Persistent
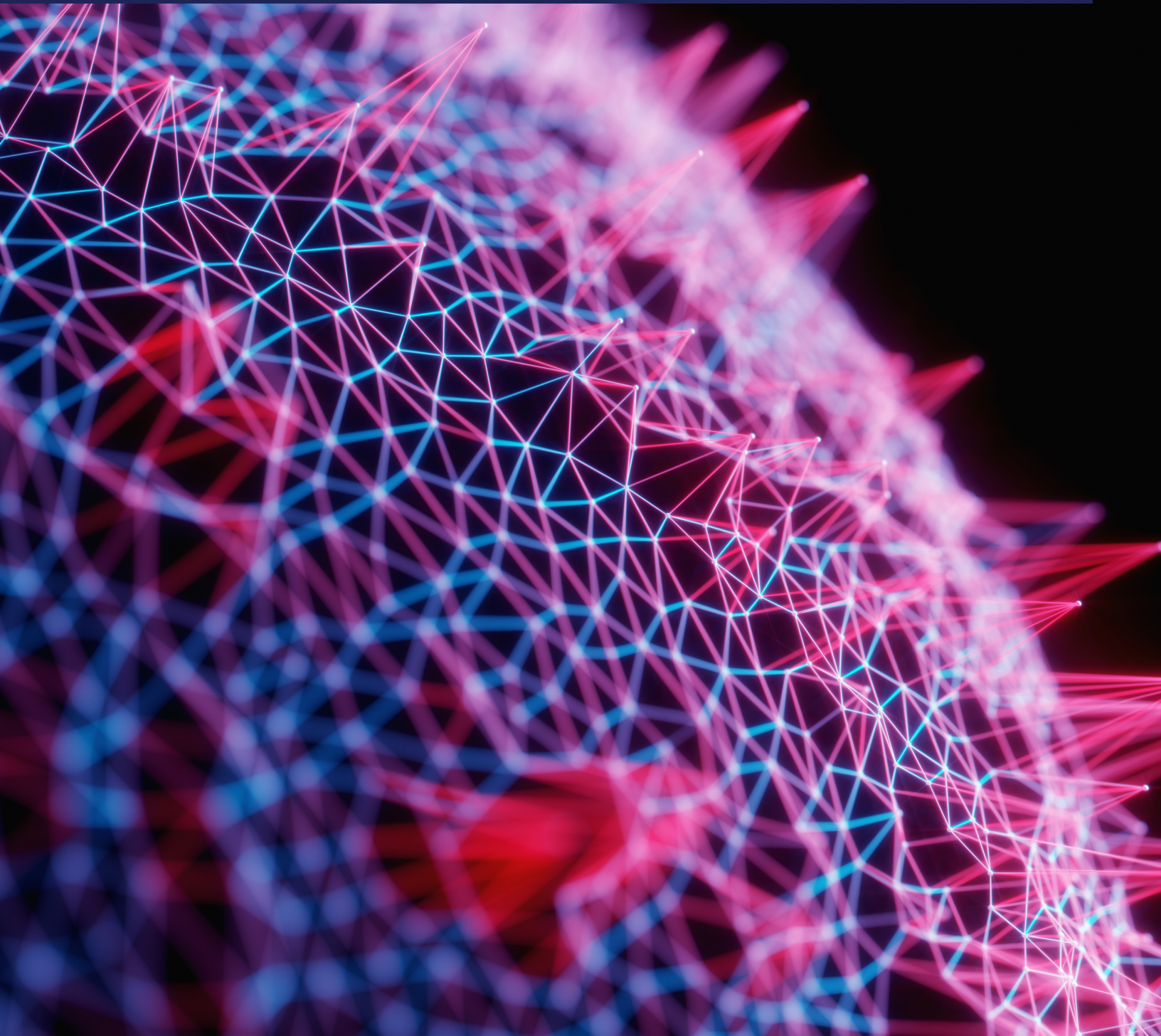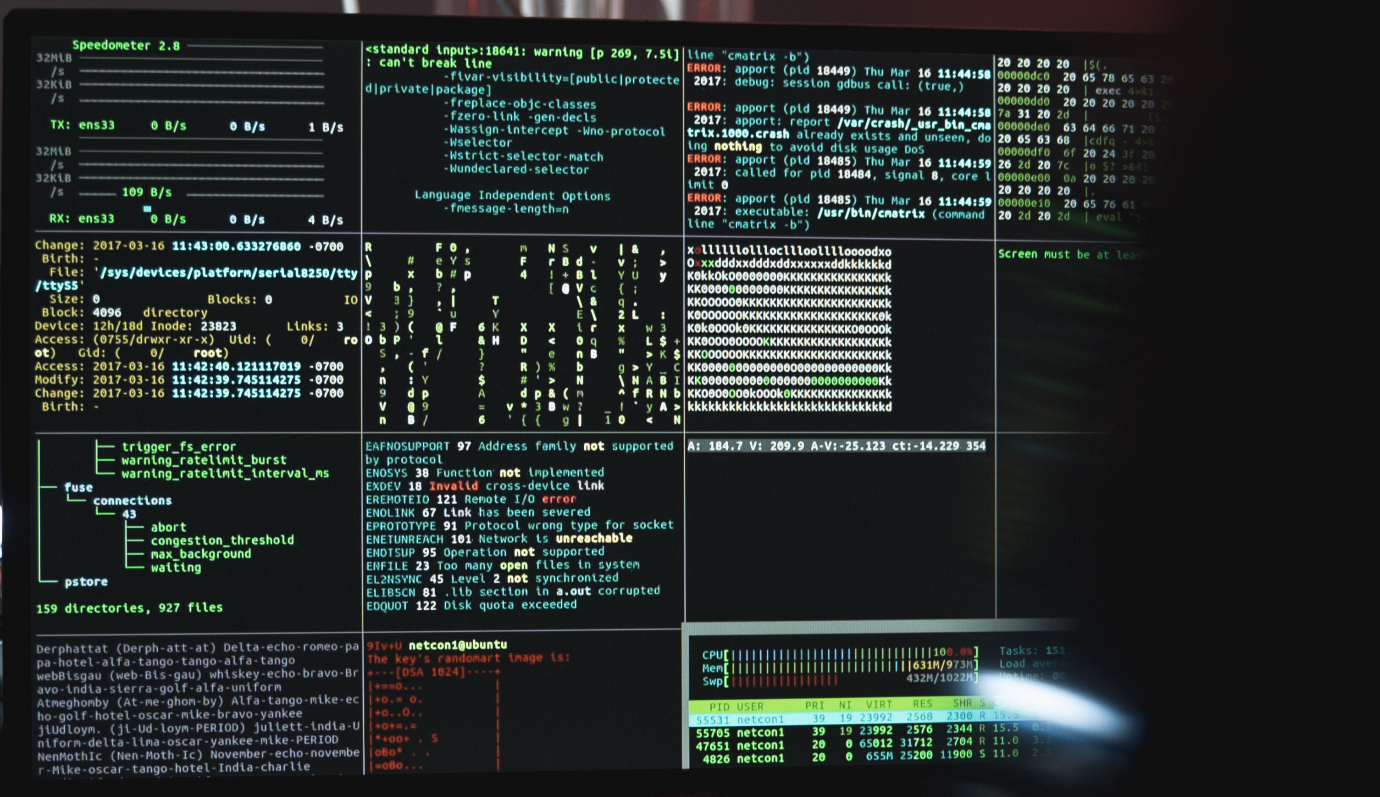