Using Clustering to Detect and Mitigate Spam Distribution

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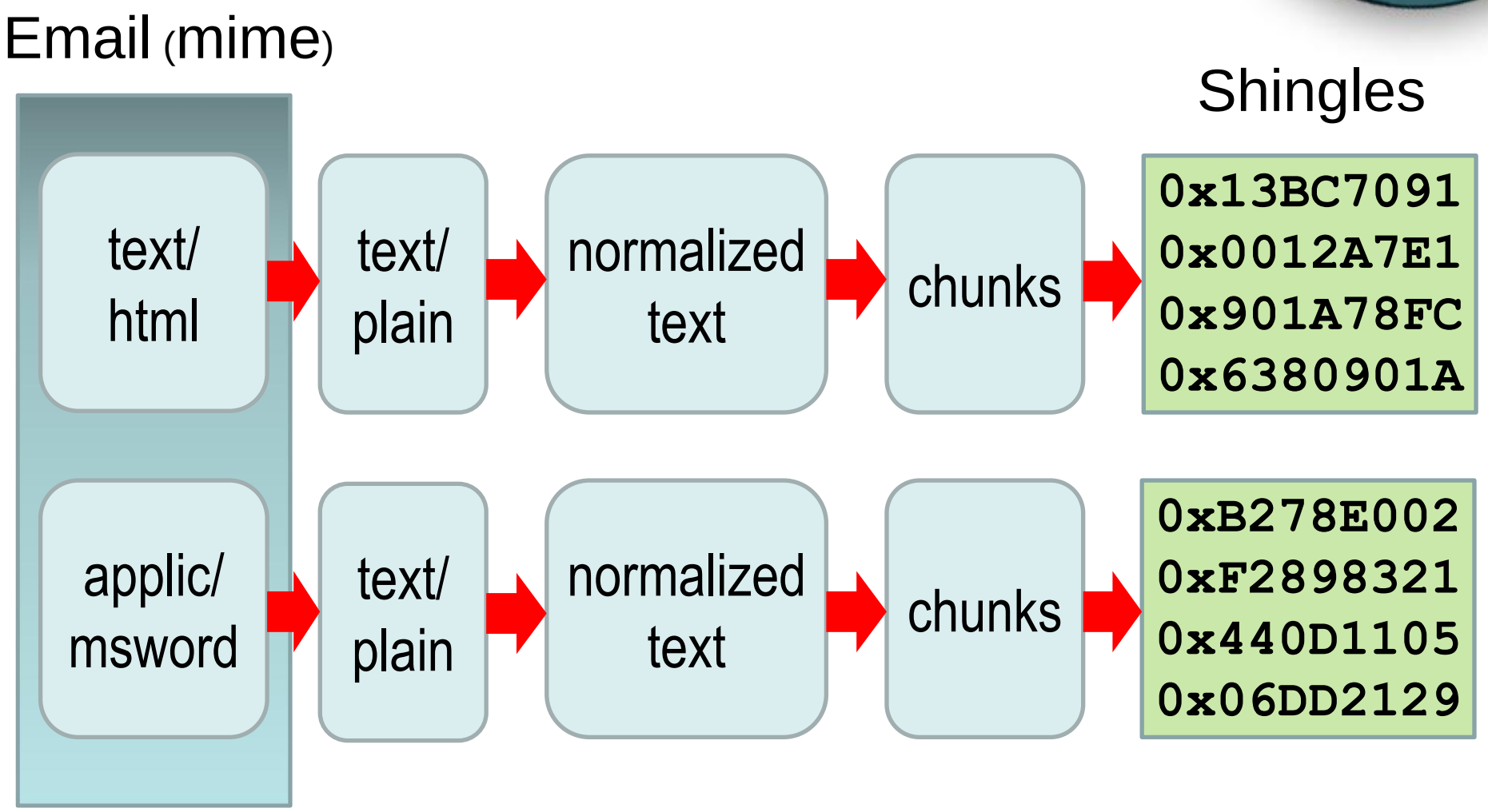
Email clustering system requirements

