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DESIGN STUDY

Architecture review before launch: ATAM on a game studio's online services

Complete design on current platforms

CAPABILITY	INDUSTRY	SETTING
Consulting & Engineering	Media & Gaming	Game studio
DOCUMENT	**VERSION**	**DATE**
CON-006	1.2	Nov 6, 2026

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Document control

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Sign-off	"An engagement under this design is signed by the practice lead before the engagement starts."		

Contents

1 · Scope 3
1c · Public implementations this design follows 4
2 · Requirements register 4
3 · Architecture overview 5
4 · Design by subsystem 6
5 · Failure behavior 7
6 · Limits 7
7 · Lessons learned 7
8 · The author 8

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CONVENTIONS

Source tags. [S] figure or clause read from the standards body's or publisher's own current page on Sep 24, 2026 · [S*] figure from the page summary where the page itself could not be opened · [A] assumption about the typical buyer, to be confirmed by the signing engineer · [T] design target taken from the design's stated outcome or derived from it. Every figure carries one tag. No figure comes from any prior engagement, file or asset. A row with more than one tag is counted once: as a published figure if any tag is [S] or [S*], otherwise as an assumption if any tag is [A], otherwise as a design target.

Table 1. Revision history

Date	Version	Change
Sep 27, 2026	1.0	First issue.
Oct 10, 2026	1.1	Approval line now reads: approved by the Founder, issued by Symbeeo. David Morgan remains the author.
Nov 6, 2026	1.2	Independence reworded: vendor commissions, rebates and incentives are declared.

1 · Scope

Who it is for. The CTO of a game studio five months from launching an online multiplayer title, whose backend was built by three teams and one outsourcer, who has been told "it will scale" by each of them, and who wants an independent review that turns that sentence into numbers before launch day tests it.

Typical buyer [A]. A studio of 400 staff launching a cross-platform title with an online backend on one public cloud in three regions: login and identity, matchmaking, dedicated game servers, player inventory and store, telemetry, and anti-cheat. Launch-week design point 250,000 concurrent players; two prior titles peaked at 60,000.

What is in. An architecture evaluation conformant to ISO/IEC/IEEE 42030:2019 using the SEI ATAM steps: business drivers, utility tree, quality-attribute scenarios with measurable responses, analysis of the architectural approaches, and the record of risks, non-risks, sensitivity points and trade-offs; a risk register on the studio's criteria; a pre-launch roadmap in two horizons; the cloud provider's own games lens used as a checklist beside the scenarios. SRA-CON-001 Model A, with the full ATAM that D4 selects for Model B, because launch risk is the question. **What is out.** Load testing itself (the review specifies what the test must show); game-client code; anti-cheat efficacy; the store's payment provider; any redesign.

Assumptions. The backend runs on AWS [A]. The studio's architects are available for a three-day ATAM workshop and two follow-up sessions [A]. Architecture documents exist for at least four of the six services [A]. Launch date is fixed [A].

Related documents, read Sep 24, 2026. SRA-CON-001, SDD-CON-001, STP-CON-001 (this capability) · ISO/IEC/IEEE 42030:2019, Architecture evaluation framework, https://www.iso.org/standard/73436.html · ISO/IEC/IEEE AWI 42030 (revision in development), https://www.iso.org/standard/93814.html · SEI, ATAM: Method for Architecture Evaluation, https://www.sei.cmu.edu/documents/629/2000_005_001_13706.pdf · AWS Well-Architected Framework, Games Industry Lens, https://docs.aws.amazon.com/wellarchitected/latest/games-industry-lens/games-industry-lens.html · AWS for Games blog, Games Industry Lens update (Dec 10, 2025), https://aws.amazon.com/blogs/gametech/games-industry-lens-update-for-the-well-architected-framework · ISO/IEC/IEEE 42010:2022, https://www.iso.org/standard/74393.html.

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1c · Public implementations this design follows

Each row is labeled. **Public deployment**: a named operator's real deployment, published and dated by the operator, its vendor or a partner, used where one exists. **Our own design**: the dated vendor or standards documentation this design was built from, where no public deployment of the design exists. Labels and dates checked Sep 27, 2026.

