

U.S. Exchange-Traded Fund Activation Process

Managed Investment Data

Overview

How does an exchange-traded fund become active in Morningstar's database?

For an ETF to be considered fully active in Morningstar's database, it must meet four of the five data readiness thresholds which Morningstar uses to track the completeness of information available for a record:

1. ID data readiness
2. Operations data readiness
3. Performance data readiness
4. Price data readiness
5. *Portfolio data readiness (optional)*

What does Morningstar need to activate an exchange-traded fund?

Morningstar requires five external documents to activate an ETF:

- Prior to inception date:
 - **SEC Form 485APOS**, collected from the EDGAR database (typically available 2-3 months before inception).
 - **New Fund Survey**, submitted by the fund company to NewFunds@morningstar.com. Fund managers are encouraged to reach out to request the current survey template as soon as the preliminary prospectus is filed, but our activation team will begin reaching out proactively about two months prior to fund inception date if a survey has not yet been submitted.
 - **SEC Form 485BPOS or 497**, also collected directly from the EDGAR database (typically available the day before inception).
- On inception date:
 - **The first daily performance feed with inception NAV**, delivered via FTP (and/or via email performance@morningstar.com) by the fund's price agent. Details of the feed delivery (sender information, delivery method, file format) should be confirmed to NewFunds@morningstar.com by the fund company prior to fund inception date.
- On listing date:
 - **The first daily market data feed with listing and price information**, delivered directly to Morningstar by the exchange.

What data is collected from the SEC filings?

SEC Form 485APOS: Morningstar reviews new Form 485APOS filings from the SEC's EDGAR database every day to collect key identifying information and preliminary operations data which can be used to create a new set of Morningstar identifiers for the upcoming fund in our

database. This facilitates the collection of data from other sources to a single record.

SEC Form 485BPOS or 497: Morningstar uses the Form 485BPOS or Form 497 to collect finalized operations data when the document is made available via the EDGAR database, typically the day prior to inception. This data is then stored on the inception date to meet the operations data readiness requirements.

What data is provided by the exchange?

Morningstar works with exchanges across the country to collect daily market price and listing information for exchange-traded instruments, including ETFs. We use listing information provided in the **New Fund Survey** to link the performance received by the exchange to the investment in our database.

What data does a fund's management company provide?

Morningstar collects a **New Fund Survey** from fund managers containing details used to populate basic information about the ETF that is used alongside other external documents to pass Morningstar's data readiness checks. If the fund company is also the fund's price agent, we collect a daily performance feed from them as well.

When should a fund's management company submit an activation request?

Fund managers are encouraged to submit a new fund survey as soon as possible after the preliminary prospectus has been filed with the SEC.

How do fund managers submit a request to Morningstar to activate an ETF and what data is required?

Fund companies can request a copy of the current **New Fund Survey** by emailing NewFunds@morningstar.com. The survey contains 19 data points of which only 13 are mandatory for all U.S. listings (the other six are only necessary for cross listings or Canadian funds). These are:

- | | |
|---------------------------|-------------------------------------|
| 1. Share Class Legal Name | 8. CUSIP |
| 2. Inception Date | 9. Actively Managed |
| 3. Inception NAV* | 10. Benchmark Currency Type |
| 4. Share Class Currency | 11. Benchmark Return Type |
| 5. Listing Date | 12. Daily Performance File Provider |
| 6. Exchange | 13. Identifier in Performance File |
| 7. Ticker | |

Note: If Inception NAV is not available at the time of New Fund Survey submission, this can be collected in the first performance feed delivered by the price agent.

What data is collected in the daily performance feed?

On a fund's inception date, the fund strikes a NAV which is then sent as the inception NAV along the identifier provided in the **New Fund Survey**, which is used to link the performance in the feed to the investment in Morningstar's database. When distributions are paid, they should be reported in this feed alongside the daily NAV. Any change to performance provider information should be reported to performance@morningstar.com immediately.

How do fund companies receive updates about the status of their activation requests?

The Activation team analyst working on an activation will confirm within 24 to 48 hours that the **New Fund Survey** has been received and no additional information is needed. They also notify the request submitter of activation completion after a fund is marked market price data ready on the listing date. Fund managers can also leverage their Data Consultant as an escalation point at any point during the activation process.

When will an exchange-traded fund start showing in Morningstar products?

