we answer the call
GROUPWARE® TECHNOLOGY

IPv6 for Next Generation Data Centers

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The IPv6 Challenge

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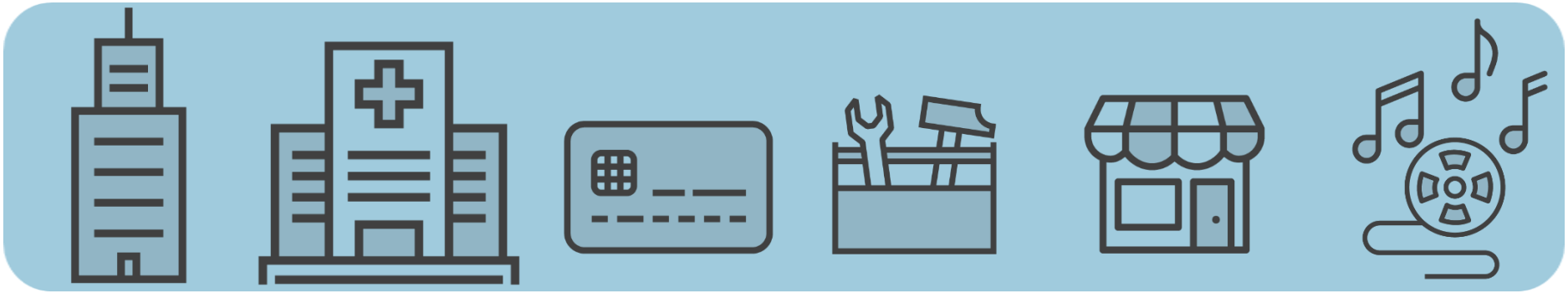
WHY SHOULD I CARE ABOUT IPv6 IN MY DATA CENTER?

Is there really a reason to do it?

Depends on what business you are in. As all good consultants say, it depends!



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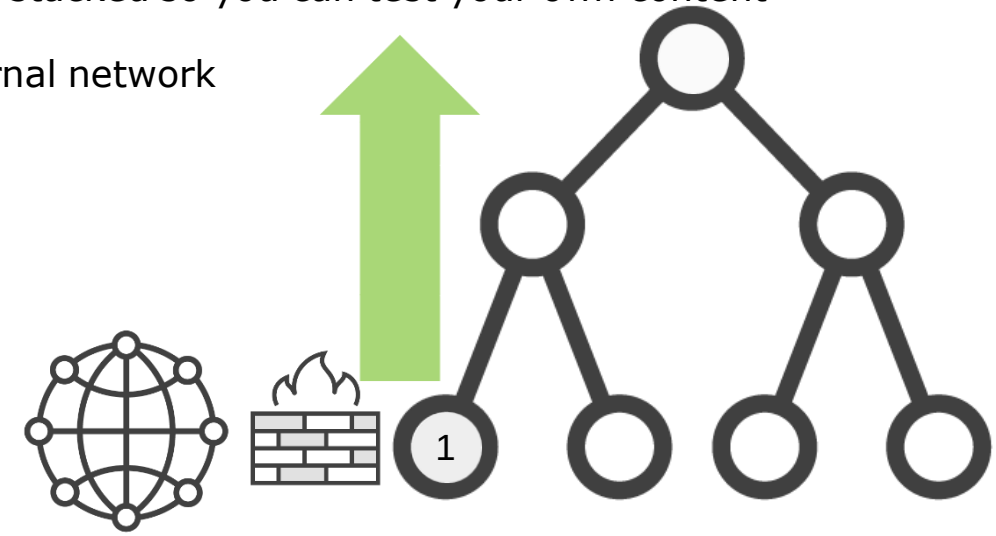
WHERE SHOULD I INTRODUCE IT FIRST?

Edge to Core or Core to Edge?

