



What's New in ActiveVOS 9.0

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Overview

There's something for everyone in the latest release of ActiveVOS because enhancements, improvements and new features are peppered throughout the entire suite.

We've made some architectural changes to improve performance and scalability. In addition we've also added a multi-tenant option. We've added some new features into the designer like a new XQuery editor and we've improved BPMN 2.0 compliance.

If your interest lies in operations management then we even have something for you too. We've added a real-time performance dashboard and enhanced process migration.

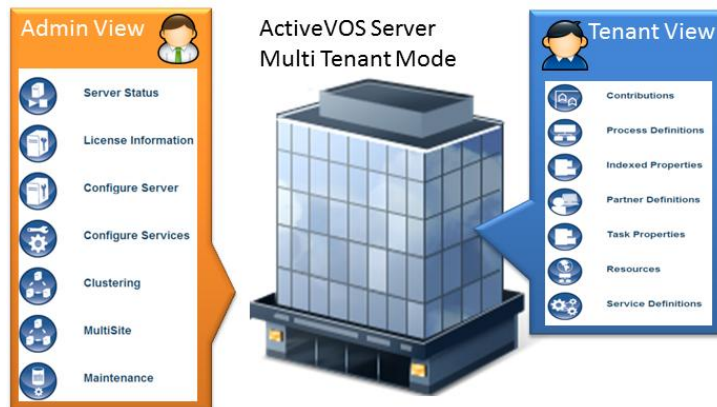
All in all ActiveVOS 9.0 is a significant release, as the following list highlights:

- ***Multi-tenant support for more cost effective capacity utilization and reduced complexity of IT infrastructure***
 - Allows enterprise IT to offer multi-tenant ActiveVOS to applications in a private cloud configuration.
 - Allows ISPs to offer ActiveVOS applications in securely partitioned hosted-environment.
- ***Improved Operations and Maintenance***
 - Live process migration.
 - Performance dashboard.
- ***Improved Performance and Scalability***
 - High performance dispatch manager
 - New XQuery processor
- ***Developer Productivity Enhancements***
 - New XQuery editor
 - New relationship view
 - Code Coverage reports
- ***New and Improved and Standards Support***
 - Enhanced BPMN 2.0 palette
 - XSLT 2.0, XQuery 3.0

New Multi-tenant Architecture

Multi-tenancy is a brand new feature introduced in ActiveVOS 9.0¹ that allows you to build and deliver SaaS applications as part of a private cloud or as a public service provider. Multi-tenancy reduces management complexity and provides more cost-effective capacity utilization large installations.

Multi-tenancy works by securely dividing a single instance of the ActiveVOS software into discrete partitions in order to serve multiple client organizations (or tenants). With a multi-tenant architecture, an ActiveVOS application virtually partitions its configuration and data to allow each client organization to work with their own customized application instance.

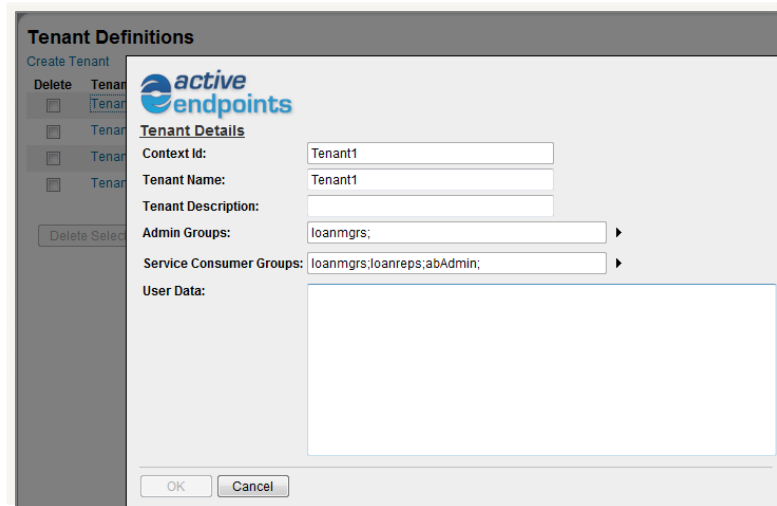


Tenants therefore share the same hardware resources, but operate though they are running on their own dedicated hardware. Each tenant has no knowledge of other tenants or visibility into other tenant's data, although running on shared resources.

