Critical Capabilities for Enterprise Integration Platform as a Service

Published: 21 September 2020 **ID:** G00434187

Analyst(s): Eric Thoo, Massimo Pezzini, Keith Guttridge, Bindi Bhullar, Abhishek Singh, Shameen Pillai

Enterprise iPaaS is foundational for supporting application and data integration, and increasingly used for B2B integration and API management. This research evaluates the product capabilities of 17 vendors in relation to four key use cases.

Key Findings

- As application leaders increasingly look at enterprise iPaaS capabilities as core to their HIP strategies, they expect them to be able to cover an expanding range of use cases, above and beyond the traditional cloud-centric scenarios.
- In addition to application and data integration, API management and B2B are the use cases where enterprise iPaaS are increasingly used.
- Most enterprise iPaaS offerings are better for some use cases than others. While most have strong capabilities for connectors, messaging and data format standardization, other functions — such as data quality, EDI, API and ecosystem enablement — are less consistent.

Recommendations

For application leaders considering enterprise iPaaS as part of an integration architecture and platform:

- Identify the key use cases that need to be supported by determining your organization's integration priorities both now, and in the future.
- Study the core product capabilities of the solutions you are assessing to identify the capabilities you will need across multiple use cases.
- Make sure that your enterprise iPaaS strategy, if multiple offerings are used, can incrementally support a HIP model — particularly when your time-sensitive or tactical integration requirements are addressed by offerings for targeting particular use cases.

What You Need to Know

More and more organizations are adopting an enterprise integration platform as a service (iPaaS) as a strategic alternative to classic integration platform software for a growing number of scenarios.

Gartner estimates that the iPaaS market approached $2.5 billion in revenue during 2019 and grew by approximately 48% compared with 2018. We estimate that the iPaaS market will reach over $5.6 billion in revenue by 2024 (see Forecast: Enterprise Infrastructure Software, Worldwide, 2018-2024, 2Q20 Update).

By now, the portfolios of most established or traditional integration platform providers include an iPaaS. Buyer demand is intensifying as fewer established on-premises integration technologies are able to support distributed/connected applications, data, APIs, ecosystems, and other challenges. It's becoming clear that traditional approaches are not delivering fast enough to meet new needs.

Enterprise iPaaS offerings are functionally rich and versatile enterprise-focused platforms. The critical capabilities for enterprise iPaaS defined in this research represent the key functional characteristics (as detailed in the Critical Capabilities Definition section) that are most common, including:

- Communication protocol connectors
- Application and data connectors
- File transfer/movement
- Messaging/events
- Event stream processing
- Protocol mapping
- Data formats/standards
- Data mapping and transformation
- Data quality
- Routing and orchestration
- API policy management and enforcement
- EDI support
- Ecosystem partner community management

These critical, core capabilities of enterprise iPaaS are increasingly relevant across emphasized use cases (as detailed in the Use Cases section) that organizations applied, in particularly, for:

- Application integration
- Data integration

- B2B integration
- API management

In these varied use cases, however, enterprise iPaaS is typically not equivalent to offerings that cover dedicated markets and provide specialized functions. One such technology is covered by our Magic Quadrant for Full Life Cycle API Management and Critical Capabilities for Full Life Cycle API Management.

In this enterprise iPaaS Critical Capabilities research, we have assessed the ability of enterprise iPaaS offerings to support API management in the context of integration. Functionality related to API management that is provided within the context an enterprise iPaaS offering tends to be more basic relative to full life cycle API management solutions.

As integration challenges continue to escalate, the adoption of enterprise iPaaS seems to be evolving toward hybrid integration platforms (HIPs).

The critical capabilities defined in this research, and used to assess the vendors, align with a subset of product evaluation criteria in the companion Magic Quadrant for Enterprise Integration Platform as a Service. The ratings allocated to each vendor are driven primarily by feedback from organizations Gartner accessed via inquiries and vendor-supplied reference customers. The degree to which respondents feel a given capability meets their needs, along with analyst opinion, influences the rating.

