Blades:
Opportunities, Issues and the Future

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Pulls and Pushes

- Financial constraints
  - Must do more with a lot less
- Need for flexibility
  - The business process is king, not the technology
- Green issues
  - Provided that the bottom line is protected
- The $100m server
  - Can this next box fit in the existing data centre?

Business changes

- Flexibility driven by:
  - Rationalisation
    - Minimising different versions
  - Consolidation
    - Minimising number of images
  - Virtualisation
    - Maximising utilisation of machines
  - Process driven architectures
    - SOA
    - Web Services

Technology facilitators

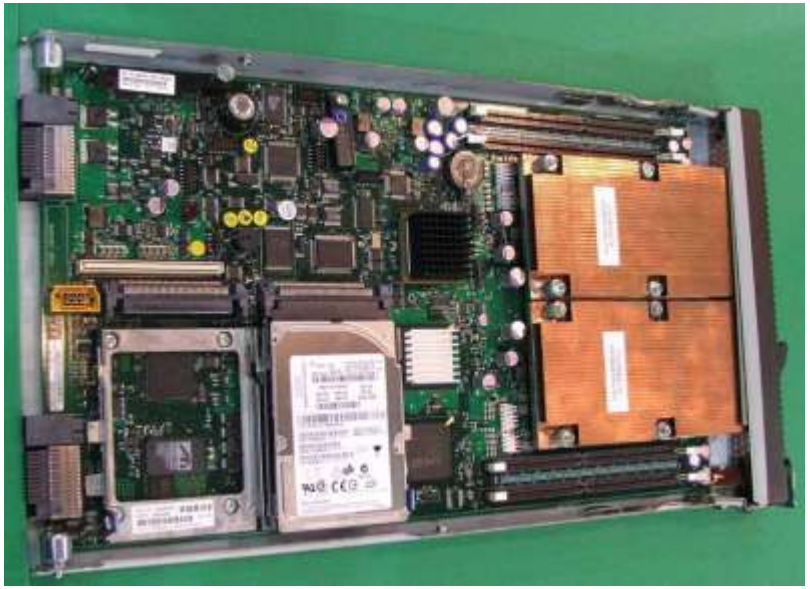
- Virtualisation
  - Making many items a single pool of resource
  - Partitioning the single pool of resource to be many logical items
  - Driving up utilisation rates
- Blade computing
  - Platform for virtualisation
  - Uses standard components for economies of scale

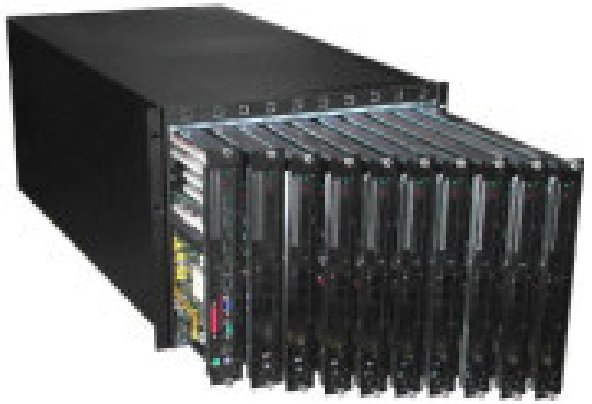
What is Blade?

- Blade computing is not just another form factor
  - It's an architecture
    - Do not confuse with standard servers!
  - It requires complete engineering
    - A piecemeal approach will lead to major problems
  - It provides an overall platform

