

An Oracle White Paper
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Provisioning and Patch Automation Pack

Multiple IT Problems, Single Solution

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Introduction

As IT tries to align more and more with business objectives, it is under immense pressure to deliver results in a short period of time while maintaining service levels. While IT budgets are largely flat, end users and lines of business reliant on computing resources and services to get jobs done are demanding more. To best meet these rising demands, IT is increasingly acting like a service provider with the continuous goal of providing better and faster services to its clients while reducing costs and improving efficiency. Most IT departments spend significant amount of time provisioning and deploying resources to meet the demands of their businesses. Just as other areas of organizations must, IT departments need to work on labor-reducing automation to keep up with the increasing needs of their firms.

Oracle Enterprise Manager Provisioning and Patch automation pack provides an end-to-end solution for software deployment lifecycle management that includes tasks like automated provisioning, patching, of entire system stacks including physical and virtual infrastructure, servers, databases, middleware and applications.

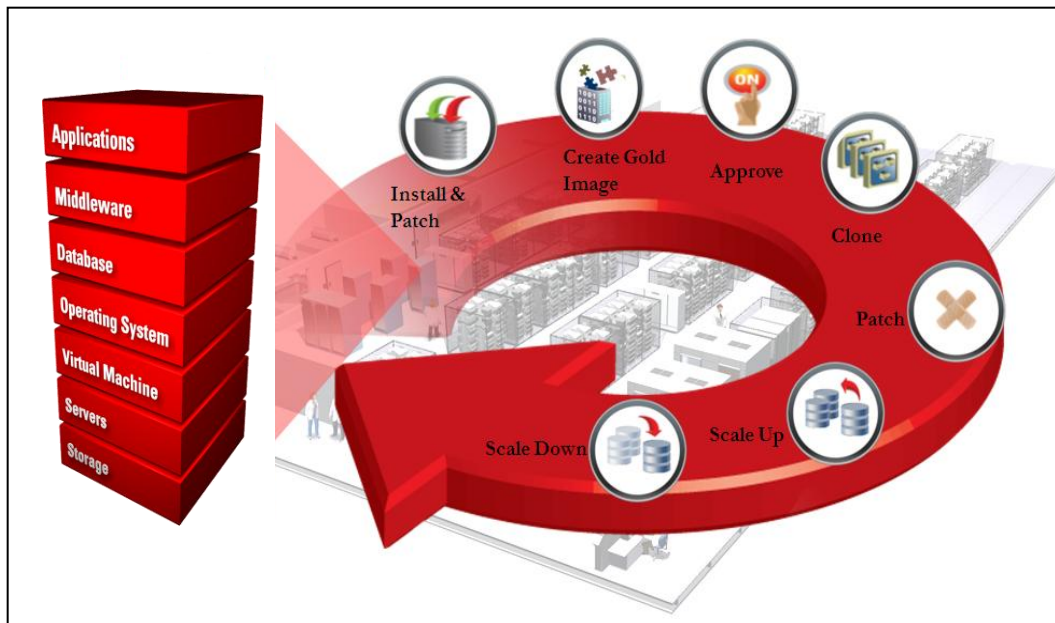


Figure 1: Software Deployment Lifecycle

This white paper discusses the use of Oracle Enterprise Manager Provisioning and Patch Automation Pack as a single solution to the following challenges inherent to Data Center operations:

- **Need for Agility.** With business requirements changing faster than ever, IT needs to make more changes than ever.
- **Increasing quality of service.** Many organizations are being pressured to increase the quality of service – often having to provide more services (or better service) with reduced resources.
- **Driving down cost.** At the same time, organizations are under pressure to reduce costs, particularly with changing economic times.
- **Ensuring Compliance.** From security requirements to compliance standard requirements to new business processes, IT has to keep up with the various regulations and best practices.

