1. AI Assisted Deployment Workflow

- 1. MCP

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What is MCP?

Source: VirtualizationHowTo

Well MCP stands for the model context protocol which in easy language means basically that you can use an LLM (chatbot) to operate your self hosted infrastructure or even a whole data center for that matter. Before MCP, you would basically ask a chatbot how do I create app A on my self hosted infrastructure. Then your chat bot will most likely answer with how to do this step by step but it won't do it for you. MCP is this game changer that will do the tasks for you in the background. It will basically connect to the apps you allow it access to and then it will manage it on your behalf.

Does it come with any dangers ? Yeah of course any time you understand less of a process the more likely you are vulnerable for lower level errors that can have bad effects on higher abstraction levels. But well, we have done this over and over again. Even before MCP we also used programming languages, we use Arcane as docker compose manager etcetera. But, yes there are always risks involved, since chat bots can act unpredictably and do something you did not intend to do. But as well, with a good back up system you can always run back from a backup if something goes of.

On top of that MCP servers also give you the ability to have boundaries between what they can do and what they can’t do, which already reduces the risks heavily w.r.t deleting files, changing permissions, opening ports etcetera.

What excites me even more is that this extends far beyond Proxmox. As MCP server adoption continues to grow, I expect to see continued integrations with Docker, Kubernetes, Github, Terraform, backup solutions, networking appliances, monitoring systems, storage, and many others. We are only getting started in this space.

But, rather than replacing skilled humans, I think this is just going to change how we operate and we are instead going to need ones that understand all things MCP and AI in the operations in the enterprise and cloud native environments. We can gain those skills in our home labs.