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mlc-barcode-server — MCP reference

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Overview

Tool	Title	Result	Hints
`decode_barcode`	Read barcodes from an image	structured	—
`generate_barcode`	Barcode or QR code	structured	—
`generate_crypto_qr`	Crypto payment QR code	structured	—
`generate_email_qr`	Email QR code	structured	—
`generate_epc_qr`	GiroCode (SEPA transfer)	structured	—
`generate_event_qr`	Calendar event QR code	structured	—
`generate_geo_qr`	Map location QR code	structured	—
`generate_sms_qr`	SMS QR code	structured	—
`generate_tel_qr`	Phone call QR code	structured	—
`generate_vcard_qr`	Business card QR code (vCard)	structured	—
`generate_wifi_qr`	Wi-Fi access QR code	structured	—

structured: the tool declares an `outputSchema` and returns `structuredContent`. **text**: free-form content without a schema.

Tools

decode_barcode

Read barcodes from an image

Reads barcodes and QR codes from an image and reports symbology and content; known payloads (GiroCode/EPC with IBAN check, securPharm pharmaceutical pack codes with PZN, batch, expiry and serial, vCard, Wi-Fi, calendar event, geo, tel, SMS, email, crypto, URL) are split into fields. Finds several codes per image. Reads qr, datamatrix, aztec, pdf417, ean13, ean8, upca, code128, code39 and itf. Pass either path or image_base64.

Parameter	Type	Required	Description
`image_base64`	string		PNG, JPEG, GIF or WebP image, base64 encoded (a data: URI prefix is accepted)
`path`	string		Absolute path of a PNG, JPEG, GIF or WebP file on this computer

Result (`structuredContent`): `codes` (barcode_type, content, points, text), `count`

generate_barcode

Barcode or QR code

Generates a barcode image (SVG or PNG) from data

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)

Parameter	Type	Required	Description
`data`	string	yes	The data to encode. ean13/ean8/upca: digits only, 13/8/12 digits with check digit or 12/7/11 without (it is then computed); a wrong check digit is rejected with the expected one
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`type`	string (`qr`, `datamatrix`, `aztec`, `pdf417`, `code128`, `code39`, `ean13`, `ean8`, `upca`, `itf`)	yes	Barcode type: qr, datamatrix, aztec (tickets, compact, good on screens), pdf417 (boarding passes, shipping labels), code128 (ASCII), code39 (A-Z 0-9 -.$/+%), ean13, ean8, upca, itf (even number of digits)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_crypto_qr

Crypto payment QR code

Generates a cryptocurrency payment QR code (Bitcoin BIP 21, Ethereum EIP-681, etc.)

Parameter	Type	Required	Description
`address`	string	yes	Crypto wallet address
`amount`	number		Optional payment amount
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`coin`	string (default `bitcoin`)		Cryptocurrency (bitcoin, ethereum, solana, etc.)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`label`	string		Optional recipient label
`message`	string		Optional payment message/memo
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_email_qr

Email QR code

Generates an Email QR code (mailto:) with recipient, subject, and body

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`body`	string		Email body content
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`subject`	string		Email subject
`text`	boolean		Show text below barcode (if supported)
`to`	string	yes	Recipient email address
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_epc_qr

GiroCode (SEPA transfer)

Generates an EPC-QR-Code (GiroCode / SEPA-Überweisung) for banking apps and invoice payments

Parameter	Type	Required	Description
`amount`	number		Amount in EUR (e.g. 12.50)
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`bic`	string		BIC (optional)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`iban`	string	yes	IBAN (e.g. DE89370400440532013000)
`name`	string	yes	Beneficiary name (Empfänger)
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`reference`	string		Remittance information / Verwendungszweck
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_event_qr

Calendar event QR code

Generates a QR code for an iCalendar (RFC 5545) event

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`description`	string		Details shown with the event (agenda, dial-in, notes)
`end_time`	string		YYYYMMDDTHHMMSS(Z); for an all-day event YYYYMMDD of the day after the last day
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`latitude`	number		Latitude of the venue in decimal degrees (with longitude; lets calendars show a map)
`location`	string		Where it takes place, as text (address or room)
`longitude`	number		Longitude of the venue in decimal degrees (with latitude)
`organizer`	string		Who invites, as it should be shown, e.g. "Lechner, Michael"
`organizer_email`	string		E-mail address of the organizer
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`start_time`	string	yes	YYYYMMDDTHHMMSS(Z), or YYYYMMDD for an all-day event
`summary`	string	yes	Event title
`text`	boolean		Show text below barcode (if supported)
`timezone`	string		e.g. Europe/Berlin
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_geo_qr

Map location QR code

Generates a Geo Location (RFC 5870) QR code that opens Google Maps or Apple Maps

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size

Parameter	Type	Required	Description
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`latitude`	number	yes	Latitude coordinate (e.g. 52.5200)
`longitude`	number	yes	Longitude coordinate (e.g. 13.4050)
`query`	string		Location name or search query
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_sms_qr

SMS QR code

Generates an SMS QR code (smsto:) with pre-filled recipient and message

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`message`	string		SMS message text
`phone_number`	string	yes	Recipient phone number
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_tel_qr

Phone call QR code

Generates a telephone QR code (tel:) that opens the phone dialer

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size

Parameter	Type	Required	Description
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`phone_number`	string	yes	Phone number to dial (e.g. +49123456789)
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_vcard_qr

Business card QR code (vCard)

