From mobile to the cloud, new technologies and the Internet of Things offer great promise for innovation, efficiency and success. However, organizations must leverage their existing investments in back-end and corporate systems and establish seamless and secure integrations to make this move forward sustainable and affordable. In this issue of TECHniques, we explore many new products and features that allow you to extend your existing investments to the cloud, mobile and partners while taking advantage of the newest technologies on the market.

In What’s Hot, Maik Szmatulewicz, CMO of metaquark, shows you how to extend your office-bound IT strategies to a mobile workforce with Software AG’s mobile BPM solution.

A new release of webMethods is coming this October and two hot offerings are introduced in What’s New. David Overos and Sachin Gadre share how to connect cloud-based applications with your existing on-premises applications with webMethods Integration Cloud. And Daniel Adelhardt and Rob Rowe explore how companies can jump on-board the API economy by exposing Web APIs through webMethods API-Portal.

Mainframe users interested in taking advantage of new technologies while maintaining their investment in critical applications will want to read Chris Pottinger’s article on EntireX for z/VSE v9.6 and Wil Heynen’s notes on how Optimizer Compiler leverages the newest instruction sets for modern IBM z/Architecture® hardware. Data centers managers will discover how to centrally control print processes from mainframes and LUW platforms in Karlheinz Kronauer’s review of Entire Output Management in Techie Deep Dive.

Marc Vietor explores how new tools, developed by Software AG consultants, for webMethods and ARIS are now available to help you add efficiency to your projects. And Ramesh Venkat takes his turn in exposing another hidden gem of webMethods by showing you how to leverage overlapping certificates in webMethods Trading Networks to ensure continuous secure exchange of documents between partners.

In Out and About, Dr. Gareth Smith takes us through the real-time journey of analyzing the sentiment of World Cup fans over social media with Software AG’s Apama and Terracotta Universal Messaging.

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
The importance of mobile-enabled processes

The answer lies in building a mobile enterprise strategy with a user-centered approach that aligns the at-work technology experience with the at-home experience by providing a secure mobile access to processes, services and data. Utilizing collaborative and social functions in mobile applications enables enterprises to take advantage of faster cross-sector information exchange. One of the core components of any mobile enterprise strategy is mobile Business Process Management.

Integrating mobile elevates the productivity benefits of BPM by removing the barriers to engaging employees, no matter where they are. Enterprises can accelerate and enrich the capture, transmission and provision of situational and context-related real-time process information and, most importantly, can significantly reduce the time needed for decisions. Employees can take actions immediately on business-relevant events even when they are not in the office.

In addition, built-in features of mobile devices, such as cameras and GPS, make capturing and storing task-relevant data easier and more accurate than ever before. All of these possibilities allow employees to work effectively outside the office and also harness the benefits of being mobile to improve productivity and the customer experience.

Figure 1: Mobile has transformed the user’s expectations.

Figure 2: Mobile BPM enriches data, processes and services.
Challenges of mobile BPM

When enterprises start implementing a mobile enterprise strategy, they typically face a variety of challenges. It is crucial to establish seamless and secure integration with back-end and corporate systems to leverage existing investments, avoid building new IT silos and make targeted mobile innovation sustainable. Unfortunately, such projects can quickly become a major cost driver due to their complexity, unfamiliar and diverse mobile platform development approaches and new working practices.

Furthermore, enterprises need to be able to scale their mobile enterprise strategy across different mobile platforms and manage a large number of mobile devices, device types and apps effectively. They must also define specific security policies for each device and at the app level then deploy apps to internal or external users.

Mobile BPM with webMethods BPMS and webMethods Mobile Suite

Software AG’s Mobile BPM solution combines webMethods BPMS and webMethods Mobile Suite to support enterprises in overcoming these challenges by providing an end-to-end solution for building cross-platform enterprise mobile apps that are tightly integrated with existing webMethods BPMS infrastructure and other back-end systems. The unique wizard-driven approach enables enterprises to create mobile BPM applications for tasks across core mobile platforms, such as iOS® and Android®, within minutes and deploy them securely to all relevant stakeholders through both enterprise and public app stores. Additionally, fine-grained policies can define how mobile applications or devices should be used in specific business contexts and enable enterprises to realize a Bring Your Own Device (BYOD) or Choose Your Own Device (CYOD) strategy.

