The Digital Enterprise is becoming reality. Are you ready? Plan now to join us at Innovation World 2014 in New Orleans, Oct. 13-15 to exchange ideas and experiences to help your company along its journey on the road to Digital Enterprise.

This issue of TECHniques gives you a head start with news on product releases and solutions that will help you succeed in your digital transformation.

In What’s Hot, Dr. Katrina Simon and Josèphe Blondaut introduce Software AG’s Model-to-Execute (M2E) approach for process automation that combines products (ARIS and webMethods), methodology and content.

Paula Ziehr announces the 9.6 releases of Alfabet for IT planning, portfolio management and Enterprise Architecture (EA) and ARIS for Business Process Analysis (BPA) in What’s New. She explores how these new product releases integrate Business Process Management (BPM) with EA to create a new business-IT management solution.

In Techie Deep Dive, Sachin Gadre and Ann Marie Bond take us on a journey through the private cloud as they explain how Software AG’s Platform-as-a-Service (PaaS) strategy provides the next level of optimization and flexibility in the Digital Enterprise’s infrastructure. Cynthia Carpenter explains how you can leverage Presto and PPM to get a unified view of big data and process data.

Interested in better performance in webMethods BPMS? Mark Imel reviews how the adoption of Universal Messaging and Terracotta as well as support for high-performance third-party data stores will significantly improve the task engine. And Jonathan Heywood uncovers another hidden gem of webMethods: logged fields for service auditing.

In Out and About, don’t miss Bernd Gudat’s update on the International User Groups Conference in Dresden and Lori Axtell’s summary of TechEd—the first annual user conference of Software AG’s North America User Groups.

Click here to print and read the full color issue and visit the TECHniques blog to comment and rate the articles. Look for “Gerd’s Blog” under “Blogs we like” and tell me your ideas about TECHniques.

Happy reading!

Gerd Schneider
Vice President Cloud Operations & Communities
Software AG
To better cope with Model-to-Execute challenges and achieve targets, Software AG has developed a holistic Model-to-Execute approach combining product, methodology and content as shown in Figure 2. An integrated toolset including ARIS Architect and webMethods Designer offers a technical project environment featuring:

- Streamlined user experiences across all platforms
- Central user management for all project participants
- Supporting system check to ensure smooth tool interaction

On the other hand, the Prime methodology from Software AG offers a framework for controlled, traceable and auditable solution development and documentation. Predefined reference processes available with Industry.PerformanceREADY help jumpstart the work and serve as accelerators for the projects.

Software AG’s Model-to-Execute (M2E) for successful process automation is much more than transferring BPMN™ processes from ARIS to webMethods! Process automation is not just a matter of technology; it requires a concrete and stable solution to cope with common project challenges so that you get the full benefit of process automation. Indeed Software AG’s Model-to-Execute approach gives you all the technical functionalities you need and, at the same time, ensures long-term success.

**Process automation projects—status quo**

Typically process automation projects intend to increase business agility, speed processes and integrate partner, in-house, cloud and legacy systems, services and tools.

*But honestly, how can you achieve these objectives without knowing about the underlying processes and organization?*

Process automation projects are often affected by numerous challenges. Cost and time overruns are generally caused by a lack of business acceptance and unmanaged change requests. Requirements are fragmented and partially incorrect, consequently causing the project and solution documentation to also be incorrect. In the end, incomplete solutions are delivered because of time and budget pressures. There is a strong lack of alignment and structure in the collaboration between business owners, solution design teams and the technical implementation team. Projects can neither succeed nor bring the targeted benefits with this approach.

**Time for change—Software AG’s Model-to-Execute approach**

Model-to-Execute is not just about process automation. It is a strategy for process and IT improvement. It covers both Business Process Analysis (BPA) and Business Process Management (BPM) disciplines. BPA covers the starting phases to understand the problem and to define the solution, whereas BPM supports the next steps of realizing the solution and improving the process as shown in Figure 1.
Sharing between ARIS and webMethods

When it comes time to share your solution design between ARIS and webMethods, you can choose from different integration styles as shown in Figure 4.

Documentation-only
Documentation-only is the easiest integration style. It creates reports documenting the solution design into a PDF document that can then be handed over to webMethods users. Their implementation work is based on the document. Vice versa, the final implementation can be documented in an HTML format, which again can be provided as a PDF document to the ARIS users for future look up.

Export/import
Export/import is a slightly more technical way of sharing process information. It saves your solution process model as BPMN2 file from ARIS to your hard drive and provisions it to the webMethods user, who can then import the BPMN2 file into his webMethods project as a BPMN process.