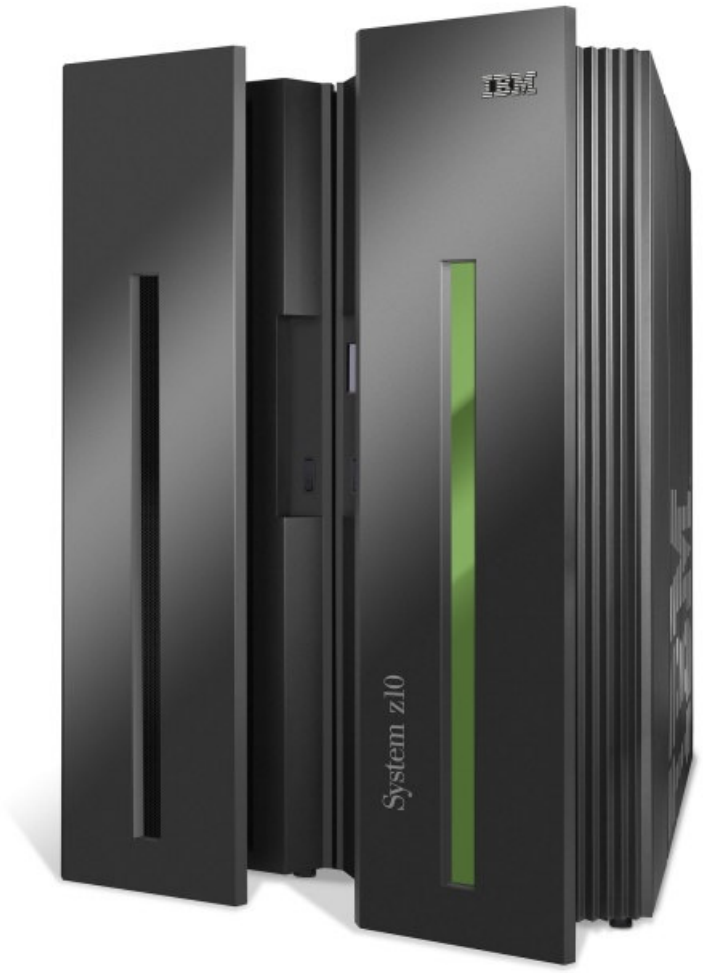
Blade as a platform

- Blades are not generally self contained computers as we know them
  - Compute blades
  - I/O blades
  - Network blades
  - Storage blades
- Chassis design is all important
  - Power distribution
  - Cooling
- Support for various workloads
  - Different OS, different chips





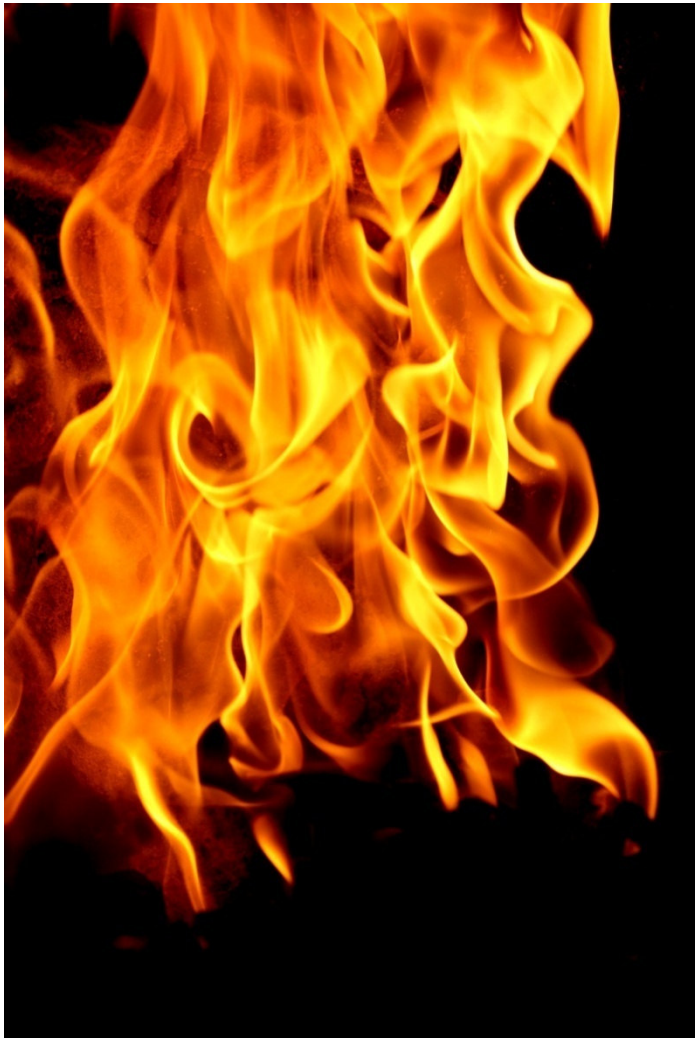
Blade in existing environments



- Blade is not a one-stop replacement for everything that has gone before
- Existing systems provide engines for specific workloads
- Remove “standard” workloads from these engines, move to blades
  - Frees up resource to support more specific workloads

Blade issues

- Higher compute densities can lead to:
  - Higher power requirements
  - Higher heat concentrations
  - More UPS required
  - New data centre designs for cabling, cooling, etc.
  - Need for new tooling around systems management



Blade advantages

- Premium platform for virtualisation
  - Higher efficiencies and utilisation rates
- Failure of any component can be mitigated
  - Built in business continuity
- Lower component costs compared to e.g. Unix systems
  - Economies of scale based on using standard sub-components
- Easy to run mixed environments
  - Windows/Linux, IA/Power/Cell

The future

- The need for business flexibility drives the need for flexible platforms
- SaaS and mash ups drive the need for a dynamic platform that can grow and shrink to meet variable workloads
- The current economic climate mitigates against large infrastructure projects
- The majority of new projects will be based on blade constructs
- Islands of blade will join up and become the over-reaching architecture over a period of time

Conclusions

- Blade has much to offer at a business level
  - Lower energy costs
  - Lower real-estate costs
  - More flexibility
- Blade is not a different server form factor
  - It is a new architecture, and needs a new approach to how to get the best out of it
- Blade vendors understand the underlying needs for power distribution, cooling and wiring
  - Use their expertise – don't do it in an ad-hoc manner
- Blade should be the de facto platform for virtualisation, SaaS and anything requiring variability in its workloads