

# **Deploying Windows Server 2003 using ProLiant Essentials Rapid Deployment Pack and Microsoft Windows Automated Deployment Service**

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# Agenda

- Overview of options for deploying Windows Server 2003 on ProLiant servers
- ProLiant Essentials software - Rapid Deployment Pack (RDP) and Microsoft's new Automated Deployment Services (ADS). Benefits of each approach to server provisioning
- Learn the HP and Microsoft solutions for deployment of servers and the differences between them
- Learn how to use RDP - Altiris eXpress Deployment Solution with ProLiant integration - to deploy ProLiant Servers
- Learn how to use Automated Deployment Solutions (ADS) with HP customizations to deploy ProLiant Servers

# Common Deployment Problems

- **Server deployment is a tedious and time consuming task**
- **No standard tools for automating multi-server deployment**
- **Automating deployment requires high level of expertise on multiple tools**
- **Standardizing server deployment processes sounds good but difficult to achieve**
- **Remote sites and remote datacenter locations are problematic for server deployment**
- **Server downtime is costly – costs much higher to restore a server to a known working configuration**
- **I have 50 servers i need to deploy next week....**

# Traditional Method CD Based Deployments

## Key Steps

- Server ROM Flash
- Server and Storage Configuration
- OS installation
- Assisted Driver Integration
- Management Agents
- Server Application Software



## Advantages

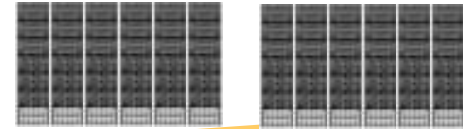
- Free with every server
- Step-by-step process
- Designed for the novice user

## Disadvantages

- Does not scale
- Fixed labor cost per server deployed
- Standardizing server builds is difficult
- Requires Keyboard, Video and Mouse
- Difficult to deploy servers at remote sites

# Automating Deployment

number of servers deployed increases



complexity of the deployment infrastructure increases

TOOLKIT



1 : 1



1 : several



1 : *hundreds*

number of people required per server decreases

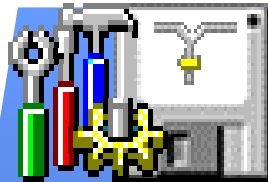
# Deployment Positioning

## SmartStart CD



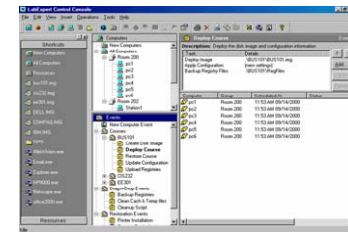
single server  
interactive,  
assisted install  
interview-based  
or replication

## SmartStart scripting toolkit



multiple server  
automated with  
boot disk required  
customer-created  
scripts

## Rapid Deployment ADS & RDP



multiple server  
automated from  
remote console

# What is Rapid Deployment Pack (RDP)?

Joint HP and Altiris solution

- Automates the process of deploying and provisioning server software
  - Altiris eXpress Deployment Solution for servers
    - Off the shelf version
  - ProLiant Integration Module
    - Includes optimizations for ProLiant servers
- A software option that can be purchased along with ProLiant servers
- A free 30 day trial is available on all Rapid Deployment Pack CD's





# What is Automated Deployment Service (ADS)?

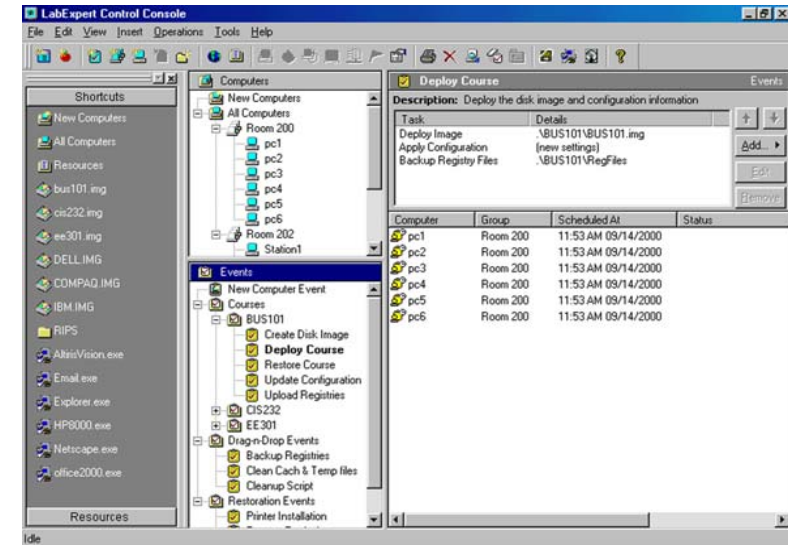
- A rapid server provisioning solution provided by Microsoft in Windows Server 2003
- Automation framework for bare metal server provisioning and re-purposing
- Flexible imaging tools for capture, deploy, editing of Windows 2000 Server and Windows Server 2003 operating systems
- Designed for scalable, PXE-based OS deployments in enterprise data centers
- Tested and supported on HP ProLiant servers
- Feature of Windows Server 2003, Enterprise Edition (no additional licensing required)



