Voted NADL Lab of 2020

A Clinician's Guide to Restoring Conus

Atlantis®
Provided by Dentsply Sirona Implants

CONUS CONCEPT PROVIDED BY Dentsply Sirona Implants

www.AbsoluteDentalLab.com

The Atlantis Conus Concept

Conus is a very innovative restorative option offered by Dentsply Sirona Implants / Atlantis suprastructures. It is available on most popular internally hexed implant systems on the market today and requires a minimum of 4 implants per arch.

This solution gives us the ability to create a prosthesis that functions like a fixed hybrid while incorporating the cleanability of a removable clip denture. The Conus system is a hybrid implant supported / retained system making it fulcrum adverse. This offers an advantage in cases where implant placement would normally cause detaching of clip retention systems. Conus can be processed with or without a vestibule and does not require a palate for stability.

My team and I have found the Conus process to be very predictable if the basic steps and principles are followed diligently. Tissue compression when setting the CONUS retention caps is by far the biggest culprit in retention issues. A passive, uncompressed tissue position in the final prosthesis is paramount to a successful outcome.

Choosing the correct patient is crucial.

CONUS is simply not an appropriate solution for non-compliant patients who would not remove the prosthesis daily. We have also found patients with low dexterity to have trouble removing the prosthesis.

After fine tuning our processes and successfully completing multiple cases, I feel very confident in our team's ability to guide you through this very innovative restorative process.

My team and I are very excited to assist you with your next Conus case and looking forward to collaborating with you on restoring with this state-of-the-art solution.

Conrad J Rensburg

ABSOLUTE DENTAL SERVICES
NADL Lab of the Year

Absolute Dental Lab
Peer Recognized
NADL Lab of the Year

Conrad J. Rensburg
N.D. & N.H.D. Tech Pret.

Conus Implant Supported Hybrid Removable Denture

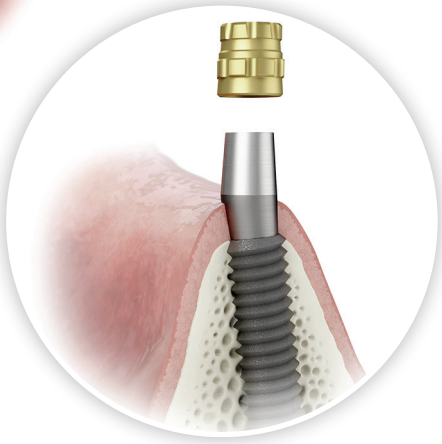
What is the ATLANTIS™ Conus concept?

Conus is a hybrid (implant retained and tissue supported) removable denture with the feel and function of a fixed implant retained prosthesis.

Conus is a friction retained denture, supported by patient-specific titanium CAD abutments. The Atlantis fabricated Conus CAD abutments can facilitate up to a combined 30° of angle correction. The system is processed directly into the implant and is available for most internally hexed implant systems. A minimum of four implants per arch is required and the AP spread can be shallow without compromising retention or function. This makes Conus an ideal solution for patients with minimal bone.

The final denture can be processed with or without a facial vestibule. For patient comfort, the palatal area is designed with an open palate horseshoe design.

The Conus concept can also be used in partial application where fixed options could potentially cause hygienic issues due to bone deficiencies.



Before You Start

Send an alginate impression or model of the patient's existing arch to the lab with instructions to fabricate a custom tray with wax window to accommodate an open tray impression.

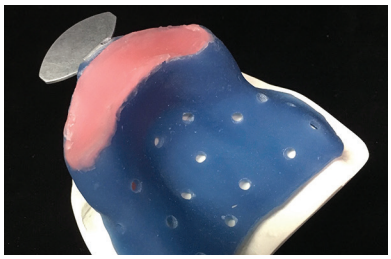
First Appointment

CLINICAL STEPS
PVS Open Tray Implant Level Impression, Opposing model.

