

# TASCAM

## TEAC Professional Division

D00445400A

# IF-DA8

## D/A Converter



## OWNER'S MANUAL



**CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons..



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number \_\_\_\_\_  
Serial number \_\_\_\_\_

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

# Important Safety Precautions

## IMPORTANT (for U.K. Customers)

### **DO NOT cut off the mains plug from this equipment.**

If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

**IMPORTANT:** The wires in this mains lead are coloured in accordance with the following code:

<b>GREEN-AND-YELLOW</b>	: EARTH
<b>BLUE</b>	: NEUTRAL
<b>BROWN</b>	: LIVE

**WARNING:** This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  $\equiv$  or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

### TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### CAUTION

Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

### For the consumers in Europe

#### WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

### Pour les utilisateurs en Europe

#### AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

### Für Kunden in Europa

#### Warnung

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen ; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

# IMPORTANT SAFETY INSTRUCTIONS

## CAUTION:

- Read all of these Instructions.
- Save these Instructions for later use.
- Follow all Warnings and Instructions marked on the audio equipment.

- 1) Read Instructions** — All the safety and operating instructions should be read before the product is operated.
- 2) Retain Instructions** — The safety and operating instructions should be retained for future reference.
- 3) Heed Warnings** — All warnings on the product and in the operating instructions should be adhered to.
- 4) Follow Instructions** — All operating and use instructions should be followed.
- 5) Cleaning** — Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 6) Attachments** — Do not use attachments not recommended by the product manufacturer as they may cause hazards.
- 7) Water and Moisture** — Do not use this product near water — for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
- 8) Accessories** — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- 9) A product and cart combination should be moved with care.** Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

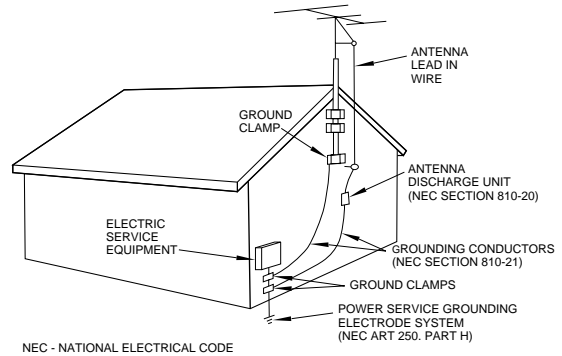


- 10) Ventilation** — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
- 11) Power Sources** — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
- 12) Grounding or Polarization** — This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 13) Power-Cord Protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
- 14) Outdoor Antenna Grounding** — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

## "Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Example of Antenna Grounding as per National Electrical Code, ANSI/NFPA 70



- 15) Lightning** — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
- 16) Power Lines** — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
- 17) Overloading** — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in risk of fire or electric shock.
- 18) Object and Liquid Entry** — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- 19) Servicing** — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- 20) Damage Requiring Service** — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - a) when the power-supply cord or plug is damaged.
  - b) if liquid has been spilled, or objects have fallen into the product.
  - c) if the product has been exposed to rain or water.
  - d) if the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
  - e) if the product has been dropped or damaged in any way.
  - f) when the product exhibits a distinct change in performance — this indicates a need for service.
- 21) Replacement Parts** — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 22) Safety Check** — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- 23) Wall or Ceiling Mounting** — The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 24) Heat** — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

# IF-DA8 D/A Converter

The TASCAM IF-DA8 D/A convertor takes eight channels of digital audio in TDIF-1 format, and converts them into balanced analog audio signals at professional audio levels, in a compact 1U rack-mount unit.

