RSA Validation Solution

Agenda

- Need for Certificate Validation
- Certificate Validation
  - CRLs
  - OCSP
- RSA Validation Solution
  - RSA Validation Manager
  - RSA Validation Client
- Summary

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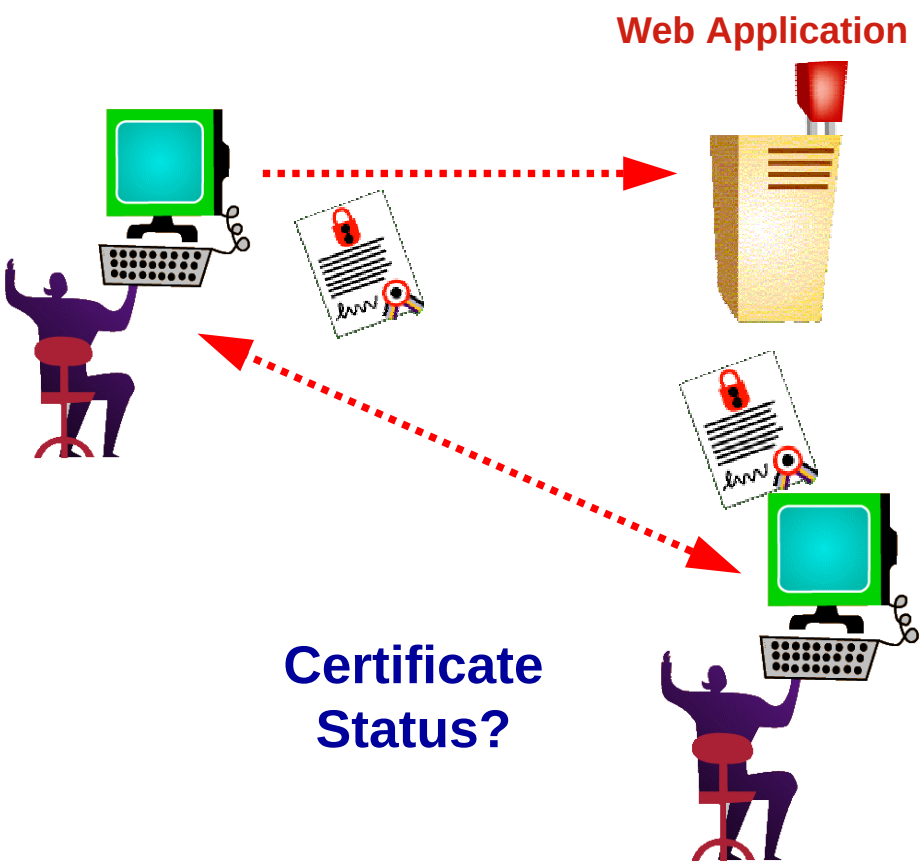
Need for Certificate Validation



- How can servers & applications know if users trying to access information have valid certificates?
- How can users receiving signed e-mail know the status of the sender's certificate?
- How do businesses provide high level of assurance for transactions using digital certificates?

Need for Certificate Validation

- To ensure high levels of trust organizations need to validate digital certificates
  - Digital certificates can expire, be revoked or be suspended
- Organizations need an efficient and reliable method to check the validity of certificates with every transaction.
- Long standing method to determine certificate status is certificate revocation lists (CRLs)

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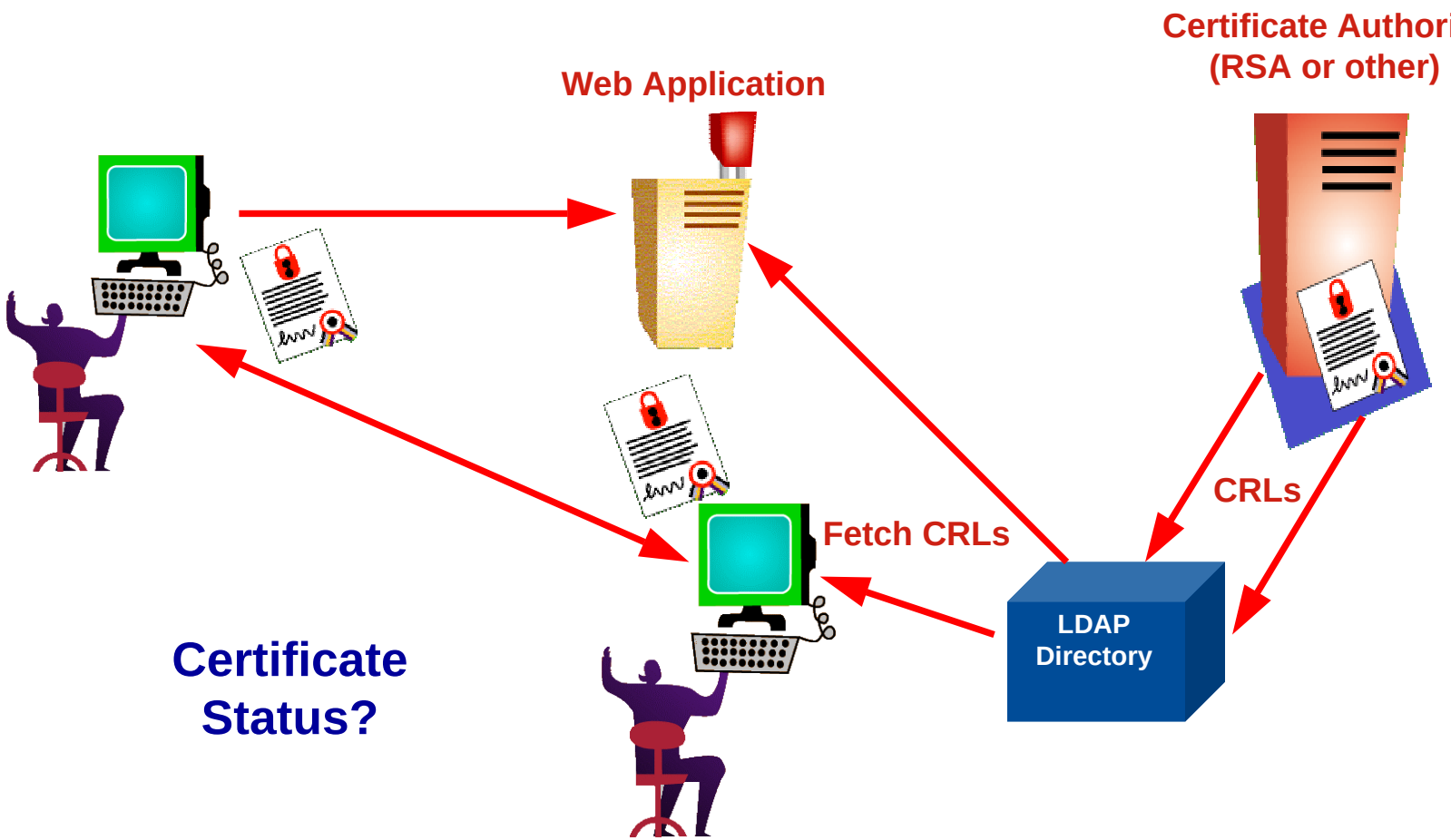
Certificate Validation
Certificate Revocation Lists (CRLs)

