Zimbra@DESY – what comes next?

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HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

HEPiX Online

DESY.

Brief overview
What does DESY e-mail services look like?

- before Zimbra: Exchange 2003 && Dovecot

- since 2015 Zimbra Collaboration Service

  - e-mail boxes, calendaring, contacts, tasks
  - 12.000 light weight mailboxes (IMAP, SMTP, Ca*DAV)
  - Outlook integration (via connector ZCO)
  - apprx. 7.000 "full" (aka Outlook/ActiveSync, incl. LW funct.)
  - negligible demand for Exchange Web Services (OL macOS)
  - shared-folder like functionalities incl. ACLs

- mailbox services are important, but also

  - mailing list services (SYMPA), apprx. 4.800 lists
  - e-mail filtering (provided by Deutsches Forschungsnetz)
  - local injection of mails via Zimbra and other means, signing-service, "dumb" clients
  - apprx. 600.000 e-mails delivered daily
  - apprx. 65 TB data currently in store (no user quotas)
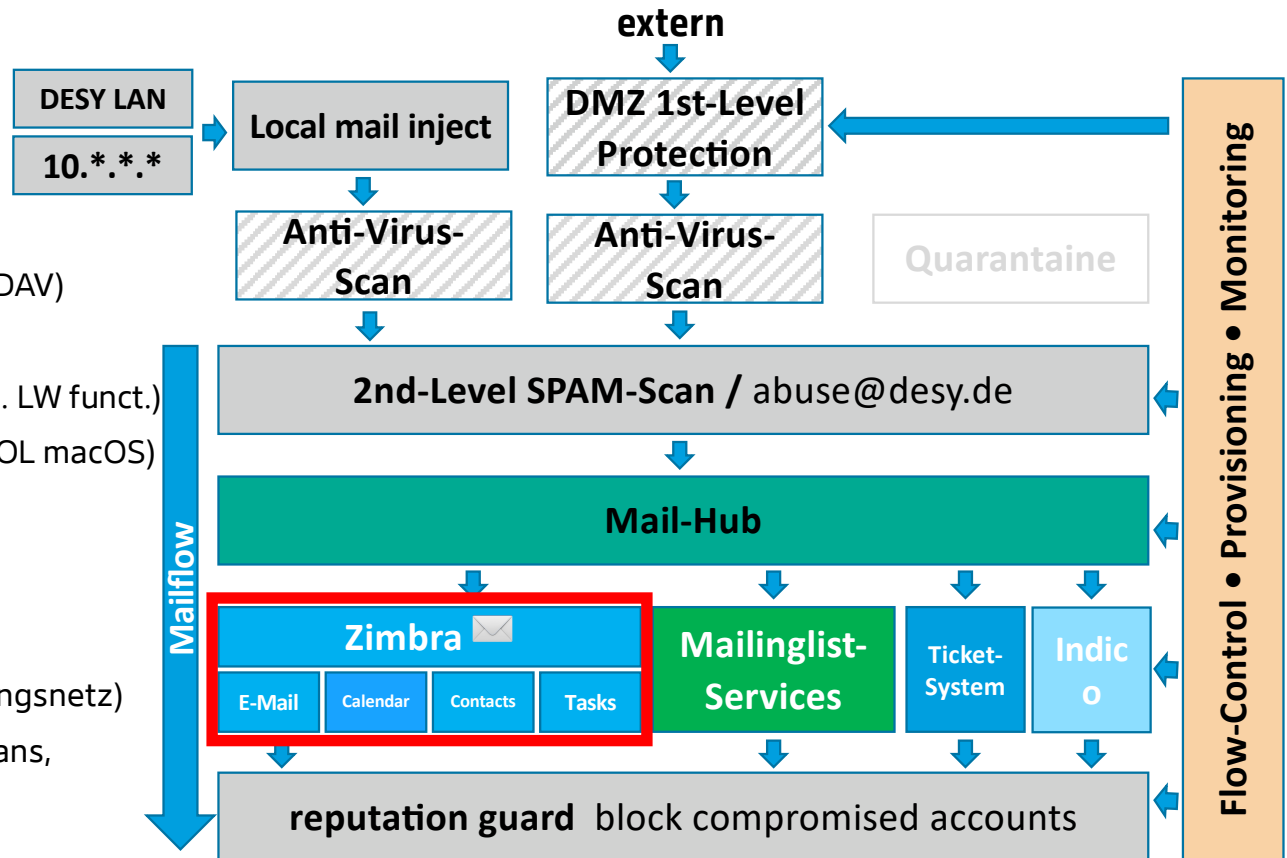
What comes next?

