

Democratizing the ESB



Table of Contents

<u>INTRODUCTION.....</u>	<u>3</u>
<u>BUSINESS DRIVERS FOR DEMOCRATIZING THE ESB</u>	<u>4</u>
<u>CHANGING THE ECONOMICS OF INTEGRATION.....</u>	<u>4</u>
<u>DEMOCRATIZING INTEGRATION WITH TALEND ESB</u>	<u>5</u>
Affordability.....	7
Accessibility.....	8
Ease of Use.....	8
<u>INCREMENTAL ADOPTION</u>	<u>11</u>
<u>A UNIFIED PLATFORM FOR APPLICATION AND DATA INTEGRATION.....</u>	<u>12</u>
<u>CONCLUSION</u>	<u>13</u>
<u>ABOUT TALEND</u>	<u>14</u>
Contact Us.....	14

Introduction

An enterprise service bus (ESB) is a standards-based connectivity layer used to integrate distributed systems across functional, enterprise and/or geographic boundaries. It provides a combination of service enablement, messaging, transformation, routing and mediation to address a wide variety of enterprise integration challenges. ESBs reliably and securely connect distributed systems and remote locations in a flexible way while reducing the number, size and complexity of application interfaces.

Until now, ESBs have primarily been the province of only large companies. Gartner estimates that core ESB features are adopted by more than 50% of large organizations¹, but this pattern is changing. The mid-market is now experiencing faster growth in application integration than large enterprises who have been locked into proprietary, non-standard, "black box" solutions, with little input into the evolution of the ESB products they have come to rely on to integrate their business applications.

What do we mean by "democratizing the ESB" and why is it important?

"Democratizing" is introducing a democratic system or democratic principles to make something accessible to everyone. Open source software democratizes the ESB by making it accessible to a much broader group of developers and organizations. By addressing the primary challenges developers face—access to low-cost, powerful development tools that are stable, easy-to-use and fully supported—Talend is democratizing the ESB.

According to Gartner², *"With several commercially supported alternatives available, open-source ESBs have moved from a developer-initiated experiment to a viable choice for mainstream organizations."* Small and medium businesses (SMBs) as well as departmental users can now gain the productivity, efficiency and cost advantages of application integration that until now were only exploitable by larger enterprises. Enterprise-class integration is now accessible to a greater number of organizations that can not only participate in the economic benefits of ESBs but can ensure an ongoing voice in how their ESB software evolves to support the needs of the ESB user community over time.

¹ Gartner, *Predicts 2011: Application Integration: A Nimble Veteran of IT* by Jess Thompson, November, 2010

² Gartner, *Predicts 2011: Application Integration: A Nimble Veteran of IT* by Jess Thompson, November, 2010

Business Drivers for Democratizing the ESB

The need to move vast amounts of data, near real-time information accuracy, and cloud services adoption are all drivers for the adoption of more—and more innovative—forms of integration. The explosion of corporate data in SMBs and the enterprise is placing extreme pressure on IT departments to produce greater oversight and just-in-time reporting, forcing the breaking down of information silos. By bridging these silos, application integration plays a key role in making the right data available to the right consumer at the right time.

As organizations evolve to embrace the model of IT services known as cloud computing, it is only natural that integration solutions must change as well. The introduction of cloud computing blurs the boundaries in business-to-business applications. In this new environment, IT resources are no longer housed on-premises in a private data center, and those without a method of integrating numerous platforms, data sources and applications—both on-and-off premises—are at a serious disadvantage in terms of maintaining accurate information, forecasting and doing business.

The nature of software development is becoming more agile and project driven, leading to increased interest and a growing appetite for cost-effective and modular integration solutions. Data management, cloud computing and modular, open source software development are addressing these increased integration demands.

Proprietary ESB products are restrictive, providing companies with little input into future ESB product evolution. They are expensive, lock companies into long-term integration strategies and provide limited options if the ESB software vendor gets acquired in the future. Open source ESB software developed in a vibrant community like the [Apache Software Foundation](#) provides the framework for democratizing the ESB.