New ETFs are generally visible on **Morningstar Direct** before markets open on their inception date, after operations data is finalized from the SEC Form 485BPOS or 497. After markets close on the fund inception date and the first NAV is received from the price agent's performance feed, the ETF is marked performance data ready and begins to be delivered in **Morningstar Data Feeds**, as early as 7pm Central Time. ETFs first appear on **Morningstar.com** prior to markets opening on their listing date.

How many teams at Morningstar are involved in ETF activations?

Five highly specialized teams of data professionals collaborate on ETF activations in the U.S. market to ensure the timeliness and quality of our data:

1. The **Activation team** serves as a fund company's single point of contact for new activations, creates new records with internal identifiers for new investments, and facilitates the flow of data into the new record.
2. The **Documents team** works to collect timely and accurate data from SEC filings on the EDGAR database and delivers initial filings to the operations data team when they become available. They also deliver updated filings with changes to operational data to the operations team for currently active investments.
3. The **Operations Data team** stores the operations data collected from SEC filings into the new investment created by the Activations team and performs regular quality checks on this data.
4. The **Performance Data team** connects the daily performance data delivered via feed from a fund's price agent to the new investment, and collects ongoing

performance data from the same feed, performing regular quality assurance checks.

5. The **Market Data team** collects market price and listing data from feeds received directly from exchanges and matches this data to investments based on the information collected by the activations team.
6. The **Portfolio Data team** collects holdings data if available for the fund. If data is being provided on the Advanced Portfolio Template, the Portfolio Data team works with the fund company's Data Consultant to onboard the fund.
7. The **Data Consultant team** serves as an escalation point for asset managers, works to provide clarity into the activation process, and helps onboard funds onto the Advanced Portfolio Template.

How does a fund management company submit portfolio data?

While not mandatory for a fund to be fully active, most ETF managers elect to submit daily full holdings data on a one-day lag to Morningstar, which Morningstar uses to calculate portfolio statistics, including asset allocation and market exposure breakdown, as well as Morningstar's signature Style Box data. Fund managers can work with their Data Consultant to learn more about the benefits of reporting holdings on our Advanced Portfolio Template, including enhanced portfolio risk and return analysis.

Quality

Quality is at the center of Morningstar's mission to empower investor success, which is why quality assurance checks are in place at every stage of the process to ensure great data from start to finish.

ID Data Readiness

- Activation Team
 - **Data completeness** checks are manual reviews of the New Fund Survey received from the fund company by the analyst on the activation team. These ensure all the relevant information has been received; the analyst works via email with the New Fund Survey submitter to fill any gaps.

Operations Data Readiness

- Activation Team
 - Our activation team has **quality checks** in place to review the accuracy of critical data points such as Fund ID, Investment type, Fund Name, IRS Tax classification & Inception date for every newly activated fund.
 - The activation team also performs a **monthly audit** on a sample of 30 newly activated mutual funds and ETFs for a comprehensive review of

operations data to ensure that our quality thresholds are being met on a large scale.

- Operations Data Team
 - **Business Rules** in place for Operations data points are used to run automated validation on mandatory data points for both completion and accuracy. For example, our system automatically checks that mandatory fields—such as IRS Tax Classification—are not left blank, and that the net expense ratio stored for a fund is equal to the gross expense ratio less any waivers available.
 - The Operations Data team also conducts a **monthly audit** on a sample of 30 newly activated funds' operational data points. This is a separate process from the activation team's audit, which greatly increases Morningstar's ability to detect errors.

Performance Data Readiness

- Performance Data Team
 - Similar to the Operations data team, our Performance Data team uses **business rules** as an automated level of quality control to prevent inaccurate or inconsistent data from being stored for fund performance. For example, we compare the share class currency in being provided in the performance file matches the share class currency stored in database, prevent NAVs from being stored prior to a fund's inception date, flag funds for analyst review if we receive a dividend outside of the specified dividend schedule, and more.
 - The Performance data team uses **readiness checks** both during activation and through the life of a fund to ensure that the level of data available in our database meets our minimum thresholds for data readiness. If a fund falls below this threshold, it is automatically flagged for review by an analyst, who will engage contacts at the fund's price agent to get the data needed to keep the fund active.