Each tenant also has their own private and secure access to ActiveVOS functionality such as the ActiveVOS Central task list, the Administration Console, and their ActiveVOS process applications.

Tenants are defined within the ActiveVOS Administration Console and leverage logical groups from your existing identity service infrastructure.

¹ Multi-tenancy is only available in "**ActiveVOS 9.0 Data Center Edition**". For more details about the data center edition please contact sales at +1 781 547 2900 or email info@activevos.com



New Palette with BPMN 2.0 Terminology

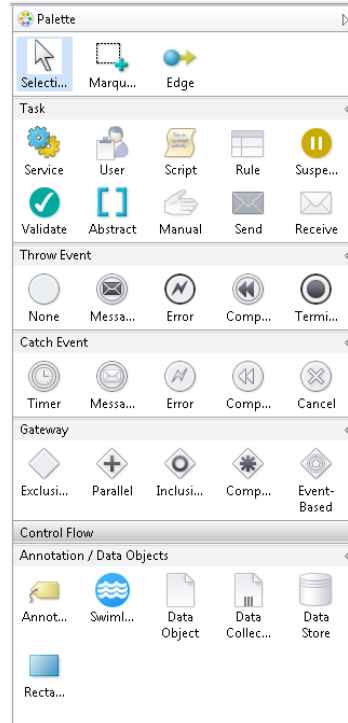
ActiveVOS 9.0 features a new process design palette that uses BPMN 2.0 modeling constructs. The drawers of the palette and the entries in each drawer are named and organized in a way that will be natural to anyone familiar with the BPMN standard.

The new palette also makes it much possible to use the most appropriate BPMN modeling construct for a situation, rather than being tied to a construct that is associated with a BPEL construct. For example, a service “invoke” activity can be modeled as:

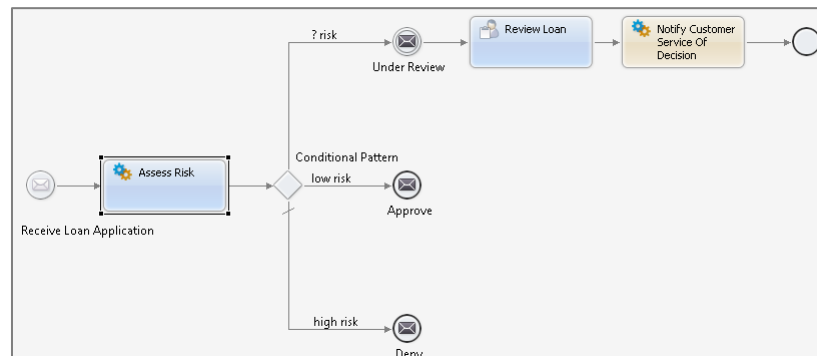
- a BPMN service task
- a BPMN business rule task (if the service evaluates a business rule)
- or a message send event (if the service sends out a message, such as an email).

Prior to 9.0, it could only be modeled as a service task. With the new ActiveVOS 9.0 process designer, you can use the BPMN construct that best matches the semantics of the activity.

The new palette also supports BPMN data annotations, which can be connected to any activity or link in the process. The data annotations include support for Data Objects, Data Collections and Data Stores.



