

UUID Identifier and Blockchain

Universally unique identifier for the un-identified

Artwork: Csoonline.com

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A Universally Unique Identifier (UUID) URN Namespace

Abstract

This specification defines a Uniform Resource Name namespace for UUIDs (Universally Unique Identifier), also known as GUIDs (Globally Unique Identifier). A UUID is 128 bits long, and can guarantee uniqueness across space and time. UUIDs were originally used in the Apollo Network Computing System and later in the Open Software Foundation's (OSF) Distributed Computing Environment (DCE), and then in Microsoft Windows platforms.

This specification is derived from the DCE specification with the kind permission of the OSF (now known as The Open Group). Information from earlier versions of the DCE specification have been incorporated into this document.

<https://datatracker.ietf.org/doc/html/rfc4122>

One of the main reasons for using UUIDs is that no centralized authority is required to administer them (although one format uses IEEE 802 node identifiers, others do not). As a result, generation on demand can be completely automated, and used for a variety of purposes. The UUID generation algorithm described here supports very high allocation rates of up to 10 million per second per machine if necessary, so that they could even be used as transaction IDs.

UUIDs are of a fixed size (128 bits) which is reasonably small compared to other alternatives. This lends itself well to sorting, ordering, and hashing of all sorts, storing in databases, simple allocation, and ease of programming in general.

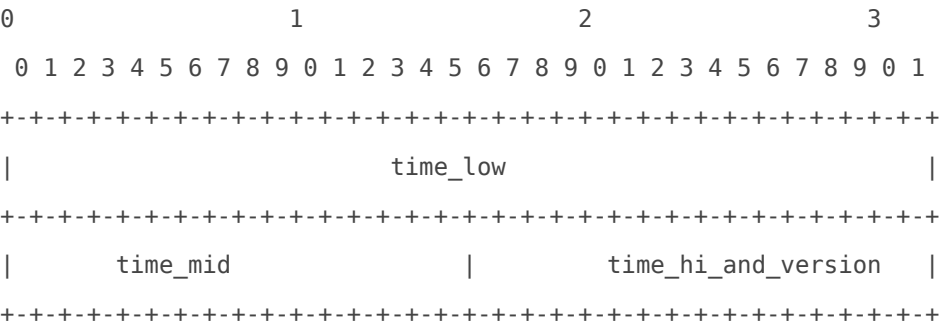
Since UUIDs are unique and persistent, they make excellent **Uniform Resource Names**. The unique ability to generate a new UUID without a registration process allows for UUIDs to be one of the URNs with the lowest minting cost.

Format

time_low	unsigned 32 bit integer	0-3	The low field of the timestamp
time_mid	unsigned 16 bit integer	4-5	The middle field of the timestamp
time_hi_and_version	unsigned 16 bit integer	6-7	The high field of the timestamp multiplexed with the version number
clock_seq_hi_and_rese rved	unsigned 8 bit integer	8	The high field of the clock sequence multiplexed with the variant
clock_seq_low	unsigned 8 bit integer	9	The low field of the clock sequence
node	unsigned 48 bit integer	10-15	The spatially unique node identifier

In the absence of explicit application or presentation protocol specification to the contrary, a UUID is encoded as a 128-bit object, as follows:

The fields are encoded as 16 octets, with the sizes and order of the fields defined above, and with each field encoded with the Most Significant Byte first (known as network byte order). Note that the field names, particularly for multiplexed fields, follow historical practice.



```
|clk_seq_hi_res | clk_seq_low |          node (0-1)          |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|
|          node (2-5)          |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---
```

Identifiers: Persistent Cloud Objects

A **persistent object** is an object that retains its state even after the program that created it has terminated, typically by storing its state in a file or database for later retrieval. This allows the object to be reloaded and used again in future program executions.

A persist cloud object is a persistent object that **lives** in one or more cloud systems.

lives: resides as in stored in storage devices, serialized and de-serialized, including all the code with

Usage

- Reusability: Persistent objects can be reloaded and used across different sessions of a program.
- Serialization: The process of converting an object's state into a format suitable for storage (e.g., converting to bytes).

Common Practices

- Serialization: Converting an object to a byte stream for storage.
- Deserialization: Restoring an object from a byte stream.

Cloud Tools

Apps and other related software applications as standalone functional units

Cloud Tools

CCN Free Form Editor

https://www.wolframcloud.com/obj/ccn2/AI/freeform/construct/editor?_embed=iframe

Cloud Tools

CCN UUID Editor

https://www.wolframcloud.com/obj/ccn2/AI/freeform/blockchain/editors/uuid?_embed=iframe

Use Cases

In both [software](#) and [systems engineering](#), a **use case** is a structured description of a system's behavior as it responds to requests from external actors, aiming to achieve a specific goal.

