

RED HAT JBOSS FUSE COMPARED WITH IBM WEBSHERE ENTERPRISE SERVICE BUS

COMPETITIVE OVERVIEW MARCH 2013

INTRODUCTION

The ability to integrate systems and share data across the enterprise is a common datacenter need. "Integration bus" is a common term that describes the technology used for middleware-based integration. Integration bus needs can vary in complexity, data volume, and required performance. Both Red Hat and IBM offer multiple products that can help customers develop and deploy middleware integration solutions. This competitive brief compares Red Hat® JBoss® Fuse with IBM WebSphere Enterprise Service Bus version 7.5.1.¹

THE RIGHT TECHNOLOGY FOR THE RIGHT JOB

Middleware integration solutions requirements often vary greatly and can influence the technology used for implementation. Some solutions demand centralized, large-scale service oriented architectures (SOA) that integrate systems using reliable high-performance networks. Others require the ability to handle smaller data loads economically and efficiently using distributed deployments with more enterprise application integration (EAI) than SOA integration patterns.

Often, these solutions have less complex integration architectures, so reliable networking is not always a given. For example, remote offices or retail locations may need local processing of a small but important data set. In another scenario, a company may have several specialty department-level applications of low to medium data value that need to be integrated with a larger corporate integration backbone. In both cases, the ability to leverage a robust and reliable integration bus at a low cost is important. Without an affordable integration bus, the solution's return on investment (ROI) may be diminished.

Red Hat JBoss Fuse is a middleware platform with technical capabilities to support these types of integration solution. And the subscription price is amenable to the budget constraints of many integration projects.

IBM offers multiple integration bus products. Two are software based—IBM Message Broker² and WebSphere Enterprise Service Bus. Each has different capabilities, configurations, and price points.^{3,4} IBM also offers integration bus capabilities as part of its WebSphere DataPower SOA Appliances product line.⁵



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1 WebSphere Enterprise Service Bus product page - <http://www-01.ibm.com/software/integration/wsesb/>

2 IBM Message Broker product page - <http://www-01.ibm.com/software/integration/wbimessagebroker/>

3 IBM Message Broker pricing - https://www-112.ibm.com/software/howtobuy/buyingtools/paexpress/Express?PO=E1&part_number=D56P3LL,D56MWLL,D03SOLL,D03S4LL,D03S2LL,D06UPL,L,DOBLZLL,DOGH4LL,DOGH1LL,DOWEOLL,DOWG2LL,DOWG4LL,DOWG6LL&catalogLocale=en_US&locale=en_US&country=USA&PT=html

4 IBM WebSphere Enterprise Service Bus pricing - https://www-112.ibm.com/software/howtobuy/buyingtools/paexpress/Express?PO=E1&part_number=D58AKLL,D58AELL,D06UVLL,D04Q1LL,D04Q3LL,D0BA1LL,D0B3HLL,DOBSHLL,DOB2XLL,DOGALLL,DOGBOLL&catalogLocale=en_US&locale=en_US&country=USA&PT=html

5 IBM WebSphere DataPower SOA Appliances - <http://www-01.ibm.com/software/integration/datapower/>

Red Hat JBoss Fuse subscription is over \$823K less than IBM WebSphere Enterprise Service bus at list price—or just 7.3% of the IBM cost.

RED HAT PRICE ADVANTAGE

There is a significant difference in the total cost of Red Hat JBoss Fuse acquisition compared with IBM WebSphere Enterprise Service Bus acquisition. Although price alone shouldn't determine your purchase decisions, the economic advantage Red Hat has over IBM is so significant that it shouldn't be overlooked.

With an IBM WebSphere purchase under the Passport Advantage program, there is 1 charge in the first year that combines license costs with subscription and support costs.⁶ After the first anniversary of purchase, IBM subscription and support charges are based on your Passport Advantage RSVP level.⁷ Subscription and support costs change as your Passport Advantage RSVP level changes. With Red Hat JBoss Middleware, you pay an annual subscription fee and are never charged software licensing fees.

