Mike Giglio, systems programmer with Shelter Mutual Insurance Co., says migrating from Intel servers to a zEnterprise 114 saved his company from server sprawl.
Shelter Mutual Insurance Co., though, may have had the granddaddy of all reasons. “Our server sprawl was simply out of control, and we were having problems with air flow and rack space,” recalls Mike Giglio, systems programmer with Shelter. “A few years ago, we had to rebuild our entire data center, and it wasn’t cheap. We had to redesign our layout, add new racks, a new ceiling and new floors. We even added new heating and ventilation and power distribution.”

As is often the case when data centers are revamped, even more servers were added—eating into the new, valuable and expensive real estate. To counter this trend, Shelter decided it could move many of its applications to Integrated Facility for Linux® (IFL) processors running on its mainframe, thereby slowing the proliferation rate of the existing Intel® technology-based boxes, if not getting rid of them entirely. As an added bonus, the company’s applications are now running faster on its zEnterprise 114 (z114) platform than they had in the past.
PROOF OF CONCEPT
Based in Columbia, Mo., Shelter is a do-it-all insurance company with a presence in 14 states. It not only offers auto insurance to the tune of some 1.2 million policies, but also homeowners and life insurance, as well as coverage for boats, recreational vehicles and motorcycles.

Beyond that, it has two business divisions, Shelter Reinsurance Co. and Shelter Financial Bank. Shelter Reinsurance is an insurance company for insurance companies. For example, if another provider wants to hedge against a big payout in the event of a natural disaster, it can take out a policy with Shelter Reinsurance to insulate against any associated losses.

As Giglio explains, “Another insurance company located where we don’t have any policyholders, such as in California, will pay us premiums to insulate against unexpected events where it has to pay a large number of policyholders. So if, for example, a reinsured customer has to pay out $5 million, it may cover $3 million, and we’ll take up the other $2 million. That way, it won’t be totally wiped out.”

Shelter Financial Bank, despite its name, doesn’t offer traditional checking and savings accounts. Instead, it offers its policyholders a variety of other financial services, such as CDs, money-market accounts and mortgages. As with its insurance offerings, these are handled by the company’s agents, who help people find ways to manage their finances. “Some of our customers simply feel more comfortable dealing with someone they already have a relationship with and trust,” Giglio adds.

A host of applications support Shelter’s multitude of missions. Many of the applications have been developed with and delivered by IBM WebSphere solutions. Its online e-commerce solution, for example, is based on the WebSphere Application Server (WAS). Initially developed around 10 years ago, it’s now one of the company’s largest applications, and is used by all of its agents to serve customer accounts. Although still hosted on a cluster of Intel-based servers, it has ties to many of Shelter’s back-end mainframe services, including DB2 for z/OS.

Other applications run directly on the company’s z114 (which replaced a System z10 server in February). One, an indexing application that tracks both its policyholders and 1,400 or so agents, was ported to Linux on System z from an Intel box about a year and a half ago. “That was when we were starting to look at Linux on System z a little more seriously,” Giglio says. “And because it was a pretty straightforward application, we chose to go with that one. We wanted to make sure it was successful and that we could make it work. It was a proof of concept, of sorts.”
**THE z114 UMBRELLA**

Notably, this was after the company embarked on its data center overhaul, when it decided it couldn’t keep throwing one-off servers into the mix to host its many applications. In fact, it already had about 400 to 500 such boxes in operation, and it didn’t necessarily want to add to those numbers and face yet another expensive data center expansion. “By virtualizing, we thought we could kind of save us from our own growth,” Giglio says.

Since then, Shelter Insurance has been doing just that, slowly but surely. It started with its indexing application and moved on to new applications that didn’t run on Intel boxes, including two recently developed WebSphere services applications. One of those is a messaging system that verifies if people’s insurance is current.

“If you get pulled over somewhere, you hand your proof of insurance over to the police,” Giglio explains. “They can then, using a computer in their patrol car, send a message to our application, which is running on Linux, to confirm that your insurance is up to date and hasn’t lapsed or been canceled. The information would include your name and policy number, which is matched to what we have in DB2. A return message is then created and sent to the patrol car.”

