BLACROCK FUNDS V
BlackRock Mortgage-Backed Securities Fund
(the "Fund")

Supplement dated June 6, 2025 to the
Summary Prospectus, Prospectus and
Statement of Additional Information ("SAI") of the Fund,
each dated January 28, 2025, as supplemented to date

At a meeting held on June 5, 2025, the Board of Trustees of the Fund (the "Board") on behalf of the Fund, approved the Reorganization (as defined below) of the Fund into a newly-established exchange-traded fund ("ETF"), which will be managed by BlackRock Fund Advisors, an investment adviser under common control with BlackRock Advisors, LLC, the Fund's current investment adviser ("BlackRock"). The Board, including all of the Trustees who are not "interested persons" (as defined in the Investment Company Act of 1940, as amended) of the Fund, determined, with respect to the Reorganization, that participation in the Reorganization is in the best interests of the Fund and the interests of existing shareholders of the Fund will not be diluted as a result of the Reorganization.

The Fund will be reorganized into an ETF through the reorganization of the Fund into a newly-created ETF, iShares Mortgage-Backed Securities Active ETF (the "Acquiring Fund"), which is a series of BlackRock ETF Trust II. The Fund and the Acquiring Fund will have identical investment objectives, fundamental investment policies, investment strategies and investment risk profiles. Following the reorganization, the Fund will be liquidated (such reorganization and liquidation, the "Reorganization").

The Reorganization is anticipated to close as of the close of trading on the New York Stock Exchange on January 23, 2026. The Acquiring Fund has not commenced investment operations.

Importantly, in order to receive shares of the Acquiring Fund as part of the Reorganization, Fund shareholders must hold their shares of the Fund through a brokerage account that can accept shares of an ETF (the Acquiring Fund). If Fund shareholders do not hold their shares of the Fund through that type of brokerage account, they will not receive shares of the Acquiring Fund as part of the Reorganization. For Fund shareholders that do not currently hold their shares of the Fund through a brokerage account that can hold shares of the Acquiring Fund, please see the Q&A that follows for additional actions that such Fund shareholders must take to receive shares of the Acquiring Fund as part of the Reorganization. No further action is required for Fund shareholders that hold shares of the Fund through a brokerage account that can hold shares of the Acquiring Fund.

BlackRock believes that the Reorganization will provide multiple benefits for investors of the Fund, including lower net expenses, additional trading flexibility and increased portfolio holdings transparency.

The Reorganization will be conducted pursuant to an Agreement and Plan of Reorganization (the "Plan"). The Reorganization is structured to be a tax-free reorganization under the U.S. Internal Revenue Code of 1986, as amended. As a result, Fund shareholders generally will not recognize a taxable gain (or loss) for U.S. tax purposes as a result of the Reorganization (except with respect to cash received, as explained elsewhere in this Supplement).

In connection with the Reorganization, shareholders of the Fund will receive ETF shares of the Acquiring Fund equal in value to the number of shares of the Fund they own, including a cash payment in lieu of fractional shares of the Acquiring Fund, which cash payment may be taxable.

Completion of the Reorganization is subject to a number of conditions under the Plan, but shareholders of the Fund are not required to approve the Reorganization. Existing Fund shareholders will receive a combined prospectus/information statement describing in detail both the Reorganization and the Acquiring Fund, and summarizing the Board's considerations in approving the Reorganization.

The following changes will take effect either immediately or on an upcoming future date as described below. These actions include limits on new purchases of certain Fund shares, the removal of sales charges on purchases of Fund shares, the removal of contingent deferred sales charges on redemptions of Fund shares, and the waiver of Distribution and Service (Rule 12b-1) Fees on Fund shares.

Consequently, effective immediately, the Fund's Summary Prospectuses and Prospectuses are amended as follows:

1. Investor A, Investor C, Institutional and Class K Shares of the Fund will be offered only on a limited basis.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Summary Prospectus and Prospectus entitled "Key Facts About BlackRock Mortgage-Backed Securities Fund — Purchase and Sale of Fund Shares" and "Fund Overview — Key Facts About BlackRock Mortgage-Backed Securities Fund — Purchase and Sale of Fund Shares" is hereby amended to add the following as the first paragraph of such section:

Effective July 1, 2025, Investor A, Investor C and Institutional Shares of the Fund are offered on a limited basis.

The section of the Class K Shares Summary Prospectus and Prospectus entitled "Key Facts About BlackRock Mortgage-Backed Securities Fund — Purchase and Sale of Fund Shares" and "Fund Overview — Key Facts About BlackRock Mortgage-Backed Securities Fund — Purchase and Sale of Fund Shares" is hereby amended to add the following as the first paragraph of such section:

Effective July 1, 2025, Class K Shares of the Fund are offered on a limited basis.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Availability — Investor A" is hereby deleted in its entirety and replaced with the following:

Generally available through Financial Intermediaries. Availability will be limited as follows:

- Effective beginning July 1, 2025, no new accounts held directly with BlackRock (including IRAs) will be opened.

- Effective beginning December 31, 2025, shareholders holding their accounts directly with BlackRock (including IRAs) will not be permitted to purchase additional Investor A Shares.

- Effective beginning January 16, 2026, no new accounts to purchase Investor A Shares through a Financial Intermediary will be opened.

- Effective beginning January 16, 2026, shareholders holding accounts through a Financial Intermediary will not be permitted to purchase additional Investor A Shares.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Availability — Investor C" is hereby deleted in its entirety and replaced with the following:

Generally available through Financial Intermediaries. Must be held through a Financial Intermediary. Availability will be limited as follows:

- Effective beginning January 16, 2026, no new accounts to purchase Investor C Shares through a Financial Intermediary will be opened.

- Effective beginning January 16, 2026, shareholders holding accounts through a Financial Intermediary will not be permitted to purchase additional Investor C Shares.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled “Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Availability — Institutional” is hereby amended to add the following at the end of such section:

Availability will be further limited as follows:

- Effective beginning July 1, 2025, no new accounts held directly with BlackRock (including IRAs) will be opened.

- Effective beginning December 31, 2025, shareholders holding their accounts directly with BlackRock (including IRAs) will not be permitted to purchase additional Institutional Shares.

