SMOKE TEST REPORT · API

PASSED WITH ISSUES

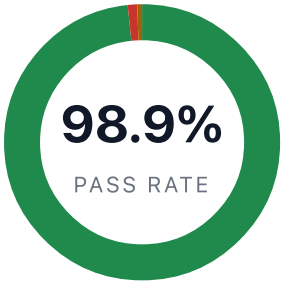
Acme Ledger Public API · Staging

Environment	`https://api.staging.acme-ledger.example`
API version	2.4.0 (OpenAPI 3.1)
Build	4.2.0-rc1
Executed	2026-10-20 09:12 – 09:21 UTC
Executed by	Tomasz Kordiak (QA lead), suite in `acme/qa-api-tests`
Scope	Read-only. Writes use `dryRun=true`; no data created, modified or deleted.

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Overview



270	265	3
Tests	Passed	Failed
2	**249** ms	**64**
Skipped	Median response	Operations tested

Auth	14/14
Customers	23/23
Contacts	16/16
Products	19/19
Invoices	32/35 · **2 failed** · 1 skipped
Payments	21/22 · 1 skipped
Credit notes	17/17
Recurring schedules	19/19
Taxes	14/14
Webhooks	19/20 · **1 failed**
Reports	19/19
Users and roles	20/20
Files	16/16
Audit log	16/16

Response time: median 249 ms, p95 470 ms, max 855 ms. Pass rate excludes skipped tests. Every successful response was validated against the OpenAPI schema.

Environment and scope

Base URL	`https://api.staging.acme-ledger.example/v2`
Test tenants	`t-demo-01` (1,019 invoices, 7-year retention), `t-demo-02` (265 invoices, 365-day retention)
Clients	3 OAuth clients: full scope, read-only scope, no scope
Users	5 roles: Admin, Finance, Accountant, Sales, Viewer
Tooling	Python 3.12, pytest, schemathesis for schema checks; runs in CI on every deploy to staging

Out of scope	Write operations without `dryRun`, payment provider callbacks, load (see performance report)
Entry criteria	Build deployed, health check green, seed data loaded — met at 09:05 UTC

Issues found 3 failed tests

High INV-26 Invoices past data retention are listed but cannot be retrieved

Observed	`GET /invoices` returns invoices whose retention period has expired. `GET /invoices/{id}` returns `404 Invoice not found` for the same IDs.
Evidence	5 of the first 20 listed invoices; 41 of 1,284 in total. All belong to `t-demo-02`, created before 2025-10-20, with `retention.days = 365`. Reproduced 3 times per ID.
Impact	Integrations that list then fetch get unexpected 404s. `totalItems` and dashboards include effectively deleted records.
Expected	Expired invoices excluded from the list and from `totalItems`.
Defect	ACME-512 · full detail in the test case execution report ACME-T-118

Medium INV-25 Invalid status filter value is silently ignored

Observed	`GET /invoices?status=payed` returns `200` with all 1,284 invoices. The spec documents `400`.
Evidence	Control checks: `status=paid` → 913, `status=open` → 371.
Impact	A typo returns unfiltered data instead of an error.
Defect	ACME-513

Medium WH-19 Webhook retries ignore the configured back-off

Observed	Subscription configured with back-off 1 min / 5 min / 15 min; the delivery log shows the 3rd retry 1 minute after the 2nd.
Impact	Receivers that are down get retried too fast, and the event is marked failed 13 minutes early.
Defect	ACME-514

Defects 4 reported

KEY	SUMMARY	SEVERITY	STATUS	COMPONENT	FOUND BY	OWNER	CREATED
`ACME-512`	Invoice list returns invoices already removed by data retention (404 on detail)	High	Open	Invoices API	`INV-26`	Backend	20 Oct 2026
`ACME-513`	Invalid `status` filter value silently ignored instead of 400	Medium	Open	Invoices API	`INV-25`	Backend	20 Oct 2026
`ACME-514`	Webhook retry ignores the configured back-off on the 3rd attempt	Medium	Open	Webhooks	`WH-19`	Platform	20 Oct 2026
`ACME-516`	OpenAPI spec documents `limit` max 200, API enforces 100 Found while writing checks; the API behaviour is correct, the spec is not.	Low	Open	API docs	–	Backend	20 Oct 2026

Observations no defect, worth knowing

ID	AREA	OBSERVATION	IMPACT	SUGGESTED ACTION
`OBS-01`	Customers	`GET /customers/{id}` for another tenant returns `404`, not `403`.	None	None — consistent with docs and hides which IDs exist.

