Education
SUPERHIGHWAY

An Infrastructure Solution for Connecting Low-Income Americans
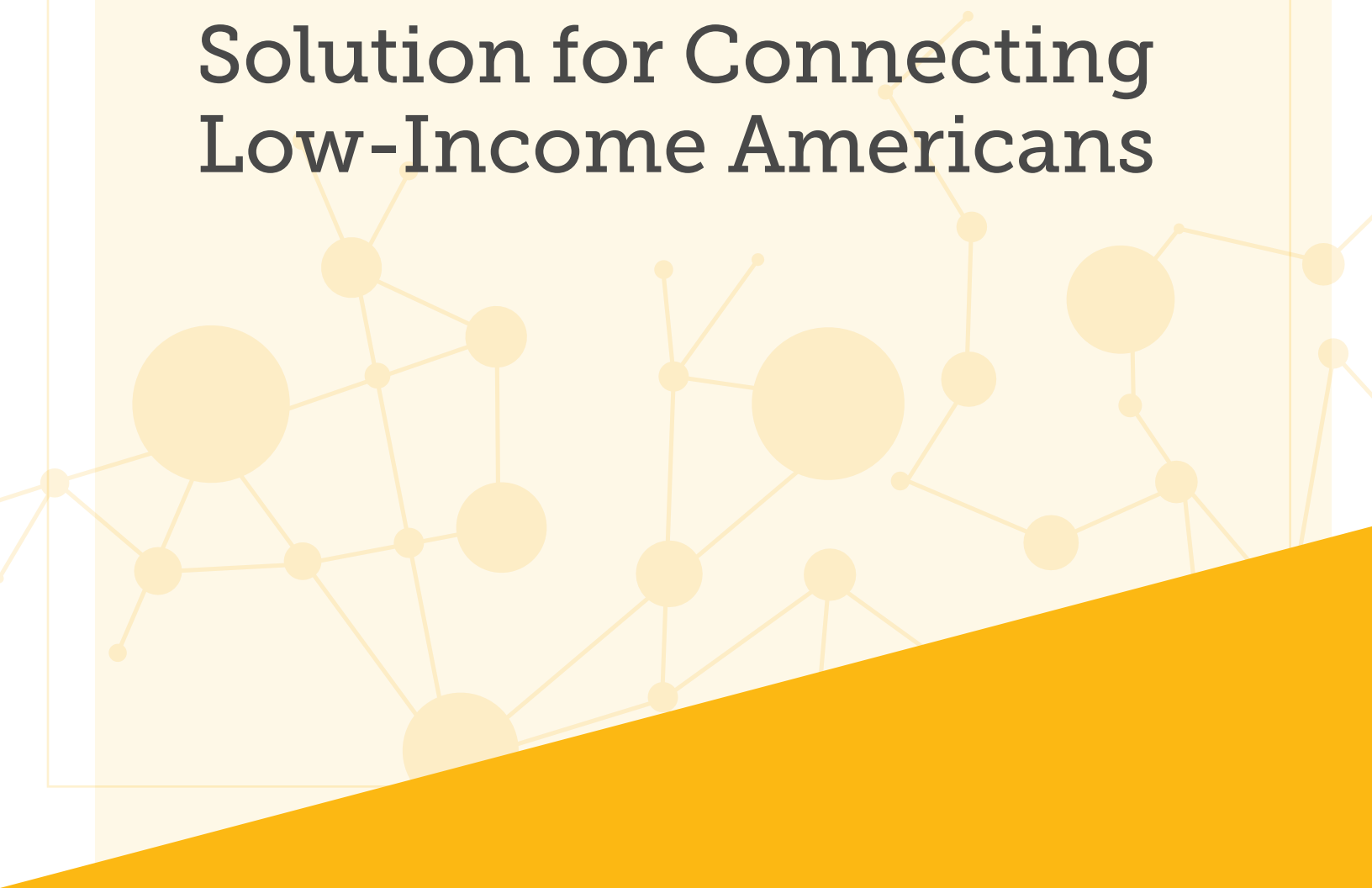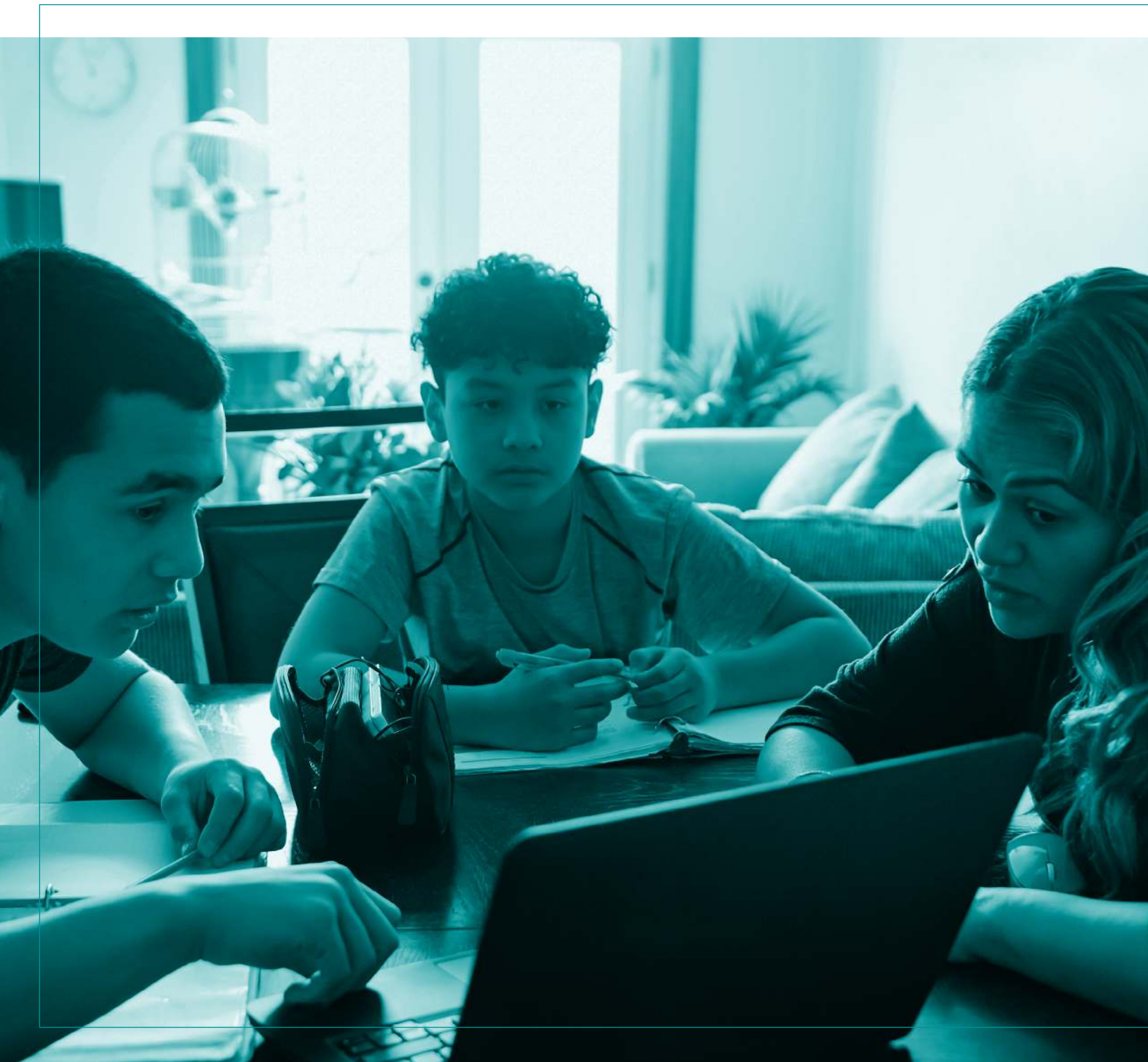
The Free Apartment Wi-Fi Opportunity

Today, approximately 29 million of the 123 million households in the United States do not have high-speed broadband. Despite the availability of affordable broadband plans for the last ten years, 20 million of these households, representing over 55 million people, are simply offline because they cannot afford an available Internet connection. This problem, also known as the "affordability gap," impacts virtually every community in America - urban, suburban, and small-town - and has become one of the primary inhibitors of access to education, healthcare, economic security, and opportunity.

