'Homebrew' email servers: Genius as well as sneaky?

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In this Dec. 8, 2011, file photo, then-U.S. Secretary of State Hillary Rodham Clinton hands off her mobile phone after arriving to meet with Dutch Foreign Minister Uri Rosenthal at the Ministry of Foreign Affairs in The Hague, Netherlands. The personal email server used by Clinton during her time as secretary of state was probably about the size of your office desktop computer. Setting up your own email server is easier and cheaper than you might think. (AP Photo/J. Scott Applewhite, Pool/File)

No, it's not always a room filled with wires and glowing blue lights. It's probably not even the size of your furnace. The personal email server used by Hillary Rodham Clinton during her time as secretary of state was most likely about the size of your office desktop computer and could have been tucked quietly in a corner somewhere.

She's come a long way since 1997, when Clinton's staff bought the then-first lady a copy of the book "E-Mail for Dummies."

Setting up your own email server is something only the geekiest of tech geeks do because of the serious hassles involved, including spending every waking hour fending off spam. Like brewing your own beer, it's typically done just for fun—a way to challenge your smarts and fill the time. It also appeals to those who fear the government is sniffing around and could compel companies like Google or Yahoo to release customer data.

"It's not trivial to do it, but if you understand how all this works, you can certainly do it yourself," said Carole Fennelly, a New York City-area information security consultant who once operated her own mail server and has set them up for clients.

Setting up your own email server might only cost a few hundred dollars. A common and inexpensive solution might be to take an old computer running Windows; replace the guts of the machine with a free Linux operating system like Ubuntu; and install mail server software that lets you send and receive emails without the help of companies like Google or Yahoo.

Before you get any ideas, Fennelly and other tech experts say there are so many headaches involved with "homebrew" email servers that it's almost never worth it. The cable companies that provide most people their Internet connections don't like them and will often block them

because they tend to spew out lots of spam. So you might have to buy a business-class connection or pay a hosting service. Also, servers can crash and power outages occur, requiring backup generators and constant maintenance.

"It's a huge, huge headache," said Christopher Soghoian of the American Civil Liberties Union.

Cables are connected to a server capable of handling an email server at the Washington bureau of The Associated Press on Thursday, March 5, 2015. It's not always a room filled with wires and glowing lights. It's probably not even the size of your furnace. The personal email server used by Hillary Rodham Clinton during her time as secretary of state was likely about the size of your office desktop computer and could have been tucked quietly in a corner somewhere. (AP Photo/Jon Elswick)

As the ACLU's principal technologist and a vocal opponent of government surveillance, Soghoian is exactly the type you'd expect to operate his own email server. But he says he's not comfortable with his technical ability to keep sophisticated hackers out and wonders what risks Clinton was taking. You could probably work around the clock to fend off spam and teenage hackers, he says. But what about the Chinese military?

"What may be a fun activity for a 20-year-old tech whiz is probably a bad idea for the secretary of state," Soghoian said.

So what's the point? In one word, control.

Think of computer servers a bit like post offices. Every time you send an email, that message is stored on a server physically located at a facility owned by Yahoo or Google, for example. That server connects with other networks on the Internet and sends a copy to the intended recipient. At work, your employer probably runs its own email server, storing and sending copies from a computer system maintained by tech support staff.

Either way, every time you write something online, a third party—Yahoo or Google or your employer—has a copy.

This is what makes what Clinton did both sneaky and, some might say, genius: Instead of setting up an email account with the government—for example, hillary.clinton@state.gov—she operated a computer email server on an Internet connection that has been traced back to her family's hometown in New York. (The email, hdr22@clintonemail.com, appears to be a nod to her middle name, Diane.)

No Yahoo employee with ambitions to become the next Edward Snowden could ever quietly search its server and leak her emails to the

public. Google couldn't be compelled by congressional investigators to hand them over. If reporters were to ask the government for email records during Clinton's time as secretary of state, none would be found.

In other words, if you want a complete record of Clinton's electronic correspondence while she was helping to decide matters of war and peace, you'd have to knock on her door and ask politely. Or take her to court.

For Clinton, who is eyeing a presidential bid and is the wife of a former president, the hassle and expense of hiring consultants to manage the server might be worth it.

For the average Joe, however, not so much.

"When I saw that she had her own (server), I was like, 'Wow, that's a lot of hassle to go through,'" said Fennelly.