ID	AREA	OBSERVATION	IMPACT	SUGGESTED ACTION
`OBS-02`	Invoices	Invoice PDF is the slowest operation (p95 ≈ 1 s).	Performance	Include in the load test (done: see performance report).
`OBS-03`	Auth	HTTP requests are redirected with `301`; clients that don't follow redirects fail.	Low	Docs already say HTTPS only; no change.
`OBS-04`	Pagination	Cursor values are base64 JSON and decodable by clients.	Low	Fine if clients are told cursors are opaque; add a line to the docs.
`OBS-05`	Errors	Validation errors return the first failing field only.	Usability	Consider returning all field errors at once (API v3).
`OBS-06`	Rate limiting	Limit is 100 requests/minute per client; bursts are not smoothed.	Low	Document the limit per endpoint group.
`OBS-07`	Webhooks	Webhook URLs resolving to private IPs are rejected (SSRF protection).	Positive	Keep; covered by WH validation check.
`OBS-08`	Skipped	2 checks skipped: Peppol export (flag off on staging) and SEPA mandate (sandbox down).	Coverage	Run both on rc3 once available.

Coverage of the API

AREA	DOCUMENTED OPERATIONS	TESTED	NOT TESTED
Auth and platform	4	4	–
Customers and contacts	9	9	–
Products and taxes	7	7	–
Invoices	12	10	`POST /invoices/{id}/duplicate` (deprecated), `PUT /invoices/{id}/lines` (beta, not released)
Payments and credit notes	10	9	`POST /mandates` (skipped, sandbox down)

AREA	DOCUMENTED OPERATIONS	TESTED	NOT TESTED
Recurring schedules	5	5	–
Webhooks	6	6	–
Reports	5	5	–
Users, roles, files, audit log	11	9	`POST /users/{id}/impersonate` (admin tool, excluded), `PATCH /users/{id}/locale` (UI only)

69 documented operations, 64 tested (93%). Not tested operations are listed with the reason.

Response times by area

AREA	TESTS	MEDIAN	P95	MAX
Auth	14	243 ms	349 ms	349 ms
Customers	23	225 ms	331 ms	348 ms
Contacts	16	258 ms	347 ms	347 ms
Products	19	222 ms	345 ms	345 ms
Invoices	34	255 ms	770 ms	823 ms
Payments	21	235 ms	324 ms	341 ms
Credit notes	17	251 ms	855 ms	855 ms
Recurring schedules	19	249 ms	338 ms	338 ms
Taxes	14	231 ms	337 ms	337 ms
Webhooks	20	230 ms	336 ms	336 ms
Reports	19	488 ms	594 ms	594 ms
Users and roles	20	227 ms	333 ms	333 ms
Files	16	243 ms	349 ms	349 ms
Audit log	16	259 ms	348 ms	348 ms

Test results 270 tests

Auth 14/14 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
AUTH-01	Token issued for valid client credentials	POST /oauth/token	200	200	120 ms	Pass
AUTH-02	Invalid client secret rejected	POST /oauth/token	401	401	173 ms	Pass
AUTH-03	Unknown client id rejected	POST /oauth/token	401	401	226 ms	Pass
AUTH-04	Request without token rejected	GET /invoices	401	401	279 ms	Pass
AUTH-05	Expired token rejected	GET /invoices	401	401	332 ms	Pass
AUTH-06	Token signed with wrong key rejected	GET /invoices	401	401	155 ms	Pass
AUTH-07	Token for tenant A cannot read tenant B	GET /invoices/{id}	404	404	208 ms	Pass
AUTH-08	Scopes listed in the token are enforced	GET /reports/revenue	403	403	261 ms	Pass
AUTH-09	Token lifetime is 3600 s	POST /oauth/token	expires_in 3600	expires_in 3600	314 ms	Pass
AUTH-10	HTTP request redirected to HTTPS	GET http://…/invoices	301	301	137 ms	Pass
AUTH-11	CORS: unknown origin not allowed	OPTIONS /invoices	no ACAO header	no ACAO header	190 ms	Pass
AUTH-12	Rate limit headers present	GET /invoices	X-RateLimit-*	X-RateLimit-*	243 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
AUTH-13	Rate limit returns 429 with Retry-After	GET /invoices × 120/min	429	429	296 ms	Pass
AUTH-14	Health endpoint without auth	GET /health	200	200	349 ms	Pass

