

Understanding How Firewall Filters Are Evaluated

A firewall filter consists of one or more terms, and the order of the terms within a firewall filter is important. Before you configure firewall filters, you should understand how EX-series switches evaluate the terms within a firewall filter and how packets are evaluated against the terms.

When a firewall filter consists of a single term, the filter is evaluated as follows:

- If the packet matches all the conditions, the action in the **then** statement is taken.
- If the packet matches all the conditions, and no action is specified in the **then** statement, the default action **accept** is taken.

When a firewall filter consists of more than one term, the firewall filter is evaluated sequentially:

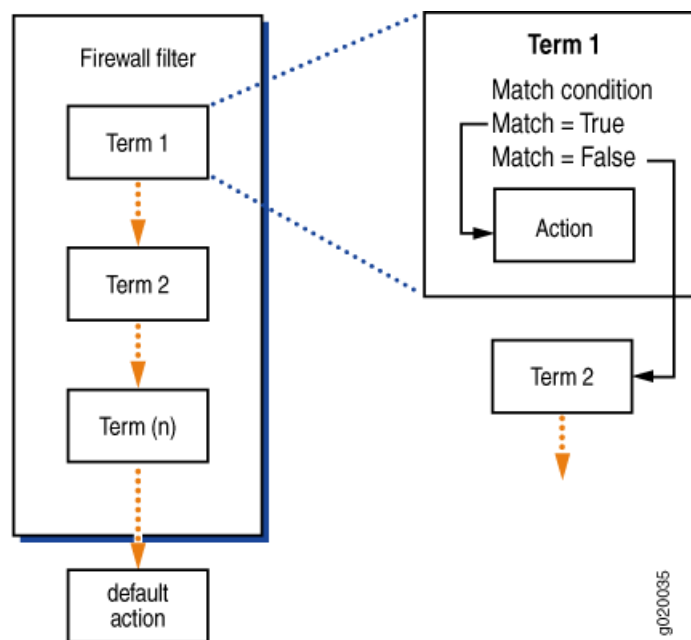
1. The packet is evaluated against the conditions in the **from** statement in the first term.
2. If the packet matches all the conditions in the term, the action in the **then** statement is taken and the evaluation ends. Subsequent terms in the filter are not evaluated.
3. If the packet does not match all the conditions in the term, the packet is evaluated against the conditions in the **from** statement in the second term.

This process continues until either the packet matches the conditions in the **from** statement in one of the subsequent terms or there are no more terms in the filter.

4. If a packet passes through all the terms in the filter without a match, the packet is discarded.

Figure 1 shows how an EX-series switch evaluates the terms within a firewall filter.

Figure 1: Evaluation of Terms within a Firewall Filter



If a term does not contain a **from** statement, the packet is considered to match and the action in the **then** statement of the term is taken.

If a term does not contain a **then** statement, or if an action has not been configured in the **then** statement, and the packet matches the conditions in the **from** statement of the term, the packet is accepted.

Every firewall filter contains an implicit **deny** statement at the end of the filter, which is equivalent to the following explicit filter term:

```
term implicit-rule {
  then discard;
}
```

Consequently, if a packet passes through all the terms in a filter without matching any conditions, the packet is discarded. If you configure a firewall filter that has no terms, all packets that pass through the filter are discarded.



NOTE: Firewall filtering is supported on packets that are at least 48 bytes long.

- Related Topics**
- Firewall Filters for EX-series Switches Overview
 - Understanding Firewall Filter Match Conditions
 - Understanding the Use of Policers in Firewall Filters
 - Example: Configuring Firewall Filters for Port, VLAN, and Router Traffic on EX-series Switches