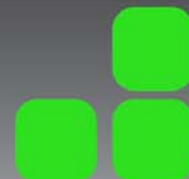




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Lawrence Kearney  
Enterprise Service Analyst  
[lawrence.kearney@earthlink.net](mailto:lawrence.kearney@earthlink.net)

GroupWise SMTP Infrastructure Design

- Not a technical deep dive but an meaningful discussion on email service trends and the architecture developed in response to them
- Viable third party security , traffic fencing, and traffic shaping options are referenced for discussion purposes
- Most information is geared for large and enterprise size environments
- Designing and maintaining systems to compete with similar commercial service offerings

Physical servers have become more niche and dated

The typical administrator's current environment:

- Servers as services
- Service providers
- Service consumers

Thinking in terms of what will make my “service” better

- Service performance
- Service efficiency
- Service stability
- Service feature sets
- Service cost of ownership (include support)
- Service planning and scaling
- Service standards

Influences leadership , staff, and customer “**dissatisfaction**”

## Unmanaged service consumers

- Fat POP/IMAP clients
- Thin POP/IMAP clients
- Device POP/IMAP clients (Email “Scourge”)

**Scourge:** a person or thing that administers or applies punishment or severe criticism

## Services providers “consuming” GroupWise services

- BIS
- mMode (mymmode)
- Notify Link

## Additional security concerns

Data leakage and loss

Malware infections

Bandwidth overconsumption

Smartphones as uncontrolled endpoints

Cannot secure or audit third party “local” message stores

Cannot remotely manage or wipe unauthorized devices

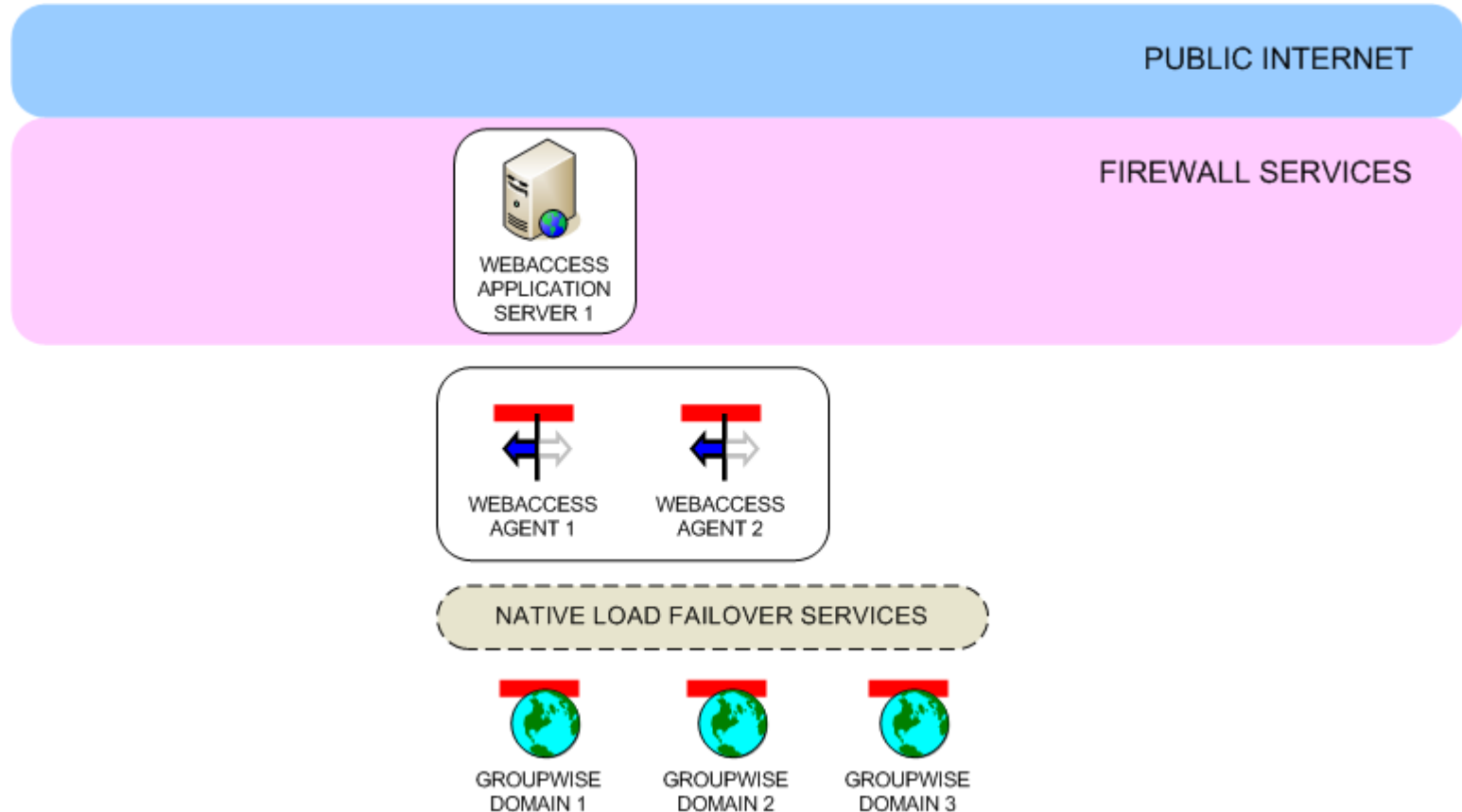
## Service capacity concerns

Left unaddressed all will consume SMTP, POP, and IMAP services until the service breaks

# What can we do to improve services?

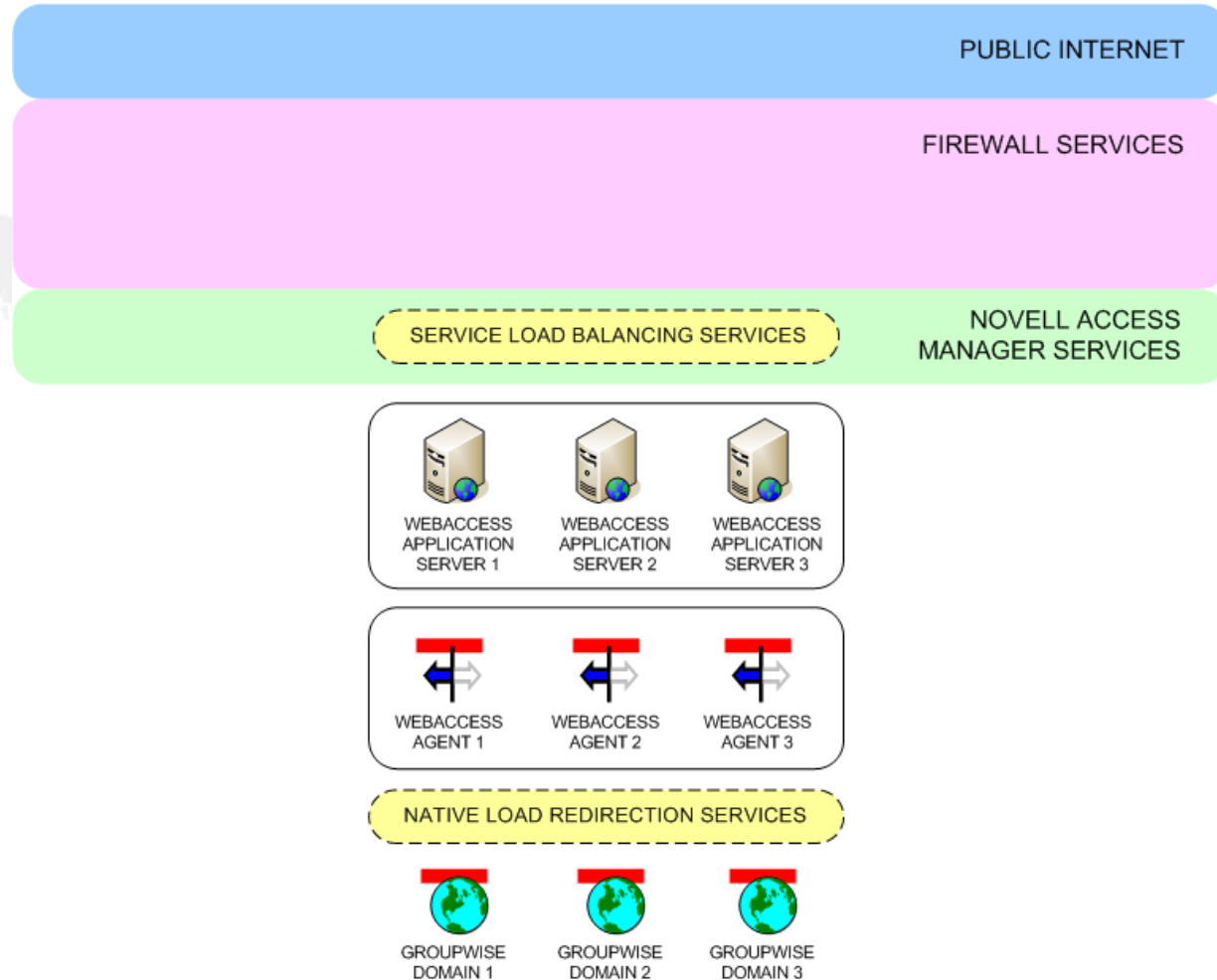
- Clever architecture and design choices
- Service redirection
- Service load balancing/management
- Service redundancy
- Service I/O fencing
- Service high availability
- Service demarcations (QoS really)
- Service virtualisation