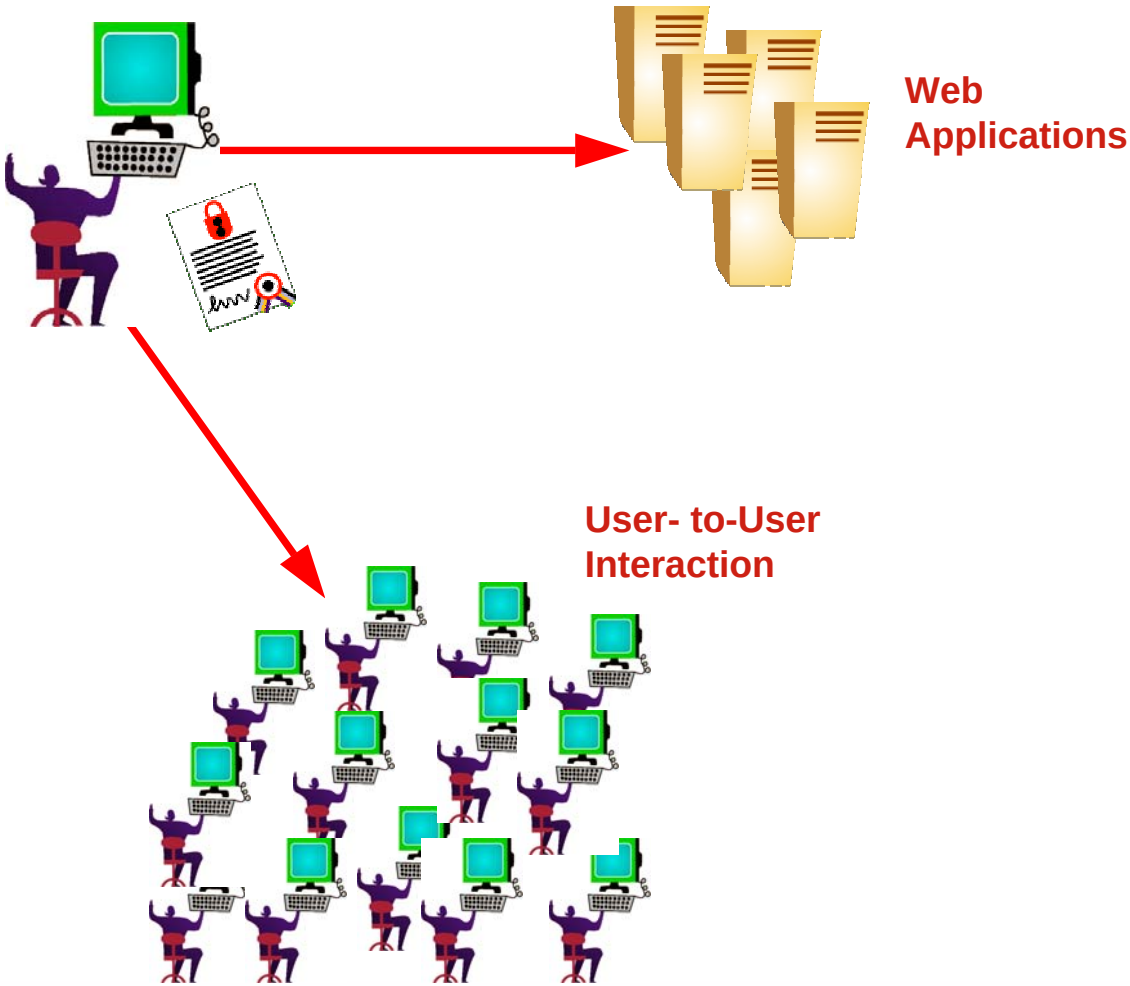


Certificate Validation Challenges with CRLs

RSA SECURITY

- Two significant challenges of CRLs:
  - Accuracy of information
  - Distribution/scalability
- Bottleneck in validation process prevents accurate and timely certificate validation

Certificate Validation: CRLs Deployment Issues



Certificate Validation: CRLs Deployment Issues

Web Applications

Certificate Authorities (RSA or other)