Process participants can work on tasks—anytime and anywhere. This increases their productivity and accelerates processes significantly. In combination with native capabilities and built-in features of mobile devices, capturing and storing of task-relevant data is easier and more accurate than ever, and relevant data can be automatically set in context of a process or task.
Mobile Suite comes with an integrated simulator that features native skins so developers can preview the native UI of every target platform. This simulates how the mobile app will look on a wide variety of mobile devices. Since the simulator supports all major platforms with native resolutions, it is not necessary to install target platform SDKs on developer machines.

Another core component of Mobile Suite is the centralized cloud-based build environment that takes care of everything around builds, code signing and certificate management for publishing apps in both enterprise and public app stores. Developers do not need physical development environments, such as Xcode® for iOS. The centralized build server, accessible from all developer environments, can run scheduled builds and tests to prevent deploying inconsistent versions.

Mobile Suite benefits from Software AG’s leading and powerful integration capabilities by being fully integrated into the webMethods product stack. webMethods Integration Server Web services and REST services are directly usable and accessible within mobile development projects. The new mobile data sync component contributes out-of-the-box offline and automated data synchronization support for mobile applications.

**Conclusion**

With Software AG’s Mobile BPM solution, enterprises are able to master their mobility challenges very effectively and embrace their mobile workforce very efficiently. To find out if your company can benefit from a mobile enterprise strategy, review these five simple questions. The answers may surprise you.

For more information, visit the Mobile Community or email MobileSuite@softwareag.com.
As cloud-based applications proliferate, businesses expect the same level of service from their cloud integration solution that they get from the Software as a Service (SaaS) applications. Learn how webMethods Integration Cloud connects cloud-based applications with on-premises applications and empowers business users without creating new silos of integration logic and assets.

The cloud integration dilemma

The success of cloud application vendors has created an integration challenge for businesses that is only getting bigger. SaaS vendors such as Salesforce® are doing an excellent job of selling their application services directly to a department or line of business instead of at the enterprise level. This approach makes a lot of sense for business buyers who are the stakeholders and really care about application use. But it can create new challenges for a centralized IT organization.

The integration dilemma is based on the reality that business applications, even if they are serving a departmental users, do not operate in a vacuum. Most applications depend on data that already exists but resides in other systems. This becomes a problem when business users are not able to easily get at that data. This is why integration, especially the synchronization of data with key systems of record, is one of the greatest challenges for companies adopting SaaS solutions.

Introducing webMethods Integration Cloud

To help IT act more like integration service providers—offering tools and integration guidance—to departmental users, Software AG is introducing a new integration Platform-as-a-Service (iPaaS) offering called webMethods Integration Cloud. This new hosted service provides connectivity to cloud-based applications, as well as to on-premises applications, and enables users to configure integrations between these applications.

The most common objective of iPaaS is to synchronize data between cloud applications and a company’s systems of record to eliminate data silos and help ensure customer satisfaction by reducing customer service errors caused by bad data.

With webMethods Integration Cloud, you can integrate your cloud-based SaaS applications, such as Salesforce.com®, SuccessFactors® and ServiceNow®, with other cloud-based applications. webMethods Integration Cloud also lets you integrate SaaS applications with traditional, on-premises ERP, CRM and warehouse management applications, such as SAP® systems and Oracle® E-Business Suite. This “hybrid” cloud integration model complements our existing webMethods on-premises integration platform.

Benefits of cloud services

Organizations expect the same level of service from their cloud integration solution as they get from SaaS applications, including:

- Elimination of maintenance and upgrade projects
- Ability to scale on demand
- Faster time-to-value by eliminating hardware procurements and installation
- Ability to work from anywhere
- Subscription-based licensing

webMethods Integration Cloud is designed to provide these same features that customers seek from their cloud application service providers.
Responsive browser-based UI for citizen developers
Integration Cloud features a brand new browser-based responsive user interface that is intentionally built for citizen developers. The user interface can be accessed using any modern browser, and it supports guided development using wizards to help users create integrations. Since the interface is built using standards-based HTML5, it is also accessible from tablets and mobile devices.

Mapping, transformation and enrichment
Mapping, transformation and enrichment have always been strengths of the webMethods Integration Platform. These functions are now available to Integration Cloud users. Integration Cloud includes transformers that provide drag-and-drop transformation and mapping capability. In addition, citizen developers can call operations that provide transformation and enrichment capabilities within their integrations.