Using blended solutions can both harden and improve the capacity of your systems





# Redesigned WebAccess example



Discuss what service features your organisation is going to support prior to implementation

- What can it do and how can you use it in your design
- Review service logs to determine service trends and metrics

Implement hardware between public and private services

- Helps relieve primary services of handling unnecessary I/O
- Use SMTP relay servers

Most do a better job than native GWIA unsolicited bulk email control

## Load balancing using DNS

- Use “unbound” network addresses for services
- Load balance MX records
- When a single name has multiple targets DNS load management can be utilised

## Service redirection

Not always available but can help “normalise” service traffic

## Service load balancing

Helps with economics of implementing solutions

Software (lowers cost)

Hardware (higher cost)

## Service load management

Can be “designed” into a system and managed with service consumption trend experience

## Service redundancy

Even in a small system always have multiple instance of mission critical services

## Service I/O fencing

- Native OS features
- CPU, logging, storage
- Native service features
- Infrastructure features
- Layer 2/3
- Design elements

## Service high availability

- Helps with economics of implementing solutions
- Clustering solutions (these may include native HA options)
- Native service or OS elements

## Service demarcations

- Use to implement natural and intuitive user base boundaries
- Easy first steps to implement
- Allows you to reap immediate benefits
- Limits the impact of planned/unplanned outages
- Leadership sees positive aspects
- Document and publicise service access “protocols” and network addresses

