Regular Expressions for Number Matching and Transformation

In the SBC Edge, Regular Expressions can be used for phone number matching and transformation. Use of Regular Expressions for phone number transformation is supported in the Transformation Tables .

Examples of Regular Expressions for phone number matching and transformation are shown below. For more information about Regular Expression syntax, see Understanding Regular Expressions.

Examples of Phone Number Matching and Transformation using Regular Expressions

Phone number transformation is the process of matching phone number patterns and transforming them to a single standard format.
In the context of Enterprise Voice, the single standard format could be the local numbering plan, the E.164 numbering scheme, as well as a SIP URI.

The following table illustrates use of Regular Expressions for matching phone number patterns and phone number transformations:

Rule Name	Description	Input Pattern	Output Pattern	Result
4-digit Extension	Transforms 4-digit extensions	`(\d{4})`	`+1425555\1`	1234 is transformed to +14255551234
5-digit Extension	Transforms 5-digit extensions	`8(\d{4})`	`+1425558\1`	81234 is transformed to +14255581234
7-digit calling Fremont	Transforms 7-digit numbers to Fremont local number	`(\d{7})`	`+1510\1`	5551212 is transformed to +15105551212
7-digit calling Dallas	Transforms 7-digit numbers to Dallas local number	`(\d{7})`	`+1972\1`	5551212 is transformed to +19725551212
10-digit calling US	Transforms 10-digit numbers in US	`(\d{10})`	`+1\1`	5105551212 is transformed to +15105551212
Long Distance (LD) Calling US	Transforms numbers with LD prefix in US	`1(\d{10})`	`+1\1`	12145551212 is transformed to +12145551212
International Calling	Transforms numbers with US international prefix	`011(\d*)`	`+\1`	011914412345678 is transformed to +914412345678

Fremont Operator	Transforms 0 to Fremont Operator	`0`	`+15105551212`	0 is transformed to +15105551212
Fremont Site Prefix	Transforms numbers with on-net prefix (6) and Fremont site code (222)	`6222(\d{4})`	`+1510555\1`	62221234 is transformed to +15105551234
New York Site Prefix	Transforms numbers with on-net prefix (6) and New York site code (333)	`6333(\d{4})`	`+1202555\1`	63331234 is transformed to +12025551234
Dallas Site Prefix	Transforms numbers with on-net prefix (6) and Dallas site code (444)	`6444(\d{4})`	`+1972555\1`	64441234 is transformed to +19725551234
URI to E.164 format	Transforms URI with on-net prefix (+999) to E.164 format	`\+999(.*)@.*`	`0119144\1`	+99912345678@net.com is transformed to 011914412345678

The use of caret symbol (^) for beginning of a number-matching pattern and the dollar sign ($) for the end of the pattern is implicit. The regular expression rule will work with or without them.

Detailed Examples

Example 1: Using Regular Expression for Route Match

1. Select **Using Regular Expression** option.
2. Match Rule:

```
(.*)@net\.com
```

3. Transformation :

```
\1
```

In this example, the input text *john.doe@net.com* matches the Match Rule and the output will be "john.doe". The Input text *john.doe@invalid.com*does not match.

Expression Input	Expression Output
john.doe@net.com	john.doe
jane_doe@net.com	jane_doe
jdoe@net.com	jdoe
john.doe@invalid.com	expression does not match: no output

Example 2: Local calls transformed to National numbering plan

1. Select **Using Regular Expression** option.
2. Match Rule:

```
(\d{7})
```

3. Transformation:

```
1510\1
```

In this example, any 7 digit number as input matches the Match Rule and the output will be the same 7-digit number prefixed with 1510.

Expression Input	Expression Output
8889999	15108889999
4441234	15104441234

Example 3: 10-digit long distance (LD) calls transformed for 11-digit dialing

1. Select **Using Regular Expression** option.
2. Match Rule:

```
(\d{10})
```

3. Transformation:

```
1\1
```

In this example, any 10-digit number as input matches the Match Rule and the output will be the same 7-digit number prefixed with 1.

Expression Input	Expression Output
5107779999	15107779999

Example 4: Stripping +-sign from the number (when terminating to some ISDN providers)

1. Select **Using Regular Expression** option.
2. Match Rule:

```
\+(.*)
```

3. Transformation:

```
\1
```

In this example, any destination number prefixed with a +-sign (plus-sign) as input matches the Match Rule and the output will be the same number without the +-sign.

Expression Input	Expression Output
+914412345678	914412345678

Example 5: Replacing "011" (international prefix) with +-sign

1. Select **Using Regular Expression** option.
2. Match Rule:

```
011(.*)
```

3. Transformation:

```
+\1
```

In this example, any destination number prefixed with a +-sign (plus-sign) as input matches the Match Rule and the output will be the same number without the +-sign.

Expression Input	Expression Output
011914412345678	+914412345678

Example 6: Transforming only URI's that start with "+999" and have a ".com" extension to E.164 format

1. Select **Using Regular Expression** option.
2. Match Rule:

```
\+999(.*)@(.*)\.com
```

3. Transformation:

```
0119144\1
```

In this example, any destination URI +99912345678@net.com matches the pattern `+999`, followed any character set `(.*)`, followed by the @-sign, followed any character set `(.*)`, followed by and ending with `\.com`, the first character set is preserved and `0119144` is prefixed to it resulting in `011914412345678`.

Expression Input	Expression Output
+99912345678@net.com	011914412345678