Changing the Economics of Integration

Democratization of IT began with organizations gaining the freedom to evaluate Linux as a desktop alternative to Windows. Now organizations are increasingly deploying open source applications to gain greater control over their IT infrastructure (and budgets). Open source-based ESBs are becoming relied on to integrate departmental to mission-critical enterprise applications. The open source ESB is a disruptive technology, changing the paradigm for integration and making it more accessible for SMBs and departmental users. The economics of ESBs have traditionally precluded SMBs and departmental users from

capitalizing on the resilience, high availability and other advantages of ESBs.

As was once the case for operating systems, databases and Web servers, ESBs have traditionally been based on proprietary technology that was expensive to deploy and required a steep learning curve to implement. The high upfront investments costs of deploying an ESB and the ongoing operational costs of maintaining an ESB were prohibitively expensive to all but large companies that could afford to make long-term commitments to proprietary software solutions that locked them into rigid software development roadmaps.

*By 2015, over 30% of large organizations will have
OSS ESBs supporting production interfaces—
Gartner³*

The advent of the Linux open source operating system and open source databases like MySQL and PostgreSQL have put such technologies within reach of SMBs and departmental users. Open source ESBs provide attractive economics combined with better accessibility to users. By overcoming these traditional barriers to ESBs, open source software democratizes yet another technology market. Furthermore, organizations have access to the source code and can participate in communities that drive the ongoing advancement of the technology. The open source development community is a constant source of innovation and works continuously to make complex technologies more robust and easier to use.

As the industry leader in open integration solutions, Talend democratizes application integration by providing open source solutions to address any integration challenge—from simple departmental projects to complex, heterogeneous IT environments. Talend allows organizations to easily integrate and expand systems and applications using leading Apache open source projects. One of the largest pure play vendors of open source software, Talend offers a breadth of middleware solutions that address data management, application integration, and business process management needs.

Talend helped democratize data management by providing open source software tools with a focus in three areas: superior affordability, accessibility and ease of use. Talend applies these three principles similarly to the burgeoning ESB market.

Democratizing Integration with Talend ESB

Talend ESB is a versatile and flexible ESB that allows organizations to address diverse integration challenges. It supports a broad set of standard transports and protocols, as well as enterprise integration patterns (EIPs), a common set of best practice descriptions developed to design effective messaging solutions. Available in several packages, Talend ESB is open

³ Ibid

and standards-based to allow wide interoperability with existing and legacy infrastructure components.

Talend invests, promotes and nurtures the underlying technology of Talend ESB through its participation in the [Apache Software Foundation \(ASF\)](#), a leading open source community recognized for its transparency and for delivering enterprise-grade, freely available software products that are designed and built from a diverse community of users. Increasingly, the open source communities—rather than the vendors of proprietary software—are driving the next generation of innovations.

Leveraging Apache CXF, Apache Camel and Apache ActiveMQ open source integration projects, Talend ESB makes enterprise-class integration accessible by delivering a cost-effective and easy-to-use way to integrate and expand systems and applications. An open source services framework, Apache CXF helps companies build and develop services using front-end programming APIs like JAX-WS and JAX-RS. Apache Camel is a powerful open source integration framework that lets you leverage EIPs to implement routing, transformation and mediation rules. Powered by Apache ActiveMQ, the most popular open source messaging provider, each message broker can handle myriad connections while processing thousands of persistent messages per second with minimal latency. Beyond the standard functionality included in the Apache projects,

Talend provides ESB functionality in four different packages to suit your current and future requirements:

1. [Talend ESB Standard Edition \(SE\)](#) is a standards-based connectivity layer used to integrate distributed systems across functional, enterprise, and geographic boundaries. Capabilities include messaging, Web services, intelligent routing, and data transformation. Its modular, pluggable architecture allows it to be easily expanded to suit most enterprise requirements, and it is available under the open source Apache license. It also includes the following enterprise-class capabilities:
 - **Service Locator**—Talend ESB SE provides automatic and transparent failover and load balancing through a newly developed extension to Apache CXF that allows for dynamic endpoint registration and lookup through Apache Zookeeper.
 - **Service Activity Monitoring**—By capturing events and storing activity information, Talend ESB SE facilitates more in-depth analysis of service activity, including service response times, traffic patterns, service lifecycle and auditing.
 - **Security Token Service (STS) Framework**—Talend ESB SE includes an STS Framework that supports Security Assertion Markup Language (SAML 2.0) to federate security credentials across applications and domains. This allows clients and services to securely and transparently authenticate

during connections without the need for custom coding. This STS Framework is another significant contribution that Talend has made to the Apache CXF community.

2. [Talend Open Studio for ESB](#) – an innovative, Eclipse-based tooling environment for modeling, configuring, deploying and managing data services – includes Talend ESB Standard Edition. Talend Open Studio for ESB eliminates lengthy learning curves and speeds time to deployment by making developers more productive—enabling organizations to rapidly respond to business demands.
3. [Talend Enterprise ESB](#) is designed for application teams that need to manage development projects across teams and operate their integrated production environments across their enterprise in a coherent manner. As such, Talend ESB includes all of the functionality of Talend Open Studio for ESB and extends it with team collaboration, enterprise management and other capabilities.
4. [Talend Platform for Enterprise Integration](#) extends Talend Enterprise ESB with advanced clustering, business process management, application integration and data management features allowing firms to increase business productivity, deliver projects faster, and lower operating costs.

For a quick comparison of these ESB products, view the online [ESB comparison matrix](#).

Affordability

Cost has been a major obstacle to widespread ESB adoption, and open source ESB software makes application integration affordable to SMBs and departmental users for the first time. Talend ESB SE is licensed under Apache License v2.0, providing users with the openness and flexibility to get started quickly without the large upfront costs of enterprise software. Through open source software, companies can achieve the benefits of a more open, less complex and more affordable integration platform without the significant upfront investment required by proprietary ESB software vendors. As with many open source products, Talend application integration products can be obtained at no cost.

More than 60% of Gartner inquiries about application integration include supported OSS ESB technology as part of the selection process.⁴

They are easily attainable by developers without the need for vendor meetings or trials. With Talend, there's no upfront investment to start using our application integration products.

⁴ Ibid

Developers get immediate access to stable, certified versions of the leading open source integration technology so you can start developing your integration solutions for free. Once you're on your way to success, a flexible subscription model allows you to pay for what you need. Talend ESB is free to [download](#) and use, for as long as you want. No budget battles or endless delays—just faster and easier application integration.

Accessibility

The nature of the open source community reflects democratization and accessibility. The community has continual input into the evolution of the code, and unlike proprietary vendors that dictate product evolutions; open source software is a community-driven product development process. The Talend [community](#) grew up around our data management communities and has tens of thousands of participants. Talend is active in the Apache community and has been active in Apache committees.

Talend ESB provides a fully certified and tested solution with support from the same key Apache developers that build the software. Talend employs Project Management Committee (PMC) chairs and members for Apache CXF, Apache Camel, Apache Karaf and Apache ActiveMQ. By registering with the Talend Community, developers can collaborate with peers, submit feedback or issues through JIRA and interact with Talend engineers to gain valuable advice. Talend's online community offers many resources that facilitate implementing and maintaining Talend solutions—including forums, wikis, tutorials, blogs and issue tracking. The community-driven approach of Apache reflects democratization. Developers add enhancements and contribute code, and the community votes on what changes will or will not be made. Unlike with proprietary ESBs, customers have continuous input into the direction of the code and maintain a voice in the ongoing evolution of the product.

