

*"Virtualization in and of itself is interesting, and it gives you server efficiency, but without some of the automated tools, it may actually increase your management burden."  
John Enck, Gartner*

TURN VIRTUAL MANAGEMENT  
INTO AUTOMATED BEST PRACTICES



**"For virtualization to truly work in real-world applications, users must also focus strongly on automation, the policy-based administrative tools used to deploy virtualized instances and manage them."\***

**John Enck, Gartner**

## **The Management Burden in Virtual Environments**

Virtual machines are becoming mainstream technology for consolidating and adding servers to the IT infrastructure. Virtualization technology allows companies to maximize resources and save on hardware expenditure. Many companies believe that it will also reduce staffing levels and lower support costs, but this is not always the case. Virtualization adds additional layers of overhead and complexity, so cost savings in hardware are often offset by the increase in time and staff that are required to manage these environments.

IT support staff spend most of their time performing activities like change requests, problem analysis and resolution. In a virtual environment the burden of administrating and maintaining machines increases. Manually coordinating systems for maintenance procedures, change management and problem management on multiple machines quickly becomes a strategy that doesn't scale. To make these systems truly cost effective IT departments need to automate run book procedures so IT staff spend less time on routine, repetitive tasks.

***"Strong automated tools are of critical importance for data centers seeking to optimize virtualization without creating additional headaches, and according to Enck [Gartner Analyst], you can't have one without the other."\****

**Luke Meredith, CIO News**

## **Automate Virtual Management Tasks Into Best Practices**

Opalis Software is the expert provider of Run Book Automation software that enables organizations to integrate, orchestrate and automate IT processes. With Opalis companies report improved service delivery, service levels, and a reduction in operational costs. This is achieved by automating manual tasks and operational processes into standardized, documented, and reliable best practices.

Opalis helps customers implement best practice frameworks, such as ITIL, by bridging the gap between department, application and data silos and integrating the people, processes and technology involved in operational tasks. The flexible workflow architecture provides an easy way to remove repetitive, time-consuming, manual tasks from overburdened IT staff so they can be reallocated to strategic projects.

Opalis ships with out-of-the-box integration to leading data center management tools, making the automation of processes Simple, Fast, and Effective. Opalis automates run book procedures without custom programming, professional services, or rip and replace methods, which means IT shops can quickly realize the benefits of automating best practices.

\*GARTNER: VIRTUALIZATION  
A MEGATREND, By Luke  
Meredith, CIO News

**"The advantage of the Opalis approach is that customers can quickly implement the system to integrate and automate a few processes at a time, building more elaborate automation environments gradually."**

**Mary Turner,  
Summit Strategies**

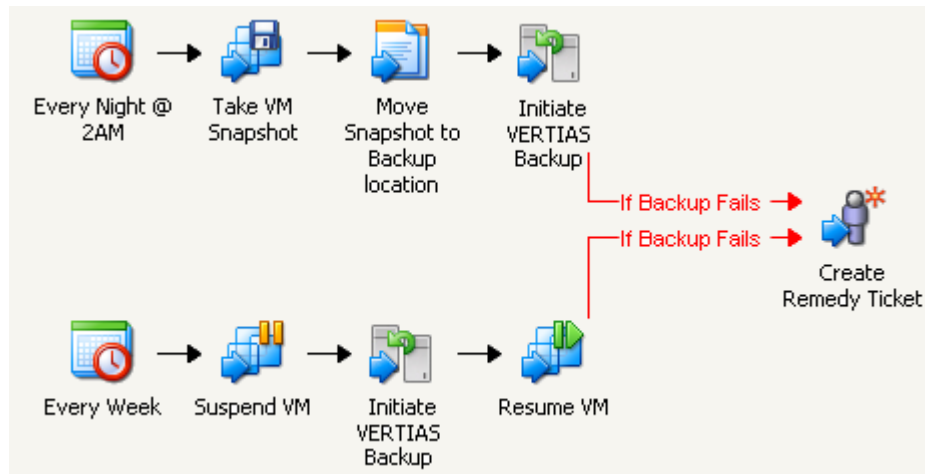
## Maintenance Procedures

Good maintenance procedures are a key component in service availability. However, most IT departments perform duties manually which limits the frequency and number of tasks that can be completed within the maintenance window. This introduces the risk of error, inconsistency, and can impact service availability. In most cases schedules and knowledge of system dependencies live inside the minds of a few IT staff, with little to no reporting. Even companies with well documented policies are faced with time constraints which result in corporate policies being bypassed.