On-premises connectivity
On-premises webMethods customers can connect their webMethods Integration Server to webMethods Integration Cloud to create cloud-to-on-premises integrations. Administrators can define on-premises applications, operations and accounts through an easy-to-use interface. These definitions can then be uploaded to Integration Cloud where they are used to build cloud-to-on-premises integrations. Connectivity between on-premises Integration Server and Integration Cloud, built on a Terracotta Universal Messaging layer, is very secure because the connection is initiated from the on-premises Integration Server to Integration Cloud, removing the need to open up firewall ports in the on-premises side.

Product capabilities

The key capabilities, shown in Figure 1, include:

**Tenant and role management**
Tenant registration and self-service (user and role management) are key capabilities of webMethods Integration Cloud. Customers or tenants can easily register using the public website at [www.webMethodsCloud.com](http://www.webMethodsCloud.com). Once the account is provisioned, the customer can log into the website and create additional users and roles. Administrators can use roles to restrict user access to integration cloud features.

**Stage management**
Newly registered tenants get access to a single development environment called a "stage." Tenants can create up to four stages (environments), depending upon their license. Tenants can promote integration flows and accounts from one stage to another, making it possible to implement a rigorous software development life-cycle process in the cloud.

**Application management**
webMethods Integration Cloud provides out-of-the-box connectivity to SaaS applications such as Salesforce, ServiceNow and StrikeIron™. These application connectors, along with pre-built operations, are included in Integration Cloud and are available for tenant re-use. Tenants can create accounts and additional operations for each application.
**Multi-tenant architecture**

Integration Cloud is fully multi-tenant. Multiple tenants share a development execution instance. Each tenant gets a separate production execution instance of Integration Server. Tenants interact with the execution instance using the Web-based user interface. Tenant can be assigned additional execution instances from a farm of instances. Multiple instances can be clustered to provide high availability and failover.

**Conclusion**

Software AG's webMethods Integration Cloud delivers SaaS application integration in an easy-to-use way, while complementing existing investments and methodologies in on-premises webMethods ESB technology, reducing integration silos and speeding up integrations.

webMethods Integration Cloud is a great choice for companies seeking to benefit from an iPaaS solution that eliminates data and integration silos and who want an iPaaS that is built on the rock-solid foundation of the webMethods ESB. Look for webMethods Integration Cloud in October 2014.
webMethods API-Portal
Jump on board the API economy

By Daniel Adelhardt, Director, Product Management, Software AG
Rob Rowe, Sr. Manager, Product Marketing, Software AG

More and more companies are interested in exposing Web APIs to create new sources of revenue, establish partner ecosystems or simply leverage external innovation. This allows them to reach new customers and unlock the business value of their corporate assets. Learn how webMethods API-Portal, the newest addition to Software AG’s API Management platform, enables companies to jump aboard the new API economy.

The API economy

Application Programming Interfaces (APIs) enable the efficient sharing of information and data across real-time, distributed cloud and mobile applications. Through that sharing, APIs can connect products or services to massive new communities, driving growth across a wide range of industries. This “API economy” broadens a company’s reach beyond direct sales, OEMs and distributors to include virtually any developer interested in incorporating a company’s features and services into new social and mobile applications—driving up revenue opportunities.

For the developer community to find, read about, discuss and test your APIs, you will need an API portal. The portal will need to expose API documentation to third-party developers, manage the developer on-boarding process, and allow these developers to use the exposed APIs for creative new uses. When developers can leverage your APIs with new mashups and apps or to support new devices, your reach is extended, and new channels are opened up to your corporate assets.

API management platforms provide the capabilities to virtualize APIs, protect API access and manage the consumption of APIs. These capabilities are sufficient for companies that only need to support business partners through the use of APIs or intend to create their own mobile apps for partner or customer enablement. But if you want to get aboard the new API economy to reach new customers and unlock the business value of your corporate assets, you must make your APIs easily accessible to developers.

Introducing webMethods API-Portal

To support organizations who want to implement “open API” initiatives, Software AG is releasing a new product—webMethods API-Portal.

webMethods API-Portal, part of the webMethods 9.7 release in October, 2014, will provide a number of key features and capabilities that will help you take full advantage of the API economy.

Branding
Customize and brand the portal in accordance with your company’s corporate identity (i.e., logos, skins and corporate colors). Add additional pages. Make it entirely your own!

