



Identifier Structure

Version 0.9

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Table of Contents

1. Scope	5
2. Overview	5
3. Identifier	5
3.1. <i>EndPointID</i>	5
3.2. <i>Account</i>	5
3.3. <i>Node</i>	6
3.4. <i>Object</i>	7
4. UUID	8
4.1. <i>Basic Structure</i>	8
4.2. <i>Domain</i>	9
4.3. <i>Local ID</i>	9
4.4. <i>Unique ID</i>	9
4.5. <i>TimeStamp</i>	9

1. Scope

This document provides the rule for identifiers utilized in the NICE System.

2. Overview

Identifiers are used in NICE System to uniquely identify Entities. The Identifier has the original issuer of the identifier and the scope of uniqueness. This specification defines their combination and the notation format of the identifier.

The identifier may depend on the primary identifier (e.g. DeviceID).

Note that the same identifier might be generated if more than one original issuer exist in the same scope of uniqueness. Collision avoidance rules are required in such cases.

3. Identifier

3.1. EndPointID

ID	Original issuer		Scope of uniqueness	Format
	NICE LA	NICE AS		
EndPointID	X		NICE System	UUID
NICEAccountServiceID	X		NICE System	UUID
DeviceID	X		NICE System	UUID
AppID	X	X	NICE System	UUID
AppInstanceID	X	X	NICE System	UUID

3.2. Account

ID	Original issuer		Scope of uniqueness	Format
	NICE LA	NICE AS		
AccountID		X	NICE System	UUID
AppDeveloperID		X	NICE System	UUID
MasterIssuerID	X		NICE System	UUID
ManufacturerID	X		NICE System	UUID
DeviceSellerID	X		NICE System	UUID

FirmwarePublisherID	X	NICE System	UUID
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3.3. Node

ID	Original issuer		Scope of the uniqueness	Format	Allowed Value
	Device	App/Service			
NodeID	X	X	Device/App/Service	4-digit zero-padded hexadecimal(16bit).	0000 is reserved. 0001 through ffff for Node.
PortID	X	X	Node	4-digit zero-padded hexadecimal(16bit).	0000 through ffff
SensorID	X	X	Node	4-digit zero-padded hexadecimal(16bit).	0000 through ffff
SpeakerID	X	X	Node	4-digit zero-padded hexadecimal(16bit).	0000 through ffff

3.4. Object

ID	Original issuer				Scope of uniqueness	Format
	NICE LA	NICE AS	Device	App/Service		
AlgorithmID	X				NICE System	UUID
AudioAnalysisID	X				NICE System	UUID
CustomAnalysisID	X				NICE System	UUID
SceneEncryptionKeyID		X			NICE System	UUID
PrivacyObjectID		X			NICE System	UUID
SceneModelID				X	App/Service	"SMD_" + NodeID + "_ " + <i>Instance</i> <i>Instance</i> := 8-digit zero-padded hexadecimal(32bit).
CaptureSequenceID				X	App/Service	"CSQ_" + NodeID + "_ " + <i>Instance</i> <i>Instance</i> := 8-digit zero-padded hexadecimal(32bit).
RefDataID			X	X	Original issuer	Determined by Device/App/Service
SceneMarkID			X	X	Original issuer	"SMK_" + NodeID + "_ " + <i>Instance</i> <i>Instance</i> := 8-digit zero-padded hexadecimal(32bit). (Development use if the most significant bit of <i>Instance</i> is 1.)
SceneDataID			X	X	Original issuer	"SDT_" + NodeID + "_ " + <i>Instance</i> <i>Instance</i> := 8-digit zero-padded hexadecimal(32bit). (Development use if the most significant bit of <i>Instance</i> is 1.)
DataSectionID			X	X	Original issuer	Determined by Device/App/Service
DetectedObjectID			X	X	Original issuer	Determined by Device/App/Service

4. UUID

The structure of the UUID is compliant with RFC4122. Note that this specification does not ensure global uniqueness. Within the NICE system each UUID is unique.

The usage rule of Local ID, TimeStamp and Unique ID allowed to define by Domain as long as the Domain ensures the uniqueness of UUID in the scope of the Domain.

4.1. Basic Structure

UUID String Format `IIIIIIII-TTTT-2TTT-dDDD-AAAAAAAAAAAA`

String length is 36 bytes. Definition of the fields are as follows.

Field	Format		Note
Local ID	IIIIIIII	8-digits hexadecimal, lowercase	32-bit value which is defined in each Domain.
TimeStamp	TTTT	4-digits hexadecimal, lowercase	Higher 16-bit value of a monotonically increasing value.
	2TTT	4-digits hexadecimal, lowercase	Lower 16-bit value of a monotonically increasing value. Most significant nibble (bit 15 to 12) must be replaced with 0010b. 0010b means UUID version 2.
Domain	dDDD	4-digits hexadecimal, lowercase	16-bit value. The most significant 2-bit must be 10b.
Unique ID	AAAAAAAAAAAA	12-digits hexadecimal, lowercase	48-bit value. Development use if the most significant bit is 1.

4.2. Domain

Domain field defines the scope of uniqueness of the UUID. All entities in NICE System which generates UUID must use the Value defined in the following table.

Domain	Scope of uniqueness	Value
-	Reserved for the compatibility of UUID version 2.	8000
-	Reserved for the compatibility of UUID version 2.	8001
NICE LA	There is only one NICE LA in the entire NICE system.	8002
NICE AS	There may be multiple NICE AS's. UUID maybe duplicated in other NICE AS's.	8003
	Reserved for future use.	8004 through ffff

4.3. Local ID

Usage rule of this field must be defined by each Domain.

4.4. Unique ID

This field is recommended to be set a unique value, but duplicate values are allowed as long as the combination with Local ID and/or TimeStamp is unique.

The value is 48-bit width. The Most Significant Bit is reserved. UUIDs where the Most Significant Bit equals 1, are reserved for development use.

4.5. TimeStamp

This field is recommended to be set the lower 48-bit of the system time. The origin of the time and its accuracy does not matter as long as it is a monotonically increasing value. System time maybe duplicated in the following cases:

- Time rollback due to some reasons (e.g. leap second, system reboot, etc.)
- Multiple logical entities within the same Domain generate the same UUID.

In such instances the System Time should be used in conjunction with the Local ID to ensure uniqueness.

UUID generation rule in NICE LA and NICE AS is not disclosed in this specification in terms of security perspective.