Customers 23/23 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
CUS-01	List customers	GET /customers	200	200	172 ms	Pass
CUS-02	Pagination: page size and next cursor	GET /customers?limit=20	20 + cursor	20 + cursor	225 ms	Pass
CUS-03	Pagination: last page has no cursor	GET /customers?cursor=…	no cursor	no cursor	278 ms	Pass
CUS-04	Limit above 100 rejected	GET /customers?limit=500	400	400	331 ms	Pass
CUS-05	Sort by creation date, descending	GET /customers?sort=-createdAt	sorted	sorted	154 ms	Pass
CUS-06	Filter by name	GET /customers?name=…	matching items only	matching items only	207 ms	Pass
CUS-07	Filter by vatNumber	GET /customers?vatNumber=…	matching items only	matching items only	260 ms	Pass
CUS-08	Filter by country	GET /customers?country=…	matching items only	matching items only	313 ms	Pass
CUS-09	Filter by createdFrom	GET /customers?createdFrom=…	matching items only	matching items only	136 ms	Pass
CUS-10	Filter by tag	GET /customers?tag=…	matching items only	matching items only	189 ms	Pass
CUS-11	Get by id	GET /customers/{id}	200	200	242 ms	Pass
CUS-12	Unknown id	GET /customers/{id}	404	404	295 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`CUS-13`	Other tenant's id	`GET /customers/{id}`	404	404	348 ms	Pass
`CUS-14`	Response matches OpenAPI schema	`GET /customers/{id}`	valid	valid	171 ms	Pass
`CUS-15`	Create (dry run)	`POST /customers?dryRun=true`	200	200	224 ms	Pass
`CUS-16`	Rejects missing `name`	`POST /customers?dryRun=true`	400	400	277 ms	Pass
`CUS-17`	Rejects invalid email	`POST /customers?dryRun=true`	400	400	330 ms	Pass
`CUS-18`	Rejects invalid country code	`POST /customers?dryRun=true`	400	400	153 ms	Pass
`CUS-19`	Rejects VAT number format	`POST /customers?dryRun=true`	400	400	206 ms	Pass
`CUS-20`	Rejects name over 200 chars	`POST /customers?dryRun=true`	400	400	259 ms	Pass
`CUS-21`	Missing scope rejected	`GET /customers`	403	403	312 ms	Pass
`CUS-22`	Customer with open invoices cannot be deleted	`DELETE /customers/{id}?dryRun=true`	409	409	135 ms	Pass
`CUS-23`	Archived customers excluded by default	`GET /customers`	archived hidden	archived hidden	188 ms	Pass

Contacts 16/16 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`CON-01`	List contacts	`GET /customers/{id}/contacts`	200	200	241 ms	Pass
`CON-02`	Pagination: page size and next cursor	`GET /customers/{id}/contacts?limit=20`	20 + cursor	20 + cursor	294 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`CON-03`	Pagination: last page has no cursor	`GET /customers/{id}/contacts?cursor=…`	no cursor	no cursor	347 ms	Pass
`CON-04`	Limit above 100 rejected	`GET /customers/{id}/contacts?limit=500`	400	400	170 ms	Pass
`CON-05`	Sort by creation date, descending	`GET /customers/{id}/contacts?sort=-createdAt`	sorted	sorted	223 ms	Pass
`CON-06`	Filter by `role`	`GET /customers/{id}/contacts?role=…`	matching items only	matching items only	276 ms	Pass
`CON-07`	Filter by `email`	`GET /customers/{id}/contacts?email=…`	matching items only	matching items only	329 ms	Pass
`CON-08`	Get by id	`GET /customers/{id}/contacts/{cid}`	200	200	152 ms	Pass
`CON-09`	Unknown id	`GET /customers/{id}/contacts/{cid}`	404	404	205 ms	Pass
`CON-10`	Other tenant's id	`GET /customers/{id}/contacts/{cid}`	404	404	258 ms	Pass
`CON-11`	Response matches OpenAPI schema	`GET /customers/{id}/contacts/{cid}`	valid	valid	311 ms	Pass
`CON-12`	Create (dry run)	`POST /customers/{id}/contacts?dryRun=true`	200	200	134 ms	Pass
`CON-13`	Rejects missing email	`POST /customers/{id}/contacts?dryRun=true`	400	400	187 ms	Pass
`CON-14`	Rejects duplicate primary contact	`POST /customers/{id}/contacts?dryRun=true`	400	400	240 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
CON-15	Missing scope rejected	GET /customers/{id}/contacts	403	403	293 ms	Pass
CON-16	Primary contact is unique per customer	GET /customers/{id}/contacts	1 primary	1 primary	346 ms	Pass