Generates a QR code for a vCard 3.0 contact

Parameter	Type	Required	Description
`address`	string		Street and house number
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`city`	string		City
`country`	string		Country, e.g. Germany
`email`	string		E-mail address
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`first_name`	string	yes	Given name
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`last_name`	string	yes	Family name
`org`	string		Organization
`phone`	string		Phone number, international format preferred (e.g. +49 89 1234567)
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`text`	boolean		Show text below barcode (if supported)
`title`	string		Job title, e.g. "Head of Sales"
`url`	string		Website, e.g. https://example.com
`width`	integer		Width of the image (optional)
`zip`	string		Postal code

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

generate_wifi_qr

Wi-Fi access QR code

Generates a QR code for WIFI access

Parameter	Type	Required	Description
`bg_color`	string (default `white`)		Background color (e.g. white, transparent, #ffffff)
`caption`	string		Custom caption below the code instead of the encoded content (implies text)
`encryption`	string (`WPA`, `WEP`, `nopass`, default `WPA`)		Encryption type
`fg_color`	string (default `black`)		Foreground color (e.g. black, #ff0000)
`font_size`	integer		Caption font size in pixels (6-200); omit for automatic size
`format`	string (`svg`, `png`, default `svg`)		Output format (svg or png)
`height`	integer		Height of the image (optional)
`hidden`	boolean		Hidden network
`password`	string		WIFI Password
`quiet_zone`	boolean (default `true`)		Blank margin around the code that scanners need (default true); set false only when you add your own margin
`ssid`	string	yes	WIFI Network Name (SSID)
`text`	boolean		Show text below barcode (if supported)
`width`	integer		Width of the image (optional)

Result (`structuredContent`): `artifact_id`, `barcode_type`, `encoded_data`, `format`, `mime_type`

Prompts

`prompts/get` returns the finished messages; the client runs them with the tools above.

payment_qr_from_invoice

GiroCode from an invoice

Read an invoice and create the matching SEPA payment QR code (GiroCode / EPC QR)

Argument	Required	Description
`invoice`	yes	Invoice text (pasted or extracted)

product_labels

Product labels

Create one labelled barcode per product line, e.g. for shelf or stock labels

Argument	Required	Description
`items`	yes	One product per line: code, optionally followed by ';' and a label text
`type`		Symbology: ean13 (default), ean8, upca, code128, qr, datamatrix

Resources

URI	Name	MIME type	Description
`skill://contact-card/SKILL.md`	contact-card	text/markdown	Turn contact details — an e-mail signature, a business card, a note — into a vCard QR code that saves the contact in one scan. Use when someone wants a QR code

URI	Name	MIME type	Description
			for a business card, a contact, a name badge or "save my number".
`skill://event-invite/SKILL.md`	event-invite	text/markdown	Turn an invitation, appointment or meeting into a calendar QR code that phones add to their calendar in one scan — with time zone, place and organizer. Use when someone wants a QR code for an event, appointment, invitation, meeting or deadline.
`skill://girocode-from-invoice/SKILL.md`	girocode-from-invoice	text/markdown	Create a GiroCode (EPC QR code for SEPA credit transfers) from an invoice so it can be paid by scanning it in a banking app. Use when someone wants a payment QR code, a GiroCode, an EPC code or a "scan to pay" code for a bill or invoice in euro.
`skill://label-sheet/SKILL.md`	label-sheet	text/markdown	Turn a list of products, parts or items into barcodes ready for labels — the right symbology per use and a readable caption. Use when someone wants labels, shelf tags, inventory codes, asset tags or a batch of barcodes from a list or spreadsheet.
`skill://medicine-pack-check/SKILL.md`	medicine-pack-check	text/markdown	Read the code on a medicine pack from a photo and report what it is — PZN, batch, expiry date, serial number — and whether it has expired. Use when someone sends a photo of a medicine box or bottle, asks whether a medicine is still usable, or wants to check a home pharmacy pack by pack.
`skill://wifi-guest-access/SKILL.md`	wifi-guest-access	text/markdown	Create a Wi-Fi QR code so guests join a network by scanning instead of typing the password — for a guest network, café, office or holiday flat. Use when someone wants to share Wi-Fi access, a network password or a WLAN code.

Instructions

The server sends them with `initialize`; clients usually add them to the model's system prompt.

```
Generates barcodes and QR codes as SVG (default) or PNG.

- Plain codes: generate_barcode with type qr, datamatrix, aztec, pdf417, code128, code39, ean13, ean8, upca
  or itf.
- Errors say which character or how much data is the problem and what to do instead (e.g. use code128 for
  lower case, aztec for more text) — correct the call accordingly.
- For structured QR payloads use the dedicated tool instead of hand-building the text: generate_epc_qr
  (SEPA transfer / GiroCode), generate_wifi_qr, generate_vcard_qr, generate_event_qr, generate_crypto_qr,
  generate_geo_qr, generate_tel_qr, generate_sms_qr, generate_email_qr.
- EAN-13, EAN-8 and UPC-A may be given without check digit; it is computed. A wrong check digit is rejected
  and the error names the right one.
- text:true adds a caption showing the encoded content; caption:"…" sets your own caption text instead
  (e.g. a product name under an EAN or a name under a vCard); font_size sets its size.
- structuredContent.encoded_data is exactly what the code contains, e.g. the EAN including check digit or
  the generated vCard.
- decode_barcode reads codes from an image (path or image_base64) and reports symbology and content — use
  it to verify a generated code or to read one the user provides.
```