Part 2A — Setup: basics, accounts, numbers

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Every endpoint here needs `Authorization: Bearer <api key>` (□□). The envelope and error codes are on the contents page.

A. Basics

A1. Ping

Purpose: Check the key works and see which features the client app has.

Endpoint: GET `{base_url}/ping`

Access Level: □□ Protected · Bearer API key

Success Response JSON Sample:


```
{
  "success": true,
  "httpStatus": "200 OK",
  "message": "pong",
  "action": null,
  "action_time": "2026-11-13T19:57:58.900619432",
  "data": {
    "clientAppId": "bd74035b-bdb6-450d-885b-222e83719906",
    "name": "softphone-test",
    "features": ["INBOUND", "CALLOUTS", "OTP", "AI"]
  }
}
```


Field	Description

`clientAppId`	The client app this key belongs to
`name`	Its name at the Ringmaster owner
`features`	What it may do: `INBOUND`, `CALLOUTS`, `OTP`, `AI`, `NUMBERS` (Part 1 §1.2)

Error Response JSON Sample (no or wrong key):

```
{
  "success": false,
  "httpStatus": "401 UNAUTHORIZED",
  "message": "Missing or invalid API key",
  "code": "UNAUTHORIZED",
  "action_time": "2026-11-13T19:57:59.067583389",
  "data": null
}
```

Also: `403 CLIENT_SUSPENDED` (the owner suspended the app), `429 RATE_LIMITED`.

A2. Script schema

Purpose: The block catalogue a flow editor needs: every block type, its group, what it does, its exits, whether it needs approval; the rules; the message shape; the variables a flow can use; an example flow.

Endpoint: `GET` `{base_url}/scripts/schema`

Access Level: Protected · Bearer API key

Success Response JSON Sample (shortened: 18 blocks in `blocks`):

```
{
  "success": true,
  "httpStatus": "200 OK",
  "message": "Script schema",
  "action": null,
  "action_time": "2026-11-13T19:58:20.112842101",
  "data": {
    "schemaVersion": "1",
    "blocks": [
```

```
      { "type": "say", "group": "Speak", "description": "Say a text or play an audio message, then continue.",
        "exits": ["next"], "needsApproval": false },
      { "type": "menu", "group": "Ask",
        "description": "Ask the caller to pick an option by key or, when speech is on, by voice …",
        "exits": ["<option>", "noInput", "notUnderstood", "later"], "needsApproval": false },
      { "type": "collect", "group": "Ask", "description": "Collect a number (account, PIN, amount) into {input.<name>}.",
        "exits": ["ok", "failed", "later"], "needsApproval": true }
    ],
    "rules": [
      "direction is INCOMING (start exit 'call') or OUTGOING (start exit 'out'); never both",
      "every block: {type, …settings, before?: message, wr?: waiting room, x: {exit: blockId}}; a missing exit ends the call",
      "at most 60 blocks, 10 menu keys, 3 retries; text at most 500 characters"
    ],
    "messageShape": {
      "text": { "src": "text", "text": "Habari {name}", "lang": "sw",
                "voice": "marin|coral|shimmer|sage|cedar|ash|echo|ballad|verse", "speed": "0.7-1.5 (1.0 normal)…" },
      "audio": { "src": "record|upload|library", "media": "<mediaId>" }
    },
    "systemVariables": ["date", "time", "lang", "answeredBy", "key", "heard", "number", "caller", "callId"],
    "example": {
      "direction": "INCOMING",
      "start": { "call": "greet" },
      "blocks": {
        "greet": { "type": "say", "msg": { "src": "text", "text": "Karibu!" }, "x": { "next": "menu" } },
        "menu": { "type": "menu", "msg": { "src": "text", "text": "Bonyeza moja kwa mauzo, mbili kwa msaada." },
                  "options": [ { "k": "1", "id": "sales", "label": "Mauzo", "words": ["mauzo", "kununua"] },
                               { "k": "2", "id": "help", "label": "Msaada", "words": ["msaada", "tatizo"] } ],
                  "x": { "sales": "sales", "help": "help", "noInput": "bye", "notUnderstood": "bye" } },
        "sales": { "type": "say", "msg": { "src": "text", "text": "Bei zetu ziko kwenye tovuti
```

```
yetu." }, "x": { "next": "bye" } },
        "help": { "type": "say", "msg": { "src": "text", "text": "Mhudumu atakupigia leo." },
"x": { "next": "bye" } },
        "bye": { "type": "goodbye", "msg": { "src": "text", "text": "Asante, kwaheri." } }
      }
    }
  }
}
```

