OMNARETH



PRODUCT OVERVIEW

Stop fraud before it moves. Prove every decision.

Omnareth is the fraud prevention and decision layer for high-risk operations

October 2026 · Product overview

OVERVIEW

What Omnareth does

Omnareth checks every high-risk action (a cargo release at the gate, a vendor payment, an insurance or healthcare claim, a refund, a loan disbursement, a SIM swap, a benefit payment, a sign-in) against the record and your rules before it happens. It answers allow, flag or deny with the exact reasons, recognizes repeat fraud across records, and seals every decision so it can be proven unaltered later.

11
reference scenarios on synthetic data, from cargo to claims and onboarding

75 ms
median fraud-checked, audited decision, lab test

3 / 3
database tampering methods caught in testing

How it works

STEP 1

Send events

Your gate system, vessel feed, tracker platform, ERP or payment run sends each high-risk action to Omnareth over a REST API.

STEP 2

Get a decision

Omnareth evaluates the event against the record's current state, your rules and what it knows about everyone involved, and returns ALLOW, ALLOW_WITH_FLAGS or DENY with reasons.

STEP 3

Prove the record

Every decision is stored with an integrity hash over exactly what was decided and anchored on the Omnareth chain, which accepts records through PACT Protocol's Proof-of-Activity consensus. One call shows it has not been edited.

Built beside what you already run

Omnareth does not replace your transport, terminal, ERP or payment systems. It gives each of them the same rules, the same memory of who tried, and the same tamper-evident record, through one API.

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PLATFORM

Capabilities

RULES ENGINE

Rules you can read

Rules are explicit JSON conditions (and, or, not, 15 comparison operators) with a decision, code, message and remediation. Deterministic: the same inputs always give the same decision.

ANY ENTITY

Your process, your model

Define any record with a JSON Schema: a shipment with its seal, vessel and bill of lading, a vendor with its verified accounts. Every write is validated.

FIELD COMPARISONS

Presented against recorded

Rules compare what is presented now with what was recorded: the seal at the gate against the origin seal, the account on a payment against the verified one.

FAIL-CLOSED

Missing data means no

Authorization rules deny when a list or field is missing, so nothing passes because data was never loaded.

FRAUD PREVENTION

A memory across records

Omnareth records who each refusal implicated, opens cases for repeat offenders, reused documents and actors working several records, and watches suspects automatically.

FRAUD PREVENTION

Analysts decide, every check obeys

Confirming a case blocks the driver, vessel, account or party everywhere, even if an insider marks it as approved. Clearing a false positive lifts the watch.

EXPLAINABILITY

Every reason, every time

Each decision lists every rule evaluated and every rule that fired, with severity and remediation, for operators and auditors.

EVIDENCE

Tamper-evident by design

Audit records capture entity, event, ruleset and fraud-context snapshots under a SHA-256 integrity hash, anchored on chain and verifiable on demand.

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Cargo by road and sea

The cargo reference set protects a container from the origin seal to final release, by road and across the ocean, with 29 custody rules and 5 fraud rules.

THREAT	WHAT OMNARETH CHECKS	DECISION
Seal tampering or seal swap	Seal at handoff differs from the origin seal, or is reported broken	DENY
Container swap	Container number differs from the booking	DENY
Custody gap / ghost handoff	Party handing over or releasing is not the recorded custodian	DENY
Unauthorized custodian	Receiving party is not approved for the route	DENY
Unauthorized release	Release recipient is not an authorized consignee	DENY
Forged or stale release order	Release order at the gate does not match the order issued	DENY
Fictitious pickup	Driver is not on the consignee's dispatch list	DENY
Double release	Shipment has already been released	DENY
Premature release	Customs not cleared, or a hold is active	DENY
Seal compromised at release	Seal missing, different or broken at the gate	DENY
Door breach in transit	Doors opened outside an authorized facility	DENY
Pilferage or contraband	Scale weight outside the booked tolerance	FLAG
Hijack precursors	Route deviation or unscheduled stop over 30 minutes	FLAG
Skipped inspection	Handoff recorded without a seal check	FLAG
Phantom or switched vessel	Container loaded on, or arriving on, a vessel other than the booked one	DENY
Wrong port of loading	Loading at a port other than the booked port	DENY
Seal tampering at sea	Seal missing, different or broken at loading or discharge	DENY
Cargo diversion	Discharge at a port that is not an authorized port of discharge	DENY
Ship-to-ship transfer	A transfer between vessels at sea reported for the cargo	DENY
Forged bill of lading	Bill of lading presented at release is not the one the carrier issued	DENY
Release without the original bill	Original bill of lading not surrendered at release	DENY
AIS dark period	Vessel stopped transmitting its position for over 6 hours	FLAG
Unscheduled port call	Call at a port not on the vessel's published rotation	FLAG