M2E process only
M2E process only includes an automated, fully governed roundtrip to transport the logical business process model (solution design) into webMethods Designer. There, it is enhanced for process automation and kept in-sync with the process models in ARIS (business blueprint and solution design). The continuously supporting governance workflow coordinates not only model synchronization but also notifies all project participants of pending project tasks.

M2E process & services
M2E processes and services, the extended version, supports the roundtrip of more than just process information. It includes specifications of the services connected to the process steps. Services are managed and administered in CentraSite.

Look for yet another integration style coming soon. We are currently working on a rather loosely coupled style of sharing more than just process information from ARIS to webMethods. It includes data models, message definitions, UI design specifications, decision tables for business rules and key performance indicators. All options can be used with collaboration capabilities that allow for social integration in the sense that both ARIS and webMethods users get a communication stream to continuously discuss new processes and their changes.

The Model-to-Execute approach provides a transparent, reliable and rapid conception and development as well as management core business process solution based on robust, scalable and agile architecture.

Blueprint and solution design

As a first step, Model-to-Execute supports the definition of a business blueprint in ARIS and, based on that blueprint, the development of a solution design and its implementation in webMethods as shown in Figure 3.

The business blueprint defines WHAT the solution should be from a business point of view as well as the functional scope. It also serves as basis for contracting solution design. It is defined by a domain expert/system owner supported by business analysts. In the end, it becomes the user documentation for the implemented solution.

The solution design defines HOW the requirements are to be realized from a technical point of view and serves as a basis for contracting the implementation and for acceptance. It’s a team effort of the business analyst and solution architect/designer. The design is widely accessible as solution documentation within the ARIS repository.

Figure 2: Model-to-Execute for successful core process automation.

Figure 3: Model-to-Execute at a glance.

Figure 4: The new Model-to-Execute offers multiple ways to share solution designs between ARIS and webMethods.
**Summary & outlook**

In a nutshell, with Model-to-Execute, you can overcome the frequent challenges and pain points of your process automation projects.

**Use Model-to-Execute from Software AG and get:**

- Controlled, traceable and auditable solution development
- Safeguarded intellectual property of your organization through central and structured documentation of business knowledge and solution design
- User documentation and technical documentation required for the roll-out and maintenance of the solution as an integral part of your development project
- Business blueprint and solution design as clear milestones and basis for scoping projects and contracting services
- Increased agility and lower TCO

Customers tell us that they saved up to 30 percent on time spent on reworking, documentation and testing. At the same time, they reduced the project risk by up to 40 percent as well as reduced maintenance efforts and implementation lock-in.

We’re continuing to add more features to the Model-to-Execute approach, designed in ARIS, including consistency checks and more sharing of assets such as data, UI and service design. Collaboration capabilities will play an even more important role in promoting the social alignment of business and IT.

**The end goal of Model-to-Execute:**

**Getting IT right the first time. Every time.**
Harmonizing the continuous development of business processes with the supporting IT is crucial in order to keep pace with rapidly changing business conditions. New, disruptive business imperatives are driving continuous change to business models and their underlying business processes. Digital business demands IT to proactively put forth solutions. This requires new approaches to collaboration between business teams and IT planning groups that previously, in many cases, acted independently. Yet, with today’s business mandates, these two groups ideally complement each other.

The interoperability between ARIS and Alfabet establishes a new methodology for collaboration: BPM, EA, and IT planning and portfolio management can all be performed with one comprehensive approach. This enables a full understanding of how organizational units, business processes and IT systems interface and interact with each other across the enterprise.

Users benefit from:

• Enterprise context for large business transformation initiatives
• Greater agility in providing digital business solutions
• Tighter business-IT collaboration from inception to implementation of business solutions
• Clear insight into the impact of change on business and IT
• Revenue growth through customer focus and market differentiation
• Cost reduction through business and IT standardization

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The integration interface between ARIS and Alfabet allows them to be used in parallel as shown in Figure 2. Data maintained in either ARIS or Alfabet can be re-used in the other application to ease data maintenance and to prevent data inconsistencies between the different management tools. The ARIS-Alfabet interoperability also allows for the regular synchronization of data between the two products.
services IT uses internally to bring these business services to life. An IT service model helps classify and standardize IT’s “products,” in turn helping IT understand what functionality IT needs to deliver and what infrastructure is needed to deliver it—functionality and infrastructure making up the “bill of service.” It can, thus, plan and manage IT activities and costs in a business-oriented manner, align to business needs and operate efficiently.

Alfabet 9.6 introduces service product portfolio management to its integrated portfolio management approach. In a portfolio management concept, the service product portfolio can be optimized for greater performance, standardization and simplification, leading to higher agility in delivering on business demands. Additionally, users can analyze the impact of changes to application and technology portfolios on IT services in terms of availability and Service Level Agreement (SLA) conformity. They can better understand who consumes and who sponsors IT services. Furthermore, users can coordinate the analysis and planning of changes to IT services with the projects delivering on those changes.