As part of our support offerings, Talend provides indemnification coverage for open source software to help protect organizations against the intellectual property risks that can come with open source software. This shields customers from the legal costs and damage fees related to patent disputes—as well as potential trade secret, trademark and copyright claims—on the use of open source software obtained from Talend software distributions. Talend includes legal guarantees of intellectual property protection—IP indemnification—to support accessibility and democratization, and to safeguard mission-critical IT systems.

Ease of Use

Companies no longer have to settle for proprietary ESB software solutions that are difficult to learn and require extensive investments in training. Talend provides developers with

documented examples based on real-world experiences implementing integration solutions that provide a fast and easy way to get started. Talend software is supported by documented examples as well as thriving developer and user communities focused on practical use.

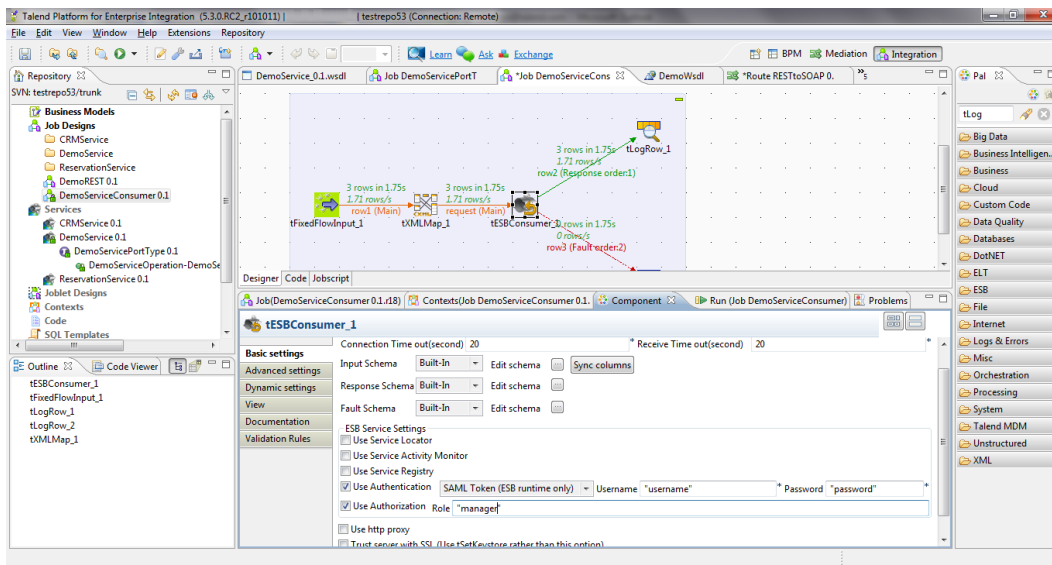
Talend application integration products are not limited versions or trial ware. They contain all the features required for building powerful integration solutions, and are freely downloadable and usable under the Apache license. Talend conducts roadshow classes and demonstrates how to solve real-world integration problems.

To eliminate lengthy learning curves and speed time to deployment, Talend makes developers more productive through Talend Open Studio. Talend Open Studio allows users to leverage existing skillsets by presenting a familiar development environment based on the Eclipse IDE they use every day. Developers can build integration processes by simply dragging and dropping the components and connectors they need onto a graphical workspace, drawing connections and relationships between them and setting their properties. Talend Open Studio provides a functional view of the actual integration processes. This significantly increases developer productivity and allows them to focus on more complex tasks.

Talend Open Studio for ESB contains a graphical user interface for Apache Camel that supports all of the basic EIPs. Talend Open Studio for ESB allows users to drag-and-drop patterns onto a palette and tie them together to create a route, without writing code or remembering the semantics of the domain specific language (DSL).

Talend Open Studio for ESB also allows users to effortlessly combine data integration with a Web service using a graphical palette of components and connectors. Users can leverage a WSDL-first approach to integration to efficiently deploy multiple data services behind a single interface on a common ESB runtime.

Leveraging the industry's leading open source data integration tool, Talend Open Studio for ESB provides access to a library of over 450 connectors supporting all types of sources and targets for data integration, migration or synchronization.



