



Automating Software Defined Data Centers

Ivan Pepelnjak (ip@ipSpace.net)

ipSpace.net AG

Who is Ivan Pepelnjak (@ioshints)

Past

- Kernel programmer, network OS and web developer
- Sysadmin, database admin, network engineer, CCIE
- Trainer, course developer, curriculum architect
- Team lead, CTO, business owner



Present

- Network architect, consultant, blogger, webinar and book author
- Teaching the art of Scalable Web Application Design

Focus

- Large-scale data centers, clouds and network virtualization
- Scalable application design
- Core IP routing/MPLS, IPv6, VPN



What Is Software-Defined Data Center?

“[SDDC] is where all infrastructure is virtualized and delivered as a service, and the control of this datacenter is entirely automated by software.”

The Software-Defined Datacenter Meets Vmworld

VMware.com

August 2012

“In an SDDC, intelligence for all infrastructure components—servers, network, storage—resides in software, not hardware.”

What’s the Big Deal about Software-Defined Data Centers?
VMware.com



Here be software

Cisco AGS at Computer History Museum
Source: Evilrouters.Net

*“In an SDDC, not only are all infrastructure components (servers, storage, network) virtualized, **but they are orchestrated through a powerful platform** that ensures the components work together.*

What's the Big Deal about Software-Defined Data Centers?
VMware.com

**What Problem Are We
Trying to Solve?**

The Challenges

- Increase flexibility while reducing costs
- Faster application deployments
- Compete with public cloud offerings

How Long Does It Take To Create...

How Long Does It take to Create

- Virtual machine
- VM disk
- Firewall or load balancing rule
- IP subnet
- Network segment (VLAN)

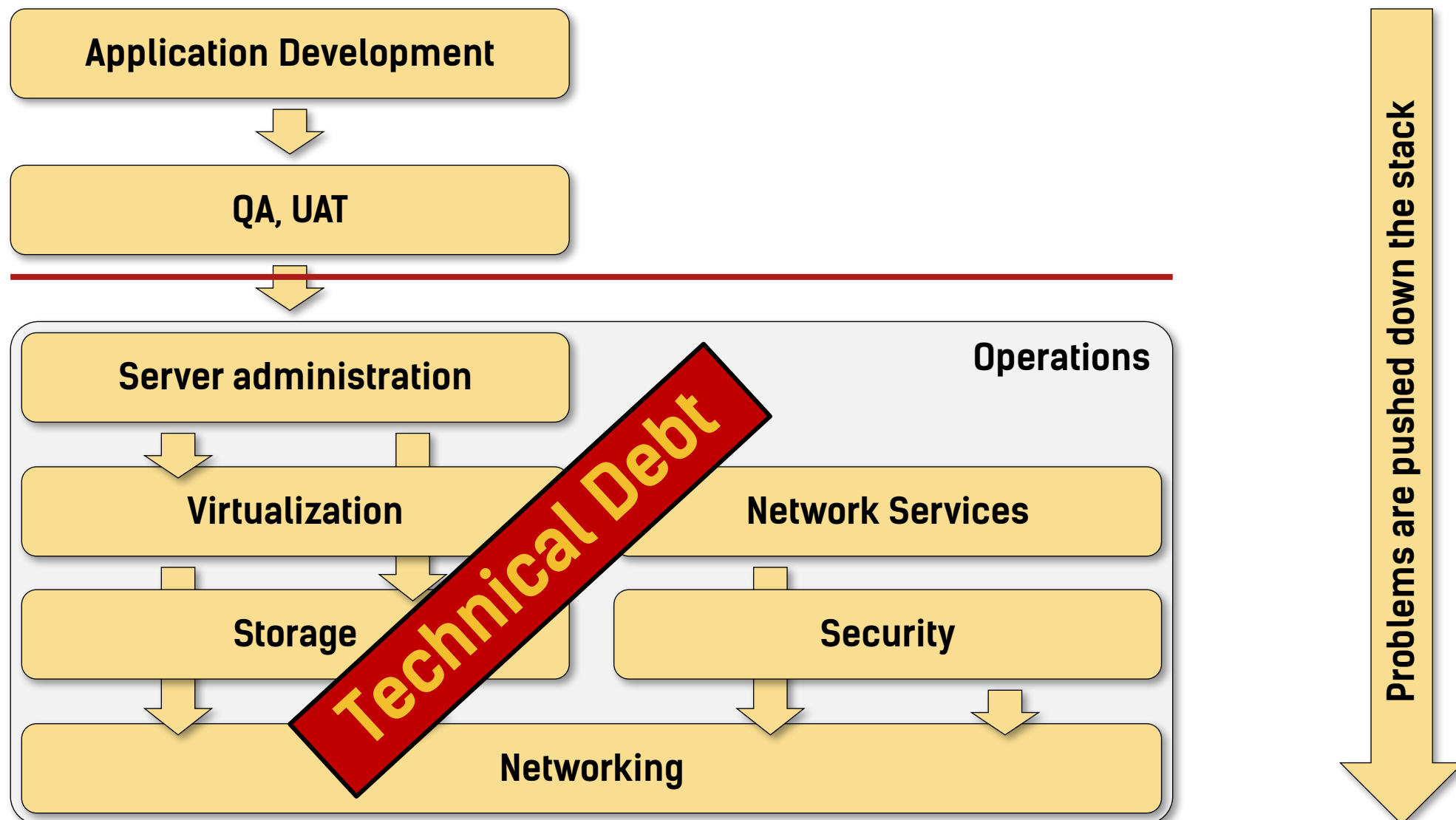
Think Again ... From Initial Request to Production