A Red Hat subscription is economical when compared with IBM WebSphere. For example, compare the 2-year list price for acquisition costs of IBM WebSphere Enterprise Service Bus⁸ and Red Hat JBoss Fuse deployed on 16 cores of Intel-based servers. For IBM, the Intel cores are rated at 100 PVU⁹ per core and the U.S. price list in effect January 2013 is used. First-year IBM costs are calculated by multiplying 16 (cores) X 100 (PVU per core) X [product price]. Second-year IBM subscription and support is calculated at 20% of license cost.¹⁰

TABLE A

2-year IBM calculations using 16 cores

	CORES	PVU P/CORE	PRICE P/PVU	TOTAL
IBM WebSphere Enterprise Service Bus Processor Value Unit (PVU) License + SW Subscription & Support 12 Months (D58AELL)	16	100	\$394	\$630,400
IBM Integration Designer per Authorized User License + SW Subscription & Support 12 Months (DOINXLL) - priced per/user	25		\$4,400	\$110,000
Subtotal				\$740,400
Total License Fees				\$740,400
Annual Subscription and Support Fees at 20% of License				\$148,080
2-YEAR TOTAL IBM COST				\$888,480

⁶ CDW software licensing center web page - <http://www.cdw.com/content/software-licensing/ibm.aspx>

⁷ IBM International Passport Advantage Agreement - http://public.dhe.ibm.com/software/passportadvantage/PA_Agreements/PA_Agreement_International_English.pdf Section 1.8 "RSVP Level."

⁸ IBM WebSphere Enterprise Service Bus pricing - https://www-112.ibm.com/software/howtobuy/buyingtools/paexpress/Express?PO=E1&part_number=D58AELL,DOINXLL&catalogLocale=en_US&locale=en_US&country=USA&PT=html

⁹ IBM Processor Value Unit [PVU] licensing for Distributed Software - http://www-01.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html

¹⁰ See page 25 of the IBM whitepaper 'Comparing IBM WebSphere and Oracle WebLogic' for 20 percent reference - <ftp://public.dhe.ibm.com/common/ssi/ecm/en/wsw14127usen/WSW14127USEN.PDF>

As shown in Table A, the 2-year list price for acquisition costs of 16 cores of WebSphere Enterprise Service Bus is more than \$888K USD at list price.¹¹ Red Hat JBoss Fuse 2-year acquisition costs are significantly lower than IBM's as shown in Table B. Red Hat JBoss Fuse can be purchased with a 1- or 3-year subscription with 16- or 64-core count increments. Red Hat recommends managed subscriptions with premium support. Using this subscription profile, a Red Hat JBoss Fuse subscription is less than the IBM offering at list price (USD).

TABLE B

2-year Red Hat JBoss Fuse subscription costs

	RED HAT JBOSS FUSE, 16 CORE PREMIUM, MANAGED	RED HAT JBOSS FUSE, 64 CORE PREMIUM, MANAGED
Annual Subscription	\$32,400	\$121,500
2 year Subscription	\$64,800	\$243,000
Savings versus IBM (USD)	\$823,680	\$3,310,920

2-year IBM calculations using 64 cores

	CORES	PVU P/CORE	PRICE P/PVU	TOTAL
IBM WebSphere Enterprise Service Bus Processor Value Unit (PVU) License + SW Subscription & Support 12 Months (D58AELL)	64	100	\$394	\$2,521,600
IBM Integration Designer per Authorized User License + SW Subscription & Support 12 Months (D0INXLL) - priced per/user	100		\$4,400	\$440,000
Subtotal				\$2,961,600
Total License Fees				\$2,961,600
Annual Subscription and Support Fees at 20% of License				\$592,320
2 YEAR TOTAL IBM COST				\$3,553,920

¹¹ Specific IBM product pricing - https://www-112.ibm.com/software/howtobuy/buyingtools/paexpress/Express?PO=E1&part_number=D58AELL,D0INXLL&catalogLocale=en_US&locale=en_US&country=USA&PT=html

“Based on the results of this study, it is our belief that Red Hat JBoss Middleware subscription services should be seen as a strategic lever to increase benefits and decrease costs.

VELOCITI PARTNERS, INC

Get all the Red Hat JBoss Fuse functionality from a single subscription.

Red Hat JBoss Fuse development can be performed using the same development tool used for all other Red Hat middleware products.