- Effective beginning January 16, 2026, no new accounts to purchase Institutional Shares through a Financial Intermediary will be opened.

- Effective beginning January 16, 2026, shareholders holding accounts through a Financial Intermediary will not be permitted to purchase additional Institutional Shares.

The section of the Class K Shares Prospectus entitled “Account Information — Details About the Share Class — Class K Shares at a Glance — Availability” is hereby amended to add the following at the end of such section:

Availability will be further limited as follows:

- Effective beginning July 1, 2025, no new accounts held directly with BlackRock (including IRAs) will be opened.

- Effective beginning December 31, 2025, shareholders holding their accounts directly with BlackRock (including IRAs) will not be permitted to purchase additional Class K Shares.

- Effective beginning January 16, 2026, no new accounts to purchase Class K Shares through a Financial Intermediary will be opened.

2. Sales Charge Waiver on Investor A Shares.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Summary Prospectus and Prospectus entitled “Key Facts About BlackRock Mortgage-Backed Securities Fund — Fees and Expenses of the Fund” and “Fund Overview — Key Facts About BlackRock Mortgage-Backed Securities Fund — Fees and Expenses of the Fund” is hereby amended to add the following sentence to the paragraph preceding the fee table:

Beginning on December 1, 2025, no initial sales charge will be imposed on purchases of Investor A Shares of the Fund.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Initial Sales Charge? — Investor A" is hereby deleted in its entirety and replaced with the following:

Yes. Payable at time of purchase. Lower sales charges are available for larger investments. Beginning on December 1, 2025, no initial sales charge will be imposed on purchases. As a result, any subsequent purchases of the Fund will not be eligible assets for future rights of accumulation or letter of intent purchases.

3. Contingent deferred sales charge waiver on Investor A and Investor C Shares of the Fund.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Summary Prospectus and Prospectus entitled "Key Facts About BlackRock Mortgage-Backed Securities Fund — Fees and Expenses of the Fund" and "Fund Overview — Key Facts About BlackRock Mortgage-Backed Securities Fund — Fees and Expenses of the Fund" is hereby amended to add the following sentence to the paragraph preceding the fee table:

Beginning on December 1, 2025, no contingent deferred sales charge ("CDSC") will be imposed on redemptions of Investor A Shares or Investor C Shares.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Deferred Sales Charge? — Investor A" is hereby deleted in its entirety and replaced with the following:

No. (May be charged for purchases of $1 million or more that are redeemed within 18 months). Beginning on December 1, 2025, no contingent deferred sales charge will be imposed on redemptions.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Deferred Sales Charge? — Investor C" is hereby deleted in its entirety and replaced with the following:

Yes. Payable if you redeem within one year of purchase. Beginning on December 1, 2025, no contingent deferred sales charge will be imposed on redemptions.

4. Forgiving Letter of Intent Obligations.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — Details About the Share Classes — Letter of Intent" is hereby amended to add the following paragraph to that section:

Effective July 1, 2025, any current Letter of Intent under which Investor A Shares of the Fund were purchased will be considered completed. As a result, after that date, commissions to dealers will not be adjusted or paid on the difference between the Letter of Intent amount and the amount actually invested before July 1, 2025. Because a Letter of Intent may include Investor A Shares purchases of other BlackRock Funds (other than the Fund), this completion will cancel the Letter of Intent for all future Investor A Shares purchases of those funds. You will need to enter into a new Letter of Intent if you want to continue to make Investor A Shares purchases in other BlackRock Funds at a reduced initial sales charge. This change may also apply to the Letters of Intent described in the "Intermediary-Defined Sales Charge Waiver Policies" section beginning on page A-1 of the Fund's prospectus.

5. Waiver of Distribution and Service (12b-1) Fees on Investor A and Investor C Shares of the Fund.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Distribution and Service (12b-1) Fees? — Investor A" is hereby deleted in its entirety and replaced with the following:

No Distribution Fee. 0.25% Annual Service Fee. All 12b-1 Service Fees will be voluntarily waived beginning December 1, 2025.

The section of the Investor A Shares, Investor C Shares and Institutional Shares Prospectus entitled "Account Information — How to Choose the Share Class that Best Suits Your Needs — Share Classes at a Glance — Distribution and Service (12b-1) Fees? — Investor C" is hereby deleted in its entirety and replaced with the following:

0.75% Annual Distribution Fee. 0.25% Annual Service Fee. All 12b-1 Distribution and Service Fees will be voluntarily waived beginning December 1, 2025.

The following is added to the end of the first paragraph of the section of each Prospectus entitled "Management of the Fund — Dividends, Distributions and Taxes:

The last day that dividend reinvestments in the Fund will be available is January 16, 2026. Subsequent dividend distributions will be paid in cash in advance of the Reorganization.

In anticipation of the Reorganization, the final date to purchase Fund shares, or to exchange shares of another BlackRock Fund for Fund shares, will be January 16, 2026 (December 31, 2025 for existing direct accounts (defined below) or through a direct IRA). The final date to exchange Fund shares for another BlackRock Fund will be January 22, 2026 (January 16, 2026 for existing direct accounts and direct IRAs). The final date to redeem Fund shares will be on January 22, 2026.

IMPORTANT NOTICE ABOUT YOUR FUND ACCOUNT
QUESTIONS AND ANSWERS

The following is a brief Q&A that provides information to help you to determine if you need to take action with respect to your Fund shareholder account prior to the Reorganization in order to receive shares of the Acquiring Fund.

Q. What types of shareholder accounts can receive shares of the Acquiring Fund as part of the Reorganization?

A. If you hold your shares of the Fund in a brokerage account that permits you to purchase securities traded in the stock market, such as ETFs or other types of stocks, then you will be eligible to receive shares of the Acquiring Fund in the Reorganization. No further action is required.

Q. What types of shareholder accounts cannot receive shares of the Acquiring Fund as part of the Reorganization?

A. The following account types cannot hold shares of ETFs:

Non-Accommodating Brokerage Accounts. If you hold your shares of the Fund in a brokerage account with a financial intermediary that only allows you to hold shares of mutual funds in the account, you will need to contact your financial intermediary to set up a brokerage account that permits investments in ETF shares. If such a change is not made before the Reorganization, you will not receive shares of the Acquiring Fund as part of the Reorganization. Instead, your investment will be liquidated and you will receive cash equal in value to the net asset value (“NAV”) of your Fund shares.