In America's most unconnected communities, where 38% of households do not have home broadband, **20-25% of the digital divide is concentrated in low-income apartment buildings.** These communities have 67% more black households and 60% more Latinx households than the national average and twice as many people in poverty. By deploying free Wi-Fi into these buildings, just as cities have in airports, libraries, and other community spaces, we can make a significant impact on the digital divide in months, not years.

Using federal broadband infrastructure funds to deploy free apartment Wi-Fi solves the two main barriers to connecting low-income households.

> **First, it solves the affordability problem by making Internet access free.**
>
> **Second, it solves the adoption problem by eliminating the need for households to sign-up for broadband service**[1]**. Instead, all a household needs to do is find and connect to the network available in their building - something that every American with a connected device does on a regular basis. In addition, because of dramatic improvements in Wi-Fi technology, households in apartment buildings can be connected simply by deploying Wi-Fi access points in hallways and other common areas - lowering the cost of installation by 75% or more.**
>
> **Finally, because free Wi-Fi helps landlords attract and retain tenants, they are willing to support the installation and maintenance of the networks in their buildings.**

As federal, state and local policymakers work to close the digital divide by investing in broadband infrastructure, nothing can make a greater impact in a shorter period of time and at lower cost than ensuring that free apartment Wi-Fi projects in high poverty areas are eligible for and prioritized in broadband infrastructure programs and the use of state and local American Rescue Plan Act funds.
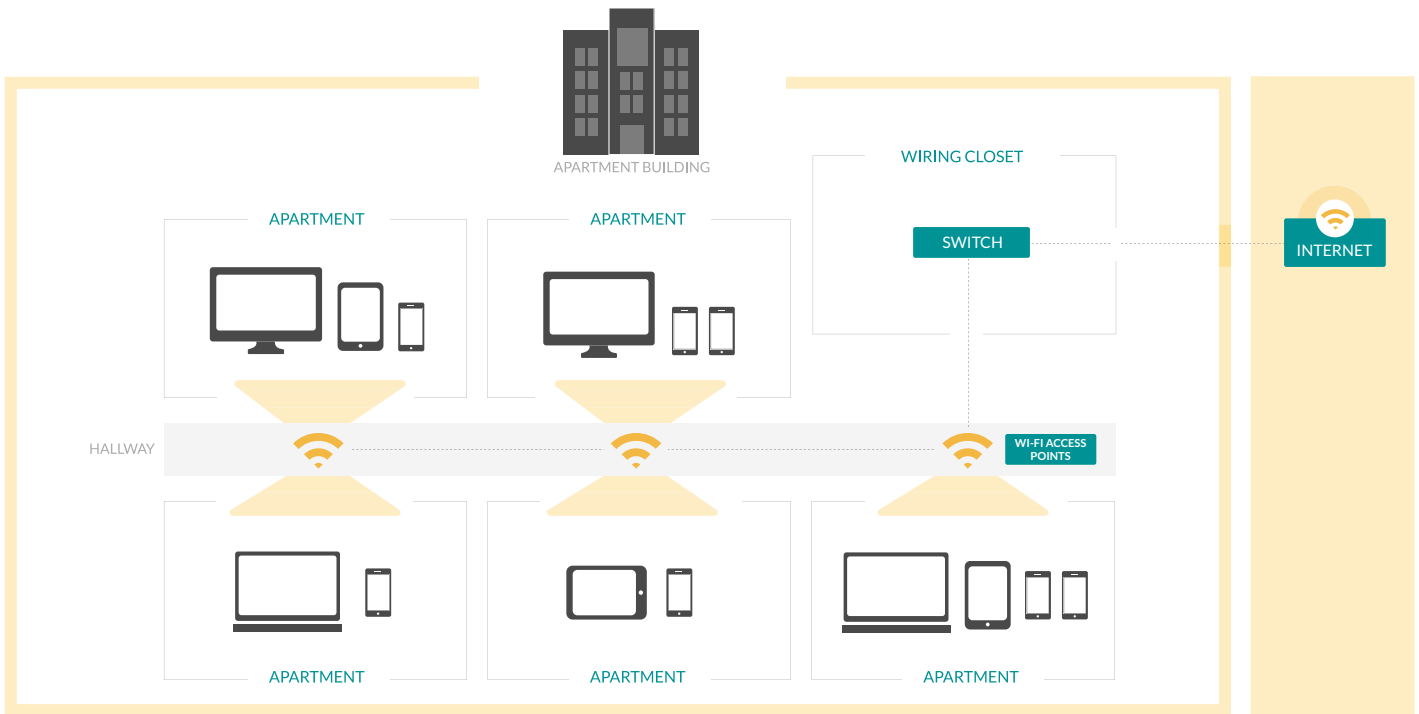
How Free Apartment Wi-Fi Works

