Depreciation of site local address

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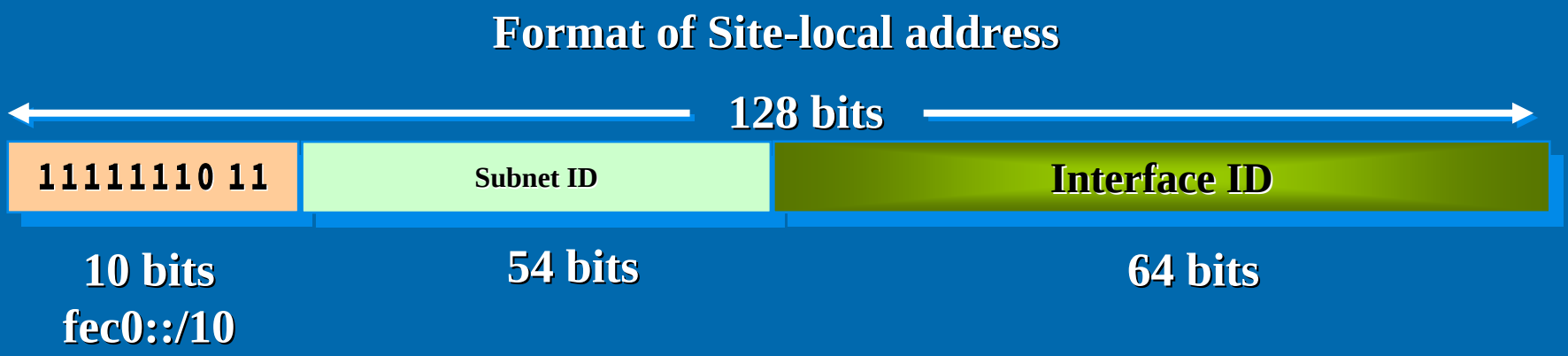
Contents

- What is site-local address?
- Why was site-local address depreciated ?
- Substitute for site-local address

Site-Local Address

- One of IPv6 local-use unicast address
  - Defined in RFC 3513 “IPv6 Addressing Architecture”
  - designed to be used for addressing inside of a site without the need for a global prefix.
  - Routers must not forward any packets with site-local source or destination addresses outside of the site.

Format of site-local address



- A subnet ID may be up to 54-bits long, it is expected that globally-connected sites will use the same subnet IDs for site-local and global prefixes.

16 bit subnet ID

Site-local address: What was the problem?

Site-local address has so many problems

- Ambiguity:
  - What is a site? Where is the site border ?
- Address leaking problem：
  - IP layer, DNS, Upper Layer
- Site-border router issues：
  - Routing table, forwarding table
  - lack of routing protocol functionality to handle it
- Mobile IP issue： etc.

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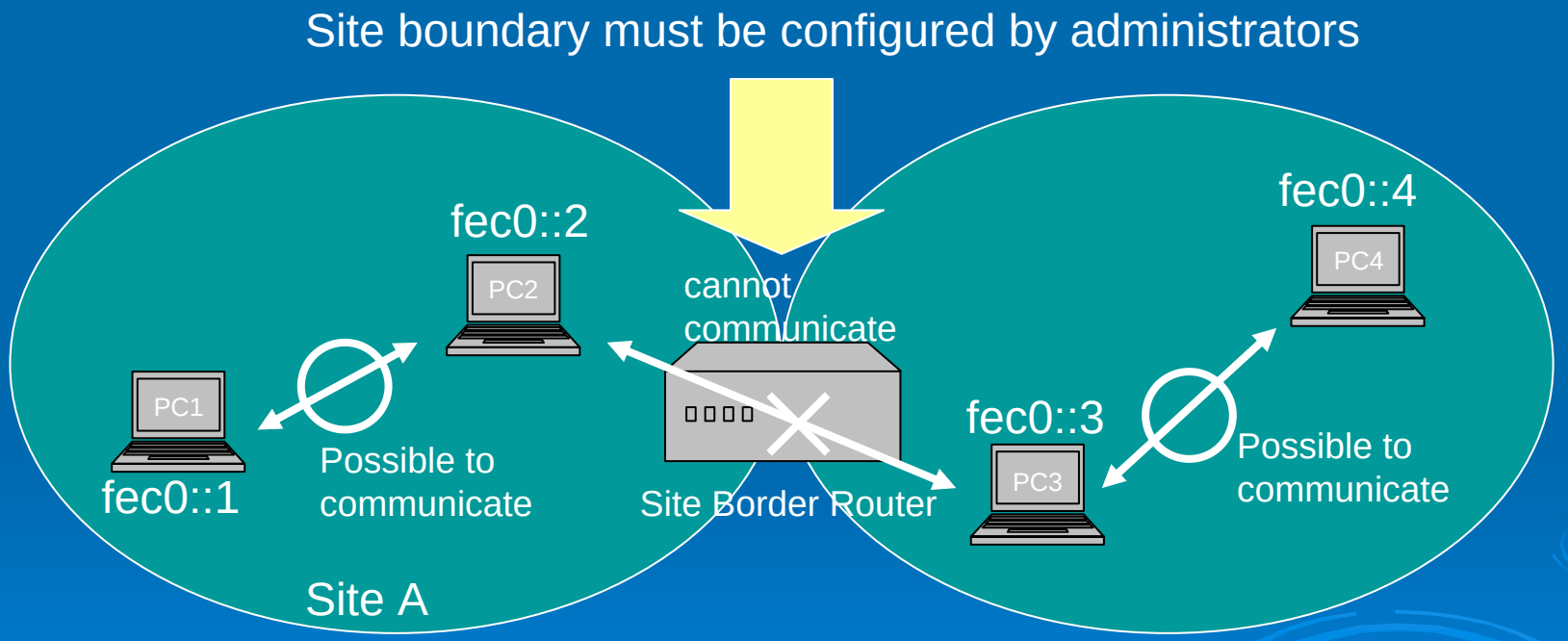
Site-local address problem: Address Ambiguity



