# Scalability Considerations for Network Resource Partition (NRP)

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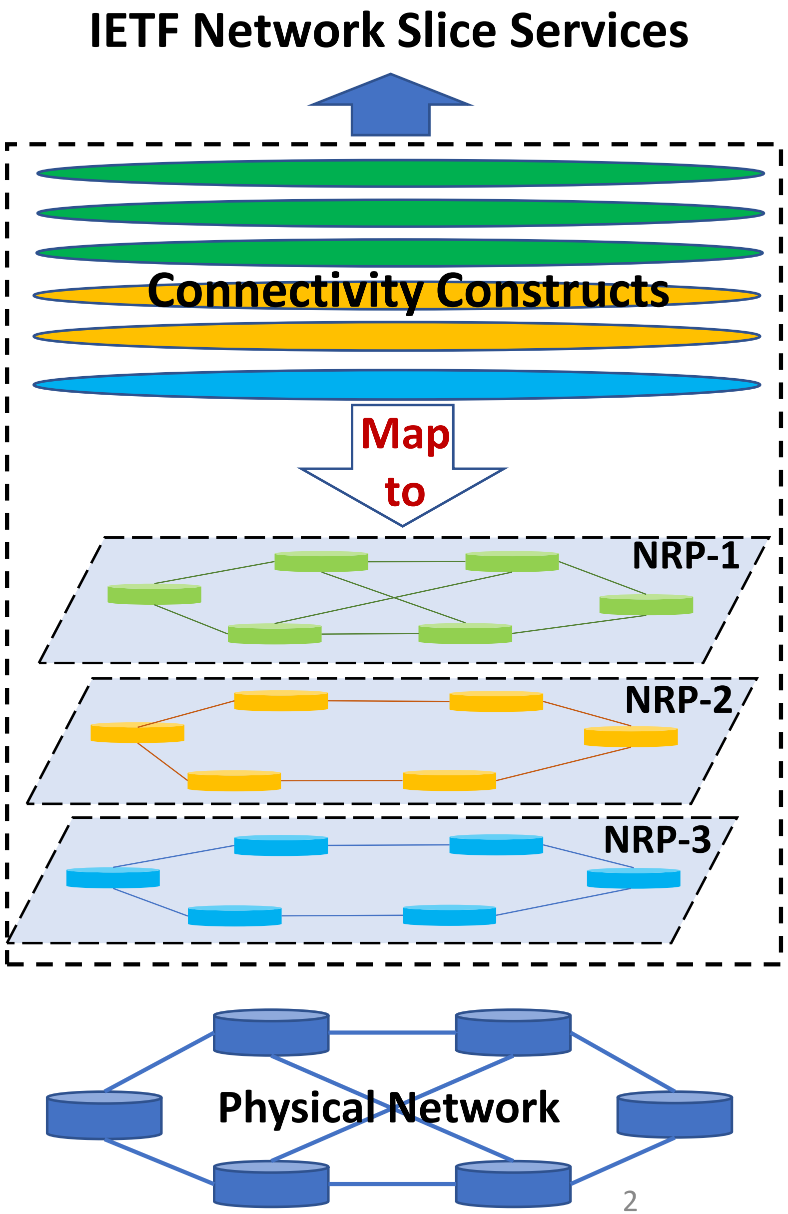
# Recap of Network Slice and NRP

- The concept and general framework of "IETF network slice " are described in RFC 9543
  - IETF network slice services can be realized by mapping network slice connectivity constructs to NRPs in the underlay network
- An NRP consists of a set of network resources, and is associated with a (filtered) topology
  - Can be used to support one or a group of network slice services
- The scalability of NRP is important for the widely deployment of IETF network slices
  - This document provides the design principles and considerations about NRP scalability in both the control plane and data plane
  - Some scalability optimization mechanisms are investigated and recommended



# Progress & Updates since IETF 121

- TEAS WG's conclusion on the terminology and general design of the dedicated data plane identifier for NRP
  - The terminology: NRP Selector ID
  - Length of the ID:
    - Can be different for different data plane types
    - The recommended minimum length is 8 bits
  - Strict Match indicator:
    - "Nice to have" as it provides more granular control to the forwarding behavior
    - The actual encoding could differ for different data plane types
- The data plane optimization section has been updated to reflect the above WG conclusions

# Progress & Updates since IETF 121 (Cont.)

- Resolution of the comments on the scalability design principles
  - Tarek Saad and Zafar expressed concerns that the change made in rev-04 deviates from the WG agreement to not rely on routing protocols to carry per NRP state information
  - In rev-07, changes are made to address the concerns about carrying per NRP state information in underlay routing protocols, such as IGP or BGP:

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By default the underlay routing (IGP or BGP) does not have to be
involved in any of these points. But when they have to, it is
important to isolate the information of network slices or NRPs from
the existing routing information, so that there is no impact on
scaling or stability of the underlay routing. Furthermore, the
overhead of SPF computation should not be impacted by the increasing
number of network slices and NRPs.¶
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  - The plan is to also elaborate on the design principles on the protocols for distributed routing and the protocols for communication northbound with the controller

# Next Steps

- Update and reach consensus on the scalability design principles
- Request WG Last Call

# Thank You