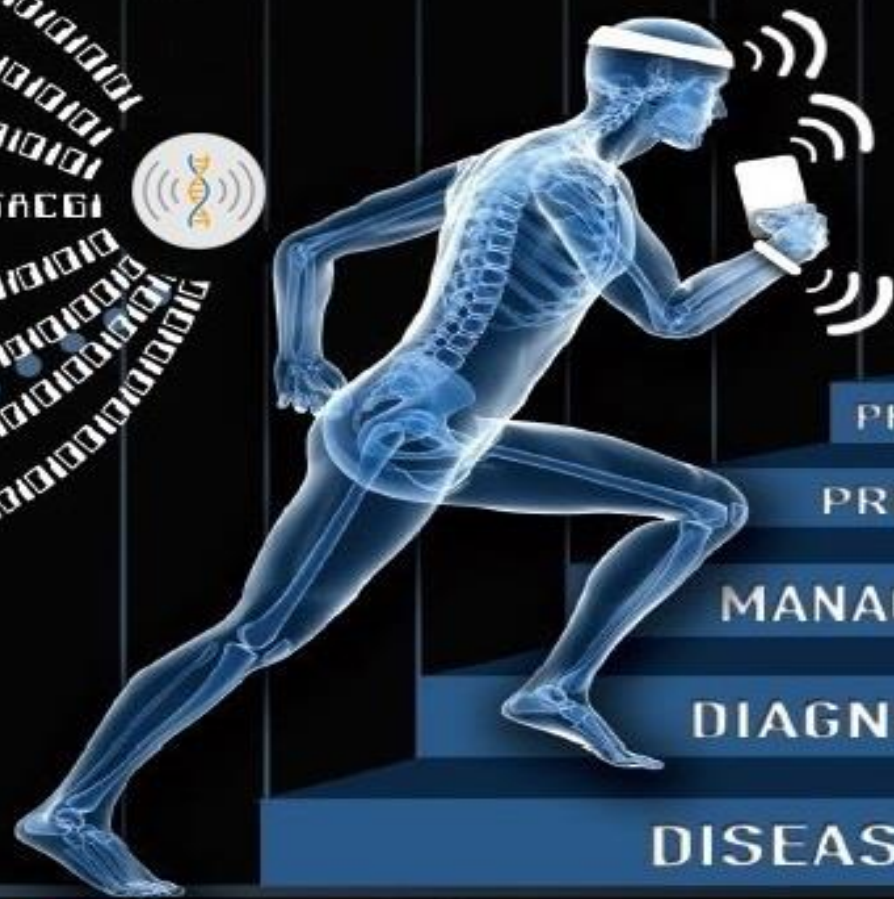
GENOMICS

INTERNET

IMAGING

DATA UNIVERSE

HEALTH INFO SYSTEMS



R
E
S
U
L
T
S

PREVENTION

PREDICTION

MANAGEMENT

DIAGNOSIS

DISEASE

1970

1980

1990

2000

storyofdigitalhealth.com

2010

2020

Cognitive Computing: Making Healthcare Intelligent

73 the number of **days** it takes for **medical data** to **double** by 2020

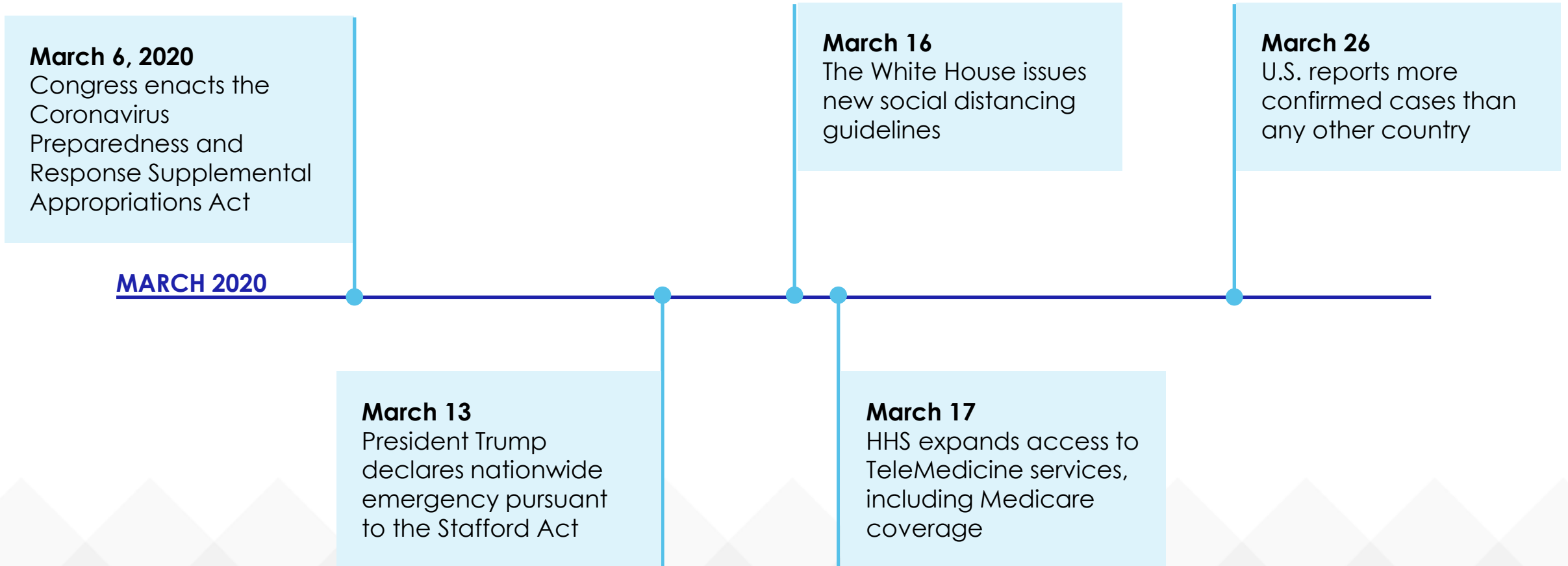
1,100 TB Lifetime data volume generated by a **typical consumer**

80% of the world's **healthcare data** is **unstructured**



2022 Healthcare now creates more data than any other industry at 30% YoY growth!

COVID-19, TeleMedicine and Remote Work Demands



MARCH 2020

Result: Healthcare organizations forced to deploy TeleMedicine in a matter of weeks

Enabling a remote workforce

- 100's if not 1000's of laptops, cameras, headsets and microphones
- Patient care provided via any device accessible
- Many new entry points into the organization
- Many staff not trained on current hacking techniques and protection
- New clinical protocols created overnight



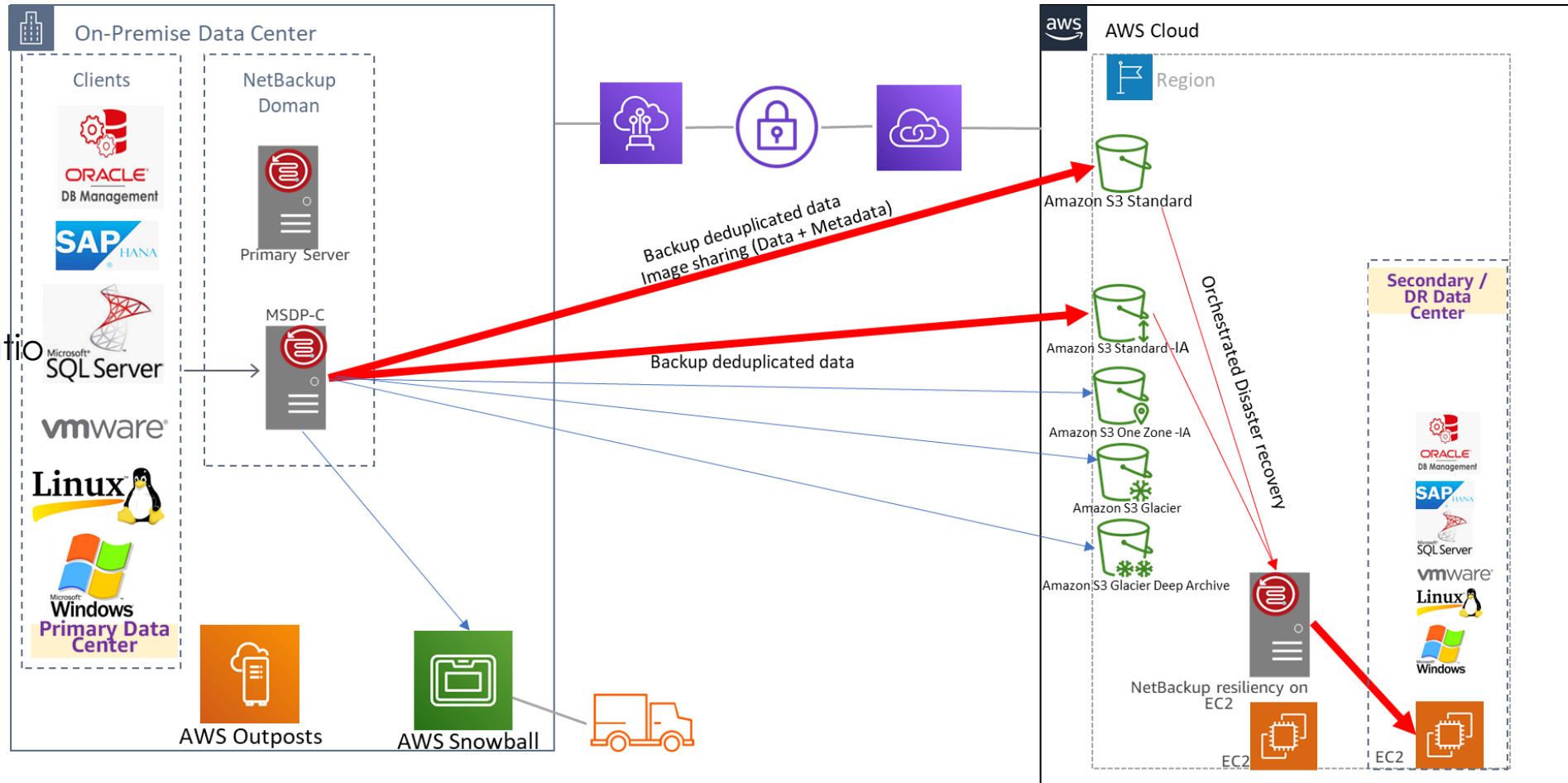
Creating surge capacity

- Thousands of popup testing centers across the US
- Remote access and capacity needed overnight
- Traditional procurement mechanisms fall down with CV and supply chain issues
- Healthcare embraces the cloud
- Security must now embrace public cloud concerns.