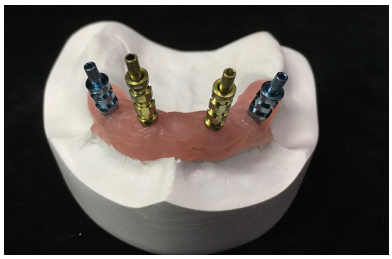
Once implants are integrated and ready to restore, a fixture level impression using open tray impression copings are registered. This impression must be taken with PVS material and splinted together using a rigid intraoral material i.e. Triad Dual-Cure, Duralay etc. Divergent implants will in some cases cause undercuts when the impression copings are engaged, making it difficult to remove the impression tray. Using a combination of open and closed tray impression copings or only splinting parallel implants, will help address this potential problem. It is important to take this impression using a custom tray, paying special attention to accurate indexing of the vestibule and palatal areas. Overfilling the impression tray will help with a stable engagement of the impression copings.

Please do not hesitate to call us or your local Dentsply implant representative with any questions regarding this technique.

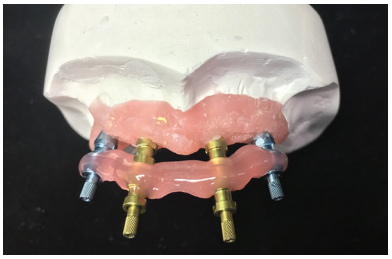
Implant level exposed



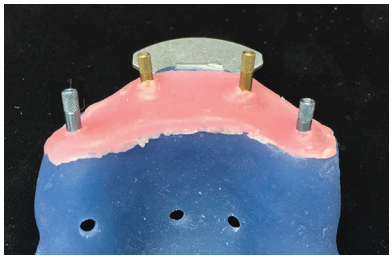
Open tray custom tray with wax window



Open tray impression copings ready for splinting



Impression copings splinted using a dual-cure acrylic



Remove pins before pulling impression

Lab Process:

Pour a soft-tissue model. Fabricate an implant stabilized wax bite rim and model verification jig (Absolute will only fabricate a model verification jig in cases where all implants have a common path of draw). These components will be returned to the clinician for traditional bite registration and possible model verification.

Schedule your patient to return after: **5 DAYS IN LAB**

Second Appointment

Register a bite using the same protocols as for traditional removable dentures. Register the bite, mid-line, occlusal plane and labial contour on the wax-rim.

Determine a tooth shade and mold approved by the patient.

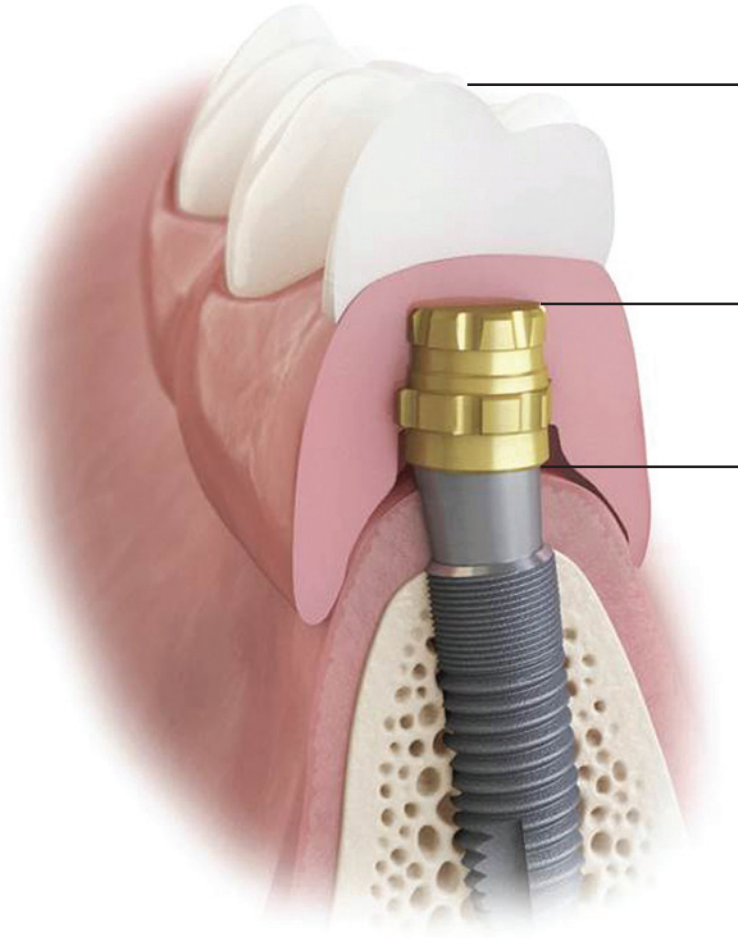
CLINICAL STEPS
Bite and tooth position registered on wax-rim. Tooth shade and mold determined.

