CUSTOMER GUIDE / PRODUCT RELEASE 2.0

Calling APIs

Request shapes, typed parameters, metadata, paging and response parsing for the SICF and Gateway interfaces in release 2.0.

Conventions and endpoints

Replace every example host, client, identity and business object with approved values. Use HTTPS. URL-encode query values containing spaces, quotes or reserved characters. Examples are illustrative and require the corresponding license, client configuration and exact object grant.

Operation	SICF path	Gateway path below /sap/opu/odata/CGR/CONN_SRV
Table GET	/cgr/api/table	/table('1')/$value
Function GET	/cgr/api/func	/func('1')/$value
Function POST	/cgr/api/func	/func
Report GET	/cgr/api/report	/report('1')/$value

SICF supports HTTP Basic only. OData uses a bearer token obtained through an OAuth flow supported by your SAP system. SICF also supports TABLE/REPORT POST with the appropriate typed input document. Gateway TABLE/REPORT POST is not supported.

Discover an authorized object definition

Add cgr-metadata=true to a GET for the supported function, table or report resource. This is separate from the Gateway service-level $metadata document. Object metadata checks authorization and describes the object without executing its function, selecting its business rows or submitting its report.

```
GET /cgr/api/func?id=BAPI_PO_GETDETAIL1&cgr-metadata=true
GET /cgr/api/table?id=MARA&cgr-metadata=true
GET /cgr/api/report?id=YOUR_REPORT&cgr-metadata=true
```

Function metadata describes parameter directions and types; table metadata describes fields; report metadata supplies the variant catalog. Use GET and a single valid metadata control. Do not use metadata responses as execution input or rerun evidence.

Read tables and views

Parameter	Meaning
id	Required active SAP table or supported database-view name
select	Comma-separated field projection
filter	Validated comparison/string/logical expression

orderby	Validated field names with optional ASC or DESC
top / skip	Nonnegative page size and row offset
sap-client	Application client, when selected explicitly
sap-system	Approved SICF routing alias where the landscape uses one

```
GET /cgr/api/table?id=MARA&select=MATNR,MTART
    &orderby=MATNR&top=100&skip=0&sap-client=100
```

The displayed URL wraps for readability; send one URL. Use a positive top and stable ordering when paging. Increase skip for subsequent pages. A changing source dataset can shift offset pages; paging does not create a transactionally frozen extract. top=0 means unlimited results, not zero rows.

Validated filters

Supported expressions include eq/ne/gt/ge/lt/le; and/or/not; parentheses; startswith and contains. Fields must exist in the active definition. Values are quoted safely. Raw SQL, subqueries, field-to-field comparisons and unsupported literal forms are rejected.

```
filter=(MTART eq 'FERT' or MTART eq 'HALB')
filter=startswith(MATNR, 'A')
filter=not (MTART eq 'SERV')
```

Dynamic field query parameters can supply equality values where supported. SICF TABLE POST also accepts the input document below. PARAMETERS operators support validated comparisons, IN lists and LIKE; a LIKE pattern is one scalar value, never raw SQL.

```
POST /cgr/api/table?id=MARA HTTP/1.1
Content-Type: application/json

{
  "TOP": "100",
  "SKIP": "0",
  "SELECT": "MATNR,MTART",
  "PARAMETERS": [
    {"FIELD_NAME": "MTART", "OPERATOR": "EQ", "VALUE": "FERT"}
  ]
}
```

Call functions and BAPIs

Pass the exact function name in id. GET supports scalar input parameters in the query. Use POST for structures, tables or mixed input directions. Binding uses the active SAP interface for IMPORTING, EXPORTING, CHANGING and TABLES. Unknown, duplicate or output-only inputs and incompatible values are rejected. Omitted optional parameters remain omitted rather than being invented as initial values.

```
GET /cgr/api/func?id=BAPI_PO_GETDETAIL1
    &PURCHASEORDER=3000000010&sap-client=100
```

SICF POST: NAME / VALUE input envelope

```
POST /cgr/api/func?id=BAPI_USER_GET_DETAIL HTTP/1.1
Content-Type: application/json; charset=utf-8

[
  {"NAME": "USERNAME", "VALUE": "API_TESTUSER"},
  {"NAME": "CACHE_RESULTS", "VALUE": "X"}
]
```

VALUE is an object for a structure, an array for an internal table and the matching JSON scalar for a simple parameter. Preserve leading zeros in identifier strings. Use metadata rather than guessing field types or parameter directions.

Gateway POST: parameter-name object

```
POST /sap/opu/odata/CGR/CONN_SRV/func
    ?id=BAPI_USER_GET_DETAIL HTTP/1.1
Authorization: Bearer <access_token>
Content-Type: application/json; charset=utf-8

{"USERNAME":"API_TESTUSER","CACHE_RESULTS":"X"}
```

Use valid UTF-8 request bodies. Supported explicitly identified or BOM-marked UTF-16 is also accepted; malformed Unicode and arbitrary single-byte fallback encodings are rejected. Follow the Gateway installation's normal session and CSRF requirements where applicable.

Parse function output

Native function output is a JSON parameter envelope. Each entry identifies the output parameter and its VALUE. SICF returns this JSON directly. Gateway GET /$value returns raw execution JSON. Gateway function POST returns an OData entity whose d.CONTENT string contains that same serialized output.

```
[
  {"NAME":"ADDRESS","VALUE":{"FIRSTNAME":"Arthur"}},
  {"NAME":"RETURN","VALUE":[]}
]
```

```
// Gateway function POST response processing
const entity = JSON.parse(httpResponseBody);
const parameters = JSON.parse(entity.d.CONTENT);
const address = parameters.find(p => p.NAME === "ADDRESS").VALUE;
```

Successful Gateway POST can use its existing HTTP 201 entity response while the technical execution log records 200. Do not infer a business outcome from the framework status alone; inspect RETURN or the configured classification result.

Run reports and queries

```
GET /cgr/api/report?id=YOUR_REPORT&variant=API_VARIANT
    &top=100&skip=0&sap-client=100
```

The report/query program must be active, authorized and produce supported ALV-compatible output. Use a predefined variant in the target client; Gateway requires a valid variant. Metadata lets you inspect the catalog without submitting the report. Empty or non-tabular output returns []; duplicate normalized column names fail explicitly. Report code can have its own business effects, so review it before exposing it.

Commit, correlation and retry behavior

Set commit=X only for an intentional updating FUNCTION call that requires the Connector to commit after successful serialization. TABLE/REPORT do not gain a success commit from this flag. A target's internal commits or external effects cannot be undone by the Connector.

Capture X-CGR-Message-ID when present and inspect /CGR/MONI. X-CGR-Log-Warning indicates an execution/logging discrepancy requiring investigation. A timeout, lost response or RUNNING/UNKNOWN record does not establish that the business operation failed; reconcile before repeating an updating call. There is no automatic business retry.

Choose a practical page size

There is no fixed total-row cap across pages. Each request is bounded by SAP memory, string capacity, execution time and network/client limits. Versioned persisted payload components have a 16 MiB hard ceiling, and normalized context includes its input envelope. Large requests can be refused before dispatch; captured output can be marked truncated. Start with small positive pages and check actual responses, warnings and retained payload availability.

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Use these release 2.0 instructions with the supplied release delivery notes. Release 1.3 has a separate documentation and PDF set.