Talend Open Studio for ESB allows users to quickly create services and complex mediation routes with an easy-to-use, graphical interface.

Talend ESB is powered by the Apache projects it contains, and as such, companies relying on Talend software are able to maintain vendor independence over time and protect the integrity of their integration strategies. Distributions that are “powered by” Apache projects are taken directly from the Apache code base. This ensures consistency and transparency in the products. While products “based on” Apache projects take code from Apache communities and repackage them for distribution, they do not do so directly from the source code hosted by Apache.org. This means that changes not currently in the Apache code base could be made to the distribution, and vendors who practice this process can introduce changes that inhibit a company’s ability to easily migrate solutions built with their products back to the Apache versions. An organization choosing Talend ESB will be able to avoid vendor lock and maintain an exit strategy. If an organization wants to change vendors in a few years, it will not be shackled by allegiance to a proprietary ESB.

Ease of use continues throughout the lifecycle of the deployment. Contrary to popular belief, commercial open source vendors provide real support services, similar in type and quality to those offered by proprietary vendors. This is the case with Talend, whose services are designed to facilitate teamwork and increase productivity. These services are delivered by Talend experts or by Talend-certified partners, and offer the same services as the largest proprietary vendors—including service level agreements (SLAs) and guaranteed response times.

Our technical experts are not only experts in enterprise integration, but are connected directly with Talend’s research and development team. By leveraging Talend [Professional Support](#), [Training](#) and [Support expertise](#), organizations can build production-quality application integration solutions with confidence.

Incremental Adoption

Unlike proprietary vendors that force companies to make major investments in software, training and support to begin to gain the benefits of application integration, open source ESBs take a more democratic approach and allow companies flexible options for integration.

Companies can incrementally adopt an ESB by starting with a service enablement project, for example to connect their marketing engine with their Salesforce.com system, and over time increase their implementation as integration demands grow without the need to rip out or replace existing investments.

While Talend Enterprise ESB is a versatile and flexible ESB that allows companies to address diverse integration requirements, Talend also offers two open source solutions, Talend ESB Standard Edition and Talend Open Studio for ESB, that allow SMBs and departmental users to leverage the latest innovations developed in the Apache Camel, Apache CXF, Apache ActiveMQ and Apache Karaf open source projects.

Both are powered by the aforementioned Apache projects and are built on a lightweight, component-based architecture that supports a variety of integration protocols, data formats and programming languages. For a quick comparison of Talend ESB SE, Talend Open Studio for ESB, Talend Enterprise ESB view the online [ESB comparison matrix](#).

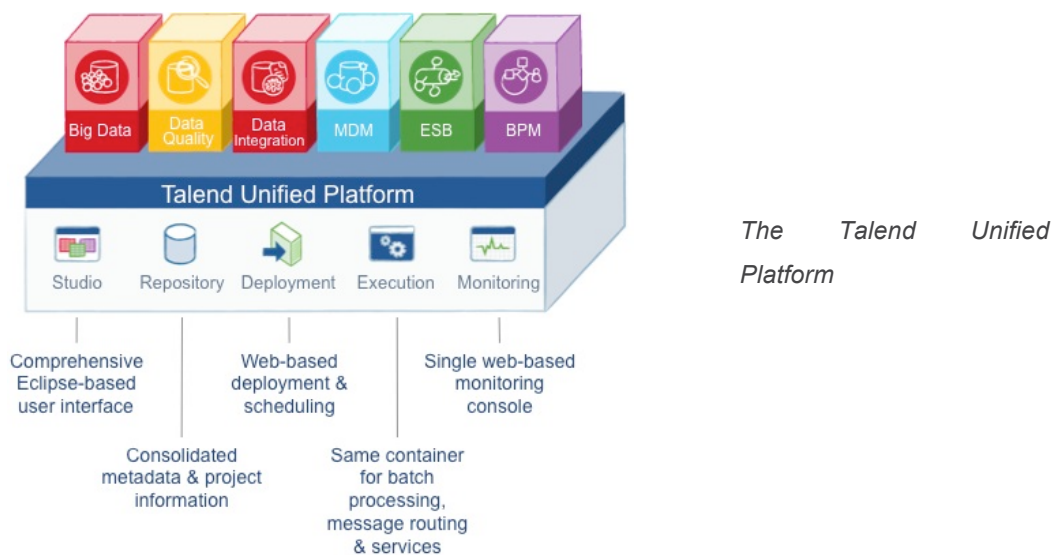
A Unified Platform for Application and Data Integration