Why should one possibly think about changing the product?

- EoL – need to re-license the product's new version

  - apprx. 2 years ago it seemed that Zimbra 8's End-of-Life would be at the end of December 2003 and

  - Zimbra 9 (no LTS) would be supported only one year longer

  - situation changed, not so urgent any longer, but has to be considered anyhow – bit more relaxed

- maybe dis-satisfied user's (and admins), perhaps/e.g.

  - 1st level support of varying quality?

  - Outlook integration (connector ZCO) with deficiencies?

  - calendaring "broken" ?

- evolving requirements

  - calendaring features

  - APIs for automation of non DESY-IT departments

And how to find out, what should come next?

Involving (power) users and group admins at an early stage; focus on mailbox services

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    - calendaring

    - APIs

- set up poll asking eleven main user groups

- five categories, 62 questions, ranking/priority (requirement, important, nice-to-have, irrelevant)

    - e-mail

    - calendaring

    - contacts

    - tasks

    - miscellaneous (what should also be considered)

- most interesting insight into how work is done, esp. secretaries

=> working **calendaring** is paramount !

... but, what does "working" exactly mean?

Findings

Broad and reasonable spectrum (mostly) apart from bread-and-butter usage

User Interface – 1

- flexibility
  - several addresses and mbxs at once
  - variety of ooo-massages and signatures in parallel

- Microsoft Outlook integration
  - de-facto Standard
  - calendar overlaying
    → find gaps visually is preferred
  - successor acceptance => like Outlook

- shared usage of mailboxes and calendars
  - mostly secretaries/conf orga
  - tasks also used shared

User-Interface – 2

- automation
  - flexible filter (match & actions)

- ample search capabilities
  - also meta data
  - within attachments too

- intuitive usage
  - „fool proof" UI demanded
    → complex with appointments

- Zimbra: "ok, but old fashioned"
  - "Zimbra modern" fails short
    looks like made for occasional usage

further capabilities

- support of open protocols
  - 3rd party product integration

- signing & encryption also in webUI – more than one identity

- calendaring
  - assistance offices need all you may imagine
  - individual configuration requested
  - room reservations (attributes!)
  - equipment (cars, cameras, beamer,...)

Calendaring

Outlook – an antetype

- annoying quirks, restrictions, …

  - Outlook synchronisation with Zimbra does not work (completely)

    - appointments show up twice

    - synchronisation stops

    - mailbox size limited (50 GB file size)

      - plain text mail is rendered as HTML and RTF

- non Outlook challenges

  - invitations are sent to a mailing list and individual replies add new addresses (think: external addrs, forwards of any kind)

  - iPhone/Android support for latest A/S available?

    - iPhones repeating to send invitation related e-mails

  - EWS-client (OL for Mac) consistently uploading the same attachment again and again.

- => calendaring should just work w/o any worries

- more / advanced functionality demanded

  - fine grained access control: who should be able to change what or what parts of an appointment?

  - series of appointments, at least semantically:

    - changing subject, individual body (think: agenda)

    - different attachments

    - next meeting not at HH1:MM1 but at HH2:MM2

    - and/or not on DATE1 but on DATE2

    - in room A instead of B (resource invitation)