Products 19/19 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
PRD-01	List products	GET /products	200	200	169 ms	Pass
PRD-02	Pagination: page size and next cursor	GET /products?limit=20	20 + cursor	20 + cursor	222 ms	Pass
PRD-03	Pagination: last page has no cursor	GET /products?cursor=…	no cursor	no cursor	275 ms	Pass
PRD-04	Limit above 100 rejected	GET /products?limit=500	400	400	328 ms	Pass
PRD-05	Sort by creation date, descending	GET /products?sort=-createdAt	sorted	sorted	151 ms	Pass
PRD-06	Filter by sku	GET /products?sku=…	matching items only	matching items only	204 ms	Pass
PRD-07	Filter by active	GET /products?active=…	matching items only	matching items only	257 ms	Pass
PRD-08	Filter by vatRate	GET /products?vatRate=…	matching items only	matching items only	310 ms	Pass
PRD-09	Get by id	GET /products/{id}	200	200	133 ms	Pass
PRD-10	Unknown id	GET /products/{id}	404	404	186 ms	Pass
PRD-11	Other tenant's id	GET /products/{id}	404	404	239 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`PRD-12`	Response matches OpenAPI schema	`GET /products/{id}`	valid	valid	292 ms	Pass
`PRD-13`	Create (dry run)	`POST /products?dryRun=true`	200	200	345 ms	Pass
`PRD-14`	Rejects negative unit price	`POST /products?dryRun=true`	400	400	168 ms	Pass
`PRD-15`	Rejects unknown VAT rate	`POST /products?dryRun=true`	400	400	221 ms	Pass
`PRD-16`	Rejects missing `name`	`POST /products?dryRun=true`	400	400	274 ms	Pass
`PRD-17`	Rejects SKU already used	`POST /products?dryRun=true`	400	400	327 ms	Pass
`PRD-18`	Missing scope rejected	`GET /products`	403	403	150 ms	Pass
`PRD-19`	Price history kept after price change	`GET /products/{id}/prices`	2 entries	2 entries	203 ms	Pass

Invoices 32/35 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`INV-01`	List invoices	`GET /invoices`	200	200	256 ms	Pass
`INV-02`	Pagination: page size and next cursor	`GET /invoices?limit=20`	20 + cursor	20 + cursor	309 ms	Pass
`INV-03`	Pagination: last page has no cursor	`GET /invoices?cursor=…`	no cursor	no cursor	132 ms	Pass
`INV-04`	Limit above 100 rejected	`GET /invoices?limit=500`	400	400	185 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
INV-05	Sort by creation date, descending	GET /invoices?sort=-createdAt	sorted	sorted	238 ms	Pass
INV-06	Filter by status	GET /invoices?status=…	matching items only	matching items only	291 ms	Pass
INV-07	Filter by customerId	GET /invoices?customerId=…	matching items only	matching items only	344 ms	Pass
INV-08	Filter by issuedFrom	GET /invoices?issuedFrom=…	matching items only	matching items only	167 ms	Pass
INV-09	Filter by issuedTo	GET /invoices?issuedTo=…	matching items only	matching items only	220 ms	Pass
INV-10	Filter by dueFrom	GET /invoices?dueFrom=…	matching items only	matching items only	273 ms	Pass
INV-11	Filter by currency	GET /invoices?currency=…	matching items only	matching items only	326 ms	Pass
INV-12	Filter by number	GET /invoices?number=…	matching items only	matching items only	149 ms	Pass
INV-13	Get by id	GET /invoices/{id}	200	200	202 ms	Pass
INV-14	Unknown id	GET /invoices/{id}	404	404	255 ms	Pass
INV-15	Other tenant's id	GET /invoices/{id}	404	404	308 ms	Pass
INV-16	Response matches OpenAPI schema	GET /invoices/{id}	valid	valid	131 ms	Pass
INV-17	Create (dry run)	POST /invoices?dryRun=true	200	200	184 ms	Pass
INV-18	Rejects negative quantity	POST /invoices?dryRun=true	400	400	237 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`INV-19`	Rejects unknown currency	`POST /invoices?dryRun=true`	400	400	290 ms	Pass
`INV-20`	Rejects missing customer	`POST /invoices?dryRun=true`	400	400	343 ms	Pass
`INV-21`	Rejects due date before issue date	`POST /invoices?dryRun=true`	400	400	166 ms	Pass
`INV-22`	Rejects more than 500 lines	`POST /invoices?dryRun=true`	400	400	219 ms	Pass
`INV-23`	Rejects discount over 100%	`POST /invoices?dryRun=true`	400	400	272 ms	Pass
`INV-24`	Missing scope rejected	`GET /invoices`	403	403	325 ms	Pass
`INV-25`	Invalid status value rejected · **ACME-513**	`GET /invoices?status=payed`	400	200	148 ms	Fail
`INV-26`	Every listed invoice can be retrieved · **ACME-512**	`GET /invoices → /invoices/{id}`	200	404 for 5 of 20	201 ms	Fail
`INV-27`	Totals computed correctly (net, VAT, gross)	`POST /invoices?dryRun=true`	match	match	254 ms	Pass
`INV-28`	Rounding: 3 × €0.333 at 23% VAT	`POST /invoices?dryRun=true`	€1.23 gross	€1.23 gross	307 ms	Pass
`INV-29`	Invoice PDF download	`GET /invoices/{id}/pdf`	200 application/pdf	200 application/pdf	770 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`INV-30`	PDF of another tenant's invoice	`GET /invoices/{id}/pdf`	404	404	823 ms	Pass
`INV-31`	`totalItems` equals the sum of pages	`GET /invoices`	equal	equal	236 ms	Pass
`INV-32`	Numbering is sequential per series	`GET /invoices?series=2026`	no gaps	no gaps	289 ms	Pass
`INV-33`	Send invoice (dry run)	`POST /invoices/{id}/send?dryRun=true`	202	202	342 ms	Pass
`INV-34`	Cancelled invoice cannot be sent	`POST /invoices/{id}/send?dryRun=true`	409	409	165 ms	Pass
`INV-35`	Peppol e-invoice export (feature flag off on staging)	`GET /invoices/{id}/ubl`	200	–	–	Skippe