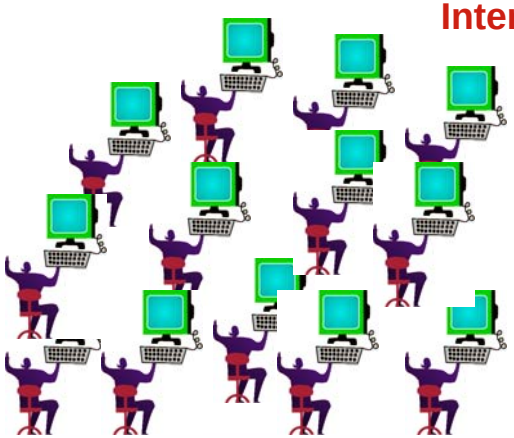
ABC Co. CA

123 Co. CA

XYZ Co. CA

Certificate Status is checked at Server or Desktop

User- to-User Interaction



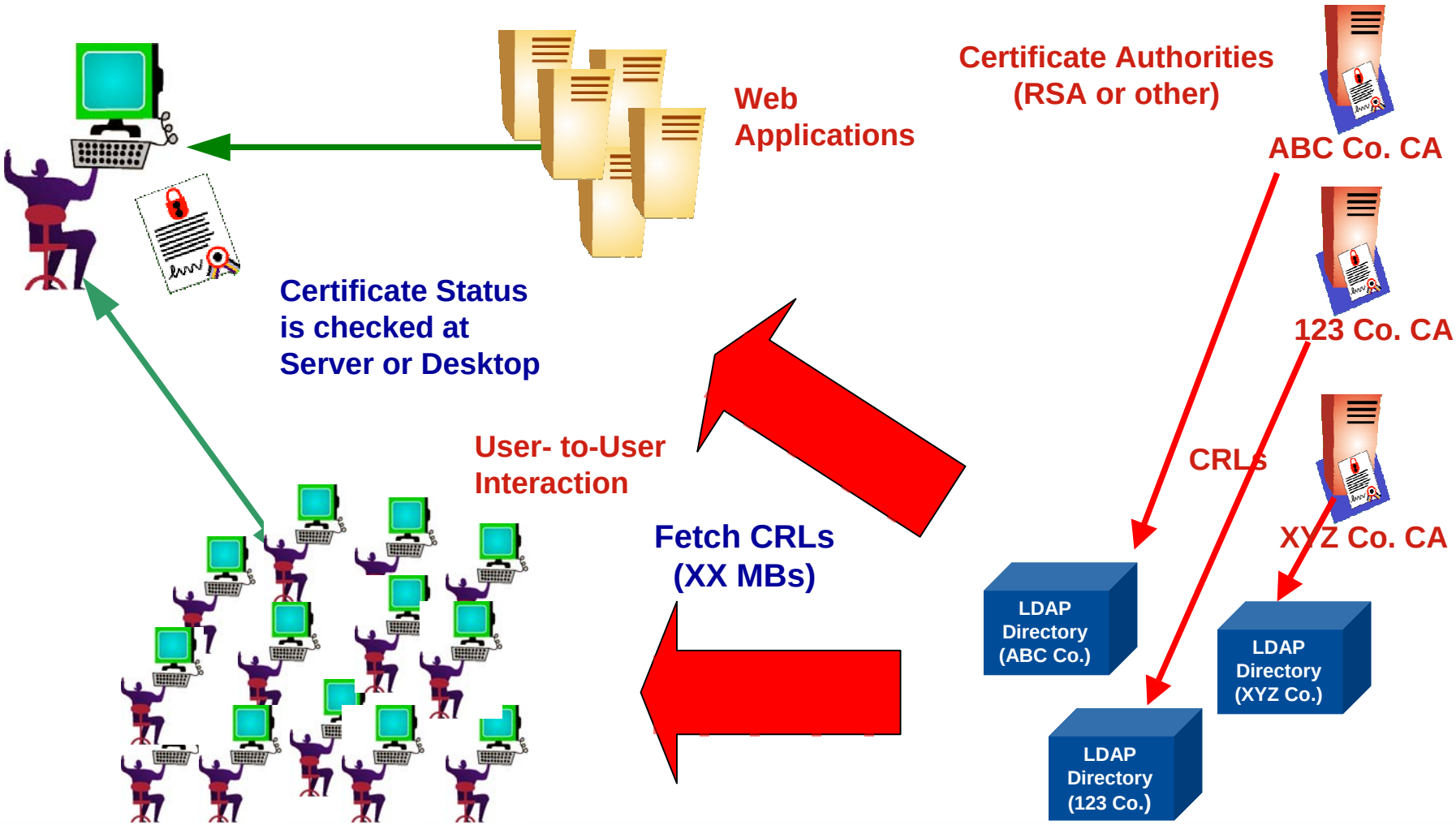
CRLs

LDAP Directory (ABC Co.)

LDAP Directory (XYZ Co.)

LDAP Directory (123 Co.)

Certificate Validation: CRLs Deployment Issues



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Certificate Validation: Online Status Checking Protocol (OCSP)

RSA SECURITY

- IETF industry standard to address the challenges with CRLs
- How it works:
  - When a user attempts to access a server, OCSP sends a request for certificate status information.
  - The server sends back a response of "current", "expired," or "unknown."
  - The OCSP protocol specifies the nature of communication between the server (which contains the certificate status) and the client application (which is informed of that status)

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RSA Validation Solution
Business Benefits

- Ensures high levels of trust & assurance of transactions
  - Resolves CRL performance and scalability issues
  - Protects organizations from security breaches with invalid certificates
- Detailed auditing for increased accountability and protection
- RSA Validation Client seamlessly integrates real-time status checking into MS Windows applications
- Interoperable with third-party Certificate Authorities
- Certificate validation critical for secure Web services