Lab Process:

Set up teeth in wax and return for traditional tooth try-in. If the final denture will be processed without a vestibule or a more stable try-in is required the wax denture try-in can be processed on an acrylic base engaging one or more implant sites. This is done using a temporary component.

Schedule your patient to return after: **5 DAYS IN LAB**

Conus Dimensions and Height Requirements



Minimal clearance between SynCone cap and opposing occlusal - 5.0mm

SynCone cap height - 6.0mm

Height requirements
Minimum vertical clearance - 11mm
Ideal vertical clearance - 15mm

** Measure clearance from tissue to opposing dentition only in areas where implants are placed. Less vertical is needed around tissue supported areas of prosthesis.*

Third Appointment

CLINICAL STEPS
Perform a wax tooth try-in. Establish patient expectations regarding shade, mold, bite etc.

At this appointment the clinical team will process a traditional tooth try-in. The laboratory will use the approved tooth position for abutment and cementing frame design. These positions cannot be changed after design and it is therefore crucial to evaluate and establish patient sign-off before proceeding to the next appointment.

Consider: Bite / Shade and tooth set-up / Vestibule requirements and general design of final prosthesis

For a predicable final delivery, it is important to ensure that the try-in represents the patient's expectations exactly. If any uncertainty remains, please return to the lab for additional changes and schedule another try-in.

Lab Process:

Scan and digitize the implant level model and denture relationship or simply send the case to Atlantis for scanning and design of the Conus abutments. Atlantis allows the lab design input through the Atlantis WebOrder software. Atlantis will mill and return the approved abutments in 1-3 days after approval. Place the abutments on the model, press the SynCone caps onto the Conus abutments and fabricate a substructure to allow the clinician to cement the caps into the substructure. This frame should fit loosely around the caps to allow for a passive clinical pick up. Any required adjustments are made to the denture to allow for a final tooth try in. Do not jump the teeth onto the substructure at this stage. Fabricate a new custom tray to allow for a pick up impression of the frame after cementation of the caps.

Lab will return the following:

- Conus abutments on the model
- Printed positioning transfer jig
- Gold SynCone retention caps
- Cementing frame (alloy or carbon acetal)
- Polymerisation protection caps
- Newly fabricated custom tray
- Original wax based tooth try-in (analog processing)
- Printed tooth try-in (digital processing)