Payments 21/22 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`PAY-01`	List payments	`GET /payments`	200	200	271 ms	Pass
`PAY-02`	Pagination: page size and next cursor	`GET /payments?limit=20`	20 + cursor	20 + cursor	324 ms	Pass
`PAY-03`	Pagination: last page has no cursor	`GET /payments?cursor=…`	no cursor	no cursor	147 ms	Pass
`PAY-04`	Limit above 100 rejected	`GET /payments?limit=500`	400	400	200 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
PAY-05	Sort by creation date, descending	GET /payments?sort=-createdAt	sorted	sorted	253 ms	Pass
PAY-06	Filter by invoiceId	GET /payments?invoiceId=…	matching items only	matching items only	306 ms	Pass
PAY-07	Filter by method	GET /payments?method=…	matching items only	matching items only	129 ms	Pass
PAY-08	Filter by receivedFrom	GET /payments?receivedFrom=…	matching items only	matching items only	182 ms	Pass
PAY-09	Get by id	GET /payments/{id}	200	200	235 ms	Pass
PAY-10	Unknown id	GET /payments/{id}	404	404	288 ms	Pass
PAY-11	Other tenant's id	GET /payments/{id}	404	404	341 ms	Pass
PAY-12	Response matches OpenAPI schema	GET /payments/{id}	valid	valid	164 ms	Pass
PAY-13	Create (dry run)	POST /payments?dryRun=true	200	200	217 ms	Pass
PAY-14	Rejects overpayment	POST /payments?dryRun=true	400	400	270 ms	Pass
PAY-15	Rejects payment on cancelled invoice	POST /payments?dryRun=true	400	400	323 ms	Pass
PAY-16	Rejects amount with 3 decimals	POST /payments?dryRun=true	400	400	146 ms	Pass
PAY-17	Rejects currency differs from invoice	POST /payments?dryRun=true	400	400	199 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
PAY-18	Missing scope rejected	GET /payments	403	403	252 ms	Pass
PAY-19	Partial payment updates the open balance	POST /payments?dryRun=true	balance reduced	balance reduced	305 ms	Pass
PAY-20	Refund (dry run)	POST /payments/{id}/refund?dryRun=true	200	200	128 ms	Pass
PAY-21	Refund above paid amount rejected	POST /payments/{id}/refund?dryRun=true	422	422	181 ms	Pass
PAY-22	SEPA direct debit mandate (provider sandbox unavailable)	POST /mandates?dryRun=true	201	–	–	Skipped

Credit notes 17/17 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
CN-01	List credit notes	GET /credit-notes	200	200	287 ms	Pass
CN-02	Pagination: page size and next cursor	GET /credit-notes?limit=20	20 + cursor	20 + cursor	340 ms	Pass
CN-03	Pagination: last page has no cursor	GET /credit-notes?cursor=…	no cursor	no cursor	163 ms	Pass
CN-04	Limit above 100 rejected	GET /credit-notes?limit=500	400	400	216 ms	Pass
CN-05	Sort by creation date, descending	GET /credit-notes?sort=-createdAt	sorted	sorted	269 ms	Pass
CN-06	Filter by invoiceId	GET /credit-notes?invoiceId=…	matching items only	matching items only	322 ms	Pass
CN-07	Filter by issuedFrom	GET /credit-notes?issuedFrom=…	matching items only	matching items only	145 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
CN-08	Get by id	GET /credit-notes/{id}	200	200	198 ms	Pass
CN-09	Unknown id	GET /credit-notes/{id}	404	404	251 ms	Pass
CN-10	Other tenant's id	GET /credit-notes/{id}	404	404	304 ms	Pass
CN-11	Response matches OpenAPI schema	GET /credit-notes/{id}	valid	valid	127 ms	Pass
CN-12	Create (dry run)	POST /credit-notes?dryRun=true	200	200	180 ms	Pass
CN-13	Rejects credit above invoice total	POST /credit-notes?dryRun=true	400	400	233 ms	Pass
CN-14	Rejects credit on draft invoice	POST /credit-notes?dryRun=true	400	400	286 ms	Pass
CN-15	Missing scope rejected	GET /credit-notes	403	403	339 ms	Pass
CN-16	Credit note links to its invoice	GET /credit-notes/{id}	invoiceId set	invoiceId set	162 ms	Pass
CN-17	Credit note PDF download	GET /credit-notes/{id}/pdf	200	200	855 ms	Pass