Automatic synchronization
API documents (descriptions) are automatically generated from the API Catalog (CentraSite) metadata, so no duplicate maintenance of API descriptions for internal and external consumers is necessary.

Information
Rich descriptions of the APIs, examples of how to use the APIs, file attachments for additional documentation and information about policies enforced on the API level are all available on the portal.
Community support
A collaborative community environment allows users to rate APIs and contribute to open discussions with other developers.

API support
Designed for REST APIs, webMethods API-Portal also fully supports traditional SOAP-based APIs. This allows you to leverage your current investments in SOAP-based APIs while adopting REST for new APIs.

Integrated API testing
Developers can easily try out APIs directly within webMethods API-Portal to see firsthand how the API behaves. Code samples and expected error/return codes with descriptions are provided. Try test invocations with different input parameters and quickly see the results.

Quick on-boarding
Ensure security while simplifying operations during on-boarding new users by using internal workflows for API key and OAuth2 credentials provisioning. Approval workflows allow the provider to individually approve access token requests by developers. Access tokens are automatically provisioned to the webMethods gateway infrastructure.

Built-in usage analytics
Understand where your visitors are coming from, what pages gather most interest, which APIs are popular and which are not. API providers can use this information to gain valuable API insights, improve the portal’s customer experience and increase API adoption by developers.

Search
Developers can quickly find the APIs they need with full text search capabilities.

Design
Count on responsive design for both desktop and mobile access. Use the Web-based administration interface to manage users, groups and permissions.

API grouping
Group APIs using definable criteria help developers discover APIs in larger API catalogs, such as free vs. paid, business domains, or public vs. B2B partner. Also, you can group APIs based on configurable maturity level, for example, beta APIs vs. final APIs.

Get started with seamless integration
Don’t be caught on the sidelines and miss the opportunity to fully participate in the API economy. Add webMethods API-Portal to your webMethods stack to support your open API initiatives while leveraging your current investments. API-Portal was designed to integrate with and complement your CentraSite, webMethods Mediator and webMethods Enterprise Gateway components.

Learn more about webMethods API-Portal by visiting http://softwareag.com/apimanagement or talk to your Software AG sales representative.

Find out how to power up your Digital Enterprise at SoftwareAG.com
Memory management for EntireX Broker running on z/VSE is made easy by simply turning on dynamic memory management as a parameter in the Broker attribute file. Dynamic memory management automatically allocates and de-allocates memory pools for various Broker resources that are based off of real-time Broker workload.

Internationalization

EntireX Broker for z/VSE supports the common International Components for Unicode (ICU) features previously unavailable on the VSE platform. Using the Broker attribute file, you can specify the default CODEPAGE for converting single-byte, double-byte or multi-byte code pages using ICU or to set translation using a custom user exit.

Reliable RPC (asynchronous RPC communication)

In addition to synchronous request-reply-based RPC communication, asynchronous RPC communication (known as Reliable RPC) is now available for z/VSE RPC clients or servers. This allows for RPC clients running on VSE to publish data to a Broker running on VSE or off-board. Likewise, VSE RPC server programs can receive Reliable RPC calls. This decouples RPC clients and RPC servers with respect to time and prevents losses due to network outages or unavailability of service.

Application monitoring

Application monitoring is now available through webMethods Optimize for Infrastructure. This product provides detailed response-time monitoring, including monitoring failures for synchronous RPC-based applications.

CICS large-message support

EntireX z/VSE CICS RPC Server calls existing CICS transactions from client programs on other platforms using EntireX RPCs. Although the de facto standard for maximum message size within CICS is 32 KB, EntireX offers a larger buffer that is only limited by available memory to CICS. Users of the EntireX workbench can automatically generate the interface object that a CICS client or server can use to transport large application payloads.
Summary

The z/VSE environment continues to make operational and economic sense, particularly for mid-range customers who have a growth path and require a certain level of diversification. Including an integration solution like EntireX helps keep z/VSE relevant as an effective application delivery platform for meeting the future needs of your business.

Learn more about EntireX, visit http://techcommunity.softwareag.com/entirex and click through the documentation link to find the following documents:

EntireX Administration under z/VSE

Migrating from EntireX V7.2.3
IBM facilities

As computing has gotten more complex, hardware boxes have started to include more and more optimized instructions to speed up applications. In 1964, IBM introduced the /360 machine with an instruction set of only 142 statements. Today, IBM’s zEnterprise® EC12 has an instruction set of more than 1,000 statements. IBM now groups these new instruction sets into facilities. To learn more about IBM facilities, read z/Architecture Principles of Operations.