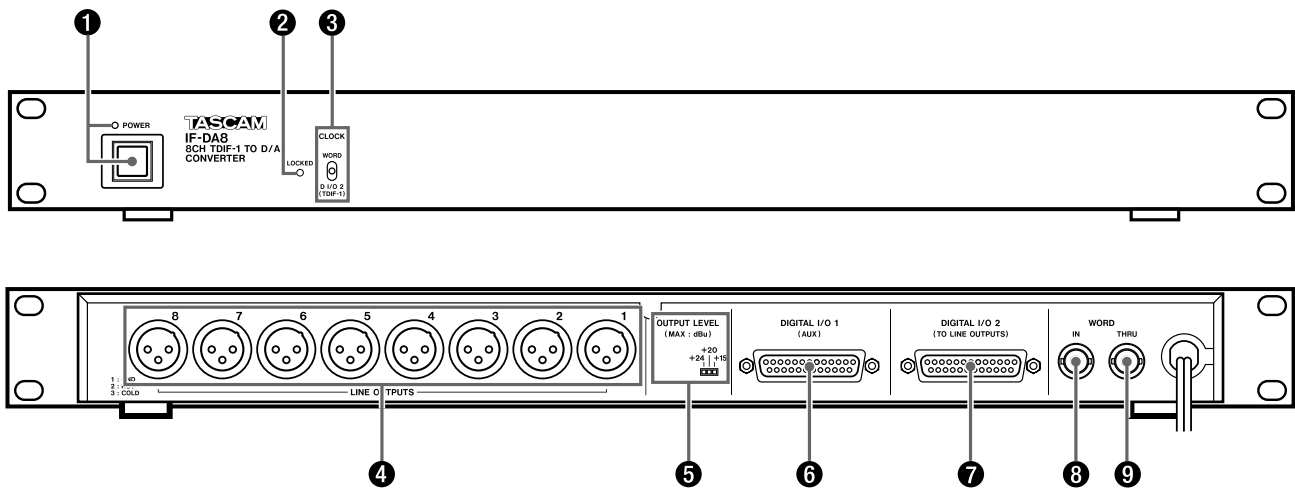
The D/A conversion can be done at up to 24 bits of resolution for the highest possible sonic quality.

The digital audio levels can be referenced to one of three different analog levels, depending on the project setup.

As well as the TDIF-1 input whose signals are converted, another “pass-through” TDIF-1 connector is provided, allowing the audio signals to be used in a variety of ways.

For example, a TASCAM TM-D8000 digital console could be used to make simultaneous DTRS digital as well as analog multitrack recordings.

The word clock for the IF-DA8 can be taken from the source TDIF-1 connector or from an external word clock.



## 1.1 Front panel

### 1 Power switch and indicator

Push the **POWER** switch once to turn on power, and again to turn it off. The **POWER** indicator lights when power is supplied to the IF-DA8.

### 2 LOCKED indicator

When a valid clock signal is received at the selected clock source, this indicator will light.

### 3 CLOCK switch

This switch allows the selection of the word clock source for the IF-DA8.

When in the **WORD** position, the word clock used by the IF-DA8 will be the clock signal received at the **WORD IN** 8 connector.

When in the **DI/O 2** position, the word clock used by the IF-DA8 will be the clock signal received at the **DIGITAL I/O 2 (TO LINE OUTPUTS)** 7 connector.

## WARNING

*There should never be more than one word clock signal in a digital audio system. If there are not, at worst, damage may occur to speakers, amplifiers, etc. as a result of high-frequency noise generated by word clock incompatibilities.*

## 1.2 Rear panel

### 4 LINE OUTPUTs

These male XLR-type balanced connectors are wired as follows:

1	GND
2	Hot (+)
3	Cold (-)

Connect balanced professional (+4 dBu) level devices to these outputs.

## 5 OUTPUT LEVEL switch

This switch should be used in conjunction with the “reference level” settings on various pieces of TASCAM equipment.

When an analog signal is at its nominal level (i.e. the meter reads “0 dB”), the signal level on digital equipment must not read 0 dB—this would mean that any signals above 0 dB (analog) would produce unacceptable clipping and distortion on the digital equipment. Accordingly, there are a number of standards, which reference the analog 0 dB level to a specific level on a digital unit.

These standard levels are as follows, together with the settings of this switch which will match the reference level in use in your installation.:

Standard	Reference level (0 dBFS)	Nominal level	IF-DA8 OUTPUT LEVEL (MAX:dBu)
TASCAM	-16 dB	+4 dBu	+20
EBU2	-9 dB	+6 dBu	+15
SMPTE	-20 dB	+4 dBu	+24

### NOTE

*Make sure that the reference level settings on your other digital equipment and the switch settings here match, otherwise you may find yourself working with analog levels that are too high or too low.*

## 6 DIGITAL I/O 1 (AUX)

This connector is typically used to connect an auxiliary TDIF-1 device, such as a DTRS multitrack recorder.

### WARNING

*Note that you should always use genuine TASCAM cables, or cables which have been approved for use with TDIF-1 interfaces by TASCAM.*

*Although these cables appear similar to certain types of computer cables and use similar connectors, the cables themselves are very different, and the different electrical characteristics of the cables can cause damage to the equipment connected with the wrong cables.*

*If the use of cables other than TASCAM cables causes or results in damage, the warranty is voided.*

The signals received at this connector are passed straight through as outputs to the **D I/O 2** connector 7.

The signals output from this connector are the signals from the **D I/O 2** connector 7, passed through unchanged.

