Novell ZENworks® Linux Management
Best Practices

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Novell, Inc.

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Assumptions and Facts

Assumptions made in this session:

- You have some Linux knowledge – some basic concepts are assumed
- You have some familiarity with RPM Package Manager for installing and managing Linux software

Facts of this session:

- We will be discussing managing a SUSE® LINUX Enterprise Server environment - ZENworks Linux Management will also manage Red Hat Enterprise Linux with ease.

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Objectives

Understand ZENworks Linux Management

What is ZENworks?

RPM Package Management

ZENworks Linux Management

Obtaining updates and patches

Controlling the deployment of updates

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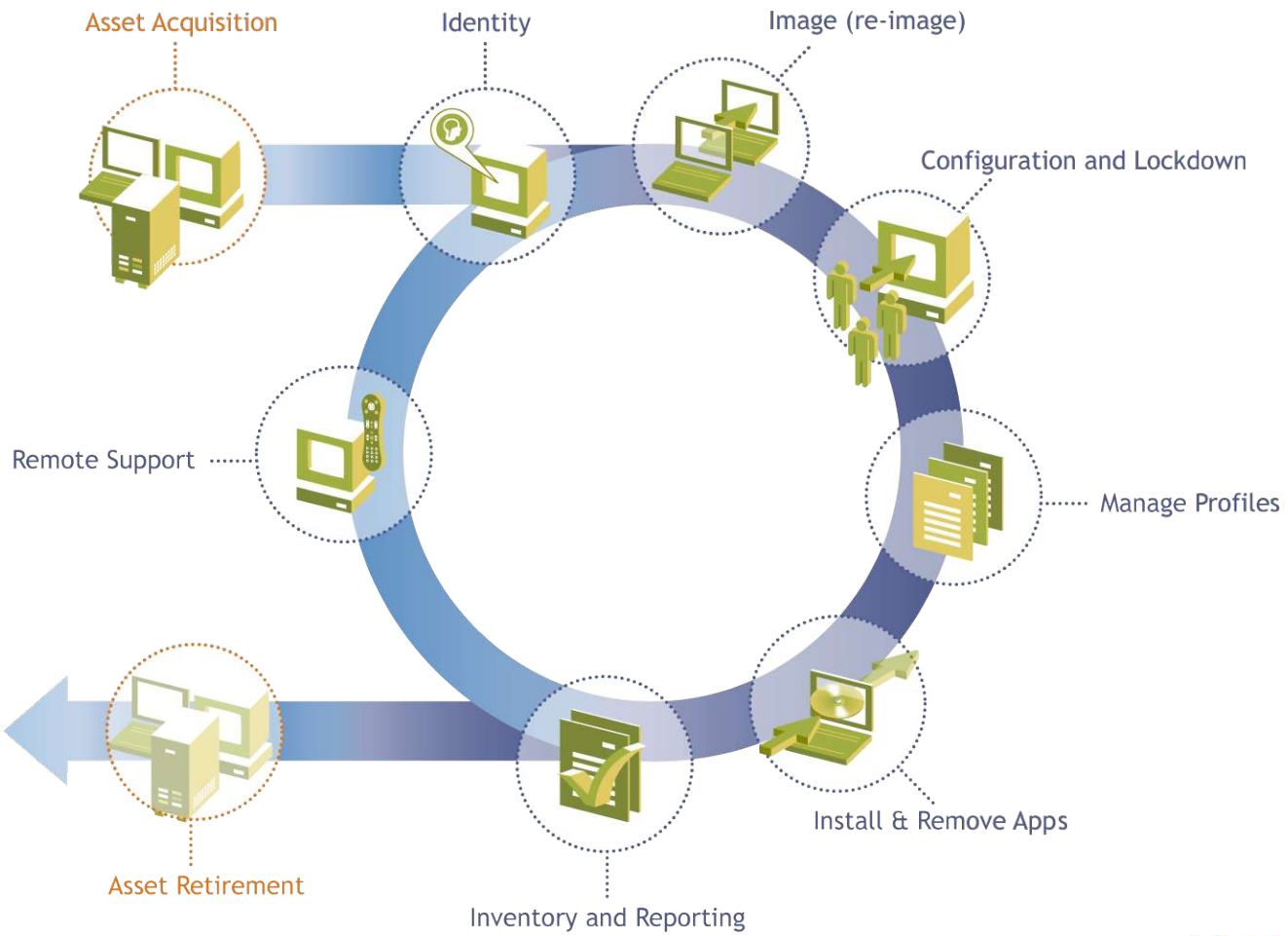
Linux lifecycle management
Birth to Retirement