If you fit in the **Yes** category and need to deploy IPv6 soon you should:

1. Turn up your edge immediately (get your IPv6 allocation and BGP set up)
2. Test services via ADCs or simple forgiving services (like DNS)
3. Get your firewalls working
4. Get your monitoring (IDS/IPS) and logging working
5. Get your helpdesk and ops team trained
6. Get a portion of your network dual stacked so you can test your own content
7. Turn up your first set of content
8. Move to turn up more of your internal network



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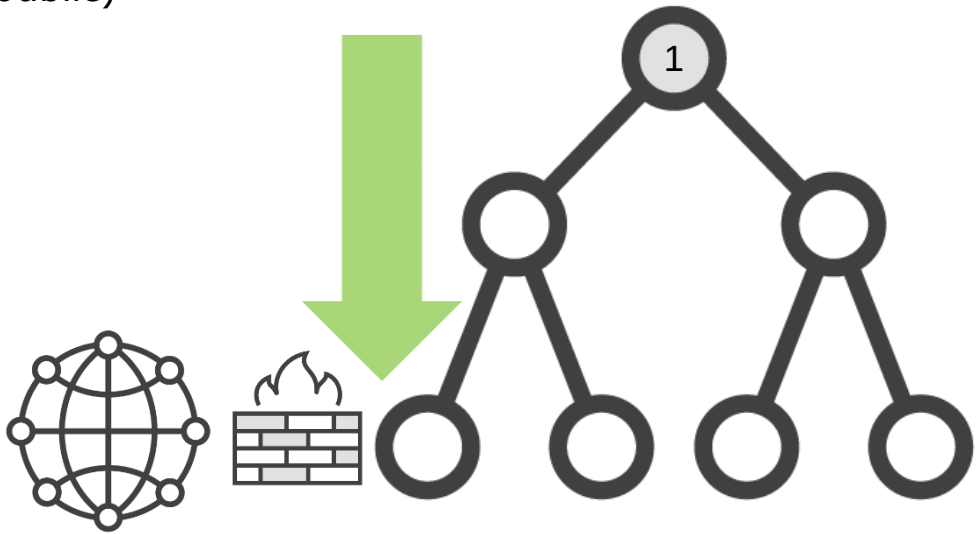
WHERE SHOULD I INTRODUCE IT FIRST?

Edge to Core or **Core to Edge**?

If you fit in the **Maybe** category you should:

1. Get your IPv6 allocation and BGP set up
2. Establish a core to edge adoption model
3. Evaluate all your equipment to make sure you can support IPv6
4. Transition routing and firewalls
5. Pick up from #4 from previous list
6. Turn up your edge (both client and public)



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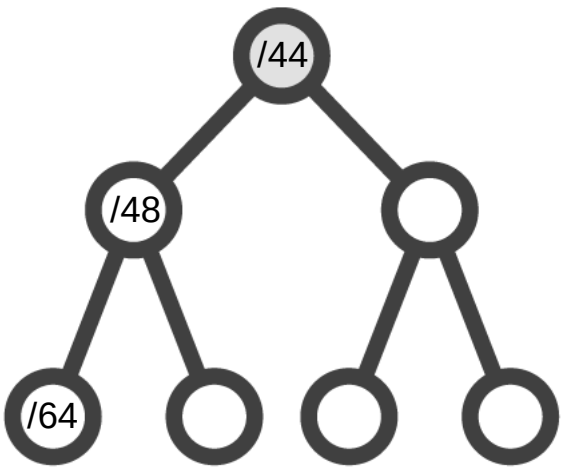
WHAT ARE THE RISKS?