Non-Accommodating Retirement Accounts. If you hold your shares of the Fund through an individual retirement account (“IRA”) or group retirement plan whose plan sponsor does not have the ability to hold shares of ETFs on its platform, you may need to redeem your shares prior to the Reorganization or, if applicable, your financial intermediary may transfer your investment in the Fund to a different investment option prior to the Reorganization. If either such a change is not made before the Reorganization, you will not receive shares of the Acquiring Fund as part of the Reorganization. Instead, your investment will be liquidated and you will receive cash equal in value to the NAV of your Fund shares.

Direct Accounts. If you hold your shares of the Fund in an account directly with the Fund at its transfer agent, BNY Mellon Investment Servicing (US) Inc. (a “direct account”), you should transfer your shares of the Fund to a brokerage account that can accept shares of the Acquiring Fund prior to the Reorganization. For this purpose, a direct account includes a direct IRA. If you hold your shares of the Fund through a direct IRA and do not take action prior to January 16, 2026, your Fund shares will be exchanged for shares of BlackRock Summit Cash Reserves Fund (the “Money Market Fund”), a series of BlackRock Financial Institutions Series Trust, equal in value to the NAV of your Fund shares. Such shareholders holding Investor A Shares of the Fund will be exchanged into Investor A Shares of the Money Market Fund, such shareholders holding Investor C Shares of the Fund will be exchanged into Investor C Shares of the Money Market Fund, and such shareholders holding Institutional Shares of the Fund will be exchanged into Institutional Shares of the Money Market Fund. You have a direct account if you receive quarterly account statements directly from the Fund and not from a third-party broker-dealer.

The redemption of Fund shares or the transfer of Fund shares to a different investment option prior to the Reorganization, or the receipt of cash or shares in a fund other than the Acquiring Fund in exchange for Fund shares, is expected to be a taxable transaction to shareholders in non-tax qualified accounts. If you are unsure about the ability of your account to accept shares of the Acquiring Fund, please call (800) 441-7762 or contact your financial advisor or other financial intermediary.

Q. How do I transfer my Fund shares from a direct account to a brokerage account that will accept Acquiring Fund shares?

A. Transferring your shares from a direct account to a brokerage account that can accept shares of the Acquiring Fund should be a simple process. If you have a brokerage account or a relationship with a brokerage firm, please talk to your broker and inform the broker that you would like to transfer a mutual fund position that you hold directly with the Fund into your brokerage account. Also inform your broker that such an account will need to be set up to accept shares of an ETF, such as the Acquiring Fund. If you don't have a brokerage account or a relationship with a brokerage firm, you will need to open an account.

We suggest you provide your broker with a copy of your quarterly statement from the Fund. Your broker will require your account number with the Fund, which can be found on your statement. Your broker will help you complete a form to initiate the transfer. Once you sign that form, your broker will submit the form to the transfer agent directly, and the shares will be transferred into your brokerage account. ***The sooner you initiate the transfer, the better.***

Q. How do I transfer my Fund shares from a non-accommodating brokerage account to a brokerage account that will accept Acquiring Fund shares?

A. The broker where you hold your Fund shares should be able to assist you in changing the characteristics of your brokerage account to an account that is permitted to invest in ETF shares. Contact your broker right away to make the necessary changes to your account.

Q. What will happen if I do not have a brokerage account that can accept Acquiring Fund shares at the time of the Reorganization?

A. In order to receive shares of the Acquiring Fund as part of the Reorganization, you must hold your shares of the Fund through a brokerage account that can accept shares of an ETF (the Acquiring Fund) as follows:

- *Non-Accommodating Brokerage Accounts.* If you hold your shares of the Fund in a brokerage account with a financial intermediary that only allows you to hold shares of mutual funds in the account, you will need to contact your financial intermediary to set up a brokerage account that permits investments in ETF shares. If such a change is not made before the Reorganization, you will not receive shares of the Acquiring Fund as part of the Reorganization. Instead, your investment will be liquidated and you will receive cash equal in value to the NAV of your Fund shares.

- *Non-Accommodating Retirement Accounts.* If you hold your shares of the Fund through an IRA or group retirement plan whose plan sponsor does not have the ability to hold shares of ETFs on its platform, you may need to redeem your shares prior to the Reorganization or, if applicable, your financial intermediary may transfer your investment in the Fund to a different investment option prior to the Reorganization. If either such a change is not made before the Reorganization, you will not receive shares of the Acquiring Fund as part of the Reorganization. Instead, your investment will be liquidated and you will receive cash equal in value to the NAV of your Fund shares.

- *Direct Accounts.* If you hold your shares of the Fund in a direct account, you should transfer your shares of the Fund to a brokerage account that can accept shares of the Acquiring Fund prior to the Reorganization. If such a change is not made before January 16, 2026, you will not receive shares of the Acquiring Fund as part of the Reorganization. Instead, your investment will be liquidated on January 16, 2026 and you will receive cash equal in value to the NAV of your Fund shares.

- *Direct IRA.* If you hold your shares of the Fund through a direct IRA and you do not take action to transfer your investment in the Fund to a different investment option prior to January 16, 2026, your Fund shares will be exchanged for shares of BlackRock Summit Cash Reserves Fund (the "Money Market Fund"), a series of BlackRock Financial Institutions Series Trust, equal in value to the NAV of your Fund shares. Such shareholders holding Investor A Shares of the Fund will be exchanged into Investor A Shares of the Money Market Fund, such shareholders holding Investor C Shares of the Fund will be exchanged into Investor C Shares of the Money Market Fund, and such shareholders holding Institutional Shares of the Fund will be exchanged into Institutional Shares of the Money Market Fund.

