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Multi-Language Search API Reference

Version: 5.52.29 | **Last Updated**: January 25, 2026 | **Base URL**: `https://api.radiant.ai/v1`

Complete API reference for RADIANT's multi-language full-text search capabilities, including CJK (Chinese, Japanese, Korean) bi-gram search.

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Overview

RADIANT provides intelligent multi-language search across all content types, with automatic language detection and optimized search strategies for different language families.

Supported Languages

Language	Code	Search Method	Features
English	`en`	PostgreSQL FTS	Stemming, ranking
Spanish	`es`	PostgreSQL FTS	Stemming, ranking
French	`fr`	PostgreSQL FTS	Stemming, ranking
German	`de`	PostgreSQL FTS	Compound word handling
Portuguese	`pt`	PostgreSQL FTS	Stemming, ranking
Italian	`it`	PostgreSQL FTS	Stemming, ranking
Dutch	`nl`	PostgreSQL FTS	Stemming, ranking
Polish	`pl`	Simple FTS	Basic tokenization
Russian	`ru`	PostgreSQL FTS	Stemming, ranking
Turkish	`tr`	PostgreSQL FTS	Stemming, ranking
Japanese	`ja`	**pg_bigm**	Bi-gram indexing
Korean	`ko`	**pg_bigm**	Bi-gram indexing
Chinese (Simplified)	`zh-CN`	**pg_bigm**	Bi-gram indexing
Chinese (Traditional)	`zh-TW`	**pg_bigm**	Bi-gram indexing
Arabic	`ar`	Simple FTS	Basic tokenization
Hindi	`hi`	Simple FTS	Basic tokenization
Thai	`th`	Simple FTS	Basic tokenization
Vietnamese	`vi`	Simple FTS	Basic tokenization

Authentication

All search endpoints require authentication:

```
Authorization: Bearer <access_token>
```

Search Endpoints

Universal Search

Search across all content types.

```
POST /search
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:

```
{
  "query": "machine learning",
  "types": ["sessions", "messages", "files", "artifacts"],
  "limit": 20,
  "offset": 0,
  "filters": {
    "created_after": "2025-01-01T00:00:00Z",
    "created_before": "2026-01-25T23:59:59Z"
  },
  "language_hint": null
}
```

Parameters:

Parameter	Type	Required	Description
`query`	string	Yes	Search query (1-500 characters)
`types`	string[]	No	Content types to search (default: all)
`limit`	integer	No	Results per page (1-100, default: 20)
`offset`	integer	No	Pagination offset (default: 0)
`filters`	object	No	Additional filters
`language_hint`	string	No	Override language detection

Response 200:

```
{
  "results": [
    {
      "id": "sess_abc123",
      "type": "session",
      "title": "Machine Learning Project Discussion",
      "snippet": "...exploring various <mark>machine learning</mark> algorithms for...",
      "relevance_score": 0.95,
      "created_at": "2026-01-20T10:30:00Z",
      "updated_at": "2026-01-24T15:00:00Z"
    },
    {
      "id": "msg_def456",
      "type": "message",
```

```
      "session_id": "sess_xyz789",
      "snippet": "...the <mark>machine learning</mark> model achieved 95% accuracy...",
      "relevance_score": 0.87,
      "created_at": "2026-01-22T14:00:00Z"
    }
  ],
  "total": 42,
  "limit": 20,
  "offset": 0,
  "detected_language": "en",
  "search_method": "fts",
  "query_time_ms": 45
}
```

Search Sessions

Search within Think Tank sessions.

```
POST /search/sessions
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:

```
{
  "query": "    ",
  "limit": 20,
  "filters": {
    "workspace_id": "ws_abc123",
    "created_after": "2025-01-01T00:00:00Z"
  }
}
```

Response 200:

```
{
  "results": [
    {
      "id": "sess_abc123",
      "title": "       ",
      "snippet": "...  <mark>    </mark>     ...",
      "message_count": 45,
      "relevance_score": 0.92,
      "created_at": "2026-01-15T09:00:00Z",
      "last_message_at": "2026-01-24T18:30:00Z"
    }
  ],
  "total": 8,
  "detected_language": "ja",
  "search_method": "pg_bigm"
```

```
}
```

Search Messages

Search within session messages.

```
POST /search/messages
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:

```
{
  "query": "API integration",
  "session_id": "sess_abc123",
  "limit": 50
}
```

Response 200:

```
{
  "results": [
    {
      "id": "msg_def456",
      "session_id": "sess_abc123",
      "role": "assistant",
      "snippet": "...the <mark>API integration</mark> requires the following steps...",
      "relevance_score": 0.89,
      "created_at": "2026-01-20T11:30:00Z"
    }
  ],
  "total": 15,
  "detected_language": "en",
  "search_method": "fts"
}
```

Search Files

Search within uploaded files and documents.