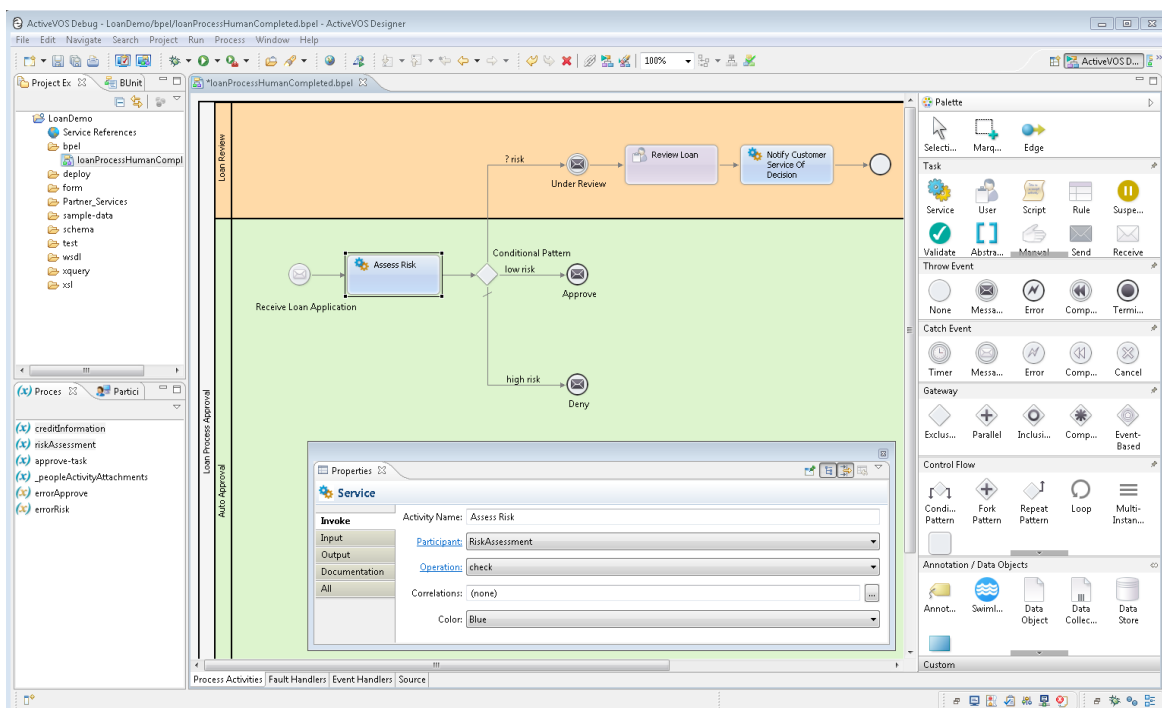
The developer can now also choose to color each activity by selecting the desired color from a coordinated palette. You can use colors to improve the readability of your process diagrams. For example you can color activities to categorize tasks according to partner links or logical people groups.



The designer now contains extra intelligence for BPMN constructs that can map to multiple BPEL constructs. For example, there is just one BPMN receive event on the palette, but it will be mapped to different BPEL constructs depending on whether it is dropped onto an activity boundary, onto a Pick construct, or onto the main flow of the process. In other cases, the process designer can choose the appropriate BPEL

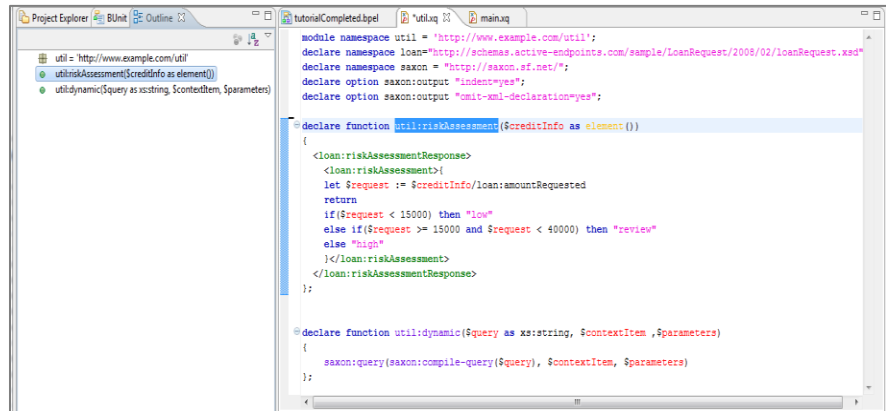
construct to use to implement the model by using a new “Implement As” property of some activities. For example, a message send event could be implemented as either a BPEL reply, invoke or even as a BPEL4People notification.