Analysis

Critical Capabilities Use-Case Graphics

Figure 1. Vendors' Product Scores for the Application Integration Use Case

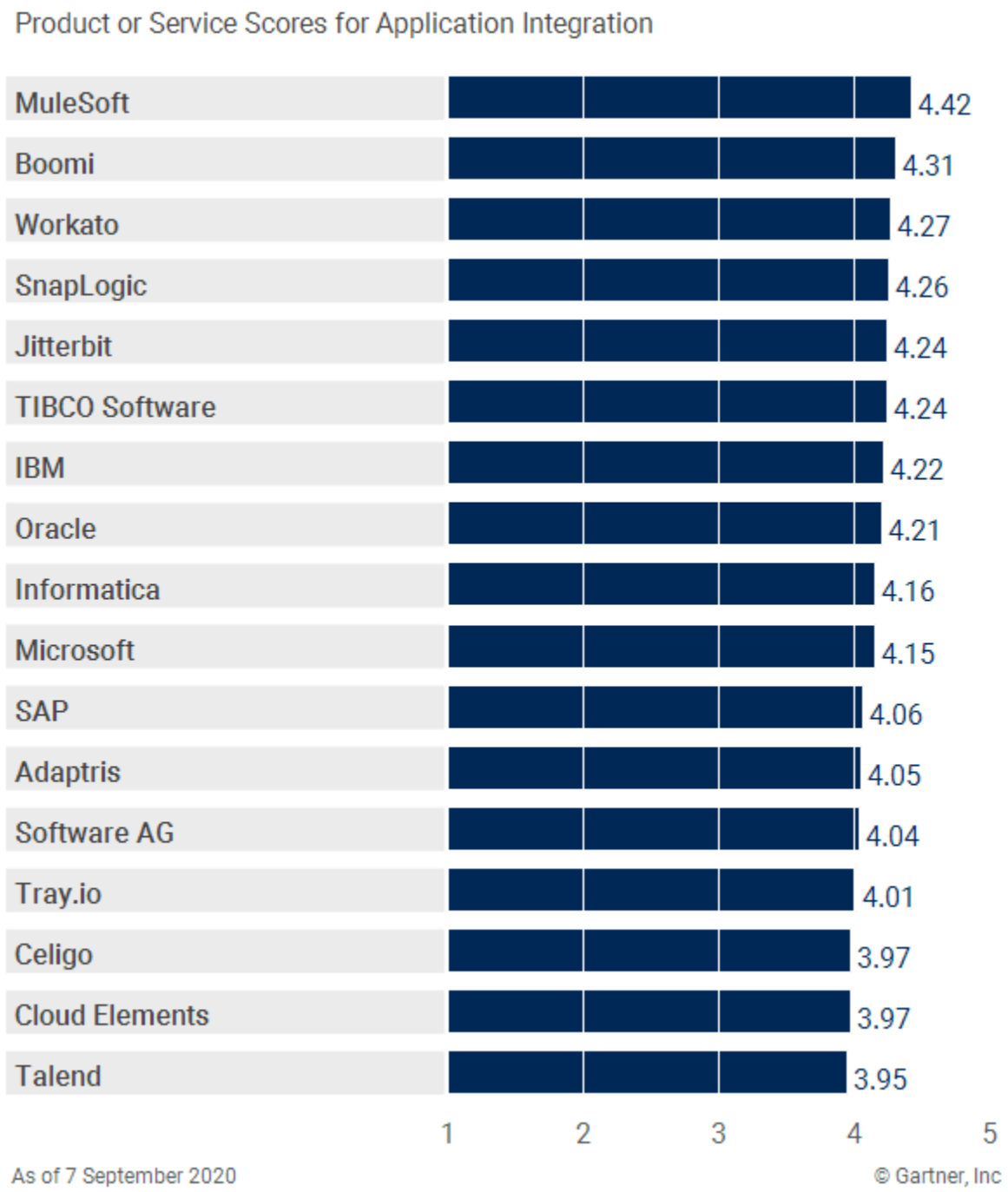


Figure 2. Vendors' Product Scores for the Data Integration Use Case

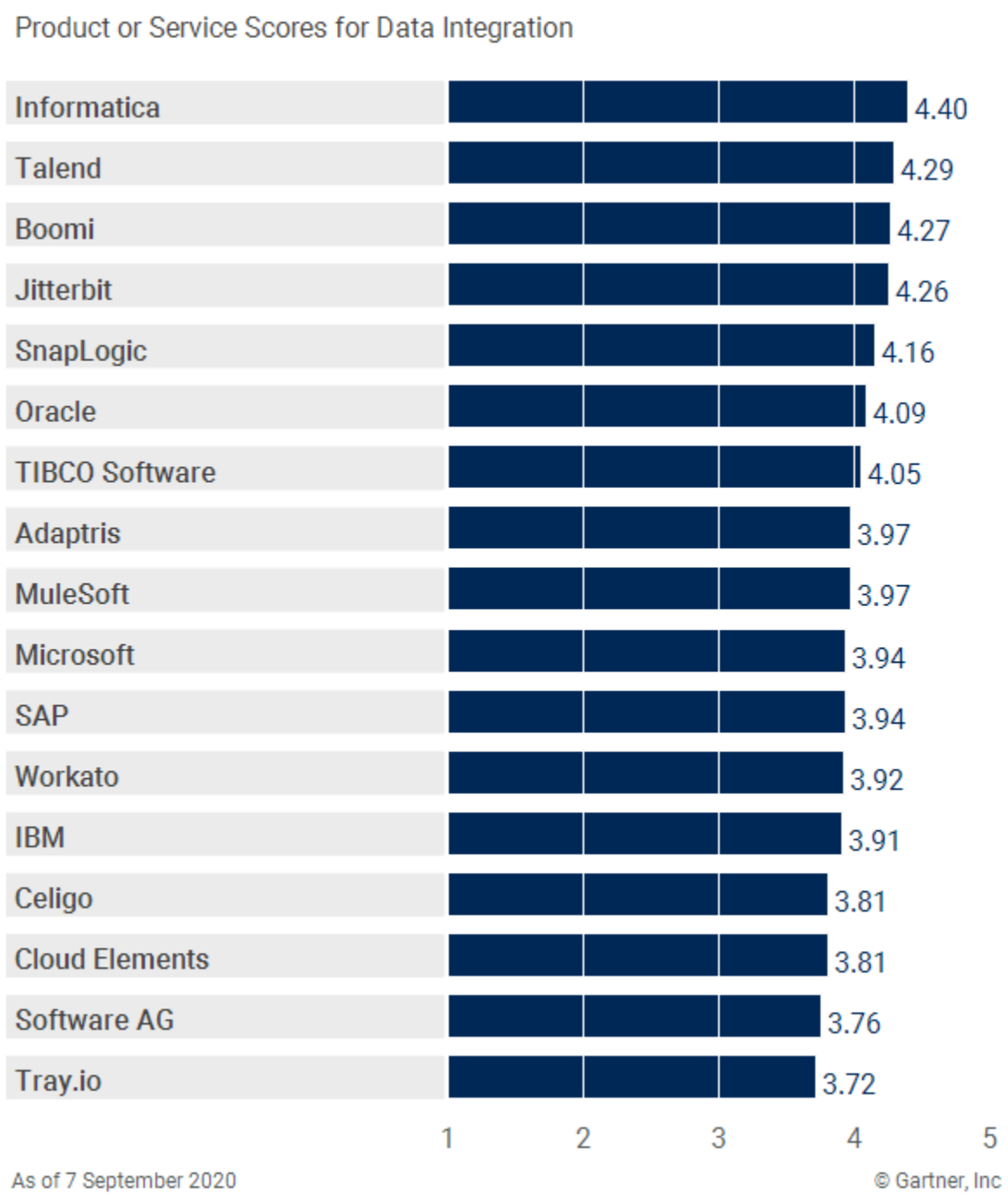


Figure 3. Vendors' Product Scores for the B2B Integration Use Case

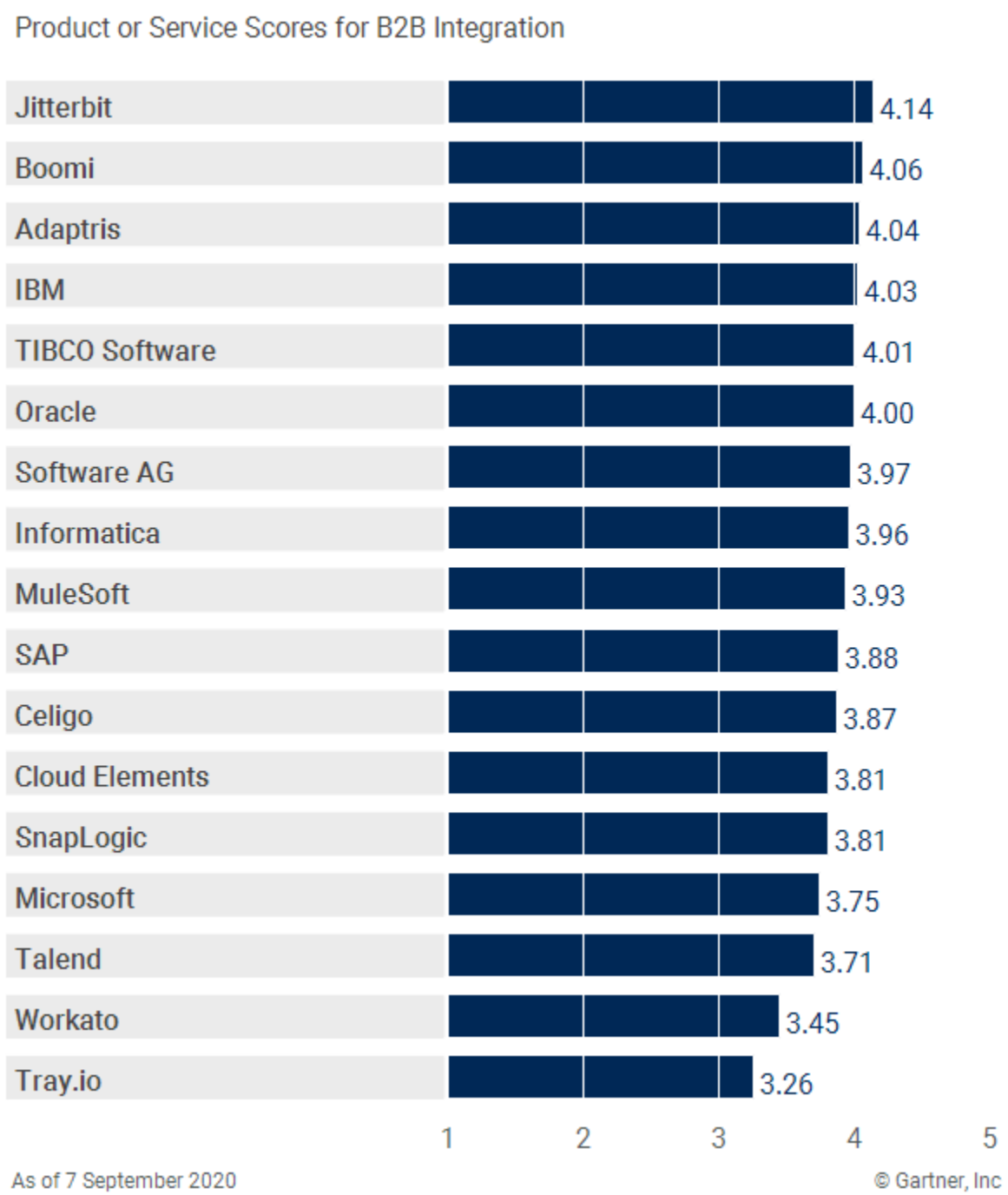
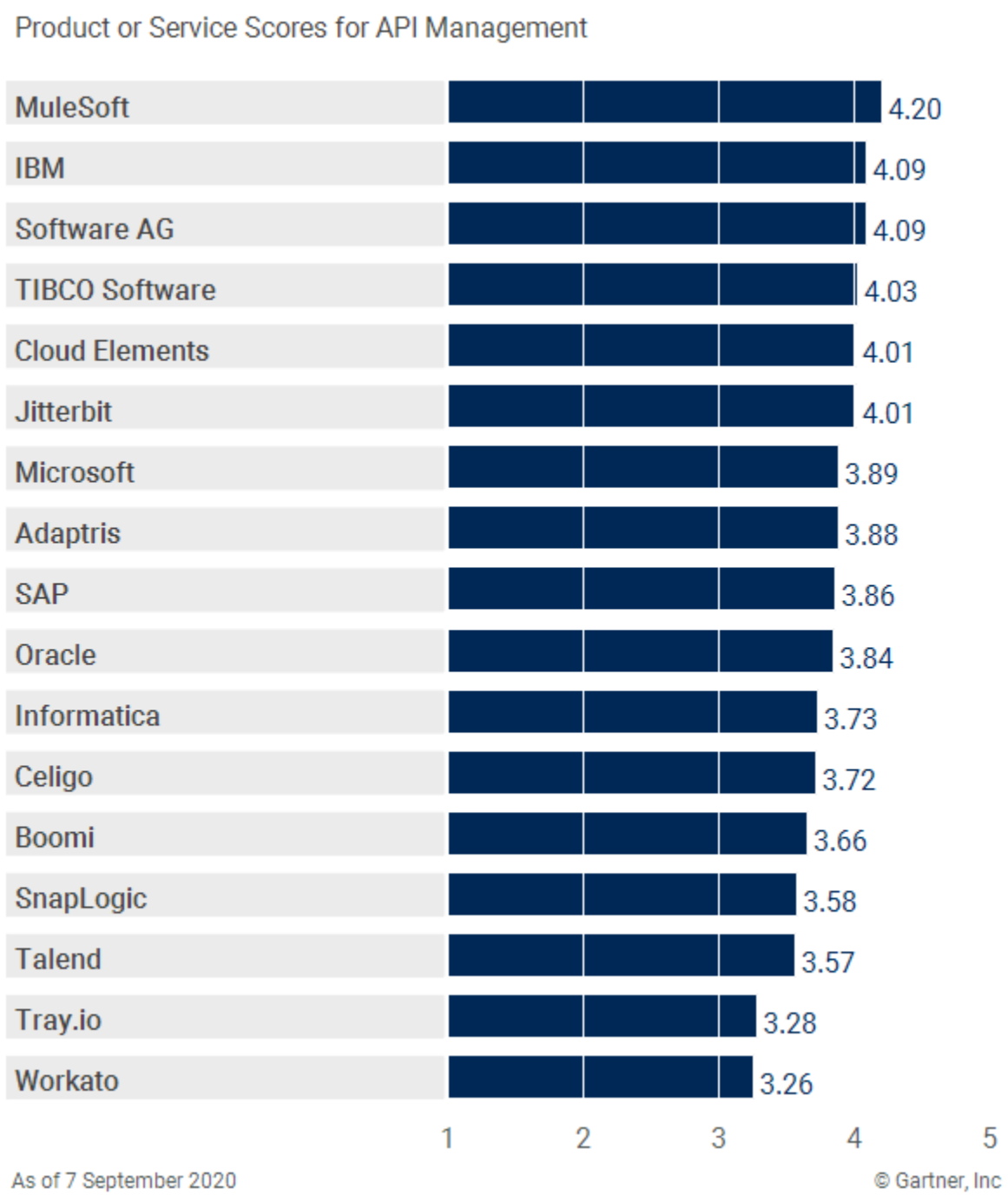


Figure 4. Vendors' Product Scores for the API Management Use Case



Vendors

Adaptris

Adaptris' Interlok enterprise iPaaS product reflects the vendor's 20-year-long history in the field of integration, with an original focus on B2B integration. The tooling has a reputation for supporting agriculture-related solutions, and offers iPaaS and integration brokerage together with APIs for the IoT and support for data standardization.