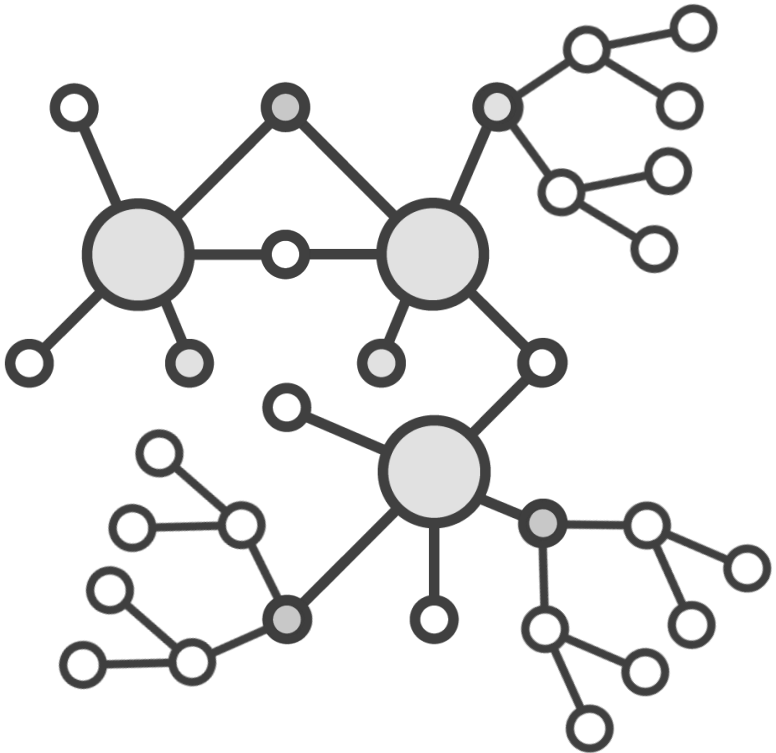
What will bite me when?

Lack of planning – it will take much longer to dual stack your network than you think

Lack of design work:

- Addressing plan
- Not using /64's as intended
- Limiting number of networks





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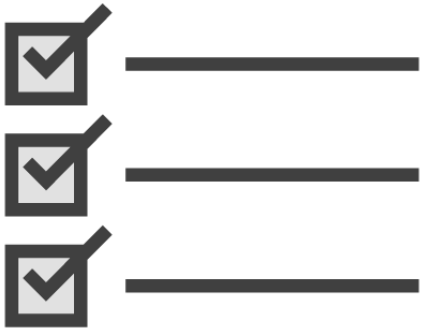
WHAT ARE THE RISKS?

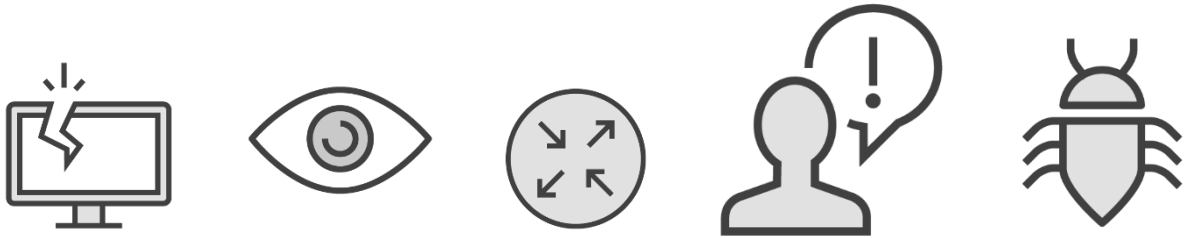
What will bite me when?

Not defining function parity verse feature parity – huge part of RFP and technical consideration for a product

Applications not working w/ IPv6

- Brokenness due to how the application was written
- Happy eyeballs problem
- NAT64/DNS64 problems
- Legacy protocol transition issues (ISATAP, 6to4, Teredo)
- General network end to end reachability issues





DUAL STACK OR IPv6-ONLY?

I'm feeling brave

Almost everyone started Dual-stack and everyone recommended that as the starting point. But why?

Because no one knew IPv6 and we needed to start people someplace!

We built into the host operating systems several methods to help with the transition, we thought they would help, they didn't.

It seemed like the right thing to do at the time as so many folks were scared of IPv6.

IPv6 suffered from the chicken and egg issue. No one would adopt it because no one else was on it.

Dual-stack is ALWAYS more expensive. It is technically more difficult, it can burden your equipment, it requires debugging twice as much stuff, your team needs to know more to do the same role.

DOES MY HOST MATTER?

Anything I need to worry about?

Today, all host operating systems fully support IPv6

The challenge for the last few years has been…
Security
Core bootstrapping services
Logging/Monitoring
Applications dependencies

Most of these issues have been resolved.

Finally, politics. Specifically RFC 6106 and the newer update RFC 8106 and how you provision for Windows/Linux/OSX/iOS verse Android for DHCPv6 Stateful verses Stateless verses SLAAC

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Q&A

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THANK YOU
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We Answer the Call