Recurring schedules 19/19 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
REC-01	List recurring schedules	GET /recurring	200	200	268 ms	Pass
REC-02	Pagination: page size and next cursor	GET /recurring?limit=20	20 + cursor	20 + cursor	321 ms	Pass
REC-03	Pagination: last page has no cursor	GET /recurring?cursor=…	no cursor	no cursor	144 ms	Pass
REC-04	Limit above 100 rejected	GET /recurring?limit=500	400	400	197 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
REC-05	Sort by creation date, descending	GET /recurring?sort=-createdAt	sorted	sorted	250 ms	Pass
REC-06	Filter by customerId	GET /recurring?customerId=…	matching items only	matching items only	303 ms	Pass
REC-07	Filter by frequency	GET /recurring?frequency=…	matching items only	matching items only	126 ms	Pass
REC-08	Filter by active	GET /recurring?active=…	matching items only	matching items only	179 ms	Pass
REC-09	Get by id	GET /recurring/{id}	200	200	232 ms	Pass
REC-10	Unknown id	GET /recurring/{id}	404	404	285 ms	Pass
REC-11	Other tenant's id	GET /recurring/{id}	404	404	338 ms	Pass
REC-12	Response matches OpenAPI schema	GET /recurring/{id}	valid	valid	161 ms	Pass
REC-13	Create (dry run)	POST /recurring?dryRun=true	200	200	214 ms	Pass
REC-14	Rejects day of month 0	POST /recurring?dryRun=true	400	400	267 ms	Pass
REC-15	Rejects end date before start	POST /recurring?dryRun=true	400	400	320 ms	Pass
REC-16	Rejects unknown frequency	POST /recurring?dryRun=true	400	400	143 ms	Pass
REC-17	Missing scope rejected	GET /recurring	403	403	196 ms	Pass
REC-18	Next 3 run dates returned	GET /recurring/{id}	3 dates	3 dates	249 ms	Pass
REC-19	Day 31 falls back to last day of month	GET /recurring/{id}	30 Nov	30 Nov	302 ms	Pass

Taxes 14/14 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
TAX-01	List taxes	GET /tax-rates	200	200	125 ms	Pass
TAX-02	Pagination: page size and next cursor	GET /tax-rates?limit=20	20 + cursor	20 + cursor	178 ms	Pass
TAX-03	Pagination: last page has no cursor	GET /tax-rates?cursor=…	no cursor	no cursor	231 ms	Pass
TAX-04	Limit above 100 rejected	GET /tax-rates?limit=500	400	400	284 ms	Pass
TAX-05	Sort by creation date, descending	GET /tax-rates?sort=-createdAt	sorted	sorted	337 ms	Pass
TAX-06	Filter by country	GET /tax-rates?country=…	matching items only	matching items only	160 ms	Pass
TAX-07	Get by id	GET /tax-rates/{id}	200	200	213 ms	Pass
TAX-08	Unknown id	GET /tax-rates/{id}	404	404	266 ms	Pass
TAX-09	Other tenant's id	GET /tax-rates/{id}	404	404	319 ms	Pass
TAX-10	Response matches OpenAPI schema	GET /tax-rates/{id}	valid	valid	142 ms	Pass
TAX-11	Create (dry run)	POST /tax-rates?dryRun=true	200	200	195 ms	Pass
TAX-12	Rejects rate over 100%	POST /tax-rates?dryRun=true	400	400	248 ms	Pass
TAX-13	Missing scope rejected	GET /tax-rates	403	403	301 ms	Pass
TAX-14	Reverse charge flag on EU B2B customer	POST /invoices?dryRun=true	VAT 0%, note added	VAT 0%, note added	124 ms	Pass