  In some cases, the liquidation of your investment and return of cash, or the transfer of your investment, may be subject to fees and expenses and it may take time for you to receive your cash. **Additionally, the redemption of Fund shares or the transfer of Fund shares to a different investment option prior to the Reorganization, or the receipt of cash or shares in a fund other than the Acquiring Fund in exchange for Fund shares, is expected to be a taxable transaction to shareholders in non-tax qualified accounts.** Please consult with your financial intermediary for more information on the impact that the Reorganization will have on you and your investments.

Q. What if I do not want to own shares of the Acquiring Fund?

A. If you do not want to receive shares of the Acquiring Fund in connection with the Reorganization, you can exchange your Fund shares for shares of another BlackRock mutual fund or redeem your Fund shares. Prior to doing so, however, you should consider the tax consequences associated with either action. **Each of the exchange of your Fund shares for shares of another BlackRock mutual fund or the redemption of your Fund shares will be a taxable transaction to shareholders in non-tax qualified accounts.** The last date to exchange your shares into another BlackRock mutual fund prior to the Reorganization is January 22, 2026 (January 16, 2026 for existing direct accounts and direct IRAs). The last date to redeem your shares prior to the Reorganization is January 22, 2026. These dates may change if the closing date of the Reorganization changes. Any changes to the closing date of the Reorganization will be communicated to shareholders.

* * *

In connection with the Reorganization discussed herein, a prospectus/information statement included in a registration statement on Form N-14 has been filed with the Securities and Exchange Commission (the "SEC"). The registration statement may be amended or withdrawn and the prospectus/information statement will not be distributed to shareholders of the Fund unless and until the registration statement is declared effective by the SEC. Investors are urged to read the materials and any other relevant documents when they become available because they will contain important information about the Reorganization. Free copies of the materials will be available on the SEC's web site at www.sec.gov. A paper copy of these materials can be obtained at no charge by calling (800) 441-7762.

This communication is for informational purposes only and does not constitute an offer of any securities for sale. No offer of securities will be made except pursuant to a prospectus meeting the requirements of Section 10 of the Securities Act of 1933.

Shareholders should retain this Supplement for future reference.

PR2SAI-MBS-0625SUP

BlackRock.

JANUARY 28, 2025

Summary Prospectus

BlackRock Funds V | Investor and Institutional Shares

- **BlackRock Mortgage-Backed Securities Fund**
  Investor A: BGPAX • Investor C: BGPCX • Institutional: BGNIX

Before you invest, you may want to review the Fund's prospectus, which contains more information about the Fund and its risks. You can find the Fund's prospectus (including amendments and supplements), reports to shareholders and other information about the Fund, including the Fund's statement of additional information, online at https://www.blackrock.com/prospectus. You can also get this information at no cost by calling (800) 441-7762 or by sending an e-mail request to **prospectus.request@blackrock.com**, or from your financial professional. The Fund's prospectus and statement of additional information, both dated January 28, 2025, as amended and supplemented from time to time, are incorporated by reference into (legally made a part of) this Summary Prospectus.

This Summary Prospectus contains information you should know before investing, including information about risks. Please read it before you invest and keep it for future reference.

The Securities and Exchange Commission has not approved or disapproved these securities or passed upon the adequacy of this Summary Prospectus. Any representation to the contrary is a criminal offense.

Not FDIC Insured • May Lose Value • No Bank Guarantee

NM0625U-4566636-9/20

Summary Prospectus

Key Facts About BlackRock Mortgage-Backed Securities Fund

Investment Objective

The investment objective of the BlackRock Mortgage-Backed Securities Fund (the "Fund") (formerly, BlackRock GNMA Portfolio) is to seek to maximize total return, consistent with income generation and prudent investment management.

Fees and Expenses of the Fund

This table describes the fees and expenses that you may pay if you buy, hold and sell shares of the Fund. **You may pay other fees, such as brokerage commissions and other fees to your financial professional or your selected securities dealer, broker, investment adviser, service provider or industry professional (including BlackRock Advisors, LLC ("BlackRock") and its affiliates) (each, a "Financial Intermediary"), which are not reflected in the table and example below.** You may qualify for sales charge discounts if you and your family invest, or agree to invest in the future, at least $25,000 in the fund complex advised by BlackRock or its affiliates. More information about these and other discounts is available from your Financial Intermediary and in the "Details About the Share Classes" and the "Intermediary-Defined Sales Charge Waiver Policies" sections on pages 24 and A-1, respectively, of the Fund's prospectus and in the "Purchase of Shares" section on page II-94 of Part II of the Fund's Statement of Additional Information.

Shareholder Fees (fees paid directly from your investment)	**Investor A Shares**	**Investor C Shares**	**Institutional Shares**
Maximum Sales Charge (Load) Imposed on Purchases (as a percentage of offering price)	4.00%	None	None
Maximum Deferred Sales Charge (Load) (as a percentage of offering price or redemption proceeds, whichever is lower)	None[1]	1.00%[2]	None

Annual Fund Operating Expenses (expenses that you pay each year as a percentage of the value of your investment)	**Investor A Shares**	**Investor C Shares**	**Institutional Shares**
Management Fee[3]	0.34%	0.34%	0.34%
Distribution and/or Service (12b-1) Fees	0.25%	1.00%	None
Other Expenses	0.31%	0.28%	0.32%
Miscellaneous Other Expenses	0.30%	0.27%	0.31%
Interest Expense	0.01%	0.01%	0.01%
Total Annual Fund Operating Expenses	0.90%	1.62%	0.66%
Fee Waivers and/or Expense Reimbursements[3,4]	(0.22)%	(0.19)%	(0.23)%
Total Annual Fund Operating Expenses After Fee Waivers and/or Expense Reimbursements[3,4]	0.68%	1.43%	0.43%

1 A contingent deferred sales charge ("CDSC") of 0.50% is assessed on certain redemptions of Investor A Shares made within 18 months after purchase where no initial sales charge was paid at the time of purchase as part of an investment of $1,000,000 or more.