Finally structured activities can now be ungrouped to allow the individual components be positioned anywhere on the canvas. This is especially useful when arranging a process into swimlanes.



New XQuery Editor

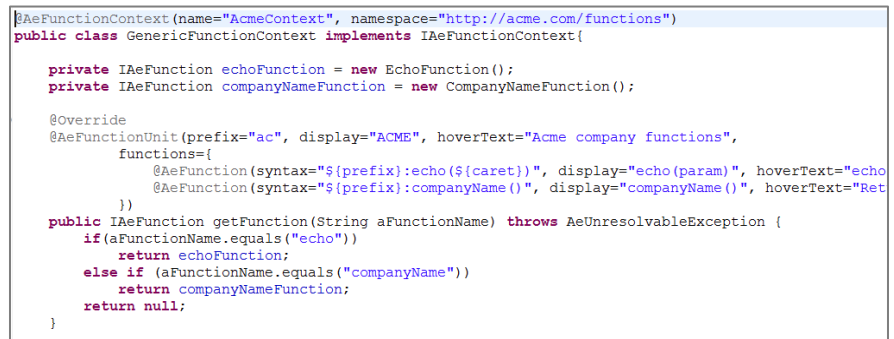
ActiveVOS 9.0 features a brand new XQuery Editor that allows you to develop XQuery modules. The editor provides syntax coloring, content assistance and can be fully customized to match your coding style. The background error checking provides real-time feedback as you type, reducing your development time.



XQuery user defined functions are immediately accessible from the ActiveVOS Expression Builder and XQuery modules can be imported across contributions.

The new XQuery processor executes up to 15 times faster than previous ActiveVOS versions and also includes support for XQuery 3.0 (try/catch, group by, format functions).

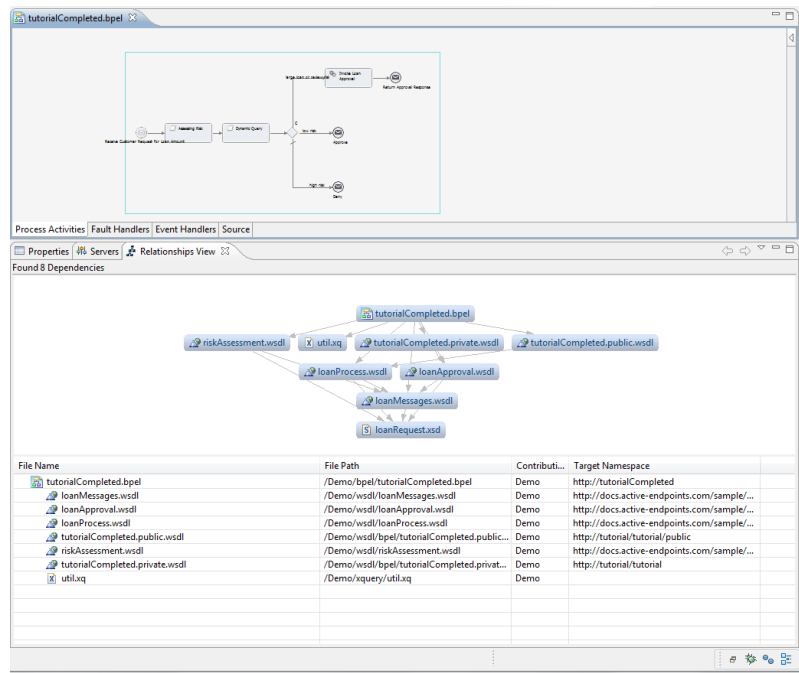
In addition to XQuery you can also create custom functions using Java as part of your contribution. Custom functions are also immediately accessible from the ActiveVOS Expression Builder.