Adaptris' fundamental functionality of connectors, file movement and data format standardization are often applied to solutions requiring enterprise iPaaS and integration brokerage offerings together. To a lesser extent, Adaptris meets the needs for event stream processing and data quality capabilities, while some reference customers single out API policy management and enforcement as capabilities in need of improvement. In conjunction with its strong protocol mapping, messaging and EDI support, Adaptris would be a good fit for companies looking for B2B integration and application integration.

Boomi

Boomi, a wholly owned subsidiary of Dell Technologies, provides an extended suite of enterprise iPaaS capabilities in the Boomi AtomSphere Platform. This provides separately packaged components for application, data and B2B/EDI integration; API management; low-code application development and master data management (MDM).

Boomi scores strongly on its communication protocols, data and application connectivity (with the core integration flows of data and message routing/orchestration), and data formatting, mapping and transformation. API policy management/enforcement and ecosystem management functionality received lesser scores relative to supporting API management requirements. Alongside file movement and EDI support, the combined set of AtomSphere functionality is better suited to application integration, data integration and B2B integration.

Celigo

Celigo's integrator.io product supports all of the needs of enterprise iPaaS users, integration specialists and developers, and is particularly suited to SMBs in need of SaaS integration.

Celigo has a strong focus on integrating Salesforce with NetSuite, and provides a wide range of prepackaged integrations and connectors (using Celigo Integration Apps and Flow Builder), as well as the ability to build custom integrations. Celigo has demonstrated strong communication protocols, application and data connectors, file transfers, messaging, and data formatting and standardization. Celigo scores relatively lower for integration involving event stream processing and API policy management and enforcement, resulting in a relatively lower score for the API management use case.

Celigo's focus on speed of implementation and third-party development of custom integration functions enables implementations to more rapidly and broadly deliver integration apps as

functional extensions to business process requirements. This means that Celigo is best suited to application integration, data integration and B2B integration.

Cloud Elements

Cloud Elements approaches the enterprise iPaaS market via its Cloud Elements API Integration Platform. Its enterprise iPaaS contains the Elements Catalog (with over 200 services), API hubs that provide a virtual API in front of certain application domains, and Virtual Data Resources (VDR) to normalize data types.

Cloud Elements is particularly strong for communication protocols, applications and data connector functionality, data mapping and transformation, and API policy management and enforcement. These capabilities enable the integration of APIs and data entities supported by a single access to endpoint and connected elements through service virtualization. Some data management operations were rated lower when they involved data/file movement and data quality. Cloud elements focuses on embeddable iPaaS support for the ecosystem requirements of software providers, that allows them to share and synchronize applications of partners and their customers. Its strongest relevance is to application integration and API management, followed by B2B and data integration.

IBM

IBM's enterprise iPaaS offering is based on a modular suite of enterprise iPaaS capabilities named IBM Cloud Integration. The suite includes IBM App Connect for application integration; IBM API Connect, IBM Secure Gateway Service and IBM DataPower Gateway for API management; IBM MQ and IBM Event Streams for event brokering; and IBM Aspera for high-performance MFT. Customers can subscribe to the whole suite or to the individual components.

IBM scored well for application and data connectors, messaging, data mapping and transformation, routing/orchestration, and API policy management/enforcement. Ecosystem management scored relatively lower particularly for implementations requiring easier deployment and integration. The release of the IBM Cloud Pak for integration capitalizes on the acquisition of Red Hat, allowing IBM Cloud Integration to run as native containers on the Red Hat OpenShift/Kubernetes platform. IBM's evolved set of offerings increases its suitability for application integration and API management, which both received strong scores.

Informatica

Informatica's enterprise iPaaS product, Informatica Intelligent Cloud Services (IICS), provides cloud-native capabilities across API, application integration, data integration and data management support. IICS operates on a common microservices-based, AI-powered platform environment, in a multicloud and hybrid integration platform (HIP) model.

Because of their ability to fulfill the needs of complex scenarios and enterprisewide deployments, connectivity to data and applications, data mapping, transformation, formatting and standardization capabilities scored particularly well. With a focus on foundational data management, expanding out

toward enabling applications, Informatica scored well for data integration and application integration.

Capabilities related to ecosystems, EDI and APIs were rated relatively lower than other functionality exploited in deployments. Having strong capabilities for data quality improvement and data/file movement, Informatica's offering addresses data management and data sharing challenges, which increases its relevance for the B2B integration use case.

Jitterbit

Jitterbit's Harmony API Integration Platform provides a combination of data integration, process automation and API support in a single platform.

Jitterbit addresses integration needs with packaged applications, and offers a set of predefined templates with over 100 "recipes" for accelerating the development of integration flows.

Jitterbit scored strongly for its connectors, data/file movement (including mapping and transformation capabilities), and the use of routing/orchestration supported by protocol and format standardization. As a result, Jitterbit received stronger scores for the data and application integration. Scores for API policy management and enforcement were relatively lower.

Strong scores in data manipulation — combined with favorable reports about ecosystem management and protocol mapping — strongly relates Jitterbit to B2B integration.

Microsoft

Microsoft offers enterprise iPaaS capabilities via Azure Integration Services (AIS), which combines Azure Logic Apps with Azure API Management, Azure Service Bus (a message queuing and publish-subscribe service) and Azure Event Grid (a massive-event ingestion service).

Microsoft's enterprise iPaaS commonly supports the requirements of connectors, messaging, data transformation, and facilitating protocol communication and mapping, which contribute to its suitability for application integration, followed by data integration. Some reference customers said they made less use of Microsoft's EDI support and ecosystem management capabilities, and rated these lower than other functions, resulting in a weaker score for B2B integration.

Microsoft's strength in routing/orchestration and API policy management/enforcement — supporting customer needs for a combination of application and business task automation, API and event stream processing — ties Microsoft increasingly to API management use.

MuleSoft

MuleSoft, an independent unit of the Salesforce company, approaches the enterprise iPaaS market via its Anypoint Platform, which combines integration and full life cycle API management.

MuleSoft's comprehensive functionality is backed by:

- Anypoint Exchange (a marketplace of APIs and integration assets that can accelerate development and facilitate collaboration and sharing)
- Anypoint MQ (cloud messaging)
- Anypoint Design Center (integration and API design and implementation interfaces to support a spectrum of user personas). Includes Flow Designer for ad hoc integrators, API Designer for API developers, and Studio for integration specialists.

