Data Observability Buyers Guide

Software Provider and Product Assessment

EXECUTIVE SUMMARY

ISG Research

Data Observability

Maintaining data quality and trust is a perennial data management challenge, often preventing enterprises from operating at the speed of business. In addition to automating and coordinating the creation, scheduling and monitoring of data pipelines via data orchestration, it is also critical to monitor the quality and reliability of the data flowing through those data pipelines.

This is achieved using data observability, which ISG Research defines as providing the capabilities for monitoring the quality and reliability of data used for analytics and governance projects as well as the reliability and health of the overall data environment.

There has been a Cambrian explosion of data observability software providers in recent years, inspired by the observability platforms that provide an environment for monitoring metrics, traces and logs to track application and infrastructure performance.

> **A baseline requirement for data observability software is that it collects and measures metrics from data pipelines, data warehouses, data lakes and other data-processing platforms.**

To monitor and measure anything, it must first be instrumented, so a baseline requirement for data observability software is that it collects and measures metrics from data pipelines, data warehouses, data lakes and other data-processing platforms. Data observability software also collects, monitors and measures information on data lineage (dependencies between data), metadata (describing the attributes of the data, such as its age, volume, format and schema) and logs of human- or machine-based interaction with the data.

In addition to collecting and monitoring this information, some data observability software also enables the creation of models that can be applied to the various metrics, logs, dependencies and attributes to automate the detection of anomalies. Data observability software may also offer root cause analysis and the provision of alerts, explanations and recommendations to enable data engineers and data architects to accelerate the correction of issues, as well as take preemptive action to prevent data quality issues from reoccurring.

The metrics generated by data observability also form a critical component of the development and sharing of data products, providing the information by which data

consumers can gauge if a data product meets their requirements in terms of a variety of attributes, including validity, uniqueness, timeliness, consistency, completeness and accuracy.

> **As enterprises aspire to be more data-driven, it is critical to trust the data used to make those decisions.**

The importance of trust in data has arguably never been greater. As enterprises aspire to be more data-driven, it is critical to trust the data used to make those decisions. However, only 1 in 5 (20%) participants in ISG's Analytics and Data Benchmark Research are very confident in the ability to analyze the quantity of data needed to make informed business decisions.

Assessing the quality of data used to make business decisions is not only more important than ever but also increasingly difficult, given the growing range of data sources and the volume of data that needs to be evaluated. Poor data quality processes can result in security and privacy risks as well as unnecessary data storage and processing costs due to data duplication. Without trusted and reliable data, enterprises may make decisions based on old, incomplete, incorrect or poorly organized data—or worse, no data.

Enterprises have previously sought to improve trust in data using data quality tools and platforms to ensure that data used in decision-making processes is accurate, complete, consistent, timely and valid. These are assessed in ISG's Data Quality Buyers Guide.

Data observability complements the use of data quality products by automating the monitoring of data freshness, distribution, volume, schema and lineage as well as the reliability and health of the overall data environment.

The use of automation is an important characteristic of data observability software, expanding the volume of data that can be monitored while also improving efficiency compared to manual data monitoring and management. Automation is also integrated into data quality tools and platforms, however, to the extent that automation should not be considered a defining characteristic that separates data quality from data observability. A clearer distinction can be drawn from the scope and focus of the functionality. Data quality software is concerned with the suitability of the data for a given task. In comparison, data observability is concerned with the reliability and health of the overall data environment.

While data quality software helps users identify and resolve data quality problems, data observability software automates the detection and identification of the causes of data quality problems, such as avoiding downtime triggered by lost or inaccurate data due to schema changes, system failures or broken data pipelines, potentially enabling users to prevent data quality issues before they occur.

Data observability tools monitor not just the data in an individual environment for a specific purpose at a given point in time but also the associated upstream and downstream data pipelines. In doing so, data observability software ensures that data is available and up to date, avoiding downtime caused by lost or inaccurate data due to schema changes, system failures or broken data pipelines.

Data observability tools monitor not just the data in an individual environment for a specific purpose at a given point in time, but also the associated upstream and downstream data pipelines.

The two approaches are largely complementary. For example, when the data being assessed remains consistent, data quality tools might not detect a failed pipeline until the data has become out of date. Data observability tools could detect the failure long before the data quality issue arises. Conversely, a change in address might not be identified by data observability tools if the new information adhered to the correct schema. It could be detected—and remediated—using data quality tools.