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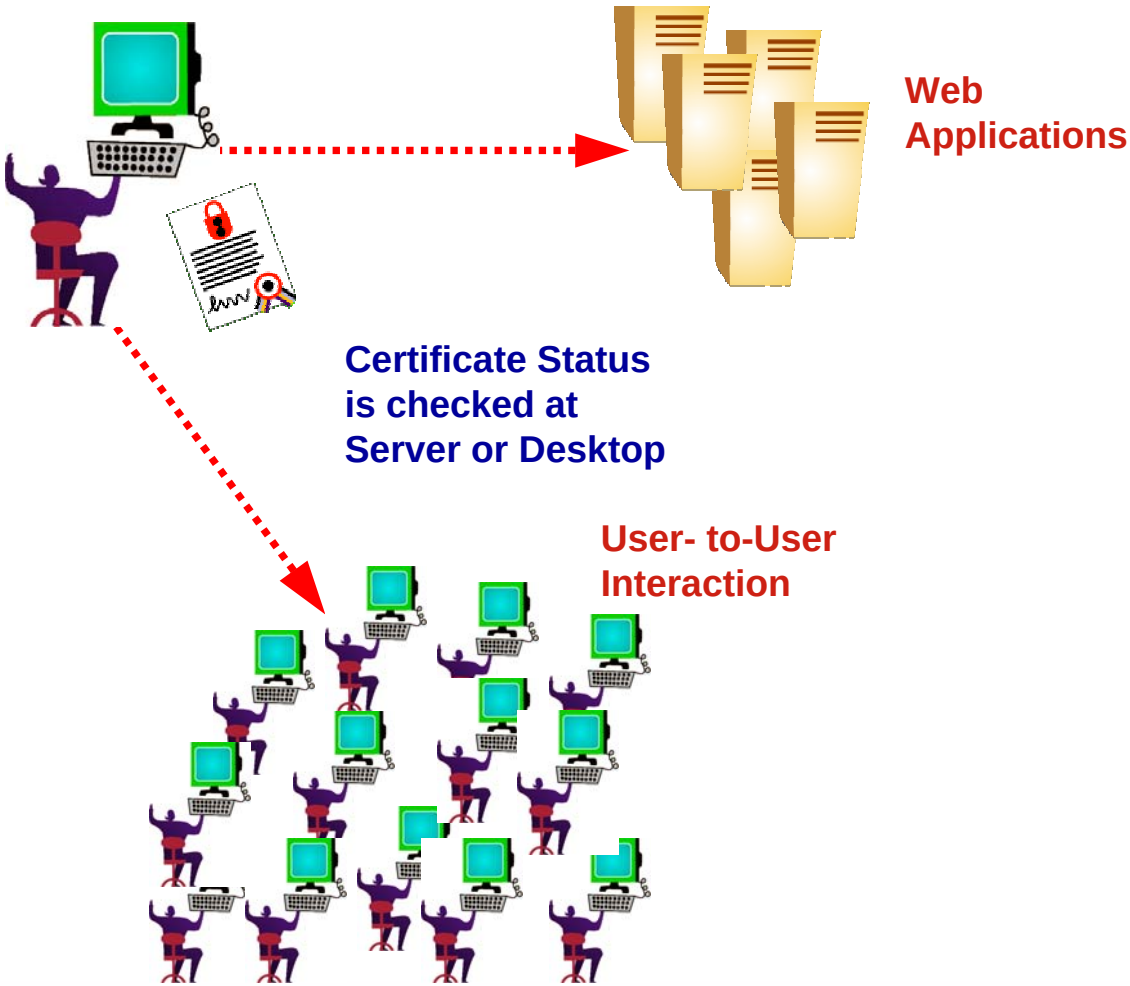
RSA Validation Manager
Overview

- Industry standards-based OCSP server:
  - RFC 2560 (PKIX OCSP)
  - CONOPS (US Gov't)
  - Identrus (Financial Services)
- Highly scalable, enterprise-ready certificate status checking
- Interoperability with Keon CA and third party standards-compliant CAs
- Interoperability with third party OCSP clients
- Platform Support:
  - Solaris 8
  - Windows 2003 & 2000 (Q2 2004)

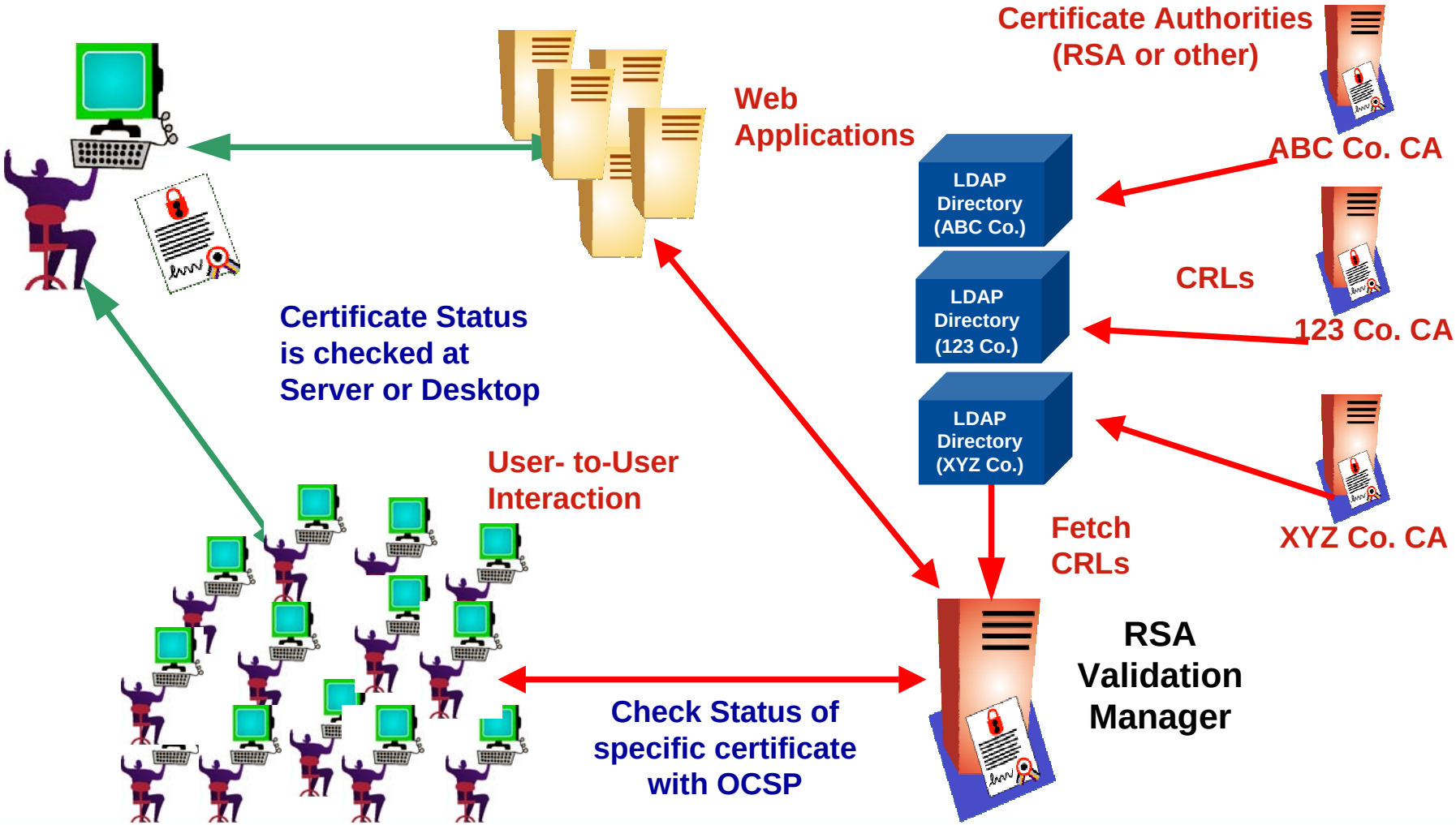
Certificate Validation:

Certificate Status Checking with OCSP



Certificate Validation:

Certificate Status Checking with OCSP



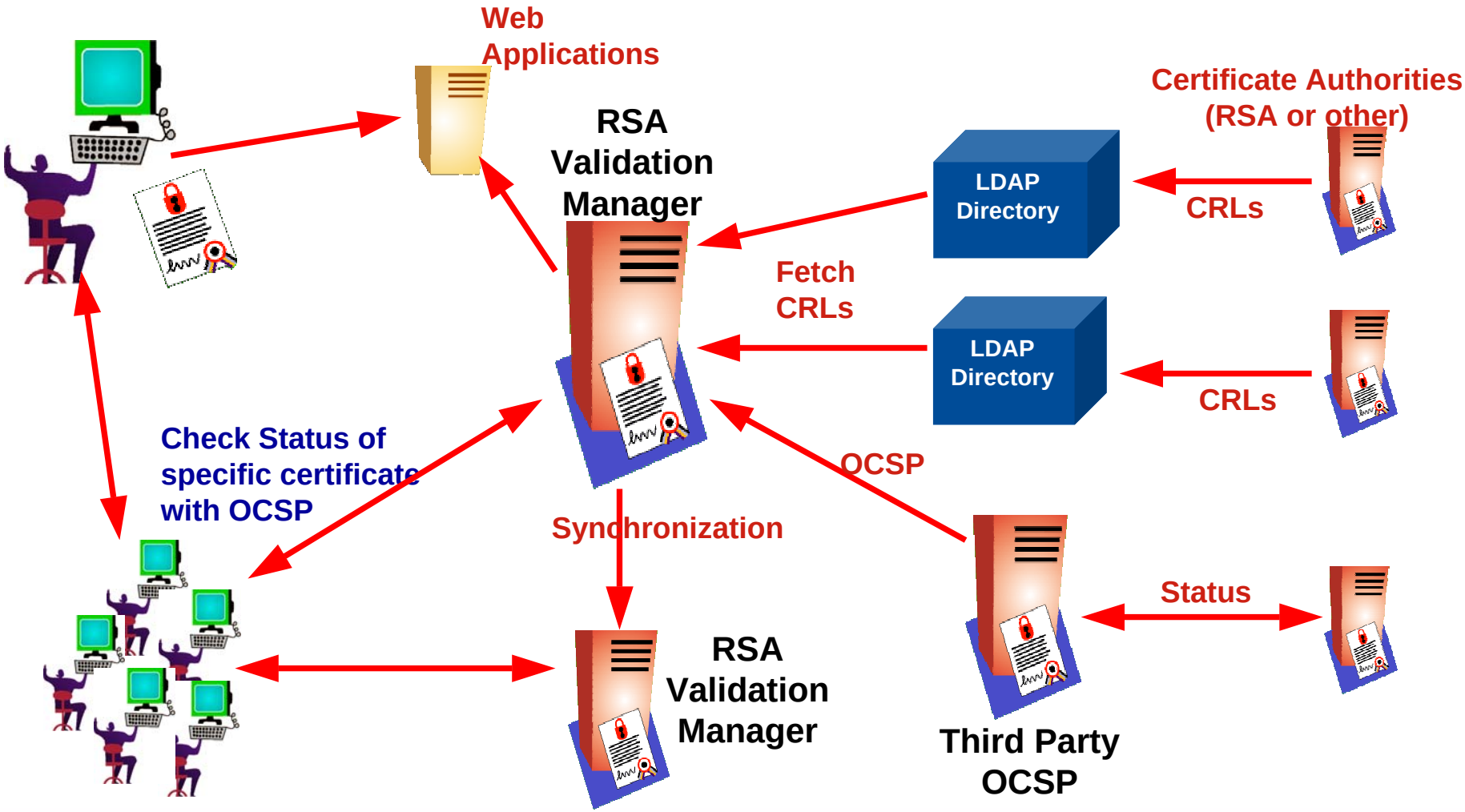
RSA Validation Manager
Key Features – Administration and Security