An anti-spam clustering system should:

- be large-scale and distributed
- use an efficient, secure data model
  - small data size
  - inability to restore original content
- adopt an efficient algorithm for real-time clustering at high speed
- employ extra tools to identify spam clusters

Email processing stages



Shingles

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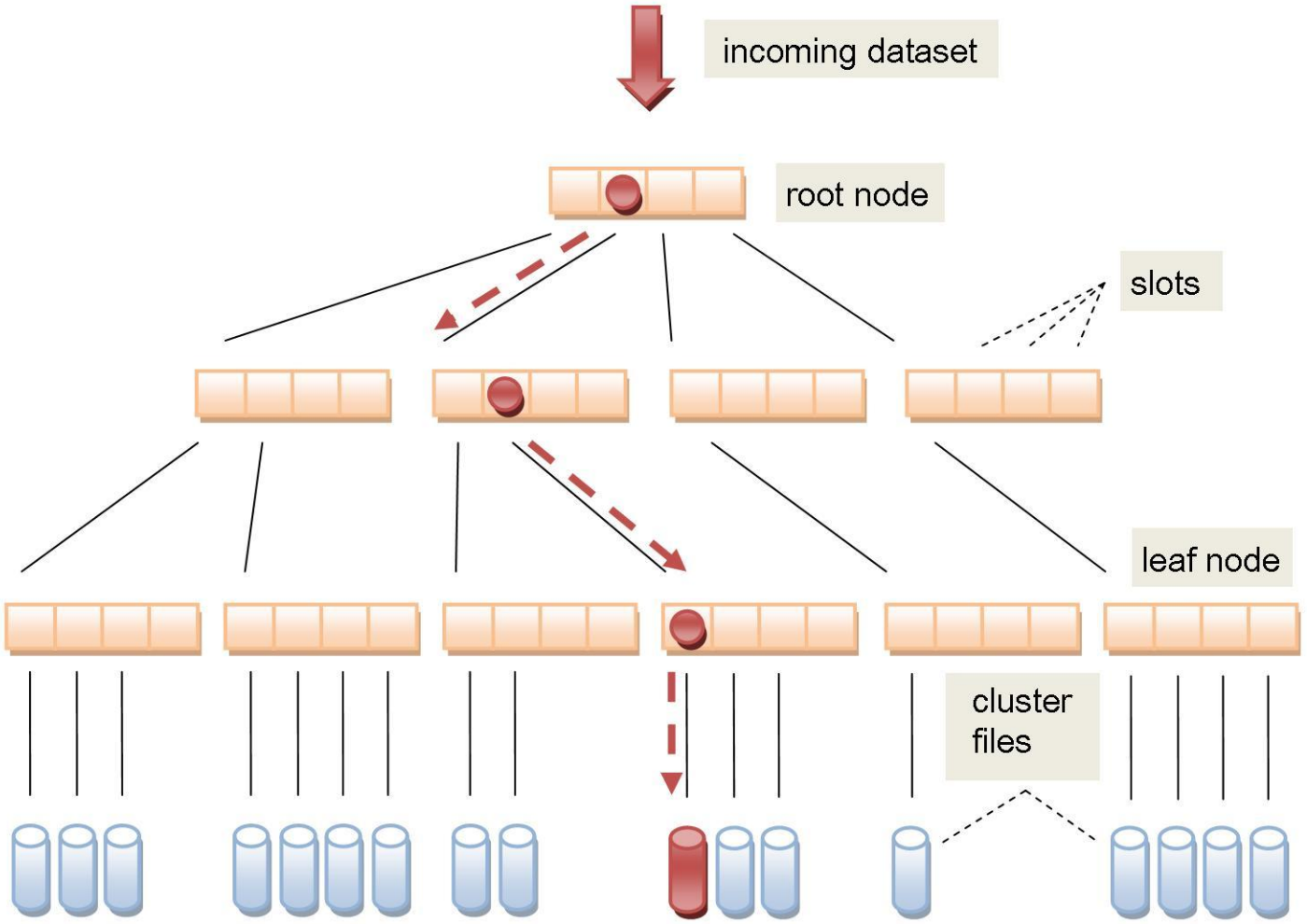
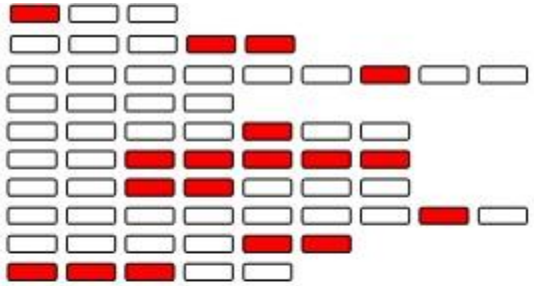
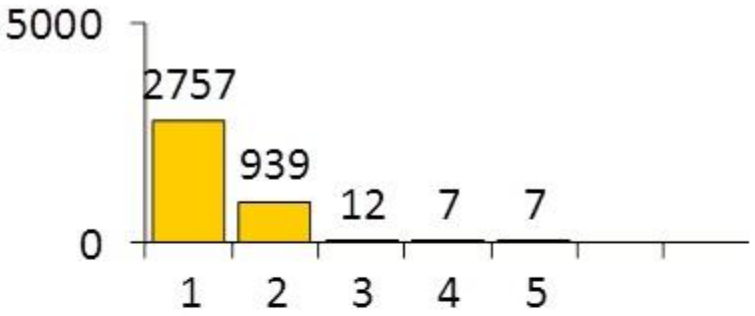
```
0xC05F5857
0x2EA6814D
0xB60257F0
0xA18E4FCD
0x20167ADD
0x31E713B8
```