Key Features

Automate software provisioning

- Rollout certified images from Software Library
- Provision Linux servers
- Automate software image deployment

Automate patch updates

- Integrate with My Oracle Support
- Proactive notifications via Critical Patch Advisory
- Automated patch deployment

Ensure Compliance

- Zero resource integrity threats.
- 100% compliance to standards

Extensible solution

- Customizable Deployment Procedures
- Command Line interface

Need for Agility

Earlier data centers relied heavily on manpower to perform their day-to-day operations. There were administrators who were responsible for all the major activities of maintaining the data centers. In modern era, data centers are constantly evolving to meet ever increasing business demands. Technology is getting more complex, deployment cycles are shorter while testing and regulatory requirements are getting more demanding.

Meanwhile, as the concept of Private Cloud gains popularity, most IT organizations are under pressure to provide an agile and efficient self-service model. Typical use cases for self-service provisioning are - the ability to provision a complete system for training or demonstrations, cloning of production environments for testing, promoting an application from QA to production, etc. All these use cases require IT resources to be assigned by autonomous, cooperating, business parties within and beyond the enterprise.

Dräxlmaier Group, a large auto parts manufacturing company, has a constant need to rapidly provision new infrastructure across geographies and to expedite the rollout of enhancements made by their application development teams to meet the increasing demands of business. *“Provisioning of databases and Linux operating system takes us 4-5 days with involvement of different groups to create a system meeting enterprise standards,”* says Mario Lohner, Chief Architect at Dräxlmaier. *“Using standard gold images and EM based cloning we can ensure 100% compliance to standards and save 80% man hours and cost.”*

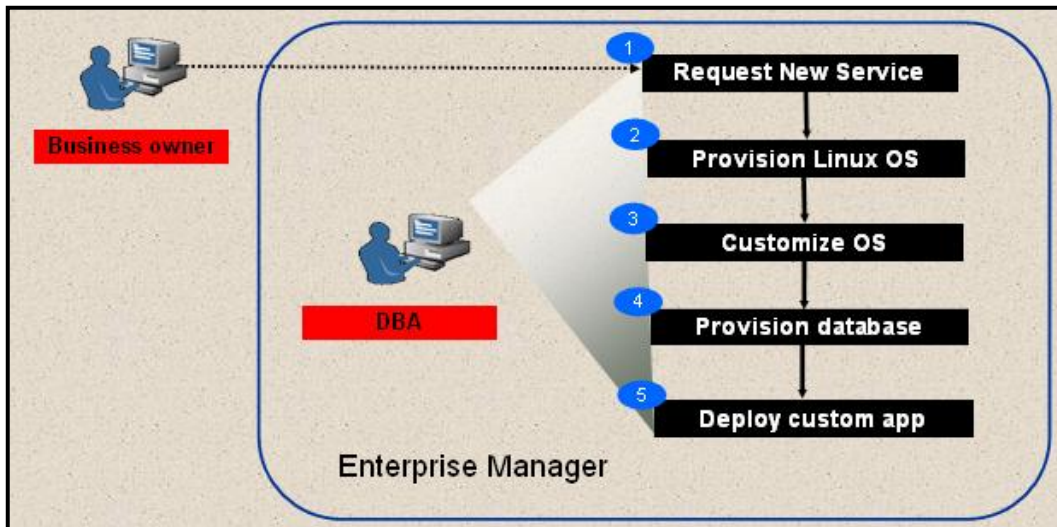


Figure 2: Rapid deployment of new servers at Dräxlmaier

Alok Arora, Director of Enterprise Integration and Architecture group at [NetApp](#) had similar requirement, albeit for a different software stack. At NetApp, the requirement was to be able to provision new SOA deployments quickly while reducing the time required in patching and maintaining them. *"It takes us 2-3 weeks to come up with a SOA deployment with relevant patches and compliant to standards,"* says Alok. With Oracle's Enterprise Manager Provisioning Pack for Oracle Middleware, NetApp was able to expedite SOA provisioning and patching all via a single console. *"With Oracle Enterprise Manager, we are now able to meet corporate standards 100% of the time. And, our pre-patched gold images, enabled by Oracle Enterprise Manager, save time and resources."* continues Alok.

