BITBULLNEWS DATA · CRYPTO INDUSTRY HEALTH

VERSION 1
INAUGURAL RELEASE

BBN DEVELOPMENT INDEX

PUBLIC METHODOLOGY

A monthly measure of meaningful builder activity across the crypto ecosystem. It tracks whether the industry keeps producing durable technical capacity — maintaining networks, shipping infrastructure, fixing vulnerabilities — even after prices, narratives and trading attention have moved on. The headline is a diffusion reading on a 0–100 scale, anchored on a no-change line at 50.0.

HOW TO READ IT — AND WHAT 50 MEANS

Above 50.0 means builder activity expanded month-on-month; below 50.0 means it contracted; exactly 50.0 means no net change. A rising index means development is broadening across the panel; a falling one means it is cooling or narrowing to fewer ecosystems. Like every index in the BBN family, this is a diffusion index: 50.0 is the point at which the share of repositories and ecosystems with strengthening activity is balanced by the share with weakening activity. It is best read as a long-horizon health signal, not a short-term trading indicator.

< 50.0	50.0	> 50.0
CONTRACTION	NO CHANGE	EXPANSION

Index family	BBN Indices · Crypto Industry Health
Index name	BBN Development Index
Primary objective	Measure the month-on-month change in meaningful builder activity and technical capacity across the crypto ecosystem
Update frequency	Monthly — one reading per calendar month (UTC)
Headline unit	Diffusion reading, 0–100, centred on 50.0 (no net change)
Headline bounds	Bounded in [0, 100]; 50.0 is the no-change line
Coverage standard	150–250 ecosystems · 3,000–8,000 eligible repositories · 5,000–18,000 unique contributors
Minimum publication threshold	At least 850 valid repositories across no fewer than six of eight sector sleeves
Material revision threshold	0.5 index points (headline)
Methodology version	Version 1 — inaugural public release
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POSITIONING

BBN Development is a directional industry indicator for editorial, research and commercial data users who need a consistent monthly read on whether the crypto builder economy is expanding, contracting or moving sideways. It is not an official statistic, a regulated financial benchmark, or a measure of code quality, protocol safety, investment merit or the commercial success of any individual project.

01 WHAT THE INDEX MEASURES

Unlike price, trading volume or social attention, development activity reflects the technical work required to maintain networks, improve protocols, ship infrastructure, fix vulnerabilities and expand long-term capacity. The index does not rank individual projects by quality or investment merit. It gives a repeatable, sector-level view of the builder economy: whether more teams are active, whether code work is broadening, and whether progress is concentrated in a few large projects or distributed across the ecosystem.

> **CORE QUESTION**
>
> Is the crypto ecosystem producing more meaningful technical activity this month than last — and is that activity broad enough to suggest durable industry development rather than isolated work by a handful of large projects?

02 COVERAGE DESIGN

The index is built from a curated universe of public development signals, focused on crypto-native projects, infrastructure providers, protocol ecosystems, developer tooling, wallets, security infrastructure, scaling systems and other open development surfaces directly relevant to blockchain and digital-asset infrastructure.

COVERAGE STANDARD	TARGET SPECIFICATION
Monitored development universe	150–250 ecosystems, protocols, infrastructure projects or developer organisations
Eligible repository universe	3,000–8,000 public repositories after relevance screening — a multi-year growth envelope, not a month-to-month band
Target monthly valid coverage	1,200–3,500 repositories with sufficient data for scoring in the reference month
Minimum publication threshold	At least 850 valid repositories across no fewer than six of the eight sector sleeves
Developer coverage objective	5,000–18,000 unique public contributor identities after deduplication and bot filtering

03 SECTOR SLEEVES

The universe is divided into eight sleeves so the index reflects the breadth of crypto development rather than the dominance of one ecosystem. Sleeves are target ranges, not fixed weights; the mid-points sum to roughly 100% within a ±5-point tolerance, which absorbs natural variation in the eligible universe without forcing a re-weighting each cycle.