- Easy Administration
  - Command line administration for task automation
  - Local and remote web-based administration
  - Centralized aggregate of CRLs & delta CRLs published by single or multiple CAs
- Enhanced Security
  - HSM Support for FIPS level 3 protection of the private keys
  - SSL enabled requests, responses & administration
  - Digitally signed and unsigned OCSP requests
  - Nonces supported to eliminate replay attacks
  - Instant local revocation of certificates and CAs
  - Detailed audit logs and secure digital signing of audit logs (Q2 '04)

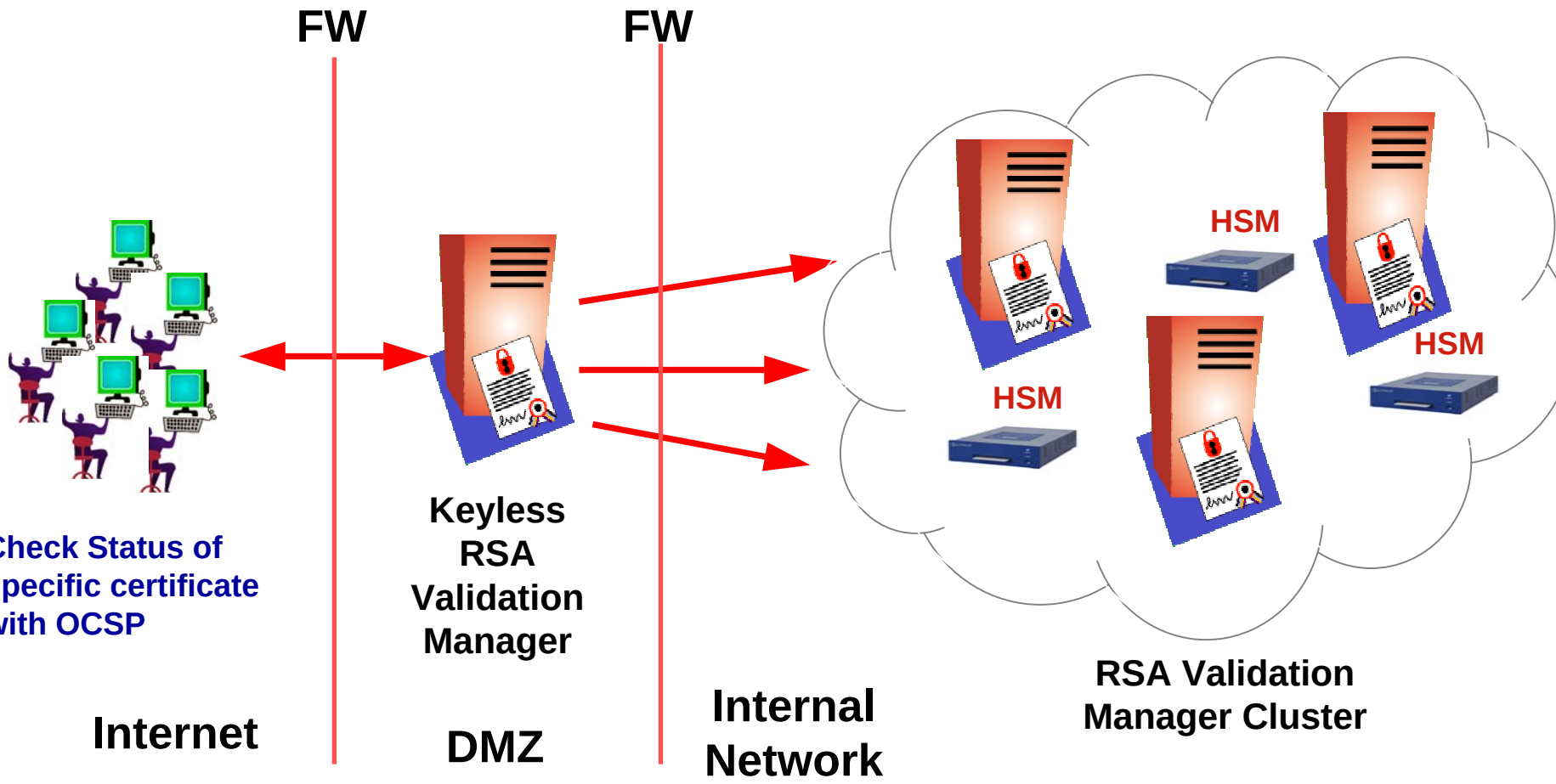
RSA Validation Manager
Key Features – Scalability and Performance

- Synchronization between servers
  - Eliminates need to distribute CRL to every OCSP Server
  - Allows Low bandwidth distribution of updates
- Caching Configurability
  - Grace period for expired CRLs
  - Enables quicker response time
- Supports multiple CAs simultaneously
  - Designate specific signer to sign OCSP responses
  - Specify the status source used to obtain status
- Supports Multiple Signers
  - Each Signer can have multiple certificates to serve different CAs
- Supports Multiple Status Sources
  - Can “Fetch” CRL/deltaCRL/ARL from an LDAP directory or manually import
  - Can “Forward” or “Proxy’ requests to another OCSP responder

Checking Status with OCSP:
Scalability & High Assurance



Checking Status with OCSP:
Scalability & High Assurance



RSA Validation Manager Performance

Responder Configuration	Signer	resp/sec	resp/hr
Unsigned request with nonce	software	209	750,000
Unsigned request with nonce	nCipher	321	1,150,000
Signed request with nonce	nCipher	207	745,000
Unsigned request with no nonce	cached	510	1,800,000

- What Performance level is required for 1,000,000 users?
  - Assume that during a peak hour 50% of users use certificates and the average number of uses is 1.5.
  - Even with peaks of 50% over mean within the hour one RSA Validation Manager with an HSM can handle the load.