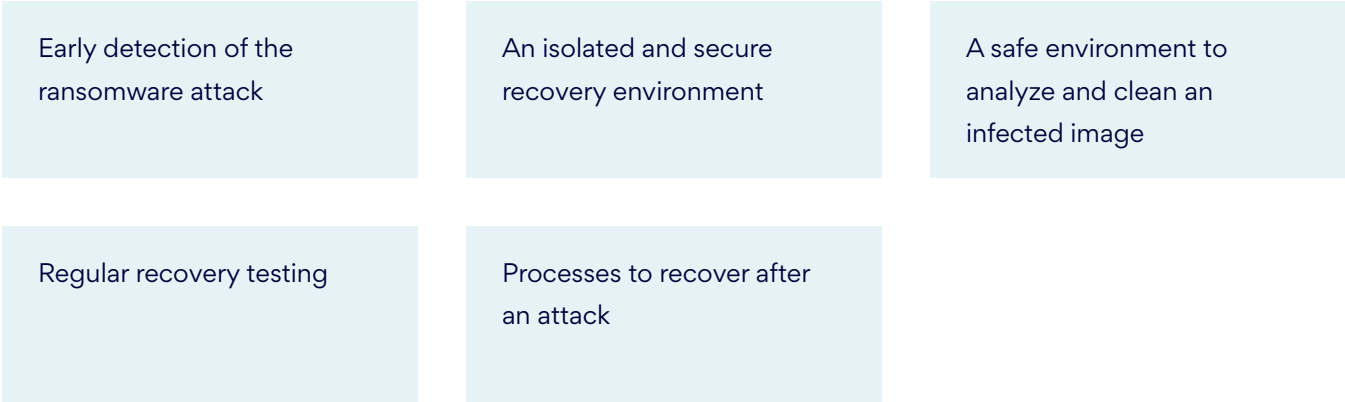
Persistent Intelligent Cyber Recovery