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RPM: Ease of use

Only a single command needed to do operations

Historically:

```
tar xzf novell-foo-1.2.tar.gz
cd novell-foo-1.2
./configure -prefix=/usr
make
su -
make install
```

with RPM:

```
rpm -Uvh novell-foo-1.2-1.i386.rpm
```


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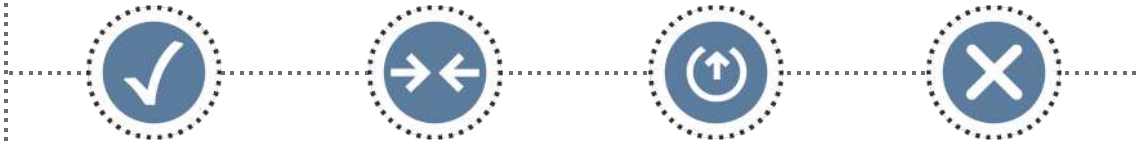
RPM: Package dependencies

Four basic relationship types:

- Require
- Conflict
- Provide
- Obsolete



Explicit dependencies

Automatic discovery

Versioned dependencies

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RPM dependency hell

Often installing or updating an RPM package is unsuccessful – there are unmet dependencies.

Also packaging rules within RPM packages can introduce cyclic dependencies.

These issues often lead to frustration and wasted time as administrators hunt down missing packages.

Forcing the package install, or installing non-authorized or non-tested packages introduces uncertainty and risk.

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RPM Dependency Demo

ZENworks Linux Management Dependency Demo

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ZENworks Linux Management

Resolves Recursive Dependencies

- Can track all requirements for packages to be installed against currently installed packages, and packages available but not installed on the system

Organizes Software

- Allows RPMs to be organized into channels for better management

Controls Distribution

- Allows managed systems to be grouped to control software distribution across entire organization

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ZENworks 6.6.1 Linux Management

The current release of ZENworks Linux Management is specifically enhanced to manage SUSE LINUX Enterprise Server 9 and Novell Linux Desktop 9:

- Full support for SUSE LINUX Enterprise Server 9
- Cross hardware platform managed devices – follows SUSE LINUX Enterprise Server 9 to x86, x86-64 (AMD Opteron, Intel EM64T), IA64 (Itanium), IBM POWER, zSeries, iSeries, pSeries
- New support for SUSE LINUX patches – integration with YaST Online Update and deployment of YOU patches using YaST
- Competitive SUSE LINUX Enterprise Server 9 + ZENworks Linux Management pricing, as well as Novell Linux Desktop and ZENworks Linux Management
- Worldwide support and deployment services