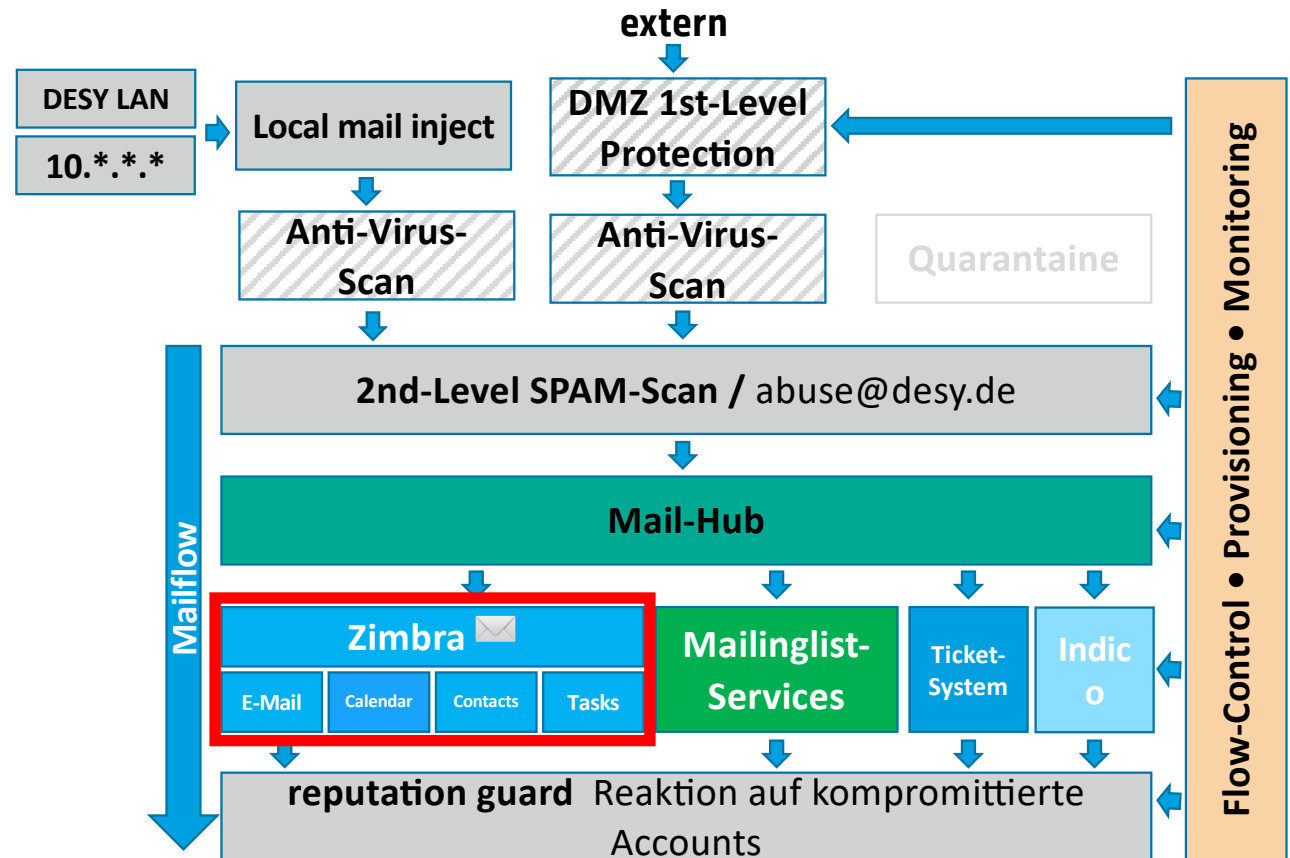   => is this still a date of a series of dates or an individual date?

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Is there a product which fulfills all requirements / needs / wishes ?

Is the standard calendaring most tools offer in the end under-complex?

Is Groupware like Zimbra always the best solution?

Changing the behaviour of people may be way harder to accomplish…

What could be a replacement?

And what should be replaced?

- drop-in replacement

  - product B instead of product A

  - open source vs. closed source

  - high quality commercial support required in both cases

- security & high availability

  - in-house solution vs. cloud service(s)

  - only one part in the cloud or everything?

  - data sovereignty

  - clear responsibilities and SLAs necessary

- other boundary conditions, e.g.

  - GDPR

  - political agreements
    institutional policies
    government and Hamburg coalition contract

extern

DESY LAN	Local mail inject	DMZ 1st-Level Protection
10.*.*.*		

Anti-Virus-Scan | Anti-Virus-Scan | Quarantaine

2nd-Level SPAM-Scan / abuse@desy.de

Mail-Hub

Mailflow

Zimbra ✉	Mailinglist-Services	Ticket-System	Indico
E-Mail · Calendar · Contacts · Tasks			

reputation guard Reaktion auf kompromittierte Accounts

Flow-Control • Provisioning • Monitoring

What could be a replacement?
And what should be replaced?

