Collaborative design review powered by mixed reality

Client

Mobile

10

Microsoft
HoloLens

1 → Azure Active Directory

2 8 → Azure Spatial Anchors

3 5 → Azure Kubernetes Service 4 6 → Cosmos DB

7

9 → Blob Storage
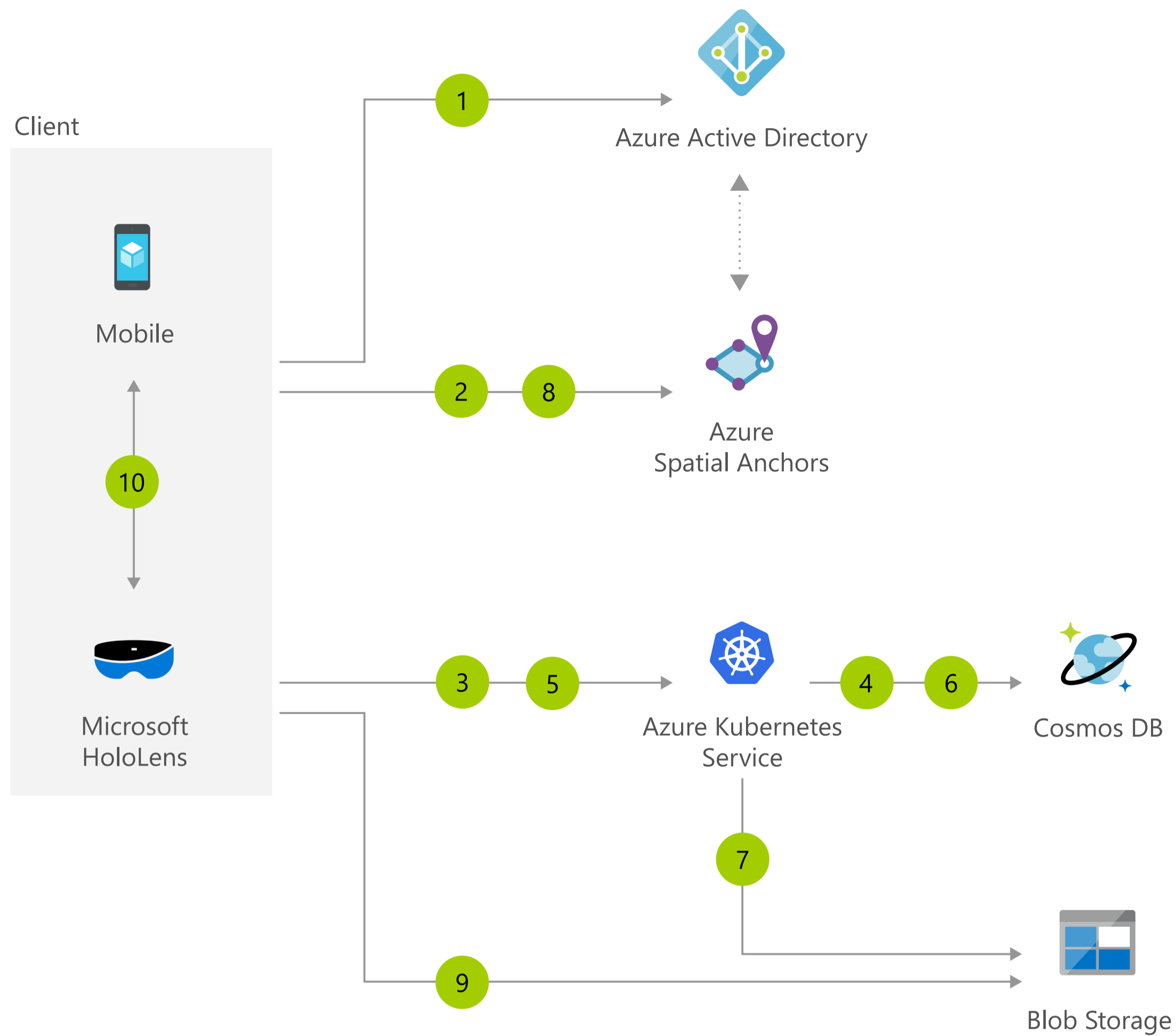
Architecture overview

Too often, product designers waste time and money with inefficient design review—2D images lose essential detail and context, and physical prototypes are extremely expensive. With this mixed reality scenario, clients, designers, and on-site engineers can easily share and review designs as 3D holograms in the context of their environment, accelerating design decisions and reducing time to market.

1 Users of client application authenticate using their AAD credentials, from Hololens or mobile device.

2 Device 1 creates spatial anchors and gets an anchor ID back from the Azure Spatial Anchors service.

3 Device 1 sends the anchor ID to the app's web service to create a collaboration session. It also specifies which hologram is to be displayed via its ID in blob store.

4 Session information, including a 6-digit code to join the session, is stored in Cosmos DB. That code is returned back to the client, allowing the user of that device to invite others to join.

5 Device 2 connects to the app's web service, passing in the code to join the session (displayed on device1).

6 The web service retrieves from Cosmos DB the anchor ID for the session and the ID of the hologram associated to that session.

7 The web service retrieves a SAS key to access the hologram associated to the session from Azure blob store. It then returns the anchor ID and SAS key to device 2.

8 Device 2 queries Azure Spatial Anchors to get a pose for the anchor ID retrieved in step 6.

9 Device 2 fetches the hologram from Azure blob store using the SAS key obtained from the app service.

10 Device 1 and 2 exchange state information over a peer-to-peer networking channel (or through a service relay of your choice).

Azure products used in this solution

Azure Active Directory

App Service

Azure Functions

Azure Digital Twins

Cosmos DB

Azure Kubernetes Service

Azure Spatial Anchors