Table 2. Public implementations this design follows

Implementation	Who published it · date	What it settles for this design	URL
Our own design, built from published documentation. Games Industry Lens update: scalable game backends, multiplayer server orchestration, load testing, real-time data analysis; session-based server hosting with serverless backends; multi-region and hybrid architectures for low-latency games; importable as a custom lens into the Well-Architected Tool	AWS · Dec 10, 2025	R10 and §4.4: the provider's own games checklist runs beside the ATAM scenarios, so a finding can be traced to the platform's published practice, not only to the reviewer's view	https://aws.amazon.com/blogs/gametech/games-industry-lens-update-for-the-well-architected-framework
Our own design, built from published documentation. ISO/IEC/IEEE 42030:2019: organizes and records architecture evaluations; reviewed and confirmed in 2025, with a revision (AWI 42030) in development	ISO · published July 2019 (IEEE record Jul 19, 2019); page summary read Sep 24, 2026	R2 and §4.1: the evaluation record follows the standard's structure; the revision status is checked again before issue	https://www.iso.org/standard/73436.html
Our own design, built from published documentation. ATAM: business drivers, utility tree, scenarios, analysis of approaches, then risks, non-risks, sensitivity points and trade-offs	SEI, Carnegie Mellon University · CMU/SEI-2000-TR-004, August 2000	R3–R6 and §4.2–§4.3: the workshop steps and the output record are the method's own	https://www.sei.cmu.edu/documents/629/2000_005_001_13706.pdf
Public deployment. ATAM applied to a large defense simulation system at a national defense integration center: scenarios, utility tree and the resulting risks and trade-offs, as a published case study	SEI, CMU/SEI-2001-TN-022 · December 2001	§4.2–§4.3: a real evaluation of a real simulation system by the method's own authors' institute. A defense simulation, not a commercial game, so it settles the method in practice only; no figure from it enters the register. No ATAM case from a commercial game studio was found on Sep 27, 2026	https://www.sei.cmu.edu/documents/1980/2001_004_001_13835.pdf

2 · Requirements register

Table 3. Requirements register

#	Requirement	Value	Source
R1	Scope	6 backend services, 3 cloud regions, 1 launch	[A]
R2	Evaluation record	conformant to ISO/IEC/IEEE 42030:2019	[S*] 42030

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#	Requirement	Value	Source
R3	Scenarios	≥ 12 quality-attribute scenarios, each with a stimulus and a measurable response	[T] from SRA-CON-001 R8
R4	Scenario coverage	≥ 2 scenarios per service; ≥ 1 per quality attribute named in the utility tree	[T]
R5	Output record	every risk, sensitivity point and trade-off cites a scenario	[S] ATAM
R6	Launch design point	250,000 concurrent players in launch week	[A]
R7	Headroom target	every scenario at the design point analyzed at 1.5 × for the first 72 hours	[T]
R8	Risk register	each risk with likelihood, impact, owner and treatment on the studio's criteria	[S] ISO 31000:2018
R9	Pre-launch roadmap	every item in one horizon (before launch, first 90 days) and linked to ≥ 1 risk	[T]
R10	Platform checklist	Games Industry Lens questions answered for all 6 services	[S] AWS Games Industry Lens
R11	Load-test specification	for every performance or availability risk, the load test that would retire it, with pass value	[T]
R12	Independence	any commission, rebate or incentive from the cloud provider or its partners is declared	[A] Symbeeo policy
R13	Turnaround	evaluation report issued ≤ 15 working days after the workshop	[T]
R14	Workshop	3 days, business drivers and utility tree on day 1, scenario analysis on days 2–3	[A]

Fourteen rows; four carry a published figure, four are design assumptions, six are design targets.

3 · Architecture overview

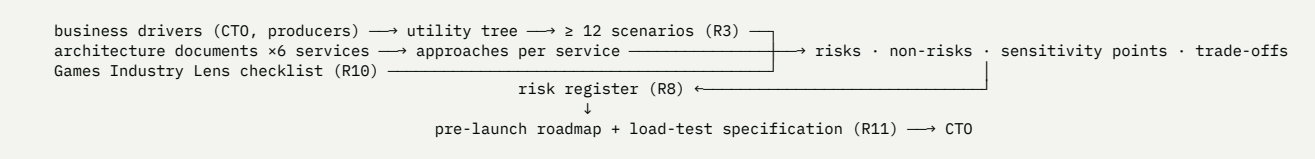


Figure 1. Architecture evaluation flow

The review does not decide whether the backend scales; it states, per scenario, what must be true for it to scale and which load test proves it.