Schedule your patient to return after: **15 DAYS IN LAB**

Components Delivered for 4th Appointment

Conus abutments in correct rotation on implant level model

Atlantis printed positioning jig

Cementing frame – Alloy or Carbon acetal

Printed tooth try in (digital processing only

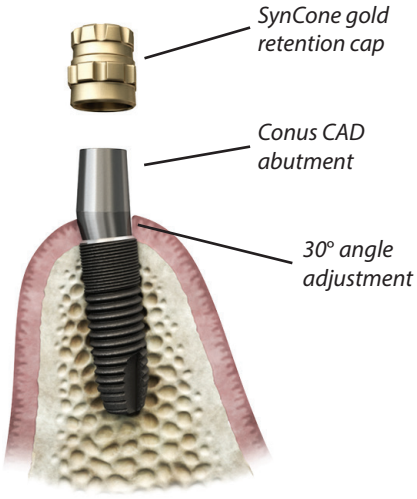
Original approved tooth try-in

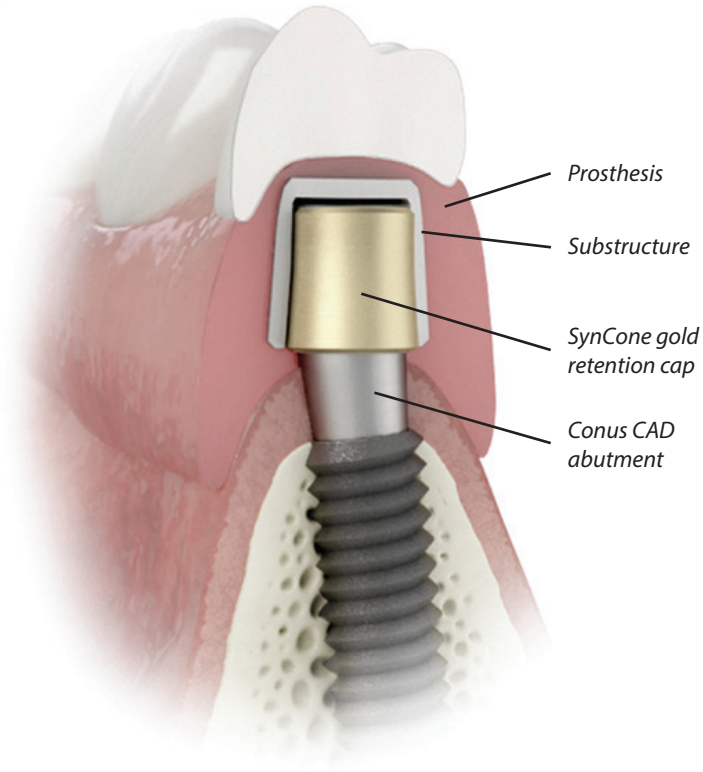
New custom tray for tissue neutral pick-up impression

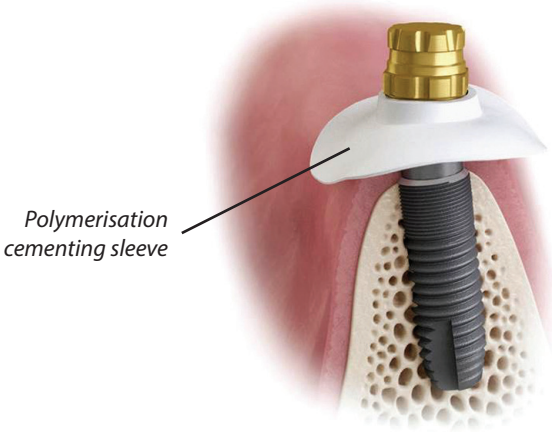
Syncone gold caps for pick-up

Polymerisation caps

The Conus Concept







Fourth Appointment

CLINICAL STEPS

- Transfer the Conus abutments to the mouth using the printed positioning indicator
- Place the Syncone gold retention caps over the Conus abutments
  - Rotate the cap while pushing down until cap "grabs" the abutment. Tap the Syncone caps with the handle of an intra-oral mirror to engage retention. Two taps on the anterior abutments and four taps on the posterior abutments is mostly sufficient
- Slide the supplied polymerisation caps over the SynCone gold caps to protect the caps and abutments from material overflow
- Position the substructure over the SynCone caps
- Lute the support frame onto the SynCone caps using an acrylic pick up material
- Pick the frame up using the new custom tray
- Do not remove the abutments from the mouth
- Soft reline the existing denture over the Conus abutments

Remove the healing abutments from the implants, exposing the implant platform. Transfer the Conus abutments directly from the model to the mouth using the printed positioning indicator. A precise transfer of the abutments is crucial in determining the retention of a Conus case.

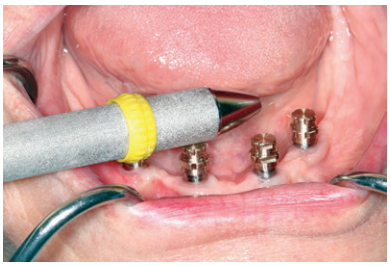
Unscrew the abutments from the model through the positioning indicator and transfer to the mouth without removing the abutments from the positioning indicator. Only remove the positioning indicator after the abutments are torqued in place. If an abutment is out of rotation by any amount it will cause the positioning indicator to bind. Call the lab for instructions if a Conus abutment does not transfer accurately from the model to the mouth. Place the machined SynCone gold retention caps onto the Conus abutments. Rotate the coping while pressing down until you feel the cap engage. After all caps are seated use the handle of an intraoral mirror to tap the caps into retention. Tap the anterior caps twice and the posterior caps four times to ensure an active retention. Passively position the cementing sub-structure over the caps making sure the frame is not under tension. If required, perform internal adjustments to allow the frame to fit passively over the abutments.

Slide the plastic polymerisation sleeves over the gold SynCone caps to protect the caps and abutments from material overflow. It is important to engage the polymerisation sleeve under the 2nd retention ring on the gold retention cap. It is crucial not to allow any material to engage the lower third of the gold cap. This area of the cap should be left open. Leaving this area exposed will allow the gold cap to stretch and mold to conform to the titanium abutment and through this maintain retention over time.