Of course, Shelter is also eyeballing existing Linux environments currently running on Intel, hoping to put even more under the z114 SUSE Linux Enterprise Server for System z umbrella. The company is taking a very deliberate approach to this, starting with nonproduction loads, including, development, testing and staging. After that, it will move to some light production systems.

Giglio is hoping to retire about a half-dozen Intel servers in this first stage. “If you do that two or three times a year, you’re eventually talking about retiring a fairly significant amount of hardware,” he adds. “But right now, we’re just looking at the low-hanging fruit—the things that are easiest to move and are running on geriatric servers. As you can tell, we move at a very deliberate pace.”

**VALIDATING THE WORK**

Shelter wants to ensure it gets things done precisely and not necessarily just quickly in a big-bang approach. This is, in part, because of technological and cultural hurdles that must be overcome. More specifically, the company’s IT staff had to become knowledgeable about Linux and virtualization. Giglio had some experience in this, but when he came to Shelter around six years ago, the company itself didn’t. “It was all Windows* and z/OS,” he recalls.

But when Shelter chose to do a mainframe CPU upgrade, it seized the opportunity and also implemented an IFL. At the time, however, the intention was to test the waters to see if running Linux in a virtualized environment on the mainframe made sense.

One of Shelter’s first tests was with its e-commerce site. It made a copy of the “monolithic application,” as Giglio describes it, and began running an offline instance of it with the assistance of IBM and Sirius computing, which also supplies its hardware. This proved to be somewhat successful, but there were a few important caveats.

“If we could move our biggest, most demanding application to this environment without a whole lot of hassles, we thought, ‘Hey, this is viable.’ The largest challenge, though, wasn’t getting WebSphere to run in that environment, but getting everything hooked up with the HTTP server and DB2,” Giglio remarks. “So our thinking moving forward was to make sure we had a quality-of-service environment before we could move production applications to Linux on System z. And what I mean by that are performance, availability, capacity, backup and recovery, and security.”

Over the course of the next couple of years, reaching that quality of service became Giglio’s goal. To that end, he began assembling a team focusing on just that. He and other staff members began learning the ins and outs of Linux and virtualizing on the mainframe, both on their own and in classroom settings. He also brought storage and backup people on board to lend their expertise to the enterprise.

“I wanted to make sure the infrastructure was 100 percent in place before we started deploying any apps,” Giglio says. “Now, from having nothing in the way of z/VM* or Linux infrastructure, we’ve since built a hardware environment based on existing System z processors, existing DASD and the existing network infrastructure. When you think about it from a hardware point of view, the only things we had to add were the IFLs. We had everything else.”
And this included the support of IBM and Sirius, both of which offered to lend a hand when needed. An IBM zVM expert, for example, lives only an hour from Shelter’s data center and would come in to help where needed—and still comes in so IT staff can “pick his brain,” Giglio says. To review what Shelter had done, Sirius also sent an expert, who made only a few minor suggestions. “It was reassuring to have someone come in and validate our work,” Giglio remarks.

**AVOIDING WORST PRACTICES**

Although Giglio—who won an award for his paper, “The Penguins Have Landed: Getting Started with Linux on System z,” from the Computer Measurement Group—says the company has been “slow yet deliberate” toward wider adoption of Linux on the z114, Shelter has made great strides without putting its production systems at risk. This is all part of his larger philosophy, which de-emphasizes best practices in favor of avoiding worst practices.

“Best practices are really too expensive,” he says. “Instead, I prefer to avoid worst practices and say, ‘That’s not working out so well. Let’s stop doing it.’ In my book, that’s the best way to do things—which, come to think of it, is a best practice of sorts. But that’s for another day.”

Whatever the case, it’s clear that Shelter has taken the right road when it comes to deploying Linux applications on its z114. It could’ve hurriedly taken the big-bang route, but that might have ended in disaster. Now, with all of the proper skills and infrastructure in place, it can deliberately decide what it wants to move to the mainframe and when, without having to worry about another costly data center makeover.