Path Validation Tiers

Path Validation Module Name	NameConstraints	Policy Mapping	anyPolicy	Indirect CRLs	Reasons	Delta-CRLs	DSA
Bridge-enabled PVM with Advanced CRLs [, *f*, and *g*]	✔	✔	✔	✔	✔	*f*	*g*
Bridge-enabled PVM [with *d*, *e*, *f*, and *g*]	✔	✔	✔	*d*	*e*	*f*	*g*
Enterprise PVM with Advanced CRLs[, *a*, *b*, *c*, *f*, and *g*]	*a*	*b*	*c*	✔	✔	*f*	*g*
Enterprise PVM [with *a*, *b*, *c*, *d*, *e*, *f*, and *g*]	*a*	*b*	*c*	*d*	*e*	*f*	*g*

✔: required package for this naming scheme

Optional packages:

a: Name Constraints   *d*: Indirect CRLs   *g*: DSA

b: Policy Mapping   *e*: Reasons

c: anyPolicy   *f*: Delta-CRLs

Path Discovery – Location Tiers

- Level 1:
  - Directory based path discovery – locate certificates and CRLs based on DNs in **issuer** and **subject** fields and **cRLDistributionPoints** extension.

  or

  - URI based path discovery – locate certificates and CRLs based on LDAP and HTTP URIs in **authorityInfoAccess**, **subjectInfoAccess**, and **cRLDistributionPoints** extensions.
- Level 2: Both Directory based and URI based path discovery

Path Discovery – Architecture Tiers

- Rudimentary
  - Only need to construct certification paths in a hierarchical PKI, but hierarchy is part of a mesh (the PKI architecture for Basic tests)
  - No constraints in paths to be constructed
  - Self-issued certificates
  - Certificates and CRLs signed with different keys
- Basic
  - Mesh architecture with only one path from any CA to any other CA
  - Name constraints and policy mappings

Path Discovery – Architecture Tiers

- ## Intermediate
  - Multiple paths between CAs. Constraints may result in one path being valid and another being invalid.

- ## Advanced
  - TBD. Some features of Advanced architecture may include
    - Missing and mismatched key identifiers
    - More complicated key rollover tests

Combined Tiers

- Tier 1:
  - Enterprise PVM
  - Path Discovery (Level 1 Locater, Rudimentary Architecture)
- Tier 2:
  - Enterprise PVM with Name Constraints and Policy Mappings
  - Path Discovery (Level 1 Locater, Basic Architecture)
- Tier 3:
  - Bridge-enabled PVM
  - Path Discovery (Level 2 Locater, Intermediate Architecture)
- Tier 4:
  - Bridge-enabled PVM
  - Path Discovery (Level 2 Locater, Advanced Architecture)