The democratization of IT is rapidly progressing into the traditionally complex and traditionally isolated worlds of application, data and process integration. The role and impact of integration has shifted due in large part to major trends such as cloud computing and managing massive data sets. As a result, a more comprehensive and managed approach to integration is required and the tools that support enterprise integration need to be useable by more types of workers.

IT organizations are often challenged with a variety of integration needs. One common example is the need to cleanse information from a data warehouse to produce a record of inventory. Another might be the need to connect a hosted, software-as-a-service (SaaS) CRM application with an organization's marketing automation solution.

Talend recognizes that the same company is quite often tasked with finding solutions to address both these situations—albeit sometimes in different departments—and developers and IT operations struggle to piece together multiple tools to do so. Application integration teams have historically focused on making independently designed applications work together, and data management teams have focused on enabling independently designed data structures to be leveraged together. Yet these different approaches aim to support the same business strategy, processes and goals. Organizations can generate increased impact and value from their applications and data sources by identifying opportunities where these integration disciplines can be applied together to support the overarching business processes.

Not only does the Talend ESB work well on its own, but it can be combined with Talend's other data management products using a common, unified platform. Talend's unified platform makes application integration, data management and process integration easier by providing a common environment for users to manage the entire lifecycle of their Web services, data services, REST applications, ETL jobs and business processes across enterprise boundaries. Talend does this by leveraging the same unified platform across all of its products.



Through the Talend unified platform, companies can benefit from a flexible and open architecture that allows you to rapidly take advantage of more applications and data resources than ever before.

Conclusion

No longer restricted to large enterprise IT, Talend continues to democratize the integration market by making the ESB more affordable, accessible and easier to use. Open source software enables companies to leverage a more open and affordable integration platform to reduce complexity. Talend provides users of open source with easy-to-use tooling, documentation, training and other services so SMBs and departmental users can integrate applications that can be trusted to run mission-critical IT systems—all backed by professional support when needed.

Organizations with specialized needs can start with Talend Open Studio for ESB or Talend ESB SE and adopt Talend Enterprise ESB or Talend Platform for Enterprise Integration as your integration needs increase. Companies can increase productivity and more efficiently integrate diverse enterprise resources by relying on open source ESBs. Talend democratizes the ESB and allows SMBs and departmental users to leverage open source software to make integration more affordable, more accessible and easier to use throughout the organization.

Talend is the first to combine application integration with data management and business process management to allow businesses to cope with the volume of information in an increasingly connected world. Organizations can dramatically increase IT productivity with the only unified platform for application, data and process integration. This holistic approach to integration allows companies to apply these three disciplines and the associated tools in

concert to address problems more completely and effectively than with a single approach to integration.

About Talend

Talend provides integration that truly scales. From small projects to enterprise-wide implementations, Talend's highly scalable data, application and business process integration platform maximizes the value of an organization's information assets and optimizes return on investment through a usage-based subscription model. Ready for big data environments, Talend's flexible architecture easily adapts to future IT platforms. And a common set of easy-to-use tools implemented across all Talend products enable teams to scale developer skillsets, too.

More than 1,800 active subscribers worldwide leverage Talend's solutions and services. The company has major offices in North America, Europe and Asia, and a global network of technical and services partners. For more information, please visit www.talend.com.

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