extern

Cloud host CloudNordic says most of its customers have "lost all data with us" following a ransomware attack on its data center systems, including its backups.
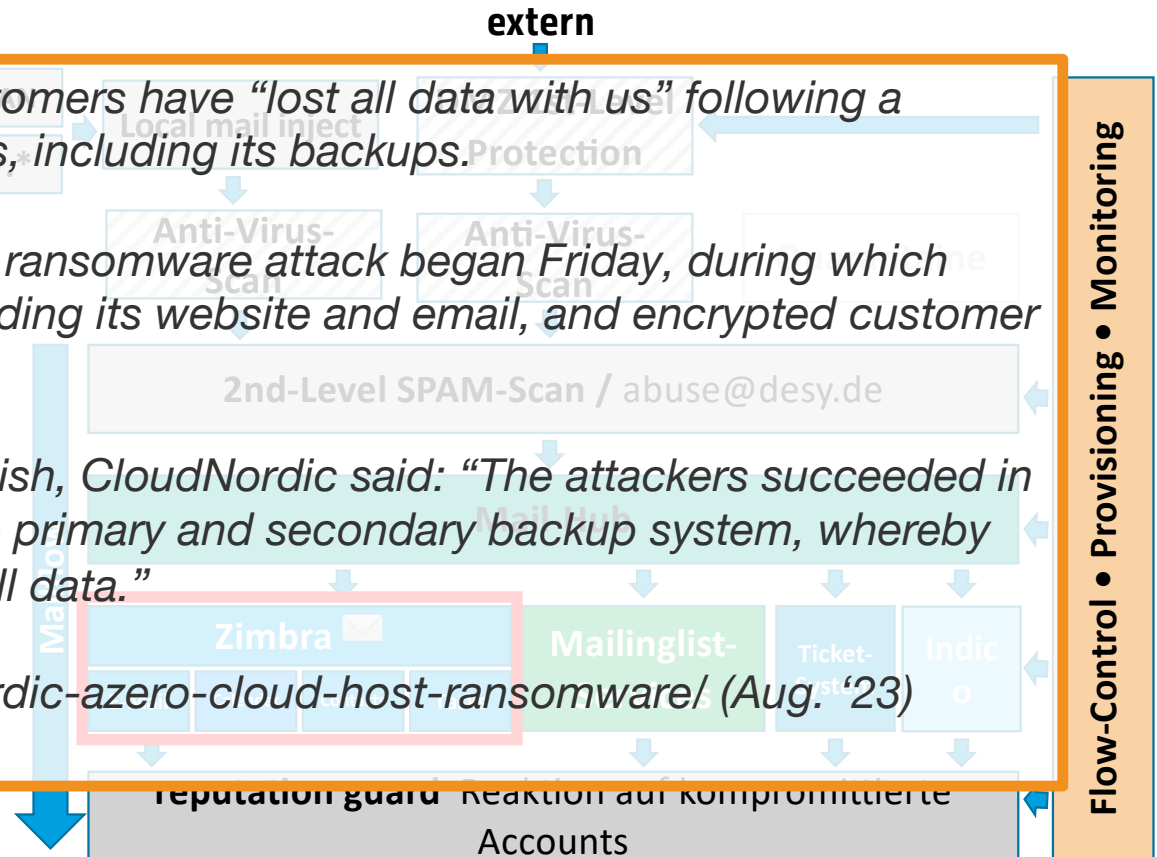
The Denmark-based cloud company said the ransomware attack began Friday, during which cybercriminals "shut down all systems," including its website and email, and encrypted customer systems and websites.

In a notice on its website translated from Danish, CloudNordic said: "The attackers succeeded in encrypting all servers' disks, as well as on the primary and secondary backup system, whereby all machines crashed and we lost access to all data."

https://techcrunch.com/2023/08/23/cloudnordic-azero-cloud-host-ransomware/ (Aug. '23)

- GDPR
- political agreements
  institutional policies
  government and Hamburg coalition contract

Operational and functional aspects

Three variants in principle

- local installation – on-premises

- we do this since >20 years ~99,94% availability

- efforts:
  - operations (basic && mailboxes) (HW,OS, software, patching)
  - users may contact help desk directly
  - close contact to mailmaster team

- commercial support 24x7x365

- Open Source Software (OSS)
  - digital sovereignty
  - DESY's investment could help community

- hybrid
  - Zimbra's successor a cloud solution
  - all other components remain on-premises

- efforts:
  - somewhat reduced operations PLUS
  - provisioning & coordination with provider
  - local support & relay functions

- commercial support 24x7x365

- reliable calendaring?

- where is the gain?