The reciprocal nature of data quality and data observability software products is supported by the fact that some providers offer products in both categories. Others offer products that could be said to include functionality associated with both data observability and data quality.

Data observability is an important aspect of Data Operations, which provides an overall approach to automate data monitoring and the continuous delivery of data into operational and analytical processes through the application of agile development, DevOps and lean manufacturing by data engineering professionals in support of data production. In addition to the emergence of standalone data observability software specialists, we also see this functionality being included in wider DataOps platforms. This is a trend we expect to continue.

ISG asserts that through 2026, two-thirds of enterprises will invest in initiatives to improve trust in data through automated data observability tools addressing the detection, resolution and prevention of data reliability issues. Potential adopters of data observability are recommended to explore how the software can help increase trust in data as part of a broader evaluation of the people, processes, information and technology improvements required to deliver data-driven decision-making.

However, the evolution of data observability is still in its early stages. When evaluating data observability software, potential adopters are advised to pay close attention and assess products carefully. Some data observability products offer quality resolution and remediation functionality traditionally associated with data quality software, albeit not to the same depth and breadth. Additionally, some providers previously associated with data quality have

adopted the term data observability but may lack the depth and breadth of pipeline monitoring and error detection capabilities.

The ISG Buyers Guide™ for Data Observability evaluates software providers and products in key areas, including the detection, resolution and prevention of data reliability issues. This research evaluates the following software providers that offer products to address key elements of data observability as we define it: Acceldata, Ataccama, Bigeye, Collibra, Dagster Labs, DataKitchen, DataOps.live, DQLabs, Great Expectations, IBM, Informatica, Monte Carlo, Precisely, Qlik, RightData, Soda and Validio.

Buyers Guide Overview

For over two decades, ISG Research has conducted market research in a spectrum of areas across business applications, tools and technologies. We have designed the Buyers Guide to provide a balanced perspective of software providers and products that is rooted in an understanding of the business requirements in any enterprise. Utilization of our research methodology and decades of experience enables our Buyers Guide to be an effective method to assess and select software providers and products. The findings of this research undertaking contribute to our comprehensive approach to rating software providers in a manner that is based on the assessments completed by an enterprise.

> **ISG Research has designed the Buyers Guide to provide a balanced perspective of software providers and products that is rooted in an understanding of business requirements in any enterprise.**

The ISG Buyers Guide™ for Data Observability is the distillation of over a year of market and product research efforts. It is an assessment of how well software providers' offerings address enterprises' requirements for data observability software. The index is structured to support a request for information (RFI) that could be used in the request for proposal (RFP) process by incorporating all criteria needed to evaluate, select, utilize and maintain relationships with software providers. An effective product and customer experience with a provider can ensure the best long-term relationship and value achieved from a resource and financial investment.

In this Buyers Guide, ISG Research evaluates the software in seven key categories that are weighted to reflect buyers' needs based on our expertise and research. Five are product-experience related: Adaptability, Capability, Manageability, Reliability, and Usability. In addition, we consider two customer-experience categories: Validation, and Total Cost of Ownership/Return on Investment (TCO/ROI). To assess functionality, one of the components of Capability, we applied the ISG Research Value Index methodology and blueprint, which links the personas and processes for data observability to an enterprise's requirements.

The structure of the research reflects our understanding that the effective evaluation of software providers and products involves far more than just examining product features, potential revenue or customers generated from a provider's marketing and sales efforts. We believe it is important to take a comprehensive, research-based approach, since making the wrong choice of data observability technology can raise the total cost of ownership, lower the return on investment and hamper an enterprise's ability to reach its full performance potential. In addition, this approach can reduce the project's development and deployment

time and eliminate the risk of relying on a short list of software providers that does not represent a best fit for your enterprise.

ISG Research believes that an objective review of software providers and products is a critical business strategy for the adoption and implementation of data observability software and applications. An enterprise's review should include a thorough analysis of both what is possible and what is relevant. We urge enterprises to do a thorough job of evaluating data observability systems and tools and offer this Buyers Guide as both the results of our in-depth analysis of these providers and as an evaluation methodology.