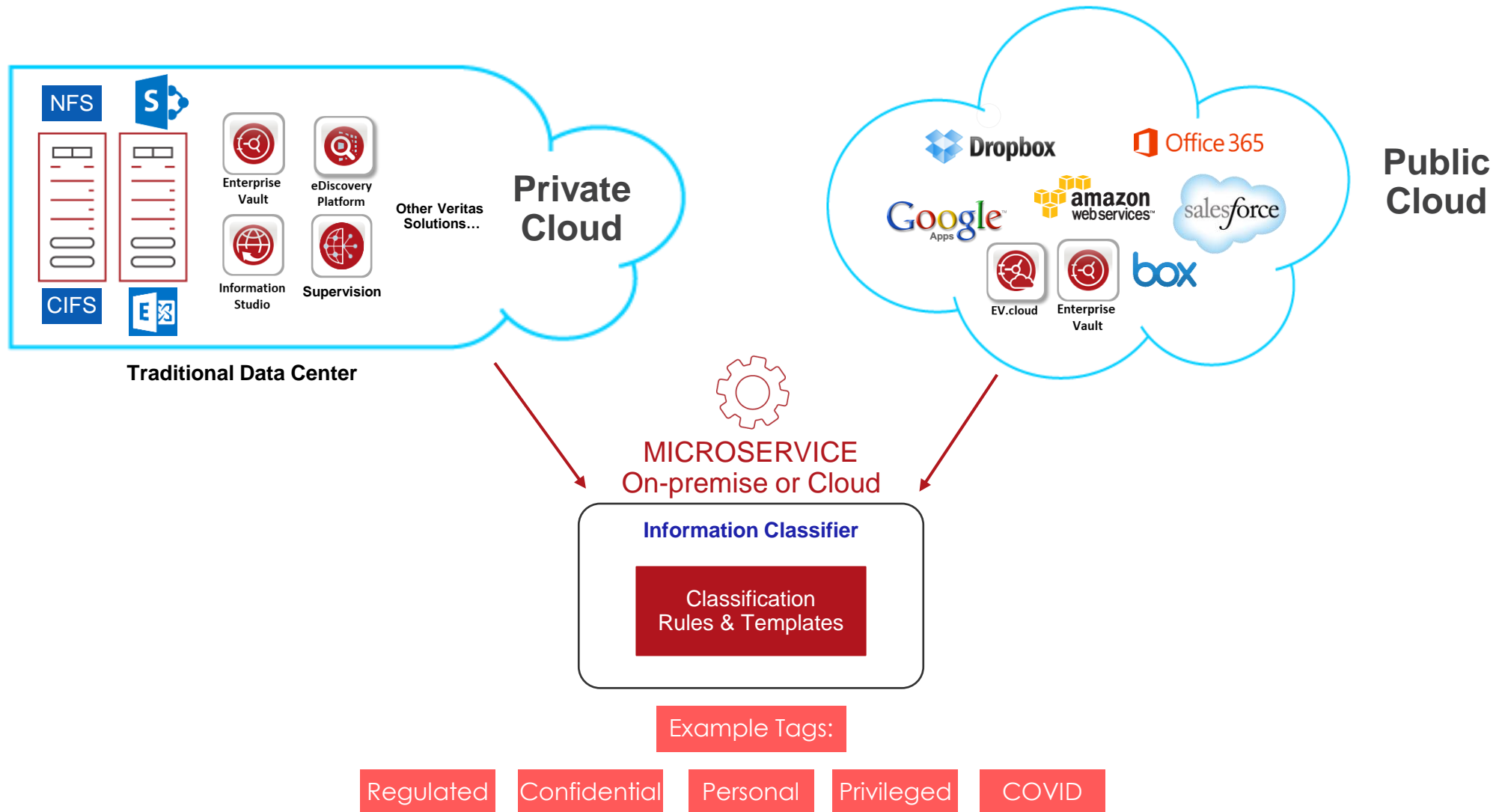


Automated Capacity

- Disaster Recovery to AWS
- Migration to AWS
- Design to run at scale
- Full automation & orchestration
- DR rehearsals
- Works with EBS, S3, or NBU



Classify Close to Information



TeleHealth

- TeleHealth enabled overnight
- Large IDN's grew from 1000 TH visits/mo. To over 100,000/mo.
- Any technologies available were used, many NOT HIPAA compliant
- TeleHealth only practices competing with traditional brick and mortar health systems
- Quality and timeliness huge differentiators



TeleMedicine Challenges

Wider adoption of TeleMedicine creates many challenges for compliance and revenue capture, including:



Managing distributed workforce



Ensuring proper protocols



Protecting PHI



Controlling quality



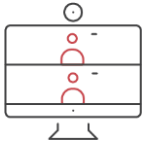
Reaching at-risk patients



Capturing EMR record and ICD-10 billing

Healthcare Needs a TeleHealth Solution

The TeleHealth solution enables hospitals and physician practices to:



