Managing
IT Assets
Across Enterprise Networks

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Agenda

- Asset Management Issues
- Gartner TCO
- Technology Stack
- Inventory Management
- ESD -- Software Stack Management
- Current technology/business observations
- Best Practices
- Success story
- LSVI's products' value
- Question and Answers

Issues To Consider

- Manage – Why?
  - To reduce TCO
  - To increase business partner satisfaction
  - Keep up with security fixes/virus updates
- Manage – What?
  - Change
  - Hardware equipment
  - Software Stack
- Manage – How?
  - Processes
  - Tools
- Who – Manages?
  - In-house
  - Out-source

Gartner's PC Total Cost Of Ownership

Leveraging best practices can lead to an 18% to 26% reduction in TCO

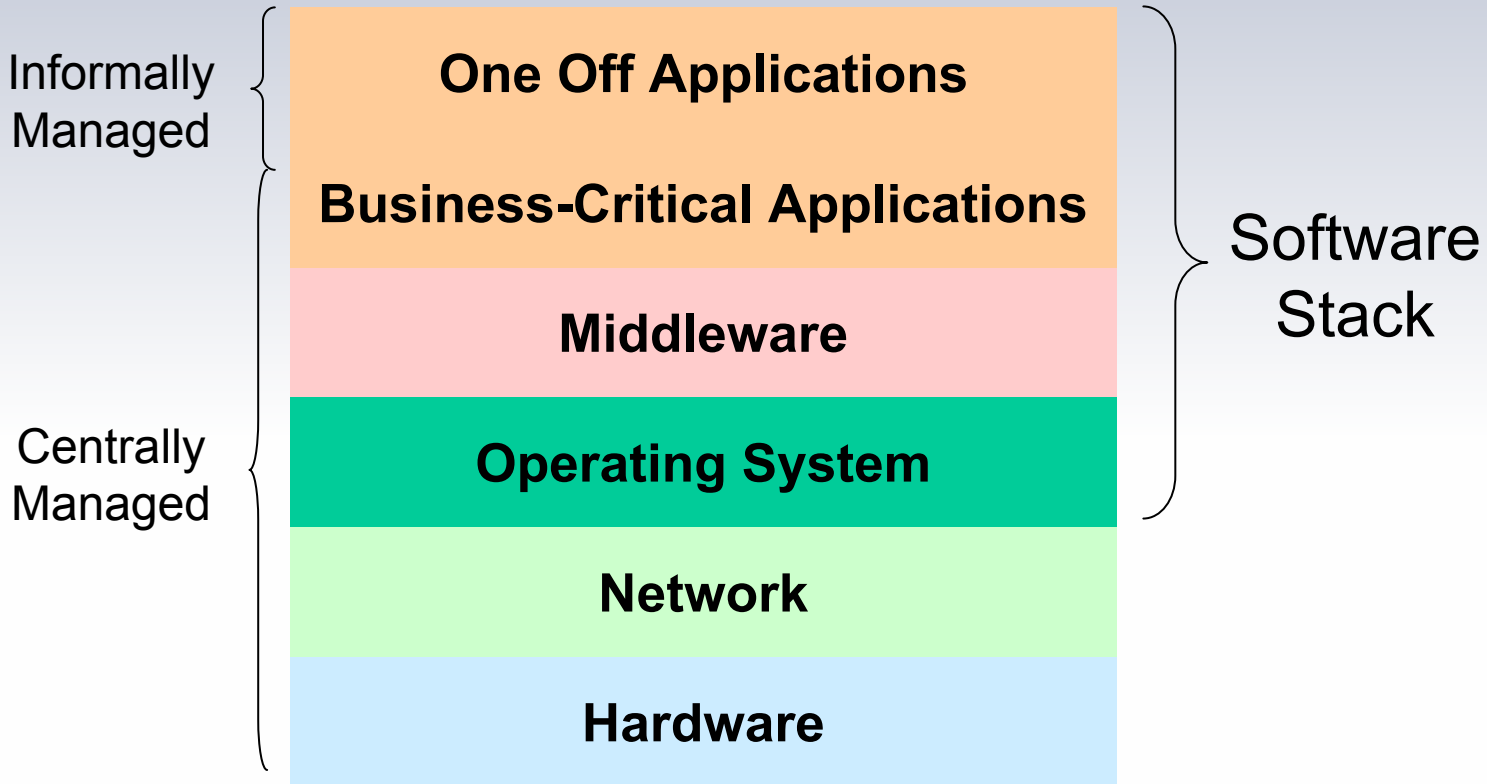
Annual Cost: $8000 to $48,00

Freedom/Chaos ⟷ Control

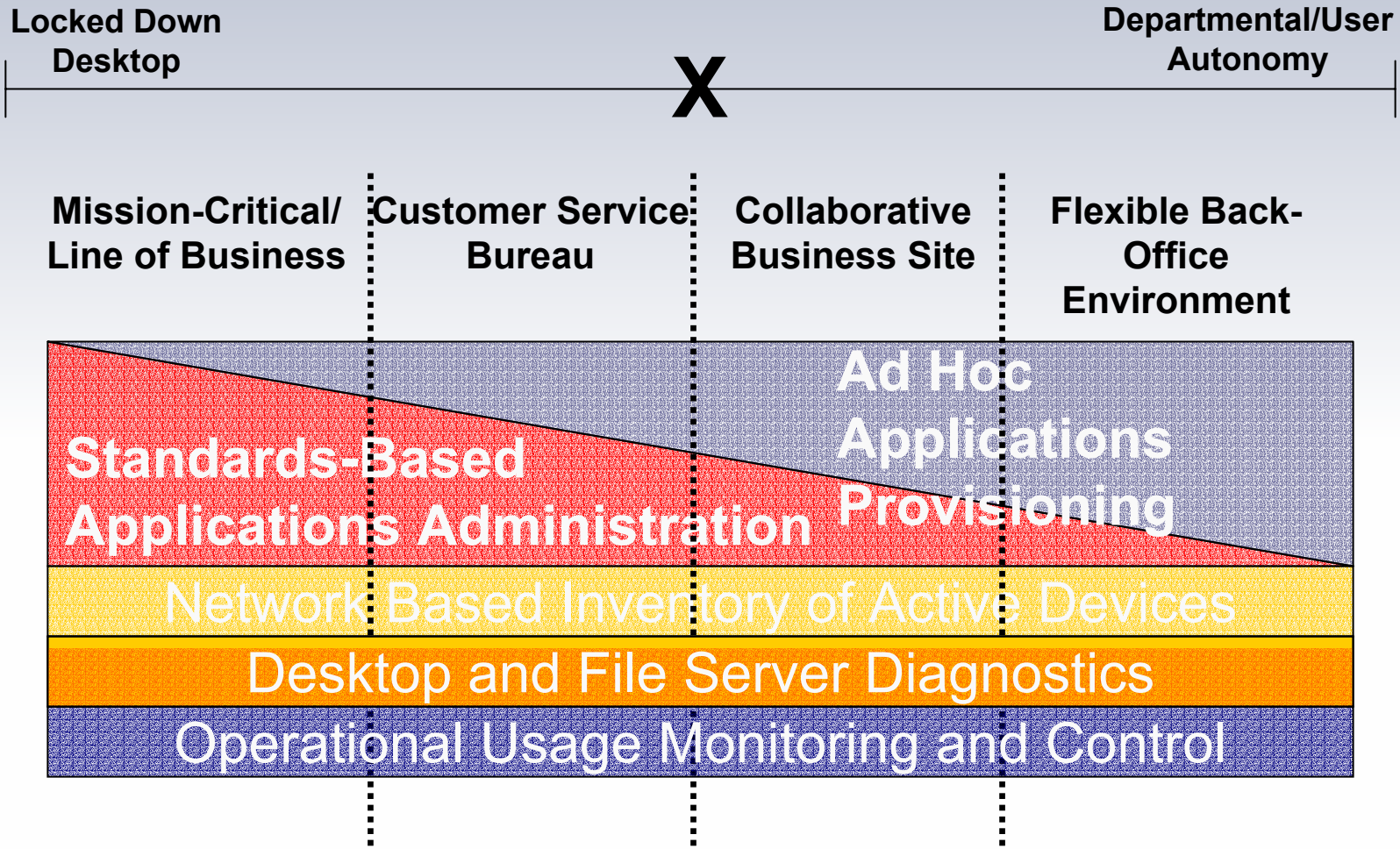
What Process?
Sneakernet
High Management $
100% Dispatched Help
Users in Complete Control
Reactive vs. Proactive Helpless Desk

Starts With Process
Software Distribution
Asset Management
Remote Control
Desktop Lockdown
Self-Healing