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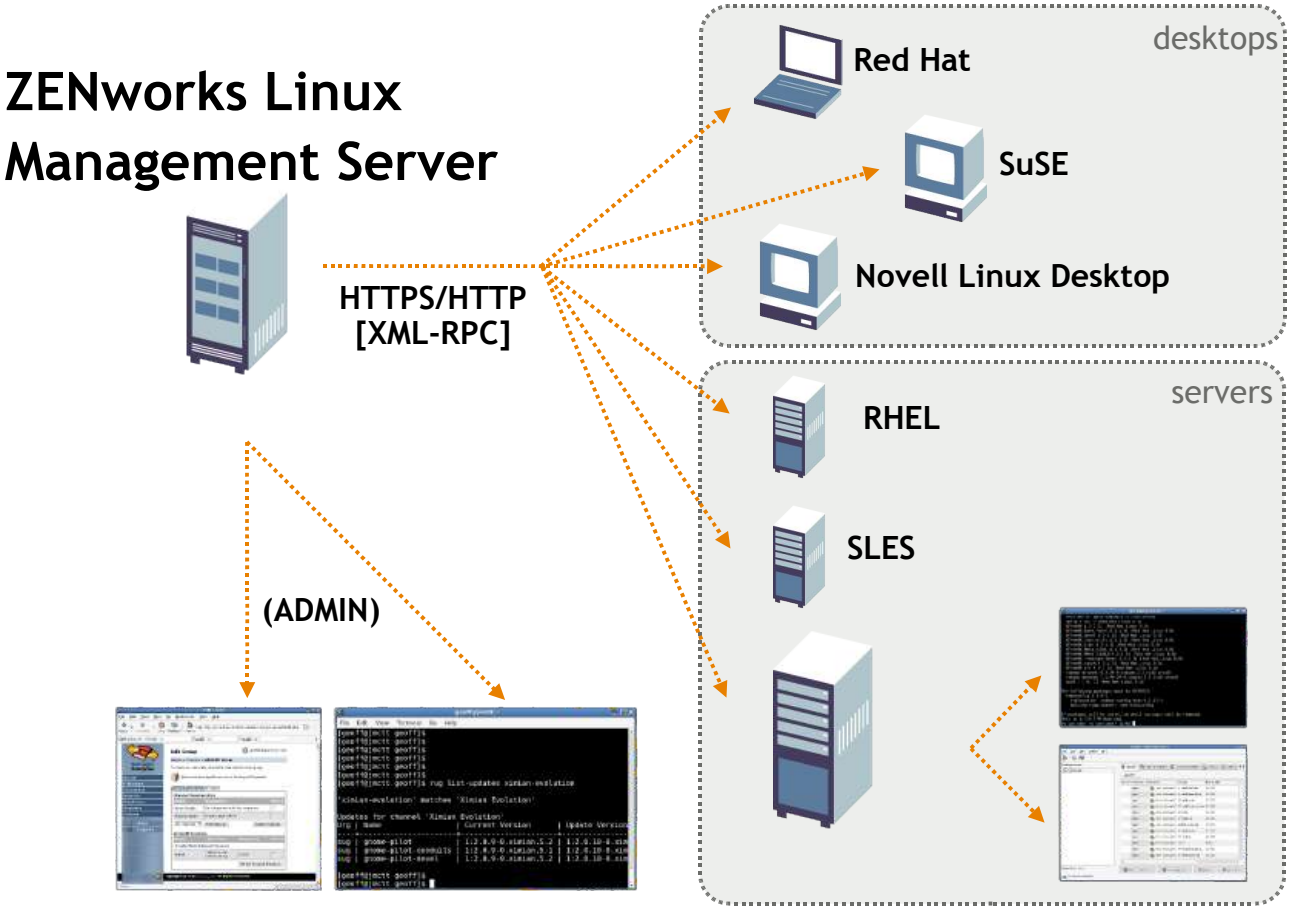
ZENworks 6.6.1 Linux Management
Management Domain



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Centralized, Web-based Management Demo

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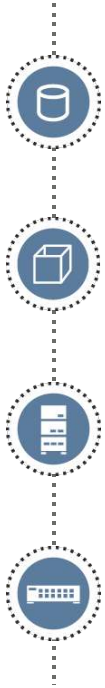
Scalability and Resilience

These requirements are addressed in the same manner:

- Split the ZENworks Linux Management server into modules



Database

Package repository

ZENworks Linux Management servers (Apache + PHP)

Load balance (L4 switch) or DNS round robin

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Scalability and Availability

Database

- PostgreSQL scales well – certainly beyond 10,000 machines.
- Oracle 9i scales far better – cost and training make this only for Oracle shops.
- Both PostgreSQL and Oracle 9i can be installed on a dedicated server.
- Multiple ZENworks Linux Management servers can communicate to the same database server.
- Oracle also provides a clustered, high-availability solution.