Opalis provides a script-free workflow environment to orchestrate, integrate and automate even the most complex backup procedures.

- Automate image archiving, snapshot, backup process
- Test restoration processes
- Pause monitoring systems during maintenance hours
- Generate service desk tickets and update status during each step in the process

## Automate Backup Procedures



*Automate Snapshots and Virtual Machine Backups*

This Backup Procedure shows two Opalis Policies, one that runs nightly and one that runs weekly. The nightly backup process (top Policy) initiates a VMware snapshot of the virtual machine, once complete it moves the snapshot to an archive location and initiates VERITAS Backup.

The weekly branch suspends the VMware machine and initiates VERITAS to run a backup on the entire virtual machine. Once complete the VMware machine is returned to an online state. If either Policy fails, a BMC Remedy Case will be created and populated with details of the failure: which step failed, time, error returned, exit codes, etc..

**"Good change management relies on automation, specifically automating the change-management process while following the best practices laid out with ITIL."**

**Denise Dubie,  
NetworkWorld**

## Change Management

Change management is the addition, modification or removal of any component in an IT environment. Change requests can result from users requesting software, modifications to corporate security policies or in response to a problem that requires a change in system configuration such as a patch.

Industry analysts report that up to 80% of IT-related problems are directly attributable to changes made to the environment. The rapid adoption of virtual servers is helping IT departments fulfill change requests faster, by provisioning new virtual machines instead of building physical boxes from scratch. But whether physical or virtual, best practices need to be defined and automated to prevent unanticipated downtime and service delivery delays.

The key to successful change management is strict compliance to processes that are built around best practices. Opalis helps IT organizations coordinate processes that cross application, data and department silos, to ensure there is no impact to service availability.

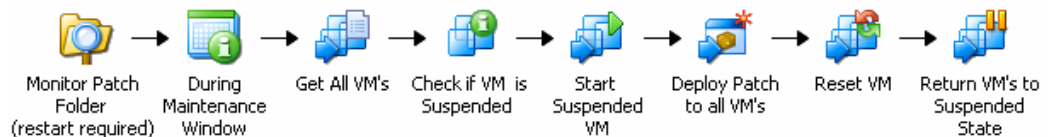
- Orchestrate approval processes
- Automate service requests
- Apply changes to online and offline machines
- Provision and Decommission Virtual Machines

## Proactive Change Management



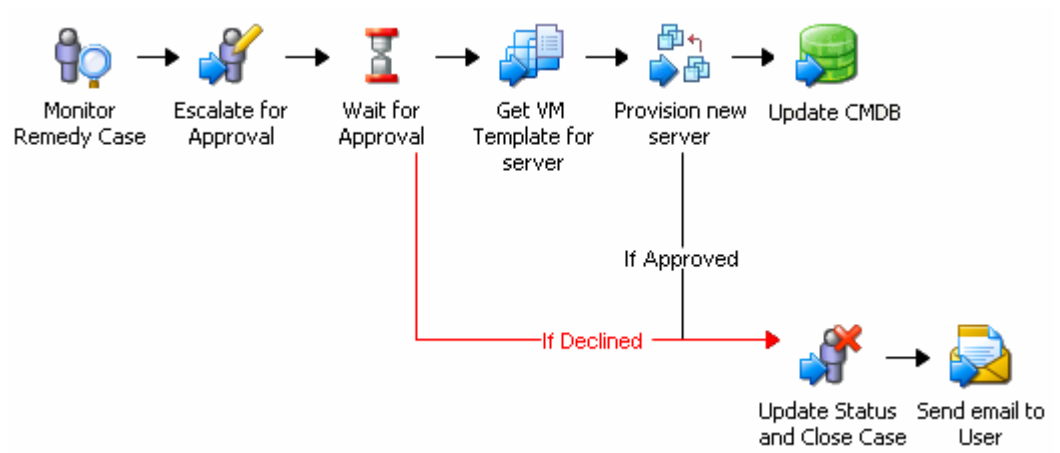
*Patch On-line and Off-line Virtual Machines*

