

# Vuforia Chalk

Technical architecture overview



ptc

As of Mar 28, 2020

# Chalk security overview



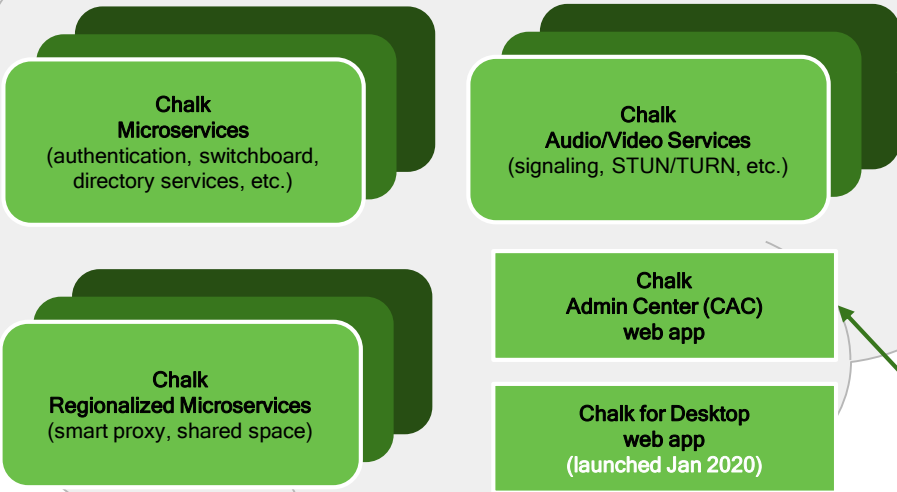
1. Chalk is accessed and delivered as a SaaS (Software-as-a-Service) offering.
  - a. Chalk resources and services are hosted on Amazon Web Services.
  - b. Chalk user authentication is managed by Amazon Web Services (Cognito).
  - c. Chalk offers SAML-based SSO if the customer prefers to manage user authentication themselves.
2. All transmissions between the Mobile clients and Hosted Services are encrypted.
3. Video, audio and image (i.e., the “content”) are encrypted end-to-end.
  - a. Video, audio and images are delivered using a peer-to-peer delivery model using WebRTC (no intermediary server for transmission).
  - b. A Study of WebRTC Security is a helpful resource: <https://webrtc-security.github.io/>
  - c. Session Summary shown at the end of the session are captured on each participant’s local device (not stored on a server).
  - d. Session Summary can be disabled by the Chalk Admin to configure to their InfoSec policy for their use.
4. Access to any user (and customer) data requires successful authentication.
5. PTC performs daily backups of hosted data in the production system.
  - a. Daily backups of the production system are retained for at least 30 days.
6. Services and data are protected with several layers of security (including routing, service access separation, user access control and auditing)
7. SOC 2 Type I attestation has been attained as of Mar 2020.
  - a. Our SOC 2 Type I report can be obtained by emailing [VuforiaComplianceTeam@ptc.com](mailto:VuforiaComplianceTeam@ptc.com) with the requestor’s email address.
  - b. Note: this SOC 2 report covers Vuforia SaaS offerings (Vuforia Expert Capture and Vuforia Chalk).
  - c. Our goal is to attain SOC 2 Type II (learn more [here](#)) and ISO27001 certification.
  - d. SOC 2 attestation is an independent assessment that we meet industry guidelines & standards to minimize risk to handling our customers’ data.

