CERIAS

the center for education and research in information assurance and security

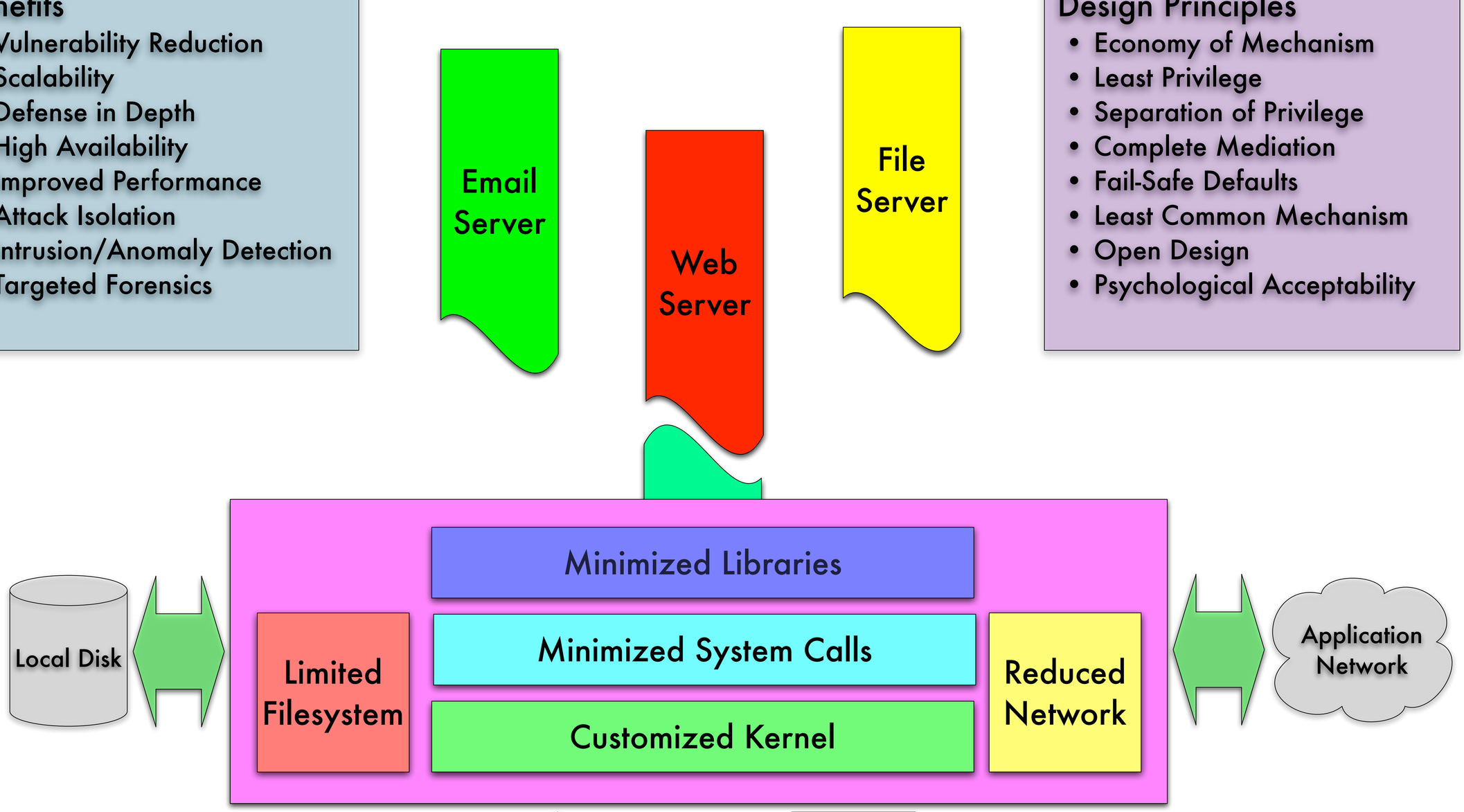
Poly^2 Application Nodes

poly-computer * poly-network

To create a secure and fault-tolerant server architecture
using established security design principles.

Benefits

- Vulnerability Reduction
- Scalability
- Defense in Depth
- High Availability
- Improved Performance
- Attack Isolation
- Intrusion/Anomaly Detection
- Targeted Forensics



Design Principles

- Economy of Mechanism
- Least Privilege
- Separation of Privilege
- Complete Mediation
- Fail-Safe Defaults
- Least Common Mechanism
- Open Design
- Psychological Acceptability

Implementation Status

- Custom Kernel Configuration
- System Call Patchset
- Reduced Network Patchset
- Limited Filesystem Patchset
- Test Environment Patchset
- Minimized OS Configuration
- Executable Interrogator
- Web and Email Applications
- Remote OS Loading

The Poly^2 Architecture

This project advances the understanding in building secure and reliable system architectures for critical services in hostile network environments. A secure and reliable system architecture must only provide the required services to authorized users in time to be effective. The proposed architecture is based on widely acknowledged security design principles. The Poly^2 application nodes host the external network services.

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http://projects.cerias.purdue.edu/poly2/

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