- **security / availability ?**

- everything in the cloud (nearly)
  - local mail infra structure still necessary
  - not every thing (IoT) will/should/could mail via an external service

- efforts:
  - reduced operations PLUS
  - provisioning & coordination with provider(s)
  - reduced local support & relay

- commercial support 24x7x365

- perhaps some kind of all-in-one workspace solution?

Examples

on-premises / hybrid / complete cloud

- local installation – on-premises

- Open Source solutions

  - with some licensed parts (MS Outlook integration)
  - Zimbra
  - Grommunio
  - SoGo

- Exchange 2019

  - future?
  - no further AD development for Exchange

- hybrid

- Google Business Starter

  - Workspace included

- Microsoft Business Basic

  - e.g. via Telekom / GDPR…

- mailbox.org

  - Berlin based (GDPR again)
  - OSS used
  - but no Outlook integration

- completly cloud based

- like hybrid solution …

- … plus

  - List-Services
    - differentiate between internal and external addresses?
    - policy options should be close to existing ones; support…
  - Ticketsytem

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  - e.g. via Telekom / GDPR…

- **basic mail infrastructure needed for every variant**

- **migration efforts!**

- **adaptation of provisioning software**

- complete cloud

- like hybrid solution …

- … plus

  - List-Services

    - differentiate between internal and external addresses?

    - policy options should be close to existing ones; support…

  - Ticketsytem

Costs

really rough estimates – list prices, no talk to vendors

- local installation – on-premises

- Open Source solution

  - Invest: **70.000€ once**
  - Support: **50.000€ p.a.**

- Exchange 2019

  - Invest: **520.000€**
  - Support: **140.000€ p.a.**
    Premium Support (pre-specified bundles)

- Server-Hardware: ~ 120.000€
  apprx. 24.000€ p.a.

- Basic Mail-Infrastruktur

  - apprx. 15.000€ p.a.

- Hybrid – 12.000 Mailboxen
  (not 19.000)

- Google Business Starter (WS inkl.)
  or Microsoft Business Basic via
  Telekom: ~5€ p.user mtl.

  - Invest: 0€
  - Subscription: 60.000€ mtl.
    => 720.000€ p.a.
  - „better": Google Business Plus*
    or O365 Enterprise E3:
    ~ 20€ p.u. mtl.
    => 2,8M€ p.a.

- mailbox.org: 3€ / 9€ p.u. mtl.
  => 432.000€ / 1,3 M€ p.a.

- cloud complete

  - see „2"

- plus

  - List-Services: 5€ p. list
    => 24.000€ mtl.
  - Ticketsytems
    (depends on number of
    supporters)
    => 3.500€ mtl.

- **=> 330.000€ p.a.**

Considerations

Invest funding wisely

- what are the non-list prices?
procurement restrictions, call for tenders, product
neutral

- security considerations / availability

  remember: not only Cloud Nordic, also
  MS Azure key leakage (useful logs costing extra)

- rising costs for

  - electricity (5x)

  - helium (7x)

  - staff (raised wages)

