

# ECS Regular Expression


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# Feature Summary and Revision History

## Summary Data

***Table 1: Summary Data***

| | |
|---|---|
| Applicable Product(s) or Functional Area | 5G-UPF |
| Applicable Platform(s) | VPC-SI<br>SMI |
| Feature Default Setting | Disabled - Configuration Required |
| Related Changes in This Release: | Not Applicable |
| Related Documentation | Not Applicable |

## Revision History

***Table 2: Revision History***

| Revision Details | Release |
|---|---|
| First introduced. | 2022.01.2 |

# Feature Description

The ECS Regular Expression feature supports the implementation of regex engine in the User Plane Function (UPF). Furthermore, this feature allows you to configure the regex rule through RCM.

The UPF supports the following protocols as part of regex engine rebuild and rule matching.

- HTTP
  - URL
  - URI
  - HOST
- WWW
  - URL
  - URI
- RTSP
  - URL
  - URI

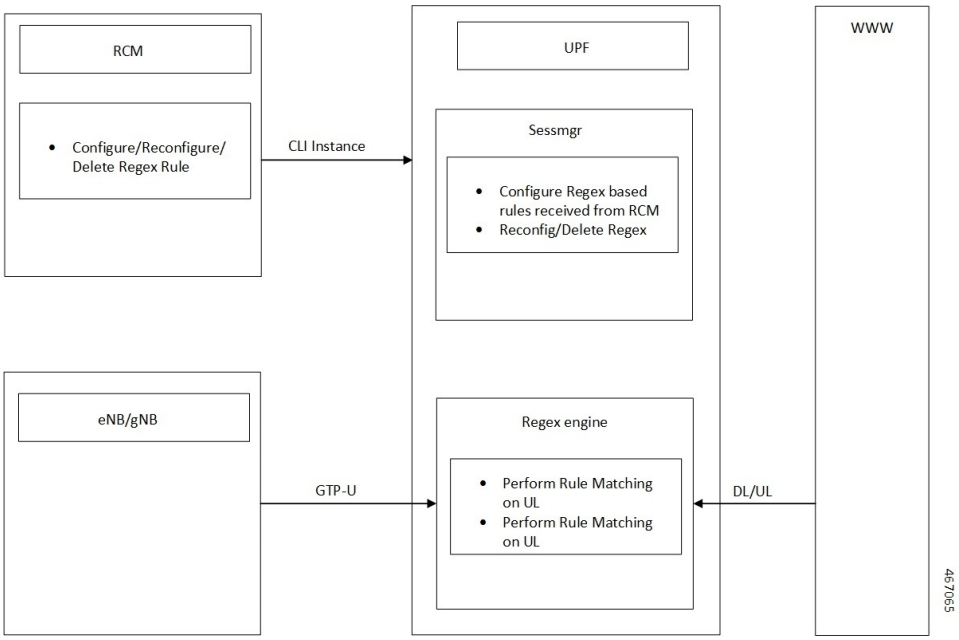
# How It Works

The following table lists the special characters that you can use in regex rule expressions.

| Convention | Description |
|---|---|
| * | Zero or more characters. |
| + | Zero or more repeated instances of the token preceding the +. |
| ? | Zero or one character. |
| \character | Escaped character. |
| \? | Match on a question mark (\<ctrl-v>?) |
| \+ | Match on a plus sign |
| * | Match on an asterisk |
| \a | Alert (ASCII 7) |
| \b | Backspace (ASCII 8) |
| \f | Form-feed (ASCII 12) |
| \n | New line (ASCII 10) |
| \r | Carriage return (ASCII 13) |

| Convention | Description |
|---|---|
| \t | Tab (ASCII 9) |
| \v | Vertical tab (ASCII 11) |
| \0 | Null (ASCII 0) |
| \\ | Back slash |
| Bracketed range [0-9] | Matching any single character from the range. |
| A leading ^ in a range | No match in the range. All other characters represent themselves. |
| .\x## | Any ASCII character as specified in two-digit hex notation. For example, \x5A yields a ‘Z’. |

The following diagram illustrates the regex rule configuration through RCM:




# Configuring Regex Rule

Configure the regex rule through RCM using UPF CLI instance or directly on the UPF through CLI.

```
configure
  require rcm-configmgr
  end
```

# Sample Configuration

Following is a sample configuration for configuring the Regex Rule.

```
configure
   active-charging service <service_name>
      ruledef <ruledef_name>
         http url regex <regex_url>
         rtsp uri regex <regex_uri>
         www url regex <regex_url>
         end
```

# Monitoring and Troubleshooting

This section provides information on CLI commands that are available for monitoring and troubleshooting the feature.

## Show Commands and Outputs

This section provides information about show CLI commands that are available in support of ECS Regex feature in UPF.

| Show Commands | Description |
|---|---|
| **show user-plane-service regex status** | Use this command to display the engine status for the SessMgr instance. |
| **show user-plane-service regex statistics memory** | Use this command to display the memory statistics for the SessMgr instance. |
| **show user-plane-service regex statistics memory summary** | Use this command to display the combined memory summary for the SessMgr. |
| **show user-plane-service regex statistics ruledef** | Use this command to display the regex ruledef statistics for the SessMgr. |
| **show user-plane-service regex statistics ruledef summary** | Use this command to display the combined regex ruledef statistics summary for the SessMgr. |