QUALITY OF SUPPORT

In October 2012, Velociti Partners released a report commissioned by Red Hat titled “JBoss Enterprise Middleware, by Red Hat: Proven Technical Support Services Leader”¹². This report includes data from more than 360 randomly selected Red Hat support users, which further validates Red Hat’s superior technical support services compared to its major competitors.

COMPARATIVE DIFFERENCES

The following subsections highlight competitive differences between Red Hat JBoss Fuse and IBM WebSphere Enterprise Service Bus. Although not an exhaustive list of all differences, it does represent significant points that Red Hat commonly discusses with customers.

PRODUCT ACQUISITION

Red Hat JBoss Fuse functionality is available in a single platform bundle. Managed premium support subscriptions are available in 1- and 3-year terms with either 16- or 64-cores. The platform can be used in any customer location within any geography that a subscription is available.

IBM offers 3 versions of the WebSphere Enterprise Service Bus. Customers must select which version best meets their needs. WebSphere Enterprise Service Bus Retail Store Edition¹³ (D06UVLL) is restricted to “store” locations and does not include headquarters or datacenter operations.¹⁴ This restriction limits customer deployment options. WebSphere Enterprise Service Bus Registry Edition¹⁵ (D0GALLL) delivers the full capabilities of WebSphere Enterprise Service Bus V7.5 and WebSphere Service Registry and Repository V7.5.¹⁶ Customers who do not want the additional governance features may find this product over featured. IBM WebSphere Enterprise Service Bus (D58AELL) is not a restricted usage product like the retail edition, and does not carry the extra governance overhead found in the service registry and repository edition.

DEVELOPER TOOLING

Red Hat includes JBoss Developer Studio for drag-and-drop integration development with all Red Hat JBoss Fuse subscription levels. In fact, JBoss Developer Studio can be used to configure all Red Hat middleware platforms.¹⁷ The drag-and-drop feature in Red Hat JBoss Fuse is easy to use, enabling developers to deliver solutions faster, which can result in lower costs.

¹² JBoss Enterprise Middleware, by Red Hat: Proven Technical Support Services Leader <http://www.redhat.com/resourcelibrary/whitepapers/customer-satisfaction>

¹³ IBM WebSphere Enterprise Service Bus Retail Store Edition product page - <http://www-01.ibm.com/software/integration/wsesb/retail-store-edition/>

¹⁴ IBM WebSphere Enterprise Service Bus Retail Store Edition V7.5.1 license information document - http://www-03.ibm.com/software/sla/sldb.nsf/lilookup/7E89B59781985D4A85257961005606A2?opendocument&li_select=157D32F80FA0E1D2852579610056069EI

¹⁵ IBM WebSphere Enterprise Service Bus Registry Edition product page - <http://www-01.ibm.com/software/integration/wsesb/registry-edition/>

¹⁶ Features and Benefits of IBM WebSphere Enterprise Service Bus Registry Edition - <http://www-01.ibm.com/software/integration/wsesb/registry-edition/about/>

¹⁷ Such as JBoss Enterprise Application Platform, JBoss Enterprise BRMS, JBoss Data Grid, and all other Red Hat middleware platforms

IBM Integration Designer¹⁸ (DOINXLL) is the development tool of choice for WebSphere Enterprise Service Bus.¹⁹ The product is licensed by an “authorized user” separately from WebSphere Enterprise Service Bus. Developers using IBM WebSphere products other than WebSphere Enterprise Service Bus, WebSphere Adapters and Adapter Toolkit, DataPower, and BPM Advanced may need access to other IBM development tools.²⁰ Developers who find themselves in this situation may find it challenging.

DEVELOPER EXPERIENCE

Red Hat JBoss Fuse developers can choose between development techniques to use the one that makes them the most comfortable and productive

JBoss Developer Studio can be used for all Red Hat middleware development, including Red Hat JBoss Fuse. Red Hat JBoss Fuse developers can choose to work with a graphical editor, work directly with XML files, or switch between graphical and direct XML editing. The developer chooses the method that makes them the most comfortable and productive. Using JBoss Developer Studio, developers can also choose to develop for Camel directly in Java classes.