With this new capability, a service product is a service that is owned by an organization and can be made available to other entities. The consumption of services is represented through contracts delivering the service product. Each service product is coupled with its SLA to define measures for the service product being contracted. The SLA captures information, such as a volume base, that is relevant for the service product (i.e., service desk support hours, target resolution time, defect backlog size limit, maximum number of test failures).

The service product portfolio management capability, shown in Figure 4, is highly configurable to accommodate each organization’s unique service product model and permits representation of the great variety of service products IT organizations offer to their business stakeholders.

### Service product portfolio management

Most organizations have an IT services catalog that defines the services available to business units as well as the more elementary services IT uses internally to bring these business services to life. An IT service model helps classify and standardize IT’s “products,” in turn helping IT understand what functionality IT needs to deliver and what infrastructure is needed to deliver it—functionality and infrastructure making up the “bill of service.” It can, thus, plan and manage IT activities and costs in a business-oriented manner, align to business needs and operate efficiently.

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### New user interface

Alfabet 9.6 offers a preview to a completely new, HTML5-based client, which is planned for delivery in the October 2014 release. The new interface provides independence of the Alfabet user interface from the underlying browser platform and embraces the innovative technologies that HTML5 has to offer. It provides Alfabet users a Web-based interaction that is state-of-the-art, improving usability and increasing performance in globally distributed environments. Most significantly, the new graphical user interface, shown in Figure 3, incorporates design elements from ARIS to provide a uniform “look and feel” for ARIS-Alfabet interoperability.

![New HTML5-based GUI facilitates ARIS-Alfabet interoperability.](image)

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![Figure 4: The new service product portfolio management capability accommodates each organization’s unique service product model.](image)
Private PaaS capabilities

A private PaaS must include the ability to provision new platforms on demand with preconfigured applications. For optimal efficiency, these new platforms should be created using predefined templates that are ready to assemble and deploy. The resulting infrastructure should be centrally administered and managed.

The central management tooling should provide self-service, enable resources to be re-used and provide visibility into what’s deployed. Metering is important to be able to charge back to the requesting line of business. Finally, a resilient, scalable platform that supports an agile Software Development Life Cycle (SDLC) is the core of the PaaS. Figure 2 summarizes the key characteristics of a private PaaS.

Cloud migration: Private PaaS is a logical start

Most companies are just beginning their transition from traditional deployment in on-premises data centers to a deployment model based on shared on-demand infrastructure similar to popular infrastructure-as-a-service offerings. PAAS (Platform-as-a-service) is an increasingly popular option for enterprise IT as it looks to provide the next level of optimization and flexibility in its infrastructure.

PaaS can be deployed internally in the private cloud or hosted in the public cloud. Many enterprises are choosing the private PaaS option for deploying internal applications. Private PaaS is the deployment of a PaaS software layer on an enterprise’s internal infrastructure (or using private PaaS providers like Amazon®) with the goal of exposing the PaaS service to developers within an enterprise’s various lines of business.

A private PaaS, or private cloud, provides immediate benefits:

- Responsiveness - Dynamic allocation of resources to meet demands
- Optimization - Better use hardware, software and personnel resources
- Fault tolerance - Proactive prevention, isolation and recovery from failures without affecting the end user
- Ease of operations - Centralized management and monitoring, and self-service

Next generation of integration in the private cloud

Expanding integration capacity often involves scaling horizontally with public or private PaaS, as shown in Figure 1. While the hardware can be provisioned in minutes, what happens to the software, fixes, configuration and assets? How can deployment be automated? And once new nodes are added, what tools are available to monitor and manage this extra capacity to ensure stability? These are just some of the challenges with implementing a private PaaS with the goal of increasing integration capacity.

Figure 1: Scaling horizontally for more integration capacity

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By Sachin Gadre, Director, Product Management, Software AG
Ann Marie Bond, Manager, Product Management, Software AG

Is adopting cloud-based solutions high on your agenda? How do recent Software AG product releases enable private clouds? What is our Platform-as-a-Service (PaaS) strategy, and what are the key elements we’re focused on? Read on and learn.
How Software AG provides private PaaS

To achieve a more agile IT infrastructure enabled by cloud computing, Software AG has enhanced existing products and introduced new products such as Command Central in webMethods 9. Command Central is designed to overcome, automate and manage private PaaS. Using Command Central, the deployment of an Integration Server in a cluster is much easier. Here’s how the fundamental requirements of a private cloud are addressed by Software AG.