What Problem Are We Trying to Solve?

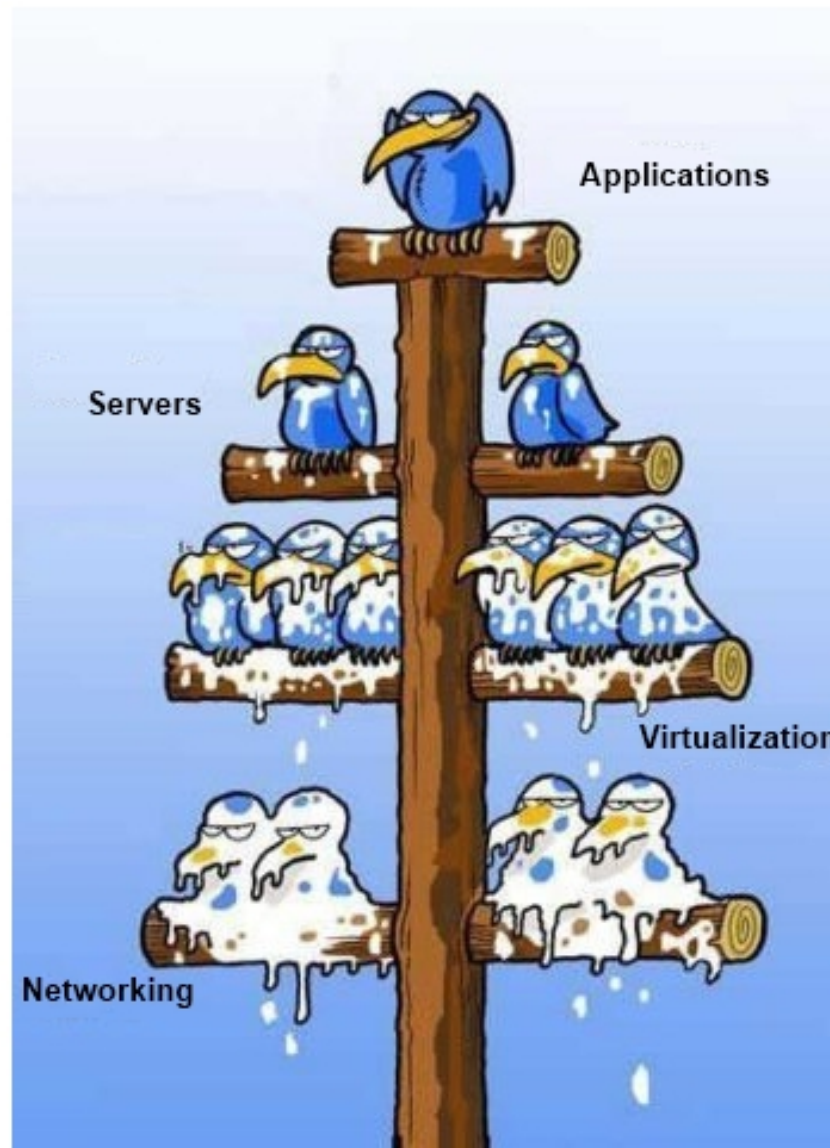
How Quickly Can You Deploy Apps?