How To Use This Buyers Guide

Evaluating Software Providers: The Process

We recommend using the Buyers Guide to assess and evaluate new or existing software providers for your enterprise. The market research can be used as an evaluation framework to establish a formal request for information from providers on products and customer experience and will shorten the cycle time when creating an RFI. The steps listed below provide a process that can facilitate best possible outcomes.

1. Define the business case and goals.
   Define the mission and business case for investment and the expected outcomes from your organizational and technological efforts.
2. Specify the business needs.
   Defining the business requirements helps identify what specific capabilities are required with respect to people, processes, information and technology.
3. Assess the required roles and responsibilities.
   Identify the individuals required for success at every level of the enterprise from executives to frontline workers and determine the needs of each.
4. Outline the project's critical path.
   What needs to be done, in what order and who will do it? This outline should make clear the prior dependencies at each step of the project plan.
5. Ascertain the technology approach.
   Determine the business and technology approach that most closely aligns to your enterprise's requirements.
6. Establish software provider evaluation criteria.
   Utilize the product experience: Adaptability, Capability, Manageability, Reliability and Usability, and the customer experience in TCO/ROI and Validation.
7. Evaluate and select the technology properly.
   Weight the categories in the technology evaluation criteria to reflect your enterprise's priorities to determine the short list of software providers and products.
8. Establish the business initiative team to start the project.
   Identify who will lead the project and the members of the team needed to plan and execute it with timelines, priorities and resources.

The Findings

All of the products we evaluated are feature-rich, but not all the capabilities offered by a software provider are equally valuable to types of workers or support everything needed to manage products on a continuous basis. Moreover, the existence of too many capabilities may be a negative factor for an enterprise if it introduces unnecessary complexity. Nonetheless, you may decide that a larger number of features in the product is a plus, especially if some of them match your enterprise's established practices or support an initiative that is driving the purchase of new software.

Factors beyond features and functions or software provider assessments may become a deciding factor. For example, an enterprise may face budget constraints such that the TCO evaluation can tip the balance to one provider or another. This is where the Value Index methodology and the appropriate category weighting can be applied to determine the best fit of software providers and products to your specific needs.

Overall Scoring of Software Providers Across Categories

The research finds Monte Carlo atop the list, followed by DQLabs and Acceldata. Providers that place in the top three of a category earn the designation of Leader. Informatica has done so in six categories, Monte Carlo in five, DQLabs in four, Acceldata and IBM in two, and Collibra and Qlik in one category.

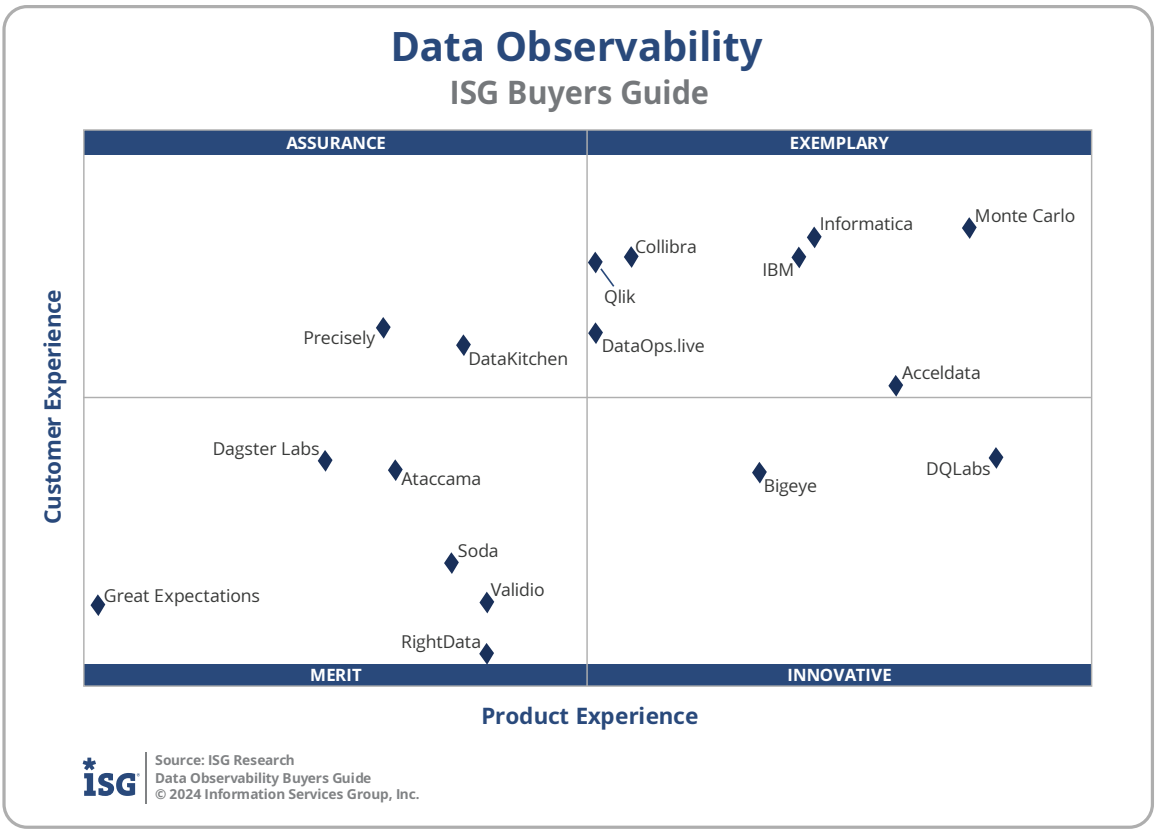
The overall representation of the research below places the rating of the Product Experience and Customer Experience on the *x* and *y* axes, respectively, to provide a visual representation and classification of the software providers. Those providers whose Product Experience have a higher weighted performance to the axis in aggregate of the five product categories place farther to the right, while the performance and weighting for the two Customer Experience categories determines placement on the vertical axis. In short, software providers that place closer to the upper-right on this chart performed better than those closer to the lower-left.