  - not foreseen to this extent => stay within budget

- DESY: we will have a look on on-premise solutions

Thank you for your attention

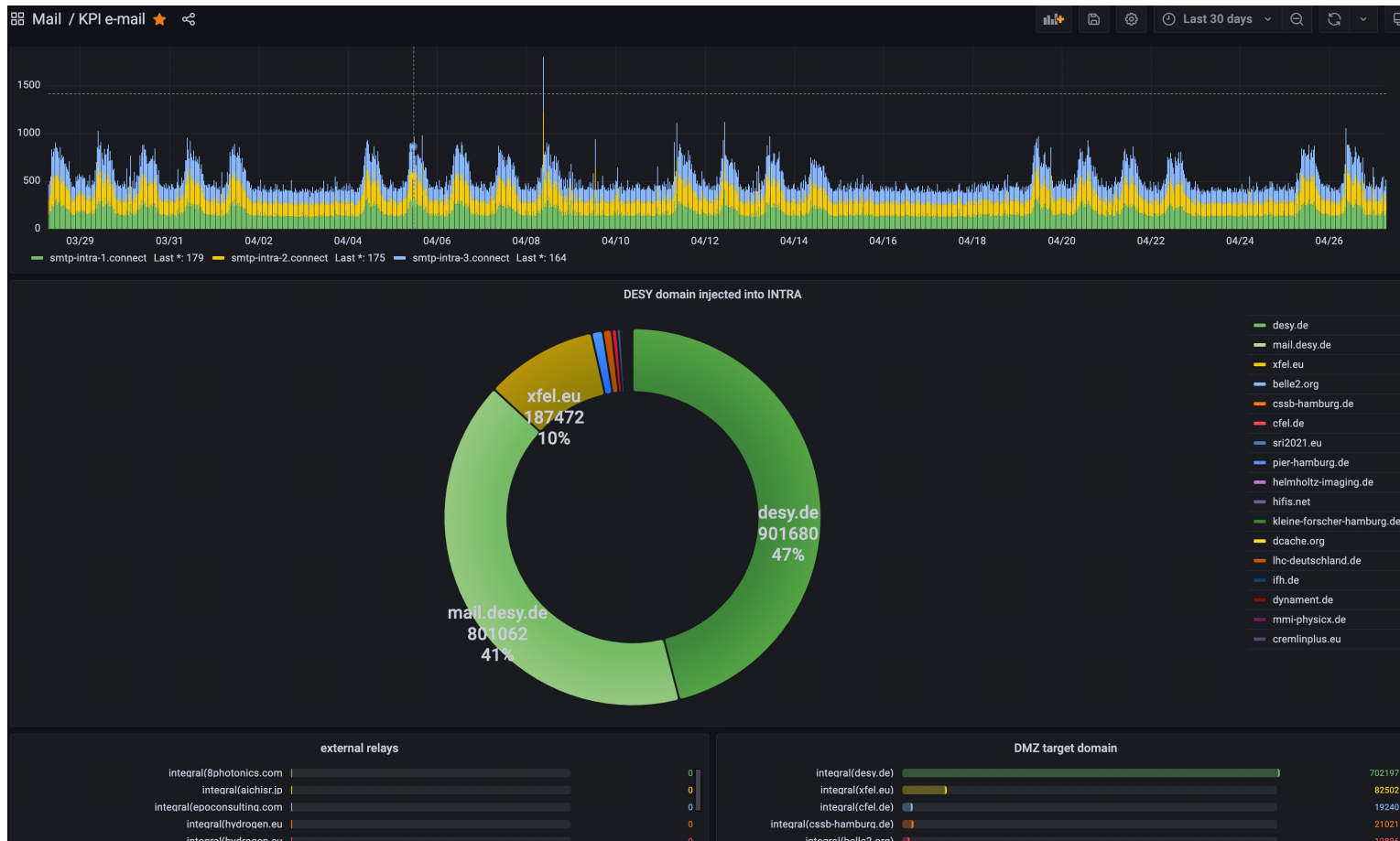## Q & A

Infrastructure – protocol relations

DESY Mail & Co.
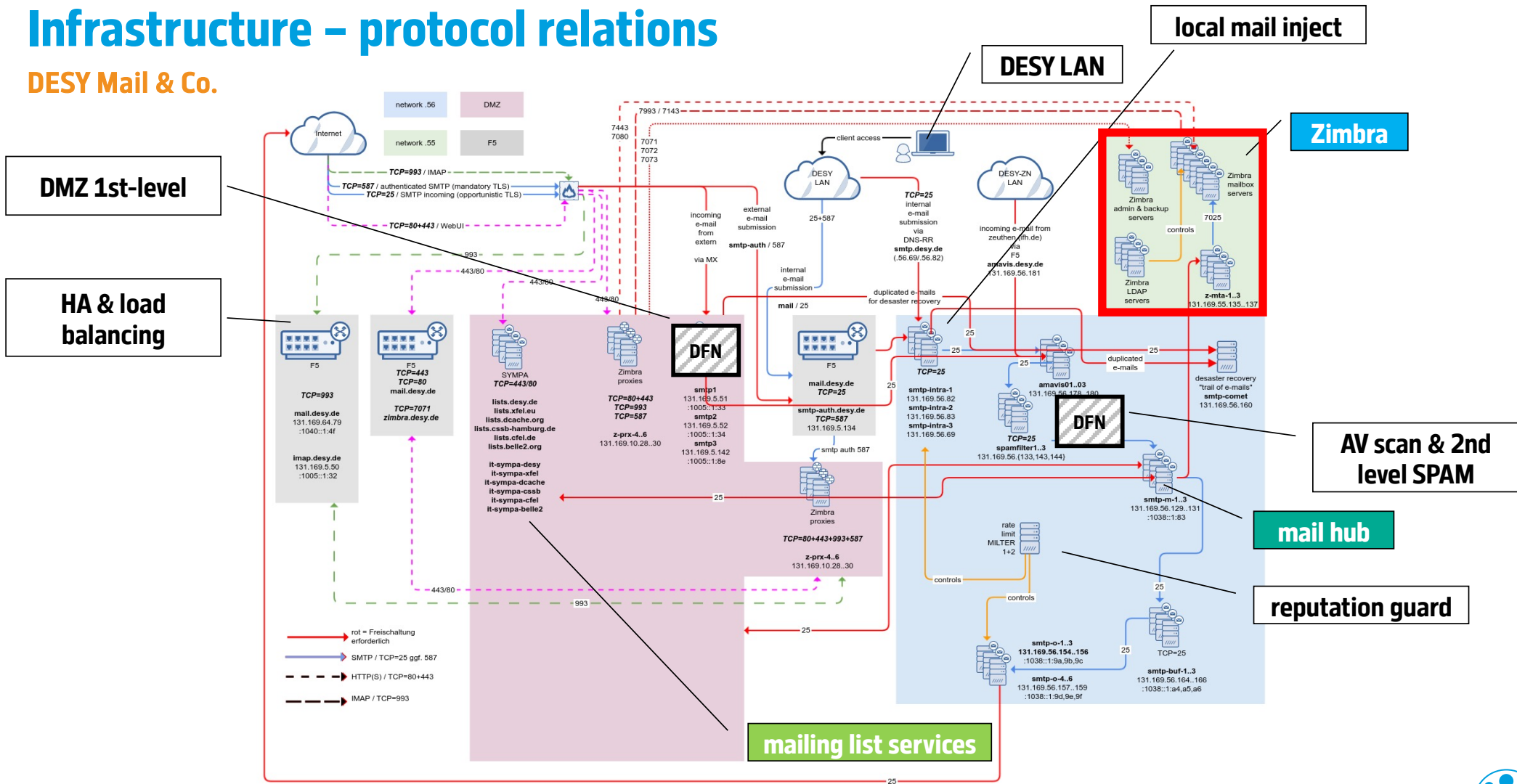
outgoing e-mail traffic

by domain

Three options

Costs: invest • maintenance • migration

Exchange on-premise

- CAL 420.000 € (12.000 mbxs)
- Server & OS-Lic. 101.000 €
- AV-scan x €
- special backup software x €
- Premier support: ~140k€ p.a.

- Currently Zimbra (31.12.2024)
  - 15k€ p.a. subscr. & support
    (7.500 full + 75.000 light mbxs)
  - 15k–35€ p.a. Anti-Virus
- basic mail infrastructure:
  ⇒15k€ p.a. (MTA,RT)
- migration: ~ 2FTE on top
  of daily operations (18mo eff. time)

mailboxes in the cloud

- Google: 5€ p.mo.p.mbx
  ⇒ 60k€ monthly

- Microsoft / Telekom Enterprise:
  15€ p.mo.p.mbx
  ⇒ 180k€ monthly

- fixed quota mailboxes; currently
  unlimited

- backup strategy may add cost

- basic mail infrastructure:
  ⇒15k€ p.a. (MTA,RT)

- migration service costs plus
  ~1 FTE 3M in-house

- integration into DESY-Registry
  ~1 FTE 3M (net) in-house

everything in the cloud

- as "mailboxes in the cloud"

- mailing lists (e.g. minuskel.de)
  5,-€/list ⇒ 24k€/month

- ticket-system, e.g. Zendesk
  (minimum) ~49€p.mo.p.supporter
  ~ 70 supporter
  ⇒ 3.500,-€/month

- migration service cost plus
  ~1 FTE 6M in-house

- integration into DESY-Registry
  ~1 FTE 6M in-house

- basic mail infrastructure:
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Keep in mind: several services depend on the current set up (e.g. DMS) which will incur additional costs for integration.

Three options

Costs: invest • maintenance • migration

Exchange on-premise

- CAL 420.000 € (12.000 mbxs)
- Server & ~~~~~~~~~ 0 €
- AV-scan x €
- special backup software x €
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Exchange (A)

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~ 140.000 € p.a.

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Zimbra / Grommunio(?) (B)

0 € Invest
~ 70.000 Invest (2024)
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  5,-€/list ⇒ 500,-€/month

- ticket-system, e.g. Zendesk
  (minimal 49€ p.mo.p.supporter
  ~ 70 supporter
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