

Spitzer News / Spitzer Data

WebSocket Dictionary

Wire protocol & response schema

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Version 1.0

1. Overview

The Spitzer WebSocket API exposes Spitzer News and Spitzer Data over a single, multiplexed connection. One socket carries two channels — news (published Spitzer / CTFN stories) and data (live M&A risk-arbitrage metrics) — in two modes:

- Pull (request / response): send a query, receive a result. Available at every access level.
- Push (streaming): the server sends frames unprompted — news on publish, and live data on the price tick. Available only at the Immediate level.

Authentication is the same opaque bearer token used by the REST API and the =SPITZER Excel add-in. One call equals one logical request, charged against a single per-user budget that is shared across every Spitzer API surface (WebSocket, MCP, REST, and =SPITZER).

Channels

Channel	Carries	Pull	Push (Immediate)
news	Published Spitzer / CTFN news stories (summaries + full article by slug)	Yes — all levels	Broadcast to all Immediate connections on every publish
data	Live M&A deal metrics (spreads, premium, odds, prices, timing)	Yes — all levels	Per-ticker, on subscription, on the live-price tick

Related surfaces (same bearer, same per-user budget): the REST endpoints under /api/spitzer/ (aliased /api/ctfndata*), and the five MCP tools spitzer_data, spitzer_data_all, spitzer_data_search, spitzer_news and spitzer_news_article.*

2. Connecting & authentication

Open a WebSocket connection to:

```
wss://spitzerdata.com/ws
wss://spitzernews.com/ws      (same endpoint, alternate host)
```

Present the bearer token in EITHER the upgrade request's Authorization header OR a ?token= query parameter (use the query parameter when your client cannot set custom headers):

```
Authorization: Bearer <opaque-bearer>
  — or —
wss://spitzerdata.com/ws?token=<opaque-bearer>
```

Obtaining a bearer token

POST your credentials to the REST login endpoint. The username is your account email; the token is valid for 24 hours. Request a fresh one whenever a call returns 401.

```
POST https://spitzerdata.com/login
Content-Type: application/json
{ "username": "you@example.com", "password": "<password>" }

→ { "status": "ok", "token": "<opaque-bearer>",
    "user": "you@example.com",
    "level": "immediate",           // immediate | research_plus | research
    "expires_in_hours": 24 }
```

Welcome frame

On a successful connection the server immediately sends a welcome frame describing your access level, push eligibility, pull budget, and the available channels.

Field	Definition	Type	Example
type	Frame discriminator; always "welcome".	string	"welcome"
level	Your resolved Spitzer API access level.	string	"immediate"
can_push	Whether this connection receives pushes (true only at Immediate).	boolean	true
pull_limit	Max pull calls per window; null = uncapped (Immediate).	integer null	null
pull_window_seconds	Length of the rate-limit window in seconds; null when uncapped.	integer null	null
channels	The channels available on this socket.	array[string]	["news", "data"]

```
← { "type": "welcome", "level": "immediate", "can_push": true,
    "pull_limit": null, "pull_window_seconds": null,
    "channels": ["news", "data"] }
```

Close codes

Code	Meaning
4401	Unauthorized — the bearer was missing or did not resolve to a user. Sent BEFORE the upgrade is accepted; no welcome or error frame is delivered.
4403	Forbidden — the bearer is valid but the tier has no API access (tiers 6+). The server first sends an error frame (reason "no_access"), then closes with 4403.

Clients must reconnect automatically on any CLOSE event, using exponential backoff, and re-send their data subscriptions afterwards (subscriptions are per-connection and not persisted).

3. Access levels & pull budgets

Your tier resolves to one of three API levels. One call = one logical request on any surface, charged against a single shared per-user budget.

Level	Tiers	Push	Pull budget	Window
Immediate	1–3 (and F&F)	Yes — news + data	Uncapped	—
Research+	4	No (pull only)	10,000 calls	30 min
Research	5	No (pull only)	50 calls	10 min
(none)	6–9, 11	No — connection rejected (4403)	No access	—

Read the remaining field on each result frame to pace your usage (null = uncapped). The authoritative budget signal over the socket is this remaining field — REST-style rate-limit headers do not apply to WebSocket frames.