# ProLiant essentials rapid deployment pack

## Key Features

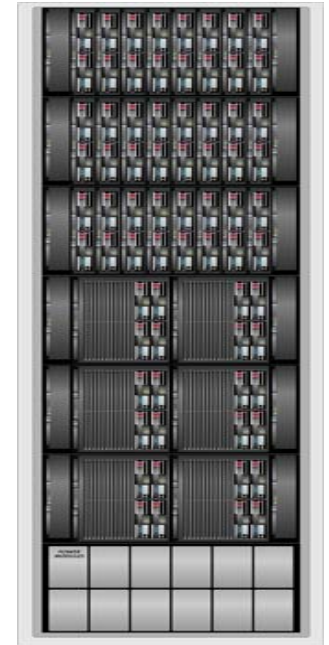
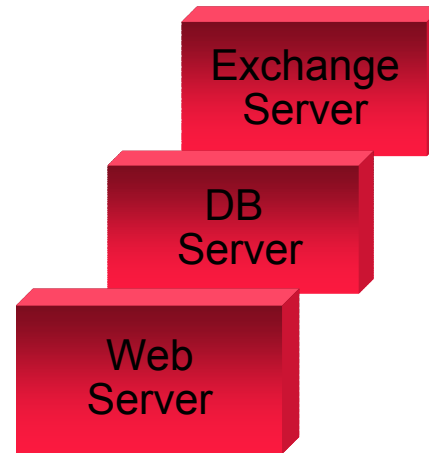
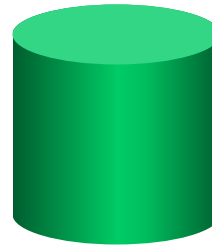
- GUI, console-based deployment server
- Drag and drop servers into configurations
- Built-in pxe services and pxe image tools
- Network booting for headless deployment
- Deploy via scripting or imaging
- Built in script generation and editing
- Remote power control
- Uses wake-on-lan, rlo or integrated lights-out
- Server configuration on-the-fly
- Drag and drop tasks to create configs
- Scalable deployment without network degradation
- Using multicast, deploy 100 servers in 30 minutes



