

# How to Clear a Single ARP Entry in a Router Using SNMP

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## Introduction

### Prerequisites

- Requirements

- Components Used

- Conventions

### Clearing a Single ARP Entry

- Example

### Related Information

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## Introduction

This document describes how to clear a single Address Resolution Protocol (ARP) entry in a router using Simple Network Management Protocol (SNMP).

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

The information in this document is based on all devices which support RFC1213MIB running Cisco IOS® software.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

### Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

## Clearing a Single ARP Entry

There is no Cisco IOS software command to clear a single ARP table entry. The Cisco IOS software **clear arp-cache** command clears the entire table.

You can use the SNMP with the MIB object **ipNetToMediaType** (.1.3.6.1.2.1.4.22.1.4) within the table **ipNetToMediaTable** (.1.3.6.1.2.1.4.22) from the RFC1213 MIB.

```
.1.3.6.1.2.1.4.22
ipNetToMediaTable OBJECT-TYPE
    -- FROM RFC1213-MIB
    DESCRIPTION      "The IP Address Translation table used for mapping from IP addresses
```

```
::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) ip(4) 22 }
```

```
.1.3.6.1.2.1.4.22.1.4
```

```
ipNetToMediaType OBJECT-TYPE
```

```
-- FROM RFC1213-MIB
```

```
SYNTAX Integer { other(1), invalid(2), dynamic(3), static(4) }
```

```
MAX-ACCESS read-create
```

```
STATUS Current
```

```
DESCRIPTION "The type of mapping.
```

```
Setting this object to the value invalid(2) has the effect of invalidating
the corresponding entry in the ipNetToMediaTable. That is, it effectively
disassociates the interface identified with said entry from the mapping
identified with said entry. It is an implementation-specific matter whether
whether the agent removes an invalidated entry from the table. Access
management stations must be prepared to receive tabular information
that corresponds to entries not currently in use. Proper interpretation
of these entries requires examination of the relevant ipNetToMediaType object.
```

```
::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) ip(4) ipNetToMediaTable(22) ipNetToMediaEntry(23) }
```

When you run `ansnmpset` on the MIB Object, **ipNetToMediaType (.1.3.6.1.2.1.4.22.1.4)**, to `invalid=2`, you can delete a single ARP entry.

## Example

**Note:** Make sure to configure the SNMP Read-Only (RO)/Read-Write (RW) Community Strings on the router.

Here is the `snmpwalk` output of the MIB Object **ipNetToMediaType** on the router:

```
snmpwalk 172.16.99.1 public .1.3.6.1.2.1.4.22.1.4
```

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.1 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.2 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.2.172.16.98.36 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.2.172.16.98.37 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.1 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.101 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.254 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.4.172.16.98.41 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.4.172.16.98.45 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.7.172.16.96.1 = other(1)
```

```
--<snip>--
```

When you execute an `snmpset` to one ARP entry, for example:

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.2 = dynamic(3)
```

and set its value to `2=invalid`, according to the MIB definition:

```
snmpset 172.16.99.1 private ipNetToMediaType.1.172.16.98.2 i 2
```

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.2 = invalid(2)
```

If you execute another `snmpwalk` of the MIB Object **ipNetToMediaType** on the router, you see this output:

```
snmpwalk 172.16.99.1 public .1.3.6.1.2.1.4.22.1.4
```

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.1 = other(1)
```

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.2.172.16.98.36 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.2.172.16.98.37 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.1 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.101 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.3.172.16.97.254 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.4.172.16.98.41 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.4.172.16.98.45 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.7.172.16.96.1 = other(1)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.7.172.16.96.31 = dynamic(3)
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.7.172.16.96.40 = dynamic(3)

--<snip>--
```

The targeted output is no longer in the output.

```
ip.ipNetToMediaTable.ipNetToMediaEntry.ipNetToMediaType.1.172.16.98.2 = dynamic(3)
```

Here's an explanation of the variables used above:

- 172.16.99.1 = IP address of the router used in this example.
- private = RW SNMP Community string of the router
- public = RO SNMP Community string of the router
- .1.3.6.1.2.1.4.22.1.4= Object ID (OID) for the MIB Object **ipNetToMediaType**
- i = Integer as defined SYNTAX in the MIB
- 2 (invalid)= Value of the MIB object

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## Related Information

- **Technical Support & Documentation – Cisco Systems**

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