SECTOR SLEEVE	TARGET SHARE	REPRESENTATIVE COVERAGE
Layer 1 & core protocol	**15–20%**	Base-layer networks, consensus clients, core protocol repositories, protocol SDKs
Layer 2, scaling & interoperability	**12–16%**	Rollups, scaling systems, bridges, cross-chain messaging, interoperability infrastructure
DeFi & on-chain finance	**14–18%**	DEXs, lending and derivatives protocols, yield infrastructure, risk engines
Wallets, custody & user infrastructure	**10–14%**	Wallet software, account-abstraction tooling, custody infrastructure, key management

SECTOR SLEEVE	TARGET SHARE	REPRESENTATIVE COVERAGE
Developer tooling & data infrastructure	**12–16%**	Indexers, APIs, analytics stacks, node tooling, developer platforms, data pipelines
Security, compliance & risk	**8–12%**	Auditing tools, monitoring, threat detection, compliance and risk tooling
Stablecoin, payments & settlement	**8–12%**	Payment rails, stablecoin tooling, settlement interfaces, transfer infrastructure
Applications & emerging use cases	**8–12%**	DePIN, gaming infrastructure, social protocols, tokenisation, application-layer projects

Sleeve definitions and target ranges are reviewed at least once every twelve months. Material changes are announced with at least 30 days' public notice before they take effect.

04 ELIGIBLE REPOSITORIES AND CONTRIBUTORS

Not every public repository counts equally — relevance, continuity and signal quality matter. A repository must represent a genuine development surface for a crypto product, protocol, infrastructure layer or ecosystem.

ELIGIBLE	EXCLUDED OR ADJUSTED
Official or ecosystem-recognised repositories tied to live protocols, infrastructure or products	Personal experiments with no evident connection to a live ecosystem or product
Repositories with observable maintenance, code or release activity in the trailing 6 months	Abandoned repositories — no merged code, release or maintenance activity in the trailing 6 months
Core protocol, tooling, documentation, SDK, client, smart-contract and infrastructure repositories	Pure website, marketing or duplicated-documentation repositories, unless technically relevant
Contributors with code, review, issue, release or maintenance activity that passes quality checks	Known bots, automated version bumps, spam commits and artificial contribution patterns
Forks that are materially maintained or extended — ≥25% of trailing-12-month commits originating in the fork, or ≥3 independent contributors not present upstream over the same window	Passive mirrors, unmodified forks and bulk imports that do not represent independent development work

QUANTITATIVE DEFINITIONS

TERM	DEFINITION
Meaningful contribution (commit)	A commit that is not flagged by the bot/automation filter, is not a passive merge of upstream, and modifies at least one line of substantive code, configuration or documentation in an eligible path. Pure version-bump and dependency-bump commits are excluded.
Meaningful pull request	A pull request merged into the default branch that contains at least one meaningful commit and is not authored by a listed bot account.
Active developer (monthly)	A unique deduplicated contributor with at least one meaningful contribution to an eligible repository in the reference month.
Active repository (monthly)	An eligible repository with at least three meaningful contributions from at least two distinct active developers in the reference month.

TERM	DEFINITION
Stable repository (monthly)	An eligible repository that misses the active threshold this month but had at least one meaningful contribution or one release/tag event in the trailing 3 months.
Release / maintenance event	A tagged release, a semantic-version bump, a security patch published with release notes, or an issue resolution explicitly linked to a closed pull request.

05 COMPONENT STRUCTURE

The headline is a composite of five components, weighted to avoid over-reliance on raw commit counts — which are noisy, easy to distort and not always representative of meaningful development.