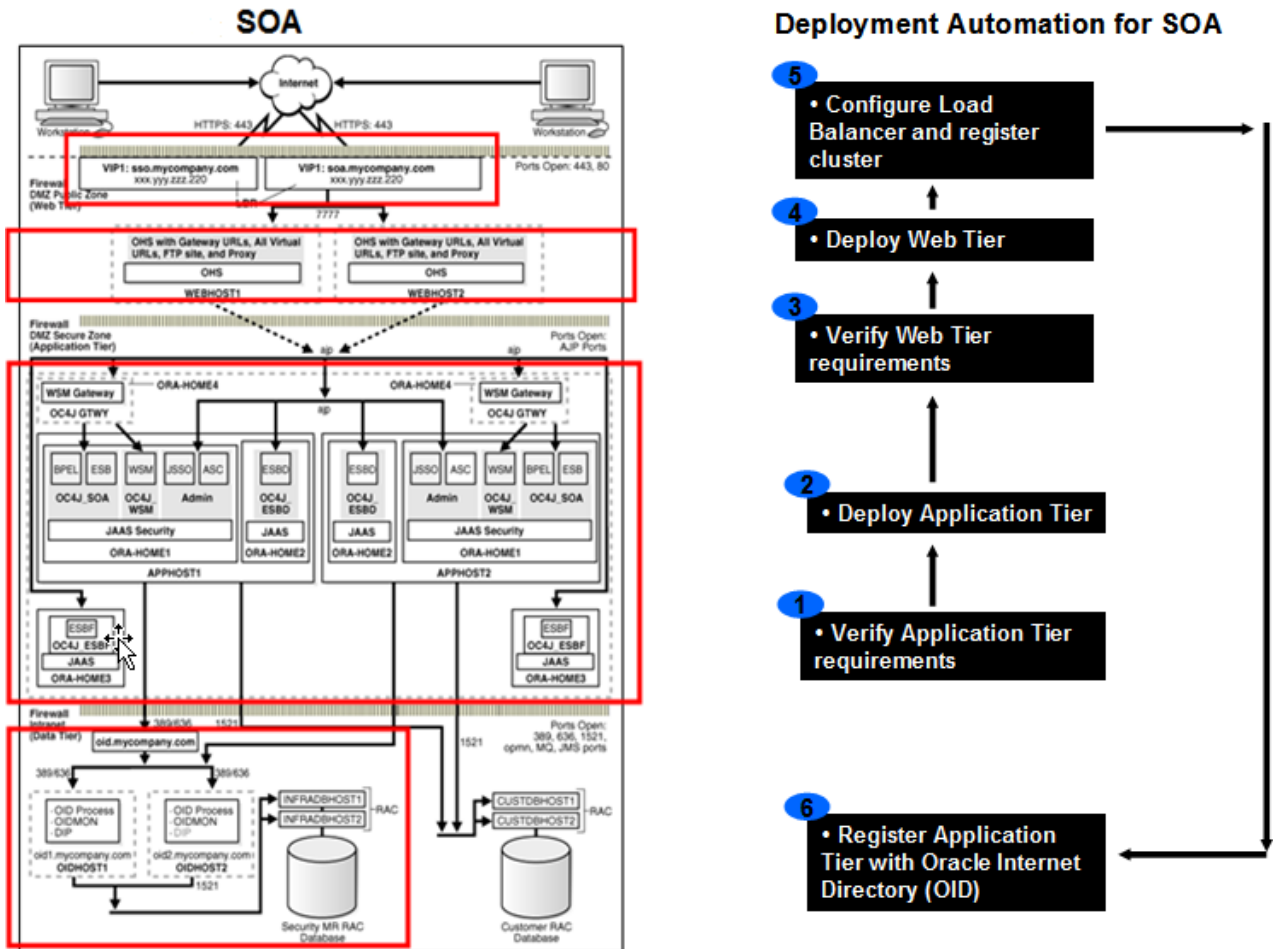


Figure 3: Topology for Oracle Fusion Middleware SOA deployment

Doing more with less

Most companies try to reduce their capital expenses (CAPEX) by adopting distributed architectures, by scaling horizontally, or by moving to less expensive commodity hardware. While these measures bring down CAPEX, they pose a huge burden on IT departments in terms of operational costs (OPEX). One of the most significant components of OPEX is the indirect cost of running large number of servers. This includes the network and storage infrastructure, continuous management, security, etc.