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Across shipments

THREAT	WHAT OMNARETH CHECKS	DECISION
Known fraudster returns	A driver, truck or party in the event is blocked on the fraud watchlist	DENY
Watched identity	An identity is under watch, added by an analyst or automatically	FLAG
Repeat offender	An identity was implicated in 2 or more denied events in the last 30 days	FLAG
Compromised release document	The release order or bill of lading has also been presented for another shipment	FLAG
Driver hopping	The driver was implicated in denied pickups on 2 or more other shipments in 24 hours	FLAG

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Payments

Every business pays suppliers. The payments reference set checks vendor bank-detail changes and payment requests against the vendor master before money moves, and recognizes one fraud account pushed onto several vendors.

THREAT	WHAT OMNARETH CHECKS	DECISION
Bank detail change fraud	New bank account not verified by callback to a known contact	DENY
Business email compromise	Change request from a domain other than the vendor's verified domain	DENY
Payment diversion	Payment to an account that is not a verified account of the vendor	DENY
Duplicate invoice	Invoice number already paid	DENY
Self-approval	Requester and approver are the same person	DENY
Paying a vendor on hold	Vendor is on hold or blocked	DENY
Unusual amount	Invoice above the vendor's limit	FLAG
Known fraud account	A bank account, domain or person blocked on the watchlist	DENY
Watched identity	An identity under watch, added by an analyst or automatically	FLAG
Repeat offender	An identity implicated in 2 or more denied events in the last 30 days	FLAG
One account, many vendors	An account or domain implicated in denials on 2 or more other vendors in 24 hours	FLAG

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Insurance claims

Claims fraud rings file through people who are not insured, copy police reports between claims, date losses before a policy started and redirect payouts. Omnareth checks every claim and payout against the policy before money moves, and recognizes the device behind a ring when it turns up on another policy.

THREAT	WHAT OMNARETH CHECKS	DECISION
Claimant Not Insured	Only people insured on the policy may claim.	DENY
Duplicate Claim	An incident may be claimed only once.	DENY
Claim Soon After Inception	Flag claims within 30 days of the policy starting.	FLAG
Loss Not Covered	The type of loss must be covered by the policy.	DENY
Claim Over Limit	A claim may not exceed the coverage limit.	DENY
Policy Not Active	Claims are paid only on active policies.	DENY
Loss Before Inception	A loss that happened before the policy started is not covered.	DENY
Payout to Unverified Account	Claim payouts go only to accounts verified for the policy.	DENY
Device Across Policies	Flag a device or account implicated in denials on two or more other policies in 24 hours.	FLAG
Police Report Reuse	A police report belongs to one incident; seen on another policy, it is likely copied.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any policy event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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E-commerce refunds

Refund-as-a-service rings sell fake refunds: "never arrived" on delivered orders, returns shipped with another order's label, money sent to a gift card that never paid. Omnareth checks every refund against the order before money moves, and recognizes the gift card or device collecting across orders.

THREAT	WHAT OMNARETH CHECKS	DECISION
Refund Before Return Received	Flag refunds for returns that have not reached the warehouse yet.	FLAG
Refund to Another Destination	Refunds go back to the payment method that paid.	DENY
Refund Exceeds Order	A refund may not exceed what is still refundable on the order.	DENY
Not Received, but Delivered	An item-not-received claim on an order the carrier confirmed delivered needs investigation.	DENY
Not the Order Owner	Only the customer who placed the order may request its refund.	DENY
Return Tracking Mismatch	A return must use the label issued for this order.	DENY
Destination Across Orders	Flag a refund destination or device implicated in denied refunds on two or more other orders in the last 24 hours.	FLAG
Return Label Reuse	A return tracking number belongs to one order; seen on another, the return is likely fake.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any order event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Lending

Synthetic and stolen identities, employers that do not exist, several applications from one phone, and funds sent to an account the borrower does not own. Omnareth checks every application and disbursement before money moves, and recognizes the phone or device behind a ring across applications.