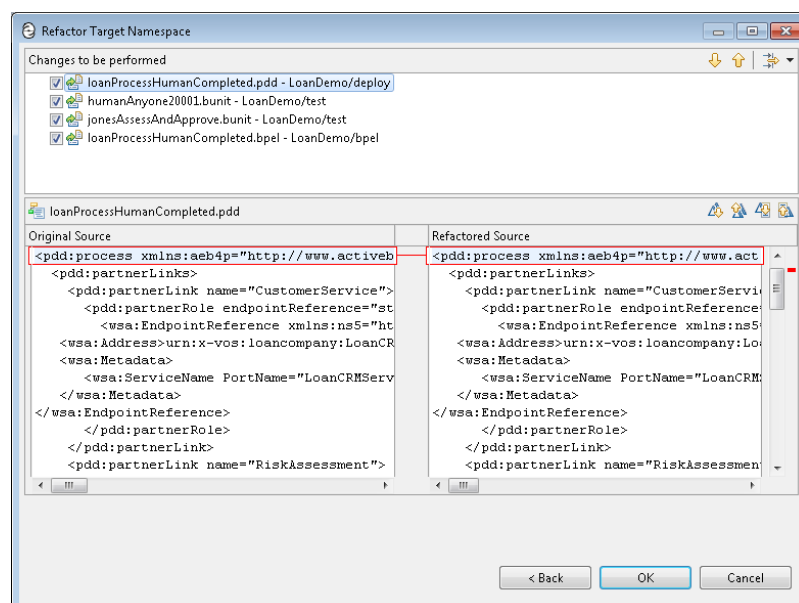
Finally, the XSLT processor has been upgraded to support XSLT 2.0 and 3.0.

New Relationship View

The ActiveVOS 9.0 designer includes a new Relationship View that allows you to quickly determine the dependencies between various document types including: Business Processes, XML Schema, WSDL, and Process Deployment Descriptors.

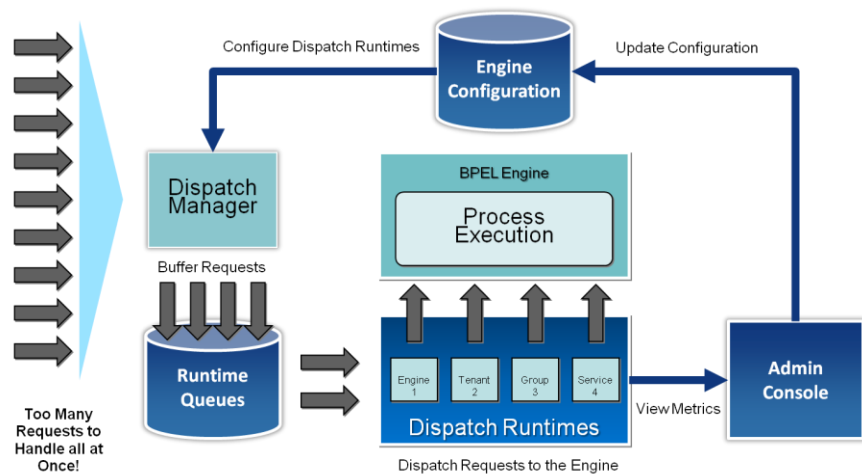


The Relationship View and new refactoring capabilities help you determine the impact of any changes before they take place.



New High Performance Dispatch Manager

The new high performance dispatch manager makes it possible limit the number of incoming service requests that are processed simultaneously (i.e. it provides message throttling). This prevents the services that are called by the process that is handling those requests from being overwhelmed with too many requests at once. It also prevents a burst of incoming traffic to one process from starving all other process execution work from occurring.