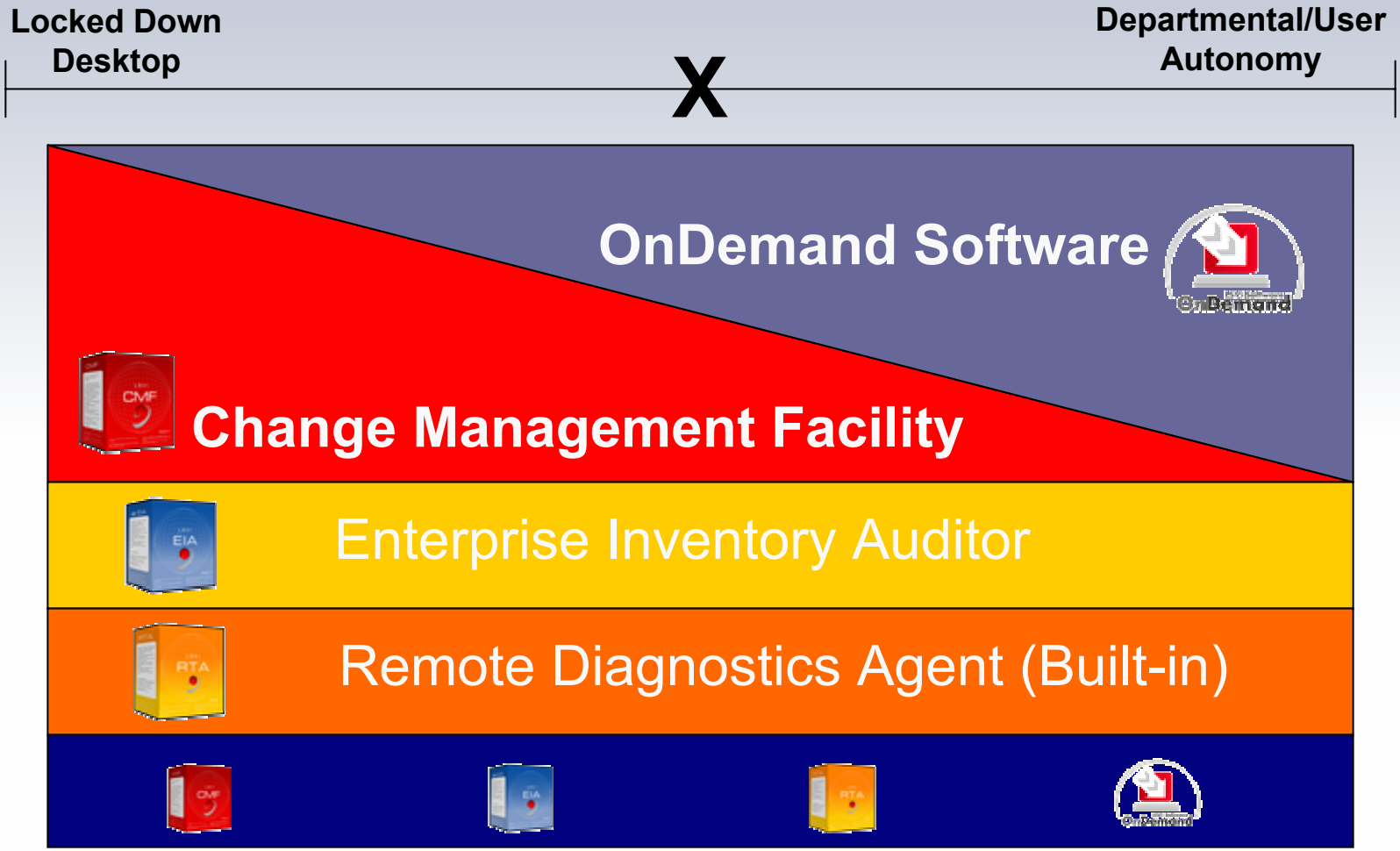
Corporate Technology Stack



Customer Management Profiles



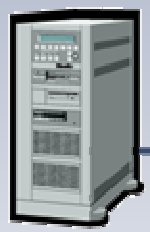
LSVi's Desktop Management Suite



Enterprise Inventory Auditor

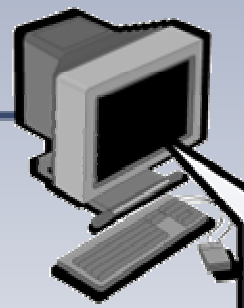
- Asset Tracking for Desktop Computers
  - Sniffed/Full/Quick Discovery
  - Physical hardware assets
  - Software assets and usage tracking
  - Network and configuration
- Enterprise Approach
- Relational Database Repository
- Ongoing Inventory (Asset History)
- WAN, LAN, and Internet Support
- Quick Time-to-Value

EIA Blueprint



