ECS Regular Expression Support

- Feature Summary and Revision History, on page 1
- Feature Description, on page 1
- How It Works, on page 2
- Configuring Regex Rule, on page 3
- Monitoring and Troubleshooting, on page 4

Feature Summary and Revision History

Note Revision history details are not provided for features introduced before release 21.24.

Revision Details	Release
First introduced	Pre 21.24

Feature Description

This feature provides the Enhanced Charging Support (ECS) for regular expression (regex) rule matching. The intent of the feature is to implement the regex engine in User Plane to enable RCM and PFD-based regex configuration/matching. The User Plane supports the following protocols as a part of regex engine rebuild and rule matching.

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

- RTSP
  - URL
  - URI

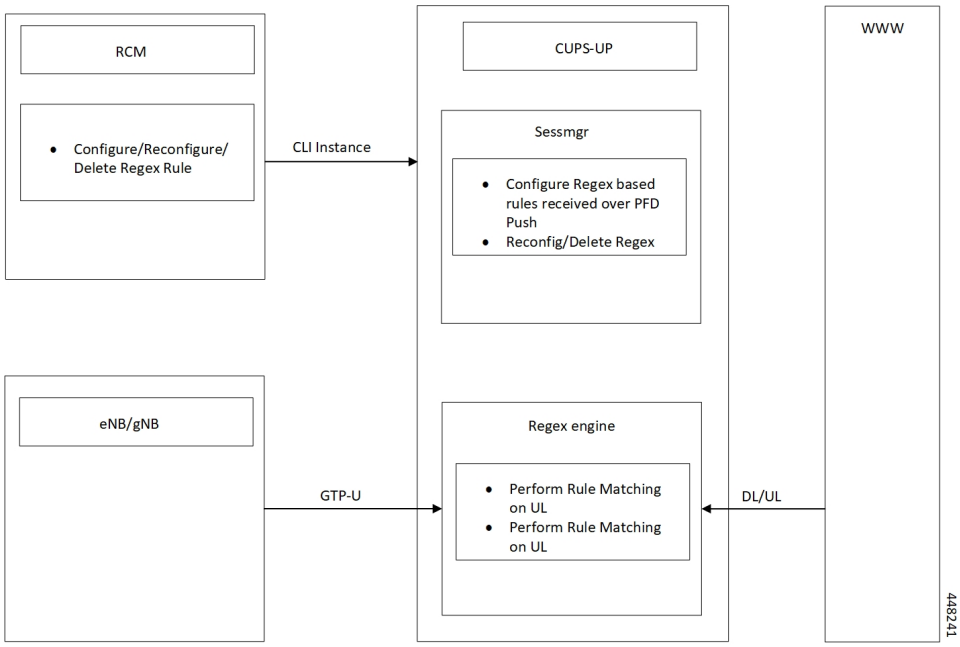
How It Works

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

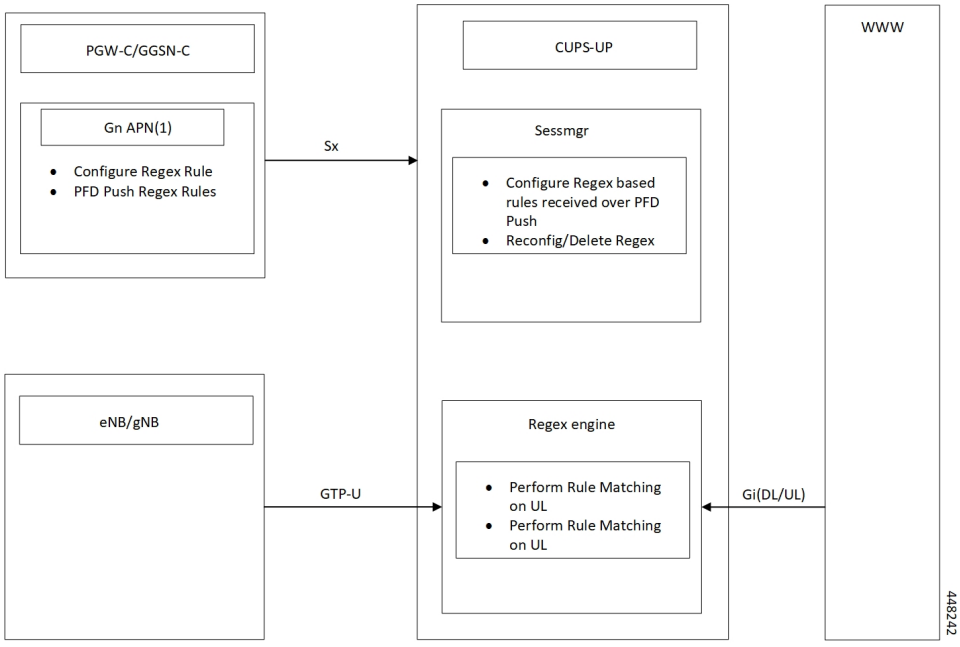
Convention	Description
*	Zero or more characters.
+	Zero or more repeated instances of the token preceding the +.
?	Zero or one character.
\character	Escaped character.
\?	Match on a question mark (\<ctrl-v>?)
\+	Match on a plus sign
*	Match on an asterisk
\a	Alert (ASCII 7)
\b	Backspace (ASCII 8)
\f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

Following are the two ways to configure the regex rule:

- Regex rule configuration via RCM:



• Regex rule configuration via PFD Push:



Configuring Regex Rule

Following are the two ways to configure the Regex Rule.

Configuring Regex Rule via RCM

Configure the regex rule via RCM through User Plane CLI instance or directly on User Plane via CLI.

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

Configuring Regex Rule via PFD Push

Configure the regex rule on Control Plane through the User Plane via PFD push.

```
configure
        push config-to-up all
        end
```

Sample Configuration

Following are the 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
```

Note

- For RCM - Execute the regex rule configuration through the User Plane CLI instance.
- For PFD - Execute the regex rule configuration through the Control Plane and execute the PFD push.

Monitoring and Troubleshooting

This section provides information on CLI commands that are available for monitoring and troubleshooting for Regex support in User Plane.

Show Commands and Outputs

This section provides information about show CLI commands that are available in support of Regex support in User Plane.

- **show user-plane-service regex status**: Use this command to display the engine status for SessMgr instance.
- **show user-plane-service regex statistics memory**: Use this command to display the memory stats for 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 stats for the SessMgr.
- **show user-plane-service regex statistics ruledef summary**:

  Use this command to display the combined regex ruledef stats summary for the SessMgr.