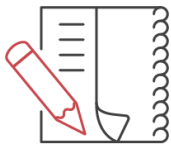
Protect patient video recordings



Facilitate billing



Mitigate risk

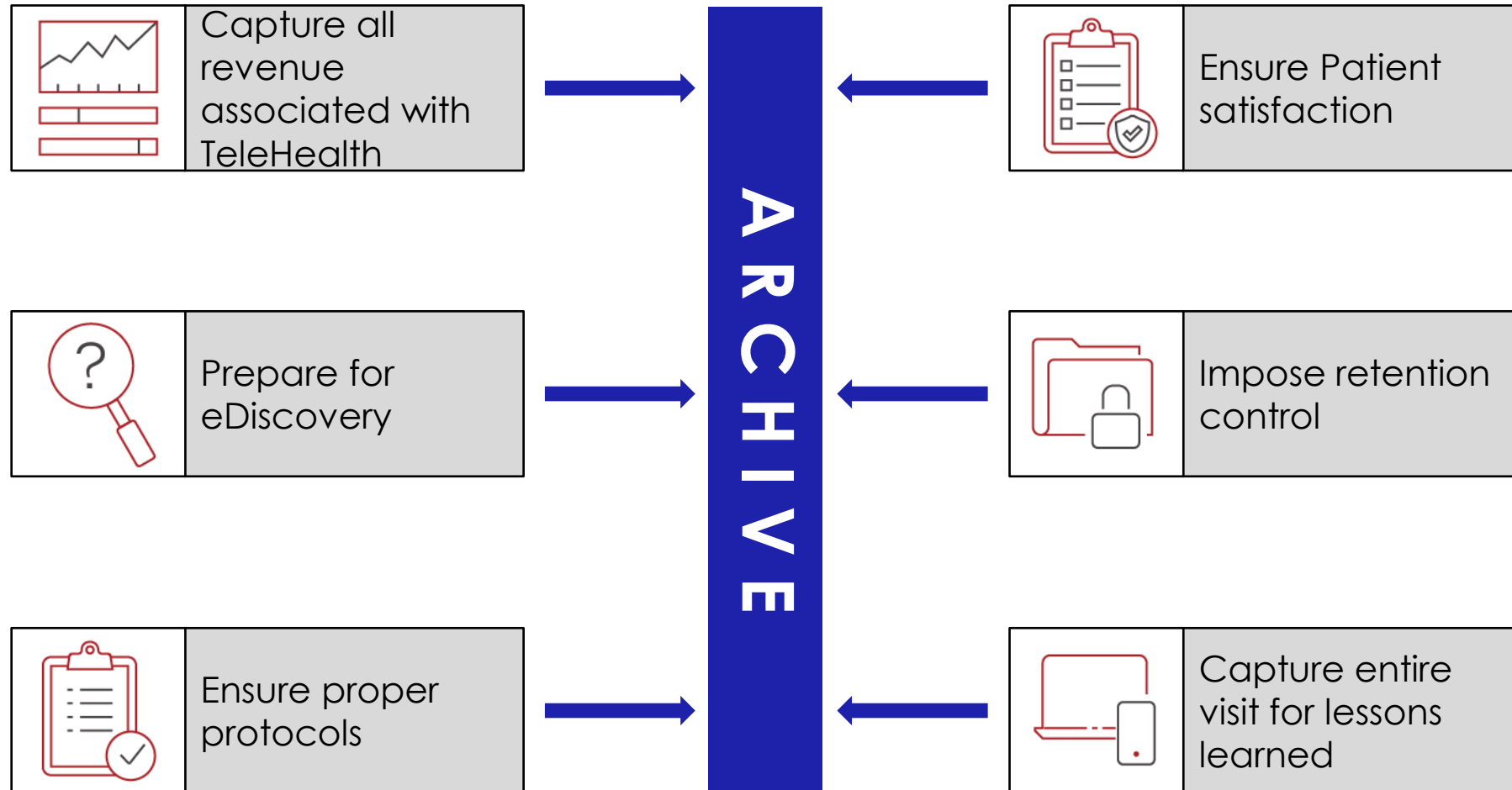


Support compliance reporting

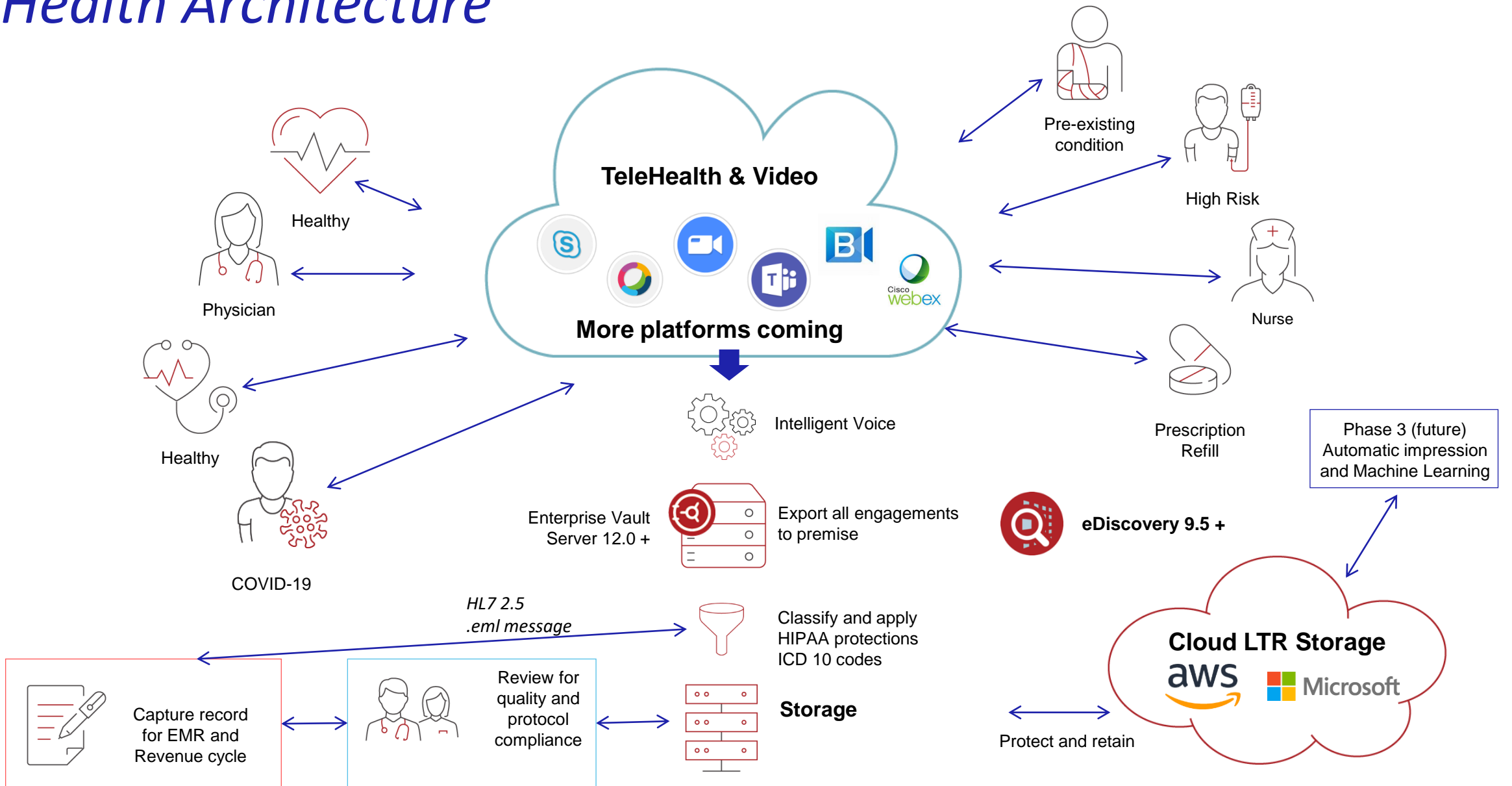
Technology has been at the forefront as healthcare systems have rapidly expanded telehealth, virtual care, remote work capabilities, data analytics and medical record-sharing capabilities to care for patients with COVID-19.

- [Becker's Health IT, May 18, 2020](#)

Why Archive Data?



TeleHealth Architecture

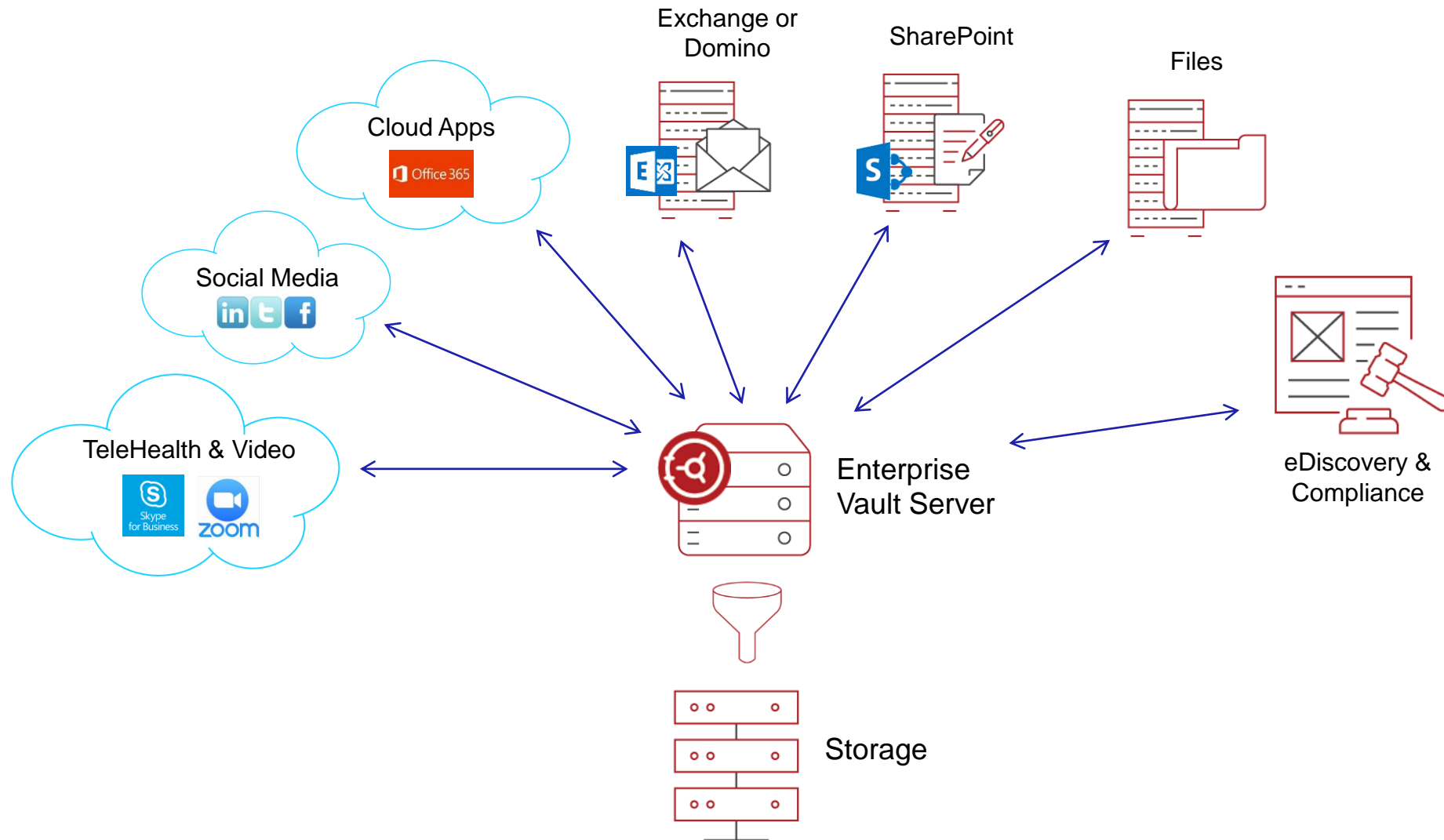


Benefits

- Consolidate disparate TeleHealth engagements on a multitude of platforms/caregivers on-premise
- Capture engagement and free the caregiver from documentation
- Store on Access and tier to cloud for a cost-effective solution
- Protect PHI from breaches or unauthorized access
- Reduce risk by protecting PHI per HIPAA
- Provide supervision and quality control in a distributed healthcare provider system
- Apply PII, HIPAA, COVID-19 and ICD-10 diagnosis and billing codes