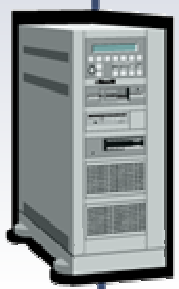
DATA MOBILITY
TO OTHER SYSTEMS

CENTRAL DATABASE
SERVER



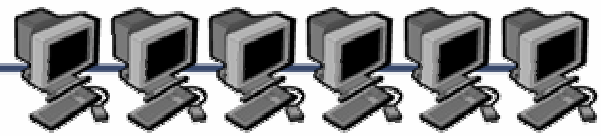
CENTRAL PLANNING,
ADMINISTRATION,
AND REVIEW

- ADMINISTRATIVE CONSOLES
- SOFTWARE DICTIONARY MANAGER
- QUERY SERVER MANAGER



QUERY SERVER

WEB QUERY
SERVER



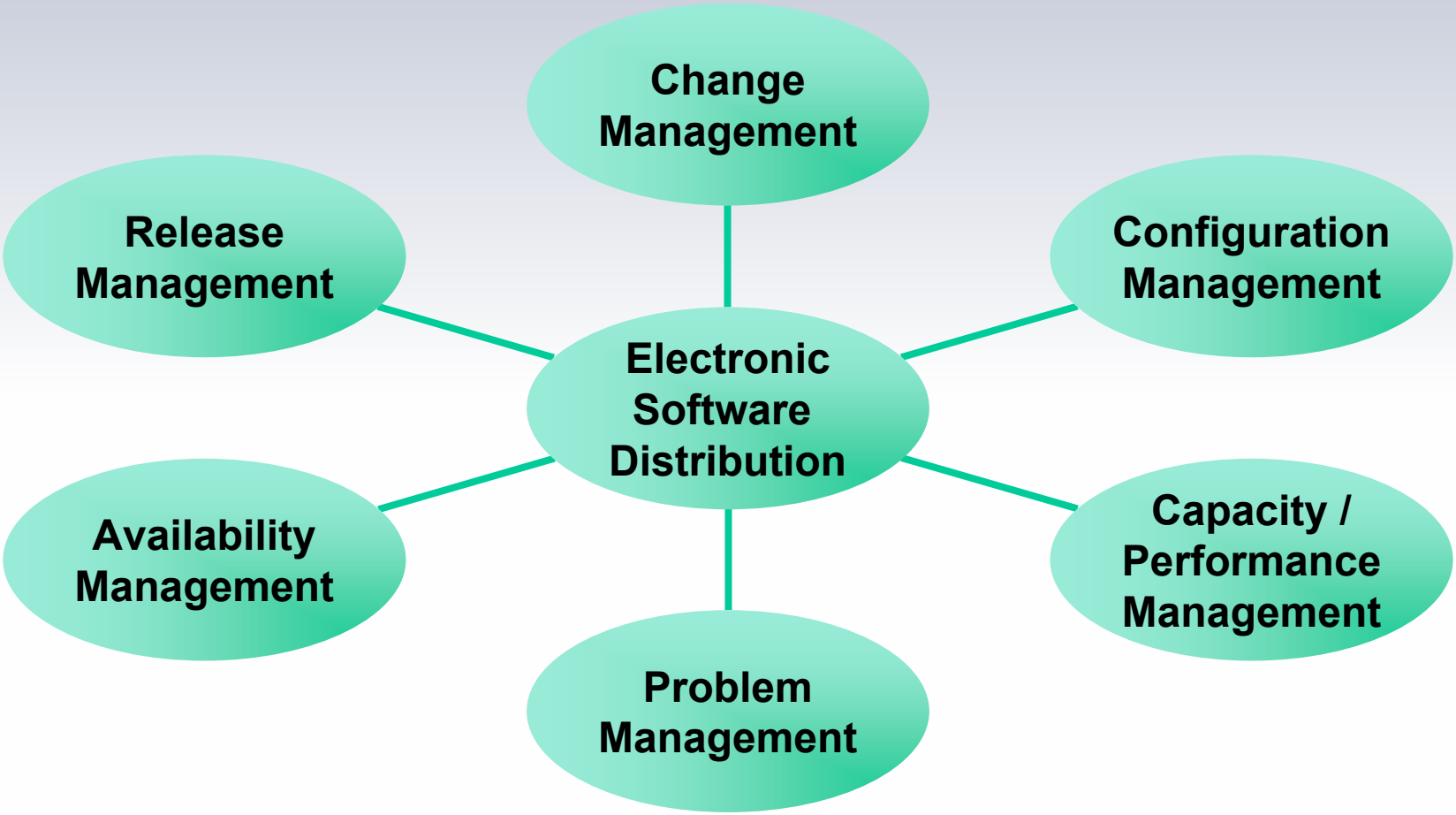
AUDITED MACHINES

AUDITING AGENTS

FIELD TECHNICAL SERVICES

Enterprise Electronic Software Distribution

ESD Best Practices requires organization, processes and tools that incorporate many system management disciplines.