2 There is no CDSC on Investor C Shares after one year.

3 As described in the "Management of the Fund" section of the Fund's prospectus beginning on page 40, BlackRock has contractually agreed to waive the management fee of the Fund with respect to any portion of the Fund's assets estimated to be attributable to investments in other equity and fixed-income mutual funds and exchange-traded funds ("ETFs") managed by BlackRock or its affiliates that have a contractual management fee, through June 30, 2026. In addition, BlackRock has contractually agreed to waive its management fees by the amount of investment advisory fees the Fund pays to BlackRock indirectly through its investment in money market funds managed by BlackRock or its affiliates, through June 30, 2026. The contractual agreements may be terminated upon 90 days' notice by a majority of the non-interested trustees of BlackRock Funds V (the "Trust") or by a vote of a majority of the outstanding voting securities of the Fund.

4 As described in the "Management of the Fund" section of the Fund's prospectus beginning on page 40, BlackRock has contractually agreed to waive and/or reimburse fees or expenses in order to limit Total Annual Fund Operating Expenses After Fee Waivers and/or Expense Reimbursements (excluding Dividend Expense, Interest Expense, Acquired Fund Fees and Expenses and certain other Fund expenses) to 0.67% (for Investor A Shares), 1.42% (for Investor C Shares) and 0.42% (for Institutional Shares) of average daily net assets through June 30, 2026. The contractual agreement may be terminated upon 90 days' notice by a majority of the non-interested trustees of the Trust or by a vote of a majority of the outstanding voting securities of the Fund.

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Example:

This Example is intended to help you compare the cost of investing in the Fund with the cost of investing in other mutual funds. The Example assumes that you invest $10,000 in the Fund for the time periods indicated and then redeem all of your shares at the end of those periods. The Example also assumes that your investment has a 5% return each year and that the Fund's operating expenses remain the same. Although your actual costs may be higher or lower, based on these assumptions your costs would be:

	1 Year	3 Years	5 Years	10 Years
Investor A Shares	$467	$654	$858	$1,444
Investor C Shares	$246	$493	$863	$1,713
Institutional Shares	$ 44	$188	$345	$ 801

You would pay the following expenses if you did not redeem your shares:

	1 Year	3 Years	5 Years	10 Years
Investor C Shares	$146	$493	$863	$1,713

Portfolio Turnover:

The Fund pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs and may result in higher taxes when shares are held in a taxable account. These costs, which are not reflected in annual fund operating expenses or in the Example, affect the Fund's performance. During the most recent fiscal year, the Fund's portfolio turnover rate was 1,338% of the average value of its portfolio.

Principal Investment Strategies of the Fund

Under normal circumstances, the Fund invests at least 80% of its net assets, plus any borrowings for investment purposes, in mortgage-backed securities ("MBS") and derivatives that provide investment exposure to such securities or to one or more market risk factors associated with such securities. Such securities include, but are not limited to, securities issued by Government National Mortgage Association ("GNMA"), Federal National Mortgage Association ("Fannie Mae") and Federal Home Loan Mortgage Corporation ("Freddie Mac") as well as other U.S. Government securities.

The Fund may participate in to be announced ("TBA") transactions. A TBA transaction is a method of trading MBS where the buyer and seller agree upon general trade parameters such as agency, settlement date, par amount and price at the time the contract is entered into but the MBS are delivered in the future, generally 30 days later. The actual pools of MBS delivered in a TBA transaction typically are not determined until two days prior to settlement date.

The Fund measures its performance against the Bloomberg U.S. MBS Index (the "Benchmark"). Under normal circumstances, the Fund seeks to maintain an average portfolio duration that is within ±1 year of the duration of the Benchmark.

The Fund makes investments in residential and commercial MBS as well as other asset backed securities.

The Fund may buy or sell options or futures on a security or an index of securities, or enter into credit default swaps and interest rate transactions, including swaps (collectively, commonly known as derivatives). The Fund may seek to obtain market exposure to the securities in which it primarily invests by entering into a series of purchase and sale contracts or by using other investment techniques (such as reverse repurchase agreements or dollar rolls).

The Fund may engage in active and frequent trading of portfolio securities to achieve its primary investment strategies.

Principal Risks of Investing in the Fund

Risk is inherent in all investing. The value of your investment in the Fund, as well as the amount of return you receive on your investment, may fluctuate significantly from day to day and over time. You may lose part or all of your investment in the Fund or your investment may not perform as well as other similar investments. The following is a summary description of principal risks of investing in the Fund. The relative significance of each risk factor below may change over time and you should review each risk factor carefully.

NM0625U-4566636-11/20

- ***Mortgage- and Asset-Backed Securities Risks*** — Mortgage- and asset-backed securities represent interests in "pools" of mortgages or other assets, including consumer loans or receivables held in trust. Mortgage- and asset-backed securities are subject to credit, interest rate, prepayment and extension risks. These securities also are subject to risk of default on the underlying mortgage or asset, particularly during periods of economic downturn. Small movements in interest rates (both increases and decreases) may quickly and significantly reduce the value of certain mortgage-backed securities.
- ***Debt Securities Risk*** — Debt securities, such as bonds, involve risks, such as credit risk, interest rate risk, extension risk, and prepayment risk, each of which are described in further detail below:

  Credit Risk — Credit risk refers to the possibility that the issuer of a debt security (i.e., the borrower) will not be able to make payments of interest and principal when due. Changes in an issuer's credit rating or the market's perception of an issuer's creditworthiness may also affect the value of the Fund's investment in that issuer. The degree of credit risk depends on both the financial condition of the issuer and the terms of the obligation.

  Interest Rate Risk — The market value of bonds and other fixed-income securities changes in response to interest rate changes and other factors. Interest rate risk is the risk that prices of bonds and other fixed-income securities will increase as interest rates fall and decrease as interest rates rise.

  The Fund may be subject to a greater risk of rising interest rates during a period of historically low interest rates. For example, if interest rates increase by 1%, assuming a current portfolio duration of ten years, and all other factors being equal, the value of the Fund's investments would be expected to decrease by 10%. (Duration is a measure of the price sensitivity of a debt security or portfolio of debt securities to relative changes in interest rates.) The magnitude of these fluctuations in the market price of bonds and other fixed-income securities is generally greater for those securities with longer maturities. Fluctuations in the market price of the Fund's investments will not affect interest income derived from instruments already owned by the Fund, but will be reflected in the Fund's net asset value. The Fund may lose money if short-term or long-term interest rates rise sharply in a manner not anticipated by Fund management.