IBM WebSphere Enterprise Service Bus developers need IBM Integration Designer V7.5 (previously known as WebSphere Integration Developer) as their development and test tool.²¹ Development is performed almost entirely using this tool. Other tools can be used to develop artifacts such as XML schema and service endpoints that interact with the product. However, key developer work in areas like mediation modules, business objects, and mediation flows is done using IBM Integration Designer.²² IBM Integration Designer documentation consistently describes how to work with specific editors for different types of WebSphere Enterprise Service Bus project artifacts. Direct editing of artifacts is not encouraged in the documentation. In fact, there are several cautions related to direct editing in the IBM documentation on using software configuration management systems with IBM Integration Designer.²³

DEVELOPER ACCESS TO ADDITIONAL MIDDLEWARE

Every Red Hat JBoss Fuse subscription provides development rights for all Red Hat middleware platforms

With your Red Hat JBoss Fuse subscription, you get development rights to all Red Hat JBoss Middleware platforms. Specifically, for every 16 cores of a Red Hat JBoss Middleware subscription, 25 developers gain rights as developers for all Red Hat JBoss Middleware platforms. As a result, developers can easily explore how Red Hat middleware platforms such as Red Hat JBoss Data Grid, JBoss Enterprise BRMS, and others complement Red Hat JBoss Fuse.

¹⁸ IBM Integration Designer product page - <http://www-01.ibm.com/software/integration/integration-designer/>

¹⁹ Features and benefits of WebSphere Enterprise Service Bus - <http://www-01.ibm.com/software/integration/wsesb/about/>

²⁰ Features and benefits of IBM Integration Designer - <http://www-01.ibm.com/software/integration/integration-designer/features/>

²¹ See IBM WebSphere Enterprise Service Bus V7.5 announcement letter - <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=897/ENUS211-075>

²² See target run times for integration developer - <http://publib.boulder.ibm.com/infocenter/esbsoa/wesbv7r5/topic/com.ibm.wbpm.wid.main.doc/prodoverview/topics/ctargetruntimes.html>

²³ Using software configuration management systems - http://publib.boulder.ibm.com/infocenter/esbsoa/wesbv7r5/index.jsp?topic=%2Fcom.ibm.wbpm.wid.admin.doc%2Ftopics%2Fartifacts_in_scm.html

Unlike a Red Hat middleware subscription, an IBM WebSphere Enterprise Service license does not entitle developers access to other IBM WebSphere products.²⁴ For such access, customers must license the desired IBM WebSphere software or use a trial copy.²⁵ Products like the WebSphere Enterprise Service Bus and IBM Integration Designer do not offer download trial editions from the IBM product pages.²⁶ Some other IBM WebSphere products, such as Message Broker, are available for download and use within the terms a limited time trial.²⁷

Building integrations using patterns can be faster than trying to start from scratch each time.

BUILDING INTEGRATIONS USING PATTERNS

Red Hat JBoss Fuse includes Apache Camel, which is open source and includes out-of-the-box, standards-based integration patterns. The patterns are based on the the book, Enterprise Integration Patterns by Gregor Hohpe and Bobby Woolf.²⁸ For many, enterprise integration patterns are the de facto standard for discussing enterprise integration. Forty five different patterns are supported by Red Hat JBoss Fuse and are broken down into the following categories:

- Messaging systems (6 patterns)
- Messaging channels (5 patterns)
- Message construction (2 patterns)
- Message routing (15 patterns)
- Message transformation (5 patterns)
- Messaging endpoints (11 patterns)
- System management (1 pattern)

IBM does not offer development functionality using patterns with IBM Integration Designer. IBM does offer pattern-based development options with the WebSphere Message Broker Toolkit that is used to develop IBM Message Broker solutions.²⁹ However, the selection of WebSphere Message Broker Toolkit available out of the box patterns is limited and only available for WebSphere Message Broker.³⁰

This is an example of how different IBM tools vary between products and can impact developers.

Red Hat JBoss Fuse is deployed using OSGi.

SERVER DEPLOYMENT FOOTPRINT

Red Hat JBoss Fuse runs in an OSGi framework to simplify putting applications into components. Bundles are deployed to the OSGi for execution. The minimum hardware specifications to install and run Red Hat JBoss Fuse are 100MB of free disk space and 2GB of RAM. However, the RAM requirement is a result of the default runtime configuration that enables most Red Hat JBoss Fuse features. Reducing the features available to the Red Hat JBoss Fuse runtime can reduce the amount of RAM required and influence the amount of time it takes to start up an instance.