Software Stack Management Objectives

- ESD tool should provide the highest level of responsiveness to business change requirements at the lowest possible cost.
- ESD tool should ensure software changes are traceable, secure and that only the correct, authorized and tested versions of software are installed in a timely manner without impacting availability of computer resources.
- ESD tool should install the right software, at the right time and at the right place.

ESD Operational Requirements

- User perception of 100% Availability
- Off Hour installation of software changes even if machine powered off
- Flawless introduction of new operating environments
- Automated rollback to last working configuration if problems arise
- No involvement of business staff in computer system maintenance
- Recovery of hardware failures within hours
- Cost effectiveness
- Heterogeneous platforms support
- Ease of production roll-out

ESD Architectural Concepts

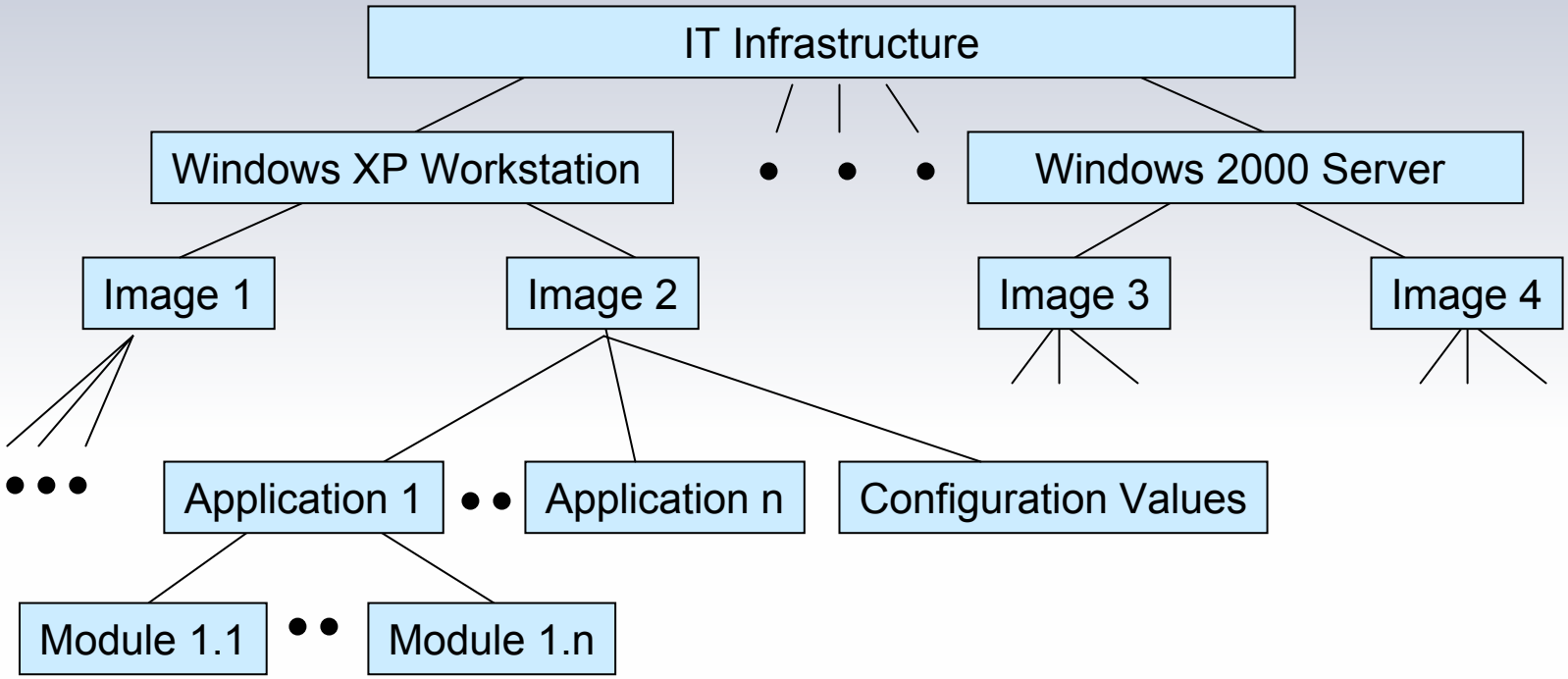
- ESD should implement the process of flawlessly moving from one complete working software image state to another.

Architectural Imperatives:

- Track & manage **entire system image**
- Provide system-maintained **version control**
- **Guarantee the distribution and installation** of software & configuration changes, no matter what transmission or environmental errors occur
- **Integrate configuration** changes
- Provide **synchronized problem identification & resolution**
- Provide **tracking** mechanisms to support auditable change and release management processes
- Provide software engineering tools for **automated differencing** and **granular packaging** as well as support for common pre-scripted packaging tools.