MuleSoft's primary strengths are its connectors, file movement, messaging flows, routing/orchestration, and API policy management/enforcement capabilities. It has established experience in full life cycle API management platforms and ESB technologies. Areas that rated relatively low were data quality and EDI support, particularly for data-management-centric requirements, which contributed to lower scores for data integration and B2B integration, although MuleSoft is making investments in these areas. Overall scoring suggests that MuleSoft is best suited to application integration and API management scenarios.

Oracle

Oracle targets its enterprise iPaaS at both large and midsize organizations, focuses on ERP, HCM and CX integration processes, and encompasses both Oracle and popular third-party SaaS applications.

The Oracle enterprise iPaaS includes:

- Oracle Integration Cloud Service
- Oracle API Platform Cloud Service
- Oracle SOA Cloud Service (for backward compatibility with Oracle SOA Suite software)
- Oracle Managed File Transfer Cloud Service
- Oracle Process Cloud Service
- Oracle Data Integration Platform Cloud
- Oracle Self-Service Integration Cloud Service

Oracle's enterprise iPaaS strongly supports connectivity, file movement, messaging flows and data mapping and transformation. Other strengths include routing/orchestration and data format standardization. These strong functional ratings make Oracle suitable for application integration and data integration.

Ecosystem management and API policy management/enforcement are seen as capable by reference customers, but show room for improvement. As a result, API management and B2B integration scored lower relative to other use cases.

SAP

SAP's enterprise iPaaS offering is framed by its broader PaaS proposition called the SAP Cloud Platform. This provides integration-related tooling in the form of the SAP Cloud Platform Integration Suite. SAP's API Business Hub provides access to integration packs, APIs and events that target specific business processes.

SAP's EiPaaS is one of the most widely deployed platforms on all major cloud providers, and scored well for communication protocol, data and application connectivity with the core integration flows of data and message routing/orchestration. While meeting requirements, a lower rating for EDI support and ecosystem management functionality relative to other capabilities. Alongside data manipulation support for standardization, data mapping and transformation, the combined set of functionalities is broadly applicable to all use cases, with a stronger showing in application integration, data integration and B2B integration.

SnapLogic

SnapLogic Intelligent Integration Platform has a standard edition that provides all core functions for limited consumption, and an enterprise edition that adds API management, B2B integration, big data support (through SnapLogic eXtreme) and data science capabilities.

SnapLogic commonly addresses data- and message-oriented integration, and uses machine learning (ML) for automation and guidance, which helps accelerate the development of integration flows.

SnapLogic's reference customers scored it strongly for its connectors, file/message delivery and protocol mapping, as well as data manipulation support (for standardizing, formatting, mapping and transforming data). Weaker ecosystem management, EDI support and API policy management and enforcement resulted in lower scores for B2B integration and API management, but higher relevance to application integration and data integration.

Software AG

Software AG's enterprise iPaaS offering webMethods.io includes B2B and API abilities. There is also a headless version that can be embedded within software components. It also provides integration with the vendor's Cumulocity IoT platform.

Software AG has a strong track record in solving complex integration challenges for some of the world's largest organizations. Reference customers favor its strong connectors, protocol mapping, routing and orchestration, and API policy management/enforcement. As a result, Software AG relates strongly to the API management and application integration use cases.

Areas rated lower relate to data management requirements — including data mapping and transformation and data quality — which contributed to a lower score for the data integration use case. Software AG's API-enablement strength, combined with its ecosystem management support, extends its use case relevance for B2B integration.

Talend

Talend provides a range of offerings that make up an enterprise iPaaS portfolio. These include Cloud Data Integration, Cloud Data Management, Cloud Data Loader, Cloud Real-time Big Data Integration, Cloud Data Catalog, and Cloud API Services (which has ESB and EDI support). These tools are offered as stand-alone or as a part of Talend Data Fabric, an overarching platform of Talend's cloud-based and on-premises products.

Talend's enterprise iPaaS leverages its established on-premises data integration technology, broadened for cloud and on-premises integration and hybrid deployments, along with APIs to extend and embed the platform. Capitalizing on its data management experience, Talend strongly supports data/application connectors and requirements of data manipulation for standardizing, formatting, mapping, transforming and quality assuring data. The areas of application flow routing/orchestration, EDI support and ecosystem management are rated relatively lower, pertaining to integration needs of application composition, on-premises application-to-application integration, and process optimization.

Talend's strongest relevance is to data integration use case, followed by application integration, B2B integration and API management.

TIBCO Software

TIBCO's enterprise iPaaS increasingly addresses integration complexities involving analytics, cloud-native applications, IoT, on-premises applications, as well as data migration between existing applications and their replacements.

TIBCO Cloud Integration has been available since May 2016. It incorporates functionality from Scribe Software (acquired in June 2018). To increase its support for API management, TIBCO acquired the Mashery unit from Intel in August 2015.

Building on its wealth of experience in integration, and supporting application modernization and deployment flexibility, greatest strengths of TIBCO's enterprise iPaaS are its connectors, protocol mapping, messaging, event stream processing, and routing/orchestration. Areas rated lower by its reference customers include its ecosystem partner community management.

Having API policy management/enforcement and messaging functions that are well rated, along with strengths in data formatting, mapping and transformation, make TIBCO suitable for application integration, data integration and API management scenarios, followed by B2B integration.

Tray.io

Tray.io offers the Tray Automation Platform and Tray Embedded. Its enterprise iPaaS provides a wide range of prepackaged integrations and connectors, and the ability to build custom integrations. More recently, ISVs that embed solutions of Tray.io to provide integration to their customers have become a significant proportion of the company's customers.

With an emphasis on ease of use, scalability and the flexibility to automate business applications and processes, Tray.io scored well for connectivity, file movement, message flows/routing, and data mapping and transformation. Concerns about EDI support and B2B/ecosystem management point to a higher relevance to application integration and data integration scenarios.

Workato

Workato Workspace targets departmental or SMB development, while Workato Enterprise Suite targets enterprise-level adoptions. Adoptions of Workato's enterprise iPaaS support both common scenarios (data integration, messaging, API management, EDI [via partnership] and bot-assisted managed file transfer) and advanced integration scenarios (chatbot-enabled human tasks, collaboration tools integration, RPA, digital integration hub, and ML/natural language processing-enabled integration). The vendor's tools are seen in deployments across all of the key enterprise iPaaS use cases.

Workato exhibits functional strengths for connectors, file/message delivery, protocol mapping, routing/orchestration, as well as data manipulation support of standardizing, formatting, mapping and transforming data. EDI support and ecosystem community management are rated lower than other capabilities, pertaining to B2B integration scenarios. These factors contribute to Workato's stronger suitability to application integration and data integration use cases.