Data Observability
Overall

Providers	Grade	Performance
Monte Carlo	A-	Leader 86.1%
DQLabs	A-	Leader 82.2%
Acceldata	B++	Leader 79.2%
IBM	B++	76.6%
Informatica	B++	76.1%
Bigeye	B+	73.9%
Collibra	B+	71.4%
Qlik	B+	69.2%
DataOps.live	B	68.2%
DataKitchen	B	65.6%
Precisely	B-	61.4%
Soda	B-	61.0%
Ataccama	B-	60.6%
Validio	B-	60.5%
RightData	B-	59.1%
Dagster Labs	C++	55.3%
Great Expectations	C+	46.2%

ISG
Source: ISG Research
Data Observability Buyers Guide

The research places software providers into one of four overall categories: Assurance, Exemplary, Merit or Innovative. This representation classifies providers' overall weighted performance.



Exemplary: The categorization and placement of software providers in Exemplary (upper right) represent those that performed the best in meeting the overall Product and Customer Experience requirements. The providers rated Exemplary are: Acceldata, Collibra, DataOps.live, IBM, Informatica, Monte Carlo and Qlik.

Innovative: The categorization and placement of software providers in Innovative (lower right) represent those that performed the best in meeting the overall Product Experience requirements but did not achieve the highest levels of requirements in Customer Experience. The providers rated Innovative are Bigeye and DQLabs.

Assurance: The categorization and placement of software providers in Assurance (upper left) represent those that achieved the highest levels in the overall Customer Experience requirements but did not achieve the highest levels of Product Experience. The providers rated Assurance are: DataKitchen and Precisely.

Merit: The categorization of software providers in Merit (lower left) represents those that did not exceed the median of performance in Customer or Product Experience or surpass the threshold for the other three categories. The providers rated Merit are: Ataccama, Dagster Labs, Great Expectations, RightData, Soda and Validio.

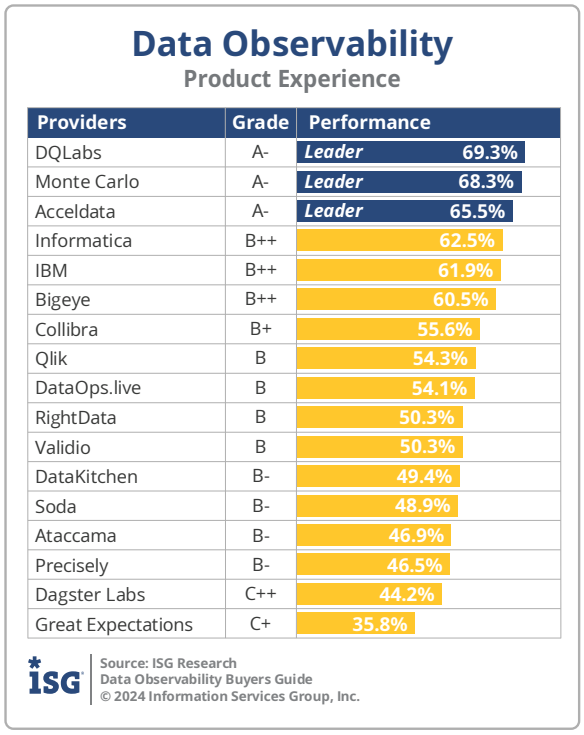
We warn that close provider placement proximity should not be taken to imply that the packages evaluated are functionally identical or equally well suited for use by every enterprise