  To the extent the Fund invests in debt securities that may be prepaid at the option of the obligor (such as mortgage-backed securities), the sensitivity of such securities to changes in interest rates may increase (to the detriment of the Fund) when interest rates rise. Moreover, because rates on certain floating rate debt securities typically reset only periodically, changes in prevailing interest rates (and particularly sudden and significant changes) can be expected to cause some fluctuations in the net asset value of the Fund to the extent that it invests in floating rate debt securities.

  These basic principles of bond prices also apply to U.S. Government securities. A security backed by the "full faith and credit" of the U.S. Government is guaranteed only as to its stated interest rate and face value at maturity, not its current market price. Just like other fixed-income securities, government-guaranteed securities will fluctuate in value when interest rates change.

  A general rise in interest rates has the potential to cause investors to move out of fixed-income securities on a large scale, which may increase redemptions from funds that hold large amounts of fixed-income securities. Heavy redemptions could cause the Fund to sell assets at inopportune times or at a loss or depressed value and could hurt the Fund's performance.

  Extension Risk — When interest rates rise, certain obligations will be paid off by the obligor more slowly than anticipated, causing the value of these obligations to fall.

  Prepayment Risk — When interest rates fall, certain obligations will be paid off by the obligor more quickly than originally anticipated, and the Fund may have to invest the proceeds in securities with lower yields.
- ***U.S. Government Issuer Risk*** — Treasury obligations may differ in their interest rates, maturities, times of issuance and other characteristics. Obligations of U.S. Government agencies and authorities are supported by varying degrees of credit but generally are not backed by the full faith and credit of the U.S. Government. No assurance can be given that the U.S. Government will provide financial support to its agencies and authorities if it is not obligated by law to do so.
- ***Derivatives Risk*** — The Fund's use of derivatives may increase its costs, reduce the Fund's returns and/or increase volatility. Derivatives involve significant risks, including:

  Leverage Risk — The Fund's use of derivatives can magnify the Fund's gains and losses. Relatively small market movements may result in large changes in the value of a derivatives position and can result in losses that greatly exceed the amount originally invested.

  Market Risk — Some derivatives are more sensitive to interest rate changes and market price fluctuations than other securities. The Fund could also suffer losses related to its derivatives positions as a result of unanticipated market movements, which losses are potentially unlimited. Finally, BlackRock may not be able to predict correctly

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the direction of securities prices, interest rates and other economic factors, which could cause the Fund's derivatives positions to lose value.

Counterparty Risk — Derivatives are also subject to counterparty risk, which is the risk that the other party in the transaction will be unable or unwilling to fulfill its contractual obligation, and the related risks of having concentrated exposure to such a counterparty.

Illiquidity Risk — The possible lack of a liquid secondary market for derivatives and the resulting inability of the Fund to sell or otherwise close a derivatives position could expose the Fund to losses and could make derivatives more difficult for the Fund to value accurately.

Operational Risk — The use of derivatives includes the risk of potential operational issues, including documentation issues, settlement issues, systems failures, inadequate controls and human error.

Legal Risk — The risk of insufficient documentation, insufficient capacity or authority of counterparty, or legality or enforceability of a contract.

Volatility and Correlation Risk — Volatility is defined as the characteristic of a security, an index or a market to fluctuate significantly in price within a short time period. A risk of the Fund's use of derivatives is that the fluctuations in their values may not correlate with the overall securities markets.

Valuation Risk — Valuation for derivatives may not be readily available in the market. Valuation may be more difficult in times of market turmoil since many investors and market makers may be reluctant to purchase complex instruments or quote prices for them.

Hedging Risk — Hedges are sometimes subject to imperfect matching between the derivative and the underlying security, and there can be no assurance that the Fund's hedging transactions will be effective. The use of hedging may result in certain adverse tax consequences.

Tax Risk — Certain aspects of the tax treatment of derivative instruments, including swap agreements and commodity-linked derivative instruments, are currently unclear and may be affected by changes in legislation, regulations or other legally binding authority. Such treatment may be less favorable than that given to a direct investment in an underlying asset and may adversely affect the timing, character and amount of income the Fund realizes from its investments.

- ***Dollar Rolls Risk*** — Dollar rolls involve the risk that the market value of the securities that the Fund is committed to buy may decline below the price of the securities the Fund has sold. These transactions may involve leverage.
- ***High Portfolio Turnover Risk*** — The Fund may engage in active and frequent trading of its portfolio securities. High portfolio turnover (more than 100%) may result in increased transaction costs to the Fund, including brokerage commissions, dealer mark-ups and other transaction costs on the sale of the securities and on reinvestment in other securities. The sale of Fund portfolio securities may result in the realization and/or distribution to shareholders of higher capital gains or losses as compared to a fund with less active trading policies. These effects of higher than normal portfolio turnover may adversely affect Fund performance. In addition, investment in mortgage dollar rolls and participation in to-be-announced ("TBA") transactions may significantly increase the Fund's portfolio turnover rate. A TBA transaction is a method of trading mortgage-backed securities where the buyer and seller agree upon general trade parameters such as agency, settlement date, par amount, and price at the time the contract is entered into but the mortgage-backed securities are delivered in the future, generally 30 days later.
- ***Illiquid Investments Risk*** — The Fund may not acquire any illiquid investment if, immediately after the acquisition, the Fund would have invested more than 15% of its net assets in illiquid investments. An illiquid investment is any investment that the Fund reasonably expects cannot be sold or disposed of in current market conditions in seven calendar days or less without the sale or disposition significantly changing the market value of the investment. Liquid investments may become illiquid after purchase by the Fund, particularly during periods of market turmoil. There can be no assurance that a security or instrument that is deemed to be liquid when purchased will continue to be liquid for as long as it is held by the Fund, and any security or instrument held by the Fund may be deemed an illiquid investment pursuant to the Fund's liquidity risk management program. The Fund's illiquid investments may reduce the returns of the Fund because it may be difficult to sell the illiquid investments at an advantageous time or price. In addition, if the Fund is limited in its ability to sell illiquid investments during periods when shareholders are redeeming their shares, the Fund will need to sell liquid securities to meet redemption requests and illiquid securities will become a larger portion of the Fund's holdings. An investment may be illiquid due to, among other things, the reduced number and capacity of traditional market participants to make a market in fixed-income securities or the lack of an active trading market. To the extent that the Fund's principal investment strategies involve derivatives or securities with substantial market and/or credit risk, the Fund will tend to have the greatest exposure to the risks associated with illiquid investments. Illiquid investments may be harder to value, especially in changing markets, and if the Fund is forced to sell these investments to meet redemption requests or for other cash needs, the Fund may suffer a loss. This may be magnified in a rising interest rate environment or other

circumstances where investor redemptions from fixed-income mutual funds may be higher than normal. In addition, when there is illiquidity in the market for certain securities, the Fund, due to limitations on illiquid investments, may be subject to purchase and sale restrictions.