```
POST /search/files
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:

```
{
  "query": "quarterly report",
  "file_types": ["pdf", "docx"],
  "limit": 20
}
```

Response 200:

```
{
  "results": [
    {
      "id": "file_abc123",
      "name": "Q4-2025-Report.pdf",
      "snippet": "...the <mark>quarterly report</mark> shows significant growth...",
      "file_type": "pdf",
      "size_bytes": 2456789,
      "relevance_score": 0.94,
      "uploaded_at": "2026-01-10T08:00:00Z"
    }
  ],
  "total": 5,
  "detected_language": "en",
  "search_method": "fts"
}
```


Search Artifacts

Search within generated artifacts (code, documents, etc.).

```
POST /search/artifacts
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:


```
{
  "query": "React component",
  "artifact_types": ["code", "document"],
  "limit": 20
}
```


Response 200:


```
{
  "results": [
    {
      "id": "art_xyz789",
      "title": "UserProfile React Component",
      "type": "code",
      "language": "typescript",
      "snippet": "...export const UserProfile: <mark>React</mark>.<mark>Component</mark>...",
      "relevance_score": 0.91,
      "session_id": "sess_abc123",
      "created_at": "2026-01-18T14:00:00Z"
    }
  ],
  "total": 12,
  "detected_language": "en",
```

```
  "search_method": "fts"
}
```

Language Detection

Detect Language

Detect the primary language of text.

```
POST /search/detect-language
Authorization: Bearer <access_token>
Content-Type: application/json
```

Request Body:

```
{
  "text": "         "
}
```

Response 200:

```
{
  "detected_language": "zh-CN",
  "confidence": 0.98,
  "script": "han",
  "search_method": "pg_bigm",
  "alternatives": [
    { "language": "zh-TW", "confidence": 0.85 },
    { "language": "ja", "confidence": 0.12 }
  ]
}
```

Detection Algorithm

```
flowchart TD
    A[Input Text] --> B{Contains CJK?}
    B -->|Yes| C{Which CJK?}
    B -->|No| D{Contains Arabic?}

    C -->|Hiragana/Katakana| E[Japanese]
    C -->|Hangul| F[Korean]
    C -->|Han only| G[Chinese]

    G --> H{Simplified chars?}
    H -->|Yes| I[zh-CN]
    H -->|No| J[zh-TW]

    D -->|Yes| K[Arabic]
    D -->|No| L{Contains Cyrillic?}
```

```
    L -->|Yes| M[Russian]
    L -->|No| N[Latin-based detection]

    N --> O[Trigram analysis]
    O --> P[Most likely language]
```

Search Methods

PostgreSQL Full-Text Search (FTS)

Used for Western languages with word boundaries.

Features: - Stemming (running → run) - Stop word removal - Relevance ranking (ts_rank) - Phrase search (`"exact phrase"`) - Prefix matching (`machine*`)

Example Query Processing:

```
Input: "machine learning algorithms"
↓
Stemmed: machine learn algorithm
↓
tsvector: 'algorithm':3 'learn':2 'machin':1
```

pg_bigm Bi-gram Search

Used for CJK languages without word boundaries.

Features: - Character bi-gram indexing - Substring matching - No dictionary required - Fuzzy matching support

Example Query Processing (Japanese):

```
Input: "  "
↓
Bi-grams: " ", " ", " "
↓
Search: LIKE '% %' AND LIKE '% %' AND LIKE '% %'
(optimized via GIN index)
```

Simple Search

Used for languages without dedicated FTS support.

Features: - Basic word tokenization - No stemming - Case-insensitive matching

---

Filtering and Pagination

Available Filters

Filter	Type	Description
`created_after`	ISO 8601	Results created after this date
`created_before`	ISO 8601	Results created before this date
`workspace_id`	string	Filter by workspace
`session_id`	string	Filter by session
`file_types`	string[]	Filter by file extensions
`artifact_types`	string[]	Filter by artifact type

Pagination

```
{
  "query": "search term",
  "limit": 20,
  "offset": 40
}
```

Parameter	Default	Maximum
`limit`	20	100
`offset`	0	10000

Cursor-Based Pagination (Recommended)

For large result sets, use cursor pagination:

```
POST /search
Content-Type: application/json
```

First Request:

```
{
  "query": "data analysis",
  "limit": 20
}
```

Response:

```
{
  "results": [...],
  "total": 500,
  "next_cursor": "eyJvZmZzZXQiOjIwfQ==",
  "has_more": true
}
```

Next Request:

```
{
  "query": "data analysis",
  "limit": 20,
  "cursor": "eyJvZmZzZXQiOjIwfQ=="
}
```

Response Format

Result Object

```
{
  "id": "string",
  "type": "session | message | file | artifact",
  "title": "string (if applicable)",
  "snippet": "string with <mark>highlighted</mark> matches",
  "relevance_score": 0.0-1.0,
  "created_at": "ISO 8601",
  "updated_at": "ISO 8601 (if applicable)",
  "metadata": {}
}
```

Snippet Highlighting

Matched terms are wrapped in `<mark>` tags:

```
{
  "snippet": "The <mark>machine learning</mark> model uses <mark>neural networks</mark>..."
}
```

Configure highlighting:

```
{
  "query": "machine learning",
  "highlight": {
    "pre_tag": "<em class='highlight'>",
    "post_tag": "</em>",
    "max_length": 200
  }
}
```

Metadata by Type

Session:

```
{
  "message_count": 45,
  "participant_count": 1,
  "workspace_id": "ws_abc123"
}
```

Message:

```
{
  "session_id": "sess_abc123",
  "role": "user | assistant",
```

```
  "message_index": 15
}
```

File:

```
{
  "file_type": "pdf",
  "size_bytes": 2456789,
  "page_count": 25
}
```

Artifact:

```
{
  "artifact_type": "code | document | image",
  "language": "typescript",
  "session_id": "sess_abc123"
}
```

Error Handling

Error Response Format

```
{
  "error": "error_code",
  "message": "Human-readable description",
  "details": {},
  "request_id": "req_abc123"
}
```

Error Codes

Code	HTTP Status	Description
`invalid_query`	400	Query is empty or too long
`invalid_filter`	400	Invalid filter parameter
`invalid_language`	400	Unknown language code
`unauthorized`	401	Missing or invalid token
`forbidden`	403	No access to resource
`rate_limited`	429	Too many requests
`search_timeout`	504	Search took too long
`internal_error`	500	Server error

Rate Limits

Endpoint	Limit	Window
`/search`	60 requests	1 minute
`/search/*`	100 requests	1 minute

Endpoint	Limit	Window
`/search/detect-language`	120 requests	1 minute

Examples

CJK Search Example (Japanese)

```
POST /search/sessions
Authorization: Bearer <access_token>
Content-Type: application/json

{
  "query": "    ",
  "limit": 10
}
```

Response:

```
{
  "results": [
    {
      "id": "sess_jp001",
      "title": "      ",
      "snippet": "...<mark>  </mark><mark> </mark>     ...",
      "relevance_score": 0.94
    }
  ],
  "detected_language": "ja",
  "search_method": "pg_bigm",
  "query_time_ms": 32
}
```

Mixed Language Search

```
POST /search
Authorization: Bearer <access_token>
Content-Type: application/json

{
  "query": "AI    development",
  "limit": 20
}
```

Response:

```
{
  "results": [...],
  "detected_language": "ko",
```

```
  "search_method": "pg_bigm",
  "note": "Mixed-language query detected. CJK method used for best coverage."
}
```

Advanced Filtering

```
POST /search
Authorization: Bearer <access_token>
Content-Type: application/json

{
  "query": "project planning",
  "types": ["sessions", "artifacts"],
  "filters": {
    "workspace_id": "ws_main",
    "created_after": "2026-01-01T00:00:00Z",
    "artifact_types": ["document"]
  },
  "limit": 50
}
```

Performance Considerations

Query Optimization Tips

Tip	Reason
Use specific queries	Reduces result set size
Filter by type when possible	Limits tables to search
Use date filters	Indexes are date-partitioned
Avoid leading wildcards	Cannot use index efficiently

Index Architecture

```
graph LR
    subgraph "Western Languages"
        FTS[GIN tsvector index]
    end

    subgraph "CJK Languages"
        BIGM[GIN pg_bigm index]
    end

    subgraph "Tables"
        SESS[sessions]
        MSG[messages]
        FILES[files]
```

```
    ART[artifacts]
end

FTS --> SESS
FTS --> MSG
FTS --> FILES
FTS --> ART

BIGM --> SESS
BIGM --> MSG
BIGM --> FILES
BIGM --> ART
```

Related Documentation

- Internationalization Guide
- Authentication API
- Section 41: Internationalization