Overall Architecture



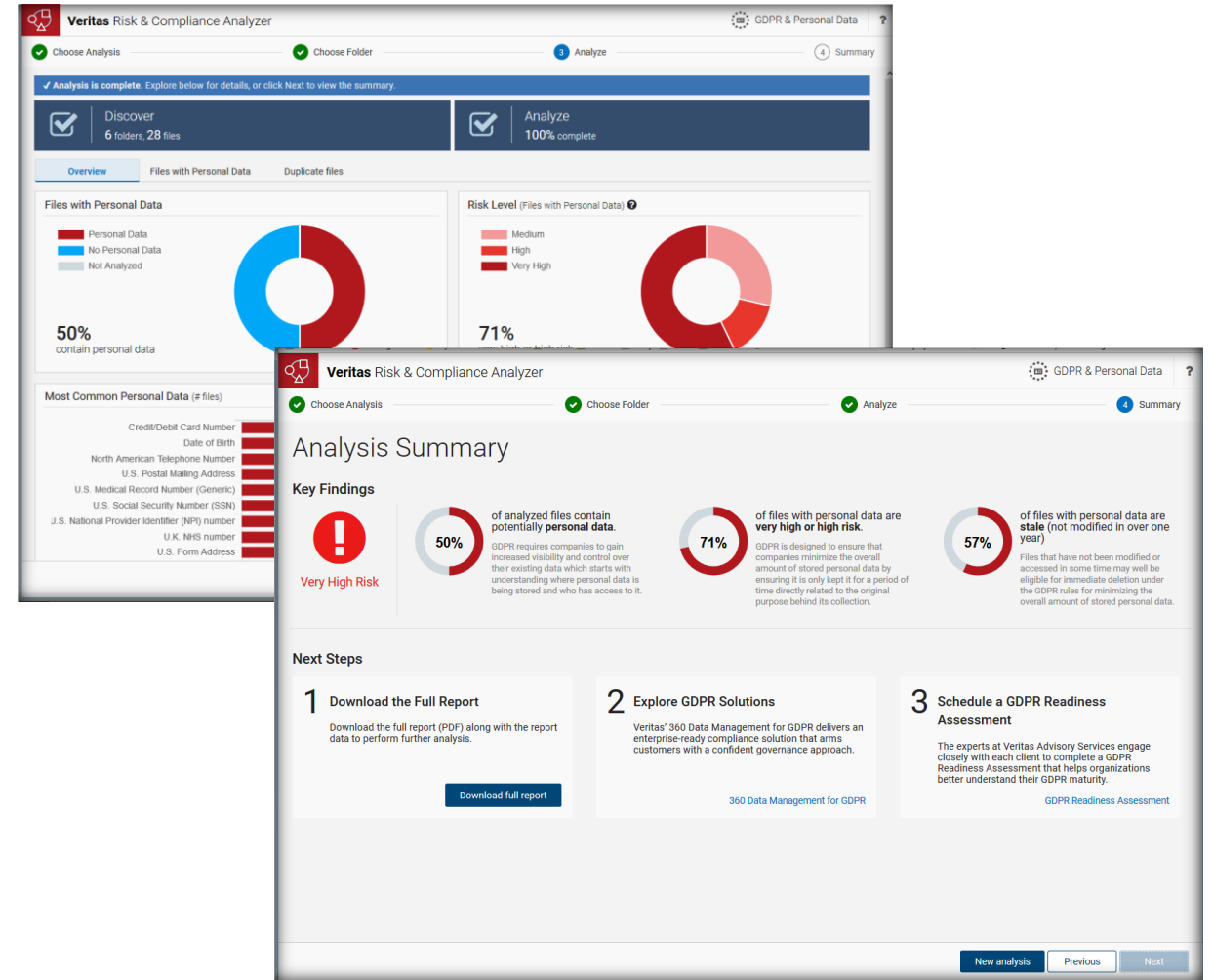
Verify and Report on Risk

What

- Policy validation tool embedded within VIC

Why

- Test folders against specific policies
- Verify new custom policies
- Test larger amounts of data to gain confidence in policies



Ransomware

- New entry points created by remote workers
- Relatively untrained against phishing
- High value data and cures
- New tactics with huge impact
- Board level initiative



Digital Transformation Exposes Risks to Healthcare



1 in 3 healthcare organizations reported being hit by ransomware in 2020



45% uptick in attacks experienced in the healthcare sector since November 2020



6-8x increase in cyber insurance costs compared to years prior



18 million patient records were affected in 2020 at a cost of nearly \$21 billion

Strategy: 3 Steps to become **Resilient**

1



Protect



Safeguarding **data integrity**
with system hardening and
immutability

2



Detect



Monitoring and reporting on
system activity to mitigate
threats and vulnerabilities