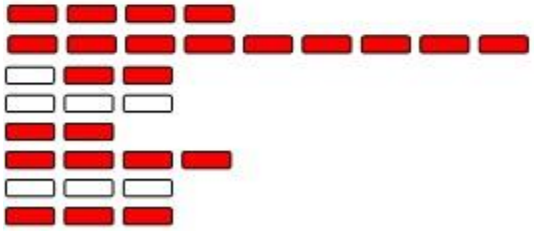
Clustering database

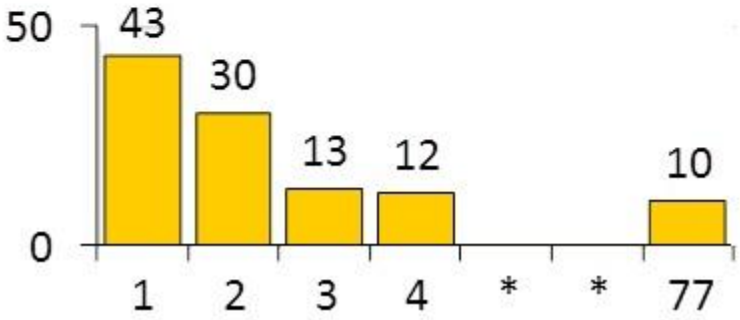


Grouping capabilities

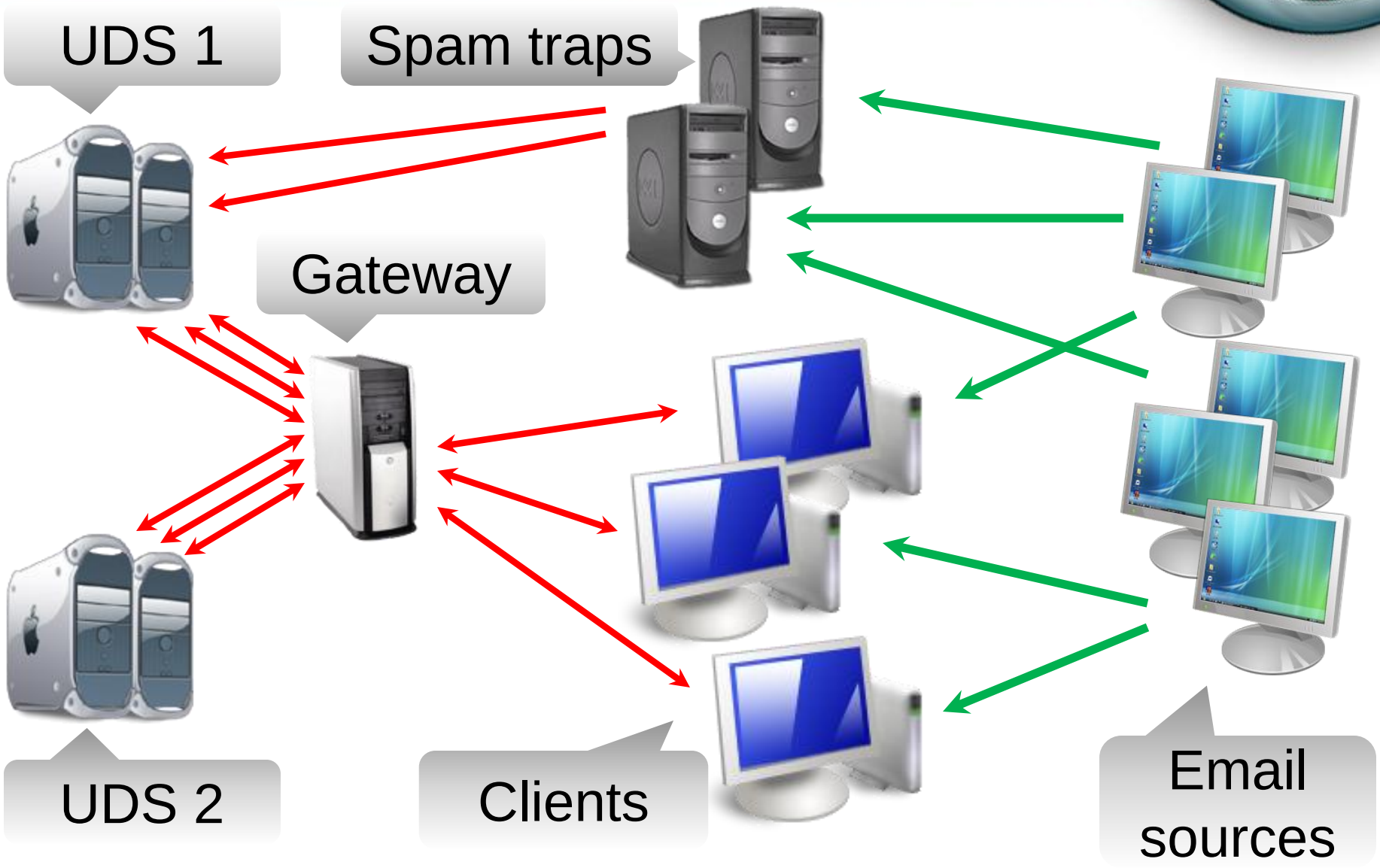








System architecture



Spam vs. mailing list sources

ip-109-38.hyper.net.id

ABTS-mum-dynamic-251.90.170.122.airtelbroadband.in

Static-177.143.195.14.tataidc.co.in

95x153x190x63.kubangsm.ru

112-79-36-62.live.vodafone.in

smtp293.usndr.com

smtp289.usndr.com

smtp131.usndr.com

smtp91.usndr.com

smtp171.usndr.com

Messages with auto-signatures

Here's to an all Manchester Europa League Final!!!!!

Chelsea mailing list

Chelsea@jesternix.net

http://jesternix.net/mailman/listinfo/chelsea_jesternix.net

Message refinement

Here's to an all Manchester Europa League Final!!!!!