# Server Deployment with RDP



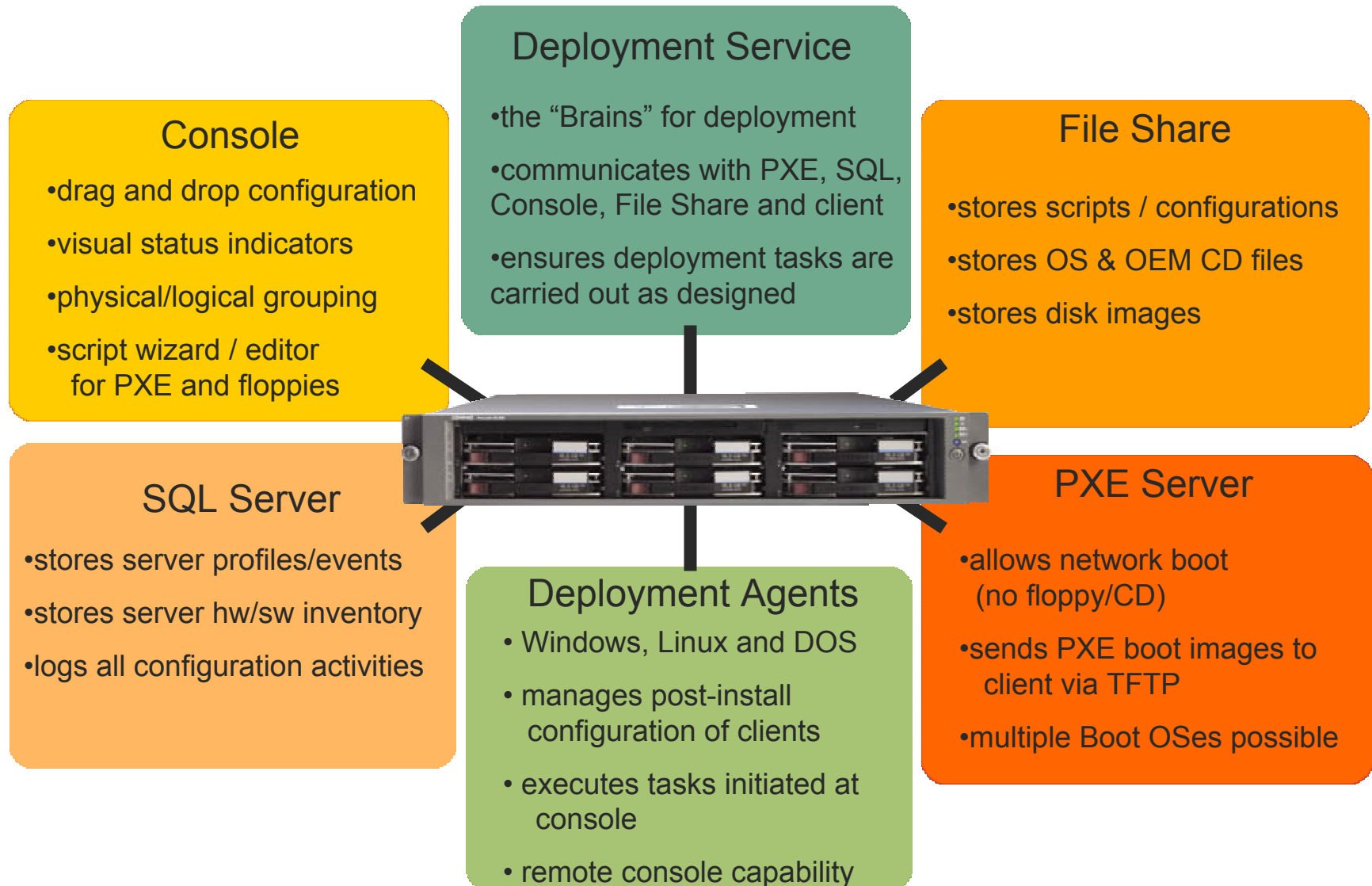
Software  
Images



Build  
Servers  
From  
Profiles

- Remote Power On
- Automated Network Boot
- Server Configuration On The Fly
- Select OS and Application Images
- Management by Groups and Function

# Deployment Technology Overview



# Altiris eXpress console

Use the Event Wizard to easily set-up tasks

Flexible organization and grouping of all servers

View physical location of blade servers

Run an event by simply dragging it to a server or group (or drag servers or groups to the event)

Run scripts and programs on remote servers, use remote console, copy files, control power

See details about your servers, groups, and events / tasks

**ProLiant Essentials Rapid Deployment Pack Powered by**

File Edit View Operations Tools Help

**Computers**

- New Computers
  - 00508BE1B506
  - COMPAQ-BL10e-1
  - COMPAQ-BL10e-2
  - COMPAQ-BL10e-3
- All Computers
- Physical Devices
  - COMPAQ
    - BL10e
      - 1
      - 2
      - 3

**Events**

- Initial Deployment Event
- System Events
- Microsoft Windows 2000 Scripted Install Events
- Red Hat Linux 7.2 Scripted Install Events
- SmartStart Toolkit and OS Imaging Events
  - Capture Hardware Configuration and Linux Image
  - Capture Hardware Configuration and Windows Image
  - Deploy Hardware Configuration and Linux Image
  - Deploy Hardware Configuration and Windows Image
- SmartStart Toolkit Hardware Configuration Events
- SuSE Enterprise 7 Scripted Install Events

**Description:**

Condition: [default] Options ▶

Task	Details
Create Image	.images\wincap.img
Run Script	Capture Hardware Configuration