4. Messages (client → server)

Send JSON objects. A message routes to a pull whenever it carries a query or uid; otherwise it is dispatched by its type field.

Message	Shape	Purpose
pull / query	<code>{ "uid": "<id>", "query": { "channel": "news" "data", ... } }</code>	Request / response. uid (optional) is echoed on the matching result or error frame. The query object selects the channel and form (see §6 / §7). Charges one call.
ping	<code>{ "type": "ping" }</code>	Keep-alive heartbeat. The server replies with a single keep-alive frame. Not charged.
subscribe	<code>{ "type": "subscribe", "tickers": ["AAPL", ...] }</code>	Add data tickers to this connection's push set (Immediate only). A single "ticker" string is also accepted. Acknowledged with a subscribed frame.
unsubscribe	<code>{ "type": "unsubscribe", "tickers": ["AAPL", ...] }</code>	Remove data tickers (Immediate only). Omitting tickers clears ALL subscriptions. Acknowledged with a subscribed frame listing what remains.

5. Frames (server → client)

Frame type	When sent	Key fields
welcome	Once, on connect (see §2).	type, level, can_push, pull_limit, pull_window_seconds, channels
result	On a successful pull.	type, uid (echoed), channel, remaining, value
error	On a rejected or failed request.	type, reason (+ uid / retry_after / limit / detail — see §9)
push	Streaming, Immediate only (news on publish; data on tick).	type, channel, content (+ ticker on data pushes)
keep-alive	In reply to a client ping.	type only
subscribed	In reply to subscribe / unsubscribe.	type, channel ("data"), tickers (sorted current set)

The result frame's value holds the unwrapped payload (the scalar, map, list, or article object described in §6 / §7) — not a status envelope.

6. The data channel

A data query takes one of three forms. The channel defaults to "data" when omitted.

Form	Request query	Returns (value)
Single cell	<code>{ "channel": "data", "ticker": "NSC", "param": "spread", "format": "display" }</code>	A single scalar — a formatted string ("18.27%"), a number (329.47), or an N/A / #ERR string. Omit param (with a ticker) for a one-line summary. format "raw" returns the unformatted value.
All params	<code>{ "channel": "data", "all": true, "ticker": "NSC" }</code>	An object mapping all 25 canonical parameters to their display values (the same map a data push delivers). Unresolved ticker → an #ERR string.
Search	<code>{ "channel": "data", "q": "Disney", "param": "spread", "limit": 20 }</code>	A pipe-joined string of hits — "TICKER: value ..." with a param, or "TICKER: Target / Acquirer ..." without. q matches ticker, target or acquirer name.

```
→ { "uid": "q1", "query": { "channel": "data", "ticker": "NSC", "param": "spread" } }
← { "type": "result", "uid": "q1", "channel": "data",
    "remaining": null, "value": "18.27%" }
```

Data parameter catalogue

Parameter names are case-insensitive and accept spaces, hyphens or underscores; common aliases are noted.

Percentage values are stored as decimals and rendered ×100 to two decimals.