Because customers operate on a number of different mainframe hardware, Software AG is not able to use most of these new hardware instructions in our core products. Fortunately, Software AG can leverage the newest hardware facilities in Natural Optimizer Compiler, specifically for a few components like the Natural Roll Server (IBM zOS® only). We continue to honor the IBM “Architecture Level Sets” to ensure that customers operating older hardware versions won’t run into problems.

How Natural Optimizer Compiler works

Natural Optimizer Compiler generates machine code from Natural sources to reduce CPU consumption and speed up Natural applications in any environment. By leveraging the newest instruction sets for modern IBM z/Architecture® hardware, Natural Optimizer Compiler enables you to generate code that leverages the best features for your application environment.

Table 1 explains which ARCH level supports which hardware. Please note that these functions only support IBM hardware—please don’t use an ARCH level greater than zero on BS2000® environments.
Performance Improvements

While improvements in performance ultimately depend on the applications and code you are compiling, we have seen a 20 to 25 percent reduction in CPU usage when Natural Optimizer Compiler v8.3 is used compared to v8.2.

We have also witnessed functions in the Unicode® area sped up by a factor of 10! That’s a 10 times improvement, not a mere 10 percent. You can expect your best performance improvements when you build new Unicode applications with Natural and compile them with the newest version of Natural Optimizer Compiler.

What’s next

Software AG R&D continues to work on including more facilities and tools to improve your application performance. New Unicode optimization is already available through special zaps. More facilities will be available in early 2015 with the release of Natural Optimizer Compiler v8.3.2.

This upcoming version will improve typical packed arithmetic using the DFP (Decimal Floating Point) accelerators of the zEC12 machines. We will keep you informed via TECHniques.

To take advantage of facilities already available in Natural Optimize Compiler v8.3, just drop me an email and request our new Getting Started Guide. Learn how to leverage IBM facilities today, just email: wil.heynen@softwareag.com.

Available IBM facilities

Natural Optimize Compiler v8.3.1, released in April 2014 as an optional version to Natural v8.2.4, already exploits some important new facilities up to ARCH 8, as shown in Table 2. IBM Facilities leveraged include:

- Extended-Translation-Facility handles Unicode operations
- HFP Multiply-and-Add/Subtract Facility simply combines appropriate instructions into a single instruction
- Extended-Immediate Facility minimizes the need for constants and literal pools
- General-Instructions-Extension Facility adds instructions mostly for improving performance, including immediate instructions

Furthermore, enterprises need to be able to scale their mobile enterprise strategy across different mobile platforms and manage a large number of mobile devices, device types and apps effectively. They must also define specific security policies for each device and at the app level then deploy apps to internal or external users.

<table>
<thead>
<tr>
<th>Level value</th>
<th>IBM hardware facility required at execution time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 6</td>
<td>• 2800 or 2900 Extended-Translation-Facility 2</td>
</tr>
<tr>
<td></td>
<td>• 2800 or 2900 HFP Multiply-and-Add/Subtract Facility</td>
</tr>
<tr>
<td>7</td>
<td>• z9 to z109 Extended-Immediate Facility</td>
</tr>
<tr>
<td>8</td>
<td>• z10 General-Instructions-Extension Facility</td>
</tr>
<tr>
<td></td>
<td>• z10 Execute-Extensions Facility</td>
</tr>
</tbody>
</table>

Table 2: IBM facilities leveraged by Natural Optimizer Compiler

Find out how to power up your Digital Enterprise at SoftwareAG.com

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, Alfabet, Apama, ARIS, Terracotta and webMethods. Learn more at www.SoftwareAG.com.

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Entire Output Management

Centrally control print processes for greater savings

By Karlheinz Kronauer, Sr. Director Product Management, Software AG

The flood of printing tasks from various operating systems and applications can consume resources, create waste and increase costs if not efficiently controlled. Learn how Entire Output Management, part of Software AG’s Entire Systems Management (ESM) product family, automates the electronic distribution and processing of print data before it is committed to paper or sent to the recipients.