Dev → Test → Prod

The Real Culprit: Application Deployment Process

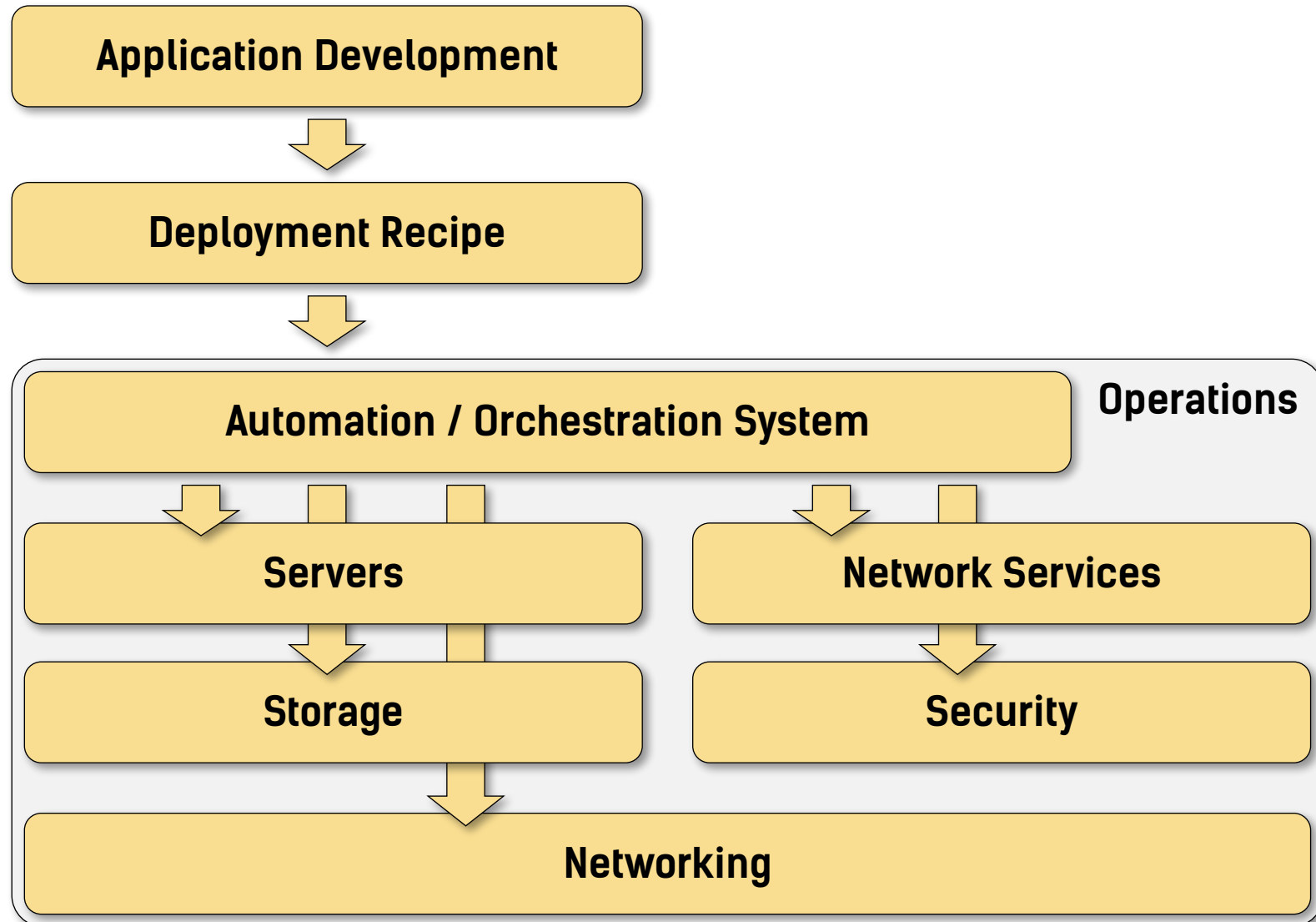


This is what makes networking so complex



**Maybe Something Is
Fundamentally
Broken**

The Right Way of Doing Things



Stay in Touch

Web: ipSpace.net
Blog: blog.ipSpace.net
Email: ip@ipSpace.net
Twitter: [@ioshints](https://twitter.com/ioshints)



SDN: ipSpace.net/SDN
Webinars: ipSpace.net/Webinars
Consulting: ipSpace.net/Consulting

A young child stands on a floor graphic of Europe. Three Raspberry Pi computers are placed on the map, with numerous colorful cables (red, yellow, green, blue) connected to them and snaking across the floor tiles. The child is wearing a white t-shirt with red sleeves and dark pants. The background is a grey tiled floor.

Questions?

Send them to ip@ipSpace.net or [@ioshints](https://twitter.com/ioshints)