By default, all inbound requests to the engine will be managed and controlled by a dispatch configuration queue, which is administered from the ActiveVOS Administration Console.

When an inbound request arrives, it's handed to the Dispatch Manager that will look at the number of threads handling similar requests and then either:

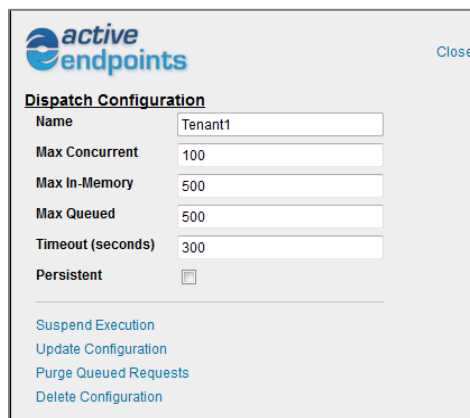
- allow the request to be executed immediately, if the maximum number of concurrent requests hasn't been reached;
- queue the request, if the maximum number of concurrent requests has been reached, but the maximum queue length hasn't been reached;
- or, reject the request, if the maximum queue length has been reached.

Note that, by default, the dispatch queue is only stored in memory and adds no measurable latency to the handling of the request. It is also possible to make the dispatch queue persistent using the Administration Console.

Request Dispatch Service						
Service	Executing	Queued	Average Time	Consumed	Rejected	Status
▶ DispatchCallRequestResponseService	0	0	00:00:00.000	0	0	Active
▶ DispatchCorrelatedReceiveCallback	0	0	00:00:00.000	0	0	Active
▼ DispatchOneWayService	10	155	00:00:11.102	35	0	Active
KPEASE-DT:8080	5	65	00:00:10.859	30	0	
KPEASE-DT:8081	5	90	00:00:12.565	5	0	
▶ DispatchRequestResponseService	0	0	00:00:00.000	0	0	Active

[Reset](#)

You can configure the dispatch manager on a very granular level either by per Service, Process Group, Tenant or BPEL Engine.



Dispatch Configuration

Name:

Max Concurrent:

Max In-Memory:

Max Queued:

Timeout (seconds):

Persistent:

[Suspend Execution](#)
[Update Configuration](#)
[Purge Queued Requests](#)
[Delete Configuration](#)

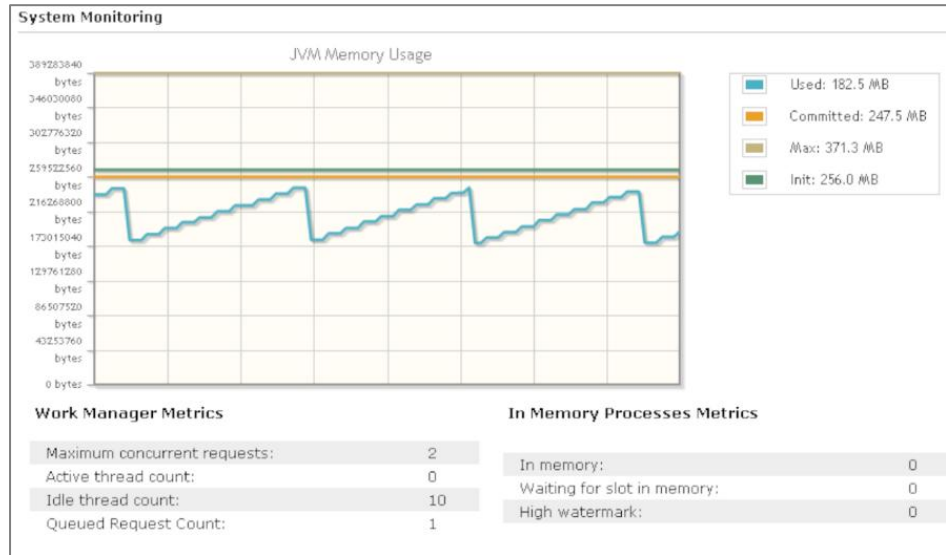
New Performance Dashboard

While there are many server monitoring tools available within the operating system, JVM, and application servers, they tend to provide statistics at a very low level that may not be particularly meaningful outside the context of your business application.