Managing the Entire System Image

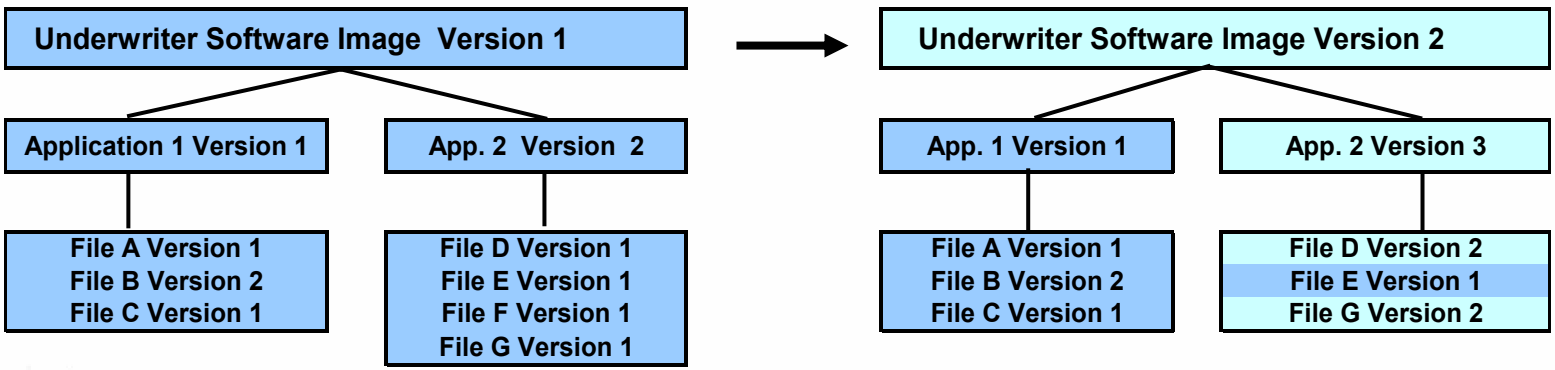
- The fundamental object to be managed is the entire System Image which constitutes a functional entity for the end user



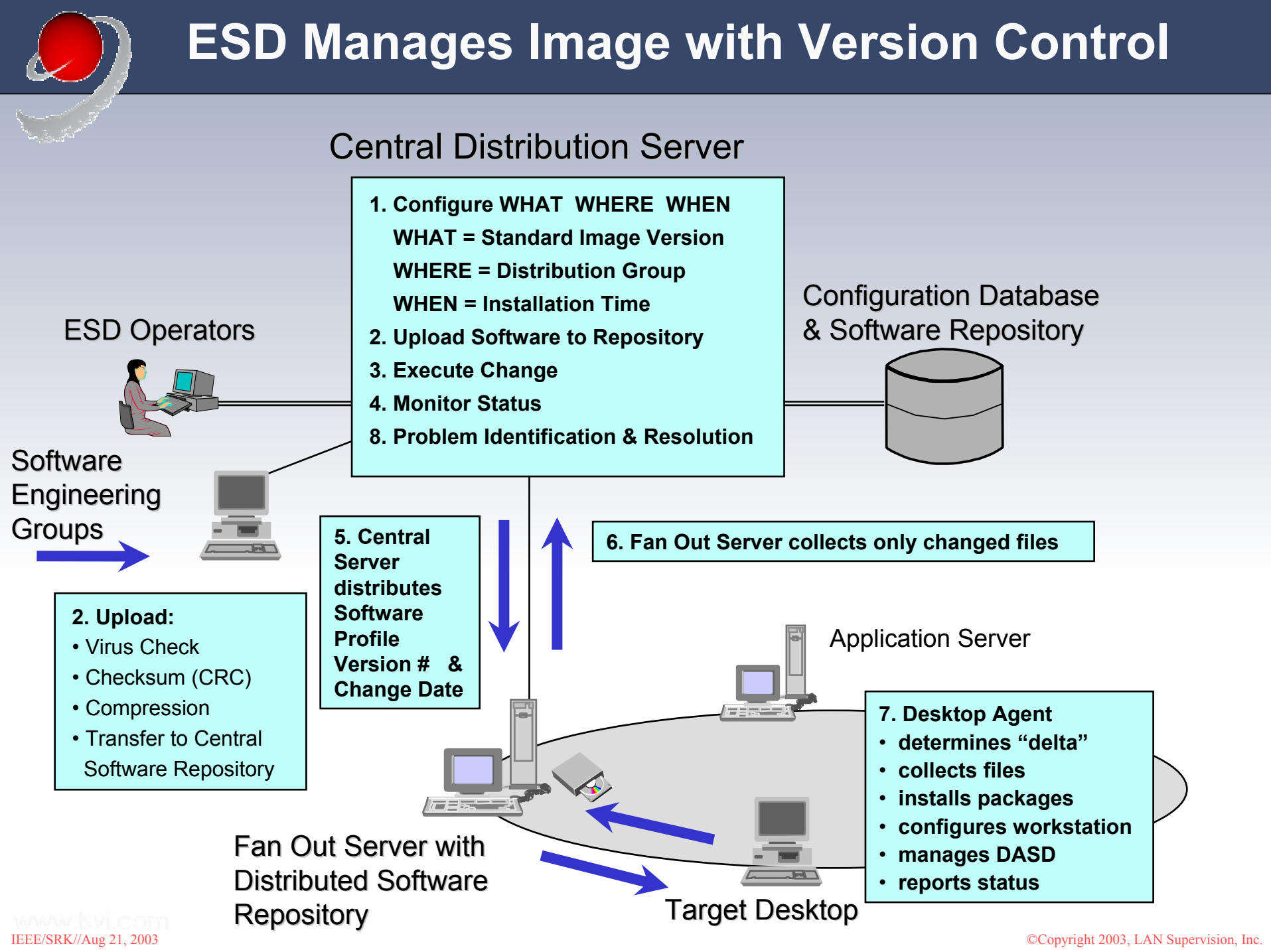
ESD System Provides Version Control

- Hierarchical Version Control of Entire System Image
  - File Level: Minimum unit of Change
  - Package Level: All files within an Application
  - System Image: All Packages Managed on a Node
- System will create, issue & maintain all Version Numbers
- Users can overwrite system Version Numbers for ease of use
- Version Control allows for CHANGE IDENTIFICATION
- Only changed files are sent to nodes
- Allows ease of recovery, new workstation setup and state management

Version Management Example



ESD Manages Image with Version Control



Scalability

- Minimize Sensitivity to Network Size thru Client/Server Model
  - Central Host distributes Target State Profiles to Nodes
  - All Node Specific Processing done by Client Nodes
  - Central Host is a LARGE File Server
- Reduce Host Processing Demands
- Use PUSH to Distribute Target State, PULL to collect
- Remote Nodes collect only Changed files at pre-configured times
- “Intelligence” about state of workstation is distributed to remote nodes