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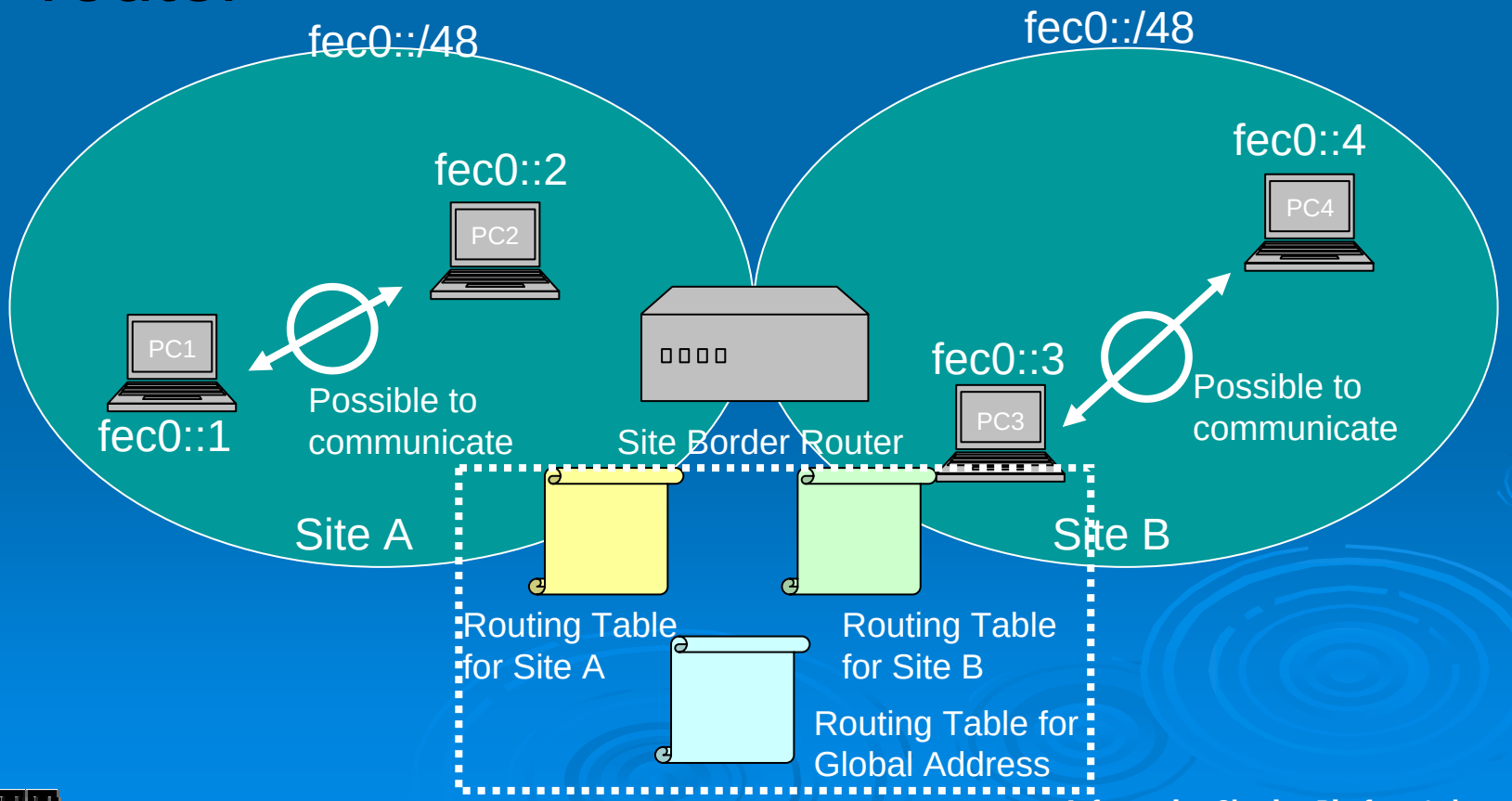
Site-local address problem: Site border router issues