THREAT	WHAT OMNARETH CHECKS	DECISION
Employment Not Verified	Stated employment must be verified.	DENY
Income Above Verified	Flag stated income above the verified income tolerance.	FLAG
Identity Not Verified	An application proceeds only if identity verification passed.	DENY
Amount Over Affordability	The amount may not exceed what verified income supports.	DENY
Disbursement to Unverified Account	Funds go only to an account verified as the applicant's own.	DENY
Disbursement Before Approval	Funds are released only on approved applications.	DENY
Phone or Device Across Applications	Flag a phone, device, employer or account implicated in denials on two or more other applications in the last 24 hours.	FLAG
Loan Stacking	Flag a national ID seen on other applications: one person applying many times in a short period.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any application event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Healthcare claims

Fraudulent providers bill for visits that never happened, quote prior authorizations issued for other patients and bill the same service twice. Omnareth checks every claim against the member's coverage and history before it is paid, and recognizes the provider when it bills across many members.

THREAT	WHAT OMNARETH CHECKS	DECISION
Possible Upcoding	Flag claims whose diagnosis does not support the level of service billed.	FLAG
Duplicate Billing	A service by a provider on a date is paid once.	DENY
Service Not Verified	A billed service must match a verified encounter (eligibility check, check-in or visit record).	DENY
Member Not Eligible	Claims are paid only for members with active coverage.	DENY
Prior Authorization Invalid	A prior authorization quoted on a claim must have been issued for this member.	DENY
Excluded Provider	Providers on a government exclusion list may not be paid.	DENY
Service Not Covered	The procedure must be covered by the member's plan.	DENY
Provider Across Members	Flag a provider or referrer implicated in denied claims for two or more other members in 24 hours.	FLAG
Prior Authorization Reuse	A prior authorization belongs to one member; seen on another, it is likely copied.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any member event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Telecom

SIM swaps without proper ID, numbers ported out without the PIN, and financed phones shipped to drop addresses, often through one rogue agent. Omnareth checks every swap, port-out and device order against the account before it happens, and recognizes the agent or address behind it across accounts.

THREAT	WHAT OMNARETH CHECKS	DECISION
Account Not Active	Suspended or closed accounts cannot swap SIMs, port out or order devices.	DENY
Devices Over Limit	An order may not finance more devices than the account allows.	DENY
Device Shipped to Unverified Address	Financed devices ship only to an address verified for the account.	DENY
Port-Out Soon After SIM Swap	Flag a port-out within 72 hours of a SIM swap.	FLAG
Port-Out Not Authorized	A number may be ported out only with the correct port-out PIN.	DENY
SIM Swap Without Strong Authentication	A SIM swap needs the account PIN or photo ID checked in person.	DENY
Agent or Address Across Accounts	Flag an agent, port destination or address implicated in denials on two or more other accounts in 24 hours.	FLAG
SIM Reuse	A SIM card belongs to one account; seen on another, it is likely in a fraudster's hands.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any subscriber event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Government benefits

Benefit fraud rings file with stolen identities and the identities of people who have died, and redirect genuine claimants' payments to accounts they control. Omnareth checks every claim and payment change against the case before money moves, and recognizes the account, device or address behind a ring across cases.

THREAT	WHAT OMNARETH CHECKS	DECISION
Payment to Unverified Account	Benefits are paid only to accounts verified for the claimant.	DENY
Case Not Active	Benefits are paid only on active cases.	DENY
Claimant Deceased	No benefits are paid for a person whose identity matches a death record.	DENY
Week Already Paid	Each week is paid once.	DENY
Filed From Abroad	Flag claims filed from outside the country.	FLAG
Identity Not Verified	A claim is paid only after the claimant's identity is verified.	DENY
Over Weekly Benefit	A weekly claim may not exceed the case's weekly benefit.	DENY
Employer Reports Still Employed	Flag a claim when the employer reports the claimant is still employed.	FLAG
Payment Account Change Unverified	A change of payment account takes effect only after the claimant is verified again.	DENY
Account or Device Across Cases	Flag an account, device or address implicated in denials on 2+ other cases in 24 hours.	FLAG
Identity on Several Cases	A national ID on another case may be stolen or claimed twice.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any benefit case event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Cybersecurity

Account takeover runs on stolen credentials: credential stuffing, MFA push bombing, recovery emails changed from unknown devices, and help desks talked into bypassing MFA. Omnareth checks every sign-in, security change and privileged action before it is granted, and recognizes the attacker's address or device across accounts.