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Scalability and Availability

Package repository

- Again, create a dedicated, resilient tuned server for this. Export and mount the package repository on all ZENworks Linux Management servers.
- Also consider dedicated rcmirror servers if you will be mirroring large quantities of data. Mount the exported package repository and connect to the central database server.

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Scalability and Availability

ZENworks Linux Management servers

- Apache and PHP are the bottle neck.
- Create a farm of ZENworks Linux Management servers
  - connect to the central database
  - mount the exported package repository.
- Typically expect around ~250 concurrent sessions for each server.

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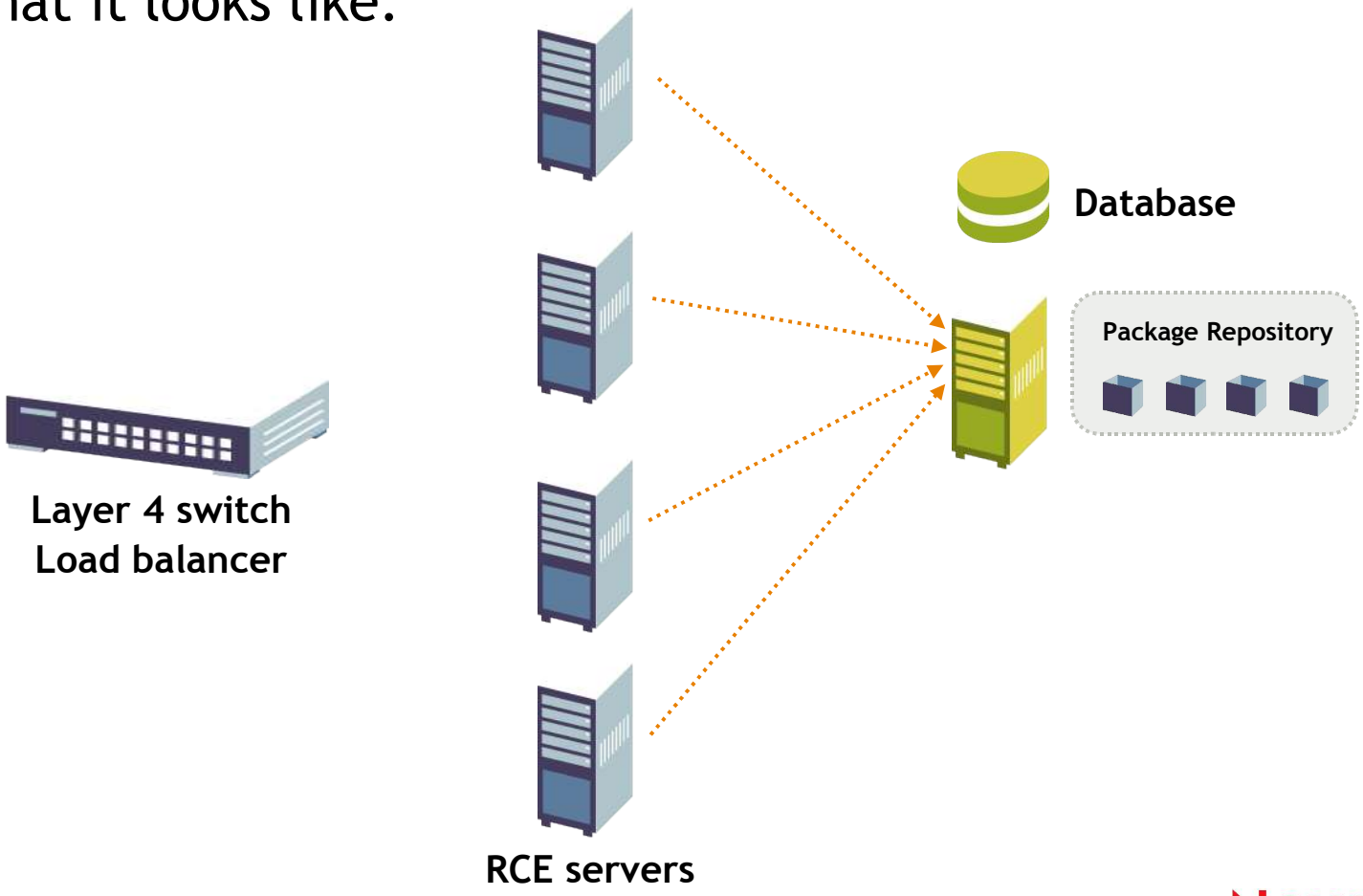
Scalability and Availability

What it looks like:



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Channels, Packages
and Dependency resolution

ZENworks Linux Management has industry leading RPM package dependency and conflict resolution.