Centralized administration and management

Centralized management is a critical aspect of cloud computing. Private PaaS requires sophisticated automation for operational visibility and control. Command Central is the central administration and management tool, offering:

- A single tool for monitoring, managing and configuring all webMethods products, grouped in a way that makes sense to the user
- Life-cycle management - stop, stop and start, KPI viewing
- Fix management - Users can now create a template of a set of fixes and apply them singly or to multiple servers automatically, reducing errors and addressing a key pain point for large customers
- Application, fix and configuration comparison - Easy side-by-side comparison of installed product versions, fix versions and configurations reduces risk and assists in debugging
- Administration - Central configuration and log file visibility
- Command-line interface and REST APIs - All capabilities can be automated; scripts are used for data collection change management, and mass application of configuration updates and fixes

Initially this capability will be focused on core products, Integration Server, Broker, Universal Messaging and My webMethods Server.

Template-based provisioning and resource re-use

With Command Central’s template-based provisioning, you can:

- Create a template of installed versions, fixes and/or configurations to clone servers, create new project environments, apply fix packs or troubleshoot environment problems
- Use templates to apply software and fixes from the source of record, or store images and apply from an internal repository
- Save templates as a “gold standard” to be re-used
- Edit templates

Self-service

Self-service in Command Central reduces the operational costs associated with supporting a private PaaS platform. Self-service activities include:

- PaaS instance creation - Administrators can create instances on demand, based on Optimize KPIs, Command Central KPIs or another custom rubric that previously required IT support
- Monitoring and management - “Environments” allow users to filter their view to just the systems they care about
- Auditing and usage tracking - While access control is still rudimentary, Command Central activities are logged and audited on the target application as usual

On-demand scaling: elastic ESB

With Command Central, it is possible to implement an elastic Enterprise Service Bus (ESB) strategy where preconfigured Integration Servers (ISs) are added to a cluster. You can:

- Provision templates of new IS instances to a private cloud via scriptable interfaces
- Count on new cloud API supports for provisioning Amazon EC2® and Rackspace platforms
- Manage products, fixes, configuration and licensing of cloud-burst IS instances via template-based provisioning
- Secure connectivity between on-premise and cloud-burst IS instances

Metering and chargeback

Metering is the task of monitoring usage of PaaS instances by various tenants. Metering information can be used to identify the charge back to every tenant based on usage of PaaS resources. Metering and chargeback can be accomplished several different ways within the webMethods platform. For example:

- Mediator automatically captures statistics for all mediated services; reports are generated via CentraSite
- With Insight, end-to-end service transaction statistics can be aggregated and dimensioned by requestor, message content and many other parameters

Data metering customizations can be built into services themselves on Integration Server. Standard IS service auditing of fields from service invocations can be used for aggregation and reporting via WmMonitor APIs.

Platform resiliency (in-memory ESB)

Platform resiliency is provided primarily by Software AG’s in-memory ESB, Terracotta. Features include:

- Clustering for high availability and failover
- Distributed caching
- Local caching using BigMemory
- WAN-based clustering
- Ability to handle all types of “big” data

Integration Server

Integration Server recently added some key high availability and big data functionality as well, including:

- Quiesce mode (maintenance mode) for 24/7 support
- Big XML processing
- Ability to work even if the database is down or experiencing problems
Continuous integration

webMethods supports the continuous integration software engineering practice through a combination of out-of-the-box product capabilities used in conjunction with open-source and tools developed by Software AG Global Consulting Services (GCS).

- Designer Workstation supports local development and easy integration with Version Control System (VCS) for configuration management
- Automated testing can happen in conjunction with open-source tools like Jenkins and using a GCS-developed testing toolkit
- The asset build environment allows continuous builds using build scripts and then stores those builds in a composite repository
- Deployer’s ability to deliver, configure and activate assets provides fine-grained control over every step of the process

Road map for the future

The PaaS road map for the webMethods suite includes:

1. Increased adoption of Command Central - In the future, all products within the Software AG Suite will use Command Central for centralized administration and management
2. Enhanced templates support - Command Central will be able to automatically provision and bootstrap a server, allow for substitution variables in templates, etc.
3. Automated deployment of assets - Deployer will be accessible from Command Central so assets can be included in a template
4. Enhanced metering and licensing - Out-of-the-box metering functionality will be introduced in the webMethods suite
5. Multi-tenancy in ESB - Additional options will be available for setting up Integration Server in a multi-tenant fashion
6. More granularity in self-service - This includes support for tenant self-service

Conclusion

Software AG’s strategic goal is to give customers deployment flexibility with a portfolio of on-premises, private cloud and PaaS offerings. Customers need to be able to choose which deployment and run-time model works for their individual business, security, response time and organizational needs. Integration Live, a new PaaS offering, will be introduced in the fall as a cornerstone of the Software AG PaaS strategy.

