BGP Roles &
its applications

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Problem Statement

Flexibility is the best thing!

Leave no knobs unturned!

Someone let the cowboys and cowgirls in.
Consequences

Number of Prefixes in Route Leaks during March
Consequences

Flexibility + lack of knowledge = outage
Flexibility + typOs = outage
Flexibility + malicious activity = outage

Flexibility, that is under control, is the best thing!
Peering Relations/Roles

**Provider:** sends their own routes and (possibly) a subset of routes learned from their other customers, peers, and transit providers to their customer.

**Customer:** accepts 'transit routes' from its provider(s) and announces their own routes and the routes they have learned from the transitive closure of their customers to their provider(s).

**Peer:** announces their routes and the routes from their customer cone to other Peers.

**Internal:** announces all routes, accepts all routes.
BGP Roles

4 pairs of non-conflict roles:
1. Peer ---> Peer
2. Customer ---> Provider
3. Internal ---> Internal
4. Complex ---> Complex
Considerations

- Roles are native;
- Roles are not revealing any sensitive data to other parties;
- Roles have a number of applications.
Roles Applications

Roles + iOTC = leak prevention;
Roles + eOTC = detection of leaks that are made by mistake;
Roles + eOTC + BGPSec = detection of leaks that are made by purpose;
Roles – native definition of ISP borders.
Hard Coding it in OPEN is CRUCIAL!

Remember the Problem Statement

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