

Tidal® Enterprise Adapter for VMware

Highlights

Increase VMware management efficiency:

- Reduce manual operations, misprocessing, and swivel-chair integration by scheduling ESX actions directly from the scheduler
- Use resources effectively by setting the schedule to trigger actions based upon power and performance metrics from ESX
- Automatically migrate resources to critical business processes using the scheduler integration with vCenter
- Manage all jobs and the state of the virtual environment by applying core scheduler features to VMware environments

System Requirements

- Tidal Enterprise Scheduler 5.3.X
- VMware ESX Server 3.5
- vCenter (optional)

Enterprise Scheduling in a Virtualized World

Businesses are progressively deploying SOA based applications and virtualized environments. Administration in these loosely coupled ecosystems presents tremendous challenges for tracking and ensuring optimum performance of business processes because of the fluid, dynamic nature of these newer models where resources used for computation vary in state and physical location. The complexity is amplified by the multiple virtualization vendor tools that are not unified in a single pane of glass. Ultimately, those two factors significantly hinder the enterprise's ability to extract full performance from these flexible new environments.

A simple way to gain control and visibility over business processes in these new environments is to link the execution of business processes and data center tasks to the virtualized environment. That is the way to ensure that business processes run smoothly and reliably. Optimizing the location and configuration state of virtual machines (VMs) in the context of an executing business process can result in reduced hardware requirements and VM software costs.

The Tidal Enterprise Adapter for VMware enables companies to manage all jobs executing in a virtualized environment through a single point of control using the Tidal Enterprise Scheduler. The adapter allows users to connect VMware to the enterprise schedule, then define VMware jobs as part of the business process, monitor VMware management jobs, and define and leverage VMware events. In this way, Tidal's solution orchestrates business processes and the required virtual resources within the enterprise's entire framework.

Tidal's solution can help reduce infrastructure and software costs through optimization of virtual resources and increased administrative efficiency.

Bringing VMs into the Enterprise Schedule

In a virtualized environment, host servers often support dozens to hundreds of virtual machines. This creates a challenge for coordinating the availability of hosts through power management, preserving and restoring machine states through snapshots, and configuring servers for specific tasks. As a result, business processes in virtualized environments create significant considerations for the scheduling solutions. Using an enterprise job scheduler that can access all applications and systems and support management of virtualized environments becomes more critical than ever to the successful execution business processes because it enables the reliable functioning of the virtualized environment itself.

This adapter connects to both the ESX server and VMware Virtual Infrastructure web services to provide a new type of job to manage virtual machines and their hosts bringing this into the framework of the entire enterprise schedule. These jobs are managed through the scheduler's graphical interface through which all enterprise jobs and relationships between jobs across the entire enterprise are also managed.

This adapter for VMware extends the reach of the Tidal Enterprise Scheduler with three major categories of jobs that can be scheduled to simplify management in virtualized environments (see image 1).

Tidal Enterprise Adapter for VMware

Power Tasks	
	Query Power State
	Power On
	Power Off
	Suspend
	Reset
	Reboot Guest
	Shutdown Guest
	Standby Guest
Snapshot Tasks	
	Create Snapshot
	Rename Snapshot
	Remove Snapshot
	Remove All Snapshots
	Revert to Snapshot
	Revert to Current
Configuration Tasks	
	Reconfigure
	Migrate (VMotion)
	Upgrade Virtual Hardware
	Install / Upgrade Tools
Host Tasks	
	Power Up Host
	Power Down Host
	Reboot Host
	Enter Maintenance
	Exit Maintenance

Image 1. Four categories offer a variety of tasks that automate many VMware actions

The adapter even supports events that can be used to automate a response to changes in power state and/or host and guest performance conditions.

For example, consider a business process that requires a dedicated machine to produce quarterly tax reports with a specific configuration of CPU, memory and applications, but only for a limited period of time four times a year. If this dedicated machine were virtualized using a

solution like VMware, it could remain powered off until the schedule demanded that it be ready for this process, and only then powered on. Knowing when to power on or power off a machine and/or when to take a snapshot for checkpoint backups is the job of a scheduler, and enabling that within the context of the larger business process is the challenge addressed by this Tidal solution.

In order to achieve accurate alignment of the infrastructure with business process requirements when virtualization is in the data center mix, it is recommended that the Tidal Enterprise Scheduler be used in conjunction with this adapter for VMware to build intelligent automation around the management of virtual machines.

