

# CASE STUDY

## Travel Portal



# DEPARTURES

TIME	TO	FLIGHT NO.	GATE	REMARKS
15:35	AMSTERDAM	TK3946	A1	CANCELLED
15:40	WASHINGTON	LN3211	C3	CANCELLED
15:45	BERLIN	GT4638	A2	CANCELLED
15:45	MIAMI	HV3323	B4	CANCELLED
15:50	STOCKHOLM	FD2753	A6	CANCELLED
15:55	MADRID	LV2317	A5	CANCELLED
16:05	SEATTLE	BD9032	B1	CANCELLED
16:15	RIO DE JANEIRO	FB5610	C4	CANCELLED
16:20	MILAN	7B7792	A4	CANCELLED
16:25	TORONTO	GC5433	C1	CANCELLED
16:35	DENVER	LY4488	B2	CANCELLED
16:40	PARIS	HF3288	B4	CANCELLED
16:50	CHICAGO	TH7252	A4	CANCELLED
16:55	SYDNEY	LV3100	B2	CANCELLED
17:00	TORONTO	LN1101	C4	CANCELLED
17:10	LAS VEGAS	RZ1408	B3	CANCELLED
17:15	LONDON	ER4319	A1	CANCELLED

## Automated Static Testing (Software Audit) from Magic Lamp

Static Testing identifies critical reliability, security and performance defects missed by traditional (dynamic) testing and enforces compliance with rules and best practices. Magic Lamp Software provides technologies and services for automating Static Testing or Software Code Audits.

It automatically detects critical errors in applications that use core Java and Java EE, based on an expert knowledge base of thousands of rules, including security, performance, concurrency, resource leakage, Core Java/Java EE/Open Source API usage, and SQL query analysis rules.

### Overview

- Top travel portal in India for flight and hotel reservations
- Application development outsourced to services vendor
- Client CTO concerned about application quality; requested Magic Lamp's Java experts to do audit

### Objective

Identify reliability, security and performance issues in web application before deploying on production servers

### Application details

- 80% of client business depended on application
- Exposed to users on internet, high security needed
- High performance and reliability needed
- Well tested by services vendor

### Critical issues identified

#### Security

Data-Race Condition (confidential data leakage)

Effect: One user's ticket charged to another user's credit card

Cause: Private data stored in a location shared by multiple concurrent threads of execution, and accessed without locking

#### Performance

Database Connection/Session Leakages

Effect: Performance slowdown, loss of scalability, server hang/downtime

Cause: Database connection starvation because connections are not closed after usage

#### Redundant Locking

Effect: Loss of scalability, bad performance at high load

Cause: Many threads blocked and waiting while 1 thread completes expensive operation

#### Defect Statistics

Total defects: 704

P0: 241 defects, P1: 377 defects, P2: 86 defects

Category	Defect Count
Web-application Security (SQL Injection, Cross-site Scripting, etc.)	21
Reliability/Concurrency (Data Race Conditions,	155
Performance (Resource Leaks, Excessive Locking)	23
Java/J2EE/Open Source/Custom API Usage, Maintainability issues	Many

### Software Audit

Magic Lamp can provide an on-site or off-site audit service that allows clients to reliably and quickly improve quality and security without disturbing existing processes or diverting resources from other commitments.



### Customer Testimonial

Magic Lamp Software's solutions enabled us to pro-actively identify important defects and security vulnerabilities in our critical software modules. We have seen significant efficiency benefits using Magic Lamp's solutions which have helped us cut down our quality assurance cycle time and allowed us to get critical changes quickly to market.

– CTO, Travel Portal, India