A differentiator for Software AG in our private PaaS offering continues to be our well-integrated product suite that supports the SDLC. Mature organizations know that efficiency throughout the SDLC pays dividends over time.

Finally, everything we build must have enterprise-class scalability, performance, reliability and security. Organizations insist on this, and our products deliver whether on-premises or in the private cloud.
Visualizing big data with process data

Leverage Presto & PPM together to get a unified view

By Cynthia Carpenter, Sr. Product Manager, IBO, Software AG

Do you need to take your dashboards further? Do you need to perform root-cause analysis on the KPIs that are violating a rule? Do you dream of being able to visualize all your internal and external organizational data in one place? Then read on to learn how to use Presto and Software AG Process Performance Manager (PPM) together to achieve these goals.

Use Presto and PPM to create a unified view

Presto is a self-service, real-time data visualization and exploration tool that combines data from different applications to create mashups, which can be displayed on any device. Process Performance Manager (PPM) provides process discovery and root cause analysis so enterprises can keep process design, implementation and execution in sync across heterogeneous environments including ERP, CRM and BPMS. By using these two products together, you can create a unified dashboard to display a holistic view of your organization.

Step 1: Install the PPM custom app in Presto

The first step toward configuring Presto to show charts from PPM is to install the PPM Custom App in Presto. The subsequent steps will instruct you on how to fully install and configure PPM for use in Presto. At the end of this short tutorial you will have a PPM Chart on a Presto Dashboard.

a) Search your Presto installation to find the zip file ppm-chart.zip which should be located in a directory similar to: C:\SoftwareAG\Presto\mashzone\clientapps\ppm-chart.zip

b) Unzip ppm-chart.zip to reveal a second file called PPM Chart.zip

c) Open Presto in the Web browser of your choice and navigate to the App Editor <ip address:port>/presto/hub/app-editor.html

d) Create a new app and upload the file PPM Chart.zip as shown in Figure 1

Figure 1: Create a custom PPM app.

Step 2: Configure a PPM instance in the Presto Admin Console

a) Navigate to the Presto Admin Console.

In the left navigation bar select “MashZone” and then select “PPM connections.” You will be presented with a screen to create a connection to your PPM instance as shown in Figure 2.
b) Populate a connection
The easiest way to populate a connection is to navigate to your PPM instance and right-click on favorite. Select “Use in dashboard,” then return to the Presto admin console and click the “Retrieve data” URL. Here you can paste a connection string created by PPM to automatically populate the fields as shown in Figure 3. Please note that you still need to manually provide an Alias.

![Figure 3: PPM configuration screen in Presto](image)

Figure 3: PPM configuration screen in Presto

c) Save your configuration
You are now ready to use the PPM custom app in the Presto Mashboard!

**Step 3: Use the PPM custom app in Presto Mashboard**

a) Create a new Workspace in Mashboard.

b) Select the Apps tab and drag the PPM custom app to the New Workspace as shown in Figure 4.

d) Copy the Favorite URL from PPM into the app

e) Click “next” and enter credentials into the PPM instance

That’s it! You will now see a PPM app embedded in your dashboard as shown in Figure 5.

![Figure 4: PPM custom app in a workspace](image)

Figure 4: PPM custom app in a workspace

c) Select the “Select PPM favorite” button to configure the app

d) Copy the Favorite URL from PPM into the app

e) Click “next” and enter credentials into the PPM instance

That’s it! You will now see a PPM app embedded in your dashboard as shown in Figure 5.
Skilled PPM users in your organization can additionally configure an optional “jump to PPM” capability to enable dashboard users to go straight from the dashboard into PPM. To make the jump, simply right-click on your PPM app, select “Properties,” then check “Allow jump to PPM” and click “Apply” as shown in Figure 6.

**Figure 5: PPM Custom App**

**Figure 6: PPM chart app properties**

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**Get to know Presto**

Learn more at [www.softwareag.com/presto](http://www.softwareag.com/presto). Or join the Presto community on [http://techcommunity.softwareag.com/presto/](http://techcommunity.softwareag.com/presto/) to access code samples, product downloads, documentation, and demos as well as gain insightful tips and tricks from collaborating with experts and users of Presto.

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**ABOUT SOFTWARE AG**

Software AG helps organizations achieve their business objectives faster. The company’s big data, integration and business process technologies enable customers to drive operational efficiency, modernize their systems and optimize processes for smarter decisions and better service. Building on over 40 years of customer-centric innovation, the company is ranked as a “Leader” in 14 market categories, fueled by core product families Adabas-Natural, Alphab, Apama, ARIS, Terracotta and webMethods. Learn more at [www.SoftwareAG.com](http://www.SoftwareAG.com).