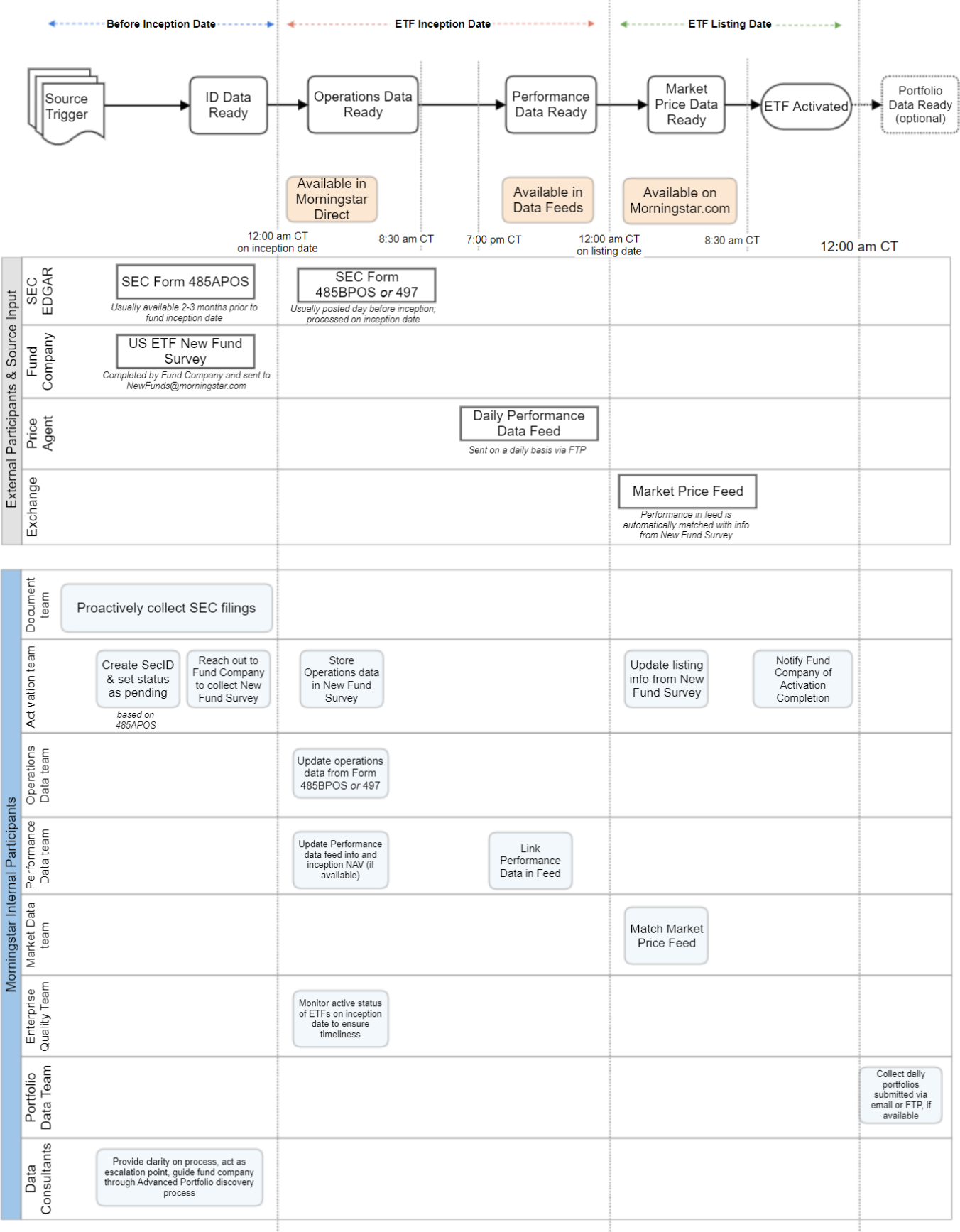
Market Data Readiness

- Activation Team
 - **Business Soft Rules** are in place if the listing information gets updated before listing date.
 - **Due Diligence Checks** are in place to ensure full data completeness before analysts on our Activation team communicate final confirmation of activation back to fund company.

Enterprise Quality Team

In addition to the quality checks owned by the teams mentioned above, Morningstar's Enterprise Quality team partners with various steps in the end-to-end data journey, monitoring all ETFs on their inception date. The monitor is conducted twice per day by 8:00 am CT and 12:00 pm CT; if any ETF is not published in Morningstar products, such as the investor website and Direct, an alert will be automatically generated to the Activation Team and database teams to follow up and ensure data is ready.