Context

Enterprise iPaaS delivers a suite of capabilities typically found in enterprise service bus (ESB), data integration tools, B2B gateways and, increasingly, API management platforms. However, not all enterprise iPaaS technologies are created equal. Some excel primarily at addressing data, some at integrating applications, others at enabling APIs. A range of products are also becoming good at different combinations. Enterprise iPaaS offerings in the market at large are still evolving capabilities across different use cases.

The enterprise iPaaS market remains dynamic, owing to its growth in size and volatility on both the supply side and the demand side. We see high demand for enterprise iPaaS that ranges from midsize organizations to increasingly large enterprises, in support of initiatives that are both focused on lines of business and whole organizations.

This demand is driven partly by activities that enable subscribers to implement data, application, API and B2B integration projects spanning cloud-resident and on-premises endpoints. This is achieved by developing, deploying, executing, managing and monitoring integration flows that bridge between multiple endpoints so that they can work together.

Even during COVID-19, demand for iPaaS continues, driven by pressing needs to automate processes, accelerate digital transformation, respond to drastic business changes, and amplify ways to take advantage of multicloud and HIP approaches to containing cost and increasing flexibility.

To meet market pressures and surpass their competitors, ambitious providers will continue to extend the functional footprint of their enterprise iPaaS offerings. We expect to see more suites of

capabilities packaged in multiple offerings or as unified platforms, catering to different use cases, integration capabilities and market segments.

Product/Service Class Definition

An integration platform as a service (iPaaS) is typically used for cloud service integration, application integration, data integration, B2B ecosystem integration and — increasingly — API publishing, multiexperience support and IoT scenarios.

Gartner considers an iPaaS as "enterprise iPaaS" if it:

- Provides support for enterprise-class integration initiatives (those that require high availability, disaster recovery, security, SLAs and technical support from the provider).
- Enables end users to develop and manage integrations independent of the enterprise iPaaS provider's professional services. These experiences must support multiple integration personas, particularly integration specialists and ad hoc integrators.
- Can execute multiple integration scenarios, including real-time application integration, batch data integration and B2B integration.
- Provides API management capabilities for supporting integration.
- Features a fully managed experience, whereby the vendor does patching and upgrades.
- Acts as strategic integration platform, supported by a broad go-to-market strategy and buyers rather than focusing on specific integration scenarios, industries or geographic areas.

An enterprise iPaaS can be a suite of iPaaS products that together provide the necessary capabilities. However, the customer must be able to purchase all these capabilities directly from the enterprise iPaaS vendor without engaging with third parties, and the vendor must provide at least first-line support for these capabilities.

This market includes only companies that provide public enterprise iPaaS offerings for use by subscribers in integrating applications, data sources and APIs. Vendors that sell only iPaaS-enabling software, merely provide iPaaS capability embedded in other "xPaaS" solutions (such as application platform as a service [aPaaS] solutions), or embed their iPaaS capabilities within SaaS applications, are not considered to be enterprise iPaaS vendors by Gartner.

Critical Capabilities Definition

Communication Protocol Connectors

The ability to establish varying modes of interaction with applications and data structures via a variety of protocols (such as HTTP, FTP, TCP/IP, AMPQ, JMS and ODBC).

Application and Data Connectors

The ability to establish connectivity to a range of applications and data structures and types via a variety of adapters and interfaces.

Examples of applications include Infor, Microsoft, Oracle, Salesforce, SAP, and Workday. Examples of data structures and types include file systems, database management systems such as AWS Aurora, Couchbase, IBM, Microsoft, MongoDB, Oracle, and data sources like Hadoop.

File Transfer/Movement

The ability to distribute files between file systems on a triggered, scheduled or manual basis.

Messaging/Events

The ability to distribute messages/events between endpoints. The messaging/event broker platform can enable publish-subscribe, message queueing, or both. It can encapsulate data and process steps in messages/events that applications can read so that they can exchange and deliver data and messages.

Event Stream Processing

The ability to address integration requirements through interoperability with streams/events, including provisioning integrated data and application flows in-stream/event for enabling downstream consumption.

Protocol Mapping

The ability to map between a range of different endpoint protocols such as file to message, application connector to data source, or any combination of endpoints.

Data Formats/Standards

The ability to process a range of different data formats such as XML, JSON and ASN.1, and adhere to data standards such as HL7, EDIFACT, SWIFT, FIX and others.

Data Mapping and Transformation

The ability to map, transform, aggregate and split data between a range of different data formats and standards.

This functionality encompasses syntactic conversion and semantic transformation, including built-in functions, and the ability to extend transformation functions with custom-coded logic, and XML support.

Data Quality

The ability to assess the quality of the data flowing through the platform and its endpoints, and perform data quality improvements in applicable contexts, such as business operations and analytics.

Data quality functions ensure that data is fit for purpose in applicable contexts such as business operations, analytics and emerging digital business scenarios.

Routing and Orchestration

The ability to route data between a range of endpoints and orchestrate the flow of information across those endpoints.

This allows the execution and delivery of process logic spanning multiple back-end services or applications with the aim of implementing composite services or automated system-to-system processes. These could range from short-term processes (that take seconds or minutes) to long-term processes (that take hours, days or even weeks).

API Policy Management & Enforcement

The ability to define, manage and enforce policies such as authentication, authorization and accounting, data masking, traffic shaping and throttling.

This governs integration flows and APIs, manages policy, and enforces the management of integration artifacts and flow execution. It enables the control of different types of API usage and enforces security and compliance policies.

EDI Support

The ability to integrate with B2B-specific data formats/standards and protocols, involving the interpretation and creation of message formats and flows applicable to electronic data interchange (EDI). It covers the common administrative transactions associated with interenterprise data sharing.

Ecosystem Partner Community Mgmt.

The ability to manage ecosystems and partner communities (including clients, suppliers and service providers) and access to services via tools like community portals. This provides self-service access as well as automated onboarding of partners.

This also provides the ability to support ecosystem-related features, such as enabling the B2B trading partner community, allowing business roles to participate in sharing data, and integrating processes that influence the vitality of ecosystems.

Use Cases

Application Integration

Application integration focuses on joining different application and data endpoints and is often event-driven (triggered by changes within an application or data endpoint).

Application integration enables independently designed applications to work together in the form of orchestrated flows that support varying interaction patterns across application services. This includes activities spanning communication and movement of messages among endpoints, support for fundamental web and web services standards, consumer and provider endpoint connectivity, and message validation, mapping, transformation and enrichment.

Data Integration

Data integration enables independently designed data structures to be used together.

Data integration comprises the practices, architectural techniques and tools that ingest, transform, combine and provision data across the spectrum of information types — both inside the enterprise and beyond — to meet the data consumption requirements of diverse applications and business processes.