ZENworks Linux Management builds detail of the 'Package Universe' for all packages within the ZENworks Linux Management system. The more data, the larger the Package Universe and the more successful dependency resolution

For optimal capability ZENworks Linux Management should have all base packages for all customer supported distros and software as well as any updates and errata.

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Optimal Channel Design

To create the best Package Universe ZENworks Linux Management needs data.

Novell recommends three channels for each target distribution:

SLES9-base

SLES9-QA

SLES9-current

Base contains all RPMS found in the base distro and as released

QA contains packages under test

Current contains all RPMS and errata/fixes from the distro vendor that have passed internal QA

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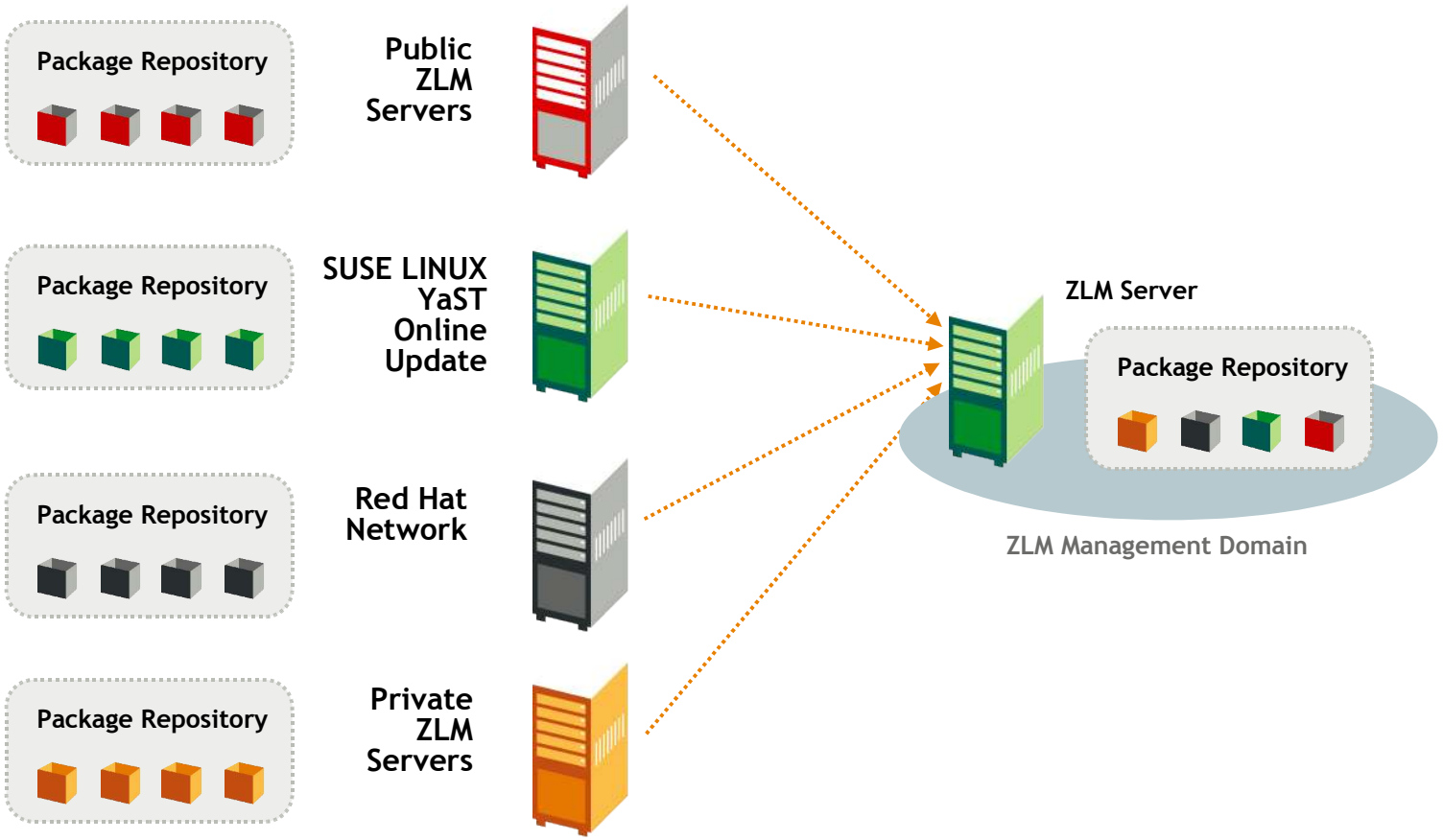
Using ZENworks Linux Management
to Aggregate Updates