Network World Fusion Newsletter (7/16/03) Observations

- **ESD seen as inefficient in today's enterprise**
- **Current systems are not able to handle load**
  - CMF has proven track record of handling load
- **High rate of deployment failures**
  - Status reporting with proper error code reporting has been there in CMF from start
- **Lack of integration with other packaging tools**
  - CMF can accept packages from any packaging tool

More observations

- Other technologies in the Asset Mgmt arena
  - Server Manager
  - Patch Manager
- ESD Outsourcing is taking off
  - EDS announced services
  - Siemens had announced services
- Big Players positioning with new products
  - SUN bought CenterRun
  - Microsoft announced BDD
- ITIL is picking up

Requirements for 100% Success

- Real time, end to end, status monitoring
- Proactive managing by exception
- Detailed error codes and step by step logging of installation
- Block by block transmission recovery, retry, resumption
- Mid distribution suspend and resume
- Installation pre-staged on fan out servers
- Distributed locked software repository on fan out servers
- Wake on LAN; Sleep on LAN
- Installation proceeds if central server is off line
- Installations occur without user being logged on
- Minimal user scripting: built in error recovery & rollback

Configuration Management

- Data Unique to a Single Managed Node
  - Operating Environment Data
  - Application Data
  - Configuration Data for Network Definition
- Generated and Maintained Centrally
- Distributed as a single LAN “ini” file with configuration values
- Unique configuration values merged with Template Files
- Windows Registry Entries can be managed
- Configuration Compiler Provides Power

Release Management Requirements

- Each operational event is an auditable job
- System predicts magnitude of change, allows simultaneous changes
- Single tool used to migrate replicable system images from unit test to system test to quality assurance test to production
- Tool enforces standard images but provides for management of “one off” application installations

Integrated Problem Management

- Integrated Full Screen Remote Takeover
- Background Command Line Agent
  - IPL Workstations and Servers
  - Execute Operating System Commands and Command Files
  - View Command Execution Results Centrally
  - Retrieve Remote Files
  - Group Command executes simultaneously across multiple nodes
  - Utilizes Node Groups set up in Distribution
- Audit Trail of All Node Change Activity
- Remote Disk space monitored locally & reported centrally

Product Requirements : Mobile & Home Office

- Fan out server can be a Web Server utilizing FTP, HTTP and HTTPS
- Pre-Install capability
- User has control of collection windows
- Download can be suspended and resumed mid-way through a file download via pre-determined criteria or by end user
- Fan out server can change based on location of end user
- Collections are bandwidth sensitive
- Collections are network context sensitive

ESD Functional Specifications Summary

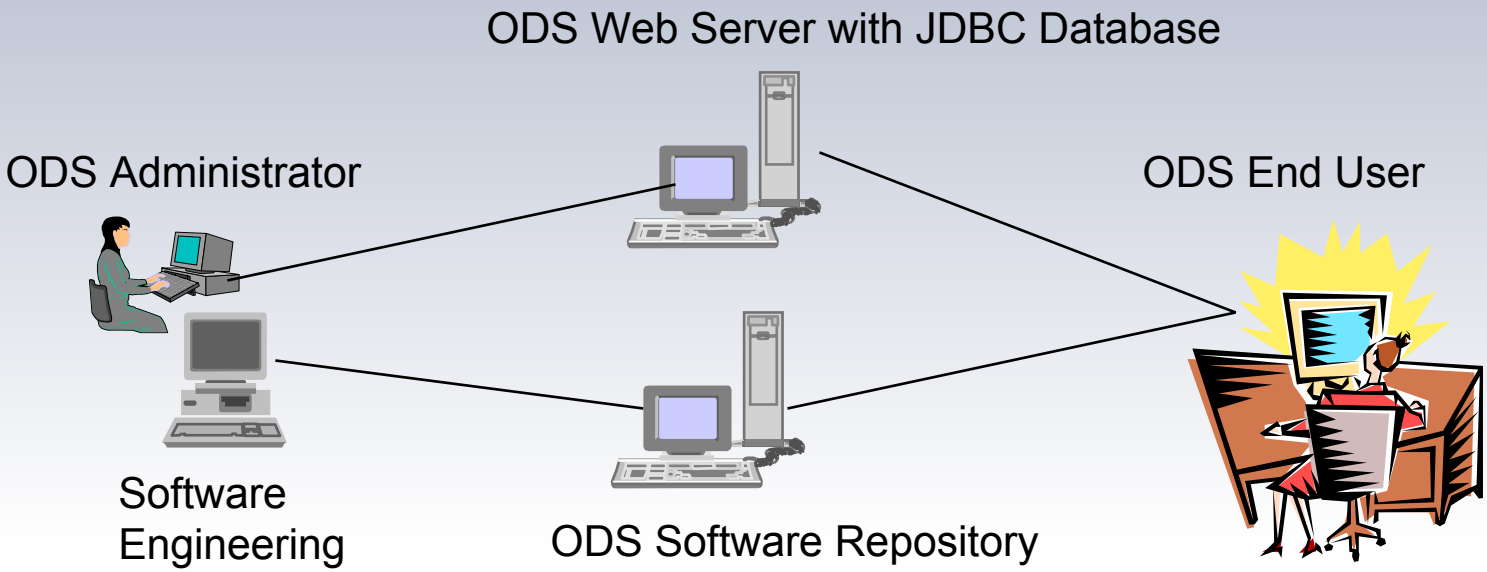
- Ability to track & manage entire system image
- System-maintained version control
- Guaranteed distribution of software & data
- Operating system, application & configuration file installation
- Synchronized problem identification & resolution
- Sophisticated large scale status monitoring
- Minimal user scripting: built in error recovery & rollback

On Demand Software

Enables companies to provide self-service software provisioning to their end users while allowing IT to centrally control the purchasing, packaging and deployment process.