Computer Group Scheduled At Status

# ProLiant Integration Module

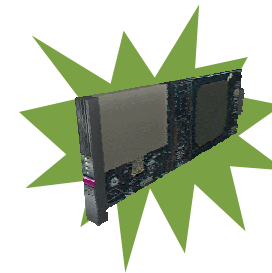
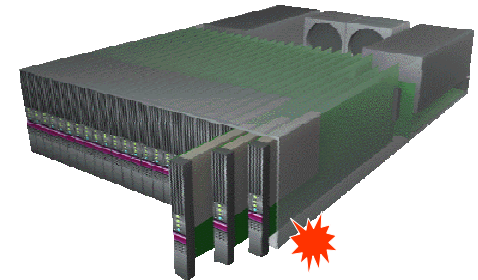
- Simplified Initial Setup
  - Autorun menu for easy access
  - Populates Deployment Server with HP Server Software
  - Simplifies ongoing updates
- SmartStart Scripting Toolkit Integration
  - Using scripting tools are as easy as drag and drop
  - Standard configuration event in the console
- HP supplied Deployment Jobs for Operating System Deployments
  - Windows 2000, Windows Server 2003, RedHat Linux
  - Predefined answer files for unattended install
  - Automated driver integration
- HP Support Software
  - Supplies latest version of ProLiant Support Packs and SmartStart Scripting Toolkit

# Deployment Scenarios

- Simplified Rack and Go Deployment
  - Connect power and network
- Ready to Go!
- Drag and Drop Configuration Event to new server
- Entire process is automated from remote console
- Deploy a code red security update within minutes

# Blade features RIP and Replace

- Blade sends pre-failure warnings to Insight Manager 7
- Replace the faulty blade with new blade
- Server role or personality information is automatically restored to new blade





# What's new in RDP V1.4?

## **Altiris Deployment Solution for Servers version 5.6**

### **Scripted OS installation wizard**

- Build unattended OS installation files using easy to use wizards

### **Role and scope-based security**

- Control who can perform tasks/jobs
- Control who can manage groups of servers
- Supports NT/AD authentication

### **Server side scripting**

- Advanced scripting capabilities that allows scripts to be executed on the server as part of a job/task

### **Switch Support**

- Windows 32 interface for discovering switches and attached clients
- Ability to manually set the VLAN for the ports on the switch
- Support for HP Proliant Blade switches

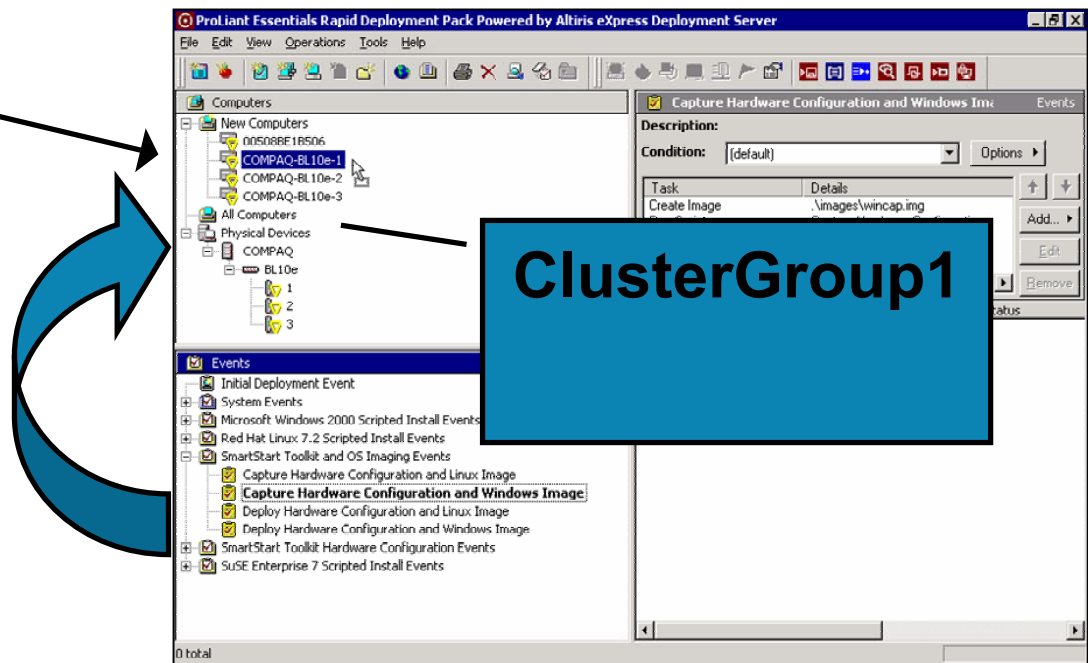
# What's new in RDP V1.4?