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ZENworks Linux Management and YOU

ZENworks Linux Management can connect on a regular basis to YaST Online Update to download patches, support packs and hotfixes.

This process allows you to optimise bandwidth consumption, simplifies outbound firewall configuration and gives control of how and when updates are applied.

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Machine information demo

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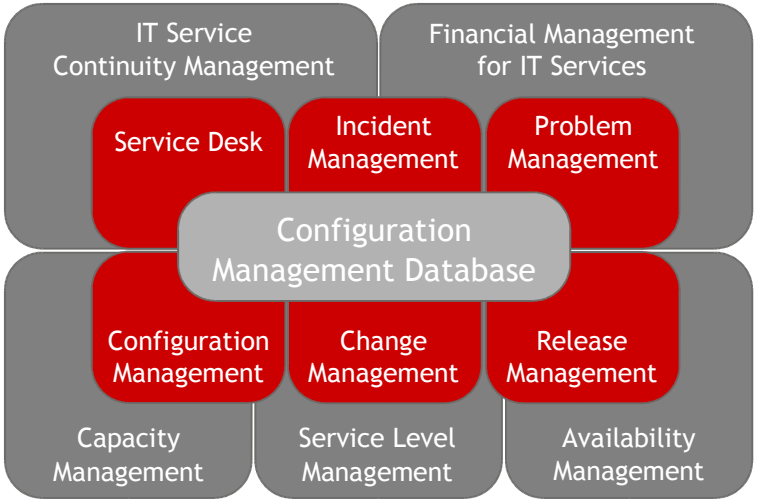
Integration with IT Service Management
or ITIL processes

The ZENworks Linux Management channels, along with granular administration and detailed reporting can be used to control the release of updates within the enterprise.

- These technology processes map to three core ITSM-ITIL processes: Configuration, Change and Release Management



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Transactions

Transactions within ZENworks Linux Management are very powerful, yet simple to administer and use.

There are several key transaction types:

- Software package installation or update
- Rollback
- Scheduled script
- Pre-position
- Dry run

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Software Installation

Software installation via transaction is a linkage between:

- groups and/or machine(s) being a member of a channel
- creation of a transaction to install all software or updates from these channels

Software push (i.e. server initiated installation) is provided in this manner.

Software pull can be initiated by a machine refresh, from the Red Carpet GUI or from the rug command line.

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Software Installation

Each transaction can also have pre- and post- scripts associated with it.

These scripts are uploaded to the ZLM server and downloaded to the machine at transaction execution time.

The scripts are run as root – beware this gives exceptional flexibility, control and the ability to destroy your system!