Field	Description
`blocks[].exits`	Exit names. `<option>` = one exit per menu/connect option (its `id`); `<outcome>` = one per App action outcome; `<return>` = the names a transferred flow returns with
`blocks[].needsApproval`	A risky block: a version using it should be approved before it runs. The engine reports these in `riskyBlocks`; the client app pushes such versions with `runnable: false` and approves them later (Part 2B, D7)
`systemVariables`	Always available in texts as `{name}`: `{caller}`, `{date}`, `{time}`, `{lang}`, `{key}` (last key), `{heard}` (last speech), `{number}` (number called), `{callId}`, `{answeredBy}` (outgoing, with answering-machine detection: `person` / `machine`)

The full meaning of every block setting is in Part 5. The schema is generated from the engine's code, so it always matches what the engine accepts; cache it per `schemaVersion`.

A3. Check a script (dry run)

Purpose: Validate a flow document without storing it: the same checks as pushing a version. Use it in the editor on every save.

Endpoint: **POST** `{base_url}/scripts/validate`

Access Level: □□ Protected · Bearer API key

Request JSON Sample:

```
{
  "accountId": "adb72fac-66a2-471b-a437-035fe008197d",
  "definition": {
    "direction": "INCOMING",
```

```
    "start": { "call": "a" },
    "blocks": {
      "a": { "type": "say", "msg": { "src": "text", "text": "Hi" }, "x": { "next": "zz" } }
    }
  }
}
```

Parameter	Type	Required	Description
`definition`	object	Yes	The flow document (Part 5)
`accountId`	uuid	No	With it, references are checked too: departments, media, the flows a Transfer or Schedule block names

Success Response JSON Sample (the check ran; this flow has an error):

```
{
  "success": true,
  "httpStatus": "200 OK",
  "message": "Validation result",
  "action": null,
  "action_time": "2026-11-13T18:06:38.004985164",
  "data": {
    "valid": false,
    "errors": [
      { "level": "ERROR", "block": "a", "code": "EXIT_TARGET_MISSING", "message": "Exit 'next'
points to a missing block: zz" }
    ],
    "warnings": [],
    "vars": [],
    "texts": ["Hi"],
    "riskyBlocks": []
  }
}
```

Field	Description
`valid`	`true` when there are no errors (warnings are allowed)
`errors[]` / `warnings[]`	`{level, block, code, message}`; codes in Part 4. Typical warning: `EXIT_UNCONNECTED` (the call ends there)

Field	Description
`vars`	Variables the flow uses that a call-out must provide (`{name}`, `{amount}`)
`texts`	Every fixed sentence; the engine turns these into audio when a version is stored
`riskyBlocks`	Blocks that make this version need approval (risky block types, and App actions registered as risky)

The answer is always `200` when the document could be read; `valid` says whether it would be stored. When the client app has no `AI` feature, each block that uses AI (AI Agent, `speech.match: "smart"`) is an error with code `FEATURE_OFF`.

B. Accounts

An **account** is one business. Its id is used in most paths. `externalRef` is the client app's own id for it.

B1. Create an account

Purpose: Add a business. It starts with sensible defaults (hours Mon–Fri 08–17, Sat 09–13; quiet hours 21:00–07:00; recording of live parts with a Kiswahili notice; limits; 90 days retention).

Endpoint: **POST** `{base_url}/accounts`

Access Level: Protected · Bearer API key

Request JSON Sample:

```
{
  "externalRef": "pmk-chemicals",
  "defaultLanguage": "sw",
  "timezone": "Africa/Dar_es_Salaam"
}
```

Parameter	Type	Required	Description	Validation
`externalRef`	string	Yes	The client app's id for the business	Not blank, max 120; unique within the client app

Parameter	Type	Required	Description	Validation
`defaultLanguage`	string	No	Language callers hear first	`sw` (default), `en`
`timezone`	string	No	For hours, quiet hours, "call me at 9"	IANA zone; default `Africa/Dar_es_Salaam`

Success Response: `201 Created`, `data` = the account, same shape as B3.

Errors:

```
{ "success": false, "httpStatus": "409 CONFLICT", "message": "An account with this externalRef already exists",
  "code": "ACCOUNT_EXISTS", "action_time": "2026-11-13T19:57:58.985027739", "data": null }
```

```
{ "success": false, "httpStatus": "422 UNPROCESSABLE_CONTENT", "message": "Validation failed",
  "code": "VALIDATION_FAILED", "action_time": "2026-11-13T19:57:59.051669172", "data": {
"externalRef": "must not be blank" } }
```

```
{ "success": false, "httpStatus": "400 BAD_REQUEST", "message": "Unknown timezone: Mars/Base",
  "code": "BAD_REQUEST", "action_time": "2026-11-13T19:57:59.009578709", "data": null }
```

B2. List accounts

Purpose: All accounts of the client app, or the one with a given `externalRef`.