Cyberattacks have been rated as the fifth top rated risk in 2020 and are expected to double by 2025. World Economic Forum's 2020 Global Risk Report states that the rate of detection (or prosecution) is as low as 0.05 percent in the U.S.
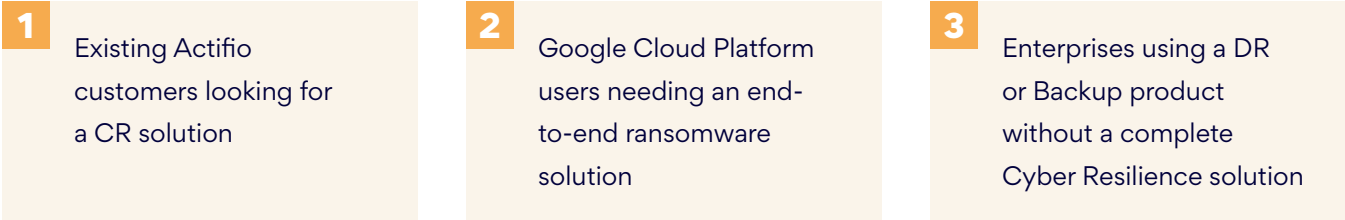
As the attacks keep becoming more sophisticated and stronger, Cyber Resiliency is moving to the top-of-the-mind on the agenda for most CEOs and CISOs. Organizations are becoming aware that they cannot detect, protect, or predict 100% of the incidents. Hence, the focus is now on absorbing the shock within their ecosystem with minimal disruption, minimum loss of data, and minimum loss to reputation. This can only be achieved by incorporating Cyber Resilience best practices — processes, technology, and people culture. It is not enough just to protect your primary data center assets and infrastructure from cyber-attacks originating from outside the firewall. Many of the attacks originate from inside of the organization using compromised credentials. In these cases, the destruction is already ongoing before anyone is aware of the breach. Cyber