or for a specific process. Although there is a high degree of commonality in how enterprises handle data observability, there are many idiosyncrasies and differences in how they do these functions that can make one software provider's offering a better fit than another's for a particular enterprise's needs.

We advise enterprises to assess and evaluate software providers based on organizational requirements and use this research as a supplement to internal evaluation of a provider and products.

Product Experience

The process of researching products to address an enterprise's needs should be comprehensive. Our Value Index methodology examines Product Experience and how it aligns with an enterprise's life cycle of onboarding, configuration, operations, usage and maintenance. Too often, software providers are not evaluated for the entirety of the product; instead, they are evaluated on market execution and vision of the future, which are flawed since they do not represent an enterprise's requirements but how the provider operates. As more software providers orient to a complete product experience, evaluations will be more robust.



The research results in Product Experience are ranked at 80%, or four-fifths, of the overall rating using the specific underlying weighted category performance. Importance was placed on the categories as follows: Usability (10%), Capability (25%), Reliability (15%), Adaptability (15%) and Manageability (15%). This weighting impacted the resulting overall ratings in this research. DQLabs, Monte Carlo and Acceldata were designated Product Experience Leaders.

Customer Experience

The importance of a customer relationship with a software provider is essential to the actual success of the products and technology. The advancement of the Customer Experience and the entire life cycle an enterprise has with its software provider is critical for ensuring satisfaction in working with that provider. Technology providers that have chief customer officers are more likely to have greater investments in the customer relationship and focus more on their success. These leaders also need to take responsibility for ensuring this commitment is made abundantly clear on the website and in the buying process and customer journey.

The research results in Customer Experience are ranked at 20%, or one-fifth, using the specific underlying weighted category performance as it relates to the framework of commitment and value to the software provider-customer relationship. The two evaluation categories are Validation (10%) and TCO/ROI (10%), which are weighted to represent their importance to the overall research.

The software providers that evaluated the highest overall in the aggregated and weighted Customer Experience categories are Monte Carlo, Informatica, Collibra and IBM. These category leaders best communicate commitment and dedication to customer needs. While not a Leader, Qlik was also found to meet a broad range of enterprise customer experience requirements.

Data Observability
Customer Experience

Providers	Grade	Performance
Monte Carlo	A-	Leader 17.2%
Informatica	A-	Leader 17.1%
Collibra	A-	Leader 16.7%
IBM	A-	Leader 16.7%
Qlik	A-	16.6%
Precisely	B++	15.2%
DataOps.live	B++	15.2%
DataKitchen	B+	14.9%
Acceldata	B+	13.8%
Dagster Labs	B	12.6%
DQLabs	B	12.6%
Ataccama	B-	12.4%
Bigeye	B-	12.4%
Soda	C++	10.5%
Validio	C+	9.7%
Great Expectations	C+	9.6%
RightData	C	8.5%

Source: ISG Research
Data Observability Buyers Guide
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Software providers that did not perform well in this category were unable to provide sufficient customer case studies to demonstrate success or articulate their commitment to customer experience and an enterprise's journey. The selection of a software provider means a continuous investment by the enterprise, so a holistic evaluation must include examination of how they support their customer experience.

Appendix: Software Provider Inclusion

For inclusion in the ISG Buyers Guide™ for Data Observability in 2024, a software provider must be in good standing financially and ethically, have at least $10 million in annual or projected revenue verified using independent sources, sell products and provide support on at least two continents and have at least 50 workers. The principal source of the relevant business unit's revenue must be software-related, and there must have been at least one major software release in the past 18 months.

