

Virtual-Classroom Reference Architecture Readiness Checklist

Pressure-test all four planes of a live-learning platform — plus the LTI/xAPI bridge, the scaling tier, and the recording path — before you commit a budget.

A. Control plane — identity & rooms

- Roles and permissions defined for your classroom type (1:1, seminar, lecture)
- Identity delegated from the LMS via LTI 1.3 launch — no second login
- Signaling separated from the media path (WebSocket or WHIP/WHEP)

B. Media plane — pick the scaling tier

- Tier chosen: P2P (1:1) · single SFU (≤ 50) · SFU+simulcast (lecture) · cascade (10K+)
- SFU buy-vs-self-host decided; cascade plan exists for your largest session

C. Shared-state plane — breakout & whiteboard

- Breakout/whiteboard/chat state lives off the media server, on its own transport
- Whiteboard uses a CRDT (Yjs/Automerger) with instant local ink

D. Learning bridge — what makes it a classroom

- LTI 1.3 launch + NRPS roster sync wired in
- AGS grade passback modeled before activities are built; xAPI events to the LRS

E. Recording & accessibility path

- Recording-to-catalog pipeline defined; live captions upgraded to prerecorded standard
- Completion rule chosen — attendance, participation, and 'watched' kept distinct