## DL 380 Packaged Cluster pre-configured Deployment Event:

**Step 1** - Import cluster nodes into a computer group

**Step 2:** Edit the cluster configuration text file with cluster information: username, password, etc

**Step 3** - Drag and drop deployment event to the group created from step 1



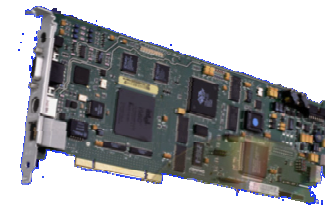
# Extending ProLiant Server Support

## ILO and RILOE integration

- Integrates with HP Lights-Out functions for power control and console interface
- browse directly to an iLO/RILOE system the deployment server console



from



## SAN Support

- *How to* Guide for deploying SAN drivers and support software on ProLiant Blade Servers
  - SAN HBA drivers
  - Fibre Channel Setup
  - Install Secure Path
  - Driver support connecting to HSG80, EVA, X

# Deployment Times

- Install first deployment server 15-30 minutes
  - Assumes installing on existing workstation
  - Includes SQL, PXE, Server Services, and Console
  - Includes pre-installed base configuration tasks and utilities

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- Install server using scripting only 60-90 minutes
  - Uses OS native scripting methods (i.e. UNATTEND.TXT)
  - Time depends on OS file copy
  - Time per server increases with more concurrent deployments

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- Install server using imaging 15-30 minutes
  - Best for identical configurations
  - Time valid for one to many servers! (using multicast)

