

Channel 5's "Jailbreak" encourages breakouts, as Cisco Secure PIX Firewall defends against break-ins



VOTE OFF "SURVIVOR," RESIST "TEMPTATION ISLAND," AND BURY "THE MOLE." IN THE U.K., THE BIG REALITY TV HIT WAS A SHOW CALLED "JAILBREAK." THE SHOW AIRED ON CHANNEL 5 WHERE, FOR THREE WEEKS LAST SEPTEMBER, ORDINARY PEOPLE WERE PLACED IN AN ESPECIALLY BUILT JAIL AND ENTICED WITH LARGE SUMS OF MONEY-100,000 POUNDS, OR \$150,000-TO BE THE FIRST TO BREAK OUT. A KEY FACTOR IN THE SHOW'S SUCCESS WAS THE JAILBREAK WEB SITE.

The Jailbreak Web site broadcast streaming video of the "prisoners" 24 hours a day and also gave viewers a chance to play games and e-mail breakout advice to the contestants.

Although the Channel 5 producers of "Jailbreak" were confident that the show would be successful, they were totally surprised at the popularity of its Web site. It received about one million hits a day-10 million hits in the first week!

"We had expected about 750,000 hits a day and built the Web site and network connections to handle that amount," said Ken Davis, Channel 5 IT head. "But the infrastructure handled all the traffic without any problems."

Channel 5 taps GE Capital Information Technology Solutions for IT project management

The Jailbreak production schedule called for the construction of a "prison" in a farm field about 150 miles from London in three months time. The IT requirements of the project included the installation of 30 broadcast cameras, database servers, and Web servers, as well as connectivity to an ISP. "We wanted a company that was going to work with us to install and handle the entire package-someone with flawless project management capabilities," said Davis. "We looked at a number of organizations but chose GE Capital IT Solutions, part of GE Capital, because we knew they had large-project experience, having actually managed fast-track projects on a par with this."

GE Capital IT Solutions specializes in augmenting Internet and IT infrastructures with a wide range of solutions including planning, acquisition, implementation, management, and refreshment.

GE Capital IT Solutions chooses Cisco Secure PIX Firewalls

From the start, security was an issue with the Channel 5 Web site. "Our primary purpose was to generate a lot of publicity for the show throughout the U.K.," says Davis. "We ran a sizeable advertising schedule placing posters in tube (subway) stations and ads on television and in the press. Because the Web site was going to attract a lot of attention, we needed to be sure we had excellent security and that we weren't going to be attacked-hacked into or defaced. That's why we wanted quite a strong firewall-industrial strength-and why we chose Cisco's PIX system."

So while the TV show encouraged jail breakouts, the Web site had to protect against break-ins of all varieties.

Ash Kahn Ameri, a GE Capital IT Solutions' Principal Networking Consultant, was the technical lead on the Jailbreak Web site installation. Aside from being a Cisco Certified Network Professional (CCNP), a Cisco Certified Design Professional (CCDP), a Cisco Certified Network Professional Voice Specialist, and a Professional Security Expert, Ash is also working toward the Cisco Certified Internetworking Expert (CCIE) certification.

"As a result of Jailbreak's success, we would never do a reality show without a Web site, and we would never dream of putting up a Web site without a PIX to protect it."

Ken Davis
Channel 5 IT Head

Defending against hackers

Ash explained to the Channel 5 production team the various kinds of hacker attacks they must defend against-including denial of service and theft of Web site. He stated that, of all the alternatives, he preferred the PIX firewall because it works at layer three-the network layer-rather than at layer seven, the application layer.

“When you have a firewall that works on top of an operating system, it’s on another vendor’s box,” says Ash. “They have lots of security holes in them, because you’re adding layer upon layer of vulnerabilities. Whereas with PIX you have a dedicated box-it’s managed at the command line and a lot more secure. For the Channel 5 solution, we felt PIX was a better offering than the Check Point alternative they had considered.”

“I explained why, when it comes to security, the lower the layer, the fewer the security holes. That’s why an appliance approach is superior to an application approach. I also told them that because I was the technical lead, I would prefer supporting the Cisco PIX-and they agreed.”

Throughput: another Cisco strength

A key issue was the throughput of the Cisco Secure PIX Firewall-its ability to handle well over one million hits a day.

“We had a 100 megabits per second coming from the Internet into the hosting site,” says Ash. “The PIX we used had a total capacity of 360 megabits per second, so at no point were we going to exceed the throughput of the PIX-we knew the PIX could handle the traffic.”

Accounting for the PIX’s high performance is a patented Cisco technology called Cut-Through Proxy that enables the PIX to examine only the first packet in a stream of data packets. The PIX identifies and authenticates the packet based on that first packet, then identifies the first packet of the next stream. This efficiency gives the PIX firewall excellent performance.

“A firewall that works at an application level has to check every packet individually. The throughput advantages are obvious,” says Ash. “If you’re running applications like RealAudio, MPEGs and movies, you should use a PIX because an application funnel would not work.”

Security policy for safety’s sake

Before the equipment was installed on site, Ash formulated a security policy for the 35 vendors who wanted to access the Web site.

Ash states, “They wanted access to the Web site so they could redesign portions, remove old news, and add new features. This, of course, caused a security hole. The more doors you open, the more vulnerable the firewall. So, the first thing we

had to do was formulate a security policy that established exactly who would be allowed access. Each vendor was allowed one static IP address and all 35 vendors had to use SecureShell, a UNIX encryption algorithm.”

A successful premier performance!

On the show’s opening night, the Jailbreak Web site was relatively quiet until the show ended. It then suddenly received in excess of one million hits. The pattern repeated itself weekly-after the show, people would “tune in” over the Web

and actually extend the show by watching streaming video on their computer. Hits would also increase when station breaks advertised the show and the Web site. People also looked at the site on weekday mornings at work where they tended to have DSL connections. (In the U.K., most residential customers have dialup connections.)

According to Ash, the PIX managed the traffic flawlessly: “We’d see a tremendous numbers of hits all of a sudden and it was a credit to the PIX because it handled it admirably. It never failed once.”

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**Ash Kahn Ameri
GE Capital IT Solutions
Principal Networking Consultant**

And the winner is...

The first contestants to break out of jail were three women, working together.

Says Ken Davis, "They were quite clever: They used some of the men's ideas but managed to be the first mainly because they were the best at interpreting clues. The men made a number of mistakes and were caught. But the PIX was invincible-no security breaches there."

Channel 5 was so impressed with the PIX that, with the Jailbreak show now over, it is using the PIX to protect the Channel 5 corporate Web site and to support the Web site for its latest reality hit, "The Mole." The Web site has been so popular, that a recent survey of UK households found that the Channel 5 Web site is the most popular TV Web site in the UK, and also the top Web site in terms of minutes spent per page. Even with these impressive traffic statistics, the PIX is up to the job!

Ken Davis, again: "As a result of Jailbreak's success, we would never do a reality show without a Web site, and we would never dream of putting up a Web site without a PIX to protect it."

To see the Cisco Secure PIX in action at the Channel 5 web site, please visit: www.channel5.co.uk/ From there you can find the link to the Jailbreak site at www.jailbreaktv.com/

To learn more about GE Capital IT Solutions, please visit:

US: www.gecitsolutions.com/

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To learn more about the Cisco Secure PIX Firewalls and other Cisco Systems Security products, please visit: www.cisco.com/go/security/



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