



# AIRTEL SETS UP INDIA'S LARGEST TELEVOTING BACKBONE ON ENTERPRISE LINUX

## SMS SERVERS HANDLE MILLIONS OF MESSAGES GENERATED BY VIEWERS OF POPULAR REALITY TV SHOWS – KAUN BANEGA CROREPATI & INDIAN IDOL

### FAST FACTS

**Industry:** Telecommunications

**Geography:** India

**Challenges:** Design a failproof televoting system to manage millions of SMSes. Conform servers to a peak load requirement in excess of 4000 messages per second. Ensure faster processing of votes and eliminate any window for performance delays. Build a system that can handle highly volatile SMS traffic. Ensure security of servers from viruses and attacks

**Solution:** Software: Red Hat Enterprise Linux  
Hardware: Intel Xeon

### INTRODUCTION

Airtel is India's largest GSM service provider, with a footprint that covers all telecom circles in the country. With its nationwide presence and world class infrastructure, Airtel is the chosen telecommunications vendor for two of the country's most popular reality TV shows – Kaun Banega Crorepati (KBC) and Indian Idol. KBC, the Indian equivalent of the reality game show, "Who wants to be a millionaire," is the nation's most widely watched program in Indian television history. Hosted by Amitabh Bachchan, a legendary icon of Indian cinema, KBC was the first reality show on the face of Indian television that spawned the beginning of India's reality TV model. The second season, KBC2 carries double the prize money – worth a staggering Rs. 20,000,000. Indian Idol is a singing talent contest developed along the

lines of "American Idol" and "Pop Idol." The contest has taken the country by storm, generating over a million calls from aspirants in its very first season.

### CHALLENGES

On an average, Indians exchange 1 billion messages per month, with every mobile user sending approximately 40 SMSes.

When KBC hit television screens in 2001, Star Plus - the channel that it was aired on - had an audience of 22 million people. In 2005, when the second season of the show was launched, the channel's total viewership had surged to over 61 million viewers.



The telecommunications infrastructure of the country had also witnessed massive growth since then, with more than 50 million mobile phones active in 2005; a quarter of them belonging to Airtel. This meant that more people had access to mobile phones for participating in the show via SMS.

The first run of Indian Idol drew over 55 million viewers and 55 million votes. The second season of Indian Idol was expected to generate significantly greater SMS traffic.

Airtel had to be absolutely sure that it had the right infrastructure to handle this critical mass of participants. The speed of processing was also critical. Explains Rajeev Vatsal, "Time syncing between servers had to be seamless, without any delays."

When an open contest is aired on KBC at the end of each episode, millions of viewers send an SMS in a short span of just 3-4 minutes. Indian Idol generates a similar spiky load. Over 30 million SMSes were sent in the run-up to the final of the show itself, with viewers sending in three votes per mobile phone on an average. "Imagine the lost revenue if our servers had to fail for even a second during this critical window," adds Vatsal.

## SOLUTION

Airtel's solutions provider, Bharti Telesoft, designed a unique televoting application that uses Short Messages as the media for polling votes. The application was developed on open standards. Televoting effectively enables Airtel's mobile subscribers to participate in various SMS contests aired on both KBC & Indian Idol. The system handles tremendous peak loads of mobile-originated (MO) messages generated by subscribers and processes it according to a pre-configured format specified by the two TV programs. The application caters to subscriber traffic across millions of users in seven different Airtel Circles over a pre-defined short code (646).

"But in our simulations, Linux proved its detractors completely wrong. The pilot Enterprise Linux server could handle a peak load of 1000 TPS with superb ease. People soon began to realise that Linux is in fact ideally suited for high throughputs. Since our transactions needed to be recorded into a log file on-the-fly, Linux, with its high performance, was the perfect fit," he adds.

"When we first decided to evaluate Linux, apprehensions were raised immediately. People began to say that the system would choke and not be able to handle the load," explains Vatsal.

Security was also another critical factor that swung the decision in the favor of Enterprise Linux. "Microsoft Windows is prone to viruses that affect its filesystem easily, whereas Linux remains unaffected," he adds. In fact, Windows was never on the selection radar at all. "We didn't even evaluate it for our server requirements," adds Vatsal.

At Airtel, Enterprise Linux runs on low cost, dual Intel Xeon servers. The servers run both the Televoting application and a MySQL database at each of the seven different locations across the country. A central server, again powered by Red Hat Enterprise Linux, functions as a host. "The central server generates MIS reports and also acts as an FTP server for the other seven distributed machines," explains Uttam Kumar, Project Head, Airtel.



## BENEFITS

The other platform contenders for powering the televoting system were Sun Solaris and HP-UX.

“When the televoting project was initiated, we were not entirely clear on the returns that we could expect. We needed a low cost, high throughput platform,” explains Kumar.

Drawing cost comparisons, Kumar adds, “A Sun Solaris server typically costs three times as much as an Intel box running on Red Hat Enterprise Linux. Moreover, it is easier to find an RHCE as opposed to a Solaris admin today; and when you find them, they are generally more reasonable (than their Solaris counterparts). This makes Enterprise Linux a compelling low cost solution to embrace.”

Besides saving a significant amount on hardware, Airtel has managed to cut down on management expenses as well. In over 10 months of operation, the organisation has never experienced any downtime.

“The Enterprise Linux platform is simply excellent. Our robust televoting system is capable of handling in excess of 4000 messages per second,” claims Vatsal. “Currently the servers receive an average load of 300 messages per second at each of the seven locations, which makes us well set to handle peak loads this season,” he adds.

## FUTURE PLANS

The televoting platform setup by Airtel is now being extended to provide services to other TV shows as well. Zee Cinema Awards, a show run on the popular Zee Television Network, is next in line to be served by the televoting infrastructure based on Enterprise Linux.



## RED HAT SALES AND GENERAL INQUIRIES

**Toll free numbers:**

**Europe, Middle East and  
Africa (EMEA)**  
00800 7334 2835

**Turkey**  
00800 448 820 640

**Israel**  
1809 449 548

**UAE**  
80004449549

**E-Mail:**

europa@redhat.com

[www.europe.redhat.com](http://www.europe.redhat.com)

© 2007 Red Hat, Inc. All Rights Reserved. Red Hat, Red Hat Enterprise Linux, the Shadowman logo and JBoss are registered trademarks of Red Hat, Inc. in the U.S. and other countries. Linux is a registered trademark of Linus Torvalds. All other trademarks are the property of their respective owners.