B2B Integration

B2B integration focuses on exchanging data (such as payments, orders and supply chain information) electronically with business ecosystems and partners.

B2B integration is growing in importance as enterprises rely more on links between ecosystems and partners to ease entry into new markets and increase competitive advantage. Executing effective B2B processes involves people from nontechnical business roles, along with quick and effective trading partner onboarding and trading community management. Increasingly, nontechnical users need access to, control over, and visibility into the operation of these B2B solutions.

API Management

API management implements key governance features and manages access to any endpoint that exposes an API (whether on-premises, in the cloud, mobile or IoT).

APIs are increasingly used to support integration efforts, so API management functionality is necessary and often available as part of an enterprise iPaaS. They bring together inconsistent and independent APIs from different sources (for example, different SaaS applications).

Vendors Added and Dropped

We review and adjust our inclusion criteria as markets change. As a result of these adjustments, the mix of vendors in this research may change over time. A vendor's appearance in this research one year and not the next does not necessarily indicate that Gartner has changed its opinion of that

vendor. It may reflect a change in the market and, therefore, changed evaluation criteria, or a change of focus by that vendor.

Added

- Talend
- Tray.io

Dropped

- Azuqua
- Moskitos

Inclusion Criteria

In the context of this Critical Capabilities analysis, we are using the same inclusion criteria as the 2020 Magic Quadrant for Enterprise Integration Platform as a Service.

Vendors had to deliver a service with the following characteristics:

- It had to be a cloud service:
  - Available by subscription and accessible over internet technologies.
  - Available uniformly to all qualified subscribers.
- It had to include:
  - Some sharing of physical resources between logically isolated tenants (subscribers or applications).
  - Some self-service provisioning and management by subscribers.
  - Bidirectional scaling without interruption of activities and with some automation.
  - Some instrumentation for resource use tracking.
- It had to be a PaaS solution that:
  - Encapsulates the underlying virtual or physical machines, their procurement, management and direct costs, and does not require tenants to be aware of them.
  - Delegates to the providers the patching, versioning and health of the platform stack.
- It had to provide the following iPaaS capabilities:
  - Features targeting application integration — that is, the ability for different applications to exchange messages, call each other's business functions and automate business

processes. This integration generally needs to be at the transaction level. It must support use cases such as data consistency/synchronization between applications, composition of new services from aggregations of existing applications or services (typically published as APIs or events), and delivery of a multistep process that touches many systems.

- Features targeting data integration — that is, the ability for different data stores to synchronize, to move data from one store to another, and to combine, deduplicate and aggregate data from different stores. This integration generally involves a bulk/batch, federated/virtualized or replication/synchronization mode of data delivery. It supports requirements for extracting, transforming, combining and provisioning data to support diverse use cases, such as analytics and data management, as well as integration.
- Features targeting API management — that is, the ability to create, deploy, secure and monitor APIs. These capabilities must include an API gateway and administration portal; they may optionally include a developer portal.
- Connectivity to different endpoints that are on-premises and cloud-based, including:
  - Application connectors (for example, for Salesforce, Workday, NetSuite, Oracle E-Business Suite, SAP S/4HANA, ServiceNow, Microsoft Dynamics and Marketo).
  - Data source connectors (for example, for file systems and SQL and NoSQL databases).
  - Technology connectors (for example, for FTP, HTTP, Java Message Service [JMS] and Open Database Connectivity [ODBC]).
- Multiple data/message delivery styles, including:
  - API-based.
  - Messaging/event based.
  - Batch.
- Data and message validation.
- Data and message mapping and transformation.
- Data and message routing and orchestration.
- End-user tools to develop, test, deploy, execute, administer, monitor and manage integration flows, and to manage the life cycle of the relevant artifacts (transformation maps, routing rules, orchestration flows, adapter configurations and others).

- It had to be enterprise-grade and aimed at enterprise-class projects, by providing:
  - Support for high availability/disaster recovery.
  - Secure access to endpoints and to the platform's functionality.
  - Technical support to paying subscribers.
- It had to be marketed as a versatile offering able to address a broad range of use cases and industries.

- It had to be provided as a “stand-alone” service directly usable by the subscriber. To use the platform, clients can subscribe to the EiPaaS capability only, not just to some other cloud service — a SaaS application or another form of PaaS, such as aPaaS — of which the iPaaS capabilities are an “embedded” subset.
- All capabilities had to be provided directly by the EiPaaS vendor. The customer must be able to purchase all these capabilities directly from the vendor of the enterprise iPaaS without engaging with third parties, and the vendor must provide at least first-line support for these capabilities.
- All the functionality listed above had to be generally available as of 15 February 2020, and had to have at least 900 paying customer organizations, of which at least 200 were direct customers, by the same date. Please note that we took into account the number of paying organizations and not individual users. We considered both “direct” clients and “indirect” customers (organizations that bought a provider’s EiPaaS solution via a reseller or an OEM partner).

Table 1 shows the relative importance of critical capabilities in the context of the specific use cases.

Table 1. Weighting for Critical Capabilities in Use Cases

Critical Capabilities	Application Integration	Data Integration	B2B Integration	API Management
Communication Protocol Connectors	5%	5%	5%	3%
Application and Data Connectors	10%	10%	5%	5%
File Transfer/Movement	3%	5%	6%	0%
Messaging/Events	15%	3%	3%	4%
Event Stream Processing	5%	8%	0%	0%
Protocol Mapping	5%	3%	3%	3%
Data Formats/Standards	7%	7%	7%	5%
Data Mapping and Transformation	22%	28%	15%	5%
Data Quality	3%	28%	3%	0%
Routing and Orchestration	25%	3%	7%	5%
API Policy	0%	0%	12%	35%
EDI Support	0%	0%	17%	5%
Ecosystem Management	0%	0%	17%	30%
Total	**100%**	**100%**	**100%**	**100%**
				As of September 2020

Source: Gartner (September 2020)

This methodology requires analysts to identify the critical capabilities for a class of products/services. Each capability is then weighted in terms of its relative importance for specific product/service use cases.