Endpoint: GET `{base_url}/accounts`

Access Level: Protected · Bearer API key

Query	Type	Required	Description
`externalRef`	string	No	Return only this account (a list of 0 or 1)

Success Response: `data` = array of accounts (B3 shape).

B3. Get an account

Endpoint: GET `{base_url}/accounts/{accountId}`

Access Level: □□ Protected · Bearer API key

Success Response JSON Sample:


```
{
  "success": true,
  "httpStatus": "200 OK",
  "message": "Account",
  "action": null,
  "action_time": "2026-11-13T19:57:58.939219236",
  "data": {
    "id": "adb72fac-66a2-471b-a437-035fe008197d",
    "externalRef": "softphone",
    "status": "ACTIVE",
    "defaultLanguage": "sw",
    "timezone": "Africa/Dar_es_Salaam",
    "hours": {
      "days": {
        "MONDAY": [ { "from": "08:00", "to": "17:00" } ],
        "TUESDAY": [ { "from": "08:00", "to": "17:00" } ],
        "WEDNESDAY": [ { "from": "08:00", "to": "17:00" } ],
        "THURSDAY": [ { "from": "08:00", "to": "17:00" } ],
        "FRIDAY": [ { "from": "08:00", "to": "17:00" } ],
        "SATURDAY": [ { "from": "09:00", "to": "13:00" } ]
      }
    },
    "quietHours": { "from": "21:00", "to": "07:00" },
    "recording": {
      "mode": "LIVE_PARTS",
      "noticeText": "Mazungumzo haya yanarekodiwa kwa ajili ya ubora wa huduma.",
      "noticeMediaId": null,
      "transcribe": true
    },
    "limits": {
      "maxCallMinutes": 15,
      "maxWaitSeconds": 300,
      "callerCallsPer10Min": 100,
      "otpPerDestinationPer10Min": 3,
      "voicemailMaxSeconds": 120,
      "maxBlockVisits": 25
```

```
    },
    "hasRequestSigningSecret": false,
    "retentionDays": 90,
    "businessName": "Ringmaster Lab",
    "aiDisclosure": null,
    "createdAt": "2026-11-12T05:20:55.204082Z"
  }
}
```

Field	Description
`status`	`ACTIVE` · `SUSPENDED` (every call to its numbers is refused)
`hours.days`	Opening hours per day (`MONDAY`…`SUNDAY`), several ranges allowed; a missing day = closed. Used by the Condition block (`hours` test) and Connect
`quietHours`	No call-outs between `from` and `to` (may cross midnight)
`recording.mode`	`LIVE_PARTS` (record talk with agents) · `OFF` (only voicemails)
`recording.noticeText` / `noticeMediaId`	What callers hear before a recorded part (text, or an uploaded audio file)
`recording.transcribe`	Make a transcript and summary of each recording
`limits.*`	Guards, see Part 1 §1.4
`hasRequestSigningSecret`	A secret is set for signing Send request blocks' calls to the business's own systems (the secret itself is never returned)
`retentionDays`	Recordings and transcripts are deleted after this many days
`businessName`	Said in the AI notice ("…huduma ya kidijitali ya *Ringmaster Lab*")
`aiDisclosure`	Own AI notice per language `{ "sw": "…", "en": "…" }`; `null` = the engine's default sentence
`recording.agentCallNotice`	Also say the notice on calls agents make (default `false`)
`agentPhone.showTeam`	Agents see who else in their departments is available, on a call or away (default `true`)
`agentPhone.showCallerNumbers`	`false` masks numbers for agents (`+2557••••250`) in rings, queues, recent calls and search
`agentPhone.allowDecline`	Agents may decline rings (`false` = calls are assigned; decline answers `409 DECLINE_NOT_ALLOWED`)
`agentPhone.allowCallBack`	Agents may call earlier callers back from their app (J8)
`agentPhone.allowDialPad`	Agents may dial any number from Agent Phone's dial pad

Errors: `404 NOT_FOUND` "Account not found" (unknown, or another client app's).

B4. Update an account

Purpose: Change any setting. Send only what changes; missing fields keep their value.

