ZConverter

ZConverter Cloud Migration Guide 2025

A comprehensive guide to planning and executing enterprise cloud migrations

1. Introduction to Cloud Migration

Cloud migration is the process of moving digital business operations, data, applications, and IT processes from on-premises infrastructure to cloud-based environments. As enterprises accelerate their digital transformation initiatives, cloud migration has become a strategic imperative.

ZConverter provides an end-to-end migration platform that supports heterogeneous environments including physical servers, virtual machines (VMware, Hyper-V), and multi-cloud platforms (AWS, Azure, GCP, Naver Cloud, KT Cloud).

Key benefits of cloud migration include:
- Cost optimization through pay-as-you-go pricing
- Improved scalability and elasticity
- Enhanced disaster recovery capabilities
- Faster time-to-market for new applications
- Access to cutting-edge cloud services (AI/ML, IoT, analytics)

2. Migration Assessment & Planning

Before initiating a migration project, conduct a thorough assessment of your current infrastructure:

Workload Discovery:
ZConverter's automated discovery engine scans your environment to catalog all servers, applications, and dependencies. This process identifies:
- Operating systems and versions
- Installed applications and services
- Network configurations and firewall rules
- Storage volumes and utilization
- Inter-server dependencies and communication patterns

Migration Strategy Selection (6 R's):
- Rehost (Lift & Shift): Move as-is to the cloud
- Replatform: Make minor optimizations during migration
- Refactor: Re-architect for cloud-native capabilities
- Repurchase: Replace with SaaS equivalent
- Retire: Decommission unused applications
- Retain: Keep on-premises (for now)

Planning Considerations:
- Define success criteria and KPIs
- Establish migration waves and priorities
- Plan network connectivity (VPN, Direct Connect)
- Design security controls and compliance requirements
- Prepare rollback procedures for each wave

3. Migration Execution with ZConverter

ZConverter's migration process follows these steps:

Step 1: Agent Installation
Install the lightweight ZConverter agent on source servers. The agent operates with minimal resource overhead (< 2% CPU, < 100MB RAM).

Step 2: Target Configuration
Configure the target cloud environment including VPC/VNet, subnets, security groups, and IAM roles. ZConverter supports Infrastructure-as-Code templates for repeatable deployments.

Step 3: Initial Replication
The kernel-level replication engine performs a full block-level copy of source volumes to the target environment. Data is compressed and encrypted (AES-256) in transit.

Step 4: Continuous Synchronization
After the initial copy, only changed blocks are replicated in real-time. This ensures the target is always within seconds of the source.

Step 5: Testing & Validation
Run automated test migrations to verify application functionality without impacting production. ZConverter provides built-in health checks for common application stacks.

Step 6: Cutover
Schedule the production cutover during a maintenance window. With continuous replication, cutover typically takes 15-30 minutes even for multi-terabyte workloads.

Step 7: Post-Migration Verification
Validate application performance, data integrity, and service connectivity. ZConverter maintains reverse replication for 48-72 hours enabling instant rollback.

4. Best Practices & Recommendations

Based on thousands of successful migrations, ZConverter recommends:

Network Optimization:
- Use dedicated network connections for large-scale migrations
- Enable bandwidth throttling to avoid impacting production traffic
- Pre-configure DNS changes with low TTL values before cutover

Security:
- Encrypt all data in transit and at rest
- Implement least-privilege IAM policies for migration tools
- Conduct security scans on migrated workloads
- Verify compliance controls are maintained post-migration

Performance:
- Right-size target instances based on actual utilization data
- Enable cloud-native monitoring immediately after migration
- Plan for performance testing before decommissioning source systems

Cost Management:
- Use reserved instances or savings plans for predictable workloads
- Implement tagging strategies for cost allocation
- Set up budget alerts and cost anomaly detection
- Review and optimize within 90 days of migration

For more information, contact your ZConverter account representative or visit www.zconverter.com.