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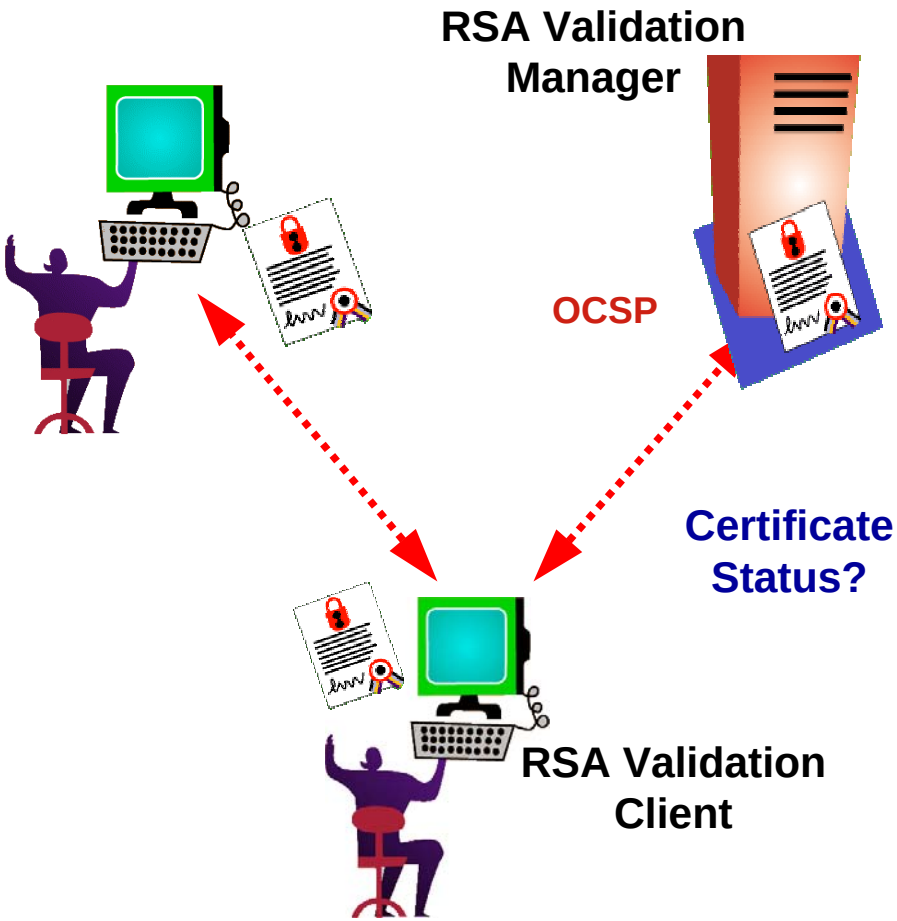
RSA Validation Client
Overview

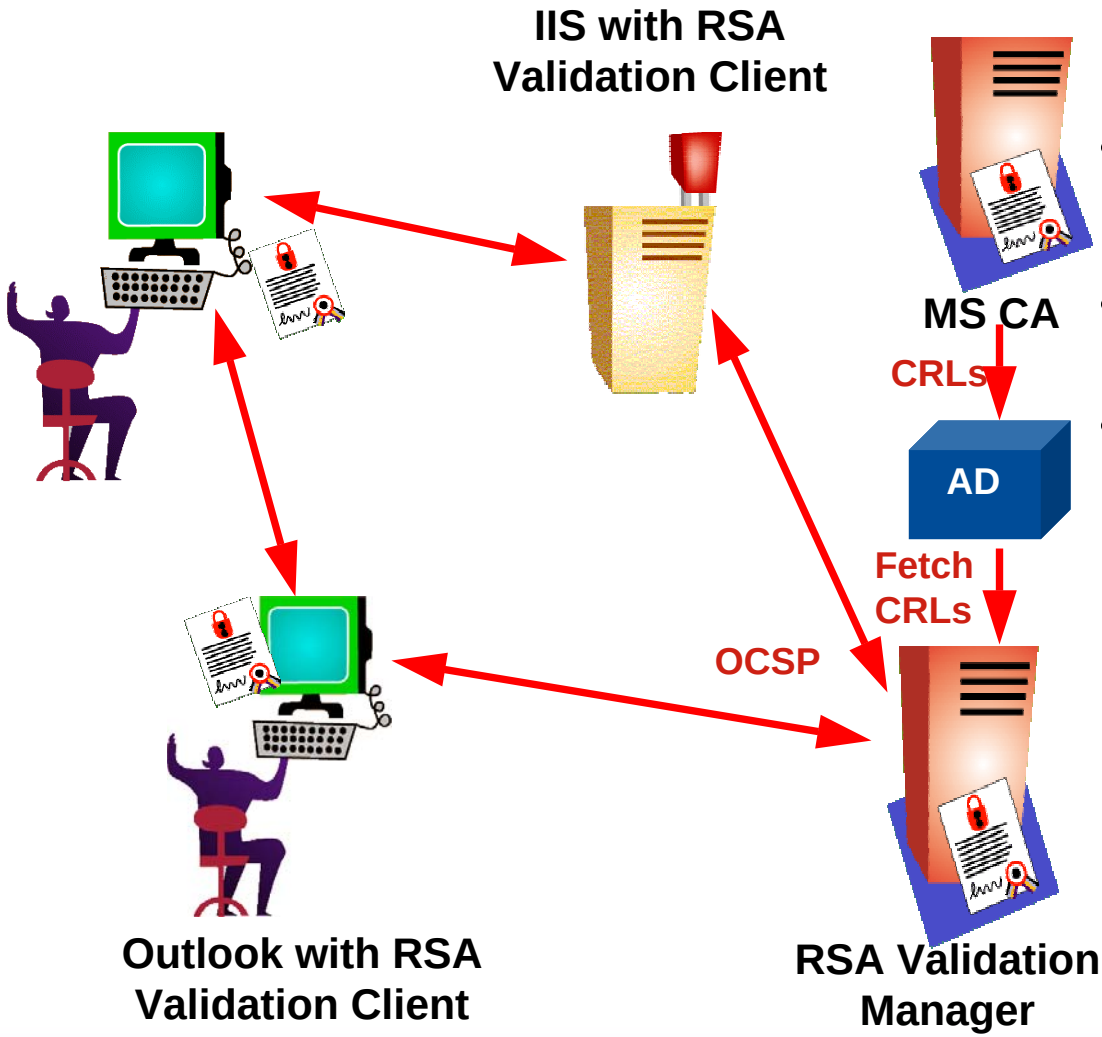
- Seamless OCSP client for MS Windows applications:
  - E-mail clients
  - Web browsers & servers
  - Third party MS CAPI compliant applications
- Supports standard RFC 2560 (PKIX OCSP) requests
- Supports signed/unsigned requests & response validation
- Provides full support and management of CRLs/delta/CRLs/ARLs
- Easy to deploy migration path from CRLs to real-time certificate status checking
- Supports multiple CAs and status sources simultaneously

