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MVP Systems Software, Inc.
is a member of the
VMware Technology Alliance Program

Virtualization Automation with JAMS

This whitepaper describes how JAMS not only leverages virtualized environments but also provides additional capabilities for VMware vSphere Server and the VMware vCenter Server. With this integration, JAMS enables customers to manage VMware tasks such as Deploy Virtual Machines, Power ON/Off, Create Snapshot, and others. By leveraging JAMS, VMware tasks can now be integrated with critical IT processes and other parts of the overall IT management strategy.

Organizations often look to virtualization as an integral part of a consolidation effort of physical servers in an attempt to gain cost reductions. Regardless of the factors leading the consolidation effort, there are real business advantages for automation of IT processes and integrating virtualization tasks with these IT processes. While there are management tools provided by VMware, JAMS extends virtualization management beyond the virtualized world so that these tasks can be intertwined with other IT management processes.

Challenges

VMware only automates and orchestrates the areas controlled by the VMware virtual environment. There are no management capabilities of IT processes between real and virtual environments. IT processes are still running separately in real and virtual environments, so integration into enterprise-wide processing with only the tools provided by VMware is not possible. Dependencies between applications, databases, platforms and legacy applications are not solved with VMware tools.

Impact on the Data Center Environment

Lack of VMware integration into enterprise-wide processes has the following impacts:

- IT processes run with manual intervention which consumes man hours that could be dedicated to higher profile projects.
- Processes may not be running correctly or they may be running out of sync, without error handling enabled.
- Compliance on IT processes does not exist.
- No support for Enterprise Workloads.
- Resources are not available or wasted doing nothing.
- No integration into existing Data Center and Run Book Automation (RBA).

Solution for VMware

The most effective way to integrate VMware into IT processes is integrating an enterprise workload automation solution into your existing VMware environment. JAMS offers a comprehensive yet flexible set of VMware automation tasks that can assist with not only managing

the virtualized environment but also managing how these VMware tasks interact with processes outside the VMware world.

JAMS as part of your VMware Solution

JAMS offers a number of built-in automation tasks in a library format to assist with a variety of VMware administrative tasks, such as:

- Automation of virtual machines and hypervisors.
- Automation of platforms in the virtual machines.

Categories of integrated tasks:

Add / remove Virtual Nic
Add / remove Virtual Switch
Add / remove Virtual Switch Port Group
Backup : Create Snapshot
Control: Query Power State
Delete Virtual Machine
Deploy Virtual Machine
Enter Maintenance
Exit Maintenance
Migrate (VMotion)
Performance Monitoring: Obtain performance data
Power Down Host
Power Down Host to Standby
Power Virtual Machine Off
Power Virtual Machine On
Provisioning: Mark as Template
Reboot Host
Reboot Virtual Machine
Reconfigure Virtual Machine
Remove all Snapshots
Remove Snapshot
Rename Object (e.g. Snapshot or Virtual Machine)
Reset Virtual Machine
Revert to Current Snapshot
Revert to Snapshot
Shutdown Virtual Machine
Standby Virtual Machine
Suspend Virtual Machine

JAMS Integrates VMware with Non-VMware Tasks

JAMS integrates into IT administrative processes as well. For example, JAMS can accelerate backups with end-to-end management of the tasks. JAMS also handles all event-based processing so that there is no need for manual intervention. Both time and event based dependencies are handled by JAMS, removing the need to manually manipulate schedules to ensure processes run when needed and not before or after.

Beyond VMware with JAMS

JAMS has the power and flexibility to integrate application processes (SAP, Oracle, SQL, Python) running in both real and virtual environments. As a result, SAP jobs running in a virtualized environment can trigger associated database updates running on physical database servers. JAMS extends its functionality as a “platform agnostic” solution so that dependencies between both virtual and real processes can extend beyond traditional operating system boundaries.

Benefits of JAMS

Better Resource Control

Business units and applications need the right resources at the right time. VMware often has to deal with running Virtual Machines that are not used anymore such as servers you don´t need at night. JAMS can use VMware functions such as Power On/Off, Standby and suspend to shutdown virtual machines unless there are IT processes dependent on these virtual machines. This solution benefits the business by not only reducing resources but also by reducing the number of licenses the organization may require for virtual machines.

Stronger Backup Strategy

VMware Virtual Machines need the same backups as real servers. Often there is a need for snapshots of virtual machines dependent on the running processes e.g. Batch job runs, Database operations. If the snapshots are done without a dependency check of the running processes, snapshots could be inconsistent. JAMS is the right tool for a backup strategy and for checking if the dependencies on the process level cross both environments. It is easy to integrate backups and snapshots at the right time with JAMS because of time-based, event-based, and calendar-based initiation options.

Flexible Provisioning

Businesses are using the provisioning options of VMware for creating and cloning virtual machines to get the right resources at the right time. The most difficult question for VMware Administrators is *"when is the right time to clone virtual machines?*". The right time is always before the need is identified in the IT process. Month-End Close processes run at the end of the month. That does not always mean the last working day of the month. This is the time when there is a need for additional resources. The need depends on the status of the running process. One example is a data warehouse data upload with an ETL Tool. This process will wait for completion of the data upload and then continue with the next steps in the workflow. This may or may not be the same time every month. To solve this issue, JAMS can provision virtual machines when the running IT processes require them.

On top of the provisioning option there is always a need for more resources during utilization peaks. JAMS enables you to use the performance data low level from the VMware vCenter server (Performance Monitoring) or predictive on a high level with JAMS (Performance of the Application on the virtual machine) to migrate virtual machines with VMotion or add more CPU and/or memory to your virtual machines.

Conclusion

VMware and JAMS complement each other as solutions for the real and virtual worlds. Integration of real environments and applications is a key part of the success of data centers. To integrate both worlds is still an area of concern for IT departments. JAMS offers a complete solution for enterprise-wide processes and IT automation. With JAMS in place, the strengths of batch job scheduling, data center automation, application integration, and management services are now available for virtual environments. When combining the strengths of VMware and JAMS, you become a truly dynamic data center.

For More Information: To find out more about how *JAMS* can help you, contact us at:

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