Endpoint: `PATCH` `{base_url}/accounts/{accountId}`

Access Level: ◫ Protected · Bearer API key

Request JSON Sample:

```
{
  "businessName": "PMK Chemicals",
  "hours": { "days": { "MONDAY": [ { "from": "08:00", "to": "12:30" }, { "from": "14:00",
"to": "17:00" } ] } },
  "quietHours": { "from": "20:00", "to": "08:00" },
  "recording": { "mode": "LIVE_PARTS", "noticeText": "Simu hii inarekodiwa.", "transcribe":
true },
  "limits": { "maxCallMinutes": 20, "maxWaitSeconds": 300, "callerCallsPer10Min": 5,
              "otpPerDestinationPer10Min": 3, "voicemailMaxSeconds": 120, "maxBlockVisits": 25
},
  "retentionDays": 180,
  "aiDisclosure": { "sw": "Unazungumza na msaidizi wa kidijitali wa PMK.", "en": "You are
talking to PMK's digital assistant." }
}
```

Parameter	Type	Description	Validation
`status`	string	`ACTIVE` · `SUSPENDED`	Suspending refuses new calls to its numbers and **pauses** its running call-outs; going back to `ACTIVE` does not restart them (the messages may be stale): resume or stop each one
`defaultLanguage`	string	`sw` · `en`	
`timezone`	string	IANA zone	`400 Unknown timezone`
`hours`	object	**Replaces** all opening hours	`HH:mm`
`quietHours`	object	`{from, to}`	`HH:mm`

Parameter	Type	Description	Validation
`recording`	object	**Replaces** the recording policy	`mode` = `OFF` / `LIVE_PARTS`
`limits`	object	**Replaces** all six limits (send all six)	whole numbers
`requestSigningSecret`	string	Secret for Send request signatures; `""` removes it	stored encrypted
`retentionDays`	integer	Days to keep recordings	1–3650
`businessName`	string	`""` removes it	
`aiDisclosure`	object	`{}` goes back to the default sentence	
`agentPhone`	object	**Replaces** the five switches (send all five); missing ones count as `true`. Agents' devices are told at once (`config` signal)	booleans

Success Response: the updated account (B3 shape).

C. Numbers

A number moves through three states:

```
POOL ──(owner gives it to the client app)──► ALLOCATED ──assign──► ASSIGNED (to one account)
──release──► ALLOCATED
                                                ▲  remove (NUMBERS feature) ◄── POOL
transfer: account → account
```

Only an **assigned** number with a pinned, runnable **Incoming** flow answers calls.

C1. List numbers

Endpoint: GET `{base_url}/numbers`

Access Level: ◫ Protected · Bearer API key

Query	Type	Required	Description

`status`	string	No	`ALLOCATED` (free, not on an account) · `ASSIGNED`. Anything else → `400 Invalid value for parameter: status`

Success Response JSON Sample:


```
{
  "success": true,
  "httpStatus": "200 OK",
  "message": "Numbers",
  "action": null,
  "action_time": "2026-11-13T19:58:07.321779977",
  "data": [
    {
      "id": "8a8d9c13-bda2-4a18-8410-c5ec49ed2c66",
      "e164": "+255677000001",
      "status": "ASSIGNED",
      "accountId": "adb72fac-66a2-471b-a437-035fe008197d",
      "label": null,
      "incomingScriptVersionId": "e183c7f1-3137-4848-95c1-11a7e8bef17a",
      "verified": true,
      "verifiedAt": "2026-11-12T05:33:27.481181Z",
      "ringMode": "BROWSER"
    }
  ]
}
```


Field	Description
`status`	`ALLOCATED` · `ASSIGNED`
`accountId`	The account it is on (`null` when free)
`label`	The client app's name for it ("Mauzo", "Line 7")
`incomingScriptVersionId`	The flow version callers hear; `null` = calls are refused
`verified` / `verifiedAt`	A real call has reached the engine through the trunk on this number
`ringMode`	Where agents are rung: `BROWSER` · `MOBILE` · `BROWSER_AND_MOBILE`

C2. Add a number

Purpose: Bring a Tanzanian number the client app owns at the carrier into Ringmaster (it must be routed to the engine's trunk). Needs the `NUMBERS` feature.

Endpoint: **POST** `{base_url}/numbers`

Access Level: ◫ Protected · Bearer API key · feature `NUMBERS`

Request JSON Sample:

```
{ "e164": "+255677000099", "type": "REGULAR", "label": "Mauzo", "by": "admin@business.co.tz" }
```

Parameter	Type	Required	Description	Validation
`e164`	string	Yes	The number	`+255` and 9 digits
`type`	string	No	`REGULAR` (default) · `TOLL_FREE`	
`label`	string	No	Name for it	max 80
`by`	string	No	Who did it in the client app (kept in the audit log)	max 120

Success Response: `201 Created`, `data` = the number (status `ALLOCATED`).