Webhooks 19/20 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
WH-01	List webhooks	GET /webhooks	200	200	177 ms	Pass
WH-02	Pagination: page size and next cursor	GET /webhooks?limit=20	20 + cursor	20 + cursor	230 ms	Pass
WH-03	Pagination: last page has no cursor	GET /webhooks?cursor=…	no cursor	no cursor	283 ms	Pass
WH-04	Limit above 100 rejected	GET /webhooks?limit=500	400	400	336 ms	Pass
WH-05	Sort by creation date, descending	GET /webhooks?sort=-createdAt	sorted	sorted	159 ms	Pass
WH-06	Filter by event	GET /webhooks?event=…	matching items only	matching items only	212 ms	Pass
WH-07	Get by id	GET /webhooks/{id}	200	200	265 ms	Pass
WH-08	Unknown id	GET /webhooks/{id}	404	404	318 ms	Pass
WH-09	Other tenant's id	GET /webhooks/{id}	404	404	141 ms	Pass
WH-10	Response matches OpenAPI schema	GET /webhooks/{id}	valid	valid	194 ms	Pass
WH-11	Create (dry run)	POST /webhooks?dryRun=true	200	200	247 ms	Pass
WH-12	Rejects HTTP (non-TLS) URL	POST /webhooks?dryRun=true	400	400	300 ms	Pass
WH-13	Rejects unknown event type	POST /webhooks?dryRun=true	400	400	123 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`WH-14`	Rejects URL resolving to private IP	`POST /webhooks?dryRun=true`	400	400	176 ms	Pass
`WH-15`	Missing scope rejected	`GET /webhooks`	403	403	229 ms	Pass
`WH-16`	Signature header on test delivery	`POST /webhooks/{id}/test`	X-Acme-Signature	X-Acme-Signature	282 ms	Pass
`WH-17`	Signature verifies with the shared secret	`POST /webhooks/{id}/test`	valid	valid	335 ms	Pass
`WH-18`	Delivery log lists the test event	`GET /webhooks/{id}/deliveries`	200	200	158 ms	Pass
`WH-19`	Retry uses configured back-off (3rd attempt) · **ACME-514**	`GET /webhooks/{id}/deliveries`	after 15 min	after 1 min	211 ms	Fail
`WH-20`	Secret rotation keeps old secret valid for 24 h	`POST /webhooks/{id}/rotate?dryRun=true`	both valid	both valid	264 ms	Pass

Reports 19/19 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`REP-01`	List reports	`GET /reports/revenue`	200	200	577 ms	Pass
`REP-02`	Pagination: page size and next cursor	`GET /reports/revenue?limit=20`	20 + cursor	20 + cursor	400 ms	Pass
`REP-03`	Pagination: last page has no cursor	`GET /reports/revenue?cursor=…`	no cursor	no cursor	453 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
REP-04	Limit above 100 rejected	GET /reports/revenue?limit=500	400	400	506 ms	Pass
REP-05	Sort by creation date, descending	GET /reports/revenue?sort=-createdAt	sorted	sorted	559 ms	Pass
REP-06	Filter by month	GET /reports/revenue?month=…	matching items only	matching items only	382 ms	Pass
REP-07	Filter by currency	GET /reports/revenue?currency=…	matching items only	matching items only	435 ms	Pass
REP-08	Get by id	GET /reports/revenue/{id}	200	200	488 ms	Pass
REP-09	Unknown id	GET /reports/revenue/{id}	404	404	541 ms	Pass
REP-10	Other tenant's id	GET /reports/revenue/{id}	404	404	594 ms	Pass
REP-11	Response matches OpenAPI schema	GET /reports/revenue/{id}	valid	valid	417 ms	Pass
REP-12	Create (dry run)	POST /reports/revenue?dryRun=true	200	200	470 ms	Pass
REP-13	Rejects month in wrong format	POST /reports/revenue?dryRun=true	400	400	523 ms	Pass
REP-14	Missing scope rejected	GET /reports/revenue	403	403	576 ms	Pass
REP-15	Aged receivables report	GET /reports/aged-receivables	200	200	399 ms	Pass
REP-16	CSV export	GET /reports/revenue.csv	text/csv	text/csv	452 ms	Pass
REP-17	Report totals equal invoice totals	GET /reports/revenue	equal	equal	505 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`REP-18`	Future month returns empty report	`GET /reports/revenue?month=2027-01`	200, 0 rows	200, 0 rows	558 ms	Pass
`REP-19`	VAT summary per rate	`GET /reports/vat`	rates sum to total	rates sum to total	381 ms	Pass

Users and roles 20/20 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`USR-01`	List users and roles	`GET /users`	200	200	174 ms	Pass
`USR-02`	Pagination: page size and next cursor	`GET /users?limit=20`	20 + cursor	20 + cursor	227 ms	Pass
`USR-03`	Pagination: last page has no cursor	`GET /users?cursor=…`	no cursor	no cursor	280 ms	Pass
`USR-04`	Limit above 100 rejected	`GET /users?limit=500`	400	400	333 ms	Pass
`USR-05`	Sort by creation date, descending	`GET /users?sort=-createdAt`	sorted	sorted	156 ms	Pass
`USR-06`	Filter by `role`	`GET /users?role=…`	matching items only	matching items only	209 ms	Pass
`USR-07`	Filter by `active`	`GET /users?active=…`	matching items only	matching items only	262 ms	Pass
`USR-08`	Get by id	`GET /users/{id}`	200	200	315 ms	Pass
`USR-09`	Unknown id	`GET /users/{id}`	404	404	138 ms	Pass
`USR-10`	Other tenant's id	`GET /users/{id}`	404	404	191 ms	Pass
`USR-11`	Response matches OpenAPI schema	`GET /users/{id}`	valid	valid	244 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`USR-12`	Create (dry run)	`POST /users?dryRun=true`	200	200	297 ms	Pass
`USR-13`	Rejects invite with invalid email	`POST /users?dryRun=true`	400	400	120 ms	Pass
`USR-14`	Rejects unknown role	`POST /users?dryRun=true`	400	400	173 ms	Pass
`USR-15`	Missing scope rejected	`GET /users`	403	403	226 ms	Pass
`USR-16`	Current user	`GET /users/me`	200	200	279 ms	Pass
`USR-17`	Roles are listed	`GET /roles`	5 roles	5 roles	332 ms	Pass
`USR-18`	Accountant cannot invite users	`POST /users/invite?dryRun=true`	403	403	155 ms	Pass
`USR-19`	Viewer cannot create invoices	`POST /invoices?dryRun=true`	403	403	208 ms	Pass
`USR-20`	Admin cannot remove the last admin	`DELETE /users/{id}?dryRun=true`	409	409	261 ms	Pass