# Chalk high-level architecture

HOSTED SERVICES

## Chalk Cloud Services

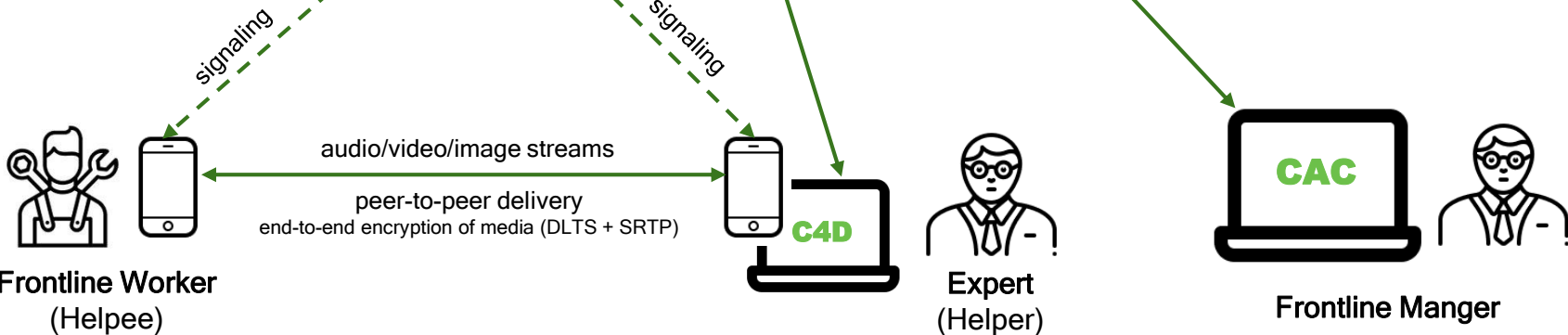
## Customer's Services



SAML-based



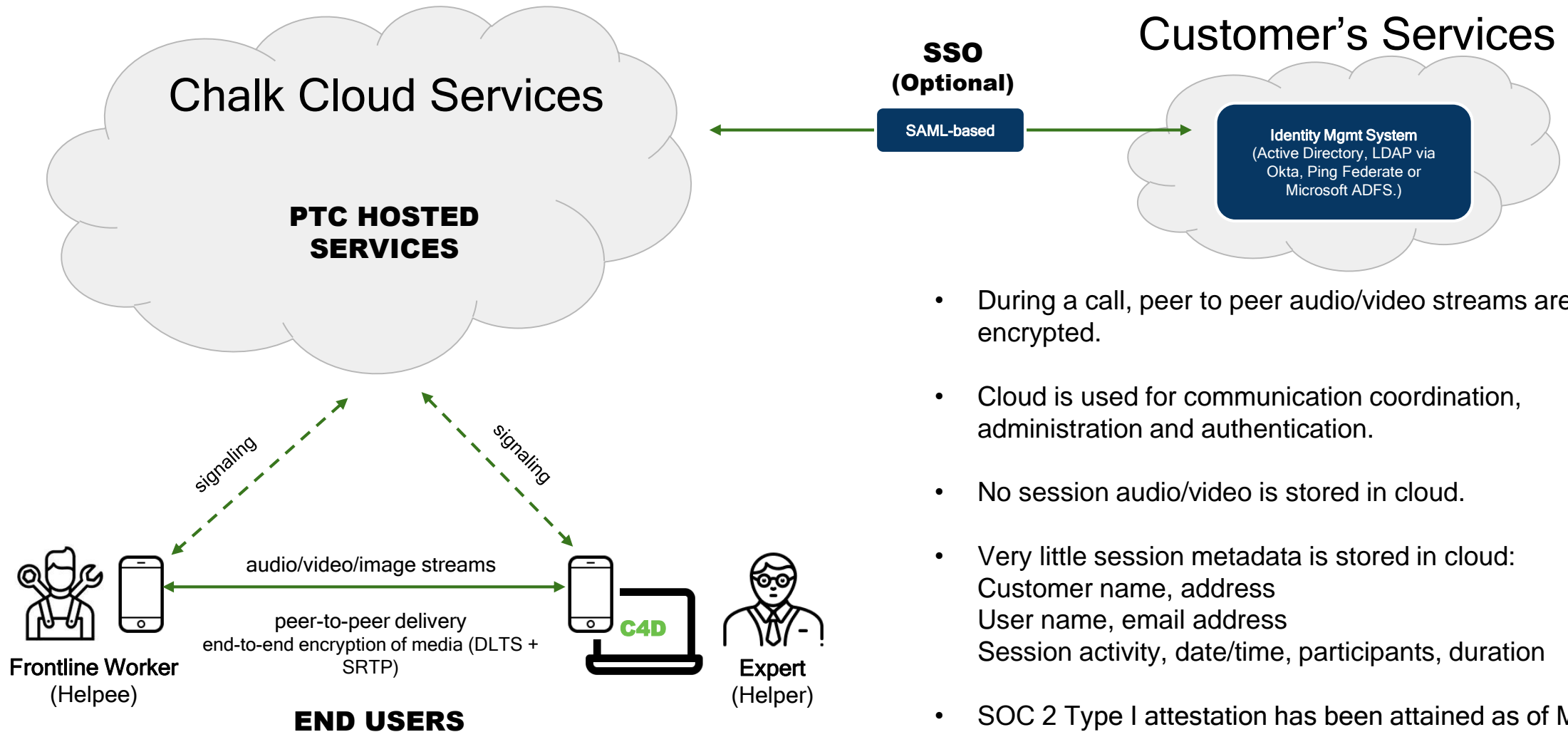
END USERS



# Device and Network Requirements

Device Support	<p>iOS and Android devices</p> <ul style="list-style-type: none"><li>Click <a href="#">here</a> for current list of supported + verified devices</li></ul> <p>Chalk for RealWear coming soon (in design &amp; development as of Mar 25, 2020)</p>
Browser Support	<p>Chalk Admin Center (<a href="https://admin.vuforiachalk.com">https://admin.vuforiachalk.com</a>)</p> <ul style="list-style-type: none"><li>Click <a href="#">here</a> for current list of supported browsers</li></ul> <p>Chalk for Desktop (<a href="https://connect.vuforia.com">https://connect.vuforia.com</a>)</p> <ul style="list-style-type: none"><li>Click <a href="#">here</a> for current list of supported browsers</li></ul>
Connectivity Required	WiFi or Cellular connection
Bandwidth Recommended	<p>Optimal performance at 800 Kbps and above</p> <p>Chalk uses adaptive streams - click <a href="#">here</a> to learn more.</p>
Low Bandwidth Mode	300 - 500 Kbps
Encryption	End-to-end encryption of media using DTLS/SRTP
Cloud Hosting	<p>Amazon Web Services</p> <ul style="list-style-type: none"><li><b>US-West-2</b> for persistent customer data (company information, user lists and session activity)</li><li>Multiple regions for "in-session" collaboration and synchronization (to reduce network latency to provide the best user experience).</li></ul>

# Chalk high-level architecture



- During a call, peer to peer audio/video streams are encrypted.
- Cloud is used for communication coordination, administration and authentication.
- No session audio/video is stored in cloud.
- Very little session metadata is stored in cloud:  
Customer name, address  
User name, email address  
Session activity, date/time, participants, duration
- SOC 2 Type I attestation has been attained as of Mar 2020.

For those situations where you can use a cell phone with video, you can use Chalk and 3d annotations