# Problem Space

- Interest in relation of Diffserv, RSVP, and Intserv
  - Different aspects described in several documents
    - draft-ietf-diffserv-rsvp-01.txt
    - draft-bernet-diffedge-01.txt
    - RSVP aggregation drafts
- Actually several distinct problems
  - DS cloud <u>as part of</u> end-to-end signaled QoS path
  - Use of RSVP <u>within</u> a DS-like aggregated cloud (to manage resources and QoS within the cloud)
  - Coexistance of Intserv and Diffserv within a cloud

A Slide from ISSLL...

DS cloud within an end-to-end signaled QoS path

Reservation Level

IS802   IS-DS   IS802   ISSLOW   ISATM   IS802

Policy Level
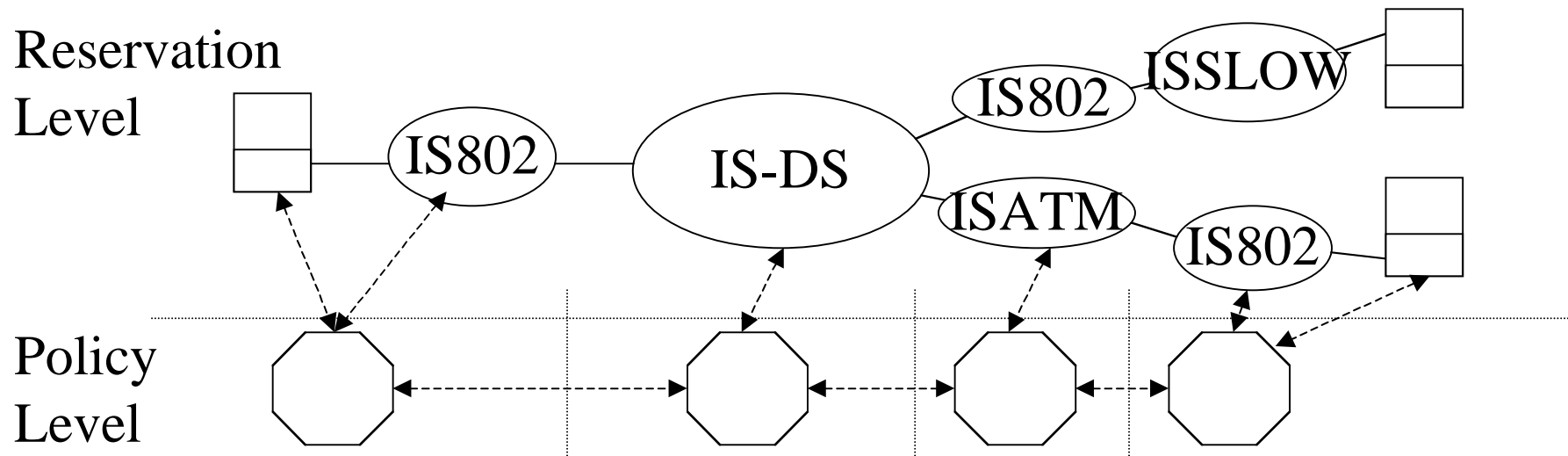
Example Issues

- Big Picture - Framework
- Mapping Intserv services to Diffserv "network element"
  – PHB behavior
  – Edge device behavior
  – Can use existing PHB/Edge behaviors, or need new?

- Useful additional behavior from DS/aggregated cloud
  – Efficiency vs. complexity tradeoffs for multicast, heterogeneity, etc.
- RSVP-DS SPI

Inside the Cloud
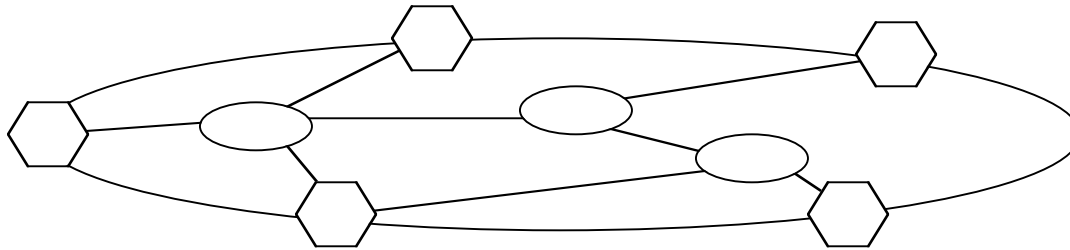
- Cloud resource provisioned statically
  (still need yes-no answer for E2E RSVP)

- End-to-end RSVP used for hop-by-hop (path) admission
  control (only - schedule DS aggregates)

- Recursive (edge-to-edge) RSVP used to manage cloud
  resources (for E2E RSVP and other uses)

- Some other protocol used to dynamically manage cloud
  resources (e.g., central resource manager)

Swamp

- Diffserv - basic aggregate QoS tools
  - PHB definition. Edge devices. Packet formats. Etc.
- ISSLL - use of aggregate clouds in E2E intserv paths
  - Service mapping. Cloud behavior requirements, desires. Admission control behavior & approaches.
- RSVP - RSVP Protocol development
  - Extensions for aggregate resource management - RSVP passthrough. Dynamic state minimization. Hop-by-hop admission control hooks. Etc.
- (???) - Non-RSVP dynamic allocation mechanisms

One list of RSVP items

- Short-term / Simple
  - Passthrough mechanisms
  - DCLASS object
    - (open technical issue about # of CP's)
  - ???

- Longer term
  - Dynamic state instantiation
    (state at heterogeneous points only)
  - Separate admission control hooks.
  - ???