3



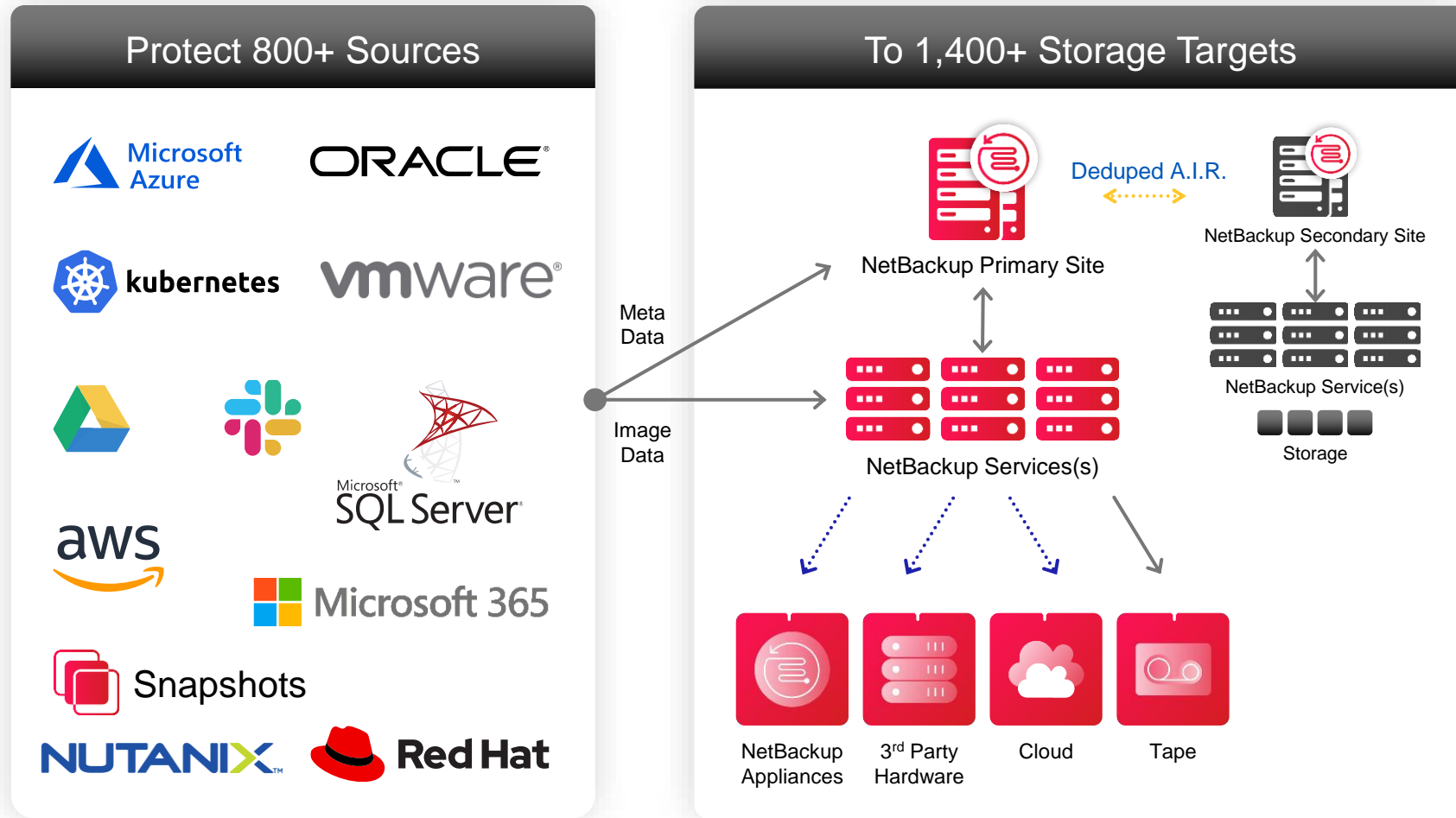
Recover



Automating and
orchestrating complete
cross-system restoration



Step 1: Protect



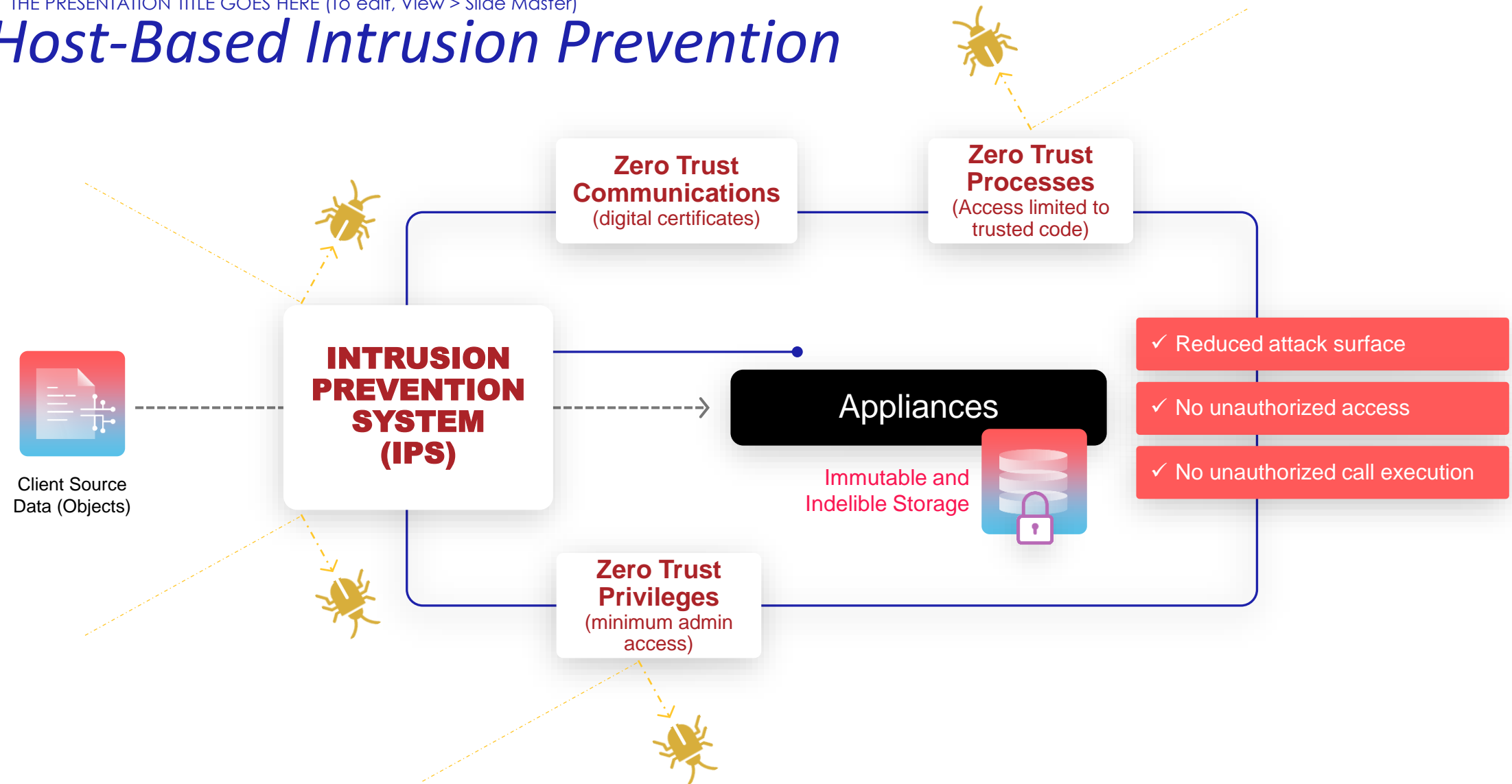
= Immutable/Encrypted Storage

= Detection Capabilities

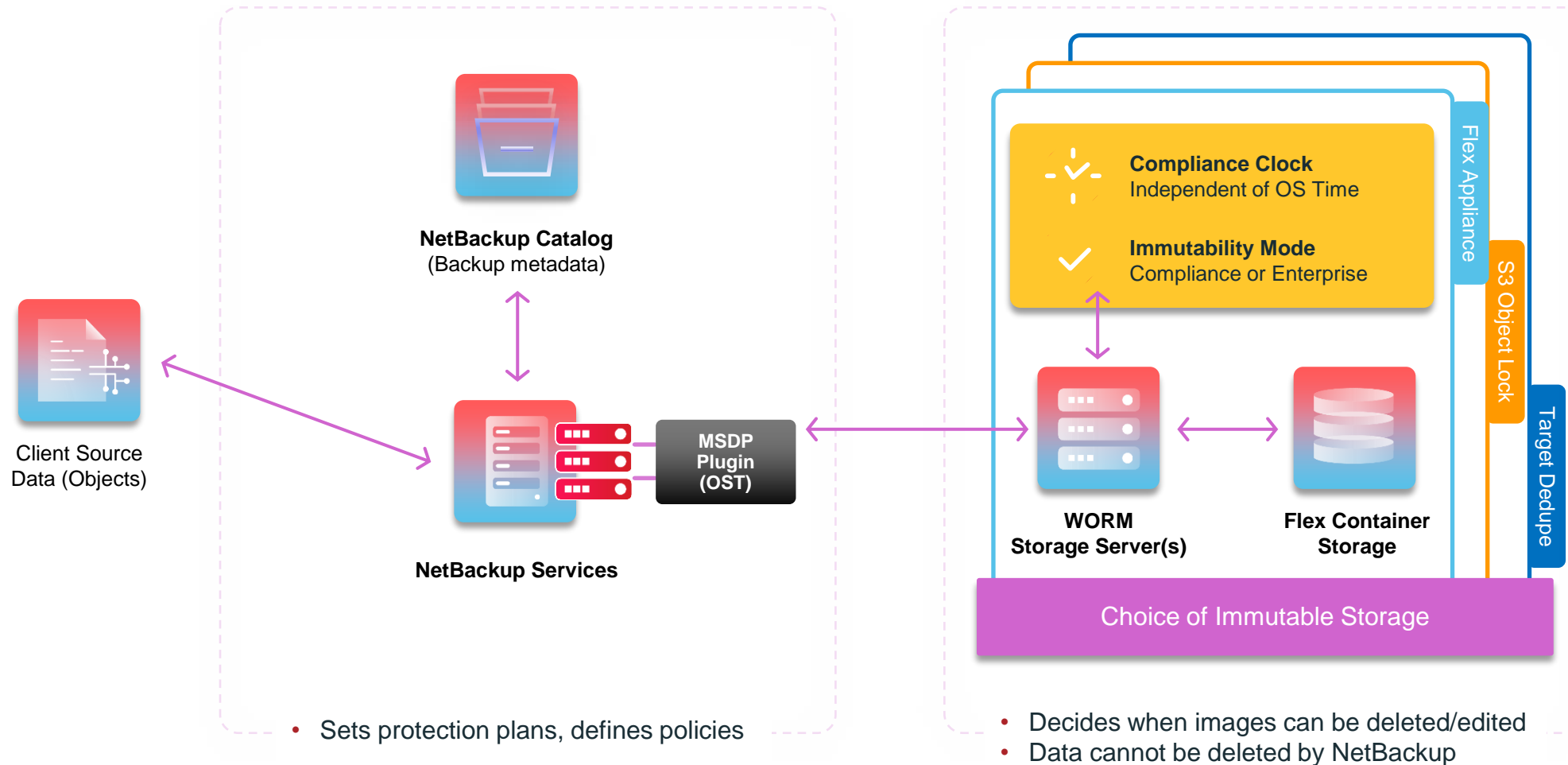
-----> = Dedupe



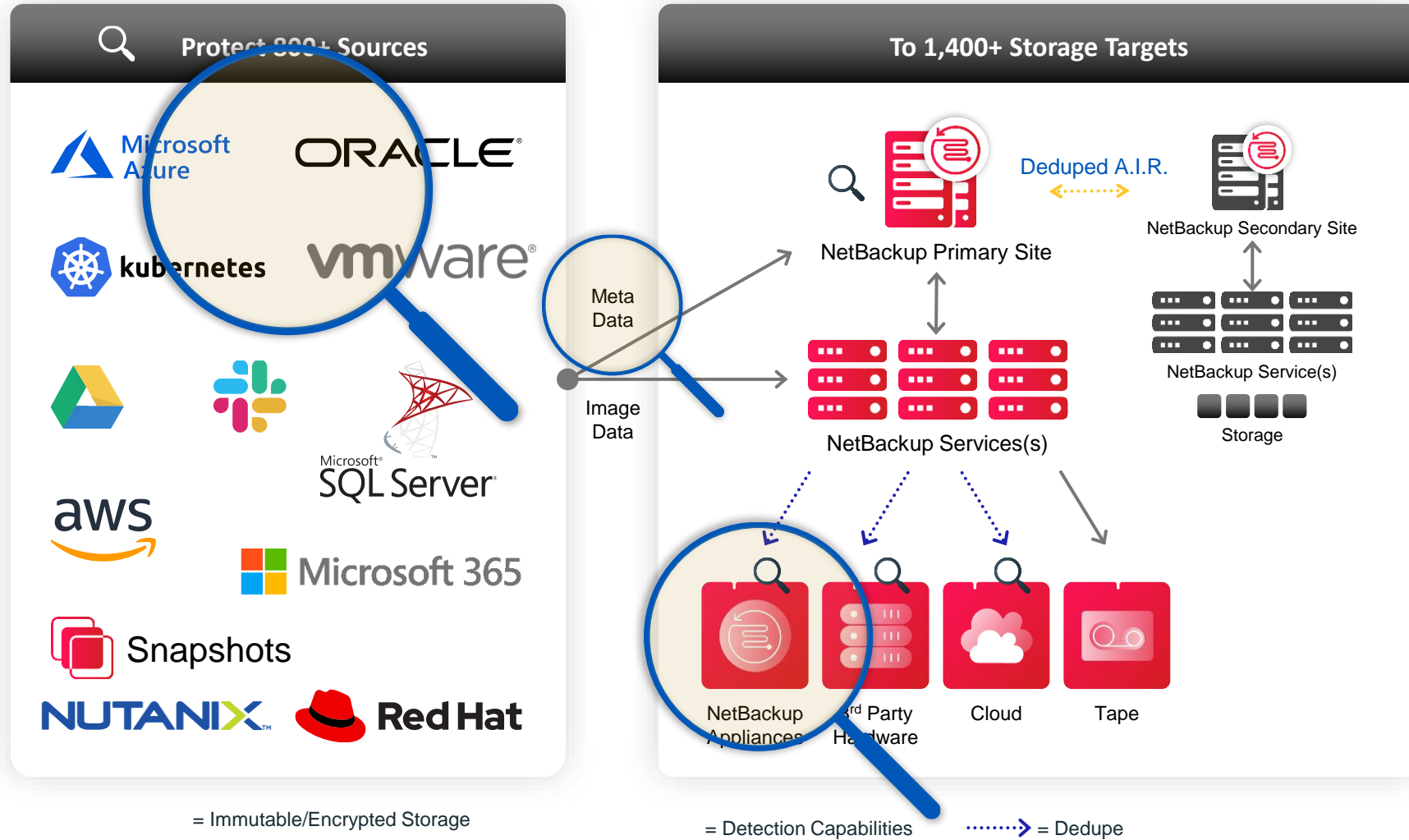
Host-Based Intrusion Prevention



Data Impervious to Change is Cost Effective

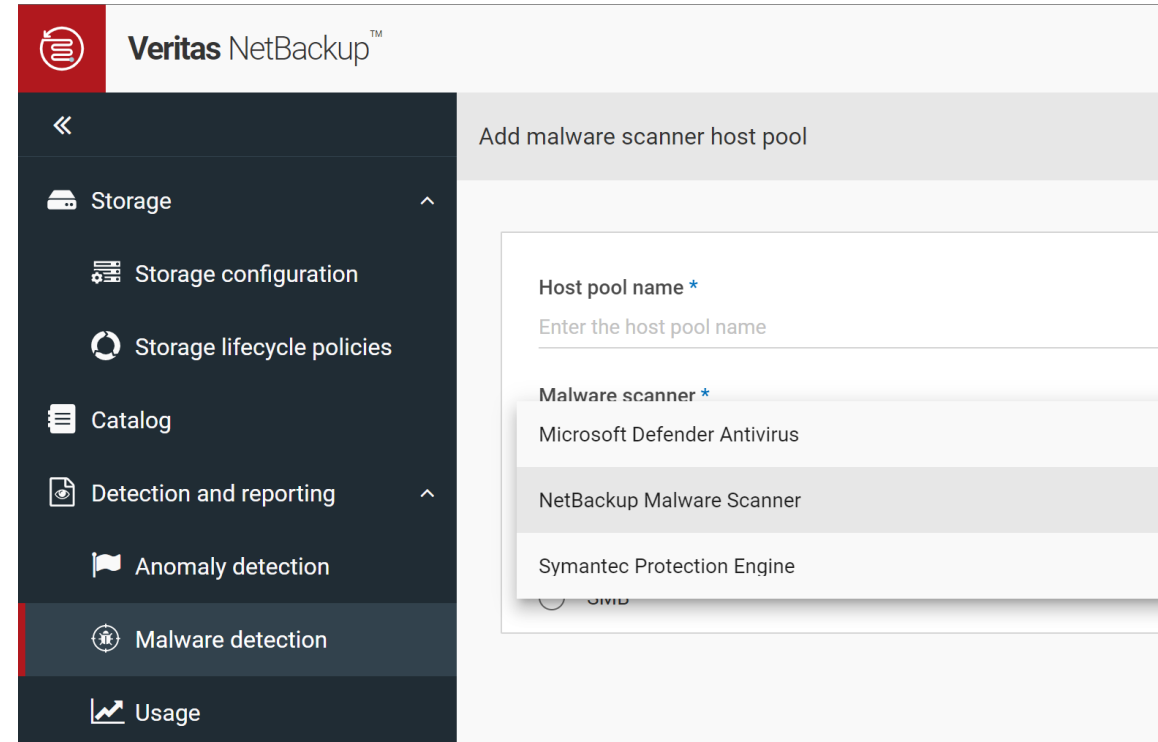


Step 2: Detect



Monitor and Mitigate to Detect Attacks

- AI-powered **anomaly detection** of both data and user activity.
 - Only Veritas can scan and monitor all systems, including third-party backup products, eliminating blind spots.
- Automated and on-demand **malware scanning**, which provides clear warning prompts, spot-checking of known high-risk areas and recovery of clean data.
- Data recovery will never be dependent on paying a ransom (because it will never encrypt unprotected data).



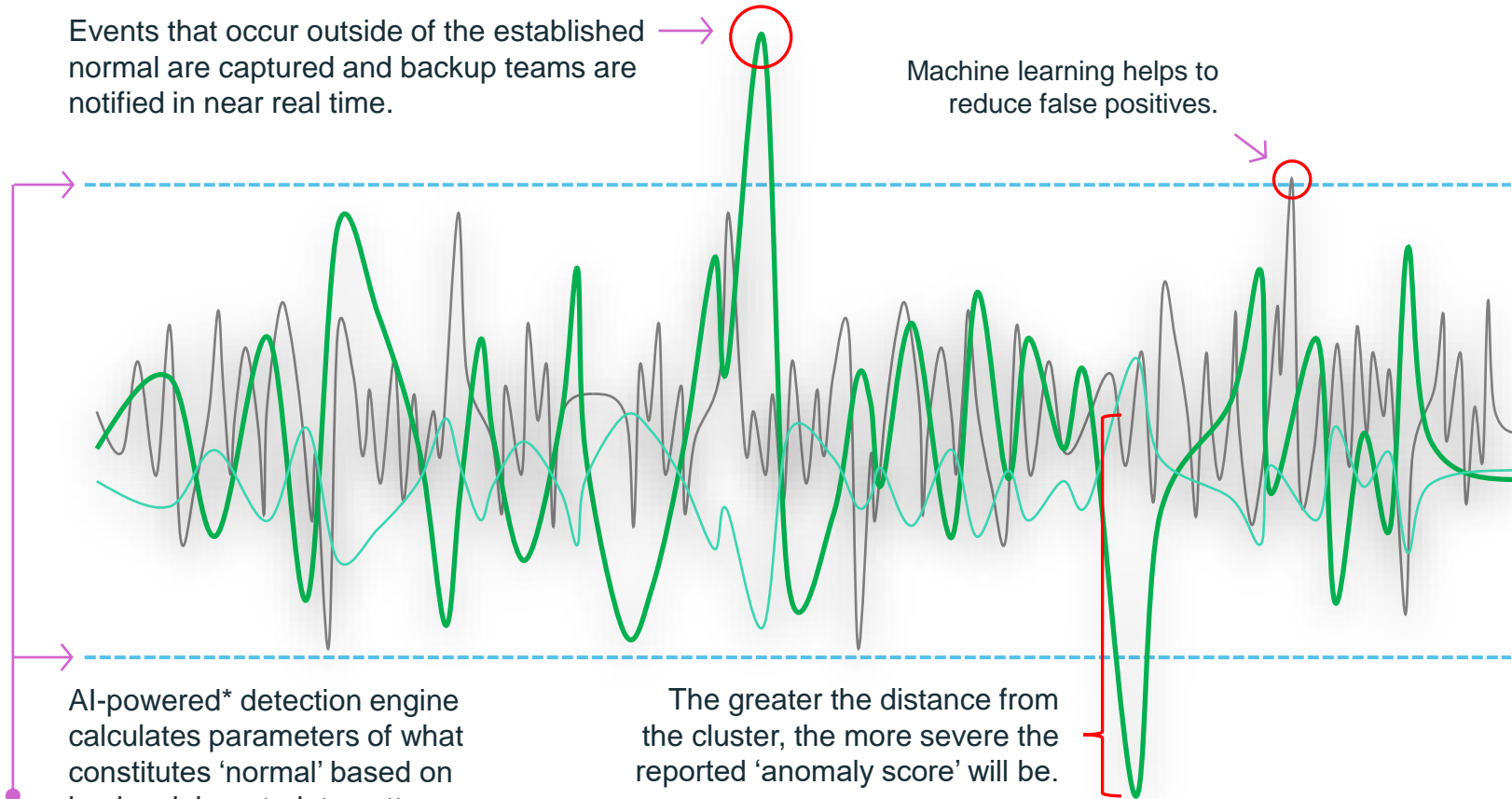