Person with Identification Documents

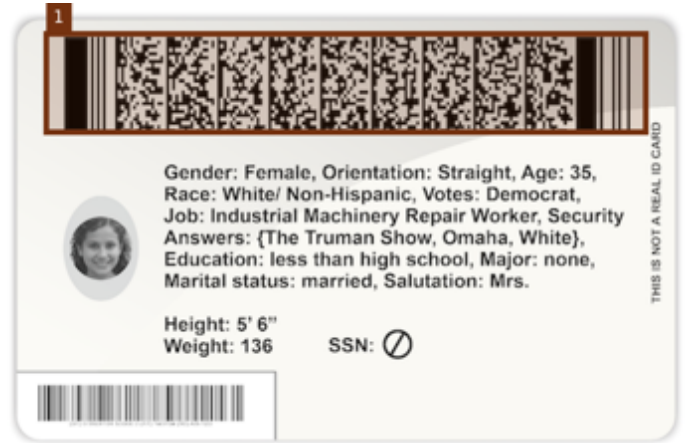
- USA, the state of Virginia (proposed?) Personal Identity card
- With qr codes, barcodes and multiple images and text.
- Symbol  does all the facial computing (neural nets), barcodes, qr codes and image text
- This will empower a universal blockchained or bloxberged Digital object that could and should enable a new de-centralized identification card system.

```
  
  
  
  
//fills in numerous content + metadata into the blockchain;  
  
  
show "index";  
  
save as photo_id;
```

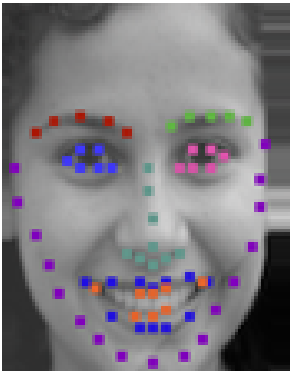
"/index"



"/barsindex"



"/highlight"



"/text"

```
{
  "image_text": "Vi soe VA, USA FEDERAL *LYQIM1A IDENTIFICATION CARD",
  "_#n* a716700487 eTESSIER 8 Gender: Female, Orientation: Straight,
Age: 35, BELLAFi Race: White/ Non-Hispanic, Votes: Democrat, Ad
srw aD *B88795-a202 5 Job: Industrial Machinery Repair Worker,
Security74 IN RD: 5 5 âAnswers: {The Truman Show, Omaha, White}, n
Dato of birt ry Marital status: married, Salutation: Mrs. nOeio4rt988
A\ na ED Height: 5â 6â nF BRO Weight: 136 ssn: Q nNONE n\ ntek
items tebe IMT |"
}
```

"/bartexts"

```
{
"@<LF><FS><CR>ANSI
6360050101DL00300203DLDAQ3265188<LF>DAALOTT,ERIC,B,<LF>DAG763 TEST
STREET<LF>DAINEW YORK CITY<LF>DAJSC<LF>DAK10005 <LF>DARD <LF>DAS
<LF>DAT <LF>DAU601<LF>DAW170<LF>DAYBRO <LF>DAZBRO
<LF>DBA20241004<LF>DBB19911004<LF>DBC1<LF>DBD20140101<LF>DBG2<LF>DBH1
}
```

Color Keys

Blockchain by Bloxberg 2.0

CCN cloud systems

Image Processing + Bloxberg 2.0 Blockchain Digitals

```
{
"[]/face", "[]/face1", "[]/highlight", "[]/faces", "[]/index", "[]/text",
"[]/facials", "[]/boxes", "[]/bartexts", "[]/barsindex", "[]/♀", "[]/[]", "[]
processed", "([])", "[]/type", "[]/curve", "[]/compressed", "([])",
"(<[])", "<[]/type", "[]/type", "([])", "<[])", "<[]/type", "[]/type",
"[] /bloxberg/contexts", "[] /bloxberg/context1/@context",
"[] /bloxberg/context1/id", "[] /bloxberg/context1/type",
"[] /bloxberg/context1/issuer", "[] /bloxberg/context1/issuancedate",
"[] /bloxberg/context1/credentialsubject", "[] /bloxberg/context1/crid",
"[] /bloxberg/context1/cridtype", "[] /bloxberg/context1/metadatajson",
"[] /bloxberg/context1/proof", "[] /bloxberg/context2/@context",
"[] /bloxberg/context2/id", "[] /bloxberg/context2/type",
```