Parameter	Definition	Type	Example
target	Target company name (also a lookup key — query by name or ticker).	string	Norfolk Southern
acquirer	Acquirer / buyer name. Aliases: buyer, acquiror.	string	Union Pacific
listing	Target's primary listing (country / exchange). Aliases: country, primary_listing.	string	United States
situation_type	Deal situation type. Aliases: situation, type, deal_type.	string	Live
comps	Comparable companies / tickers. Aliases: comparables, comp.	string	CSX UNP
pre_deal	Target's pre-deal / undisturbed share price. Aliases: predeal, undisturbed_price.	number	207.34
break	Estimated target price if the deal breaks. Alias: break_price.	number	208.50
break_rt	Break price including the reverse-termination (RT) fee. Alias: break_with_rt.	number	212.10
now	Current target share price. Aliases: current, price.	number	201.69
offer	Offer / deal price per share. Aliases: offer_price, deal_price.	number	329.47
premium	Deal premium over the pre-deal price. Alias: prem.	percent	58.83%
gross_downside	Gross downside if the deal fails (to break, no fees). Alias: downside.	percent	-12.40%
downside_rt	Downside including the reverse-termination fee.	percent	-9.85%
gross_spread	Gross spread to the offer price.	percent	19.55%
spread	All-in spread — the headline spread. Aliases: all_in, allin_spread.	percent	18.27%
ann_spread	Annualised all-in spread. Aliases: annualized, ann_all_in.	percent	34.10%
risk_reward	Implied all-in risk / reward (computed: downside_rt ÷ spread). Aliases: rr, risk_return.	percent	53.90%
chance_of_close	Implied all-in chance of close. Aliases: chance, probability, prob.	percent	21.00%
profit_pool	Profit-pool size (a number, not a percentage). Alias: pool.	number	146.82
official_guidance	Company's official closing guidance — a date or free text. Aliases: guidance, closing_guidance, close_date.	date string	2026-Q1
ctfn_estimate	Spitzer's own estimated closing date. Aliases: estimate, expected_close.	date string	2026-02-15
undisturbed_date	Undisturbed (pre-deal reference) date. Alias: undisturbed.	date	2025-07-29
break_1w	Target break price, 1-week % change. Aliases: break_change, break_weekly.	percent	+0.85%
chance_1w	Implied chance of close, 1-week change. Aliases: chance_change, chance_weekly.	percent	-3.00%
ticker	Target ticker symbol (the deal's own target ticker).	string	NSC

All 25 parameters above (including the computed risk_reward) are the keys returned by the all-params form and by data pushes.

Meta parameters (ticker-less)

These four resolve on the single-cell form with no ticker; they are not part of the all-params map.

Parameter	Definition	Type	Example
deal_count	Total deals currently loaded. Aliases: count, total.	number	178
deals	Pipe-delimited list of every target ticker (sorted). Aliases: list,	string	AAPL EA NSC

Parameter	Definition	Type	Example
	deal_list.		
loaded	Data load timestamp (UTC). Aliases: load_time, last_load.	string	2026-06-18 14:03:11 UTC
params	Pipe-delimited list of every data parameter name. Aliases: parameters, help.	string	acquirer break ...

Formatting rules

- Percentage parameters (premium, gross_downside, downside_rt, gross_spread, spread, ann_spread, risk_reward, chance_of_close, break_1w, chance_1w) are stored as decimals and rendered as `f"{value×100:.2f}%"`.
- Other numbers are rounded by magnitude: $\geq 100 \rightarrow 2$ dp, $\geq 1 \rightarrow 4$ dp, otherwise 6 dp.
- A missing value renders as "N/A"; an unknown parameter as "#ERR: Unknown param ...".
- format "display" (default) applies all formatting; format "raw" (single-cell form only) returns the unformatted underlying value.
- risk_reward is computed, not stored — it returns "N/A" when the spread is zero or missing.
- Over the socket the limit field is passed straight through (default 20); the REST 1–200 clamp is not applied on the WebSocket path.

7. The news channel

A news query takes one of two forms:

Form	Request query	Returns (value)
List / search	<code>{ "channel": "news", "q": "spinoff", "ticker": "WBD", "limit": 25 }</code>	A list of article summary objects (newest first), each WITHOUT body_html. q is a headline substring; ticker filters by tag. limit defaults to 25.
Article	<code>{ "channel": "news", "slug": "<article-slug>" }</code>	A single article object — all summary fields plus body_html. A missing or unpublished slug returns the string "#ERR: No article '<slug>'".

News item schema

Every news item — list element, article object, and news push content — shares this shape. Only the article object adds body_html.

