



AIS RINGS UP PROFIT ON RED HAT INFRASTRUCTURE

FAST FACTS

Industry:	Telecommunications
Geography:	Southeast Asia
Opportunity:	Thailand offers a unique opportunity for prepaid phone services. Unfortunately, traditional telecommunication protocols that allow for easy implementation and usage tracking of such services are both lacking and expensive.
Solution:	AIS developed its own Value-added Service Control Point (VSCP), providing the functionality needed to launch new mobile services to the postpaid market. The system was developed using Internet-based technologies, and runs on a redundant cluster of 200 Red Hat® Enterprise Linux® servers over three locations linked via X.500 connections. VSCP accounts for \$32.5 million dollars of revenue each year.
Benefits:	The move to Red Hat Enterprise Linux delivered reduced maintenance and purchase costs, greater functionality, simpler system management, and increased and faster performance.

BACKGROUND

Advanced Info Service Public Company Limited (AIS) is the leader in Thailand's burgeoning mobile communications market with 50 percent market share, 20 million subscribers, and 2005 revenues of over \$2.58 trillion. AIS began as a mobile phone provider, but has since led the way into wireless communications.

AIS now ranks first in the wireless communications business and remains the leading mobile phone operator and network system provider in Thailand. AIS prides itself as a pioneer in technology innovation—an essential competitive edge for maintaining its dominant market share and growth position.

OPPORTUNITY

The telecommunications industry is constantly bustling with the introduction of new services. Many tend to only be available in the postpaid market. "In advanced telecommunications

service markets like Europe, USA, Japan, and Korea, most of the leading-edge applications have been fed into contract or postpaid subscribers," said Arakin Rakchittapoke, Infrastructure Platform Development, ICTM, AIS. "Here it is different."

In Thailand, where the prepaid service market serves 95 percent of all mobile phone users, AIS desired a way to introduce services like General Packet Radio Service (GPRS) to its massive mobile user base. Additionally, the company searched for a way to remedy the difficult integration of next-generation technologies with the telecommunications industry's legacy systems. AIS aimed to ensure that all the services it provided could be linked to its back-end accounting system in real time.

SOLUTION

In the face of industry limitations in early 2000, AIS decided to define its own interfaces using open technology. "Telecommunications Standard Bodies are very weak in defining prepaid solutions, especially in the SS7 world," said Arakin. "Even defined standards like CAP3 for charging GPRS usage are very costly, running into the tens of millions of dollars to upgrade the whole system."



AIS chose to deploy solutions based on commodity hardware platforms—like Intel-based blade servers running Linux—to reduce total cost-of-ownership. The solution also used Internet-based technologies such as LDAP, HTTP, web services, and XML, ensuring that AIS is able to secure resources from a competitive market.

The development of Value-added Service Control Point (VSCP) started in November 2001 and finished in October 2002 with a very small budget. VSCP is the IT-based Service Control Point (SCP) providing service control functions, service rating functions, and service charging functions for AIS. It also covers the new technology services AIS offers its customers. “The solution was based on our own definition of application layer protocol,” said Arakin. “Once the solution had been implemented, AIS could provide new services with efficiency and effectiveness.”

For AIS it was also essential to ensure high availability and establish fault tolerance for the sites. To accomplish this, AIS chose proven technology—Red Hat Clustering and X.500 connections. “AIS is currently the biggest mobile phone operator in Thailand, so the availability preference for us is 99.999 percent uptime,” said Arakin, stressing the importance of a robust and resilient system. “For every minute of downtime, there is potential for 60,000 complaints. We can’t have that.” Since the full implementation of Red Hat solutions in June 2003, AIS has not had a single system outage.

BENEFITS

The most significant benefit of implementing Red Hat solutions is cost savings. Instead of incurring tens of millions of dollars with a telecommunications upgrade

system, AIS used information technology to introduce pre-paid GPRS to the market—investing just \$10,000 on six PCs.

With open source solutions, AIS was able to save millions of dollars in both software and hardware cost. Such solutions offered AIS the power to make its own choices. “It brings an openness to the AIS network, prevents vendor lock-in, and gives AIS more bargaining power and greater choice in a multi-vendor environment,” said Arakin. “Open technology also lets AIS find locally trained human resources more easily than those that are telecommunications-based.”

To date, business done on AIS’s Red Hat Enterprise Linux cluster accounts for about \$32.5 million per year in revenues. In fact, the system is involved in every single transaction with mobile data services. AIS has enjoyed 100 percent uptime since implementation, boasting full reliability.

In addition, AIS leveraged the success of the pre-paid GPRS deployment and integrated the VSCP system with new functionality including video, location-based services, PTT over cellular, IVR, WiFi, and more. The increased deployment footprint has seen the PC cluster growing from six to 200+ blade servers over three locations. Such flexibility has brought significant business benefits to AIS. “With our own solution of integration, AIS can deploy most of the new data services for prepaid users on time,” said Arakin. “We can also grant access to these services domestically and for international roaming users.”

The possibilities for AIS are endless with its new open source solution. The company seeks to expand its cost-efficient Red Hat Enterprise Linux cluster to cover telephony services. “Many new telecommunications technologies are adopted from the Internet such as SIGTRAN, SIP, Diameter, IMS, and so on,” said Arakin. “There is space within IT-based systems to host a ‘real’ telecommunications application—telephony.”

Significantly increased transaction capacity—from the current 1,000TPS to 16,000TPS—will be required, but a full upgrade of the system could potentially generate \$390 million in revenue. “That is 10 times the capacity of our existing solution,” said Arakin. “But with this potential change, we expect to have 10 times the savings doing that.”