## 7 DIGITAL I/O 2 (TO LINE OUTPUTS)

This connector is typically used to connect the main TDIF-1 source whose digital audio will be converted to analog by the IF-DA8 (for example, a digital mixing console).

The signals received at this connector are passed straight through to the **D I/O 1** connector 6, as well as being fed to the D/A converters.

The signals output from this connector are received from the **D I/O 1** connector.

When the **CLOCK** switch 3 is set to the lower position (**D I/O 2 (TDIF-1)**), this connector is used as the word clock source for the unit.

## 8 WORD IN

An external word clock may be connected to this BNC connector (75Ω), and used as the word synchronization for the IF-DA8, selected with the **CLOCK** switch 3.

## 9 WORD THRU

This BNC connector echoes the clock signal received at the **WORD IN** 8 connector. If no device is connected here, the word clock chain is automatically terminated.

## 1.3 Application examples

Since this unit provides two TDIF-1 connectors, there are a large number of uses to which it can be put effectively.

At its simplest, the IF-DA8 can be used to transfer tracks recorded on a project studio DTRS recorder to an analog recorder. The superior resolution and sonic quality of the conversion process makes it admirably suited for this role.

As briefly mentioned earlier, the same digital mixing console may be used to record on both analog and DTRS multitrack recorders simultaneously.

# IF-DA8 D/A Converter

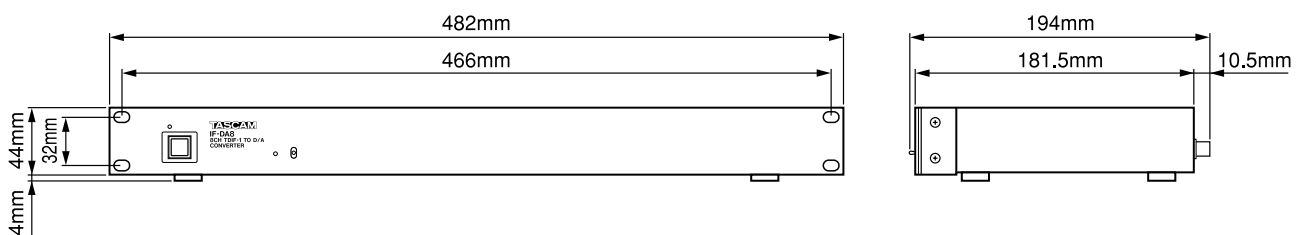
Another possible use might be in surround sound applications, where a TM-D8000 console is being used. The eight sub-groups of the console are used for the surround channels and also for the DTRS recorder. The IF-DA8 provides high-quality D/A conversion to drive the surround monitor amplifiers, while passing the digital signal transparently to the recorders.