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Software AG TECHniques: Techie Deep Dive

High-performance task engine

Scaling the task engine with webMethods 9.7

By Mark Imel, Sr. Director, R&D BPMS, webMethods

webMethods BPMS will introduce significant performance enhancements to the task engine with the October 2014 release of webMethods 9.7. Enhancements will include the adoption of Universal Messaging and Terracotta (both Software AG in-memory data management products) as well as support for high-performance third-party data stores such as Hadoop®, CouchDB and others.

Who needs a high-performance task engine?

This is a very exciting time for webMethods BPMS, especially for the task engine component of BPMS. We’ve not only reached a critical mass of successful deployments, but we’re also seeing a huge jump in the number of upcoming BPMS applications as well as a leap in the size of these applications. As a result, webMethods R&D is investing in numerous areas to ensure our customers can succeed with deployment sizes of 12,000+ active concurrent users. This article explores some of the changes in the October 2014 release and how those changes will enable an order of magnitude increase in performance and scalability, including:

• Horizontal scalability improvements using webMethods Universal Messaging

• High-performance task searches using a variety of new components, including Terracotta

Horizontal scalability

Task Engine 9.7 will overcome the horizontal scalability limitations of past versions, specifically increasing the maximum number of task engine nodes that can be deployed to a cluster. In Task Engine 9.6, the maximum number of nodes normally recommended is eight, although the system can continue to scale up to around 12 nodes. (The maximum number of nodes may vary by plus or minus one or two, depending on which features are used, the usage patterns of task engine and other factors, such as memory and CPU.) Unfortunately, at this maximum point, the task engine becomes constrained due to its clustering technology. To understand why the task engine has this limitation, we need to look at the task engine container: My webMethods Server (MWS).

Temporary implementation of Java® Message Service (JMS)

To accommodate numerous high-priority changes required to support the new webMethods BPMS platform, MWS 7.0 was released with a limited internal messaging capability to support new requirements for the MWS cluster technology. Integrated support with task development and deployment, task engine communication with the process engine and other task features were a higher priority than adopting a full JMS implementation at that time.

The limited messaging implementation, a temporary solution, is the primary bottleneck for the horizontal scalability of the current task engine. Figure 1 shows the results of a task engine performance test in which the MWS performance service reports that JMS SQL calls dominate all other RDBMS activity.

![Most time consuming database calls](image-url)

Figure 1: The most expensive database calls (in milliseconds) during a MWS cluster performance test

Get There Faster
Universal Messaging

Fortunately, the temporary messaging implementation was designed from the start to be replaced and was developed with strict internal separation. This means adopting a new implementation will not be invasive to the MWS code base, requiring only minimal changes that are mostly to configuration code.

More importantly, Software AG now has its own world-class JMS provider with Universal Messaging. As of the time I’m writing this article, we’ve successfully run a complete regression suite of tests for MWS/task engine in a cluster using Universal Messaging. Even better, there were virtually no code changes required other than the expected configuration management. During the remainder of our October 2014 development cycle, we will continue to test our Universal Messaging-based JMS implementation.

We already observed the following benefits of Universal Messaging for MWS JMS:

- For an average cluster, two-thirds of all SQL calls will be eliminated
- For clusters over 12 nodes, there will not be an explosion of JMS-related SQL calls
- The resulting pressure on the RDBMS will be significantly reduced, which should result in measurable improvements for normal task engine calls to the database
- The time to transport events over Universal Messaging is measured as a tiny fraction of the current messaging implementation

Task searches

High-performance task search has always been a driving goal for the task engine and, as a result, we’ve been making consistent progress to improve performance. With Task Engine 8.2, we introduced indexed task searches, which not only enabled fast database optimized searches but also helped minimize the dependency on the task cache. However, we’ve seen that the indexed task search feature can be further improved to meet the ever-increasing performance requirements of our customers.

High-performance task-search reference architecture

Task Engine 9.7 will deliver an entirely new paradigm for creating high-performance task searches. Instead of offering a one-size-fits-all approach, we are creating a reference architecture and implementation you can use as-is or customize to fit your specific needs.

The High Performance Task Search Reference Architecture (HPTSRA) being introduced in October 2014 is comprised of:

- Task events
- Data storage
- Caching layer
- Task search extensions

Each of these components can be customized as required and replaced with one of the supported implementations. For example, the data storage component can be implemented with a traditional RDBMS, Hadoop or CouchDB.

Figure 2: High-performance task-search architectural components

Task events

With the October 2014 release, the task engine will emit an Event-Driven Architecture (EDA) event for every action that occurs during the task life cycle. In previous releases, this would have required the task engine to be configured with “heavyweight” events that were transported over the MWS JMS layer. With the 9.7 release, the task engine will use a lightweight event structure.