COMPONENT	WEIGHT	PRIMARY SIGNAL
Active Developers (D)	**35%**	Direction of the unique deduplicated contributor count across ecosystems versus a trailing three-month baseline
Contribution Activity (C)	**25%**	Direction of per-developer-capped meaningful commits and merged PRs per repository versus baseline
Repository Breadth (R)	**20%**	Diffusion across repositories: share active and stable versus the panel
Release & Maintenance (M)	**10%**	Direction of releases, tagged versions and patch events per active repository versus baseline
Ecosystem Breadth (E)	**10%**	Direction of HHI-based concentration across ecosystems versus baseline

06 CALCULATION FRAMEWORK

BBN Development is a diffusion index. For every eligible repository — and, for some components, ecosystem — it records the direction of change against the previous month and aggregates those directions into a single 0–100 reading, where 50.0 means equal shares of improving and weakening units. The diffusion unit varies by component: Active Developers and Contribution Activity diffuse over repositories and ecosystems; Repository Breadth reads the active-vs-stable composition of the panel; Release & Maintenance diffuses over active repositories; and Ecosystem Breadth converts an HHI concentration measure into a diffusion direction. The construction follows established diffusion-index practice (ISM and S&P Global PMI) and the rest of the BBN family.

REPOSITORY ACTIVITY BASELINE

Each eligible repository's monthly activity is summarised as a log-compressed score combining its capped meaningful commits, capped merged PRs, releases and maintenance events:

$$\text{RepoActivity}_{i,t} = \alpha \cdot \ln(1+C^*_i) + \beta \cdot \ln(1+P^*_i) + \gamma \cdot \ln(1+R_i) + \delta \cdot \ln(1+M_i)$$

REPOSITORY ACTIVITY

with $\alpha = 0.40$, $\beta = 0.30$, $\gamma = 0.15$, $\delta = 0.15$ (sum = 1.00). C^*_i and P^*_i are per-developer-capped meaningful commits and merged PRs (cap = 25 events per developer per month); R_i is releases and M_i is maintenance events. The natural-log transform compresses the right-skewed distribution typical of repository activity.

PER-REPOSITORY DIRECTIONAL SIGNAL

$$d_{i,t} = \text{direction of } [\ \text{RepoActivity}_{i,t} - \text{MA3}(\text{RepoActivity}_{i,t-1})\ ]$$

DIRECTION VS TRAILING BASELINE

MA3 is the trailing three-month moving-average baseline. A repository is Improving (above baseline by more than $\tau \rightarrow$ contribution 1.0), Unchanged (within $\pm\tau \rightarrow 0.5$) or Weakening (below baseline by more than $\tau \rightarrow 0.0$). $\tau = 5\%$ of the repository's trailing-12-month average absolute month-on-month change in RepoActivity, with a 2% floor and a 15% cap. The wider tolerance than other BBN indices reflects the lumpiness of repository activity, which often follows release cycles rather than steady monthly rhythms.

COMPONENT SCORES

ACTIVE DEVELOPERS (D) — DIFFUSES ACROSS ECOSYSTEMS

$$D_t = 100 \times (\ \Sigma_k\ \omega_k \cdot d^D_{k,t}\ ) / (\ \Sigma_k\ \omega_k\ )$$

where $d^D_{k,t}$ = direction of [$\text{ActiveDevs}_{k,t} - \text{MA3}(\text{ActiveDevs}_{k,t-1})$]. The developer count is diffused at ecosystem level, since one developer often contributes to several repositories in an ecosystem. ω_k is the ecosystem weight, capped at 12% per ecosystem and 30% per sleeve.

CONTRIBUTION ACTIVITY (C) — DIFFUSES ACROSS REPOSITORIES

$$C_t = 100 \times (\ \Sigma_i\ \omega_i \cdot d^C_{i,t}\ ) / (\ \Sigma_i\ \omega_i\ )$$

where $d^C_{i,t}$ is the direction of $\text{FilteredContrib}_{i,t}$ versus its MA3 baseline. FilteredContrib is the sum of meaningful commits and merged PRs after bot filtering and per-developer capping; ω_i is the repository weight (log-scale by trailing-12-month median activity, subject to the same caps).

REPOSITORY BREADTH (R) — LEVEL READ OF THE PANEL

$$R_t = 100 \times \text{ShareActive}_t + 50 \times \text{ShareStable}_t$$

ShareActive and ShareStable are the proportions of eligible repositories meeting the active threshold and (only) the stable threshold. R is a level read rather than a month-on-month direction, because the active and stable thresholds already embed a trailing comparison; the 0.5 weight on stable repositories follows standard diffusion-index convention.