This Policy monitors a folder that contains patches that do not require a restart. When a patch is detected, VMware is initiated and retrieves the list of all Virtual Machines, from that list it filters the machines that are suspended and starts them. Once all VM's are online, the patch is deployed. When complete, the machines are returned to the original suspended state.



This Policy is similar to the one above; except that the patches in this folder require a system restart. To avoid service interruption, the patches are not applied until the weekly maintenance window.

## Reactive Change Management



### *Provision Servers Based on User Request*

This Opalis Policy monitors a Service Desk application (BMC Remedy ARS) for a new server request and starts the approval process. Once the approval process is approved Opalis retrieves the VM Template that meets the server requirements and provisions a new server. Once this is done, the CMDB is updated with server information such as computer name, IP address, configuration etc. The notification branch is used by approval or declined decisions. The notification branch updates the service desk ticket with result and closes the case. The user is also emailed the status of their request.

**"Opalis provides a standard, yet flexible framework for developing our processes. Our developers no longer have to deal with coding these processes from scratch and monitoring them each day to make sure they work correctly."**

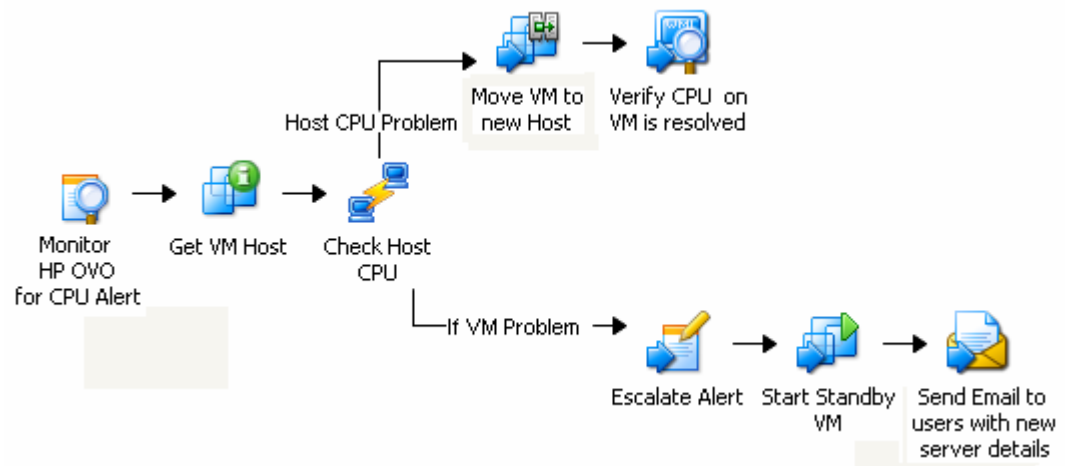
**Southern Company**

## Incident and Problem Management

An incident is a service request, or an event which is not part of the standard operation of a service and which can cause an interruption or reduction in the quality of service. Problem Management handles known errors and investigates incident details to identify the underlying cause. Determining root cause often requires standard diagnostic tests and triage routines. To minimize the impact of incidents on the IT environment and speed up resolution time, Opalis enables IT departments to integrate systems like monitoring tools, service desks applications and CMDB's so incidents and problems are detected and remediation procedures are initiated immediately. This ensures best practices are automated and time to resolution is greatly improved.