## Service virtualisation

- Helps with economics of implementing solutions
- Use it where appropriate

# What do we get if we consider this stuff?

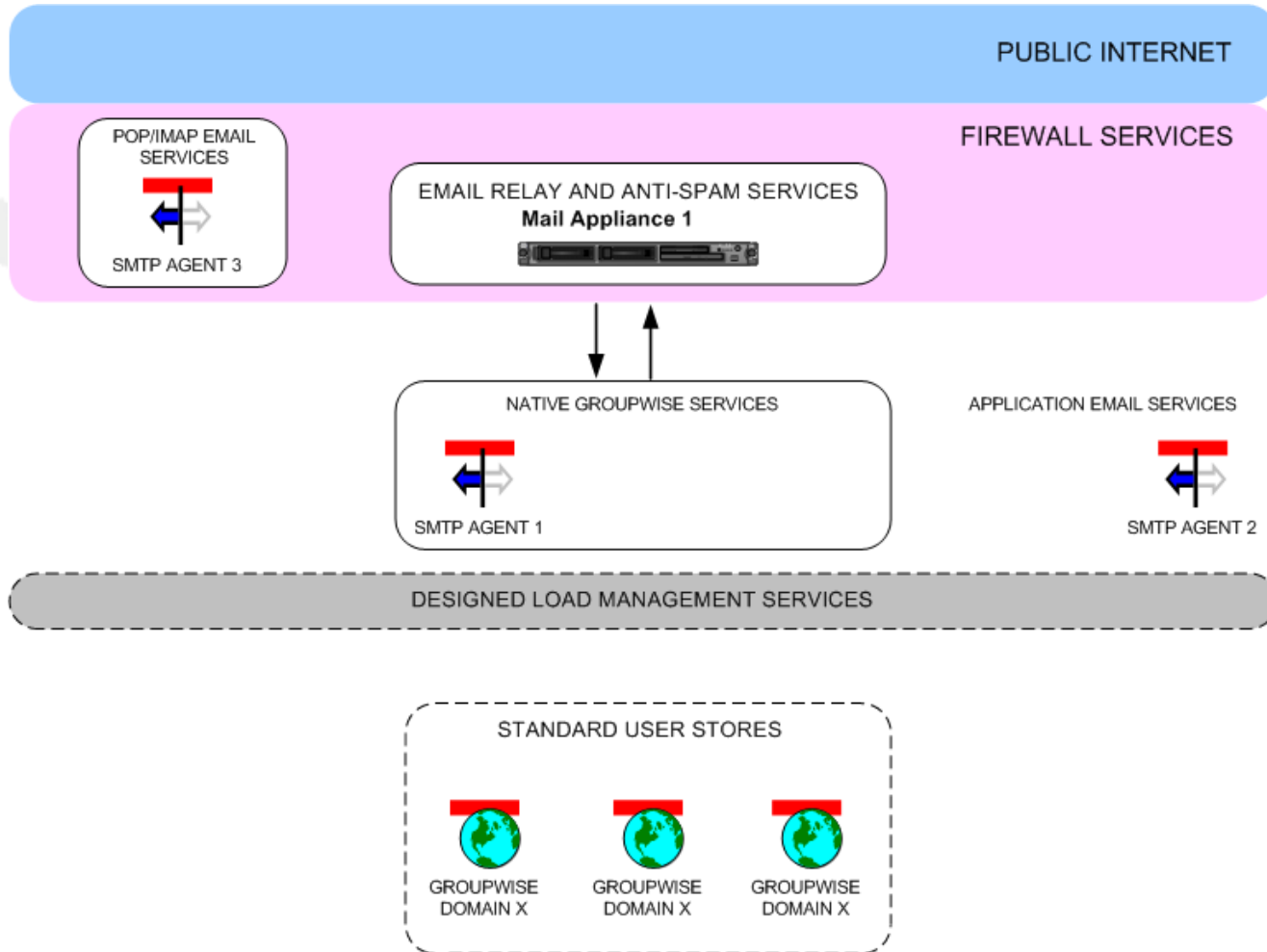
- Service performance improvements
- Service availability improvements
- Service capacity monitoring improvements
- Service capacity management improvements
- Service feature set expansions

Influences leadership, staff, and customer **“satisfaction”**

- Native GroupWise services
- Application Email services
- Non-authenticated email services (internal openish relay)
- Authenticated email services
- Unmanaged email client services
- OMG, if you just watched those logs