Free apartment Wi-Fi is modeled after the way Wi-Fi is delivered in most hotels today. Rather than buy a separate Internet connection for each room, the hotel buys a single internet connection for the building and then installs a building-wide Wi-Fi network. The hotel then makes it easy for guests to use the Wi-Fi by giving them the SSID and password when they check-in. There are no complicated forms to fill out, and the competition for guests has now made Wi-Fi a standard, free amenity in virtually every hotel.

To make free Wi-Fi available in apartment buildings, cities take the following three steps:

1. **Activate an Internet connection in the building.** This can be purchased from a local Internet service provider, or the city can leverage the Internet access it uses to connect city facilities by extending its network to apartment buildings using a wired or wireless wide area network.

2. **Install Wi-Fi infrastructure in the apartment building.** This step involves simply wiring hallways and common areas for Wi-Fi access points and then configuring the network.

3. **Provide residents with the SSID and password to connect to the Internet.** Residents can also be given a unique username and password for enhanced security.

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1. Broadband subsidy adoption has proven to be a major challenge in closing the digital divide as a result of low program awareness, difficult enrollment processes, the requirement to disclose sensitive personal information and significant eligibility restrictions. These obstacles have prevented two-thirds of the 33 million households eligible for Lifeline (the nation's largest broadband subsidy program) from enrolling in the program and significantly limited the number of K-12 students that took advantage of free broadband services offered by their school districts.

APARTMENT BUILDING

Wi-Fi infrastructure can be installed in as little as 60 days, and with the improvements in Wi-Fi technology, free apartment Wi-Fi networks can deliver symmetrical speeds up to 1 Gbps to building residents[2]. This exceeds both FCC guidelines and the targets in all of the recent and proposed federal broadband infrastructure programs.

What Free Apartment Wi-Fi Costs

There are three costs that are incurred to install and operate a free apartment Wi-Fi network.

1. **Installation of the Wi-Fi infrastructure.** This includes the cost of switches and Wi-Fi access points as well as the labor to pull ethernet cables to the appropriate places in the building. On average, these one-time costs are approximately $300 per apartment to wire hallways and common areas vs. $1,500 per apartment to pull wires into each unit[3]. Over 75% of the cost is the labor to install the wiring.

2. **Internet Access for the Building.** This is the monthly cost of an Internet connection that is plugged into the apartment Wi-Fi infrastructure. This cost will vary by location, the speed of the Internet connection and whether the Internet connection is provided by an ISP or is simply an extension of a city's existing network. In the latter case, most of the cost will be one-time cap-ex to install the links to the city network.