"□ /bloxberg/context2/issuer", "□ /bloxberg/context2/issuancedate",
"□ /bloxberg/context2/credentialsubject", "□ /bloxberg/context2/crid",
"□ /bloxberg/context2/cridtype", "□ /bloxberg/context2/metadajson",
"□ /bloxberg/context2/proof", "□ /bloxberg/context3/@context",
"□ /bloxberg/context3/id", "□ /bloxberg/context3/type",
"□ /bloxberg/context3/issuer", "□ /bloxberg/context3/issuancedate",
"□ /bloxberg/context3/credentialsubject", "□ /bloxberg/context3/crid",
"□ /bloxberg/context3/cridtype", "□ /bloxberg/context3/metadajson",
"□ /bloxberg/context3/proof", "□ /bloxberg/context4/@context",
"□ /bloxberg/context4/id", "□ /bloxberg/context4/type",
"□ /bloxberg/context4/issuer", "□ /bloxberg/context4/issuancedate",
"□ /bloxberg/context4/credentialsubject", "□ /bloxberg/context4/crid",
"□ /bloxberg/context4/cridtype", "□ /bloxberg/context4/metadajson",
"□ /bloxberg/context4/proof", "□ /bloxberg/context5/@context",
"□ /bloxberg/context5/id", "□ /bloxberg/context5/type",
"□ /bloxberg/context5/issuer", "□ /bloxberg/context5/issuancedate",
"□ /bloxberg/context5/credentialsubject", "□ /bloxberg/context5/crid",
"□ /bloxberg/context5/cridtype", "□ /bloxberg/context5/metadajson",
"□ /bloxberg/context5/proof", "□ /bloxberg/context6/@context",
"□ /bloxberg/context6/id", "□ /bloxberg/context6/type",
"□ /bloxberg/context6/issuer", "□ /bloxberg/context6/issuancedate",
"□ /bloxberg/context6/credentialsubject", "□ /bloxberg/context6/crid",
"□ /bloxberg/context6/cridtype", "□ /bloxberg/context6/metadajson",
"□ /bloxberg/context6/proof", "□ /bloxberg/context7/@context",

```

"/bloxberg/context7/id", "/bloxberg/context7/type",

"/bloxberg/context7/issuer", "/bloxberg/context7/issuancedate",

"/bloxberg/context7/credentialsubject", "/bloxberg/context7/crid",

"/bloxberg/context7/cridtype", "/bloxberg/context7/metadatajson",

"/bloxberg/context7/proof", "/contents", "/hashlist", "/key_eth",

"/value", "/pdf", "/fullcredentialobject",

"/certificate", "/metadata",

}

"/"

"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_face.png\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_facehighlight.png\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_facehighlights.png\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_index.png\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_imagetext.json\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_facialpoints.json\""
"\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/images/ff_free_blox_id_barcodebox.json\""

"/"

"\"group\"->\"ff\"\"user\"->\"free\"\"ffname\"->\"blox_id\"\"publisher\"->\"CCN\"
\"license\"->\"CC-BY-NC-ND 4.0\""

```

Full Credential Object

```

"/fullcredentialobject"

"({\"@context\":[\"https://www.w3.org/2018/credentials/v1\", \"https://w
3id.org/bloxberg/schema/research_object_certificate_
v1\"],\"id\":\"https://bloxberg.org\", \"type\":[\"VerifiableCredential
\", \"BloxbergCredential\"], \"issuer\":\"https://raw.githubusercontent.c
om/bloxberg-org/issuer_json_

```

l2/master/issuer.json\", \"issuanceDate\": \"2026-06-02T02:59:59.

448151+00:00\", \"credentialSubject\": {\"id\": \"https://sepolia.arbisca

n.io/address/0xAF3aD7B80e90C0Ca651a8e673E193eCC690BADA8\", \"issuingOrg

\": {\"id\": \"https://bloxberg.org\"} }, \"crid\": \"9d05f7aa5009599ded40f

f901de8fbce8bedb00004c0e6ad77fd128c7fac6806\", \"cridType\": \"sha2-256\", \"m

etadatajson\": {\"group\": \"ff\", \"user\": \"free\",

\"ffname\": \"blox_id\", \"publisher\": \"CCN\",

\"license\": \"CC-BY-NC-ND

4.0\"} \", \"proof\": {\"type\": \"MerkleProof2019\", \"created\": \"2026-0

6-02T02:59:59.