²⁴ Other than those bundled as part of the IBM WebSphere Enterprise Service Bus product

²⁵ See IBM evaluation software page - <http://www.ibm.com/developerworks/downloads/>

²⁶ You can gain access to WebSphere Enterprise Service Bus via the IBM SOA sandbox just to learn how to implement dynamic endpoint lookup - <http://www.ibm.com/developerworks/downloads/soasandbox/#matrix>

²⁷ IBM Message Broker 90 day trial link - https://www14.software.ibm.com/webapp/iwm/web/preLogin.do?source=swg-wsmbt&S_CMP=web_ibm_ws_appint_bt_messagebroker-ov

²⁸ Enterprise Integration patterns table of contents - <http://www.enterpriseintegrationpatterns.com/toc.html>

²⁹ See IBM presentation titled "Patterns in WebSphere Message Broker v8" - <http://www-01.ibm.com/support/docview.wss?uid=swg27024613&aid=1>

³⁰ IBM WebSphere Message Broker documentation on built in patterns - http://publib.boulder.ibm.com/infocenter/wmbhelp/v8r0m0/topic/com.ibm.etools.mft.doc/ac68260_.html

IBM WebSphere Enterprise Service Bus runs on top of the WebSphere Application Server 7.0 that is included with the software license.³¹ System requirements specify that on Linux, the recommended configuration is 6GB of RAM and a 64-bit installation.³²

The startup overhead and time associated with the WebSphere Enterprise Service Bus is directly correlated to the same factors associated with the WebSphere Application Server Network Deployment Edition. Disabling WebSphere Application Server features can decrease startup time but also impact the overall functionality of the WebSphere Enterprise Service Bus. For example, WebSphere Enterprise Service Bus relies on the WebSphere Application Server Java Message Service (JMS) provider to leverage that messaging specification.

EMBEDDED JAVA DEPLOYMENT

You can use the Camel core component of Red Hat JBoss Fuse to embed routes in Java applications. This allows you to simplify tasks like posting or retrieving data using a Camel component or transforming the data to or from a Java class instance for use with your application. With this capability, you do not need to deploy the Camel route to a server in order to use the capabilities. This capability can increase the productivity of a Java developer who otherwise would need to implement custom code to replicate the capabilities already found in Camel.

WebSphere Enterprise Service Bus does not provide the ability to embed functionality directly in a Java application. Instead, Java applications must connect to the WebSphere Enterprise Service Bus using one of the supported transports to leverage deployed proxy services. This increases the deployment topology of the Java applications that access limited functionality deployed on the WebSphere Enterprise Service Bus.

RELIABLE MESSAGING

Red Hat JBoss Fuse includes Red Hat JBoss A-MQ for reliable messaging capabilities. Red Hat JBoss A-MQ is a standards-based, open source messaging platform that deploys with a very small footprint. Key features include JMS 1.1-compliant messaging, high-performance delivery of information, connectivity options from multiple languages³³, and transactions protected against failures.

IBM WebSphere Enterprise Service Bus does not include technology to provide an independently executed messaging platform. Instead, JMS messaging is provided via the JMS provider in the WebSphere Application Server that WebSphere Enterprise Service Bus executes on top of.

Red Hat JBoss Fuse includes Red Hat JBoss A-MQ for reliable messaging that can be accessed using Java as well as other languages like C/C++ and .NET.

³¹ See IBM WebSphere Enterprise Service Bus V7.5 announcement letter - <http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=897/ENUS211-075>

³² Detailed hardware and software requirements for IBM WebSphere Enterprise Service Bus V7.5.1 - http://www-01.ibm.com/support/docview.wss?uid=swg27022955#Linux_Red_Hat_Enterprise_Linux_RHEL_Server

³³ OpenWire and STOMP protocols are supported - http://fusesource.com/docs/mqent/7.1/prod_intro/prod_intro.pdf

Red Hat JBoss A-MQ offers the following features for their JMS provider; IBM does not provide these same features:³⁴

