

# Rounding Issues

## Why do the message score and the number of stars show something different?

The message score is computed to three decimal places and then displayed rounded to the nearest tenth. An exception is made in the case that the score would round up to the required spam threshold score. In that one case to avoid a confusing message, the score is rounded down to a tenth. The number of stars is always rounded down to an integer so that a score that is below the spam threshold will never result in more than the spam threshold number of stars.

If the score of a message is 4.995, and required score is 5.0, the message's headers should show:

```
X-Spam-Level: ****
X-Spam-Status: No, score=4.9 required=5.0
```

If the score of a message is 8.995, and required score is 5.0, the message's headers should show a score of 9.0 but only 8 stars:

```
X-Spam-Level: ****
X-Spam-Status: Yes, score=9.0 required=5.0
```

## Why do the points of individual rules in the content analysis not add up to the correct point total?

The actual scores of the rules have three digits after the decimal, but in the Content analysis report they are rounded off to the nearest tenth.

The points shown for individual rules in the following example total 8.5, not the 8.6 indicated.

```
Content analysis details: (8.6 points, 5.0 required)

pts rule name                description
-----
1.7 MSGID_FROM_MTA_ID        Message-Id for external message added locally
0.0 HTML_MESSAGE             BODY: HTML included in message
5.0 BAYES_99                  BODY: Bayesian spam probability is 99 to 100%
                               [score: 0.9985]
0.2 MIME_HTML_ONLY           BODY: Message only has text/html MIME parts
1.0 HTML_IMAGE_ONLY_16       BODY: HTML: images with 1200-1600 bytes of words
0.6 FORGED_OUTLOOK_HTML      Outlook can't send HTML message only
```

The actual scores for each of these rules are shown below. They total 8.577, which clearly rounds to the 8.6 reported in the Content analysis.

```
1.723 MSGID_FROM_MTA_ID
0.001 HTML_MESSAGE
5.000 BAYES_99
0.177 MIME_HTML_ONLY
1.047 HTML_IMAGE_ONLY_16
0.629 FORGED_OUTLOOK_HTML
```