Flexible output management for multiple platforms

Enterprises that re-host their applications from the mainframe to Linux®, UNIX® or Windows® (LUW) are looking for powerful, secure and cost-saving output management solutions that are comparable to what was used in their mainframe environment. Entire Output Management, from Software AG’s Entire Systems Management product suite, is not only a powerful solution for Adabas-Natural environments on the mainframe but also automates IT processes on LUW. It runs on Linux, UNIX or mainframes, such as z/OS®, and connects Windows platforms remotely.

Entire Output Management provides multiple user exits to make the tool as adaptable as many environments as possible. And because Entire Output Management is implemented in Natural, existing Natural language skills can be leveraged to program additional user exits.

How it works

Entire Output Management can take over all print management in an enterprise. It automates the distribution of print data and allows online print data to be viewed on screen. This is all done without requiring any changes to programs or applications. Instead of delivering an immediate printout of the data, Entire Output Management controls and processes the data according to predefined rules.

Print and distribute only what you need

In many cases, users don’t like to print out the complete output data because it likely includes information of little or no interest. To save paper and costs, Entire Output Management allows you to select only the data required and combine that data into a report or bundle for further processing.

Reports are automatically created according to rules defined in the administration section of Entire Output Management. Reports can be transferred in various formats such as Adobe® PDF or XML. Multiple reports from different data sources, like jobs, can be combined into a bundle. Reports and bundles can then be printed or distributed to various recipients.

Figure 1: A typical output scenario with Entire Output Management
Centralize printing

Centralize whole printouts from Windows to a faster print system like the mainframe and make the installation of local printers obsolete with the add-on Output Option (OPO). Printouts from all Windows workstations can be grouped by sort criteria, like ZIP Code, and sent to the central system for further processing (i.e., printing or archiving).

Entire Output Management completely centralizes and automates the electronic distribution and processing of print data before it is committed to paper or sent to the recipients. Incoming data, processed by OPO, can accommodate multiple formats, such as PDF, XML or just print data.

Summary

Entire Output Management with the OPO provides all the necessary facilities to manage and control the complete output operations of a data center. Through user exits, it can easily be adapted to any environment and print processes available today.

By making the complete printing process of an enterprise more efficient and flexible, Entire Output Management saves you real money by reducing costs for postage, paper and administration. When combined with complementary solutions of the ESM suite, like Entire Operations, you can reliably handle large volumes of IT processes and events in 24/7 production, automate IT processes across mainframe and LUW platforms, and gain a single point of control and visibility across all IT processes.

Control access with distribution lists

Reports and bundles are distributed to end users defined in distribution lists. Users defined in distribution lists can be persons, printers, archives or office systems. Only members of the distribution list who have access to specified reports or bundles are allowed to print it or view it on the screen. A member of a distribution list can authorize other users to access the reports as well. These reports will then appear in the “in basket” of these users.

Organize and archive with folders

Reports and bundles can be organized into folders or archived for revision purposes. If all users have access to the reports, the folder is defined as public. Folders with limited access rights are defined as private.

Archiving is automated by simply defining a date when a report should be sent to the archive. Reports in an archive can be revived at any time.

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, Alfabet, Apama, ARIS, Terracotta and webMethods. Learn more at www.SoftwareAG.com.

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SAG_Entire_Output_Management_TECHniques_Sep14
Stay ahead of business demands by using proven tools developed by experienced Software AG consultants. The tools we’ve created are the result of decades of experience with hundreds of projects. No one knows Software AG’s products better. Count on these tools to accelerate your transformation into a Digital Enterprise, and make your ongoing use of the webMethods and ARIS platforms more comfortable and efficient.

**Accelerate webMethods project implementation**

Developed by expert consultants of Software AG, webMethods tools are the result of an austere process of maturation and a commitment to project implementation excellence and best practices. The tools will help you save testing time with increased automation. They also provide insights into the complexity of your code base and help reduce the time and effort you spend managing versions in a distributed development environment. Take a closer look at the tools for webMethods.

**Test tool**

Testing is essential to ensure a smooth process flow. Software AG’s automated test tool for webMethods simulates services without any code modifications to simplify your migration and upgrade projects. You can save up to 70 percent of the time it traditionally takes to test with this tool.

**Analyzer for webMethods**

With the analyzer for webMethods, you can quickly gain insights into the complexity and scale of your integration code base. The analyzer reports on the overall implementation and supports estimation processes for large-scale migrations and upgrades in a matter of seconds.