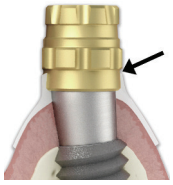
Transfer the abutments from the model to the mouth with the provided positioning jig

If implants are in undercut, pair abutments with draw to position together. After seating the first set place the subsequent abutments with common path of insertion

Conus abutments positioned and torqued with positioning jig



Place gold Syncone polymerisation caps. Turn and twist while pushing down on cap to engage. Tap the anterior caps twice and the posterior caps four times with the back of an intra-oral mirror. To ensure sufficient retention it is important to engage the posterior caps slightly more than anterior.



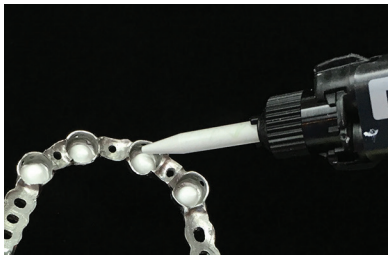
Slide a plastic Ankylos polymerisation cap over the abutment and engage it under the second ring on the Syncone gold cap.

Place the cementation frame over the gold caps and ensure a passive fit. If frame is not passive, adjust internal part of cementing frame before proceeding.

Luting the Substructure and SynCone Caps

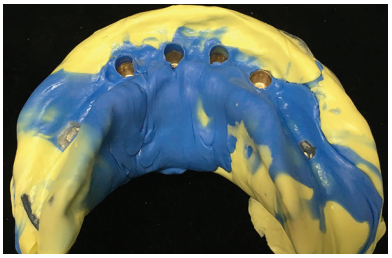
Flow a small amount of dual cure acrylic pick up material into the receiving part of the substructure and lute the substructure onto the SynCone gold caps. Once the pick up material is cured, remove the frame and polymerisation sleeves – Do NOT remove the Conus abutments from the mouth. Replace the frame over the Conus abutments and press down to achieve the desired amount of retention. Take a pick up impression of the substructure using the newly fabricated custom tray. Flow light body PVS material under the frame to index a passive tissue position. Add medium or heavy body material into the tray to facilitate a pick-up impression over the bar.

Lute the substructure to the SynCone abutments using an acrylic pick up material. Absolute suggests VoCo Quick Up or a similar product.

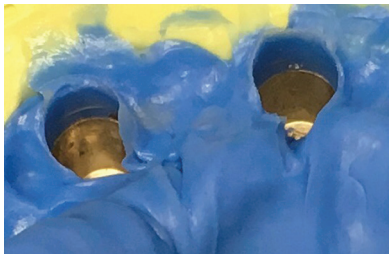


Flow a small amount of pick up material into the substructure receiving areas

SynCone caps luted into the substructure



Pick-up the luted SynCone caps and support structure inside a new custom tray impression



A "clean" pick up is essential for positive retention. Retake if any PVS bleeds into the caps.

Return the impression with the frame in place to allow your lab to pour a final processing model.

TO ENSURE ACCURATE FINAL DELIVERY, DO NOT REMOVE CONUS ABUTMENTS FROM MOUTH

Adjusting the existing denture to fit over the Conus caps

Flow a small amount of bite or PVS material into the intaglio service of the existing denture to index the Conus abutment positions. Drill corresponding holes into the existing denture to accommodate the Conus abutments. Protect the screw heads with a small amount of Teflon tape and reline the denture using a soft-reline material.

Lab Process:

Order a second set of Conus abutments and keep them in the lab to use as lab processing analogs. Place these abutments into lab analogs and press them into the pick-up impression – make sure they are fully engaged. Pour a processing model from the pick-up impression. Pull the substructure with the Conus caps out of the PVS pick up impression. Remount the case by fitting the original wax denture set-up back onto the new processing model. Fit the substructure with SynCone caps back onto the Conus "replicas" on the new processing model. Jump the teeth back onto the frame and return for a definitive try-in.