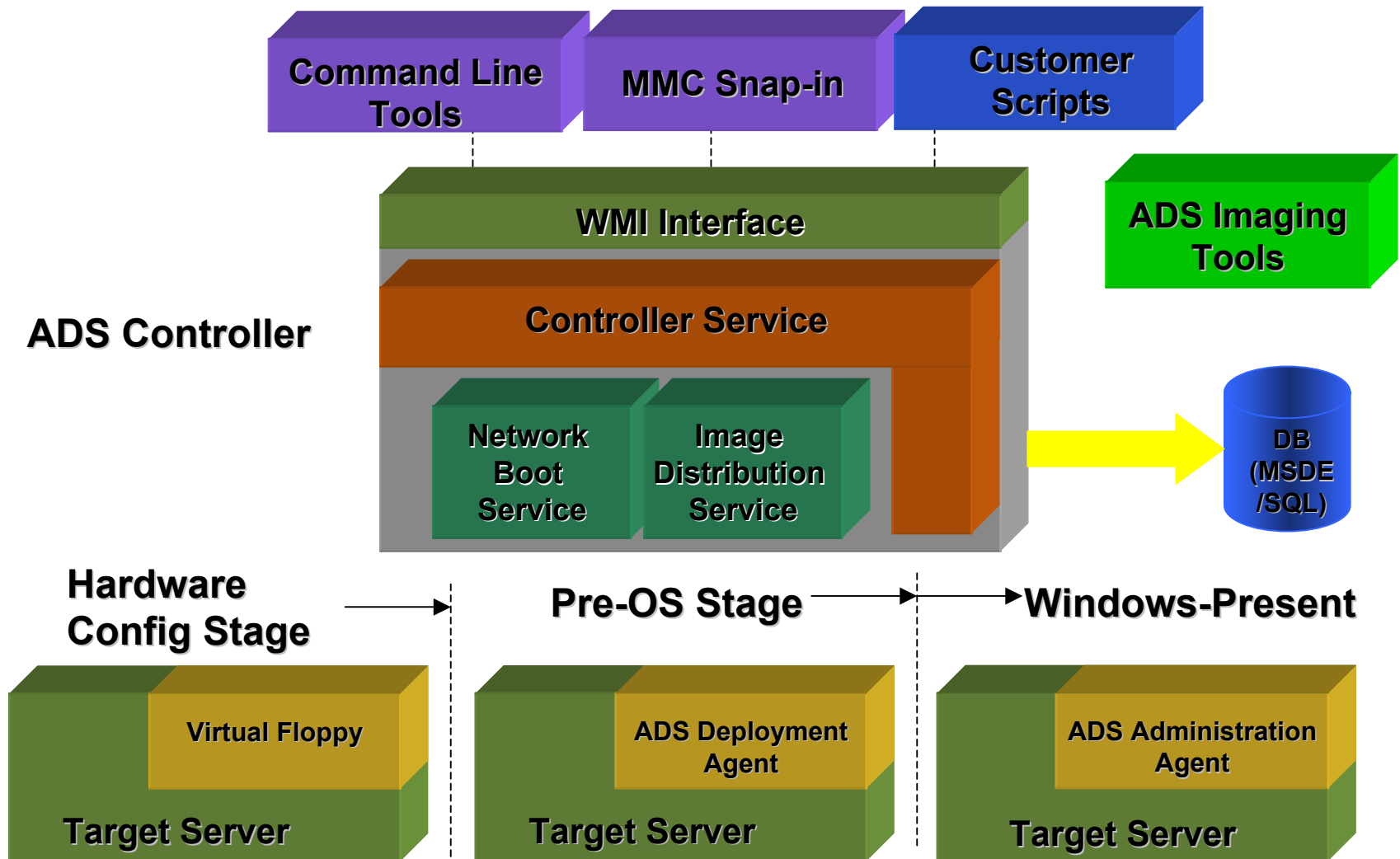
# Automated Deployment Services - ADS

- A rapid server provisioning solution provided by Microsoft in Windows Server 2003
- Automation framework for bare metal server provisioning and re-purposing
- Flexible imaging tools for capture, deploy, editing of Windows 2000 Server and Windows Server 2003 operating systems
- Designed for scalable, PXE-based OS deployments in enterprise data centers
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# ADS Features

- Imaging and deployment
  - Speed and scalability of imaging
  - Flexible imaging tools and format
  - Secure, remote deployment framework
- Script based administration
  - Centralized scripting of server farms
  - Persistent log of all administrative activities
- Versatile set of user interfaces
  - MMC Snap-in for point and click operation
  - Rich programmatic interface for automation