Resilience is the opportunity to recover the applications and data even in the event of a successful ransomware attack. But the recovery stage needs to have a robust and secure architecture to prevent the ransomware and malware from attacking the point-in-time images. Traditional backup and DR solutions are susceptible to ransomware attacks and were not designed for the recovery process necessary after an attack. Most ransomware and malware attacks attempt to corrupt the backup / DR systems or change retention times so that previous copies are no longer available. These solutions were designed for fast recovery time after a physical disaster or error. A Cyber Resilience solution is a combination of products and processes designed to operate in an isolated environment and recover a clean server image including, the most recent possible data.
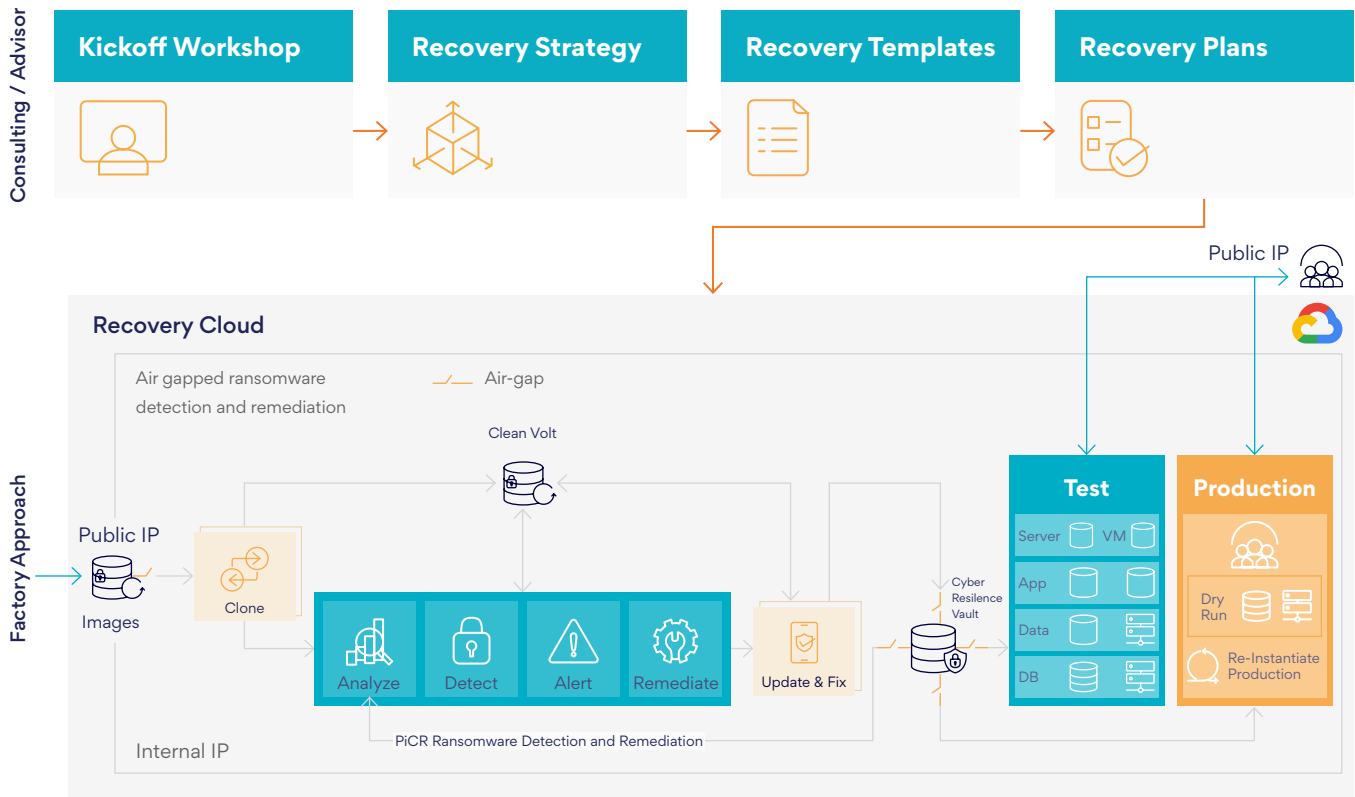
Cyber Resilience Recovery Includes