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Table 4. Architecture overview

Role	Component (exact name)	Qty	Capacity used	Why this unit
Evaluation framework	ISO/IEC/IEEE 42030:2019	1	6 services [A]	Current edition, confirmed 2025 [S*]
Evaluation method	SEI ATAM	1	3-day workshop [A]	Utility tree forces measurable scenarios (SRA-CON-001 D4)
Architecture views	ISO/IEC/IEEE 42010:2022	1	stakeholders, concerns, viewpoints per service	Views not tied to one team's diagrams (SRA-CON-001 D5)
Platform checklist	AWS Well-Architected Games Industry Lens	1	6 services	Provider's own games guidance, updated Dec 10, 2025 [S]
Risk method	ISO 31000:2018	1	every risk	Treatment on the studio's criteria [S]

4 · Design by subsystem

4.1 Preparation.

Each of the six services is described in 42010 views — stakeholders, concerns, viewpoints — from the teams' own documents, filled in by interview where a document is missing [A]. The evaluation record is opened in the 42030 structure (R2) before the workshop.

4.2 Utility tree and scenarios.

Day 1: the CTO and producers state the business drivers; the utility tree turns "it will scale" into scenarios (R3). Example scenarios [A]: launch-hour login surge at 250,000 concurrent players, login completes ≤ 10 s for 99 % of players; one region lost, matchmaking resumes in the remaining two ≤ 5 min; store purchase during a game-server scale-out, item appears in inventory ≤ 30 s; a cheat signature update deployed to all game servers ≤ 1 h. Values confirmed in the workshop.

4.3 Analysis.

Days 2–3: each scenario is walked through the architectural approach that serves it — autoscaling policy, queueing in front of login, cross-region data replication, fleet orchestration for game servers — and the outcome recorded as a risk, non-risk, sensitivity point or trade-off (R5). A shared identity database behind login and store, for example, is a sensitivity point for two scenarios and is recorded against both [A].

4.4 Platform checklist.

The Games Industry Lens questions are answered per service (R10) [S]; a lens question answered "no" that no scenario covers is added as a scenario, not left as a checklist gap. Rejected: the lens alone — it is a list of practices, not a measure of this backend at 250,000 players.

4.5 Load-test specification.

Every performance or availability risk carries the test that would retire it (R11): the load profile, the design's response measure as the pass value, and the 1.5 × headroom run (R7). The studio or its load-test supplier runs it; the review specifies it.

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4.6 Roadmap.

Items in two horizons (R9): before launch, the risks with a failed or untested scenario; first 90 days, the trade-offs the studio accepts for launch and revisits after [A].

5 · Failure behavior

Table 5. Failure behavior

Failure	Behavior	Source
A service has no architecture document	views drafted from interview; service marked lower confidence in the record	[A]
Workshop day lost	scenario analysis split over the two follow-up sessions; R13 re-dated	[A]
Stakeholders cannot agree a response measure	scenario recorded with both values; decision assigned to the CTO	[A]
Load test later fails a scenario	the risk stays open on the roadmap; the review is not re-opened	[T]
Outsourcer declines to take part	its service reviewed from documents only; limitation stated	[A]
Launch design point revised	scenarios at the new figure re-analyzed in one follow-up session	[A]

6 · Limits

- An ATAM finds risks in the architecture as described; it does not measure the running system. The load test does.
- The Games Industry Lens is one provider's guidance; it does not cover the game client or platform-holder certification.
- Scenario values are the studio's; a different launch forecast changes them.
- Anti-cheat efficacy and payment-provider behavior are out of scope.
- 42030 is under revision; its status is checked again before the record is issued.

7 · Lessons learned

None yet — this is a design study; populated after the first build against it.

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8 · The author

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Signed off by Edwin Ozer, Founder.

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Figures are as published by their sources on the dates given in this document; figures marked [A] are assumptions.

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