947487\", \"proofValue\": \"zLBHrm1GqmftAu35gTndQtHSErc2pdrx2dQ69dF9Fqvj

vqCY71iNnFEaW1kSw5rVcT6XXiWJHY7uUQyKhjPsg32KpHfyMR2GZZkEeY7YvcRRQSAjkK

sduAX2KXxWnFFBWFbn27m7m9ritdwzTzbbGFPRNfAqSeGhDKxTqLp4wYgqfAWAuFxDnG3n

hyUDCAP1c9BohuH45o3f64tEnAH3LQmJkzGKKixRqz9TtypnELSJwzeMPTWZNPTihHhL2P

A9N9YvMt3RtbjGaWzRAwebi7Tf2FwujSNmCX7Cygb13 ...

...

@context\": [\"https://www.w3.org/2018/creden

tials/v1\", \"https://w3id.org/bloxberg/schema/research_object_

certificate_

v1\"], \"id\": \"https://bloxberg.org\", \"type\": [\"VerifiableCredential

\", \"BloxbergCredential\"], \"issuer\": \"https://raw.githubusercontent.com/bloxberg-org/issuer_json_

l2/master/issuer.json\", \"issuanceDate\": \"2026-06-02T02:59:59.

448151+00:00\", \"credentialSubject\": {\"id\": \"https://sepolia.arbisca

448151+00:00\", \"credentialSubject\": {\"id\": \"https://sepolia.arbisca

n.io/address/0xAF3aD7B80e90C0Ca651a8e673E193eCC690BADA8\", \"issuingOrg

\": {\"id\": \"https://bloxberg.org\"} }, \"crid\": \"5b57331ee65751d0024a3

f47940cdecdeebf27e070c670cdee7e472aaaa274f3\", \"cridType\": \"sha2-256\", \"m

etadatajson\": {\"group\": \"ff\", \"user\": \"free\",

\"ffname\": \"blox_id\", \"publisher\": \"CCN\",

\"license\": \"CC-BY-NC-ND

4.0\"} \", \"proof\": {\"type\": \"MerkleProof2019\", \"created\": \"2026-0

6-02T02:59:59.

951710\", \"proofValue\": \"zLBHrm1GqUpCCwm

...

\" /pdf\"

\"({\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_1.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_2.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxber2/cert_pdf/ff_free_blox_id_3.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_4.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_5.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_6.pdf\",

\"https://www.wolframcloud.com/obj/ccn2/freeform/ff/blockchain/bloxberg2/cert_pdf/ff_free_blox_id_7.pdf\"})\"

Certificate 1



ISSUES THIS
RESEARCH OBJECT CERTIFICATE
#206

The bloXberg certificate serves as a proof of existence that the data corresponding to the cryptographic identifier were transacted on the bloXberg blockchain at the issued time.

MINTED NFT

<https://explorer.l2.bloXberg.org/token/0x787BE38692557E4f033bd8bE0464cE7fc8F4C41/instance/206>

TRANSACTION DETAILS

0xac074488c5a9fef693fdaaca828e35f550245b21279edd862cc0f23fc7ea4981f

FILE HASH

00b073dd1b5c4711a5ac5d786c62b7076c6c32ee4822e1d049f72559eae72a7e

TIME STAMP

2026-06-02T02:59:59.959174



Certificate 7



ISSUES THIS
RESEARCH OBJECT CERTIFICATE
#206

The bloXberg certificate serves as a proof of existence that the data corresponding to the cryptographic identifier were transacted on the bloXberg blockchain at the issued time.

MINTED NFT

<https://explorer.l2.bloXberg.org/token/0x787BE38692557E4f033bd8bE0464cE7fc8F4C41/instance/206>

TRANSACTION DETAILS

0xac074488c5a9fef693fdaaca828e35f550245b21279edd862cc0f23fc7ea4981f

FILE HASH

09789ec41c619eb8bca56c1ec3f89910917dfde6fa4da1c86dc50cdd5125a31f

TIME STAMP

2026-06-02T02:59:59.955489



Identified War Victim

base: gaza-Nour-Suliaman-Alfarah-████-██-██-██-██-████

uuid: adeb7e81-39d9-44bd-a631-e78313004657

```
{}"uuid" -> "gaza-Nour-Suliaman-Alfarah-████████████████████@deb7e81-39d9-44bd-a631-e78313004657"
{}"@" -> "CC-BY-NC-ND 4.0"
```