Field	Definition	Type	Example
slug	URL slug; the key used to fetch the full article.	string	wbd-cable-spinoff
headline	Article headline (the field q searches).	string	WBD explores cable spin-off
authors	Author display names; [] when none.	array[string]	["Jane Doe"]
tickers	Tagged tickers; [] when none. The ticker filter matches here.	array[string]	["WBD", "CMCSA"]
tags	Tag buckets: geographies, sectors, subsectors, industries, subindustries, spaces, regulators, topics.	object	{"topics":["M&A"]}
published_at	Publish timestamp (ISO-8601), or null. Drives newest-first ordering.	string null	2026-06-15T14:32:00
url	Canonical public URL: <code>https://spitzernews.com/<slug></code> .	string	<code>https://spitzernews.com/wbd-cable-spinoff</code>
body_html	Full article body as HTML. Present ONLY on the article object	string (HTML)	<code><p>Warner</code>

Field	Definition	Type	Example
	(not list items or pushes); "" when empty.		Bros...</p>

8. Push streams (Immediate only)

Push frames are delivered only to push-eligible (Immediate) connections; Research and Research+ connections never receive them. Each connection has a 1,000-frame queue; if a slow client fills it, the oldest excess frames are dropped (the connection is not closed).

News push

Sent automatically to every Immediate connection the moment a Spitzer news story is published — no subscription is required. content is the article SUMMARY (no body_html); fetch the body with a news article pull if needed.

```
← { "type": "push", "channel": "news",
    "content": { "slug": "wbd-cable-spinoff", "headline": "WBD explores cable spin-off",
                  "authors": ["Jane Doe"], "tickers": ["WBD"],
                  "tags": { "topics": ["M&A"] },
                  "published_at": "2026-06-15T14:32:00",
                  "url": "https://spitzernews.com/wbd-cable-spinoff" } }
```

Data push

Subscribe to one or more tickers; the server then pushes updated metrics for each on the live-price tick (~60 s). Pushes are diff-gated — a ticker whose values have not changed since its last push sends nothing, so an idle tick produces no frames. An unresolved ticker is silently skipped (no frame). content is the full 25-parameter map (the all-params shape).

```
→ { "type": "subscribe", "tickers": ["NSC", "PARA"] }
← { "type": "subscribed", "channel": "data", "tickers": ["NSC", "PARA"] }

← { "type": "push", "channel": "data", "ticker": "NSC",
    "content": { "target": "Norfolk Southern", "now": 201.69, "offer": 329.47,
                  "spread": "18.27%", "chance_of_close": "21.00%", ... } }
```

9. Error reasons

reason	Meaning	Extra fields
rate_limited	The pull was rejected because the per-user budget for the window is exhausted.	uid, retry_after (seconds), limit
pull_failed	The pull was accepted but the underlying handler raised while executing it.	uid, detail (error message)
push_not_allowed	A subscribe / unsubscribe arrived on a pull-only (non-Immediate) connection. The connection stays open.	detail
no_access	The bearer is valid but the tier has no API access. Sent immediately before close code 4403.	detail

```
← { "type": "error", "uid": "q7", "reason": "rate_limited",
    "retry_after": 540, "limit": 50 }
```

10. Constants & limits

Constant	Value	Notes
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Constant	Value	Notes
Endpoint path	/ws	Served on spitzerdata.com and spitzernews.com.
Channels	news, data	Advertised in the welcome frame; data is the default when channel is omitted.
Push queue	1,000 frames	Per-connection backlog; excess frames are dropped for a slow client (no disconnect).
Data-tick cadence	~60 s	Data pushes ride the live-price refresh; diff-gated.
Default limits	data search 20, news 25	Applied when limit is omitted (not range-clamped over the socket).
Token TTL	24 hours	Re-login when a call returns 401.
REST batch	500 cells / call	POST /api/spitzer/data/batch resolves many cells in one charged call (REST only — the =SPITZER add-in uses it). No WebSocket equivalent.

11. Quick reference

Item	Value
Endpoint	wss://spitzerdata.com/ws (alt: wss://spitzernews.com/ws)
Authentication	Bearer token — Authorization header or ?token=
Get a token	POST /login { username, password } → 24-hour bearer
Channels	news, data
Server frames	welcome, result, error, push, keep-alive, subscribed
Client messages	{uid, query}, ping, subscribe, unsubscribe
Levels	Immediate (push + uncapped pull) · Research+ (10,000/30 min) · Research (50/10 min)
Push (Immediate)	news on publish; data on the ~60 s tick for subscribed tickers
Pace with	the remaining field on each result (null = uncapped)
Close codes	4401 unauthorized · 4403 no API access
Technical support	Greg Falkowski — greg.falkowski@ctfn.news — +1 (609) 410-0556