- Provides an on-line, easy-to-use software catalog of pre-tested applications
- End users select software, which is downloaded and automatically installed
- End users get software they need on demand – no waiting and trouble-free
- Department managers can control software installation & manage cost
- Mandatory software option also allows one off software to be pushed or removed from the desktop without user involvement
- Software License Management

ODS Workflow *"All you need is a browser"*

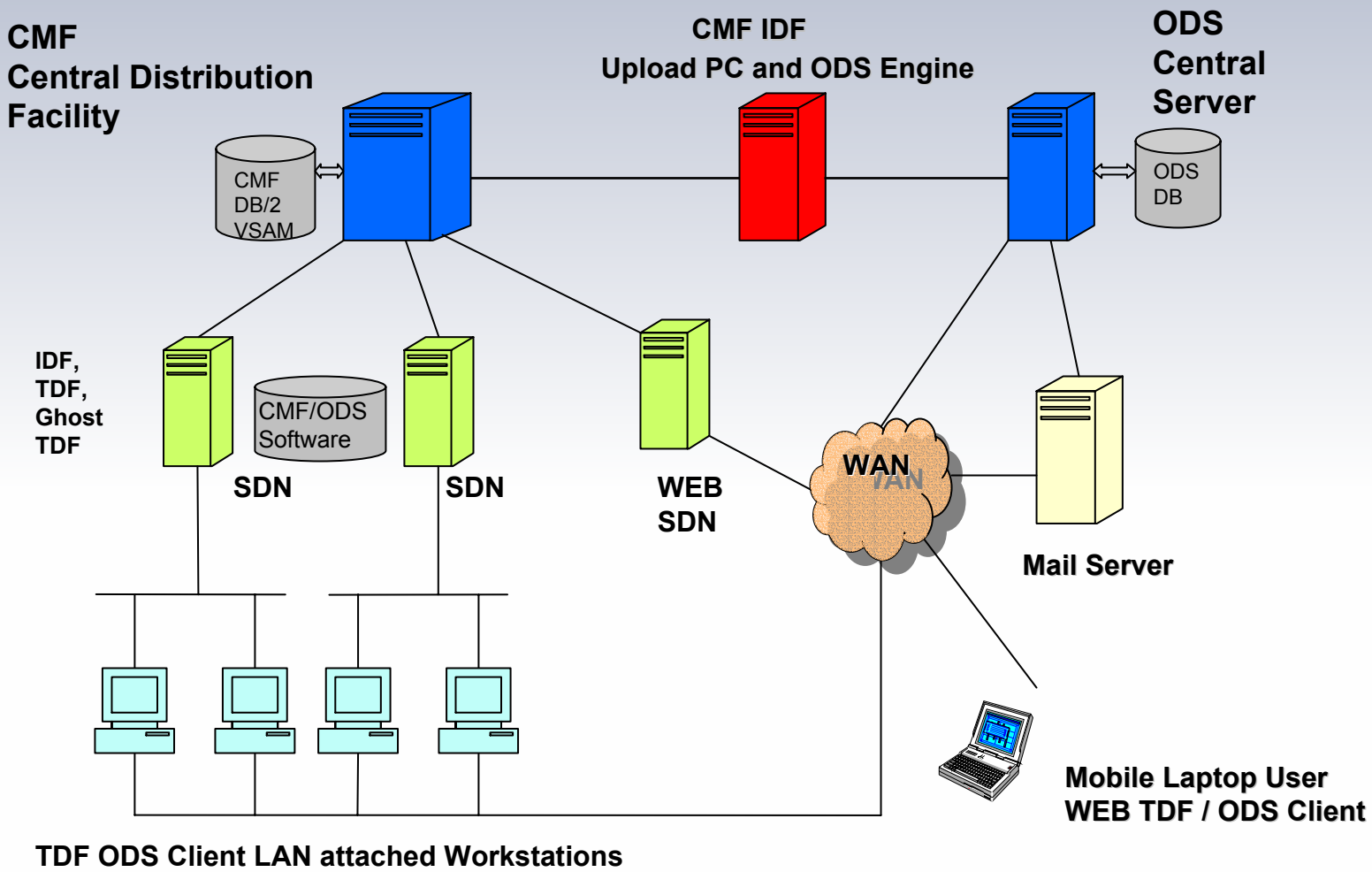


1. Define Accounts and Users
2. Engineer Application Installation Scripts
3. Upload Packages to ODS
4. Define User/Package Permissions
11. View activity reports

6. Java Servlets create dynamic HTML menus for User sessions
8. Software downloaded for selections or email to authorizer
10. Create billing and activity records

5. Log onto ODS server
7. Select software to be installed (uninstalled)
   or
   request authorization to install
   or
   mandatory install (uninstall)
9. Software installed, write to log

ODS CMF Interfaces



CMF & ODS Summary Comparison

Management Model Attribute	CMF	ODS
	A closed system with central command and control Promotes Conformity	An open flexible system of end user empowerment Promotes Diversity
Version Control	Managed and enforced as part of the product	Dependent on external services
End User Participation	Almost none: “computer – tone”	Actively involved or unattended with ODS agent
Problem Management	Tightly integrated with remote access	Server based installation logs by end user
Standards Promotion	Very strong at the entire Workstation Image Level	Package level standards
License Compliance	Implicit	Explicit
Internet / Intranet capable	Yes	Yes
Initial Deployment	Client installed agent with rigid naming standards	All you need is a browser, but the optional agent must be deployed for unattended operation
Software Management Entity	A specific version of a set of packages (the Software Profile)	One off application installations with script processing
Security	Network provides security and files are protected through a proprietary compression algorithm	Secure Socket Layers (SSL) Protocol, which provides encryption, server authentication, and message integrity
Management Console	3270 and Windows GUI	Web based
Packaging	Built in packager and third party script encapsulation	Dependent on third party scripting tools that are encapsulated for unattended operation, reporting and management
Delta Transmission	An inherent part of CMF; dynamically determined	Dependent on third party tools with only predetermined configurations
Rollback	System managed	End User initiated
Network View	Intermediate Servers and Workstation Clients	Users on the Internet