THREAT	WHAT OMNARETH CHECKS	DECISION
Account Not Active	Locked or disabled accounts cannot sign in or act.	DENY
Export Over Limit	A data export may not exceed the account's export limit.	DENY
Role Not Granted	A privileged action needs a role granted to the account.	DENY
Security Change Unverified	Password, MFA or recovery-email changes from a new device need step-up.	DENY
Wrong Password	A sign-in needs the correct password.	DENY
Impossible Travel	Deny a sign-in that would require travelling faster than an airliner since the last one.	DENY
MFA Fatigue	Three or more declined push prompts in one sign-in indicate push bombing.	DENY
MFA Not Passed	A sign-in needs a completed second factor.	DENY
New Device	Flag a successful sign-in from a device the account has not verified.	FLAG
Source Across Accounts	Flag an IP, device or recovery email implicated in denials on 2+ other accounts in 24h.	FLAG
Session Token Reuse	A session token belongs to one account; seen on another, it was likely stolen.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any account event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

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Identity verification

Synthetic identity rings open accounts with forged documents, deepfakes injected through virtual cameras, photos held up for the liveness check and stolen documents. Omnareth checks every document and selfie result before the account opens, and recognizes the ring's device, a reused document or a reused face across onboardings.

THREAT	WHAT OMNARETH CHECKS	DECISION
Details Do Not Match	The date of birth on the document must match the one declared.	DENY
Document Expired	An expired document cannot prove identity.	DENY
Document Not Accepted	Only document types the business accepts may be used.	DENY
Document Tampered	Deny a document whose security features or data show tampering.	DENY
Onboarding Not Open	Checks run only on open onboardings.	DENY
Face Does Not Match	The selfie must match the document photo above the business's threshold.	DENY
Injected Camera Feed	A selfie streamed from a virtual camera or emulator may be a deepfake.	DENY
Liveness Failed	A selfie must come from a live person, not a photo, screen or mask.	DENY
Too Many Attempts	Flag a selfie after more attempts than the policy allows.	FLAG
Device Across Onboardings	Flag a device implicated in denied checks on 2+ other onboardings in 24 hours.	FLAG
Document or Face Reused	A document or face belongs to one person; seen on another onboarding, it may be stolen or synthetic.	FLAG
Repeat Offender	Flag events involving an identity implicated in two or more denied events in the last 30 days.	FLAG
Blocked Identity	Identities blocked on the fraud watchlist may not take part in any onboarding event.	DENY
Watched Identity	Identities under watch may proceed only with a flag for review.	FLAG

Your own process

The same platform takes any approval flow: define the record, the events and which fields identify people, devices, accounts and documents, and the fraud detectors and watchlist work for it too.

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PROOF

See it work

11 reference scenarios run end to end against the live system: cargo by road and sea (22 decisions across 3 shipments, including a diversion at sea and a forged bill of lading), one impostor followed across 3 shipments to a confirmed block, a business email compromise campaign against 3 vendors, and fraud rings against insurance claims, online refunds, lending, healthcare claims, telecom accounts, government benefits, online accounts and customer onboarding. Every decision must match its expected outcome, and every record is verified against its anchor.

Proof points

PROOF POINT	RESULT
Cargo by road and sea: decisions matching and verified on chain	22 of 22
Fraud across shipments: one impostor, 3 shipments	5 of 5
Payments fraud: one fraud account, 3 vendors	9 of 9
8 more fraud rings (insurance claims, e-commerce refunds, lending, healthcare claims, telecom, government benefits, cybersecurity, identity verification), each with an insider override	64 of 64
Rule evaluation, 34 cargo rules (median / p99)	22 µs / 71 µs
Fraud-checked, stored, audited decision via API (median / p95)	75 ms / 93 ms
Automated tests passing	1,683

100 reference decisions in all. Performance measured on 4 vCPU Intel Xeon @ 2.1 GHz, Node.js 22, PostgreSQL 16 and a four-validator PACT network on the same host, production settings (sign-in, field encryption).

NEXT STEP

Getting started

Omnareth runs as Node.js services with PostgreSQL, with a Docker Compose file for the full stack. The fastest way to evaluate it is a 90-day pilot on one lane, facility or process: 15 days modeling, 15 connecting your event feeds, 45 in shadow mode while your operation carries on unchanged, and 15 reviewing results. Qualified organizations can apply on our website; the **Pilot Program Guide** has the details.

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