

# Diffserv Control Plane Elements (DCPEL) Strawman

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## Goals:

It's been some time since the Diffserv forwarding path elements were standardized. At that time, the approach was to get the mechanisms deployed in routers so that approaches to service creation and control plane could be attempted. Before closing, the Diffserv WG defined the concept of Per-Domain Behaviors (PDBs) in RFC 3086, but left the approach to controlling PDBs open.

Now Diffserv forwarding elements are available in most routers and are in use to create services in some networks. A variety of approaches are being used for control and management of Diffserv but there appears to be some commonality. A possible path for IETF work is to enumerate and classify the common elements and to work toward some best common practices. Additionally, it may be useful to present specifications for a range of diffserv control plane elements using common interfaces.

The major issues to deploying Diffserv-based services are primarily operational. The deployment must be cost-effective, be secured against vulnerabilities and not become a vehicle for denial of service attacks. Standardization should result in existing toolsets being either expanded to cover more needed functionality or to interact with other tools. A standardization effort should cover how to secure the architecture to mitigate vulnerabilities. Standards for a control plane QoS agent for routers may be useful. A desired outcome of IETF efforts is to make multiple products available to network operators, obviating the time and personnel expense of individual solutions. The end goal is to enable more services, both for network customers and for control of the network, without taxing personnel.

The starting point for a BoF is to look at what's out there, determine if there is indeed some uniformity of approach useful as a starting point, and determine what's missing .

The initial focus would be the intradomain control plane moving to interdomain or AS under same provider and finally to interprovider or interoperator.

## Proposed itinerary

1. Present the goal of a possible WG through presentation of a strawman enumeration of common elements of all Diffserv CPs. This may include examples, commercial and research, of diffserv control planes or elements thereof.
2. Discussion of whether these (some) elements need standardization or better if options presented in informationals or not at all. Do the strawman

common elements hold up, if this is useful, which might require standardization - are these the right elements? require standardization? useful to have set of standards? Best proprietary?

3. Is categorization of the capabilities of diffserv forwarding path mechanisms also needed?
4. Is there other IETF work that applies?
5. Close with checking for consensus on WG goals, different goals, no WG?

### **Strawman elements**

- Network state / resource map - include path control approaches or path awareness (databases), query language
- “server” / allocator / QoS service
- Control and configuration of edge (CP to edge devices)
- Provisioning approaches / set up
- signaling/messaging protocol(s) - host/user/originator to CP and interdomain CP communication
- performance monitoring
- policy repository - DB, query language, etc
- authentication of requesters - credentials, certificates, etc
- a QoS agent for routers - setting FP elements in response to CP messages

### **Example Products and Projects Useful for Diffserv Control**

- Operax
- Allot
- Grid approach to BB, authentication
- Intelliden
- IPsum, PacketDesign
- Telcordia BB
- PacketCable
- Cariden

### **Example Service Products Using Diffserv Control**