Enterprise Manager allows users to manage thousands of servers, databases, application servers, and other software components from a single console. This significantly reduces the time spent in managing and monitoring of these systems. Manually managing such large environments would not only require a large number of administrators but would also consume significant time that could be spent on other critical tasks.

The key challenge at **Johns Hopkins University Applied Physics Laboratory (APL)** was to enable APL's core team of eight systems administrators to efficiently support more than 80 developers and 5,000 end-users of Oracle technology—all of whom rely on Oracle-based systems for their research and administrative work. *"A key success story for us comes in the area of applying quarterly Critical Patch Updates (CPU),"* says Raymond Payne, Principal Architect at APL. *"We have been able to take it from a very time consuming task down to a point where it is substantially unattended and automated. It has reduced our time to apply quarterly security patches by nearly 80%"*

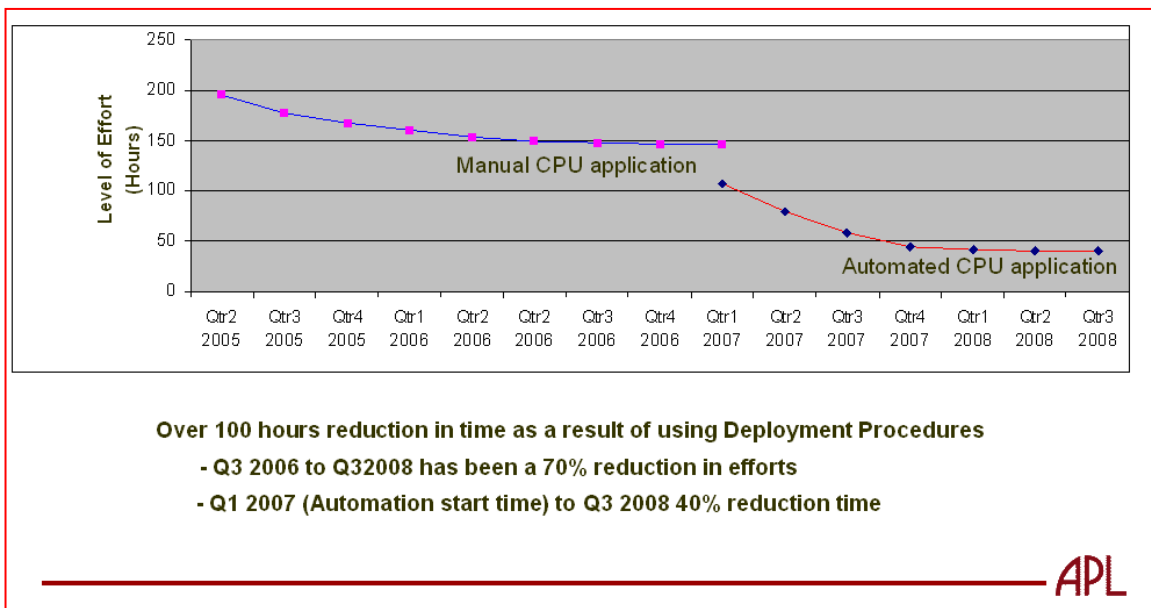
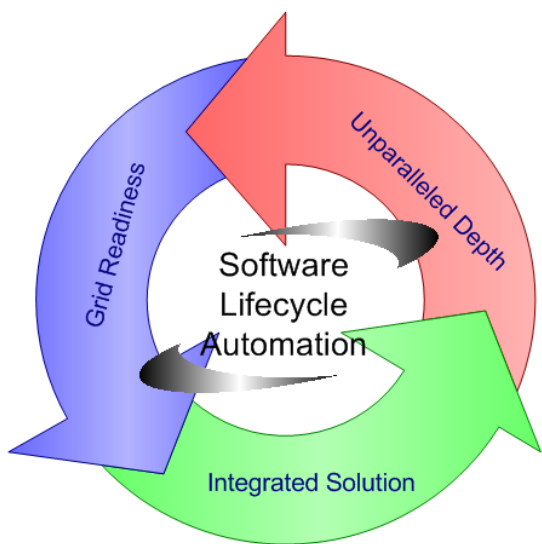