The performance dashboard is the single place where you can quickly determine if your system behaves according to your demands. The performance dashboard is very valuable tool for:

- Monitoring at a glance overall server health.
- Monitoring service request performance and throughput.
- Tuning appropriate ActiveVOS and application server settings.

- Identifying resource and service bottlenecks.



Key metrics are available for each node as well as the entire ActiveVOS cluster.

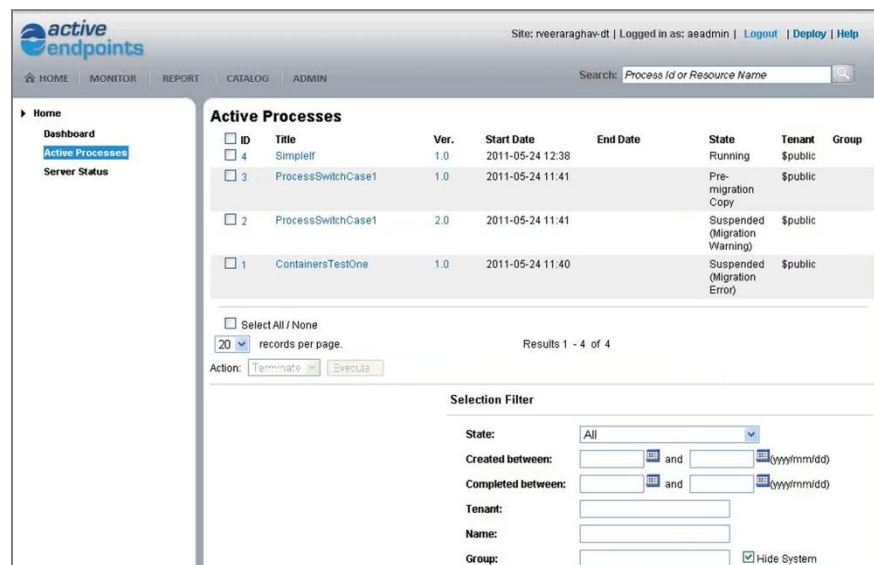
Work Manager	
Maximum Concurrent Requests:	12
Active Thread Count:	0
Idle Thread Count:	10
Queued Request Count:	1
Unmatched Receives	
Current Message Count:	0
Average Message Waiting Time (ms):	0
Total Message Count:	0
Timed-Out Messages:	0
Message Queue High Water Mark:	0
In-Memory Processes	
Currently in Memory:	0
Waiting for Slot in Memory:	0
High Water Mark:	12
Identity Service	
Average Query Execution Time (ms):	0
Total Query Executions:	0
Maximum Query Execution Time (ms):	0
Cache Efficiency:	0%

Finally the dashboard functionality can be easily integrated with other web-based monitoring tools via its rich web service API.

Migrating Process Instances to New Versions

ActiveVOS 9.0 extends the process migration capabilities to a much larger set of uses cases. Process migration is the ability to take process instances that were started with one version of a process and then automatically convert them, without stopping them, to the latest version of the process. This is now possible, even when a new version of the process is deployed that has added or removed activities, changed variable names, added participants, introduced scopes or containers or a wide variety of other changes.