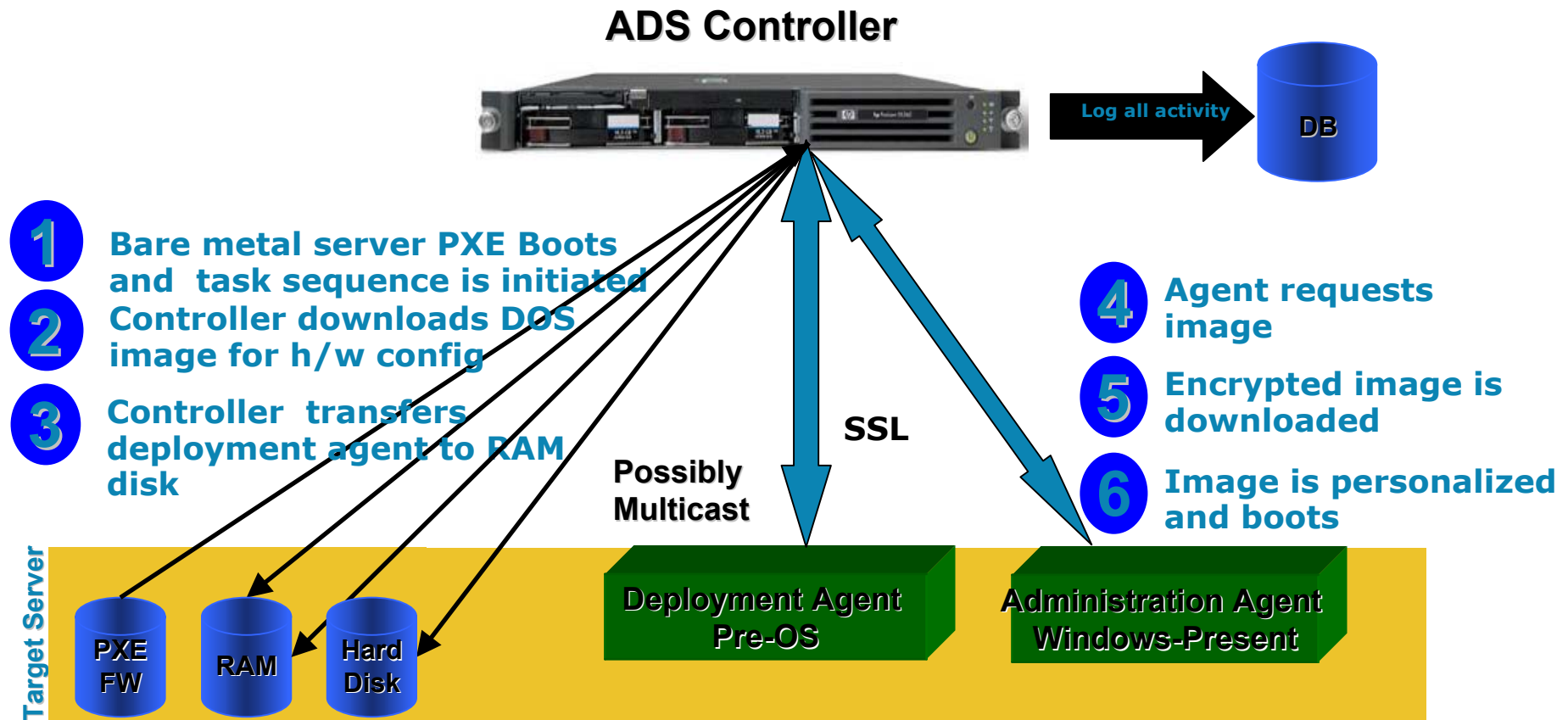
# Architectural Overview





# Secure, Hands-off Imaging

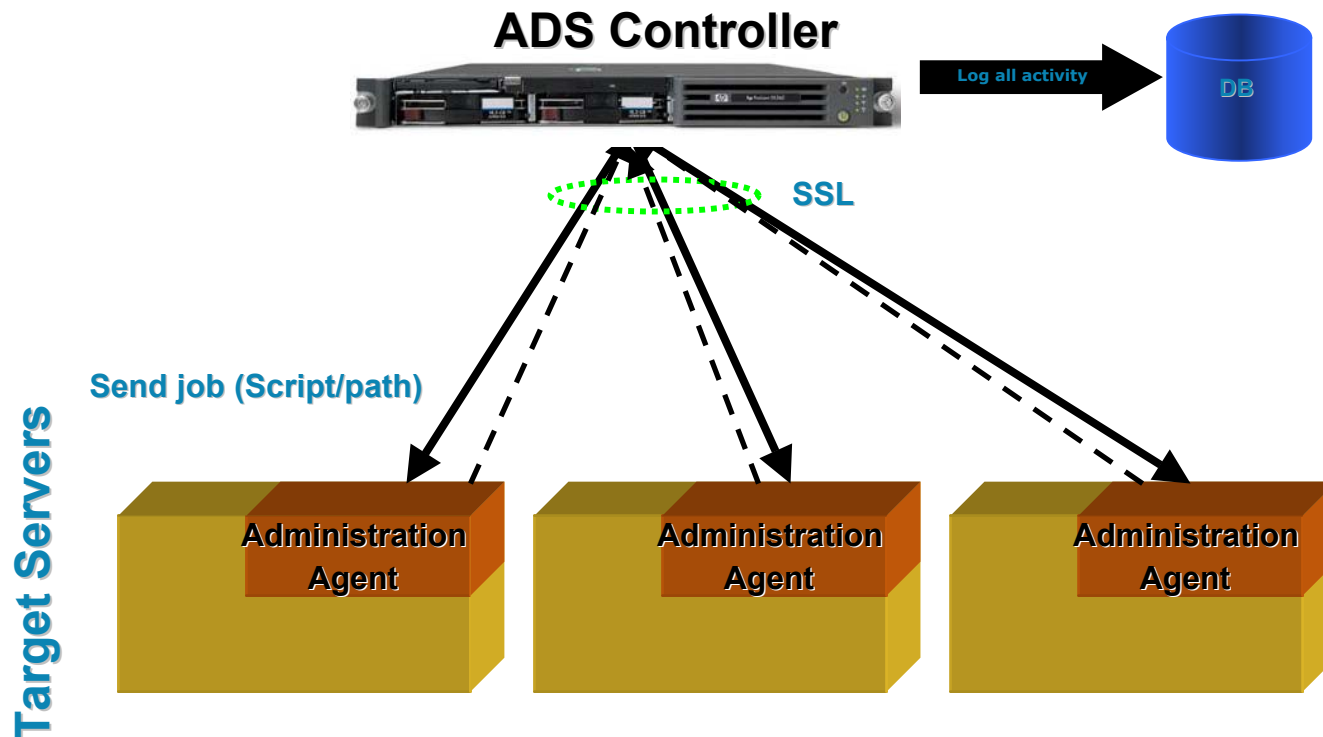
“Zero Touch Server Builds from Bare Metal”



# Script-Based Administration

“Administer 1000 servers as easily as 1”

- 1 Initiate script-based administration on thousands of servers from the central controller
- 2 Gather all output from task and store in database



# Microsoft Imaging Format

- Microsoft developed imaging format
  - Sector copy of the drive
    - Requires target partition to be equal or greater size than capture drive
  - File-system based format
    - No duplicate files captured
    - Deployed images are defragmented
  - Optional compression and encryption
- Flexible image editing features
  - Images can be mounted as a drive
  - Add or remove files, edit registry hives