BRINGS INSIGHTS AND INTELLIGENCE TO CLOUD AND DATA



Understanding Anomaly Detection

Events that occur outside of the established normal are captured and backup teams are notified in near real time.

Machine learning helps to reduce false positives.



AI-powered* detection engine calculates parameters of what constitutes 'normal' based on backup job metadata patterns over time and auto-adjusts for custom backup policies.

The greater the distance from the cluster, the more severe the reported 'anomaly score' will be.

AI-Powered Anomaly Detection Engine

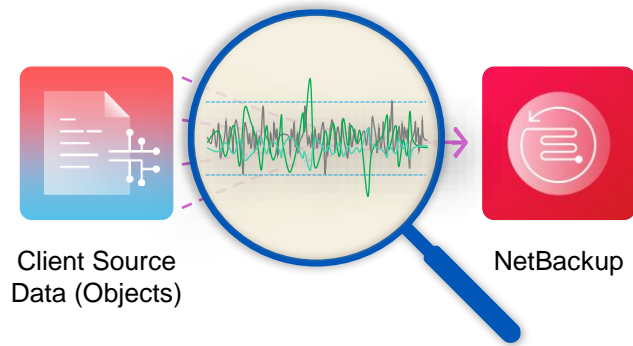
- Mine enormous amounts of data
- Automate monitoring and reporting
- Gain actionable insights
- Report based on several criteria
- Establish early warning of an attack

* Machine learning model takes advantage of data pre-seeding using nbdeployutil. AI is powered by DBSCAN algorithm.



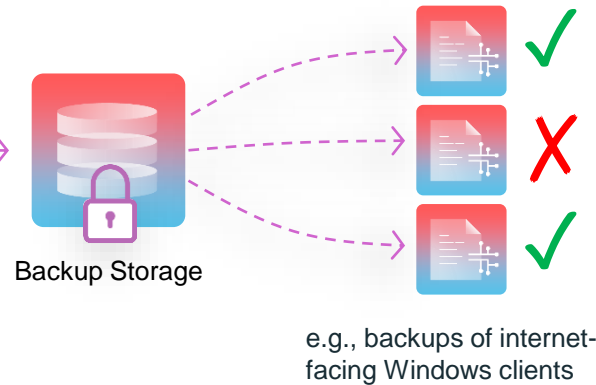
High-Level Overview of Malware Detection