**Configuration management tool**

Spend 90 percent less manual effort on configuration management and up to two-thirds less time effort on staging management with our configuration management tool. This tool ensures your solutions work everywhere by integrating your deployment chain.

**Designer plug-in for local development**

Simplify version management with our designer plug-in for local development that enhances your use of webMethods Designer Workstation. The designer plug-in simplifies your version management and distributed development by supporting multiple VCS systems and Java® development and debugging.

**Documentation generator**

Technical code documentation is tedious and often out-of-sync with reality. Generate documentation automatically with documentation generator for webMethods. The tool automatically generates documentation and improves your documentation quality by ensuring it always reflects the latest code.

**Improve process management with ARIS Consulting Tools**

You use ARIS to manage your processes. Now you can improve the efficiency of your infrastructure even more with ARIS Consulting Tools. The tools enable you to generate documentation 50 percent faster, secure the segregation of duties already in the design phase and sync up with SAP® systems faster. They are the result of the vast ARIS insights and experience gained by Software AG’s GCS in some of the most demanding real-world projects. In detail, our ARIS tools are:

**Document generator for ARIS**

Document generator for ARIS helps you generate manuals in Microsoft® Word in half the time and, at the same time, reduce errors, gaps and redundancies. Choose from different manual design variations and quickly modify the design with just a few clicks.

**Segregation of duties for ARIS tool**

When designing processes and applications, you need to consider the functional separation of organizations and roles that legal specifications often require. Our segregation of duties tool helps you analyze violations predictively and quickly. You can more easily keep processes compliant by updating governance, risk and compliance rule sets. This tool also automatically recognizes new conflicts and violations in the design phase.
Synchronization preparation in ARIS for SAP® Solution
Before synchronizing ARIS for SAP Solutions to SAP® Solution Manager, certain prerequisites have to be fulfilled. Using our sync prep report, instead of manually maintaining attributes and symbols, will save you time, reduce errors and check for breaks in modeling conventions.

Now available
To learn how you can obtain these performance-ready tools, visit our website at www.softwareag.com/consulting_tool or contact:
GCS-Tools@softwareag.com
Note: The certificate set that you add first to SSL, sign/verify or encrypt/decrypt certificate types is the primary certificate set. This is indicated by a check mark in the Status column. The next certificate set that you add to the same certificate type becomes the secondary certificate.

**Certificate switching**

Trading Networks automatically switches from the primary certificate set to the secondary one when any of the following occurs:

- The primary certificate has already expired and the secondary certificate has not expired
- The receiver’s sign/verify or SSL primary certificate set does not match the sender’s sign/verify or SSL certificate set

**How do you set up overlapping certificates?**

You can define overlapping certificates in Trading Networks by going to the partner profiles page, selecting the profile, and clicking the certificates tab as shown in Figure 1.
Trading Networks does not switch encryption/decryption certificates at the receiver’s end. The receiver of the document must write a flow service that first obtains the certificate ID of the appropriate decrypt certificate, using the wm>In.security:getAllCertificateData service. That certificate must then be set as the primary one for that partner using the wm>In.security:setPrimaryCertificate service. Doing this ensures that the correct decryption certificate is retrieved for future transactions with that partner.

The following few scenarios demonstrate how Trading Networks automatically switches certificates:

**Sign/verify scenario 1**
Trading Networks automatically switches certificates from primary to secondary when the primary certificate expires as shown in Figure 2.

**Step 1:** The trading partner sends a document signed with certificate C2 to the enterprise.

**Step 2:** Trading Networks on the enterprise side switches the primary certificate to C2 and retrieves certificate C2 because certificate C1 has expired.

**Step 3:** Trading Networks on the enterprise side verifies the document with C2. Verification is successful.

**Figure 2: Sign/verify scenario 1**

**Sign/verify scenario 2**
Trading Networks automatically switches certificates when the receiver’s verify certificate set does not match the sender’s sign certificate set as shown in Figure 3.

**Step 1:** The trading partner sends a document signed with certificate C2 to the enterprise.

**Step 2:** Trading Networks on the enterprise side retrieves certificate C1 for the trading partner and verifies the document with certificate C1. Verification fails as the document is signed with certificate C2.

**Step 3:** Trading Networks on the enterprise side retrieves certificate C2 and verifies the document with C2. Verification is successful.

**Step 4:** Trading Networks on the enterprise side sets certificate C2 as the primary certificate for the trading partner.

