

# Linkon



## Online Travel Reservation System Provides World-Class Service as a Result of Improved Performance Monitoring And Diagnostics

Linkon is an independent supplier of online booking solutions for the Swedish travel industry. Their sales and distribution system 'PETRA' includes all aspects of a travel booking from the seat reservation, route selection and timetable through to payment and settlement. The company has 125 employees and revenues of \$31 million. Linkon's clients include Veolia, Samtrafiken, Travellink, Swebus and ACP Rail and around 100,000 bookings are made per day. Linkon had problems with diagnosing and resolving performance issues associated with its new seat reservation system, which is a complex set of applications and systems involving multiple database lookups. They turned to Riverbed Technology and its SteelCentral solution to help.

### A major problem that was difficult to pinpoint

A new seat reservation system for the train booking service initially worked well. "After three months, we started getting longer response times and timeouts," explains Sjölander, "The response time reached as much as 21-25 seconds whereas with our previous system, we were used to times of around 0.5 seconds." Many users abandoned transactions. Administrative tasks—like re-bookings—took minutes rather than seconds to process. The situation became so serious, that Linkon was forced to move many bookings back to the old system, while it tried to resolve the issue.

The complexity of Linkon's booking system—called Petra—made troubleshooting difficult. Petra consists of multiple servers and databases, many managed by external users. When a passenger makes an online booking a large number of components come into play. PETRA creates a fare and a route dynamically by interrogating its product definition and yield management modules and then reserving a seat in the inventory system. The customer might need to be made aware of non-reservation tickets and their associated prices or intercity express trains whose details are held externally to PETRA and which must be accessed via a UIC interface. All the corresponding activity associated with a booking is stored in an 'order database' for future reference.

"A booking involves so many functions and layers, that it was not easy to find whether the problem was due to hardware; an application; a database index or the network," says Sjölander. "We sat down with our partners and tried to resolve the issue. Without hard data, it was impossible to trace the source of the problem."

"Abnormal behaviour is now spotted in advance and the relevant people are now contacted with concrete information. SteelCentral has enabled us to detect bugs in our production—environment we would have never discovered before. We now have a full overview of how our system actually works"

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## In Brief

## Challenges

- Long response time on new seat reservation system causing end-user frustration
- Many transactions abandoned, resulting in lost revenue
- Complex IT system makes it difficult to pinpoint source of problem

## Solution

- SteelCentral™ AppResponse
- SteelCentral™ AppInternals

## Benefits

- Response time cut from 25 seconds to 200 milliseconds, leading to faster booking process
- Performance issues now quickly analyzed, diagnosed and resolved
- Significant time and money saved

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## Riverbed Application Performance Platform

Linkon decided to work with Swedish IT consultancy Rebendo, a Riverbed channel partner. “Rebendo told us that they could solve our problem – and they did,” notes Sjölander. Rebendo recommended the Riverbed® SteelCentral™ product family, a management and control suite that combines user experience, application, and network performance management to provide the visibility needed to diagnose and cure issues.

SteelCentral™ AppResponse helps users to understand where poor performance is rooted – whether it is in the

network, servers or application code components and SteelCentral™ AppInternals performs fine-grained monitoring of hundreds of thousands of performance metrics across these application components which might include Java, .NET, web servers, databases, OS, and storage.

“After using AppResponse and AppInternals, we finally had data we could take to the application developer and to the operating supplier and say, ‘Look, this is what is causing the long response time,’” says Sjölander.

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## Faster response times, deeper understanding, faster resolution

The data provided by SteelCentral enabled the application and hardware to be improved. “The booking response time went from over 21 seconds to 200 milliseconds,” says Sjölander, “and so, we were able to re-launch the new seat reservation system.”

“We now have much better visibility of our application usage and the different resources we use,” says Wessman, “and we can use these tools to find and resolve issues quickly, like slow SQL queries.” Linkon is now using SteelCentral to monitor the whole Petra system.

“Riverbed has empowered us,” says Sjölander, “because now, we can ask smart questions to our suppliers: ‘why do I get this response time, when I do this?’ It has really helped the application developer understand their product better and improve it. In fact, our supplier now recommends SteelCentral to its new clients.”

“If we had not had Riverbed, we might have had to give up on the new system,” adds Sjölander, “or spend a lot more time and money solving the problem. Riverbed saved us a year on this project.”

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### About Riverbed

Riverbed, at more than \$1 billion in annual revenue, is the leader in application performance infrastructure, delivering the most complete platform for the hybrid enterprise to ensure applications perform as expected, data is always available when needed, and performance issues can be proactively detected and resolved before impacting business performance. Riverbed enables hybrid enterprises to transform application performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. Riverbed’s 26,000+ customers include 97% of the *Fortune* 100 and 98% of the *Forbes* Global 100. Learn more at [riverbed.com](http://riverbed.com).

The Riverbed logo consists of the word "riverbed" in a lowercase, bold, orange sans-serif font.