Early detection of the ransomware attack	An isolated and secure recovery environment	A safe environment to analyze and clean an infected image
Regular recovery testing	Processes to recover after an attack	

Use Cases

1 Existing Actifio customers looking for a CR solution

2 Google Cloud Platform users needing an end-to-end ransomware solution

3 Enterprises using a DR or Backup product without a complete Cyber Resilience solution

Persistent Intelligent Cyber Recovery (PiCR) solution builds a comprehensive multi-disciplinary cyber resilience framework including:

An advisory service delivering plans and processes	Implementation of air-gapped cloud-based solution
A protected recovery environment	Managed services or training for operations

We deliver faster detection, remediation, and recovery of applications and data as soon as practical with a safe operating environment after a cyber-attack.

PiCR — Solution for Automated Ransomware Detection and Remediation

Consulting / Advisor

Kickoff Workshop	Recovery Strategy	Recovery Templates	Recovery Plans

Factory Approach

Recovery Cloud

Air gapped ransomware detection and remediation — Air-gap

Clean Volt

Public IP — Images

Clone

Analyze · Detect · Alert · Remediate

Update & Fix

PiCR Ransomware Detection and Remediation

Internal IP

Cyber Resilence Vault

Public IP

Test
- Server | VM
- App
- Data
- DB

Production
- Dry Run
- Re-Instantiate Production

The PiCR Solution

This solution contains the following components to address the ransomware and malware attack problem

Recovery Strategy and Plan

Through an advisory consulting process, Persistent works with organizations to create a recovery strategy and execution plans to run the Cyber Resilience Recovery. The recovery strategy aligns with an organization's business priorities and structure based on SLAs, response team, security considerations and the required business outcome. The execution plan codifies the operations and processes for the implementation and operations approach.

Protect

Internal IP address-based network isolation from Public Network: A Private IP address-based internal network is used to prevent any direct exposure of the PiCR assets to the external public network. All data and control traffic and the infrastructure for remediation and storing of the clean images are limited to the internal network. The connections to the external network are fenced using the VPC settings and service account settings.

Automated air gap from internet: The Recovery Images, Test infrastructure and Cyber Resilience Production infrastructure are not reachable from the internet or a public unsecured network since the network switches connecting to the outside world are switched off by default. The system makes sure that the Cyber Resilience Vault is isolated when the resources connected to the external network are being accessed from the internal network.

Automated air gap from the Test Environment: The images are recovered into the testing environment. Before the test systems and data are brought up, the air gap between the test environment and the PiCR internal network is enabled. After the testing is completed, the testing environment is deleted in isolation thereby, purging all resources and data, including ransomware and malware if present.

Identity and Function based Access Control: Resources across the internal network are accessed only by functional modules that need to access using specific service accounts. The service accounts have the lowest level of privileges to get the work done. For example, the service account that writes data to a vault cannot delete any data. The deletion of the images can only be done by the retention manager which is an internal service that uses a completely different service account that cannot be used by any other function.

Automated need-to-access time-period: By default, the network connectivity is turned off. This completely isolates the Cyber Resilience site from the public internet. When connectivity is needed between two endpoints, the connectivity is purposefully restored. Once the access needs are satisfied, the connection is again turned off.

Immutable Images: All the images are immutable. They can be deleted only by the retention manager based on a retention policy. The images can be configured never to be expired and hence never be deleted.

Versioned Images: All images are versioned in chronological order. Timestamp and other details are maintained so that the images can be quickly searched on-demand to locate the right image to be used for testing or production.

Analyze

Inline and scanning methods generate multiple metrics for analysis using machine learning. The files that have changed or have been newly added are also analyzed for ransomware and malware.

Detect

Continuous detection of ransomware attacks: High-risk changes are detected and flagged on the PiCR dashboard for review by the security team. A weighted risk scoring system generates actionable warnings and alerts when risk thresholds are exceeded.

Remediate

Readying clean point-in-time images without the ransomware or malware: PiCR identifies the latest point-in-time images in the Cyber Resilience Vault that can be recovery candidates. These images might have ransomware or malware in them, but they have might not have triggered. The recovery candidate images are copied to the Clean Vault, and all the unique changes are reanalyzed based on additional information and risk profile. The security team can review and flag risky changes on the dashboard. The flagged changes are backed out from the image and quarantined. A new clean recovery image is created and stored in the Cyber Security Vault.

Recovery

The newly cleaned images are recovered and tested in parallel in an isolated testing environment and are monitored for any suspicious activity. After successful testing, the production recovery runbook is executed, and the system automatically recovers the images into the production environment, and the applications are up and running to execute real workloads.

Cyber threats are not a question of 'If' but 'When'. Take the necessary steps to protect your organization from ongoing and emerging cyber threats with an intelligent solution for faster recovery and limited downtime.

Want to make Cyber Resilience a lot less challenging?

Contact Us

About Persistent

With over 16,500 employees located in 19 countries, Persistent Systems is a global services and solutions company delivering Digital Engineering and Enterprise Modernization. We combine deep technical expertise and industry experience to help our clients anticipate what's next and develop solutions that create unique competitive advantage. Persistent was named to the Forbes Asia Best Under a Billion 2021 list, representing consistent top-and bottom-line performance as well as growth.

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