To receive these events, you can consume the EDA events using Software AG NERV, or you can create your own mechanism for event handling. A couple of reasonable alternatives that you can implement include publishing the task events over Universal Messaging, or creating an in-process listener to directly handle the task events in the same virtual machine as the task engine.

Task storage

Regardless of how you choose to publish and subscribe to task events, you ultimately want to store the task data that you plan to search in a scalable, high-performance data store. This data store could be a variety of high performance storage components that support scalable searches, such as many of the non-SQL data stores (CouchDB, etc.) or a traditional RDBMS.

As the developer, you will own the choice and configuration of this storage layer and its schema. Part of determining how to get maximum performance from your searches will be determining what type of queries your task application will require. Will you be searching across many task types? Will you be searching across ranges of custom task data? All of your use cases should be accounted for when making the choice of your data store and its schema.

Task search query plug-ins

Now that you’ve listened to task events and stored the task data you want to search, it is time for your users to look at their inboxes (or any other task search results). The HPTSRA will configure the task search content provider to use a query implementation that will search the custom data store instead of the default task schema. This will ensure that if your implementation starts off using the default task searches, it can easily transition to the HPTSRA without requiring re-implementation of the inbox or other custom task searches.
**Caching layer**

To add finishing touches to the HPTSRA, we are adding a caching layer between the custom task searches and the data store. The reference implementation will leverage Terracotta BigMemory as a caching layer on top of the data store. This adds a small amount of complexity to the storage of data as well as the deployment landscape. It also can add tremendous performance benefits to your searches.

**Conclusion**

Software AG R&D is working hard to ensure you have the scalability and performance you need to successfully execute large implementations of webMethods BPMS with the task engine and MWS. Task Engine 9.7, coming in October 2014, will greatly improve horizontal scalability with Universal Messaging. And the new HPTSRA will greatly change and improve how you conduct high-performance task searches. I look forward to seeing the adoption of our October 2014 release of task engine and HPTSRA.
What is service auditing?

Service auditing in Integration Server allows you to easily capture details about service execution in the audit log database. The start and end time can be logged, and the pipeline can be included if required. Audit data can be viewed and searched in the My webMethods service monitoring portlets or queried using services in the WmMonitor package on Integration Server.

Until recently, service auditing was not widely used because it was not possible to capture business-relevant context data along with the audit records. Information, such as customer number, order number, transaction ID and department code, was buried in a large pipeline and impossible to query.

What are logged fields?

If you have used webMethods BPMS, you’re familiar with the Logged Fields tab available in Designer. It allows you to pick one or more fields from the process pipeline, give them meaningful names and have them logged in such a way that they can easily be used for finding process instances based on business-relevant data.

For service auditing, logged fields work in a very similar way. In Designer, there is a new tab in the service editor called “Logged Fields”. You can pick any fields from the service’s input or output pipeline. These are captured at run-time as name/value pairs in the audit database. A key benefit is that you do not need to log the entire pipeline to make use of logged fields.

How to use logged fields?

First, you need to enable auditing for your service. In the service properties panel, enable auditing (“Always” or when “Top Level Service Only”) and pick when to log your service (“Error only”, “Error and success” or “Error, success and start”) as shown in Figure 1. If required, choose to include the pipeline. This is required if you want to be able to resubmit the service but isn’t needed if you only want to capture the logged.
Next, in the Logged Fields tab as shown in Figure 2, select the fields you want logging. Only pick fields that you want to search. Be selective about the fields you pick. A large number of logged fields may affect run-time performance.

After running the service a few times, you can search for and view the logged fields in My webMethods as shown in Figures 3 through 5.

**Figure 2: Picking the logged fields**

**Figure 3: Service monitoring in My webMethods**

**Figure 4: Searching for audit data using logged fields**

**Figure 5: Logged fields in service audit details**

### Custom context ids

You can make it even easier to find audit records by assigning custom context IDs. You can assign a custom context ID at any point in a service by invoking the service `pub.flow:setCustomContextID`. Either map a useful value directly to the id field, or assign a compound value containing multiple relevant fields, such as in the example in Figure 6.
Don’t forget to enable audit logging in the service properties, as described above.

You can use any combination of logged fields and custom context IDs in the same service.

More information
Logged fields and custom context ID for service auditing are available in webMethods 8.2 and higher. You can find detailed documentation on these features in Designer Service Development Help available at the Software AG documentation website: http://documentation.softwareag.com.

Let us know what you think of our new Hidden Gems series. And look out for another Hidden Gem in the next issue of TECHniques.

Figure 6: Assigning a custom context ID in Designer

Now, you can see the business relevant fields at a glance in the service audit list in My webMethods, and you can use the keyword search to find any substring in the context ID as shown in Figure 7.

