Case Study

# Optimizing Enterprise LMS Performance and Executing a Zero-Risk Moodle Version Upgrade

Magic EdTech

## The Client

The client is a leading provider of education and credentials for healthcare and fitness professionals. Unlike other business units within its parent organization that operate on-premises, this institution uses a specialized cloud-hosted Moodle environment to deliver critical certification content to a large global audience of professional learners.

## The Challenge

The institution faced a high-stakes technical debt challenge, requiring a major upgrade to an LMS instance that had not been significantly updated in over a year. Because the platform is essential for professional certifications, the client maintained a zero-risk tolerance, necessitating a shift from a standard "casual" update cycle to a highly structured deployment process. Alongside the version jump, the team had to overcome critical database bottlenecks, including SCORM data inconsistencies that caused system-wide processing failures, and an infrastructure that lacked the capacity to handle a major version migration.

## Critical Success Parameters

- ✓ Minimize platform downtime to ensure uninterrupted access for professional learners.
- ✓ Resolve legacy database failures, specifically addressing SCORM data issues that stalled processing.
- ✓ Modernize the system architecture by optimizing database operations and scaling hardware resources.
- ✓ Maintain a zero-risk deployment environment through rigorous testing and formal governance checkpoints.
- ✓ Execute a seamless transition from Moodle 4.1 to 4.5 in a cloud-hosted infrastructure.

## Our Approach

- ✓ Conducted an extensive dry run of the upgrade process to identify technical friction points and performance bottlenecks ahead of the production launch.
- ✓ Deployed a specialized four-person expert team, consisting of two developers, a quality assurance tester, and a project lead, to manage the end-to-end migration lifecycle.
- ✓ Resolved critical database inconsistencies in the production environment by fixing SCORM data issues that had previously prevented successful upgrades.
- ✓ Implemented technical performance tuning, including adding strategic database indexes and optimizing MySQL configuration to streamline data-intensive operations.
- ✓ Enhanced infrastructure overhead by upgrading the production environment to 64 GB RAM, providing the necessary compute power for the version jump.
- ✓ Established formal deployment governance, including rigorous "no-go" meetings and specialized documentation, to meet the client's strict risk-mitigation requirements.

## Key Result Highlights

Reduced the overall downtime for the major system upgrade from 32 hours to **27 hours**.

Achieved a **30%** reduction in upgrade duration, cutting the core activity time from 16 hours to **11 hours**.

Successfully delivered the first major version jump since 2023, moving the platform from version **4.1 to 4.5**.

Optimized database performance by implementing relevant indexes and tuning MySQL configuration.

Scaled infrastructure capacity by upgrading server resources to **64** GB of RAM to support increased processing demands.