RSA Validation Client



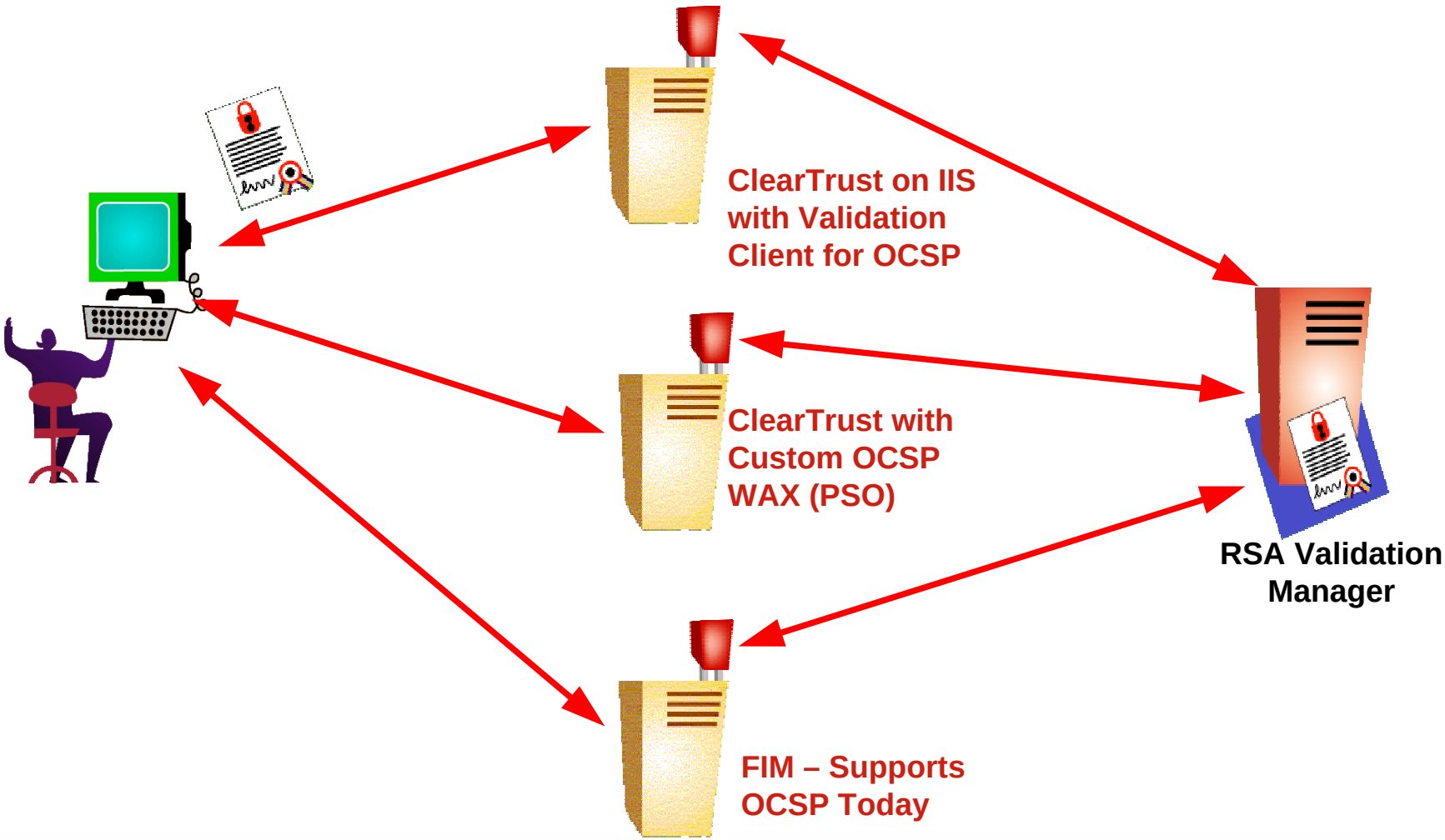
- Client deployable via Microsoft SMS
- Highly configurable to work in heterogeneous environments
- Interoperable with third party OCSP responders & CAs
- Supports local CRLs & OCSP validation to server
- Platform support:
  - Windows 2000
  - XP, NT, 2003 (Q2 2004)

RSA Validation Solution
Adding Value to Microsoft CA



- Validation Client deployable via Microsoft SMS
- Interoperable with MS CA
- Platform support:
  - RSA Validation Client:
    - Windows 2000
    - XP, NT, 2003 (Q2 2004)
  - RSA Validation Server:
    - Windows 2003 & 2000

RSA Validation Solution:
Adding Value to RSA ClearTrust and FIM



Summary

- High level of trust and assurance for transactions
- Resolves CRL performance and scalability issues preventing accurate and timely certificate validation
- Scalable solution with high performance and powerful configuration options
- RSA Validation Client provides robust and seamless integration of certificate validation (OCSP and/or CRLs) into MS applications
- Interoperates with third party CAs & OCSP responders
- RSA Security offers the most extensive set of solutions for customers to easily and cost-effectively implement certificate-based applications

Authentication Access Management Encryption Digital Signatures