Amazon Web Services (AWS) started offering pay-as-you-go cloud-based computer services in 2006. These services allow companies to spin up as many servers as they choose without the cost of hardware purchase, maintenance or storage. This allows many types of companies and individuals the flexibility and freedom to access certain computing capabilities, storage, or databases on an as-necessary basis within minutes of signing up. AWS recently revamped their platform to a new Nitro System. This new system they created and customized for their next generation of Amazon Elastic Compute Cloud (EC2) consists of Nitro Cards, Nitro Security Chips, a Nitro Hypervisor, and Nitro Enclaves.

The Nitro Hypervisor that they developed is based on Linux Kernel-Based Virtual Machine (KVM), but they removed a lot of items that they no longer wanted as part of their hypervisor since they had pushed much of the functionality onto the Nitro Cards. Moving the network and storage somewhere else created a thin hypervisor that only runs when necessary to perform a function for a specific instance or request. This significantly improved their performance. Security on this hypervisor also improves since they know exactly what is running and when. With the creation of this new hypervisor, they no longer needed the Xen hypervisor that they had been utilizing up until this time but have allowed it to be used depending on the platform’s needs.

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