RELEASE & MAINTENANCE (M) — DIFFUSES ACROSS ACTIVE REPOSITORIES

$$M_t = 100 \times (\ \Sigma_{i\in\text{active}}\ \omega_i \cdot d^M_{i,t}\ ) / (\ \Sigma_{i\in\text{active}}\ \omega_i\ )$$

$d^M_{i,t}$ is the direction of release-and-maintenance events per active repository versus its MA3 baseline, in the same weighted-share form as C. Restricting M to active repositories stops a crowd of low-activity repos that ship a single patch from inflating the score.

ECOSYSTEM BREADTH (E) — CONCENTRATION CONVERTED TO DIRECTION

$$\text{HHI}_t = \Sigma_k\ (\text{share}_{k,t})^2 \quad \cdot \quad \text{BreadthLevel}_t = 100 \cdot (1 - \text{HHI}_t) / (1 - 1/N_{\text{eff}})$$

$share_{k,t}$ is ecosystem k's share of total meaningful contributions; N_{eff} is the median count of distinct active ecosystems over the trailing 24 months. BreadthLevel = 100 is a perfectly even distribution and 0 is complete concentration in one ecosystem. E = 100 (Improving) if BreadthLevel exceeds its three-month baseline by more than τ_E = 1.0 point, 0 (Weakening) if it is below by more than τ_E, and 50 (Unchanged) otherwise.

HEADLINE

$$\text{BBN Development}_t = 0.35 \cdot D_t + 0.25 \cdot C_t + 0.20 \cdot R_t + 0.10 \cdot M_t + 0.10 \cdot E_t$$

COEFFICIENTS SUM TO 1.00 — ROUNDED TO ONE DECIMAL PLACE

Each component is bounded in [0, 100] with 50.0 meaning no net change in its dimension, so the headline is bounded in [0, 100] with 50.0 meaning builder activity across the weighted panel is unchanged versus the previous month.

Why diffusion rather than levels. Absolute development activity is right-skewed, grows secularly as the open-source crypto codebase expands, and varies sharply across sleeves. A level-based index would be dominated by that secular growth and by the largest ecosystems in any given month. A diffusion index measures how broadly conditions are improving or weakening across the panel, independent of any single ecosystem's scale — and keeps the series directly comparable with the rest of the BBN family.

07 QUALITY CONTROLS

All controls are applied by documented rules, not by discretionary judgement in the moment.

CONTROL	HOW IT WORKS
Bot & automation filtering	Contributors are excluded if they match a maintained list of known automation accounts (Dependabot, Renovate, CI service accounts, repo-bot patterns), author only dependency-/version-bump or auto-merge commits over a 90-day window, or exceed a velocity inconsistent with human authorship (e.g. more than 500 commits in a single calendar day). The list is updated continuously.
Contributor deduplication	Identities are merged via verified commit signatures, author-email normalisation and explicit handle-mapping for documented account migrations; cross-platform matching is applied only where the contributor has publicly linked identities. Any change to this procedure is treated as material and may trigger backward revisions.
Material-change threshold τ	Repository moves smaller than τ are treated as Unchanged. Default τ = 5% of the repository's trailing-12-month average absolute month-on-month change, with a 2% floor and a 15% cap.
Fork & mirror screening	Forks must meet the materiality threshold; mirrors and unmodified copies are excluded; bulk imports are flagged automatically and reviewed before inclusion.
Abandoned-repository checks	Repositories with no meaningful contribution, release or maintenance event in the trailing 6 months leave the eligible universe and are logged — not silently dropped. Universe size and changes are published monthly.
Per-developer activity capping	Meaningful commits and PRs are capped at 25 events per developer per repository per month, so no single highly active developer can dominate the contribution component.
Outlier review	A repository's activity score is flagged if its month-on-month change exceeds the 99th percentile of its own history, or if it represents more than 5% of all meaningful contributions in the month. Flagged items are checked against documented events (migration, bulk import, fork merge); confirmed artefacts may be excluded, while legitimate spikes are retained.

