# CY 2003 Architectural Enhancements

## Ramifications for Summer deployment

**March 4, 2003**

# Technology Goals

- Objective: scale to meet increasing demand
- Technology: Load Balancing
- Objective: provide consistent availability
- Technology: Transparent failover

# High-level BIG-IP Architecture - Target

Internal access HTTP/HTTPS
(SSL for Commons Testing)
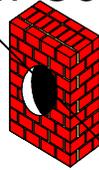
External access
HTTP/HTTPS
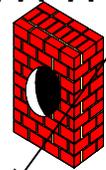
BIG-IP Load Balancer
Test and Int. Prod

BIG-IP Load Balancer
External Production

FUTURE

External access

Internal access

| Dev1 Develop. | Dev2 Develop. | Deneb Test | Deimos Test | Pavo Int. Prod | Phobos Int Prod | Corvus Ext Prod | New Ext Prod |
| 9iASR2 | 9iASR2 | 9iASR2 | 9iASR2 | 9iASR2 | 9iASR2 | 9iASR2 | 9iASR2 |
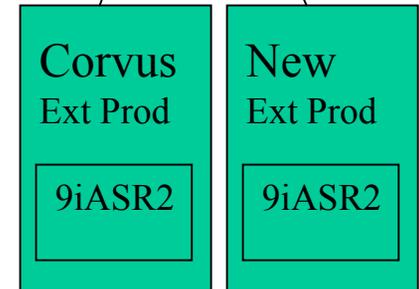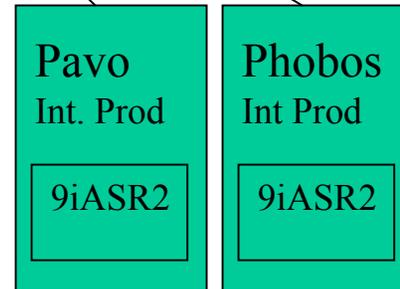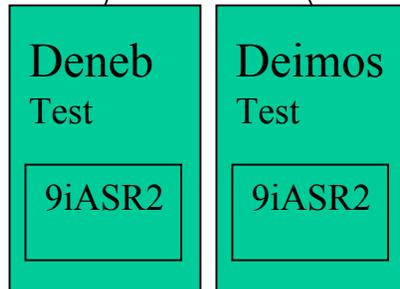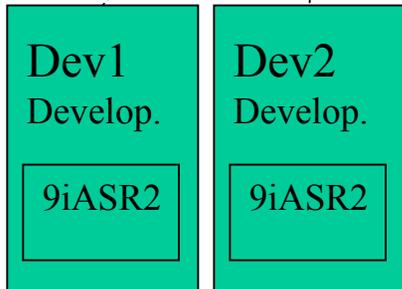
NON-PRODUCTION SYSTEMS

PRODUCTION SYSTEMS

NOTE: All traffic between BIG-IP Load Balancer and Servers is HTTP

# Technology Priorities

1.  Load balancing for external users
2.  Load balancing for all users
3.  Transparent failover for external users
4.  Transparent failover for all users

# Technology Goals for Summer 2003

- Load balancing for external users
  - **Crucial to permit us to scale as external access increases.**

- Start packaging internal applications for load balancing
  - **Important first step to permit orderly introduction of load balancing internally.**

# High-level BIG-IP Architecture
## July Option

External access
HTTPS

BIG-IP Load Balancer
External Production

External access

Internal access

| Pavo<br>Int. Prod | Phobos<br>Int Prod | Corvus<br>Ext Prod | New<br>Ext Prod |
|---|---|---|---|
| 9iASR1 | 9iASR2 | 9iASR2 | 9iASR2 |