Errors:

```
{ "success": false, "httpStatus": "403 FORBIDDEN", "message": "Adding and removing numbers is
not enabled for this client app",
  "code": "FEATURE_OFF", "action_time": "2026-11-13T19:58:07.349143236", "data": null }
```

`400` "Only Tanzanian numbers (+255 and 9 digits) can be added" · `409 NUMBER_ALREADY_YOURS` · `409 NUMBER_TAKEN` (another client app has it).

C3. Remove a number

Purpose: Give a free number back to the pool. Needs the `NUMBERS` feature.

Endpoint: **DELETE** `{base_url}/numbers/{numberId}`

Access Level: ◫ Protected · Bearer API key · feature `NUMBERS`

Query	Type	Required	Description
`by`	string	No	Who did it (audit log)

Success Response: `200`, `message` "Number removed", `data` null.

Errors: `409 NUMBER_ASSIGNED` (release it first) · `409 NUMBER_BUSY` (a call is in progress) · `409 NUMBER_IN_CALLOUT` (a scheduled, running or paused call-out calls from it).

C4. Assign a number to an account

Endpoint: **POST** `{base_url}/numbers/{numberId}/assign`

Access Level: ◫ Protected · Bearer API key

Request JSON Sample:

```
{ "accountId": "adb72fac-66a2-471b-a437-035fe008197d", "label": "Mapokezi" }
```

Parameter	Type	Required	Description
`accountId`	uuid	Yes	The account
`label`	string	No	Name for the number

Success Response: the number with `status: "ASSIGNED"`. Assigning again to the same account only changes the label.

Errors: `409 NUMBER_ASSIGNED` "Number is assigned to another account; release it first" (use C6 instead).

C5. Release a number from its account

Purpose: Take the number off the account; it becomes free (`ALLOCATED`) and its flow is cleared.

Endpoint: **POST** `{base_url}/numbers/{numberId}/release`

Access Level: ◫ Protected · Bearer API key

Success Response: the number with `status: "ALLOCATED"`, `accountId: null`, `incomingScriptVersionId: null`.

Errors: `409 NUMBER_BUSY` · `409 NUMBER_IN_CALLOUT`.

C6. Transfer a number to another account

Purpose: Move an assigned number straight to another account of the same client app. The old account's flow is cleared, so pin the new account's flow next (C7).

Endpoint: **POST** `{base_url}/numbers/{numberId}/transfer`

Access Level: ◫ Protected · Bearer API key

Request JSON Sample:

```
{ "accountId": "51f815ba-e9eb-4e29-9297-3c56033d32cd", "label": "Oda", "by":
"admin@business.co.tz" }
```

Errors:

```
{ "success": false, "httpStatus": "409 CONFLICT", "message": "The number is already on this
account",
  "code": "SAME_ACCOUNT", "action_time": "2026-11-13T19:58:07.424064672", "data": null }
```

`409 NUMBER_NOT_ASSIGNED` (assign it instead) · `409 ACCOUNT_NOT_ACTIVE` · `409 NUMBER_BUSY` · `409 NUMBER_IN_CALLOUT`.

C7. Put a flow on a number

Purpose: Choose the flow version callers hear. Takes effect for the next call; calls in progress keep their version.

Endpoint: **PUT** `{base_url}/numbers/{numberId}/script`

Access Level: ◫ Protected · Bearer API key

Request JSON Sample:

```
{ "scriptVersionId": "e183c7f1-3137-4848-95c1-11a7e8bef17a" }
```

Parameter	Type	Required	Description
`scriptVersionId`	uuid / null	Yes	A runnable version of an **Incoming** flow of the number's account (`versionId` from Part 2B); `null` takes the flow off (calls are refused)

Success Response: the number, `message` "Incoming script set".

Errors:

- `400` "Assign the number to an account first"
- `400` "Script version belongs to another account" · `400` "Numbers run Incoming scripts only"
- `404 NOT_FOUND` "Script version not found"
- `409 VERSION_NOT_RUNNABLE` "Only runnable versions can be put on a number" (approve it, Part 2B D7)

C8. Set where agents are rung

Endpoint: **PUT** `{base_url}/numbers/{numberId}/ring-mode`

Access Level: ◫ Protected · Bearer API key

Request JSON Sample:

```
{ "ringMode": "BROWSER_AND_MOBILE" }
```

Parameter	Type	Required	Description
`ringMode`	string	No	`BROWSER` (default; also when missing) · `MOBILE` (agents' `mobile` numbers) · `BROWSER_AND_MOBILE`

Success Response: the number, `message` "Ring mode set".

Errors: an unknown value → `400` "Request body is not valid JSON".

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