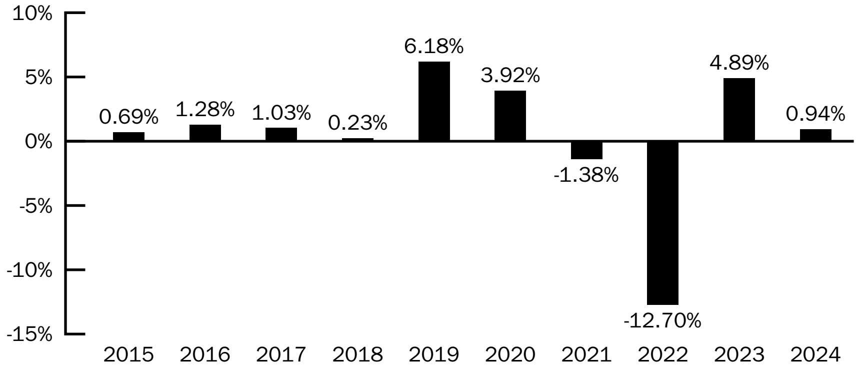
- ***Leverage Risk*** — Some transactions may give rise to a form of economic leverage. These transactions may include, among others, derivatives, and may expose the Fund to greater risk and increase its costs. The use of leverage may cause the Fund to liquidate portfolio positions when it may not be advantageous to do so to satisfy its obligations or to meet the applicable requirements of the Investment Company Act of 1940, as amended (the "Investment Company Act"), and the rules thereunder. Increases and decreases in the value of the Fund's portfolio will be magnified when the Fund uses leverage.
- ***Market Risk and Selection Risk*** — Market risk is the risk that one or more markets in which the Fund invests will go down in value, including the possibility that the markets will go down sharply and unpredictably. The value of a security or other asset may decline due to changes in general market conditions, economic trends or events that are not specifically related to the issuer of the security or other asset, or factors that affect a particular issuer or issuers, exchange, country, group of countries, region, market, industry, group of industries, sector or asset class. Local, regional or global events such as war, acts of terrorism, the spread of infectious illness or other public health issues like pandemics or epidemics, recessions, or other events could have a significant impact on the Fund and its investments. Selection risk is the risk that the securities selected by Fund management will underperform the markets, the relevant indices or the securities selected by other funds with similar investment objectives and investment strategies. This means you may lose money.
- ***Repurchase Agreements and Purchase and Sale Contracts Risk*** — If the other party to a repurchase agreement or purchase and sale contract defaults on its obligation under the agreement, the Fund may suffer delays and incur costs or lose money in exercising its rights under the agreement. If the seller fails to repurchase the security in either situation and the market value of the security declines, the Fund may lose money.
- ***Reverse Repurchase Agreements Risk*** — Reverse repurchase agreements involve the sale of securities held by the Fund with an agreement to repurchase the securities at an agreed-upon price, date and interest payment. Reverse repurchase agreements involve the risk that the other party may fail to return the securities in a timely manner or at all. The Fund could lose money if it is unable to recover the securities and the value of the collateral held by the Fund, including the value of the investments made with cash collateral, is less than the value of the securities. These events could also trigger adverse tax consequences for the Fund. In addition, reverse repurchase agreements involve the risk that the interest income earned in the investment of the proceeds will be less than the interest expense.
- ***Risk of Investing in the United States*** — Certain changes in the U.S. economy, such as when the U.S. economy weakens or when its financial markets decline, may have an adverse effect on the securities to which the Fund has exposure.

Performance Information

The information shows you how the Fund's performance has varied year by year and provides some indication of the risks of investing in the Fund. The table compares the Fund's performance to that of the Bloomberg U.S. Aggregate Bond Index and the Bloomberg U.S. MBS Index. The Fund acquired all of the assets, subject to the liabilities, of BlackRock GNMA Portfolio, a series of BlackRock Funds II (the "Predecessor Fund"), in a reorganization on September 17, 2018 (the "Reorganization"). The Fund adopted the performance of the Predecessor Fund as a result of the Reorganization. The performance information below is based on the performance of the Predecessor Fund for periods prior to the date of the Reorganization. The Predecessor Fund had the same investment objective, strategies and policies, portfolio management team and contractual arrangements, including the same contractual fees and expenses, as the Fund as of the date of the Reorganization. The Fund's and Predecessor Fund's total returns prior to January 28, 2025 as reflected in the bar chart and table are the returns of the Fund and the Predecessor Fund, as applicable, when each followed a different investment objective and different investment strategies and process under the name "BlackRock GNMA Portfolio." Effective January 28, 2025, the Fund has changed the benchmark against which it measures its performance from the Bloomberg GNMA Total Return Index Value Unhedged USD to the Bloomberg U.S. Aggregate Bond Index and the Bloomberg U.S. MBS Index. Fund management believes the Bloomberg U.S. MBS Index more accurately reflects the investment strategy of the Fund. To the extent that dividends and distributions have been paid by the Fund, the performance information for the Fund in the chart and table assumes reinvestment of the dividends and distributions. As with all such investments, past performance (before and after taxes) is not an indication of future results. Sales charges are not reflected in the bar chart. If they were, returns would be less than those shown. However, the table includes all applicable fees and sales charges. If the Fund's investment manager and its affiliates had not waived or reimbursed certain Fund expenses during these periods, the

Fund's returns would have been lower. Updated information on the Fund's performance, including its current net asset value, can be obtained by visiting www.blackrock.com or can be obtained by phone at (800) 882-0052.