Figure 7: Searching and viewing custom context ID in My webMethods

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International User Groups Conference 2014

Impressive turnout with customer participants from around the world

By Bernd Gudat, Senior Director, Customer Briefing Center, Software AG

This year’s conference of Software AG’s International User Groups took place in Dresden, Germany May 19-23. With its baroque-style architecture, numerous world-renowned museums and art collections, Dresden is one of the cultural, educational, political and economic centers of Germany and Europe. The close proximity of the conference venue to the Elbe River and the monuments of Dresden’s old town provided the participants with the perfect opportunity to relax after days filled with presentations, discussions and peer interaction.

Productive information exchange

The turnout this year was quite impressive. As always, most of the attendees were long-term Software AG customers and active members of user groups from all around the globe. Among the customer participants were Banco do Brasil, Coca-Cola Enterprises, American Armed Forces Mutual Aid Assoc., Verizon, Australia’s Department of Immigration and Border Protection, Johnson & Johnson, ConocoPhillips and Commerzbank, to name but a few. All in all, we had 340 participants from 160 companies and 28 countries.

Whenever possible, we integrate local user groups into the international user groups. This time, the German user groups decided not to hold separate spring meetings but joined the international conference instead. As a result, we had a very strong German delegation in Dresden.

We kept to the proven conference format of holding dedicated product brand sessions relevant to all Software AG customers. Participants learned about the enhanced ease of use of Adabas-Natural, found out about new innovations in the webMethods suite and heard the latest on process improvement trends and their impact on day-to-day business during the ARIS session. And, for the first time this year, we held a session for the Alfabet User Group.

All sessions offered a well-balanced mix of discussions, workshops and presentations from customers and Software AG. From the Software AG experts, participants received updates on the road map, overviews on new technical features and tips and tricks. Customers shared their experiences with our products and solutions. These use cases provided insights on how particular business challenges can be solved with Software AG technology and were met with high interest from the entire audience.

A product demo by a Dresden university attracted a lot of attention. They created a demo based on the webMethods Integration Server that lets you see, touch, feel and taste an automated process that is otherwise intangible.

We again offered working groups for the ARIS and webMethods sessions with a focus on different topics. They were co-moderated by a customer and a Software AG expert. Panel discussions, led by a customer, were held during the Adabas-Natural tracks. Pain points relevant to all attendees were discussed and solutions offered. The interactive aspect of the conference was very well received and generated a lot of positive feedback.

The conference was flanked by a number of small, separate customer meetings, which were organized on the spot in order to connect customers with particular peers or to convey specific product knowledge.

General Session on May 21
Throughout the conference, we not only provided a platform for information exchange but also created a personal atmosphere, where participants felt comfortable to communicate openly and candidly with their peers as well as with the Software AG experts. The two evening events were an added opportunity to network but also inspired the participants to connect on a more personal level and share some laughs and fun.

In their feedback, the customers gave us high marks on all aspects of the conference. From content to evening events, the participants left Dresden with the feeling that their requirements and expectations were fully met.

To multiply our success with the International User Groups, we decided to adopt that model for North America. We held the first TechEd User Group Conference from April 28 to May 1 in Chicago. The format of the International User Groups proved successful here as well. The attendees gave us a lot of positive feedback and have already voiced their intent to attend the 2015 Chicago User Conference.
Participants gained insight into Software AG’s suite of products. Keynote presenter CTO Michael Botha linked Adabas-Natural, webMethods, ARIS and Alfabet customers together with an engaging keynote presentation on Intelligent Business Operations (IBO), which showed how customers can change their businesses to run smarter and faster. The presentation was followed by a platform demo.

Shared experiences
Software AG experts informed participants about road maps, new technical features as well as tips and tricks. Customers shared their experiences with Software AG technology, some with impressive use cases and figures. Panel discussions and facilitated roundtables supplied an additional interactive aspect and received high praise from the participants.

All session presentations by customers and Software AG are available online here.
On the right track

Support of Software AG’s user group concept was evident from the heavy attendance over the past years at the International User Group meetings. We wanted to replicate that format for the U.S. User Group by having the presidents attending and helping to plan the TechEd conference.

Throughout the TechEd conference, a personal and friendly atmosphere made customers feel comfortable to communicate freely and openly. Attendees made ample use of the opportunity to network, share ideas with Software AG experts and other Software AG customers. We held a customer celebration party at Kings Bowling, where attendees had fun bowling, playing billiards and enjoying the camaraderie of their fellow peers.

The feedback collected at the end of each day was overwhelmingly positive. Customers were highly appreciative of Software AG providing a platform where they could compare notes on their common challenges and learn from one another. Many expressed excitement that we will be holding these conferences on a regular annual basis going forward.