## 1.4 Specifications

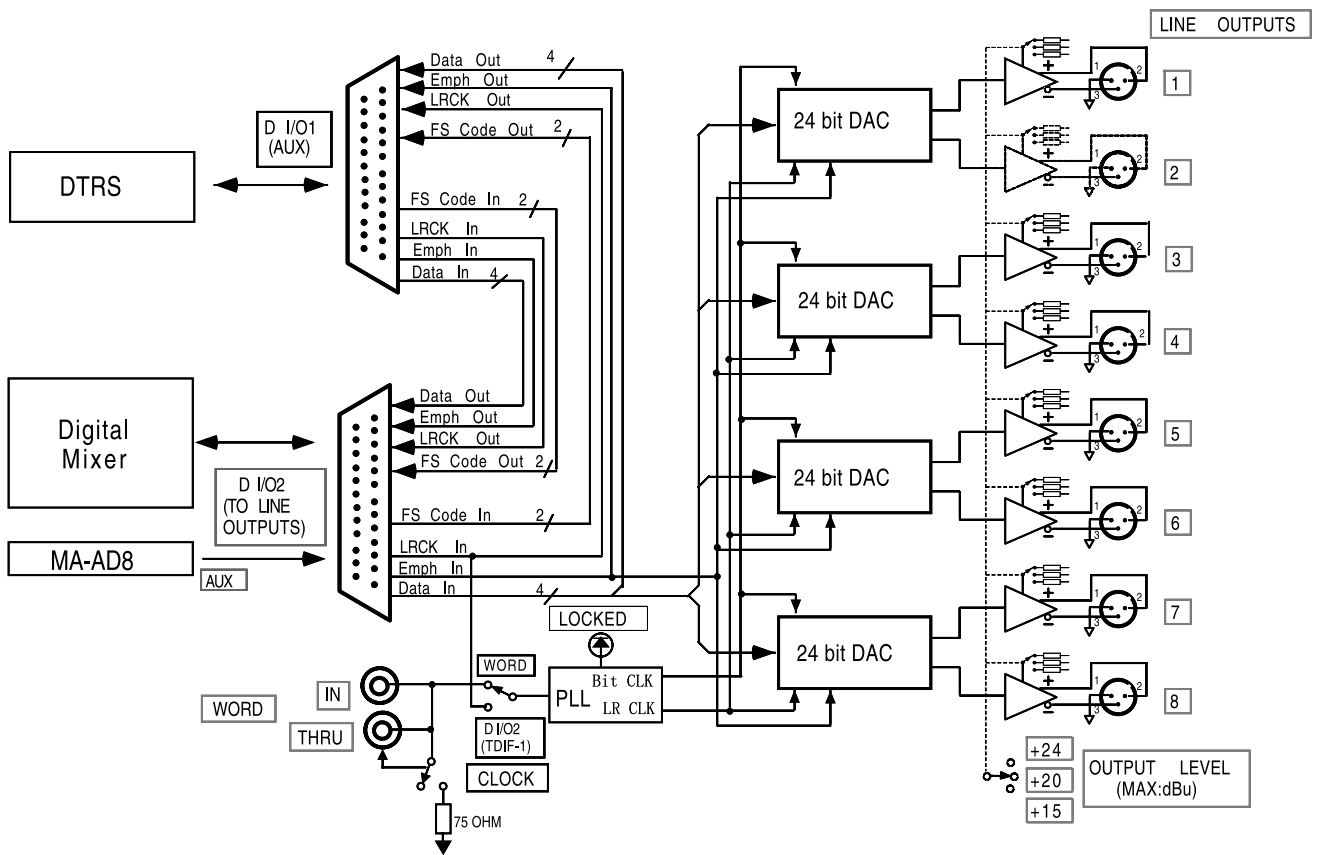
LINE OUTPUTs (1–8)	XLR-type, balanced outputs
Output impedance	75Ω
Maximum output level (0 dBFS)	+15 dBu, +20 dBu, +24 dBu
Nominal output level	+4 dBu
S/N ratio (IHF-A)	> 100 dB
Crosstalk between adjacent channels (10 kHz)	> 70dB
T.H.D. (@ 1 kHz, nominal output level)	< 0.01%

Digital I/O format	TDIF-1
Sampling frequency	44.1 kHz, 48 kHz, ±6%
D/A resolution	24-bit
Clock source	D I/O2, external word clock
LOCKED indicator	Lights when valid clock source received at selected input
WORD CLOCK IN	75Ω
WORD CLOCK THRU	75Ω (auto terminating)
Dimensions (w x h x d)	482 x 48 x 204.5 mm (19 x 1-7/8 x 8-1/16 in.)
Weight	2.5 kg (5.51 lbs.)
Power supply	120V (U.S.A./Canada) 230V (Europe) 240V (Australia)
Power consumption	10 W
Supplied accessories	Rack mounting kit

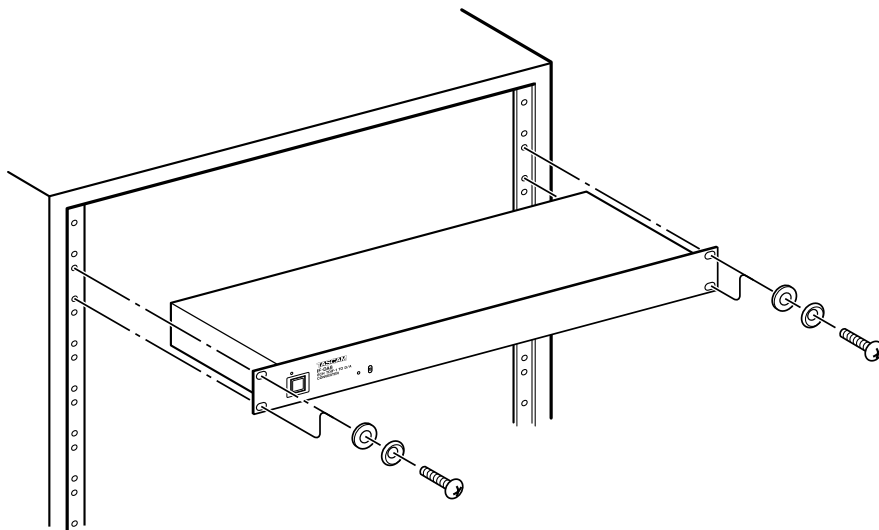
### 1.4.1 Dimensional diagram



## 1.4.2 Block diagram



## 1.4.3 Rack mounting



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TEAC Professional Division

# IF-DA8

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