Timeline



Data Points

DATA READINESS STAGE	DATA POINT	DATA SOURCE(S)	DOCUMENT SOURCE	FIRST AVAILABLE IN PRODUCTS*
ID DATA READY	Fund Share Class Name	New Fund Survey <i>and</i> 485APOS	Fund Company, SEC	8:30am CT on inception date
	Fund Name	Form 485APOS	SEC	8:30am CT on inception date
	Date of Inception	New Fund Survey	Fund Company	8:30am CT on inception date
	Investment Provider	Form 485APOS	SEC	8:30am CT on inception date
	Share Class Currency	New Fund Survey	Fund Company	8:30am CT on inception date
	Investment Legal Type	Form 485APOS	SEC	8:30am CT on inception date
	Domicile	Form 485APOS	SEC	8:30am CT on inception date
	Contract ID	Form 485APOS	SEC	Not output to Product
	CIK	Form 485APOS	SEC	8:30am CT on inception date
OPERATIONS DATA READY	CUSIP	New Fund Survey	Fund Company	8:30am CT on inception date
	ISIN	Derived from CUSIP	Fund Company	8:30am CT on inception date
	Actively/Passively Managed	New Fund Survey	Fund Company	8:30am CT on inception date
	Benchmark/Index	New Fund Survey	Fund Company	8:30am CT on inception date
	Morningstar Category	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Global Category	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Institutional Category	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Investment Objective	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Principle Strategy	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	IRS Tax Classification	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Principle Risk	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Manager	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Manager Start Date	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Manager Ownership	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Investment Provider	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Investment Advisor	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Sub-Advisor	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Fiscal Year End	Form 485BPOS <i>or</i> Form 497	SEC	Not output to Product
	Management Fee	Form 485BPOS <i>or</i> Form 497	SEC	8:30am CT on inception date
	Gross & Net Expense Ratio	Form 485BPOS <i>or</i> Form 497	SEC	7:00pm CT on inception date
	Creation Unit	Form 485BPOS <i>or</i> Form 497	SEC	Not output to Product
	Transaction Fee	Form 485BPOS <i>or</i> Form 497	SEC	7:00pm CT on inception date
	Toll Free Number	Form 485BPOS <i>or</i> Form 497	SEC	On Inception date
	NASDAQ Type	New Fund Survey	Fund Company	7:00pm CT on inception date
PERFORMANCE DATA READY	Price Agent and Contact Info	New Fund Survey	Fund Company	Not output to Product
	Unique Identifier in Daily Performance File	New Fund Survey	Fund Company	Not output to Product
	Ongoing NAV /Net Raw Returns	Performance data feed	Price Agent	7:00pm CT on inception date
	Ongoing Share Class TNA	Performance data feed	Price Agent	7:00pm CT on inception date
	Ongoing Fund TNA	Performance data feed	Price Agent	7:00pm CT on inception date

	Performance Data Feed Information (Unique Identifier, File Name, FTP Account, FTP Folder, etc.)	Confirmed via email to activation analyst prior to listing date	Price Agent	Not output to Product
	Inception NAV	New Fund Survey <i>or</i> Performance data feed	Price Agent <i>or</i> Fund Company	7:00pm CT on inception date
	Distribution & Capital Gain Frequency	Confirmed via email to activation analyst prior to listing date	Fund Company	7:00pm CT on inception date
MARKET PRICE DATA READY	Listing Exchange	New Fund Survey <i>and</i> Form 485BPOS	Fund Company, SEC	8:30am CT on listing date
	Listing Ticker	New Fund Survey <i>and</i> Market Price data feed	Fund Company, Exchange	8:30am CT on listing date
	Listing Currency	Market price data feed	Exchange	8:30am CT on listing date
	Listing Date	New Fund Survey <i>and</i> Market Price data feed	Fund Company, Exchange	8:30am CT on listing date
	USCO Tag	Internal tag: indicates fund is traded on exchange	Fund Company, Exchange	Not output to Product
	Market Price	Market price data feed	Exchange	7:00pm CT on listing date

Times listed above are an estimate based on average observable process times and may vary slightly for a given activation based on sync times and resource bandwidth at several stages of the data flow. Refer to “When will an exchange-traded fund start showing in Morningstar products?**” in the Overview section of this document for more information.*