

Kea DHCP Configuration Documentation

Overview

This configuration file is set up to provide DHCP services on a **10.10.1.0/24** network, specifically for an internal ISP user services network. It includes specific IP reservations, DNS settings, and comprehensive logging configurations to track DHCP activity at a detailed level.

Configuration Details

```
{
  "Dhcp4": {
    "interfaces-config": {
      "interfaces": [ "ens18" ]
    },
    "match-client-id": false,
    "subnet4": [
      {
        "subnet": "10.10.1.0/24",
        "pools": [],
        "option-data": [
          {
            "name": "domain-name-servers",
            "data": "10.10.1.10"
          },
          {
            "name": "domain-name",
            "data": "isp1.net"
          }
        ]
      },
      {
        "name": "domain-name",
        "data": "isp1.net"
      }
    ],
    "reservations": [
```

```
{
  "hw-address": "BC:24:11:07:88:16",
  "ip-address": "10.10.1.100"
}
]
}
],
"loggers": [
{
  "name": "kea-dhcp4",
  "severity": "DEBUG",
  "output_options": [
    {
      "output": "/var/log/kea/dhcp4.log",
      "maxver": 10
    }
  ]
},
{
  "name": "kea-dhcp4.dhcp4srv",
  "severity": "DEBUG",
  "output_options": [
    {
      "output": "/var/log/kea/dhcp4-dhcp4srv.log",
      "maxver": 10
    }
  ]
},
{
  "name": "kea-dhcp4.leases",
  "severity": "DEBUG",
  "output_options": [
    {
      "output": "/var/log/kea/dhcp4-leases.log",
      "maxver": 10
    }
  ]
}
]
```

```
}  
}
```

Explanation of Each Section

1. "interfaces-config":

- **Purpose:** Defines the network interfaces Kea should listen on for DHCP requests.
- **Setting:** "interfaces": ["ens18"] binds Kea to ens18, the network interface for the 10.10.1.0/24 subnet.

2. "match-client-id": false:

- **Purpose:** Instructs Kea to ignore the DHCP Client ID and rely on the hardware (MAC) address for client identification. This can be helpful if clients do not consistently provide a Client ID or if MAC-based reservations are used.

3. "subnet4":

- **Purpose:** Defines the subnet settings for the 10.10.1.0/24 network.
- **Details:**
 - "subnet": "10.10.1.0/24" specifies the address range.
 - "pools": [] indicates no dynamic IP pool is configured, meaning only reservations will be assigned.
 - "option-data" includes DHCP options:
 - "domain-name-servers": "10.10.1.10" specifies the DNS server.
 - "domain-name": "isp1.net" sets the DNS search domain for the network.
 - "reservations" contains static IP reservations:
 - **Example Reservation:** A device with MAC BC:24:11:07:88:16 receives the reserved IP address 10.10.1.100.

4. "loggers":

- **Purpose:** Enables detailed logging at the **DEBUG** level, splitting logs across different categories.
- **Details:**
 - "kea-dhcp4": General DHCP activity log file at /var/log/kea/dhcp4.log.
 - "kea-dhcp4.dhcp4srv": DHCP server-specific events logged at /var/log/kea/dhcp4-dhcp4srv.log.
 - "kea-dhcp4.leases": Lease assignment and release events logged at /var/log/kea/dhcp4-leases.log.
- **Log Rotation:** Each log file has maxver: 10, allowing up to 10 rotated log files.

Usage Notes

- **Reservations:** This configuration only serves devices with reservations due to the empty pool configuration. Ensure all required devices have reservations.
- **Logging:** The **DEBUG** level will produce detailed logs useful for troubleshooting and monitoring DHCP activity.

This setup should provide reliable, reservation-based IP assignment with comprehensive logging for monitoring DHCP activity on the **10.10.1.0/24** network. Let me know if there are additional features or details you'd like to incorporate!

Revision #1

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