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ZENworks 7 Linux Management

ZENworks
Manages Linux Environments

ZENworks 7 Linux Management redefines Enterprise Linux Management

- "Full Stack" Linux lifecycle management
- Policy Driven Linux OS imaging and deployment
- Application deployment and management
- Secure Remote Control
- Inventory and reporting
- Unique Policy-driven configuration and lockdown

All web-based management built on the next-generation ZENworks Architecture

Cross-distribution support – Novell, SUSE, Red Hat

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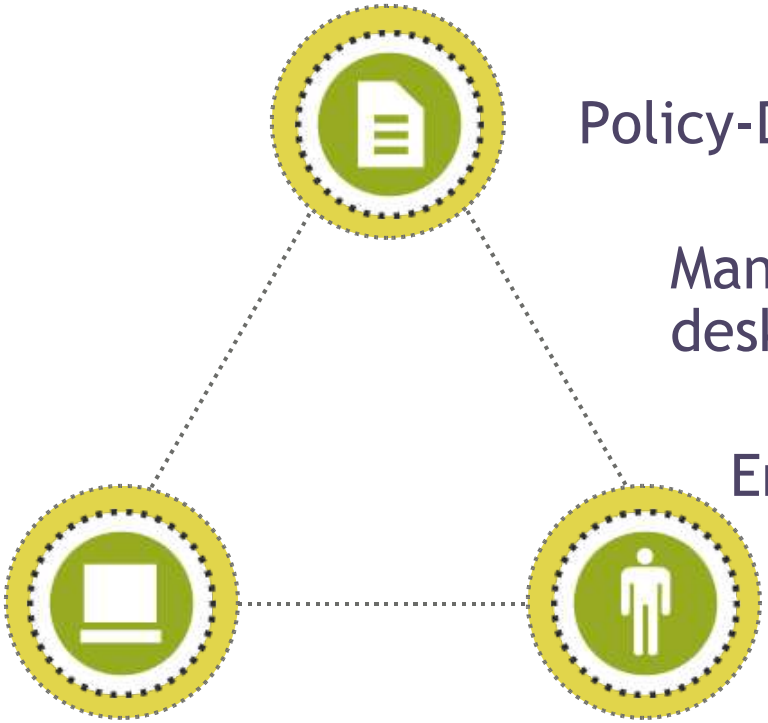
The ZENworks experience

Three fundamental concepts have made ZENworks the industry leader:



Policy-Driven Automation

Managing the complete desktop lifecycle

Enabling your #1 asset - *PEOPLE*

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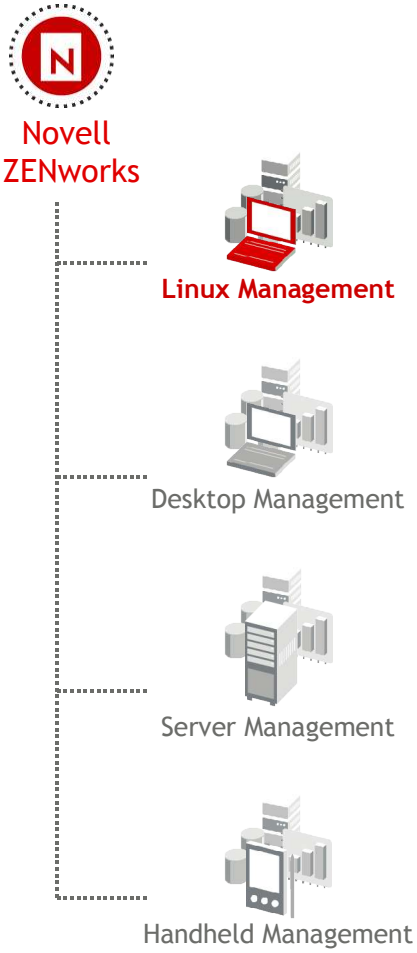
ZENworks Linux Management



"Full Stack" Linux lifecycle management

- Policy Driven Linux OS imaging and deployment
- Application deployment and management
- Inventory and reporting
- Secure Remote Control
- Unique Policy Driven configuration and lockdown

