DisNOG 2

# How Not to Run a Maintenance Window

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Hello!

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## Maintenance Windows:

What are they:

- Designated time period during which changes are made to a network.
- Necessary Evil.
- Usually take place in non-peak hours.
- Can be as simple as a configuration change or massive re-working of network infrastructure.
- Often requires coordination between multiple departments.
- Usually planned works in advance.

# How to run a maintenance window:

It’s all about the preparation.

## How to run a maintenance window:

Keys to success:

- Have a standardized change process.
- Document your change in a MOP/SOP!
- Have regular change meetings.
- Be able to assess scope of impact and notify stakeholders and customers of potential outages.
- Communicate - Before/During/After!
- Peer-review changes.
- Orchestrate spares if necessary!

## How to run a maintenance window (continued):

Have a MOP/SOP/plan of action:

- Documented pre/post checks (validate network state).
- Have fallback procedures.
  - Include disaster recovery if necessary.
- Test your MOP/SOP/plan of action!
- Have your MOP/SOP peer-reviewed.
- Distribute your MOP/SOP to relevant parties - transparency helps.

## Murphy’s Law: "Anything that can go wrong will go wrong."

- Inevitable - Eventually something will go wrong.
- Always have disaster recovery options in impacting work.
  - Depends on scope of work.
- Communicate issues quickly and clearly.
- Document!
  - Log Console/SSH sessions.
  - Automation Logs etc.

# How **not** to run a maintenance window:

With examples:

**“Good morning, you have an outage in progress.”**

Routine configuration change on BNG mishandled left customers down for hours.

What went wrong:

- Pre/post checks not carried out.
- MOP/SOP was not validated (configuration errors/typos).
- Network engineer blindly pasted configuration.

## Murphy’s Law strikes: How to recover from a critical failure.

Routine line card swap on a router in critical role (L2 termination point in network).

What went wrong:

- Poor timing (near maintenance freezes / blizzard incoming).
- Someone let out the magic smoke (not me).
- Unable to locate spare chassis.
- RMA uplift delayed due to blizzard.
- No disaster recovery strategy in place.

## Murphy's law strikes (Continued):

What went right:

- Pre-staged alternative and capable router found.
- All hands on deck effort to convert configuration and stand up new device.
- Services restored after ~12 hours.
- Was not a RGE.
- (Made the news?)

## Murphy's Law Strikes: (Continued)

Takeaways:

- Be aware of sparing situation.
- Be cognizant of the timing of a  maintenance window (blizzard / end of year).
- Have a DR plan in place.
- Don't let unqualified personnel work on your equipment.
- Remain calm and work through difficulties.

- Short stories:

Not using proper tools:

- Using rubber mallets to install line cards.

Unfamiliar platform/MOP not peer-reviewed:

- no router isis <domain> vs. no ip router isis <domain>

**Thank you!**

# Any questions?

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