During Backup



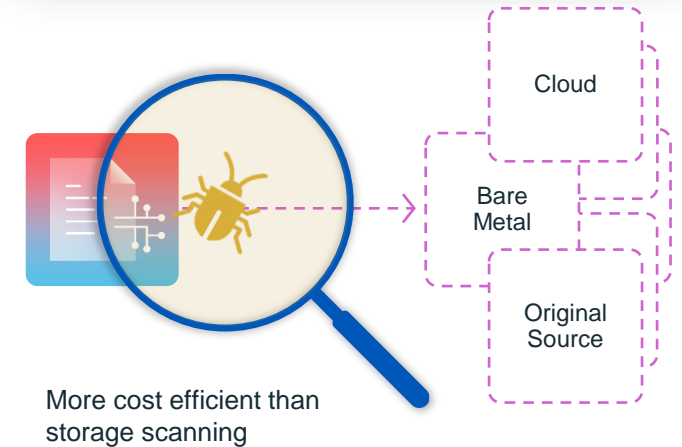
Anomaly detection in near real-time

Post Backup



Spot-checking of known high-risk areas

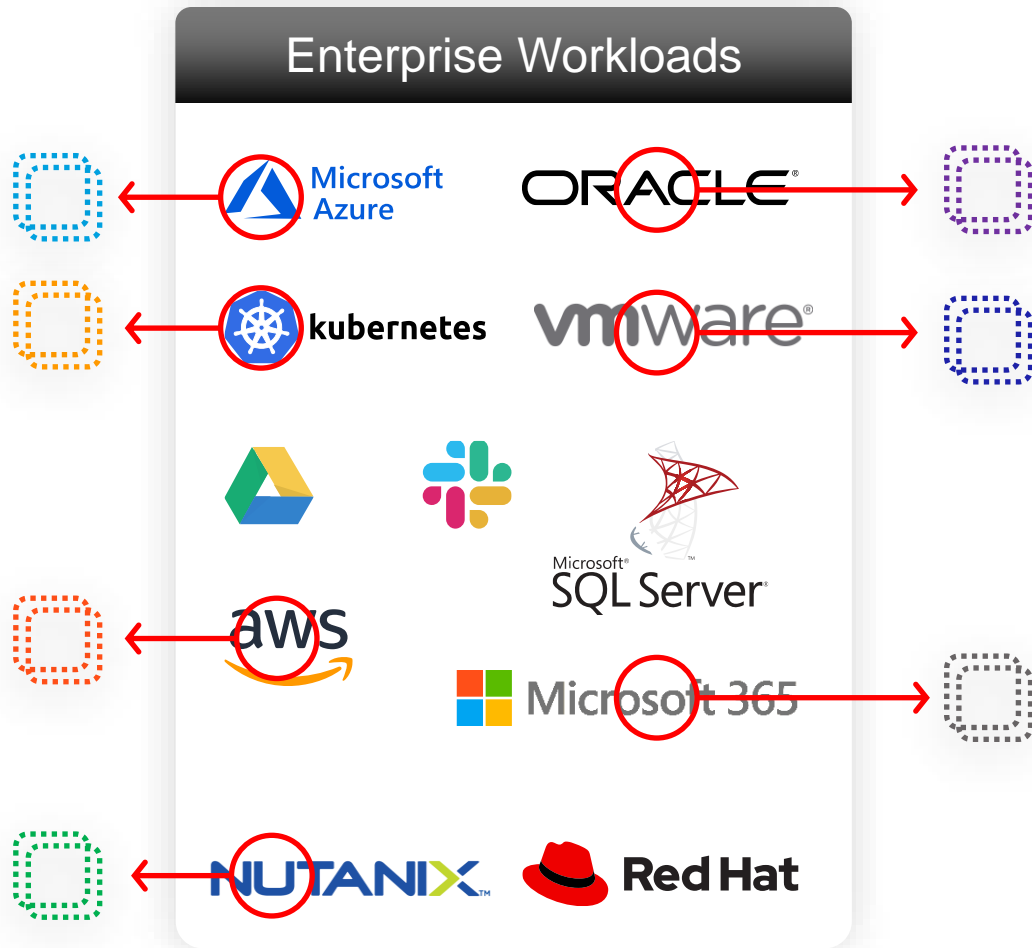
Before Restore



Scanning before restore to ensure clean data



Optimizing for Recovery, Not just Backup



- Copy of important data? ✓
- Optimized recovery experience? ✗
- Cover all tiers of data? ✗

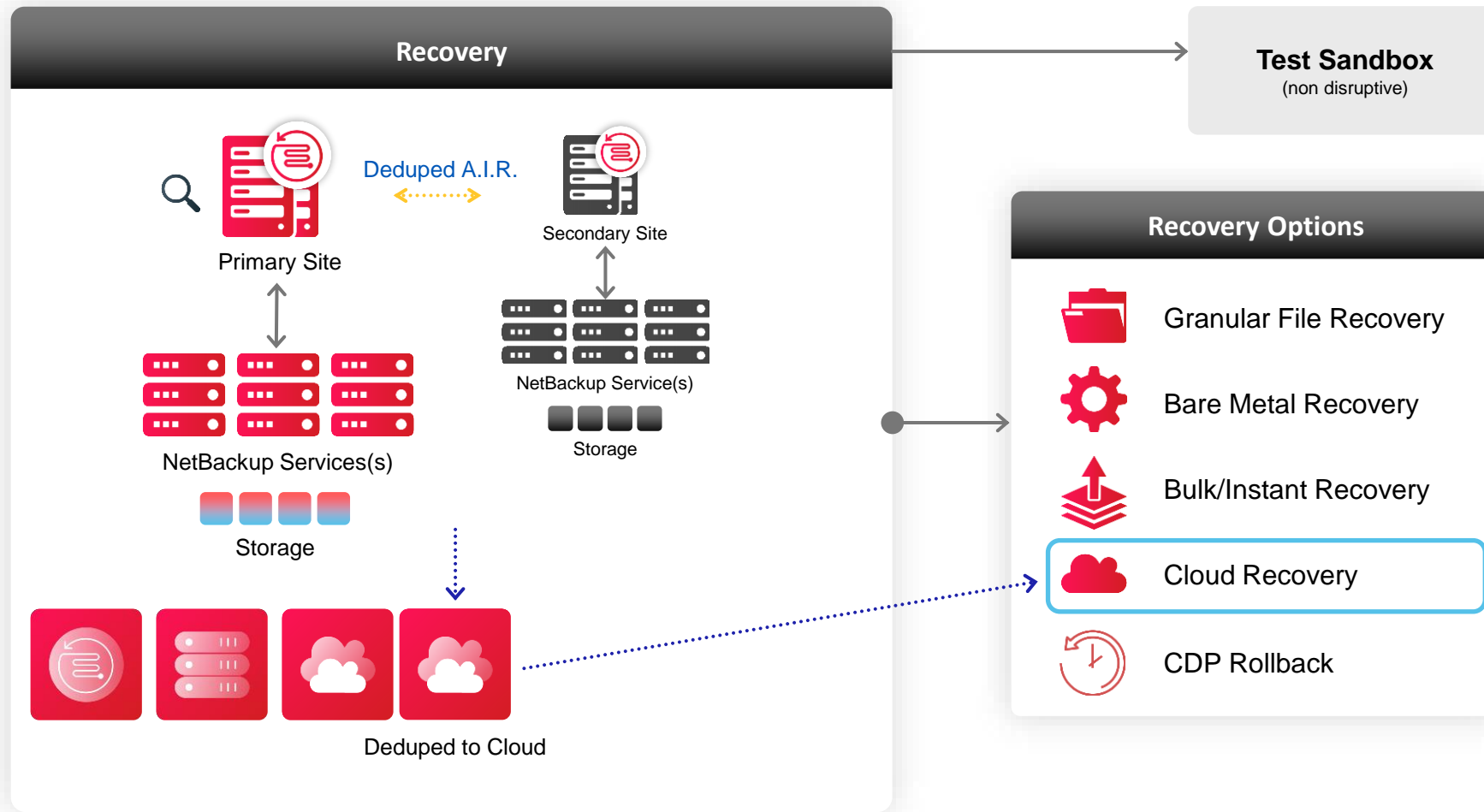
Multiple disparate backup solutions by design create a **complicated recovery experience**—especially when multiple systems are compromised.

Additional considerations:

- Skills/training gaps
- Lost storage dedupe efficiencies
- No global data visibility/oversight
- Lack of tier-appropriate data replication



