# CN Anti-Exfiltration Solution
HCI -> Cloud Immutable Backup

HCI Server to Secure Cloud Backup over the Internet – The Backup application currently protects Data in Transit via TLS. TLS is initiated via a handshake protocol which is where most of its vulnerabilities occur. TLS has known vulnerabilities that include malware injection and 'Man in the Middle' data exfiltration attacks. Once compromised the Anti-Ransomware backup is no longer secure. How can you protect the data itself from the Man in the Middle data exfiltration?

This is where TLS can fall down – Hacker can force negotiation down to lower level of TLS and open vulnerabilities.

- Certes Patented technology focuses on encrypting the data payload at layer 4 – all other aspects of the IP packet are left unchanged; Applications treat the IP packet as unchanged.
- Certes can protect individual application flows by defining policies – each flow has its own Quantum encryption key and each key is individually rotated every hour.
- Certes CEP's (enforcement points) do not build any tunnels and do not suffer from the same vulnerabilities of the TLS handshake.
- Certes CEP's placed in-line (acting as a network Bridge) at the source and Destination will protect the data payload and prevent anyone other than the intended recipient from being able to read the data.
- Traffic can be protected via Policies as to what can and cannot be viewed and 100% under customer control
- Data leaving via a CEP will be encrypted by policy – any 'Man in the Middle Attack' or Attempted Exfiltration of data will get worthless encrypted data. A TLS Man in the Middle attack will fail as a result.
- At the HCI side the Certes devices are deployed in their virtual / containerised format where they act as a bridge (between two virtual switches in-line between the virtual and physical NIC) monitoring traffic and matching by policy at which point the data payload will be encrypted and the packet sent on its way.
- At the Cloud / Backup side Certes is deployed in its Cloud Native form within the Cloud Storage Instance.
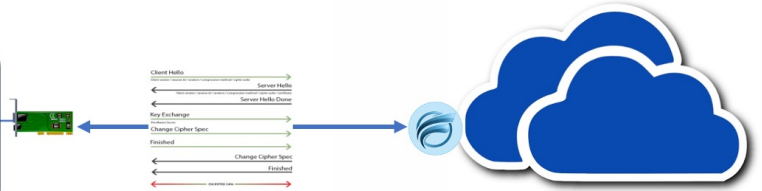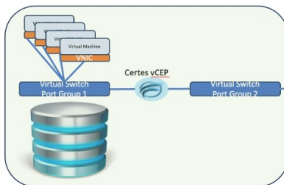
CLOUD STORAGE

Ensure the immutable backup you take has not been corrupted in transit

Keep your data Secret, keep your data Certes

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