# Legacy SMTP infrastructure example



## GroupWise SMTP services

GWAHA services are used everywhere

## GroupWise Internet Agents

Native GroupWise ACLs are applied where applicable

Agents are chained for fail over where applicable

Multiple mail relay targets are applied

Never allow “true” open relay configurations

Native and non-native load balanced wherever possible

## Gateway domains

No regular users live here

Application/service specific SMTP gateways

## User post offices

No unmanaged POP/IMAP connectivity to POAs

## Service domains

IDM services connect here

## Service post offices

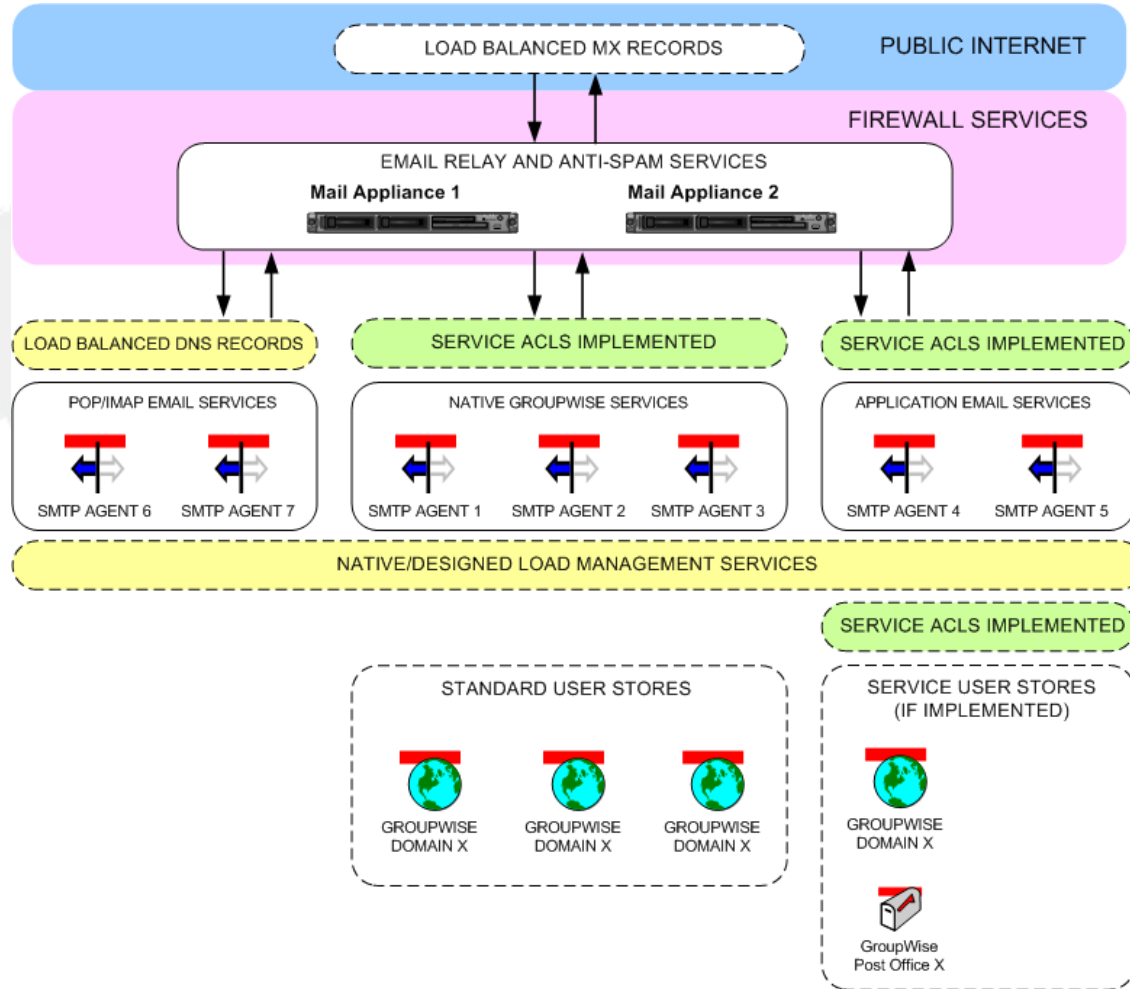
No regular users live here

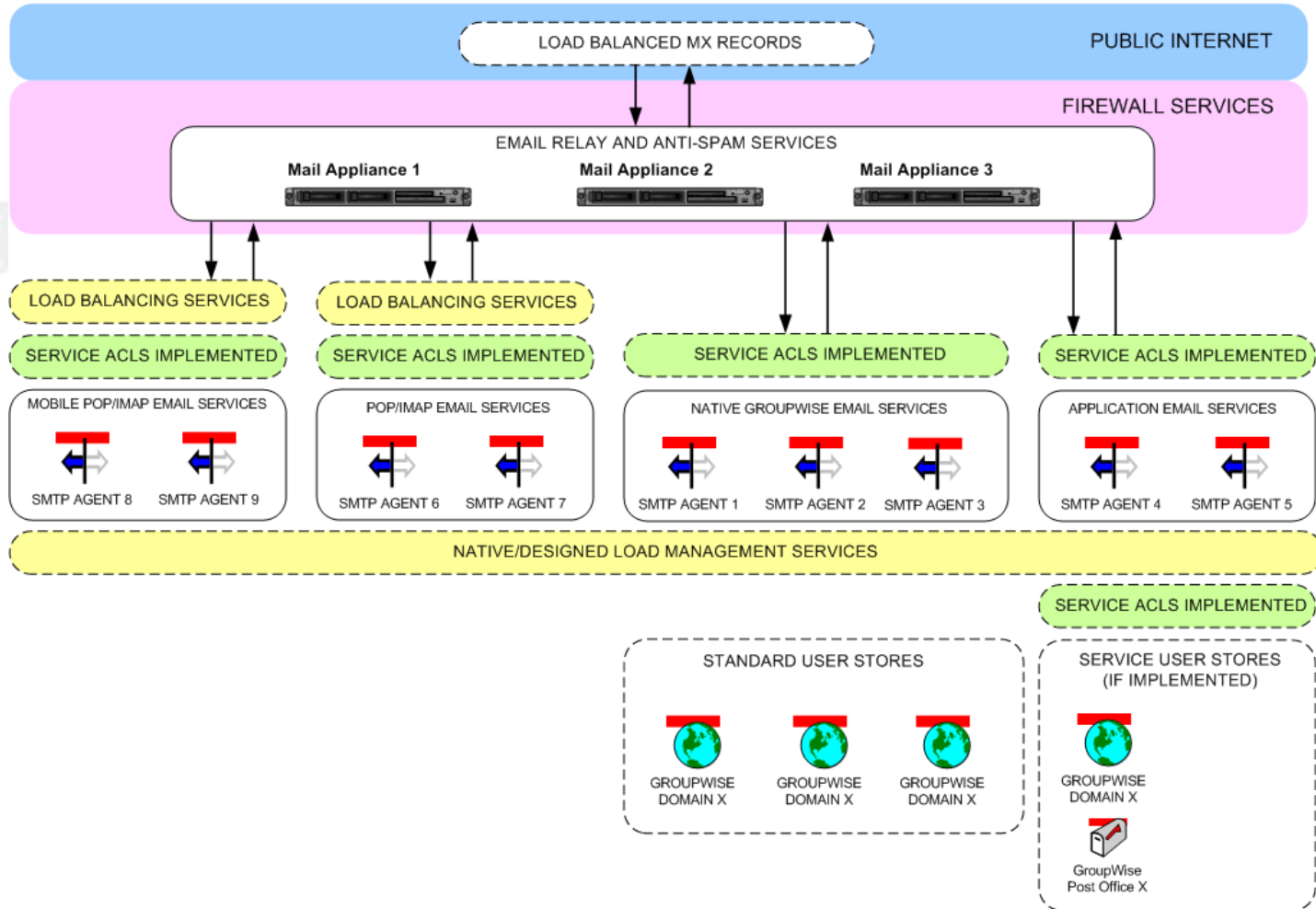
Managed third party application ingress points

Application accounts

SMTP authentication accounts

# Redesigned SMTP infrastructure example







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