

1 Overview

The Handle System is a comprehensive system for assigning, managing, and resolving persistent identifiers for digital objects and other resources on the Internet. The Handle System includes an open set of protocols, a namespace, and an implementation of the protocols. The protocols enable a distributed computer system to store identifiers of digital resources and resolve those identifiers into the information necessary to locate and access the resources. This associated information can be changed as needed to reflect the current state of the identified resource without changing the identifier, thus allowing the name of the item to persist over changes of location and other state information.

1.1 Syntax

Within the handle namespace, every identifier consists of two parts: its prefix and a unique local name under the prefix, otherwise known as its suffix. The prefix and suffix are separated by the ASCII character "/". A handle may thus be defined as

```
<Handle> ::= <Prefix> "/" <Handle Local Name>
```

For example, handle "12345/hdl1" is defined under the Handle Prefix "12345", and its Handle Local Name is "hdl1".

Handles may consist of any printable characters from the Universal Character Set, two-octet form (UCS-2) of ISO/IEC 10646, which is the exact character set defined by Unicode v2.0. The UCS-2 character set encompasses most characters used in every major language written today. To allow compatibility with most of the existing systems and prevent ambiguity among different encoding, handle protocol mandates UTF-8 to be the only encoding used for handles. The UTF-8 encoding preserves any ASCII encoded names, which allows maximum compatibility to existing systems without causing naming conflict.

By default, handles are case sensitive. However, any handle service, including the Global Handle Registry (GHR), may define its namespace such that all ASCII characters within any identifier are case insensitive.

The handle namespace can be considered as a superset of many local namespaces, with each local namespace having its own unique handle prefix. The prefix identifies the administrative unit of creation, although not necessarily continuing administration, of the associated handles. Each prefix is guaranteed to be globally unique within the Handle System. Any existing local namespace can join the Global Handle namespace by obtaining a unique prefix, with the resulting identifiers being a combination of prefix and local name as shown above.

Each prefix may have many derived prefixes registered underneath. Any derived prefix can only be registered by its parent after its parent prefix is registered. Every handle is then defined under a prefix. The prefix and the local name are separated by the octet used for ASCII character "/" (0x2F). The collection of local names under a prefix is the local namespace for that prefix. Any local name must be unique under its local namespace. The uniqueness of a prefix and a local name under that prefix ensures that any identifier is globally unique within the context of the Handle System.