Investor A Shares
ANNUAL TOTAL RETURNS
BlackRock Mortgage-Backed Securities Fund
As of 12/31



During the ten-year period shown in the bar chart, the highest return for a quarter was 7.27% (quarter ended December 31, 2023) and the lowest return for a quarter was -5.60% (quarter ended September 30, 2022).

For the periods ended 12/31/24 **Average Annual Total Returns**	**1 Year**	**5 Years**	**10 Years**
BlackRock Mortgage-Backed Securities Fund — Investor A Shares			
Return Before Taxes	(3.10)%	(1.88)%	(0.03)%
Return After Taxes on Distributions	(4.50)%	(2.96)%	(1.18)%
Return After Taxes on Distributions and Sale of Fund Shares	(1.84)%	(1.85)%	(0.50)%
BlackRock Mortgage-Backed Securities Fund — Investor C Shares			
Return Before Taxes	(0.68)%	(1.81)%	(0.22)%
BlackRock Mortgage-Backed Securities Fund — Institutional Shares			
Return Before Taxes	1.30%	(0.82)%	0.66%
Bloomberg U.S. Aggregate Bond Index[1] (Reflects no deduction for fees, expenses or taxes)	1.25%	(0.33)%	1.35%
Bloomberg U.S. MBS Index[2] (Reflects no deduction for fees, expenses or taxes)	1.20%	(0.74)%	0.91%
Bloomberg GNMA Total Return Index Value Unhedged USD[3] (Reflects no deduction for fees, expenses or taxes)	0.96%	(0.60)%	0.85%

1 The Fund has added this broad-based index in response to new regulatory requirements.
2 The Fund has added this additional benchmark.
3 Effective approximately one year from the date of the Fund's prospectus, the Fund will no longer compare its performance to this index.

After-tax returns are calculated using the historical highest individual federal marginal income tax rates and do not reflect the impact of state and local taxes. Actual after-tax returns depend on the investor's tax situation and may differ from those shown, and the after-tax returns shown are not relevant to investors who hold their shares through tax-deferred arrangements, such as 401(k) plans or individual retirement accounts. After-tax returns are shown for Investor A Shares only, and the after-tax returns for Investor C and Institutional Shares will vary.

Investment Manager

The Fund's investment manager is BlackRock Advisors, LLC (previously defined as "BlackRock").

Portfolio Managers

Portfolio Manager	Portfolio Manager of the Fund Since*	Title
Matthew Kraeger	2009	Managing Director of BlackRock, Inc.
Daniel Someck	2025	Managing Director of BlackRock, Inc.

Portfolio Manager	Portfolio Manager of the Fund Since*	Title
Nicholas Kramvis	2025	Director of BlackRock, Inc.
Siddharth Mehta	2017	Director of BlackRock, Inc.

* Includes management of the Predecessor Fund.

Purchase and Sale of Fund Shares

You may purchase or redeem shares of the Fund each day the New York Stock Exchange is open. To purchase or sell shares you should contact your Financial Intermediary, or, if you hold your shares through the Fund, you should contact the Fund by phone at (800) 441-7762, by mail (c/o BlackRock Funds, P.O. Box 534429, Pittsburgh, Pennsylvania 15253-4429), or by the Internet at www.blackrock.com. The Fund's initial and subsequent investment minimums generally are as follows, although the Fund may reduce or waive the minimums in some cases:

	Investor A and Investor C Shares	Institutional Shares
Minimum Initial Investment	$1,000 for all accounts except: • $50, if establishing an Automatic Investment Plan. • There is no investment minimum for employer-sponsored retirement plans (not including SEP IRAs, SIMPLE IRAs or SARSEPs). • There is no investment minimum for certain fee-based programs.	There is no minimum initial investment for: • Employer-sponsored retirement plans (not including SEP IRAs, SIMPLE IRAs or SARSEPs), state sponsored 529 college savings plans, collective trust funds, investment companies or other pooled investment vehicles, unaffiliated thrifts and unaffiliated banks and trust companies, each of which may purchase shares of the Fund through a Financial Intermediary that has entered into an agreement with the Fund's distributor to purchase such shares. • Clients of Financial Intermediaries that: (i) charge such clients a fee for advisory, investment consulting, or similar services or (ii) have entered into an agreement with the Fund's distributor to offer Institutional Shares through a no-load program or investment platform. • Clients investing through a self-directed IRA brokerage account program sponsored by a retirement plan record-keeper, provided that such program offers only mutual fund options and that the program maintains an account with the Fund on an omnibus basis. $2 million for individuals and "Institutional Investors," which include, but are not limited to, endowments, foundations, family offices, local, city, and state governmental institutions, corporations and insurance company separate accounts who may purchase shares of the Fund through a Financial Intermediary that has entered into an agreement with the Fund's distributor to purchase such shares. $1,000 for: • Clients investing through Financial Intermediaries that offer such shares on a platform that charges a transaction based sales commission outside of the Fund. • Tax-qualified accounts for insurance agents that are registered representatives of an insurance company's broker-dealer that has entered into an agreement with the Fund's distributor to offer Institutional Shares, and the family members of such persons.
Minimum Additional Investment	$50 for all accounts (with the exception of certain employer-sponsored retirement plans which may have a lower minimum).	No subsequent minimum.

Tax Information

The Fund's dividends and distributions may be subject to U.S. federal income taxes and may be taxed as ordinary income or capital gains, unless you are a tax-exempt investor or are investing through a qualified tax-exempt plan described in section 401(a) of the Internal Revenue Code, in which case you may be subject to U.S. federal income tax when distributions are received from such tax-deferred arrangements.

Payments to Broker/Dealers and Other Financial Intermediaries

If you purchase shares of the Fund through a Financial Intermediary, the Fund and BlackRock Investments, LLC, the Fund's distributor, or its affiliates may pay the Financial Intermediary for the sale of Fund shares and related services.

These payments may create a conflict of interest by influencing the Financial Intermediary and your individual financial professional to recommend the Fund over another investment.

Ask your individual financial professional or visit your Financial Intermediary's website for more information.

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