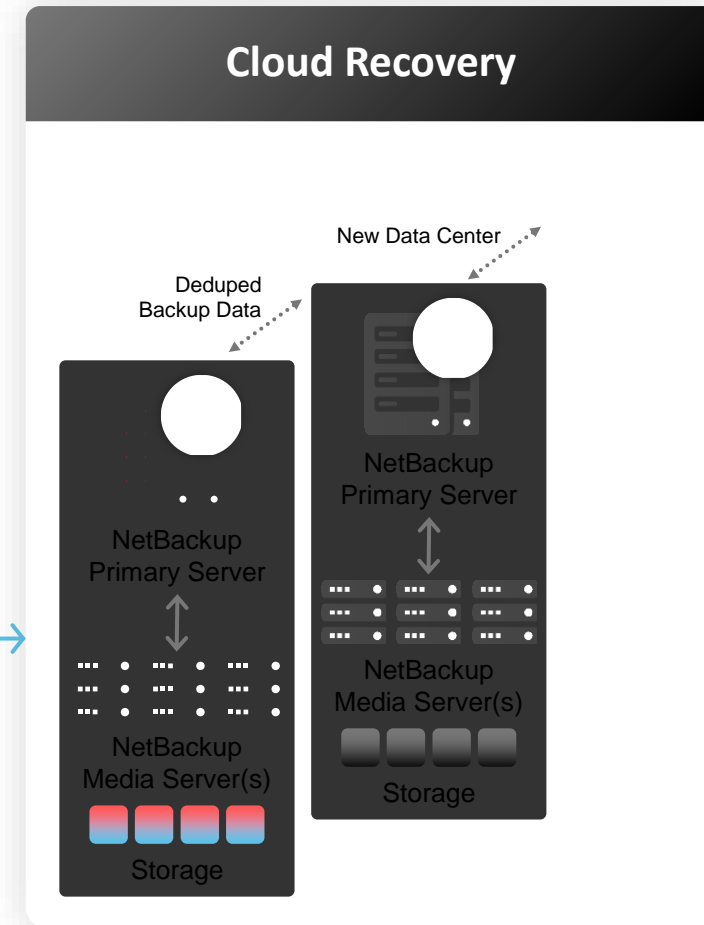
Step 3: Recover



Step 3: Recover

Maintain Control

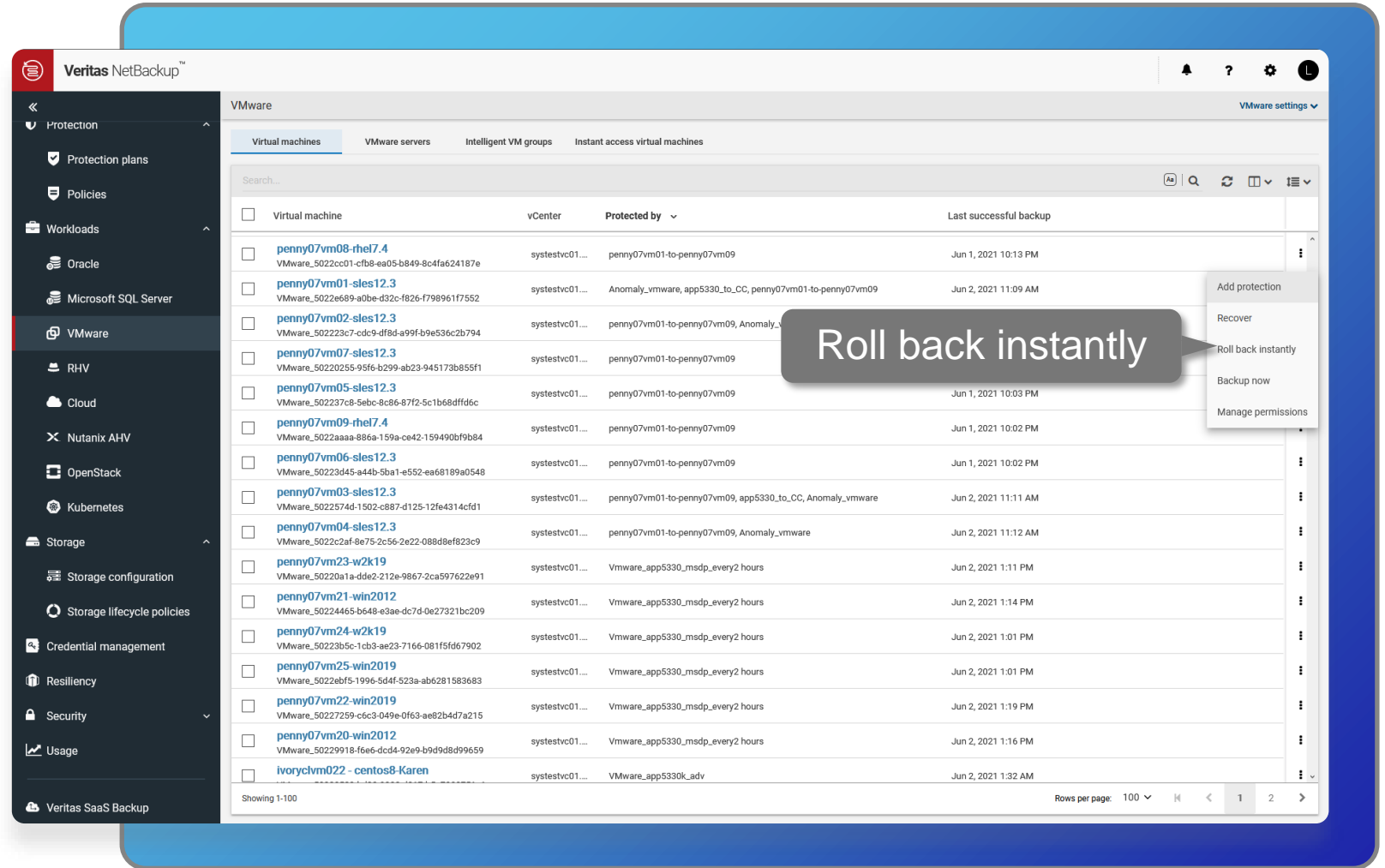
- Completely automated recovery orchestration
- Fast recovery direct from deduplicated data stored in the cloud
- Recover an entire data center in the cloud on demand



Recover Rapidly

Automate and orchestrate complete data center recovery on demand to anywhere (including cloud) from deduped data at scale.

That means one-click execution of your recovery plan.



Reduce Risk

Eliminate Uncertainty

Maintain Control

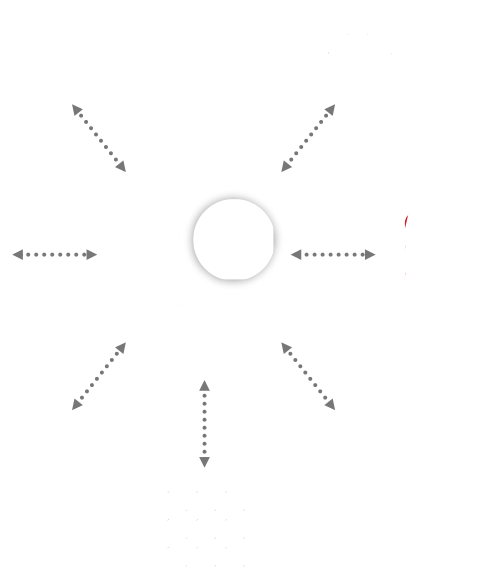
1

Unparalleled Immutability



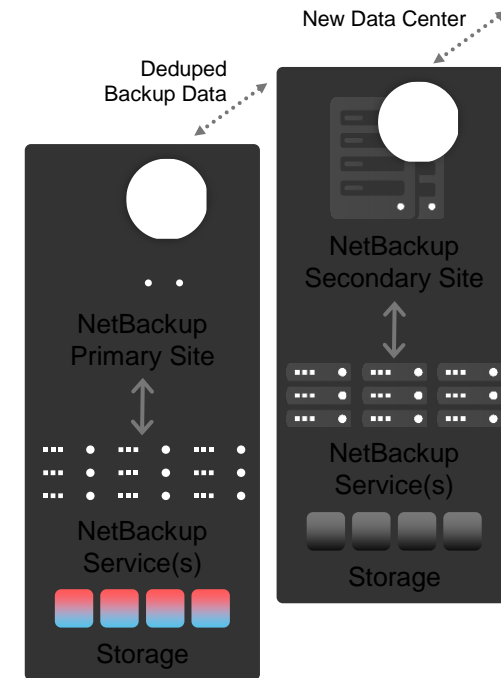
2

Complete Visibility



3

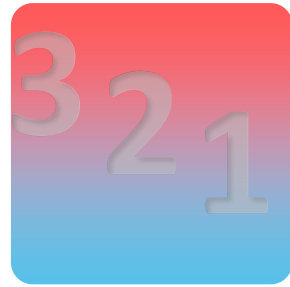
All Tier Recovery



Best Practices for Ransomware Immunity



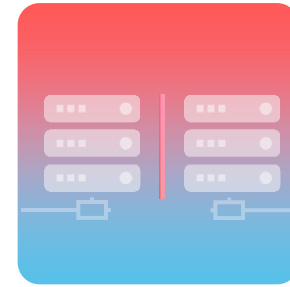
Promptly Update and Upgrade



Deployment and the 3-2-1 Backup Strategy



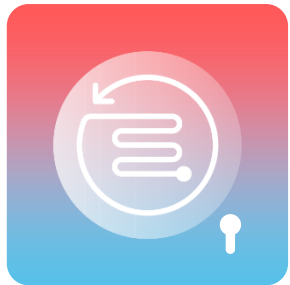
Zero Trust



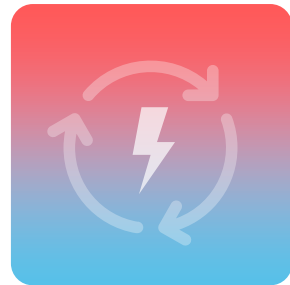
Configuration and Network Segmentation



Endpoint Visibility



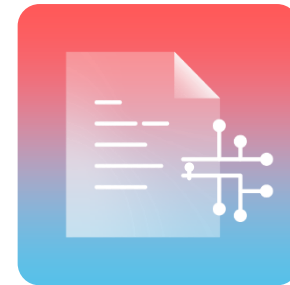
Immutable and Indelible



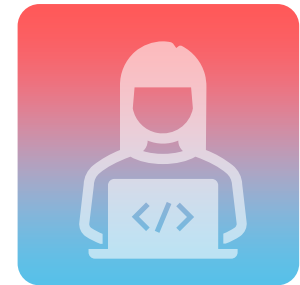
Optimize for Rapid Recovery



Rehearse and Test, Test, Test



Data Encryption At-rest and In-transit



Educate Employees

Clinician Burnout

- Long hours
- Working at risk
- Massive casualty and patient impact
- 50% of time spent documenting



Analyzing voice “sentiment” for early indicators



TELEMEDICINE SESSION
Audio/Video is transcribed into text

Skype Teams BlueJeans GoToMeeting
Webex Teams Zoom Cisco webex FB Messenger

CONTENT IS ARCHIVED
Content is journaled, indexed, classified

EV.c EV

METADATA ENRICHMENT
Content is analyzed and improved

Classification COVID-19 Diagnosis Code HIPAA Violation
Sentiment Topic Mining

Random Sample

Bad Conduct Poor Diagnosis Bad Interaction

Classification Driven

Clinician burn-out

SUPERVISION
Monitor doctor/patient interactions to ensure best care

Intelligent Review ML

Early Intervention

END TO END DISCOVERY
Complete in-house litigation preparation

eDiscovery Platform

Legal Hold Identification & Collection Processing & Analysis Predictive Coding Review & Production



Thank you