

Unique Identifiers for NDEx Objects

Networks, Users, Groups, and some other objects stored on an NDEx are of the type **NdexExternalObject**. They are assigned a **externalId** that is a universally unique identifier (UUID) and can be referenced at URIs based on the address of their host NDEx, the type of the object, and the object's externalId.

An **NdexExternalObject** also has timestamps for its creation and last modification time. All server operations that modify an external object are expected to update the last modification time.

NdexExternalObject

- externalId : *128-bit UUID*
- creationTime : *timestamp*
- modificationTime : *timestamp*

NDEx Server URI

Each NDEx server may be assigned a stable URI at which it is deployed.

Implications for Copying Networks

"Unique" in UUID must really mean unique: when a network is copied, the copy gets a new UUID on the NDEx where it is created. This is a central design issue for NDEx, supporting the construction of network provenance histories that can be used to track the chain of sources and events leading to the current state of a given network.