Files 16/16 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`FIL-01`	List files	`GET /files`	200	200	314 ms	Pass
`FIL-02`	Pagination: page size and next cursor	`GET /files?limit=20`	20 + cursor	20 + cursor	137 ms	Pass
`FIL-03`	Pagination: last page has no cursor	`GET /files?cursor=…`	no cursor	no cursor	190 ms	Pass
`FIL-04`	Limit above 100 rejected	`GET /files?limit=500`	400	400	243 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`FIL-05`	Sort by creation date, descending	`GET /files?sort=-createdAt`	sorted	sorted	296 ms	Pass
`FIL-06`	Filter by `type`	`GET /files?type=…`	matching items only	matching items only	349 ms	Pass
`FIL-07`	Get by id	`GET /files/{id}`	200	200	172 ms	Pass
`FIL-08`	Unknown id	`GET /files/{id}`	404	404	225 ms	Pass
`FIL-09`	Other tenant's id	`GET /files/{id}`	404	404	278 ms	Pass
`FIL-10`	Response matches OpenAPI schema	`GET /files/{id}`	valid	valid	331 ms	Pass
`FIL-11`	Create (dry run)	`POST /files?dryRun=true`	200	200	154 ms	Pass
`FIL-12`	Rejects file type not allowed	`POST /files?dryRun=true`	400	400	207 ms	Pass
`FIL-13`	Rejects file over 10 MB	`POST /files?dryRun=true`	400	400	260 ms	Pass
`FIL-14`	Missing scope rejected	`GET /files`	403	403	313 ms	Pass
`FIL-15`	Upload URL expires after 15 min	`POST /files`	expiresAt +15m	expiresAt +15m	136 ms	Pass
`FIL-16`	Download link works	`GET /files/{id}/content`	200	200	189 ms	Pass

Audit log 16/16 passed

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`AUD-01`	List audit log	`GET /audit-events`	200	200	242 ms	Pass

ID	TEST	ENDPOINT	EXPECTED	ACTUAL	TIME	RESULT
`AUD-02`	Pagination: page size and next cursor	`GET /audit-events?limit=20`	20 + cursor	20 + cursor	295 ms	Pass
`AUD-03`	Pagination: last page has no cursor	`GET /audit-events?cursor=…`	no cursor	no cursor	348 ms	Pass
`AUD-04`	Limit above 100 rejected	`GET /audit-events?limit=500`	400	400	171 ms	Pass
`AUD-05`	Sort by creation date, descending	`GET /audit-events?sort=-createdAt`	sorted	sorted	224 ms	Pass
`AUD-06`	Filter by `actor`	`GET /audit-events?actor=…`	matching items only	matching items only	277 ms	Pass
`AUD-07`	Filter by `action`	`GET /audit-events?action=…`	matching items only	matching items only	330 ms	Pass
`AUD-08`	Filter by `from`	`GET /audit-events?from=…`	matching items only	matching items only	153 ms	Pass
`AUD-09`	Get by id	`GET /audit-events/{id}`	200	200	206 ms	Pass
`AUD-10`	Unknown id	`GET /audit-events/{id}`	404	404	259 ms	Pass
`AUD-11`	Other tenant's id	`GET /audit-events/{id}`	404	404	312 ms	Pass
`AUD-12`	Response matches OpenAPI schema	`GET /audit-events/{id}`	valid	valid	135 ms	Pass
`AUD-13`	Create (dry run)	`POST /audit-events?dryRun=true`	200	200	188 ms	Pass
`AUD-14`	Missing scope rejected	`GET /audit-events`	403	403	241 ms	Pass
`AUD-15`	Invoice change recorded with actor and diff	`GET /audit-events?entity=invoice`	1 event	1 event	294 ms	Pass
`AUD-16`	Audit log is read-only	`DELETE /audit-events/{id}`	405	405	347 ms	Pass

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