- Ability to access the messaging system using C, C++, and .NET.
- Streaming Text Oriented Messaging Protocol (STOMP)—a platform-neutral protocol that supports client access to messaging written in scripting languages (Perl, PHP, Python, and Ruby) in addition to clients written in Java, .NET, C, and C++.
- Advanced Message Queuing Protocol (AMQP) 1.0³⁵
- IP multicast—Provides 1-to-many communications over an IP network. It enables brokers to discover other brokers in setting up a network of brokers, and clients to discover and establish connections with brokers.
- Plus multiple other features documented in the Fuse MQ Enterprise Product Introduction documentation³⁶

The following features are associated with the JMS 1.1 specification and are, therefore, available for use with both Red Hat JBoss Fuse and WebSphere Enterprise Service Bus:

- point-to-point messaging
- publish and subscribe messaging
- request/reply messaging
- persistent and non-persistent messages
- JMS transactions
- Extended architecture (XA) transactions

TRANSPORT BINDINGS

Red Hat JBoss Fuse supports multiple bindings including the popular JMS, HTTP, HTTPS, FTP, XMPP, REST, and web services. In addition, you can easily extend its connectivity options using routing and integration components.³⁷ There are over 125 different Camel components supported by Red Hat JBoss Fuse that can be used for connectivity to integration endpoints. Apache Camel documentation details how to write custom components if you find a special endpoint connectivity need.³⁸ You may also be able to find a Camel component provided by a third party that you could use as an alternative to writing a custom component.

Red Hat JBoss Fuse provides connectivity to more types of endpoints than IBM WebSphere Enterprise Service Bus.

³⁴ Based on using the default messaging provider in WebSphere Application Server Network Deployment edition - http://pic.dhe.ibm.com/infocenter/wasinfo/v8r0/topic/com.ibm.websphere.nd.multiplatform.doc/info/ae/ae/tjn9999_.html

³⁵ Provided as a technology preview

³⁶ Fuse MQ Enterprise Product Introduction documentation - http://fusesource.com/docs/mqent/7.1/prod_intro/prod_intro.pdf

³⁷ Product introduction documentation - http://fusesource.com/docs/esbent/7.1/esb_prod_intro/esb_prod_intro.pdf

³⁸ Writing Apache Camel components documentation - <http://camel.apache.org/writing-components.html>

COMPETITIVE OVERVIEW Red Hat JBoss Fuse compared with IBM WebSphere Enterprise Service Bus

WebSphere Enterprise Service Bus can be configured to work with 9 different types of service bindings.³⁹ One of those bindings, enterprise information system (EIS), uses JCA 1.5 resource adapters and Websphere Adapters. IBM Integration Designer includes 18 different types of IBM adapters. However, 7 of those adapters are not authorized for “processing production workloads, simulating production workloads, or testing scalability of any code, application or system.”⁴⁰ WebSphere technology adapters such as FTP, flat files, and JDBC are included in the remaining list of adapters that can be used without additional licensing fees.

CONCLUSION

Contact your Red Hat sales professional for more information.

This competitive brief has presented high-level differences between Red Hat JBoss Fuse and IBM WebSphere Enterprise Service Bus. More differences between the products can be found when comparing the capabilities of both products.

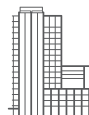
The economic difference between Red Hat JBoss Fuse and WebSphere Enterprise Service Bus is significant. A Red Hat JBoss Fuse, a 16-core premium, managed subscription is over \$823K less than the IBM offering at list price—or just 7.3% of the IBM cost. You get the full functionality of Red Hat JBoss Fuse without any associated software licenses fees. Simply purchase subscriptions for the Red Hat technologies you use. Red Hat JBoss Fuse is available in 16- and 64-core entitlement increments in annual or discounted 3-year subscriptions.

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³⁹ IBM WebSphere Enterprise Service Bus binding documentation - http://publib.boulder.ibm.com/infocenter/esbsoa/wesbv7r5/topic/com.ibm.websphere.wesb.programming.doc/topics/cadm_bindingsgeneral.html

⁴⁰ IBM Integration Designer V8.0.1 license information document - http://www-03.ibm.com/software/sla/sladb.nsf/lilookup/C2853685DE9E0AC585257A8A007EFE43?opendocument&li_select=71A1E85F741413EB85257A8A007EFE3E



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