

Chapter 23

Multicast Source Discovery Protocol (MSDP)

23.1 MSDP Overview

MSDP is intended to join administratively separate PIM-SM regions by distributing information about multicast sources within each region. MSDP speakers peer over TCP connections and announce or forward information about sources and the groups to which they are multicasting. When a rendezvous point in one PIM-SM domain learns (via MSDP) of a multicast source in another PIM-SM domain, it then attempts to join toward the multicast tree rooted at the source.

MSDP is designed to work very closely with PIM-SM. In order for a PIM-SM component to learn of sources from MSDP, and in order for MSDP to propagate information about sources for the PIM-SM domain in which it resides, a PIM-SM component must be explicitly associated with MSDP.

23.2 MSDP Syntax

```
msdp ( on | off ) {  
    [ traceoptions trace_options ; ]  
    [ peer local_host remote_host mesh id peeras asnum ; ]  
    [ connect-retry-period sec ; ]  
    [ keepalive-period sec ; ]  
    [ peer-holdtime sec ; ]  
    [ sa-cache-timeout sec ; ]  
    [ sa-holddown sec ; ]  
    [ sa-filter [ import | export ] source_ip masklen length group_ip  
      masklen length ; ]  
    [ pim-filter source_ip masklen length group_ip masklen length ; ]  
    [ static-rpf-peer peer_ip rp_addr_ip ; ]  
    [ default-rpf-peer peer_ip ; ]  
    [ msdp-draft-6-compatible ; ]  
};
```

More detailed descriptions of these commands can be found on page 505 of the *Command Reference Guide*.

23.3 Sample MSDP Configurations

23.3.1 MSDP and PIM-SM

Example 1

The following configuration specifies the local end, 192.0.2.1, and the remote end, 192.0.2.2, of an MSDP peering session. The statement "**assoc-msdp**" within the PIM clause associates the PIM-SM component with the MSDP component.

```
msdp on {  
    peer 192.0.2.1 192.0.2.2;  
};  
pim on {  
    sparse "sm0" {  
        assoc-msdp;  
        static-rp 224.0.0.0 masklen 4 192.0.2.1;  
        interface fxp0 {  
            boundary;  
        };  
        interface fxp1;  
    };  
};
```

Example 2

In the following configuration, peers of the MSDP peering session, 192.0.2.1 and 192.0.2.2, belong to mesh group 1. If the router 192.0.2.1 receives an SA-Advertisement message from 192.0.2.2, then it must forward the message to all other peers, 192.0.2.3 and 192.0.2.4. If the router receives an SA-Advertisement message from 192.0.2.3 or 192.0.2.4, then it must forward the message to 192.0.2.2.

```
msdp on {  
    peer 192.0.2.1 192.0.2.2 mesh 1;  
    peer 192.0.2.1 192.0.2.3;  
    peer 192.0.2.1 192.0.2.4;  
};  
pim on {  
    sparse "sm0" {  
        assoc-msdp;  
        static-rp 224.0.0.0 masklen 4 192.0.2.1;  
        interface fxp0 {  
            boundary;  
        };  
    };  
};
```

```

        interface fxp1 fxp2;
    };
};

```

Example 3

In the following configuration, two peering sessions are configured. An export filter is configured such that if any (S, G) pairs received in SA messages match the filter (192.0.2.0/24, 226.1.0.0/16), then the (S, G) pairs will not be forwarded to other peers.

```

msdp on {
    peer 192.0.2.1 192.0.2.2;
    peer 192.0.2.1 192.0.2.3;
    sa-filter export 192.0.2.0 masklen 24 226.1.0.0 masklen 16;
};

pim on {
    sparse "sm0" {
        assoc-msdp;
        static-rp 224.0.0.0 masklen 4 192.0.2.1;
        interface fxp0 {
            boundary;
        };
        interface fxp1;
    };
};

```

23.3.2 MSDP Only

Example 1

In the following configuration, 192.0.2.1 is configured to peer with both 192.0.2.2 and 192.0.2.3. The PIM-SM is configured `off`; the MSDP component is not associated with the PIM-SM component.

```

msdp on {
    peer 192.0.2.1 192.0.2.2;
    peer 192.0.2.1 192.0.2.3;
};

pim off ;

```

23.4 Defaults

```

msdp on {
    keepalive-period 75;
    peer-holdtime 90;
}

```

```
sa-cache-timeout 210;  
sa-holddown 30;  
connect-retry-period 30;  
};
```