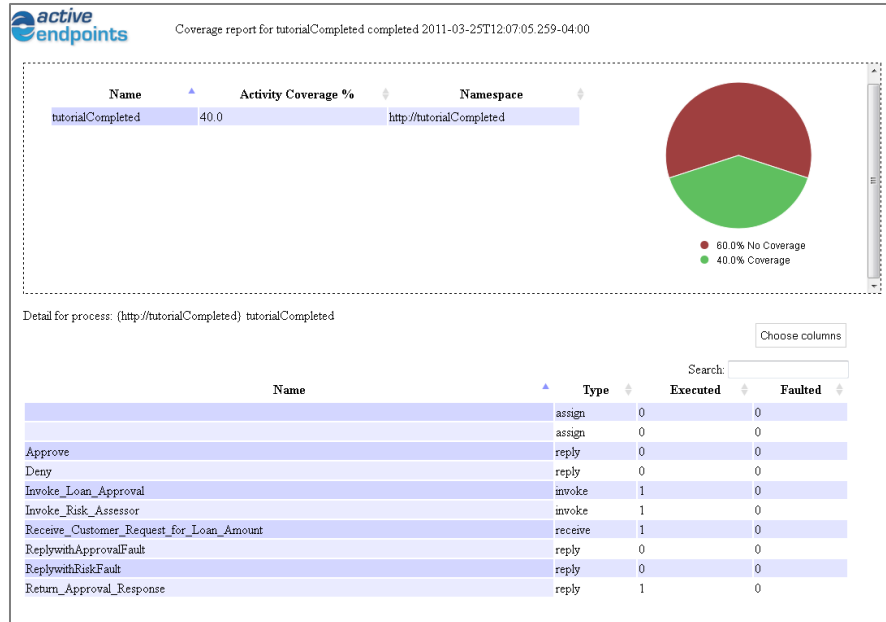
Multiple process instances can be migrated in parallel thereby improve performance. When a process cannot be migrate automatically ActiveVOS 9.0 preserves the old process instance and provides the option to let you decide the appropriate action to take to complete the migration.



ID	Title	Ver.	Start Date	End Date	State	Tenant	Group
<input type="checkbox"/> 4	SimpleIf	1.0	2011-05-24 12:38		Running	\$public	
<input type="checkbox"/> 3	ProcessSwitchCase1	1.0	2011-05-24 11:41		Pre-migration Copy	\$public	
<input type="checkbox"/> 2	ProcessSwitchCase1	2.0	2011-05-24 11:41		Suspended (Migration Warning)	\$public	
<input type="checkbox"/> 1	ContainersTestOne	1.0	2011-05-24 11:40		Suspended (Migration Error)	\$public	

New Code Coverage Reports

BUnits or BSuites can now generate code coverage reports that determine the effectiveness of the test. With a simple tweak to your Ant scripts you can produce coverage reports in HTML or XML format that track execution paths and display which activities have been executed. The results are expressed as percentages of activities have executed at least once, in relation to all process's activities.



VBPEL Replacement

ActiveVOS 9.0 no longer uses a separate file to store BPMN layout information (a hidden file with a .vbpel extension that stored the layout information for the process). The layout information is now stored as BPMN Diagram Interchange format inside of the executable BPEL file instead. The benefits of this approach are as follows:

- The BPEL XML can be edited without corrupting or invalidating the layout information.
- Changes by different developers on the same BPEL file can be merged more easily.
- Changes which are easiest to accomplish using a text-based search and replace (such as changing namespace declarations) can be done by editing the BPEL source file.



About Active Endpoints

Active Endpoints, Inc. delivers a unique suite of process automation products and related services to develop, integrate and deploy custom applications quickly and easily. The company's products — [Socrates](#) and [ActiveVOS](#) empower business users and IT project teams to collaborate more effectively.

The company has hundreds of customers worldwide from large enterprises to SMBs, spanning multiple industries such as telecommunications, government, financial services, and media and entertainment.

Active Endpoints is headquartered in Waltham, MA with development facilities in Shelton, CT.

To find out how Active Endpoints can help your business, visit <http://www.activevos.com>, call +1 781 547 2900 and press 1 for Sales, or email us at info@activevos.com.