Web-based management

Built on next-generation ZENworks Architecture

Cross-distribution support–Novell, SUSE, Red Hat

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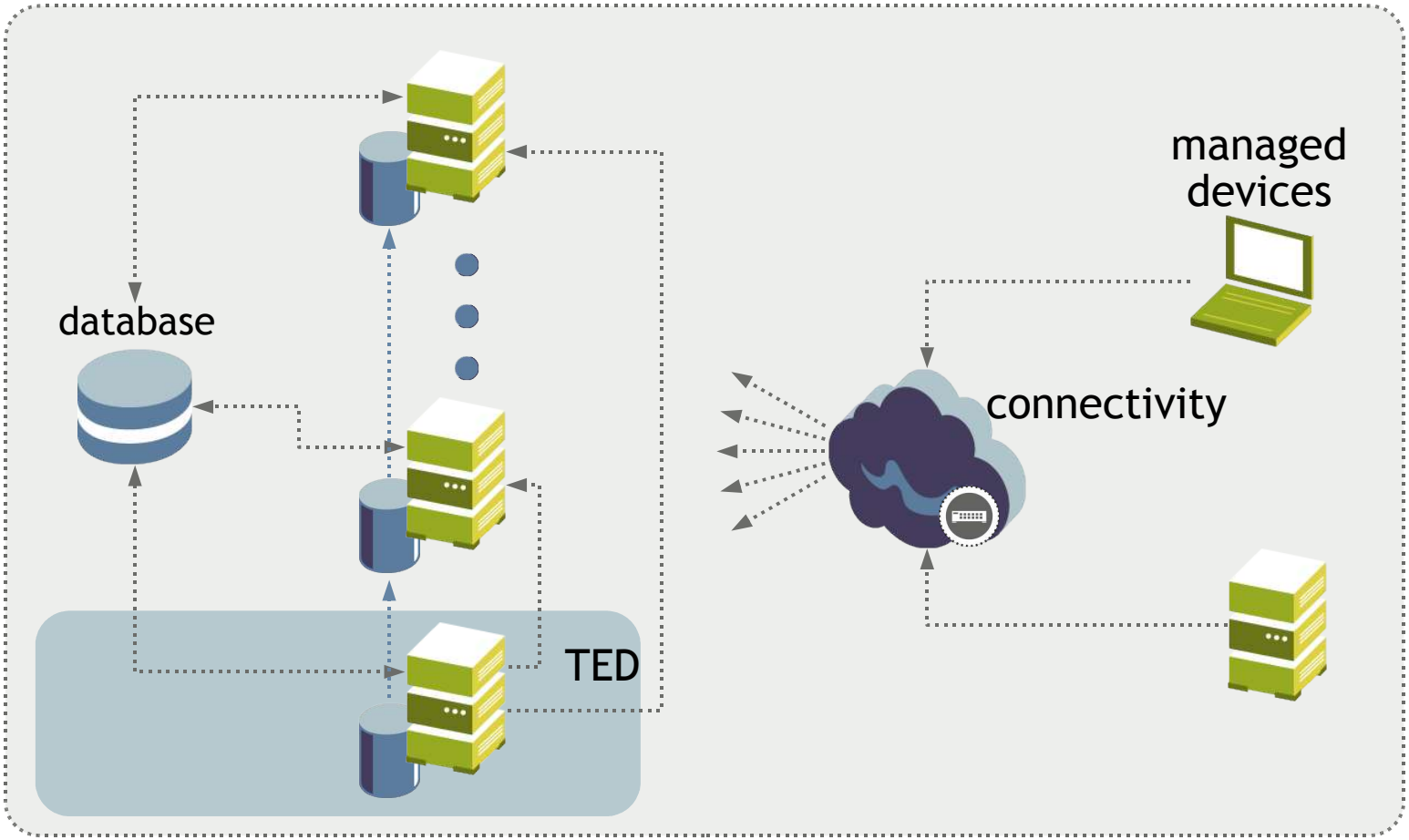
ZENworks 7 Linux Management
architecture



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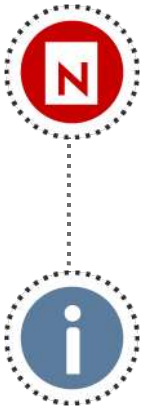
Further BrainShare Sessions



Take a look at the following BrainShare sessions for more detailed information:

Windows Only TUT115

Next Gen architecture TUT227

Linux Management best practices TUT218

Managing Novell Linux Desktop with ZENworks Linux Management TUT215

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Q & A

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