Has your budget died?

• Last year we talked a lot about IT being asked to do more with less...
• This year, it seems this has become an imperative!!
• The need to better leverage your investments further continue.
Top 5 signs your IT Budget is in trouble

5. You send ransom notes to Recall to have your backup tapes retrieved.
4. Your server team has a science project in the kitchen to turn common office waste into BioDiesel to power the generators.
3. Converged communications means the IT Manager is also answering Helpdesk phones.
2. The CTO announced the new 2.0 collaboration system being deployed is paper.com and pencil.exe.
1. Your BCP strategy now includes plastic surgery and 2 tickets to Majorca.

A Shift Toward Innovation

- Securing assets
- Managing systems
- Reducing costs
- Developing new apps, services, SOA
- Virtualization
- Enabling interop
- Maintaining legacy apps
- Ensuring compliance
- Driving people productivity
- Enabling Mobility
Traditional Infrastructure Model

How do I connect all these applications and services to the right people, at the right moment in time, using the right amount of resources, meet all my SLAs, ensure security and save money?

The Quest Toward Agility

Traditional Infrastructure

Network Centric
Routing
L2/L3/L4

Static Data Centers
Locked down
Traffic
Plumbing

Isolated
Dedicated
Low Utilization

Dynamic Infrastructure

Application Centric
Service Delivery
Messages
L4/L7
Intelligence
Rapid Provisioning

Dynamic Services
Open Access
SaaS
Federated Resources
Virtual Data Center
Cloud

Shared
Multi-Tenant
Improved Utilization
Unification
Virtualization

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Functions of Unified Application and Data Delivery

Enabling the Dynamic Infrastructure

- All strategic points of control synchronize, communicate, and leverage functions & intelligence
- Integration within the ecosystem and open, standards-based API for cross product integration.

- Intercept bi-directional application and data stream at all points of control
- Common proxy architecture for each network device and ability to see all protocols
- Reporting, notification, trending

- Put user application and data stream in context
- Understand and relate the context of the user, device, location, network, application, virtualization, and resource

- Relate visibility and content to predetermined business policy to take action
- Determine and direct appropriate response, access, acceleration, or security

F5 Vision: Unified Application & Data Delivery

Enable the Dynamic Infrastructure
Becoming More Agile

Traditional Infrastructure
IT Process

- Deploy: 1 – 2 months
- Design App Only: 3 – 9 months
- Develop App Only: 3 – 12 months
- Q/A: 1 week – 6 months
- Revise & Test: 1 – 4 months
- Test App & Network: 1 – 3 months
- Network Design: 1 – 2 months

11 – 36 Months
Limited Reuse, Low Collaboration

Dynamic Infrastructure*
IT Process

- Deploy: 1 week – 6 months
- Develop App & Network: 2 weeks – 3 months
- Design App & Network: 1 week – 1 month
- Revise & Test: 1 week – 1 month
- Test Q/A: 1 week – 1 month

1 – 12 Months
Frequent Reuse, High Collaboration

A complete dynamic infrastructure ecosystem would include SOA, unified application and data delivery, virtualization, software, SaaS, and orchestration management.

Example 1: Migration Services

Wrinkly Old Application

And now we can also leverage a cloud environment for overflow or rapid/cheap development/deployment!

Shiny New Application

Overflow Cloud

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Example 2: Capacity Increase

- TCP Stack Optimisation
- Content Spooling
- SSL Offload
- Static Caching
- Web Acceleration Module

Example 3: Web Content Delivery

- HTML Page
- Images, CSS, JavaScript

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Example 3: Web Content Delivery

Conditional Requests

Server responds with “304 Not-Modified”
Objects loaded from Cache

10,000ms = 100 Objects x 2 Connections x 200ms

Example 3: Web Content Delivery

Intelligent Browser Referencing

Intelligent Browser Referencing (IBR) re-writes HTTP headers on include objects and adds dynamic versioning to include URI’s to reduce the chattiness of HTTP apps while still ensuring object freshness.
Example 4: Reduce Storage Costs

- Vendor independent tiering
- Backup optimisation
- NAS capacity load-balancing

Usage Scenario: Tiered Storage / ILM

- Match cost of storage to business value of data
  - Files are automatically moved between tiers based on flexible criteria such as age, type, size, etc.

- Benefits:
  - Reduced CAPEX
  - Reduced backup windows and infrastructure costs
Capacity Before File Virtualisation

- **Problem:**
  - Static mapping of users to resources
  - Requires manual moves of users and data
  - Uneven usage of IO, CPU and free space across available resources

Capacity After File Virtualisation

- **Solution:**
  - Automatically balances file placement across file servers
  - Flexible dynamic load balancing algorithms
  - Uses existing file storage devices

- **Benefits:**
  - Increased application performance
  - Improved capacity utilization
  - Reduced outages associated with data management
Value to Application or Enterprise Architect

- Visual Studio.NET
- Eclipse / Java
- Perl
- Ruby on Rails
- PowerShell

Simple and rapid integration

F5 Unified Application & Data Delivery Services
- Workload Balancing
- Authentication
- Encryption
- Application Security
- ILM / Data Tiering
- Asymmetric Acceleration
- Symmetric Acceleration
- Local / Global Redirects
- Global Namespace
- Persistence / Session Management
- Application Templates
- iRules / iControl
- Dynamic Provisioning

100% reusable; significantly lower cost than alternatives, increased agility

F5’s DevCentral community shows you how for free

Value to IT Infrastructure Manager

- Common and repeatable architecture
- Lower capital expenditures
- Lower training and operational costs
- Improved time to delivery
- Better collaboration with application and security teams.
Value to CIO: Unified Application and Data Delivery

- Team collaboration & innovation
  - (IT infrastructure, architects, application, networking, storage, servers, security)
- Improved time to market of business services
- Lower capex
- Reduce opex
- Increased agility
- Satisfied customers

How we use F5

- Central to our “continuous availability” strategy
- Two data centres linked by fibre
- Active / Standby pairs
- SSL off load
- WWW, PeopleSoft, Blackboard, SMTP, LDAP, ...
iRules

- Migrating from static web site to CMS
  - if URI is /directory then cms_pool
- Publishing a blog on a server farm
  - new content is not replicated immediately
- Use iRules to “fix” application behaviour

Custom Probes

- Search LDAP directory for a DN
- For N-Tier applications
  - test web, application and database
- Allow application administrators more control
  - GET /ok.html