3. **Maintenance.** This is the cost to monitor the Wi-Fi infrastructure and building Internet access, replace any failed Wi-Fi equipment, and provide customer support. Given the reliability of Wi-Fi equipment and the low levels of customer support required, these costs are fairly limited and, in most cases, will be borne by the building owner.

Free Apartment Wi-Fi in Oakland, CA

EducationSuperHighway began deploying free apartment Wi-Fi in Oakland, CA, in early 2020. To date, we have installed free Wi-Fi networks in five low income buildings. EducationSuperHighway coordinated the activation of an Internet connection from an ISP that already had service in the building and then installed the Wi-Fi network. We monitor the network and provide any required maintenance and support. In each building there has been widespread adoption of the network by tenants, and building owners have received tremendously positive feedback. To date, we have had one support call across all five buildings, attesting to the reliability of the networks and the quality of the Internet service.

In all five of these buildings, the landlord is paying for the cost of the network. They have contracted directly with the ISP for internet service and pay a monthly fee for the amortization and maintenance of the Wi-Fi network. The total cost to building owners has ranged from $200-500 per month, demonstrating

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2. The speed of the connection will be determined primarily by the speed of the Internet connection that a city chooses to connect to the apartment building in step

3. Based on installation costs in Oakland, CA pilot buildings

the value they see in the network as a tool for attracting and retaining tenants. Based on our discussions with building owners, we believe that if we can lower the cost to under $200 per month, the vast majority of building owners will opt into the free apartment Wi-Fi program.

EducationSuperHighway is now partnering with the city of Oakland to roll out free apartment Wi-Fi in low-income apartment buildings across the city. Leveraging Oakland's city Internet access and their newly deployed OAK-WIFI network, the city is providing Internet service to the roof of each building, and EducationSuperHighway is connecting this Internet access to Wi-Fi infrastructure throughout the building. This approach, combined with grant funding for the installation of the Wi-Fi networks, will dramatically lower the cost to landlords to less than $100 per month. Our objective is to connect over 14,000 households and 40,000 people by deploying free apartment Wi-Fi in the 800+ buildings in Oakland where more than 25% of the households do not have a home broadband connection.

How Policymakers can Enable Free Apartment Wi-Fi

The success of free apartment Wi-Fi pilots in Oakland and other cities across the country (including New York, Baltimore, Boulder, and Rockville, MD) provides a roadmap for rapidly and cost-effectively making significant progress in closing the digital divide. To take advantage of this opportunity, policymakers should take the following actions:

- Federal policymakers should include the deployment of free apartment Wi-Fi networks and the links to city Internet access as an eligible use of broadband Infrastructure funds and should designate deployment of these networks in high poverty neighborhoods as an equal priority to broadband infrastructure deployments in rural areas. The BRIDGE act, introduced by senators Bennet, King, and Portman, includes such language and is a model for any future policy[4].

- States and federal agencies administering broadband grant programs should prioritize free apartment Wi-Fi projects in high-poverty areas as they will have the most immediate and largest impact on the digital divide.

- States and municipalities should allocate resources from the $240 billion of state and local funding in the American Rescue Plan Act to free apartment Wi-Fi projects. EducationSuperHighway can provide estimates at the state and municipality level of the funding required to deploy this solution in high-poverty areas.

For more information about establishing and executing a free apartment Wi-Fi program in your city or state please contact apartmentwifi@educationsuperhighway.org.

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4. The BRIDGE act allows eligible entities to "competitively award subgrants for installing internet and Wi-Fi infrastructure or providing free or reduced-cost broadband within a multi-family residential building."

About EducationSuperHighway

EducationSuperHighway was founded in 2012 with the mission of upgrading the Internet access in every public school classroom in America. Having completed our mission we are now focused on bridging the digital divide by bringing free internet access to households in America's most unconnected communities to create economic security and opportunity.

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