- Bi-directional integration between monitors & service desks
- Automated diagnostic tests to filter out false-positives
- Automate escalation and notification procedures

## Automate Diagnostic Tests & Remediation



*Determine if Alert is from Physical System or Virtual Machine*

This Policy initiates when HP OpenView Operations detects a high CPU alert. To determine the root cause, VMware is initiated to get the status of the host. A check on the physical host is run, if the host is the problem, the VM is moved to a new host. If the VM is the problem, an alert is escalated in the monitoring application and a standby VM is brought online, with an email notifying users to switch to an alternate virtual machine.

**“RBA automation is attracting considerable attention as the need to design, build, orchestrate, administer and report on workflows that support IT operations process has become a critical need that cannot be met by existing IT management approaches, such as traditional job scheduling products and custom scripting.”**

**David William, Gartner**

*IT Operations Run Book  
Automation: Automated  
Operations Revisited, June 2006*

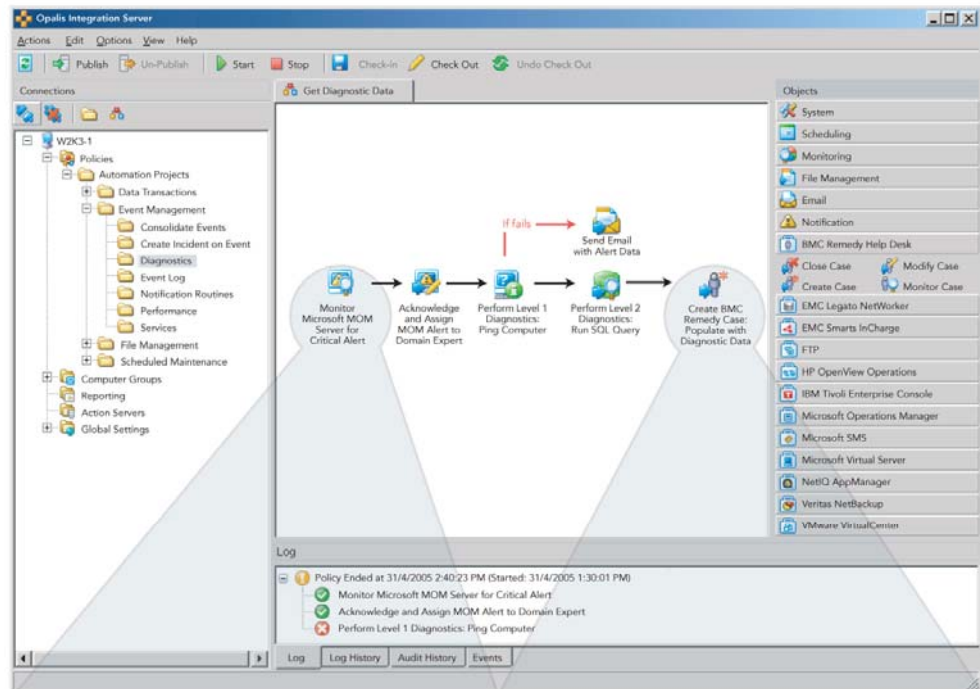
## The Opalis Difference

Opalis Integration Server - Run Book Automation Software, provides the ability to design, orchestrate, integrate and automate IT processes. With Opalis, companies can automate Run Book Processes in a way that's Simple, Fast, and Effective.

*Simple.* Opalis offers a unique script free solution to define and automate processes. This means IT professionals can implement automated processes without having to learn complex programming languages.

*Fast.* Opalis enables systems do more work in less time, so companies start realizing automation benefits of service quality, time and cost savings immediately.

*Effective.* Opalis provides the largest and most comprehensive set of integration to points to leading data center tools, enabling integration between existing products that don't currently communicate.