The software provider must offer a product or products that supports agile and collaborative data operations and marketed as addressing at least one of the following functional areas, which are mapped into Buyers Guide capability criteria: reliability issue detection, reliability issues resolution and reliability issue prevention.

Data observability addresses one of the most significant impediments to generating value from data by providing an environment for monitoring the quality and reliability of data. Maintaining data quality and trust is a perennial data management challenge, often preventing enterprises from operating at the speed of business.

To be included in this Buyers Guide requires functionality that addresses the following sections of the capabilities document:

- Detection of data reliability issues
- Resolution of data reliability issues
- Prevention of data reliability issues

The research is designed to be independent of the specifics of software provider packaging and pricing. To represent the real-world environment in which businesses operate, we include providers that offer suites or packages of products that may include relevant individual modules or applications. If a software provider is actively marketing, selling and developing a product for the general market and it is reflected on the provider's website that the product is within the scope of the research, that provider is automatically evaluated for inclusion.

All software providers that offer relevant data observability products and meet the inclusion requirements were invited to participate in the evaluation process at no cost to them.

Software providers that meet our inclusion criteria but did not completely participate in our Buyers Guide were assessed solely on publicly available information. As this could have a significant impact on classification and ratings, we recommend additional scrutiny when evaluating those providers.

Products Evaluated

Provider	Product Names	Version	Release Month/Year
Acceldata	Data Observability Cloud	3.13.0	October 2024
Ataccama	Ataccama ONE	15.3.0	August 2024
Bigeye	Bigeye	November 2024	November 2024
Collibra	Data Quality and Observability	2024.10	October 2024
Dagster Labs	Dagster+	1.8.12	October 2024
DataKitchen	DataOps Observability	2.2.1	August 2024
DataOps.live	DataOps.live	October 2024	October 2024
DQLabs	DQLabs Platform	3.0.0	August 2024
Great Expectations	GX Cloud	1.2.1	October 2024
IBM	Data Observability by Databand	September 2024	September 2024
Informatica	Intelligent Data Management Cloud	October 2024	October 2024
Monte Carlo	Monte Carlo	October 2024	October 2024
Precisely	Data Integrity Suite - Data Observability	October 2024	October 2024
Qlik	Talend Cloud Data Inventory	R2024-09	September 2024
RightData	DataTrust	2024.06	June 2024
Soda	Soda	3.4.1	October 2024
Validio	Validio	4.2	October 2024

Providers of Promise

We did not include software providers that, as a result of our research and analysis, did not satisfy the criteria for inclusion in this Buyers Guide. These are listed below as "Providers of Promise."

Provider	Product	Annual Revenue >$10M	Operates on 2 Continents	At Least 50 Employees	GA Product/ Documentation
Acryl Data	Acryl Data	No	Yes	No	Yes
Anomalo	Anomalo	Yes	Yes	Yes	No
Ascend	Data Automation Cloud	No	Yes	No	Yes
Astronomer	Astro Observe	Yes	Yes	Yes	No
Avo.app	Avo	No	Yes	No	Yes
Collate	Collate	No	Yes	No	Yes
Datorios	Datorios	No	Yes	No	Yes
Decube	Decube	No	Yes	No	Yes
Elementary	Elementary	No	Yes	No	Yes
FirstEigen	DataBuck	No	Yes	No	Yes
Integrate.io	Data Observability	No	Yes	No	Yes
Kensu	Kensu	No	Yes	No	Yes
Kleene	Kleene	No	Yes	No	Yes
Lightup	Lightup	No	Yes	No	Yes
Masthead	Masthead	No	Yes	No	Yes
Metaplane	Metaplane	No	Yes	No	Yes
Mozart Data	Mozart Data	No	Yes	No	Yes

Orchestra Technologies	Orchestra	No	Yes	No	Yes
Pantomath	Pantomath	No	Yes	No	Yes
Saturam	Qualdo, Piperr	No	Yes	Yes	No
Sifflet	Sifflet	No	Yes	No	Yes
Snowflake	AI Data Cloud	Yes	Yes	Yes	No
Telmai	Telm.ai	No	Yes	No	Yes
Torana	iceDQ	No	Yes	Yes	No
UpSolver	Upsolver	No	Yes	No	Yes
Y42	Y42	Yes	Yes	Yes	No

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