Critical Capabilities Rating

Each vendor's set of products/services has been evaluated for its critical capabilities on a scale of 1.0 to 5.0, with 1.0 being the lowest score and 5.0 the highest (see Table 2)

Table 2. Product/Service Rating on Critical Capabilities

Critical Capabilities	Adaptris	Boomi	Celigo	Cloud Elements	IBM	Informatica	Jitterbit	Microsoft	MuleSoft	Oracle	SAP	SnapLogic	Software AG	Talend	TIBCO	Tray.io	Workato
Communication Protocol Connectors	4.3	4.8	4.3	4.0	3.5	4.2	4.9	4.1	4.8	4.0	4.1	4.6	4.5	4.0	4.1	4.1	4.8
Application and Data Connectors	4.1	4.5	4.2	4.2	4.2	4.6	4.4	4.3	4.3	4.5	4.3	4.6	4.1	4.3	4.7	4.2	4.5
File Transfer/Movement	4.3	4.0	4.0	3.6	3.6	4.3	4.7	3.8	4.2	4.4	3.6	4.4	4.0	4.0	3.9	4.0	4.5
Messaging/Events	4.1	3.8	4.2	4.1	4.1	3.8	4.1	4.3	4.7	4.1	3.6	4.5	3.9	3.7	4.1	4.0	4.3
Event Stream Processing	3.4	4.0	3.6	3.4	3.8	3.7	4.0	3.9	4.6	3.7	3.4	3.7	3.5	4.0	4.3	3.3	3.5
Protocol Mapping	4.1	4.4	4.0	3.6	3.3	3.7	4.2	4.0	4.5	3.9	4.1	4.1	4.1	3.5	4.3	4.0	4.3
Data Formats/Standards	4.4	4.3	4.0	4.2	4.1	4.3	4.3	3.8	4.1	4.1	4.0	4.4	4.1	4.3	4.2	4.0	4.2
Data Mapping and Transformation	4.0	4.6	4.0	4.1	4.6	4.7	4.4	4.0	4.0	4.2	4.4	4.3	3.8	4.6	4.1	4.1	4.2
Data Quality	3.8	3.9	3.3	3.4	3.2	4.5	4.0	3.7	3.2	3.9	3.5	3.8	3.3	4.4	3.6	3.0	3.1
Routing and Orchestration	4.0	4.3	3.8	3.9	4.6	3.8	4.0	4.4	4.8	4.4	4.2	4.0	4.4	3.3	4.4	4.1	4.4
API Policy	3.5	3.0	3.5	4.3	4.5	3.4	3.8	4.1	4.6	3.8	3.9	3.3	4.3	3.6	4.2	3.6	3.3
EDI Support	4.2	4.3	4.0	3.0	3.9	3.5	3.8	2.7	2.5	4.0	3.5	3.2	3.6	3.0	3.8	1.5	2.0
Ecosystem Management	4.0	3.6	3.6	3.8	3.6	3.7	4.0	3.6	3.8	3.5	3.6	3.2	3.9	3.2	3.6	2.4	2.3

Critical Capabilities	Adaptris	Boomi	Celigo	Cloud Elements	IBM	Informatica	Jitterbit	Microsoft	MuleSoft	Oracle	SAP	SnapLogic	Software AG	Talend	TIBCO	Tray.io	Workato
																	As of September 2020

Source: Gartner (September 2020)

Table 3 shows the product/service scores for each use case. The scores, which are generated by multiplying the use-case weightings by the product/service ratings, summarize how well the critical capabilities are met for each use case.

Table 3. Product Score in Use Cases

Use Cases	Adaptris	Boomi	Celigo	Cloud Elements	IBM	Informatica	Jitterbit	Microsoft	MuleSoft	Oracle	SAP	SnapLogic	Software AG	Talend	TIBCO	Tray.io	Workato
Application Integration	4.05	4.31	3.97	3.97	4.22	4.16	4.24	4.15	4.42	4.21	4.06	4.26	4.04	3.95	4.24	4.01	4.27
Data Integration	3.97	4.27	3.81	3.81	3.91	4.40	4.26	3.94	3.97	4.09	3.94	4.16	3.76	4.29	4.05	3.72	3.92
B2B Integration	4.04	4.06	3.87	3.81	4.03	3.96	4.14	3.75	3.93	4.00	3.88	3.81	3.97	3.71	4.01	3.26	3.45
API Management	3.88	3.66	3.72	4.01	4.09	3.73	4.01	3.89	4.20	3.84	3.86	3.58	4.09	3.57	4.03	3.28	3.26
As of September 2020																	

Source: Gartner (September 2020)

To determine an overall score for each product/service in the use cases, multiply the ratings in Table 2 by the weightings shown in Table 1.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

How Products and Services Are Evaluated in Gartner Critical Capabilities

Magic Quadrant for Enterprise Integration Platform as a Service

Market Share Analysis: Integration Platform as a Service, Worldwide, 2019

How to Deliver a Truly Hybrid Integration Platform in Steps

Innovation Insight: Turbocharge Your API Platform With a Digital Integration Hub

Reshape the Data Design of Your APIs to Align With Your Integration Strategy

Evidence

The analysis in this research is based on information from sources including, but not limited to:

- Extensive data on functional capabilities, customer base demographics, financial status, pricing and other quantitative attributes gained via a request-for-information process engaging vendors in this market.
- Interactive briefings in which the vendors provided Gartner with updates on their product capabilities.
- Feedback about tools and vendors captured from user feedback through Gartner's client inquiry service, peer insights and reference customer survey.

Critical Capabilities Methodology

This methodology requires analysts to identify the critical capabilities for a class of products or services. Each capability is then weighted in terms of its relative importance for specific product or service use cases. Next, products/services are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities for each use case is then calculated for each product/service.

"Critical capabilities" are attributes that differentiate products/services in a class in terms of their quality and performance. Gartner recommends that users consider the set of critical capabilities as some of the most important criteria for acquisition decisions.

In defining the product/service category for evaluation, the analyst first identifies the leading uses for the products/services in this market. What needs are end-users looking to fulfill, when considering products/services in this market? Use cases should match common client deployment scenarios. These distinct client scenarios define the Use Cases.

The analyst then identifies the critical capabilities. These capabilities are generalized groups of features commonly required by this class of products/services. Each capability is assigned a level of importance in fulfilling that particular need; some sets of features are more important than others, depending on the use case being evaluated.

Each vendor's product or service is evaluated in terms of how well it delivers each capability, on a five-point scale. These ratings are displayed side-by-side for all vendors, allowing easy comparisons between the different sets of features.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor: most or all defined requirements not achieved

2 = Fair: some requirements not achieved

3 = Good: meets requirements

4 = Excellent: meets or exceeds some requirements

5 = Outstanding: significantly exceeds requirements

To determine an overall score for each product in the use cases, the product ratings are multiplied by the weightings to come up with the product score in use cases.

The critical capabilities Gartner has selected do not represent all capabilities for any product; therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making a product/service decision.

GARTNER HEADQUARTERS

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

Regional Headquarters
AUSTRALIA
BRAZIL
JAPAN
UNITED KINGDOM

For a complete list of worldwide locations,
visit http://www.gartner.com/technology/about.jsp