Field	Relation	Value
Computer no.	Is equal to	CHE-W2K3-11
Severity	Is equal to	Critical Error
Source	Is equal to	SQL

Field	Value
Summary	Insert MOM Alert Name
Category	Software
Type	Insert MOM Type: Error
Team	Insert MOM Alert ID
Requester Name	Insert MOM Alert Source
Requester Login Name	MOM Administrator
Description	Insert MOM Alert Details

Opalis Integration Server Client





### ***No Custom Programming or Scripts***

Opalis Integration Server ships with over 200 objects (reusable activity templates). To create automated Policies, you simply *drag-drop-and-connect*. Behind each object is a configuration dialog, not a script or code. Opalis objects expose 3<sup>rd</sup> party functionality (see examples of Microsoft Operations Manager and BMC Remedy object above) through seamless integration with monitors, service desks, CMDB's, backup, and other management systems. This enables IT professionals to define automated tasks with out having expert knowledge of each system.

### ***Integration***

Opalis Integration Server provides the ability to query, modify, collect, parse, and pass data between systems, applications and management tools. Unlike 'connector' products which simply transfer data between systems, Opalis uses data to make decisions, to dynamically configure task parameters with relevant run-time data, and to update systems such as configuration management databases and service desk applications with process information. This gives IT organizations the ability to update systems and ensure help desk and support staff have access to real-time data and problem status.

### ***Orchestration***

Opalis Integration Server orchestrates tasks between systems and collects information about tasks including status, configuration, return values, time, durations etc. These details can then be used to control next steps. This is paramount for tracking processes that interact with multiple systems.

### ***Workflow***

Opalis Integration Server provides a unique workflow environment that not only provides visual insight as to the nature of a process, it also delivers the flexible conditional logic and dependency support that is needed to automate complex process. Opalis workflow technology also enables branching capabilities, useful for creating incident management routines with error handling and escalation routines.

## **Opalis Solution Areas**

### **Incident Process Automation**

Address unanticipated incident immediately to improve response time, meet SLA's and reduce support costs.

### **Problem Process Automation**

Automate maintenance and remediation routines to reduce operational costs and ensure service availability.





### **Configuration Process Automation**

Integrate data center tools and automatically update system information to reduce service interruption.

### **Change Process Automation**

Integrate systems and automate change requests and approval processes to improve service delivery.

### **Release Process Automation**

Automate roll out procedures and verification processes to improve availability and speed of delivery.

## **Integration Support**

Opalis Integration Server ships with support for:

### **File processing**

Monitor, Delete, Copy, Rename, Encrypt, Decrypt, folders/files (text, binary, Web and XML).

### **Email Processing**

Send, Read, Reply, Forward and process Exchange and POP/SMTP email messages.

### **Database Interaction**

Utilize Oracle, SQL Server or any ODBC compliant database.

### **Event Scheduling**

Start processes based on system events or day/time calendar based scheduling.

### **Messaging & Notification**

Incorporate bi-directional interaction via email, pager, phone, web forms or message popup.

### **System Operations**

Monitor, restart and terminate application or internet services and processes.

### **Protocol Connectors**

Interact with any hardware or software using standard communications protocols such as WMI, SNMP, SSH, DNS, HTTP, and more.

Opalis Integration Packs add Objects to the Object Library for integration with:

### **Monitoring**

Microsoft Operations Manager  
NetIQ AppManager  
HP OpenView Operations  
BMC PATROL  
EMC Smarts InCharge  
IBM Tivoli Enterprise Console

### **Service Desk**

BMC Remedy ARS  
HP OpenView Service Desk  
Peregrine ServiceCenter  
CA Service Desk

### **Data Protection**

Backup Exec  
Net Backup  
EMC Legato NetWorker  
IBM Tivoli Storage Manager

### **Virtualization & Provisioning**

VMware VirtualCenter  
Microsoft Virtual Server  
Microsoft SMS

### **Other**

Cognos  
FTP  
Microsoft Active Directory



## Contact

To learn more about how Opalis can help Integrate, Orchestrate and Automate IT Operations Run Book Procedures in your organization, contact:

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