Built for VMware

This adapter is designed specifically for VMware and provides easy to use graphical views to allow administrators to bring VMware scheduling into the enterprise scheduling framework using a straightforward process. With this adapter, users can have a unified view of their entire schedule, regardless of the environment. There are several specific features this adapter offers for automating VMware jobs:

Ability to schedule ESX actions in the Scheduler - Users can schedule power, snapshot, and configuration actions within the ESX hypervisor. This eliminates the need to manually perform ESX actions as business conditions and workload change, which significantly reduces misprocessing, and swivel-chair integration.

Trigger actions based upon power & performance metrics from ESX - Both ESX and applications jobs can be triggered based upon information on the power state and performance metrics; jobs such as keeping a rogue VM offline, running a business process when resources are available, or run a process when a VM is turned on. This reduces manual operations, misprocessing, and swivel-chair integration. It allows resources such as servers, app/OS/DB

software, and VMware software to be managed for maximum effectiveness.

Integration with vCenter for workload automation

The connection to vCenter enables the scheduler to perform key vCenter tasks such as VM cloning, cold migration, hot migration, and storage migration. With this vCenter – Scheduler integration, customers can now automate and orchestrate cross ESX server tasks that allow users to better manage resources based upon the business process context and need. This increases workload automation because resources can be directly applied to critical business process job schedules. Manual operations and outages can be minimized by automatically having the scheduler control which virtual machines are at which resource state for a particular business process.

Application of core enterprise scheduler features for VMware

VMware users can leverage all the features of Tidal's scheduler to define jobs, create dependencies, manage jobs, and collect output. In this way, VMware jobs become part of the enterprise wide business processes. Virtualized environments can be more easily managed with Tidal's leading ease of use and deep integration capabilities. IT gains greater control of all jobs and the state of the virtual environment.

Users and Security - This adapter honors the VMware security model for consistency and ease of use.

VMware customers will find that this adapter is highly tailored to serve their automation needs.

Defining VMware Jobs as Part of a Business Process

Ultimately, data center automation and efficiency initiatives need to define VMware jobs as part of the business process. The Tidal Enterprise Scheduler with the VMware adapter enables business process needs to be easily factored into scheduling in complex environments as Image 2 shows.