NON-PRODUCTION SYSTEMS

PRODUCTION SYSTEMS
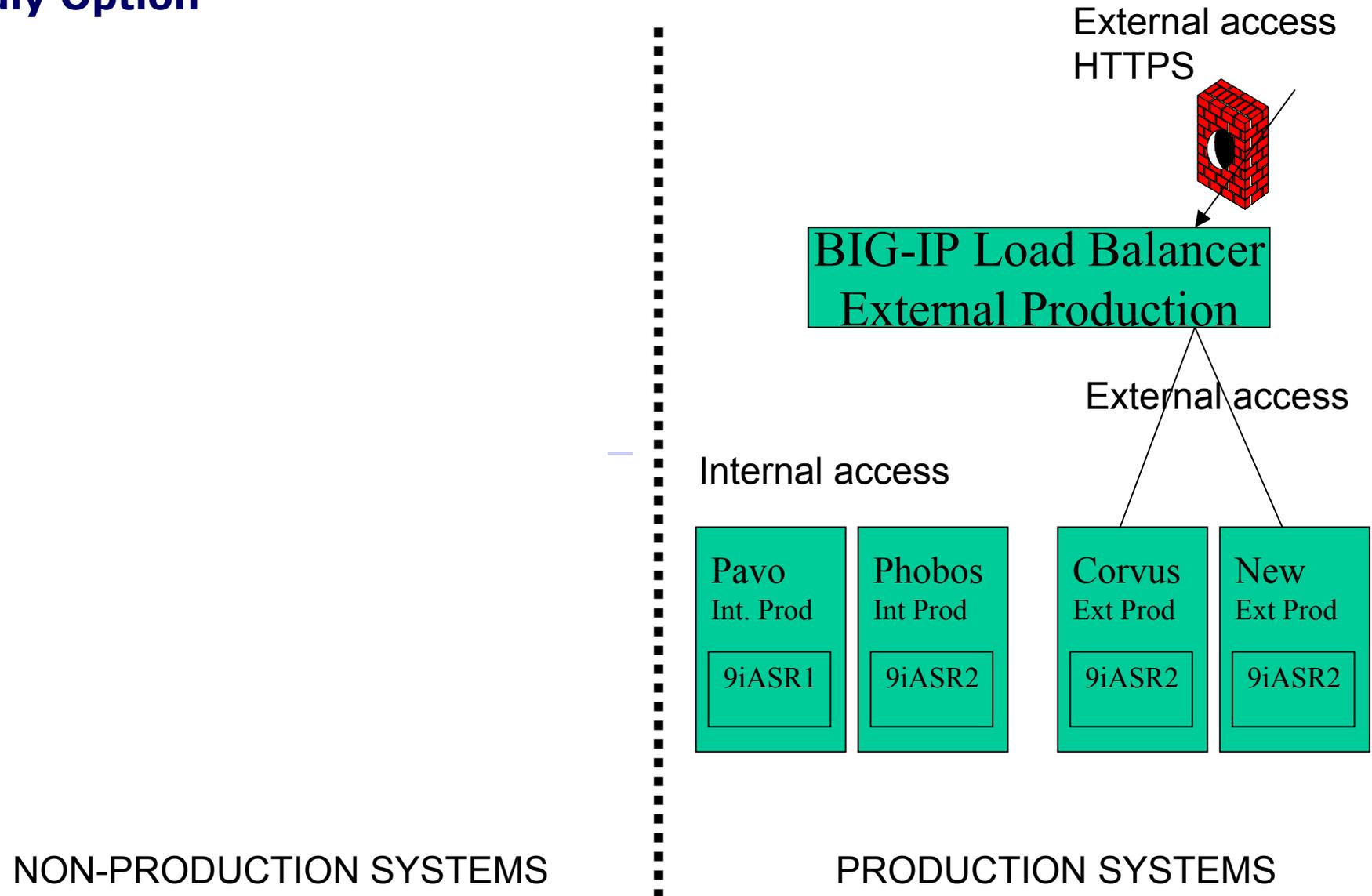
NOTE: All traffic between BIG-IP and Servers is HTTP

# Progress to Date

- Load balancing hardware in place
  - **OER/CIT working closely together to make this technology work for eRA**
  - **CIT has tested hardware and is now working with OER to implement the technology**
  - **External applications are already packaged to take advantage of load balancing**

# Key Dates and Milestones

- 05/05/03  Test ready for developers
- 05/12/03  Test ready for testers
- 05/31/03  Upgrade production
- 6/1-6/7   Deploy first Summer iteration to test
- 06/07/03  Testers begin testing Summer appl. code

- Assumptions to stay on plan
  - **If new deployments or configuration changes are necessary to get applications to work with load balancing, the schedule may change**

# Issues

- Production can't be deployed until successful regression testing indicates that load balancing environment works for existing applications.
- Summer deployment testing can't start until Production is ready
- Summer deployment delivery date is tied to start of testing period

# Ramifications

| Regression Testing results | Ramifications |
|---|---|
| Existing applications work | We can continue on schedule for July 25 release date |
| Minor configuration changes (less than 3-4 weeks total delay) in existing applications are needed | We deploy new application configuration<br><br>Summer deployment may have to be adjusted |
| Significant amount of configuration/modification (> 4 weeks total delay) must be done to existing applications | We keep Production as is, reset the test environment, then proceed with Summer deployment. Probably a slight delay in Summer deployment. |
| | |