Schedule your patient to return after: **5 DAYS IN LAB**

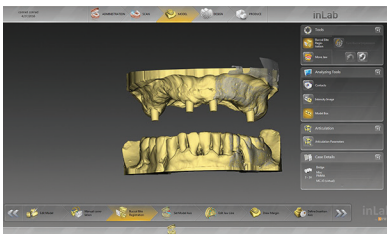
Definitive Try-In

CLINICAL STEPS
- Perform a final try-in
- Evaluate for retention as well as tooth position, etc.

The lab will return the case in wax for a definitive try-in. At this appointment it is important to evaluate the case for retention, esthetics and bite. Make chairside adjustments if needed.

Lab Process:
Process case for final delivery.

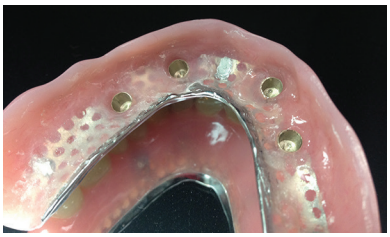
Absolute Lab add-on services
Absolute Lab will digitize the case. We keep a digital record of the model with Conus abutments, opposing model and bite relationship. A high-water sleep denture is designed and archived from this data. The sleep denture is milled from PMMA material and can be re-milled, if needed, without any additional chair time required from the clinician. Absolute also fabricates a custom Conus removal tool to assist the patient in the removal of the prosthesis.



Conus case digitizing - Archiving of bite, abutments and models

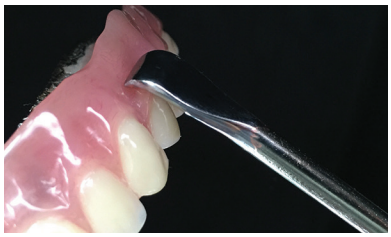
Milling of digitized sleep denture

Friction fit sleep denture ready for delivery



SynCone caps processed into the final denture

Final Conus denture with custom Absolute removal tool

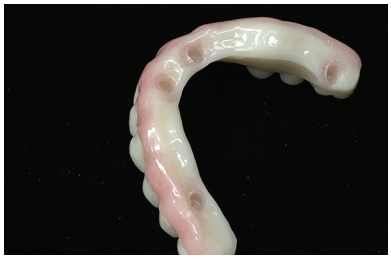


Bi-cuspid area over-festooned to attached removal tool

Final Delivery

Components delivered
- Denture processed with substructure and cemented SynCone caps
- PMMA milled high-water sleep denture
- Absolute removal tool

Final Conus and sleep denture ready for delivery



PMMA milled friction fit sleep denture

Absolute removal tool

Absolute Dental Lab

Established in 1994, Absolute Dental Services started as a small fixed prosthetics lab in the Triangle area of North Carolina. More than two decades later, Absolute's restorative focus is much broader but their attention to product detail and exceptional customer service has not changed.

In 2019 Absolute Dental Laboratory was nominated for and subsequently voted, the 2020 NADL Laboratory of the year! Today, Absolute is a true full-service partner, with a team nationally and internationally renowned for their expertise in creating world-class esthetics. Their use of cutting edge technology in CAD and milling as well as their extraordinary dental implant, guided surgery and high-end removables sections, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.

The company motto, Perfection Is Not Optional, holds true and serving their customers with Absolute Excellence has always been the primary focus of the owners, branch partners and team members. They welcome clinicians from all over the country to become part of the Absolute family!

Conrad J Rensburg

N.D & N.H.D in tech.

Conrad J Rensburg is owner and head of the dental implant division at Absolute Dental Lab in the Triangle region of North Carolina. He graduated under full scholarship with a 4-year Baccalaureate degree from Pretoria Tech in 1992. He is certified with an ND in technology and specialized with an NHD in fixed prosthetics.

He is a member of the AO, ACP and prestigious PEERS association. He is registered with the NADL, NCDLA and certified by the SADTC. He has specialized in fixed dental prosthetics with an emphasis on dental implants since the early 90's. As a CE-accredited speaker since 2002, he has presented at hundreds of events across the USA, including the Academy of Osseointegration, Global and US symposiums, World Summit Tour and a multitude of study club events. Conrad's emphasis as a speaker is on keeping todays clinicians abreast with the latest advancements in screw retained and hybrid implant retained and supported options.

As author of multiple published articles, his focus is on CAD implant design protocols and fixed as well as removable hybrid implant supported techniques.

Conrad can be contacted through absolutedentallab.com or at conrad@absolutedentalservices.com

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