Figure 4: Reduction in time for applying CPU

Telstra a telecom giant based out of Australia, had a similar experience. Prior to using Enterprise Manager, automation in Telstra was primarily driven through custom scripts. With Enterprise Manager, “the system automation has freed up administrators’ time previously spent developing and managing homegrown scripts. Telstra is now able to take advantage of functions that deploy and provision Oracle databases in Oracle Real Application Clusters (RAC) and non-RAC environments in a matter of hours. As a result, Administrators can focus on higher-level projects and upgrading their skills.”



Key Differentiators

Unparalleled depth of solution for Oracle products

- Deep product knowledge as opposed to a shallow automation framework
- Can handle complex configurations like RAC or Middleware clusters

Grid Readiness

- Can handle tens and thousands of servers
- Proven ROI for the Grid

Integrated solution

- Integrated with Application testing solution to provide coverage across entire service lifecycle (test, stage, production)
- Integrated with My Oracle Support and Unbreakable Linux Network to provide in-context management

Figure 5: Key differentiators for Enterprise Manager Solution.

Bayer, a giant in healthcare, had employed 5 full time DBAs to upgrade, patch and manage over 2000 databases- an effort spanning over 8000 person hours. Adopting Enterprise Manager reduced their software upgrade effort by 75%. “We manage thousands of databases and application servers with Enterprise Manager,” says Andreas Stephan, Senior DBA Consultant at Bayer. “We have been able to reduce the attended time for upgrading databases from 4 hours down to 1 hour per database.”

Ensuring Compliance

With the increasing number of data breaches in recent times, security is the primary concern for all IT organizations. Security can be maintained either by adhering to one or more of the compliance frameworks like SOX, PCI, COBIT, etc or by forming company wide best practices based on the industry vertical. Most companies follow a two pronged approach:

- Follow best practices or compliance standards while deploying software
- Monitor systems and software for compliance violations (periodic checks) and remediate if non-compliant

Bayer had a similar corporate policy which required them to apply the latest security patches as soon as possible to more than 2000 databases. For meeting SOX Guidelines, Bayer needed to rollout critical security patches within 45 days of release. It was soon evident that their manual process of applying patches was highly inefficient and time consuming. *“With patch automation we were able to reduce patch application time from 1 hr to 1 min per database.”* says Andreas Stephan, Senior DBA Consultant at Bayer. *“Enterprise Manager Grid Control allows us to automate this process, which translates into huge savings in time and money.”*

A large telecom equipment vendor faced a similar predicament for license compliance. For them, the real challenge was not only to install software but ensure that right options were installed as per the license contracts. Previously DBAs would install Oracle database their own way which was in clear violation of best practices prescribed by standards such as ITIL Release Management. The combination of Software Library and standardized procedures allowed them to save a significant amount on license compliance. The benefits were evident - *“We do not need to worry about making sure that the right database options are installed any more”*.

Summary and Conclusion

Oracle Enterprise Manager Provisioning and Patch Automation Pack is a single solution that can help IT organizations achieve agility, provide better quality of service with existing resources and ensure compliance all while keeping operational costs in check. As evident from the above sections, various customers across industry segments have

benefited from the features of the Pack. A recent multi-customer study by Forrester indicated a risk-adjusted ROI of 122% with a payback period of 15 months.¹

This pack provides an end-to-end and best of breed solution for automated provisioning, patching, and lifecycle management for entire system stacks including physical and virtual infrastructure, servers, databases, middleware and applications.

¹ “The Total Economic Impact™ Of Oracle Enterprise Manager Configuration Management Pack, And Provisioning And Patch Automation Pack”, Forrester, March 2009



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