- Complex implementation of Site border router



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Substitution for site-local address

- IPv6 Local address requirements:
  At 57th IETF, requirements for local address was discussed

  Requirements
  - Easy to Acquire
  - Stable
  - Multiple Link Support
  - Well-known Prefix
  - Global Uniqueness
  - Provider Independence
  - Applicable in Managed/Unmanaged Environments
  - Compatible with Site Naming System
  - Compatible with VPN
  - Multiple Addressing

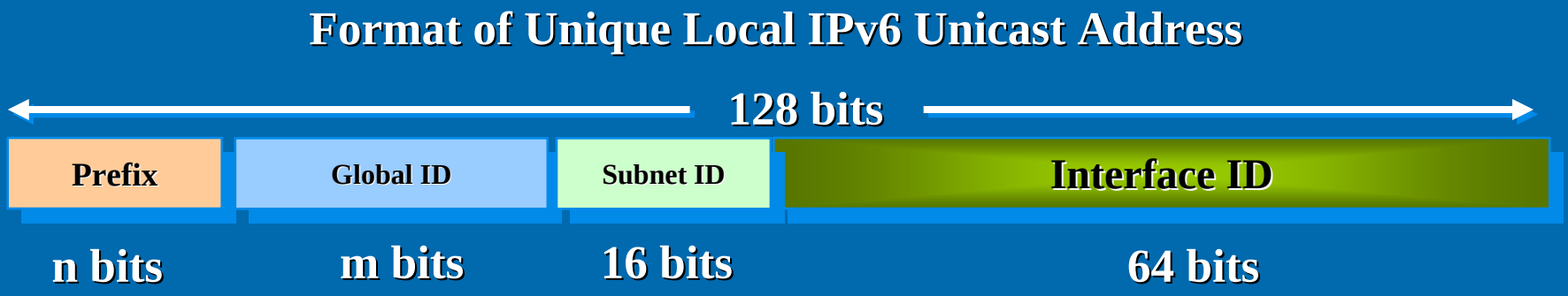
described in draft-hain-templin-ipv6-limitedrange-00.txt

Proposed local address

- Unique Local IPv6 Unicast Address
  - Globally unique address
    - local and central allocation
  - Use for local communications (inside of a site)
  - not expected to be routable on the global Internet

  - Draft-hinden-ipv6-global-local-addr-02.txt
    - This draft will be published as a WG draft
  - Meets previous requirements

Unique Local IPv6 Unicast Address



- /7 prefix and 41 bits Global ID are proposed (FC00::/7)
- Two type of Global ID
  - FC00::/8 Centrally assigned
  - FD00::/8 Locally assigned

  Each has 40 bit space to allocate

Info: IPv6 Documentation address

- 2001:0DB8::/32 can be used for documentation purpose
  - examples of IP addresses in use, in technical books, articles, and training material
  - Possible to use at any time without any application
  - http://www.apnic.net/services/ipv6_guide.html
  - This address space is also proposed at IETF
    - draft-huston-ipv6-documentation-prefix-00.txt

Conclusion

- IPv6 site-local address was depreciated
- Standardization of new local address is now in progress
  - Unique Local IPv6 Unicast Address