Discovery Questions for an On-Prem to AWS Migration

Real-world questions stakeholders might ask when evaluating a migration from an on-premises data center to AWS.

Purpose. These questions are framed the way stakeholders might ask them during a migration evaluation.

Business Strategy and Executive Priorities

1. What business outcome are we actually trying to achieve by moving this platform to AWS: lower cost, faster innovation, better resilience, AI enablement, global expansion, or all of the above?
2. Which parts of the current environment are creating the most pain today: capital spend, slow provisioning, seasonal overcapacity, delayed analytics, disaster recovery risk, or operational overhead?
3. What is the cost of doing nothing for the next 12 to 24 months if we remain fully on-premises?
4. How will executive leadership measure migration success: reduced infrastructure spend, improved uptime, faster release velocity, improved customer experience, or better business insight?
5. Are we pursuing a lift-and-shift migration, a selective modernization, or a cloud-first operating model that changes how teams build and run systems?

Application and Workload Fit

1. Which workloads are good candidates to move first, and which should remain on-premises for now?
2. Which parts of the e-commerce platform are most sensitive to latency, transaction integrity, or near-real-time performance?
3. Do our applications have hidden dependencies on local infrastructure, network appliances, legacy storage, or tightly coupled back-end systems?
4. Are our applications modular enough to move in phases, or are they so tightly integrated that migration will require refactoring first?
5. What traffic patterns do we see across the year, especially around promotions, seasonal peaks, and unexpected surges?

Architecture and Modernization Decisions

1. Should we rehost existing application servers on Amazon EC2, replatform selected services to managed offerings, or refactor into containers and event-driven services?
2. Which AWS services best align to each part of the platform: for example CloudFront, WAF, ECS with Fargate, Aurora, ElastiCache, SQS, EventBridge, Lambda, S3, Glue, Redshift, SageMaker, or Bedrock?
3. Where will we gain the most value from managed services versus retaining direct control over infrastructure components?
4. How should we design the target architecture so it can scale for retail peaks without overpaying during non-peak periods?
5. Do we want to modernize analytics and AI at the same time as the transactional platform, or sequence those capabilities after the core migration?

Data, Databases, and Integration

1. What databases are we running today, and how difficult will it be to migrate them to Amazon Aurora, Amazon RDS, or another AWS-native data platform?
2. What are our recovery point objective and recovery time objective requirements for order data, customer records, inventory, and payment-related transactions?
3. How much data must be migrated, how quickly is it changing, and what cutover strategy will minimize business disruption?
4. What downstream systems depend on our current data center environment, including ERP, warehouse, finance, reporting, or third-party integrations?
5. How will we handle data synchronization during migration if some systems remain on-premises temporarily in a hybrid state?

Security, Compliance, and Governance

1. What regulatory, privacy, or contractual requirements apply to this platform, and how will those controls be implemented in AWS?
2. How will identity, access management, encryption, logging, auditability, and key management be handled in the target environment?
3. Which security responsibilities shift to AWS under the shared responsibility model, and which still remain entirely ours?
4. How will we prove to internal auditors, risk teams, and executives that the cloud environment is governed as well as or better than the current data center?
5. What guardrails do we need from day one around account structure, network segmentation, secrets management, monitoring, and change control?

Networking, Connectivity, and Hybrid Operations

1. What connectivity model do we need between our data center and AWS during the migration period: site-to-site VPN, Direct Connect, or both?
2. Will customer-facing performance improve if we place static content, APIs, and core services closer to users through AWS global infrastructure?
3. What are our current bandwidth, latency, and failover constraints, and how will those affect migration design and hybrid operations?
4. Are there systems that must remain on-premises because of physical equipment, licensing, or ultra-low-latency dependencies?
5. How long do we realistically expect to operate in a hybrid model before the platform is fully migrated?

Reliability, Resilience, and Disaster Recovery

1. How does our current disaster recovery model compare with what we could achieve in AWS using multi-AZ design, backups, and cross-Region recovery patterns?
2. What level of availability is required for customer checkout, order processing, inventory updates, and executive reporting?
3. Which failure scenarios worry us most today, and how would AWS materially reduce or change those risks?
4. How will we test backup recovery, failover, and operational readiness in the cloud before the platform becomes production-critical?
5. Are we prepared to redesign for resilience, or are we expecting the cloud alone to solve architectural weaknesses that already exist in the application?

Operations, Support, and Team Readiness

1. Do our infrastructure, security, and application teams have the AWS skills needed to operate this environment effectively after go-live?
2. What current operational tasks can be eliminated or reduced through AWS managed services and automation?
3. How will monitoring, observability, incident response, patching, and change management evolve in the target operating model?
4. Who will own the cloud environment after migration: platform engineering, infrastructure operations, application teams, or a shared model?
5. What training, hiring, or partner support do we need so the migration does not succeed technically but fail operationally?

Cost, Finance, and Commercial Questions

1. What is our current fully loaded on-premises cost when we include hardware refresh, software licensing, facilities, networking, support labor, and disaster recovery?
2. What does the AWS cost model look like for steady-state operations, seasonal spikes, development environments, analytics workloads, and AI experimentation?
3. Where will costs go down, where might they go up, and what assumptions are we making in the business case?
4. How will we govern cloud spending through tagging, budgets, forecasting, rightsizing, storage lifecycle policies, and architecture choices?
5. What migration approach gives us the best balance between near-term financial discipline and long-term strategic value?

Migration Planning and Execution

1. What is the least risky migration sequence: front-end first, analytics first, non-production first, or a staged move by business capability?
2. What is our cutover plan, rollback plan, and communication plan if something goes wrong during migration weekend or peak business periods?
3. Which dependencies must be untangled before any serious migration work begins?
4. Can we prove the target architecture in a pilot or limited production scope before moving the full retail platform?
5. What timeline is realistic if we want to migrate carefully without creating unnecessary business disruption?

Analytics, AI, and Future-State Capability

1. Once the platform is on AWS, how quickly can we improve reporting, customer analytics, personalization, and forecasting?
2. Should we centralize operational and analytical data in Amazon S3 and modernize ETL, reporting, and dashboards as part of the broader roadmap?

3. What new capabilities become practical in AWS that are currently too expensive or too complex on-premises, especially for machine learning and generative AI?
4. How will we govern and prioritize AI use cases so they create business value rather than becoming side experiments with no measurable outcome?
5. Does the migration position us merely to host the same system elsewhere, or to become a more data-driven and innovation-ready business?

Executive Decision Questions

1. If we approve this migration, what business risks are we accepting, what risks are we reducing, and what risks are we deferring?
2. What would make this migration fail from an executive standpoint even if the technology technically works?
3. What decisions must leadership make early so the program does not stall in architecture debates, procurement delays, or unclear ownership?
4. What is the smallest meaningful migration milestone that would prove value to the business and build confidence for the next phase?
5. At the end of this effort, will we simply have moved infrastructure, or will we have materially improved agility, resilience, and competitive capability?