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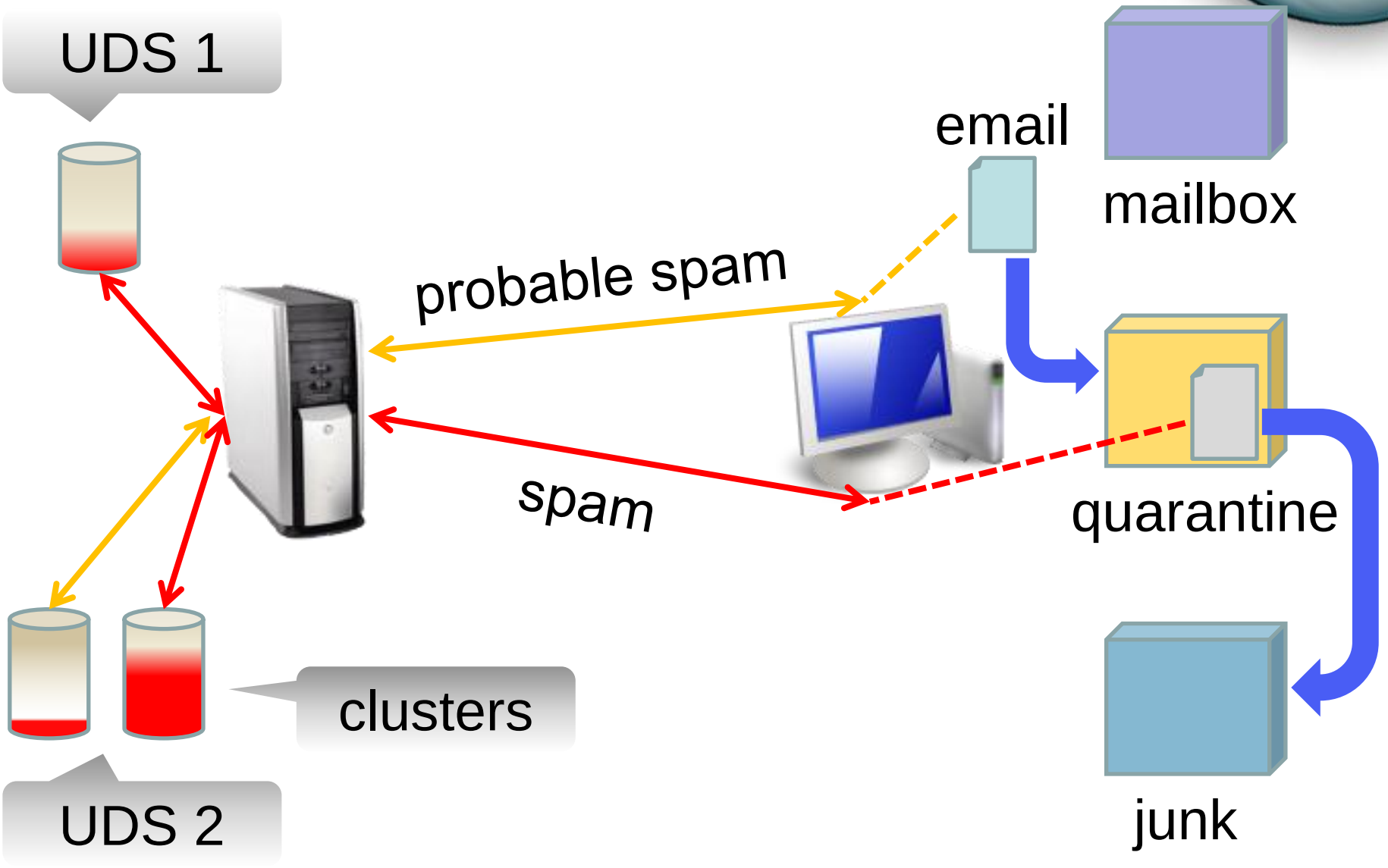
Chelsea mailing list