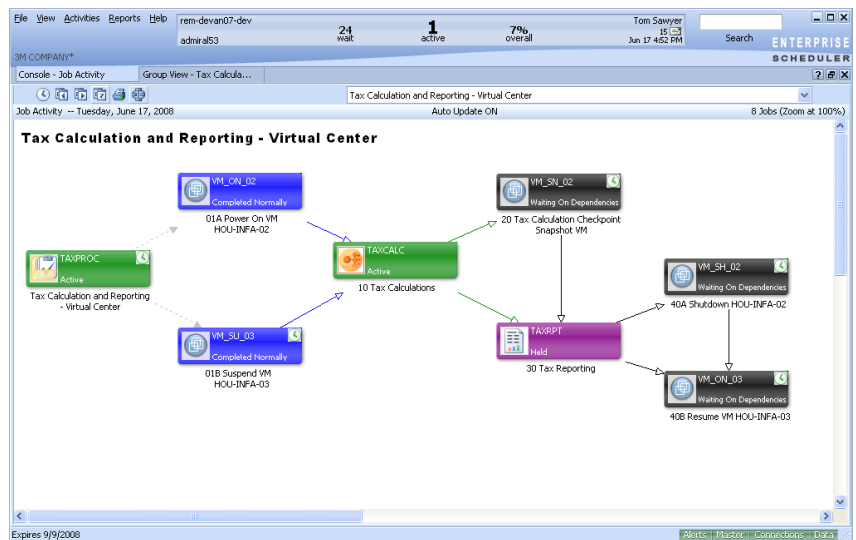


Image 2. VMware jobs can be defined as part of the entire business process

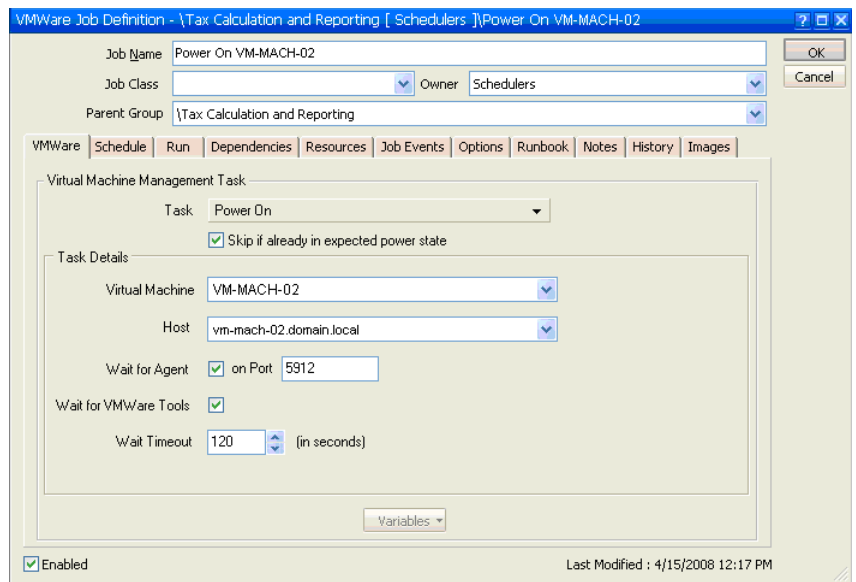


Image 3. A VMware "Power On" job is created through the scheduler's standard job definition window which now includes VMware environment details that are provided through this adapter

Tidal Enterprise Adapter for VMware

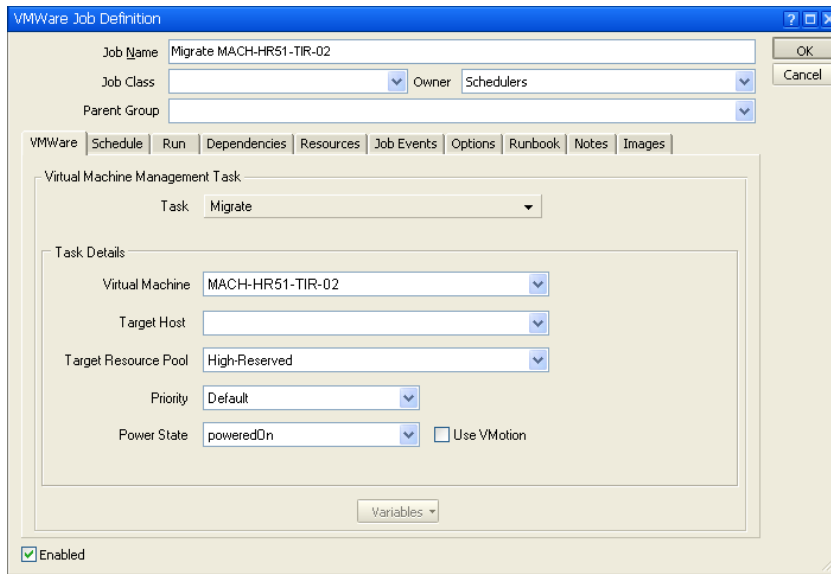


Image 4. The scheduler can migrate a host through VMotion

Installation

The Tidal Enterprise Scheduler is required in order for this adapter to function. Once the scheduler is installed, then the adapter can be quickly installed and set up.

Leveraging Enterprise Coverage

Tidal provides the integration platform for all enterprise job scheduling needs, and the adapter for VMware demonstrates Tidal Enterprise Scheduler support for changing IT environments. Tidal's scheduling solution eliminates multiple tools, manual intervention, drawn-out resolution times, and many other costly issues. Tidal provides a single interface to manage jobs and dependencies across the enterprise. Users can not only take advantage of VMware job scheduling

capabilities, but also leverage many of Tidal Enterprise Scheduler's enterprise functionality including:

- ~ Easy-to-use graphical user interface
- ~ Single point-of-control for enterprise-wide job workflow automation
- ~ Cross-platform, cross-application dependency support
- ~ Seamless integration with ERP/SCM applications such as SAP, PeopleSoft and Oracle E-Business Suite
- ~ Advanced distributed client/server architecture
- ~ Scales from departmental to enterprise-wide networks
- ~ Optimized for high volume processing
- ~ Sophisticated business calendars
- ~ Role-based security and audit logs
- ~ Automatic job recovery procedures
- ~ Alert management
- ~ Nested schedules to handle dependencies in a long sequence of tasks
- ~ Fault tolerance
- ~ Workload balancing
- ~ Remote access via Web

This product will go beyond scheduling basic VMware tasks using currently available functionality. The Enterprise Adapter for VMware provides the ability to integrate IT and business process execution along with virtualization management in VMware environments.

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