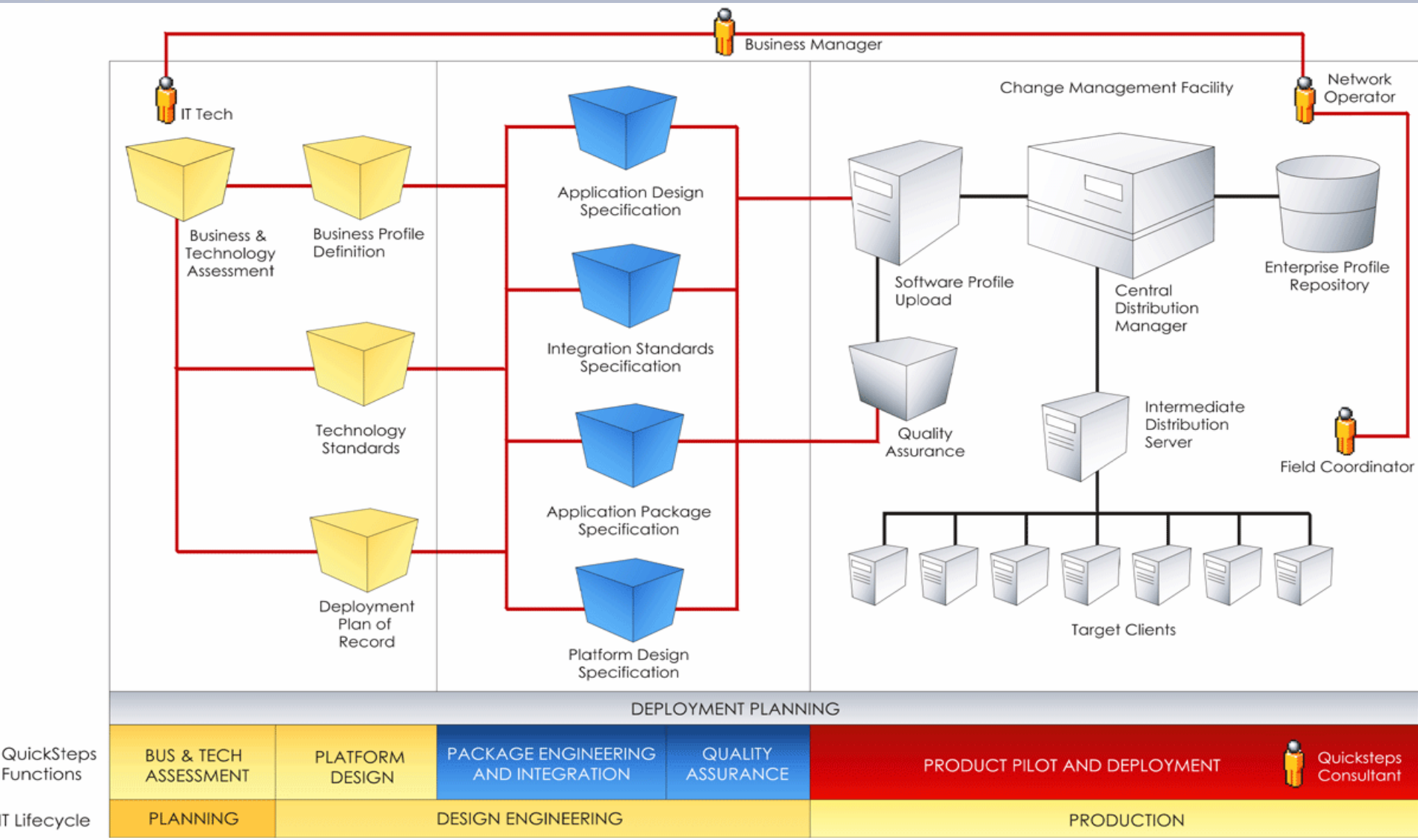
Best Practices Methodology

Observation: Implementation of ESD technology requires an accompanying focus on best practices processes.

A successful implementation focuses on key areas:

- Service Level Agreements (SLAs)
- Enterprise approach
- Roles and responsibilities
- Process workflow
- Coordination and efficiency
- Business priorities
- Organizational strengths and weaknesses

LSVi's Quick Step Process Overview



CMF/EIA/OnDemand Case Example

US Bank 2000-2003

- Dissatisfied Tivoli customer
- Purchased CMF & EIA March 2000
- Migrated from OS/2 to Windows NT for 15,000 seats and 1,300 servers by end of 2000 (9 months)
- Deployed EIA to 35,000 desktops and servers in 2 months
- Distributed Nimda Anti-Virus, IE, and emergency app to 16,000 seats in five days
- Merged with Firstar in 2001, utilized EIA to discover assets of Firstar, expanded EIA to 50,000 computers
- Consolidated offices and converted 13,000 seats in 1,200 branches 2002
- 2003: Started consolidation of front office and back office platforms with State Street Brokerage expansion
- Conversion from SNA to TCP/IP
- Currently planning for production after successful POC for -- On Demand Software for back office environment
- Demonstrated end-user responsiveness and huge cost savings over IBM solution

LSVi Products' Value

Operational Efficiency and Reliability

- **Operational efficiency for staffing**
  - **CMF: 1 person per 2000 – 10,000 workstations**
  - **Other ESD: 1 person per 500 workstations**
  - **No ESD: 1 person per 50 workstations**
- **New workstation deployment facilitated via seeding and SW profiles**
- **Built in problem determination capability**
- **Simplicity of operations—rapid learning curve**
- **Unlike other systems, no scripting is required**
- **Superior rollback, recovery, error reporting to handle:**
  - **powered down workstations**
  - **telecommunications failures**
  - **operational mishaps (suspend and resume, and change rollback)**
- **99+% availability of CMF managed environments**

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