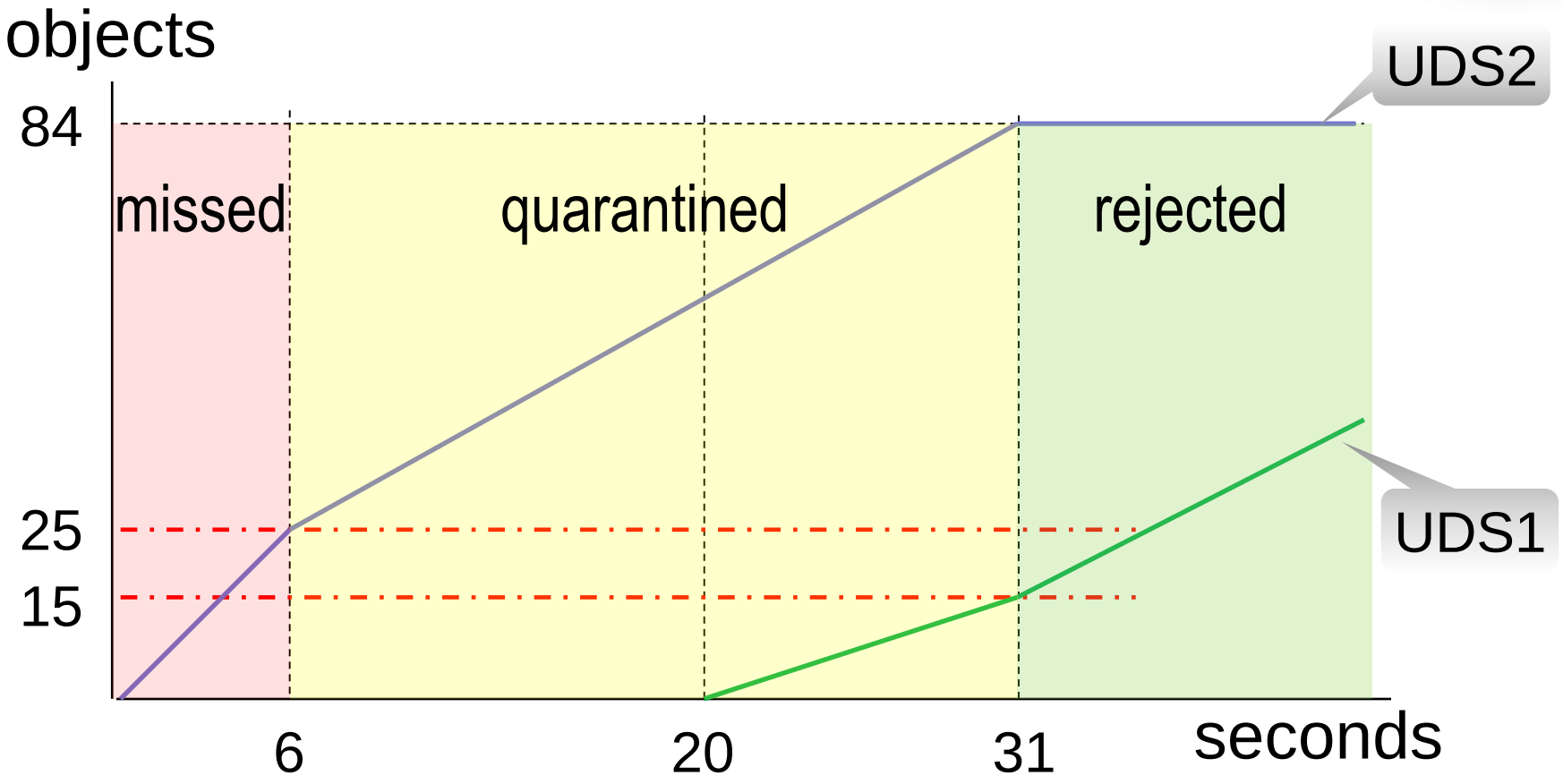
Chelsea@jesternix.net

http://jesternix.net/mailman/listinfo/chelsea_jesternix.net

Quarantine usage



Spam campaign mitigation



THANK YOU

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