**Learn more**
Overlapping certificates are available in webMethods Trading Networks 9.5 and later versions. You can find detailed documentation on overlapping certificates in the webMethods Trading Networks Administrator’s Guide in the documentation section of the TECHcommunity or the documentation website at http://documentation.softwareag.com.

Let us know what you think of our new Hidden Gems series by commenting on this article on the TECHcommunity blog. And look for another hidden gem in the next issue of TECHniques.

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This component augmented each Tweet (as it passes through Apama) with a sentiment score in real-time. Sentiment analysis was performed in two broad stages: keyword scoring and grammar modifiers.

**Keyword Scoring**
For keyword scoring, you need a lexicon of the key words or strings that you think will carry some sentiment. This lexicon is augmented with a score for each word or string. For example, “excellent” and “great” will score high positive sentiment values whereas “awful” and “terrible” will score very high negative sentiment values.

**Grammar Modifiers**
To just take keywords and add up the scores is too crude in most cases. So, the second stage takes language grammar into consideration and refines the scores. As a simple example, we looked for negativity to turn the “good” in the phrase “not good” from a positive sentiment into a negative sentiment.

These two stages combined deliver a scored Tweet that we processed further. (I’m explaining what we did using Tweets in English. Obviously you’d need a lexicon and set of grammar rules for each language you want to score. You can use as many as you like to cover all the languages you need.)

Once we had a stream of Tweets with sentiment scores applied to them, we simply passed them into a simple streaming analytic. We partitioned the scored Tweets twice in parallel:

1. **Each team.** This was done to calculate sentiment values for each team independently. As each team name can be represented in many different ways (for example: USA, US, United States, etc.) we had to cater for multiple representations and amalgamate the results.

World Cup had fans communicating in a big way over social media. See how we used Software AG’s Apama and Terracotta Universal messaging to derive sentiment from social media channels. With this real-time data, we could infer the emotion of football fans globally and then present the results to any device anywhere in the world.
2. **Each of “positive,” “negative” and “neutral” values.** This part of the analytic gave us the percentage of Tweets for each team that were positive, negative and neutral, though we only plotted the positive and negative values, making the neutral values implicit in the UI.

These analytics told us the real-time sentiment of each team based on the contents of the social media streams. The output was in the form:

- Team Name; Positive%; Negative%; Neutral%

After addressing all the integration and analytics, we needed to make the results publicly accessible. For this, we turned to another product in the Software AG portfolio: Terracotta Universal Messaging. Like Apama, it’s also commonly found supporting mission-critical applications in Tier-1 financial institutions.

In this case, we used Universal Messaging to take the feed from Apama and make it available to the Web browser, mobile device or tablet of any connected user. We also used it to serve up the HTML5 pages themselves. This is a very powerful capability and supports all sorts of devices, including smart TVs. In our case, the user interface was a simple, single window. A full-fledged Web-based interface would be much better served with Software AG’s Presto (which uses Universal Messaging for data distribution).

The simple Web page had a tile for each team that shows the country name and flag with two bar charts that graphically and textually displayed the live positive and negative percentages.

When we received a change in any of the sentiment values from Apama, Universal Messaging immediately pushed that small update out to each connected device and, in turn, their visual display updates—this all happened on an event-by-event basis and in real-time. To signify to the users that a value had changed, the positive or negative bar was highlighted for a few seconds.

Here we could see social media’s view of all teams on a single page.

**Experiences with the live system**

Once deployed, the service remained fully responsive and functioned flawlessly during the entire period. We supported thousands of connections and held everything in only 2 Gb of RAM. At all times we were left with plenty of headroom with the two 2.66 Ghz virtual cores.

The results were as you might expect. When Portugal’s Cristiano Ronaldo left training early one day before the team’s June 22 match against the USA team, sentiment plummeted because fans worried about his old knee injury. When the team’s officials said he was fit to play, sentiment around Portugal’s team rebalanced to positive.
We also recorded the sentiment of Argentina and Germany during the World Cup final. As the game ends, shown in the chart below, we saw a surge in positive German sentiment and drop in Argentine positive sentiment. This should not be surprising given the result of the game!

Despite the interesting insights into the global emotion of football teams, especially in real-time during the matches, the most interesting aspect of the project was the ease and speed of deploying out a publically available, robust solution from scratch over just a few days. Its legacy is a ready-to-go framework for other global events—next stop, politics maybe?