CONTROL	HOW IT WORKS
Sector-breadth control	No single sleeve may contribute more than 30% of weighted activity to any component, regardless of underlying volume; excess contribution is downweighted proportionally.
Ecosystem weight cap	No single ecosystem may exceed 12% of total headline weight.

Survivorship and panel change. Repositories that exit the universe (abandonment, shutdown, loss of crypto relevance) are reported with the monthly release as a panel-change note, and the cessation month is counted as Weakening before the repository leaves. Where exits exceed 5% of the eligible universe in a single month, a brief commentary explains the cause — preventing the index from looking stronger simply because weaker projects drop out.

08 INTERPRETATION FRAMEWORK

Headline values are rounded to one decimal place and classified into non-overlapping bands, defined so that every possible reading falls into exactly one category with no gaps.

READING	LABEL	PRACTICAL MEANING
≥ 65.0	**Strong development expansion**	Activity is broad and resilient; most repositories and ecosystems are strengthening month-on-month
55.0 – 64.9	**Healthy development environment**	Technical activity is improving across most of the panel, supported by several components
50.1 – 54.9	**Modestly above no-change**	Slightly more units improving than weakening; trend confirmation needed
= 50.0	**No net change**	Improvement and deterioration are evenly balanced across the weighted panel
45.0 – 49.9	**Modestly below no-change**	Slightly more units weakening than improving; not yet a clear contraction signal
35.0 – 44.9	**Weak development environment**	Builder activity is fading, narrowing or losing momentum across components
< 35.0	**Severe development contraction**	Technical activity has weakened materially across the observed universe

How to use it. Read BBN Development alongside other BBN indicators where available — Activity for operating conditions, Funding for capital formation. Development shows whether the technical base is still being built; the three are complementary, not substitutes. Read short-term moves against the three-month moving average and the breadth components, not in isolation; Development is best treated as a long-horizon health signal, not a short-term trading indicator.

09 PUBLICATION, REVISIONS AND SCOPE

ITEM	POLICY
Frequency & period	Monthly; the reference period is the calendar month (UTC)
Publication window	Normally within the second half of the following calendar month, after data collection, repository review and quality checks complete
Headline publication	At least 850 valid repositories across no fewer than six of eight sleeves

ITEM	POLICY
Provisional publication	750–849 valid repositories, or coverage in only five sleeves — published with a “Provisional” label and revisable in the next cycle
No publication	Fewer than 750 valid repositories — a brief coverage note is issued in place of the release
Material revision	A prior headline is restated if late-validated data, source restatements, repository reclassification or bot-filter updates would move it by 0.5 points or more; smaller changes are noted internally only
Revision window	Restatements normally occur in the immediately following release; anything later is exceptional and is accompanied by an explicit explanation

Published each month. The headline reading with month-over-month and twelve-month change; the five component scores; the three-month moving average; sector-sleeve commentary for sleeves meeting coverage thresholds; a coverage statement (eligible and valid repositories, unique contributors, sleeve coverage and any active provisional labels); a panel-change note; and a revision note whenever a prior reading is restated.

Governance. This is the inaugural publication, Version 1. Material changes — to component weights, sleeve definitions, publication thresholds, the threshold τ, bot-filtering or deduplication rules, or the calculation formulas — are announced with at least 30 days' public notice, carry a versioned changelog entry and a new version number, and take effect only after the notice period. Editorial corrections that do not change meaning may be made without notice but are recorded in the version history.

SCOPE AND LIMITATIONS

BBN Development is a monthly diffusion indicator of observable public development activity — a composite of builder participation, contribution intensity, repository breadth, operational upkeep and ecosystem distribution, centred on the no-change line at 50.0. It is not an official statistic or a regulated financial benchmark; not a measure of code quality, protocol safety, security or audit standing; not a measure of absolute industry size and not interchangeable with raw repository counts; and not a measure of investment returns or token performance. It is derived from public repositories only and does not capture private or closed-source work, internal enterprise development or undisclosed security engineering. Because the crypto sector is narrower, younger and more cyclical than broader open-source software, its universe is deliberately specialised: coverage standards, thresholds and caps are calibrated to that reality rather than lifted from software-industry-wide benchmarks.

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