# Image Capture and Deployment

- Flexible image capture
  - Local (WinPE) or Remote (via deployment agent)
    - Requires sysprep (included in Windows Server)
- Hardware independence
  - With sysprep, only need one image per HAL
    - Hardware Abstraction Layer (HAL)
    - Non-ACPI compliant machines will require different image
    - Single processor machines will have degraded performance running images with multi-proc HAL's
- Versatile set of imaging tools
  - Imaging can be driven from MMC UI or command line tools

# Task Sequences

- Series of individual jobs in XML
  - If a step fails, sequence stops
  - Can be run on one or more devices
- Used to run complete processes...
  - Remote image capture
  - Bare metal image deployment
- Samples and editor included
  - Sample task sequences for common administrative activities
  - GUI tool simplifies authoring and editing

# Availability

- Feature of Windows Server 2003
  - Controller requires Enterprise Edition or above
  - Deploy and administer...
    - Windows 2000 Server all SKUs
    - Windows Server 2003 all SKUs
  - No ADS specific licensing fees
  - Shipping in Q3 2003 – Web download
- Early deliverable of the Dynamic Systems Initiative (DSI)
  - See Microsoft Press Releases on Mar 18 2003

# Integration Objectives

## HP ProLiant and Microsoft ADS



- Provides seamless integration of ProLiant in ADS environments
- Maximizes investment in HP hardware and Microsoft Operating System software
- Lowers the TCO associated with bare metal server builds and script-based administration
  - Enable zero-touch server builds from bare metal
- Improves the consistency, security and scalability of your Windows Server datacenter
- Delivers the benefits of HP's intelligent, automated management to the enterprise



# SmartStart Scripting Toolkit

## Windows Server 2003 and ADS support

- HP was first to market with the SmartStart Scripting Toolkit and today is the only hardware vendor shipping these capabilities packaged as a product
- Server configuration tools that automate server configuration, which are the core of the SmartStart Scripting Toolkit, are pre-requisites required to support Microsoft's ADS
- SmartStart Scripting Toolkit Support for ADS
  - ADS virtual floppy examples
  - Best Practices documentation
  - Toolkit scripts for ADS automate
    - Server configuration
    - Array configuration
    - RILOE configuration
  - Sample unattend.txt files for Windows Server 2003
    - Automates ProLiant Support Pack (PSP) integration during OS installation
    - PSP = HP Drivers and Management Agents
  - Support for DL and blade servers

# Comparison Overview

## RDP and ADS

### Use RDP if you...

- Deploy Windows Server 2003, Windows 2000, Windows NT or Linux
- Value a single tool that can deploy desktops, portables, thin clients and servers
- Want to simplify initial deployments of HP blades and value the physical view
- Value ProLiant exclusive features such as
  - RIP and Replace functionality for blades
  - Direct access to RILOE or iLo
- Value HP supplied server configuration scripts and OS deployment events
  - ProLiant Integration Module for Altiris Deployment Solution
- Sold and supported by HP

### Use ADS if you...

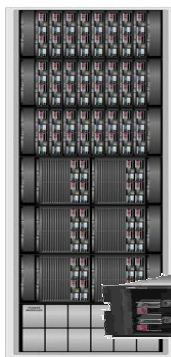
- Deployment of Windows Server 2003, Windows 2000 Server
- Use to deploy servers only
  - rack and blade
- Value Microsoft's innovative new image capture and editing capabilities
- Value flexible and scriptable environment
- Willing to invest resources to enable automated deployment processes
- Want to leverage the value ADS provides as a feature included in Windows Server 2003
- Developed, sold and supported by Microsoft

# Microsoft and HP Partnership and Integration Strategy

## Establishing the Best Managed Platform

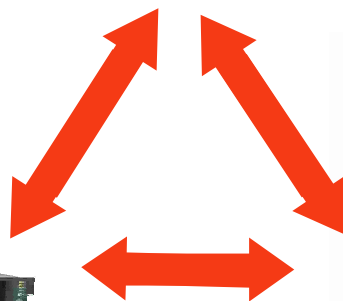


**ADS Integration**  
**Scripting Toolkit Support**



**Best Managed Platforms in  
an ADS environment**

ProLiant essentials  
foundation pack



**Complement and extend  
ADS with RDP**

ProLiant essentials  
value packs

# SmartStart Scripting Toolkit and ADS



- SmartStart Scripting Toolkit with ADS sample scripts and documentation are available from hp.com today
  - Product information and software available from
  - <http://h18013.www1.hp.com/products/servers/management/toolkit/description.html>
  - Customer registration is the only requirement
- Information on Microsoft's ADS
  - See following link
  - <http://www.microsoft.com/windowsserver2003/techinfo/overview/ads.mspx>



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