# ndn-cxx - Feature #4570

## Redesign Name::getSuccessor

04/02/2018 05:12 PM - Junxiao Shi

| | | | | |
|---|---|---|---|---|
| **Status:** | Closed | | **Start date:** | |
| **Priority:** | Normal | | **Due date:** | |
| **Assignee:** | Junxiao Shi | | **% Done:** | 100% |
| **Category:** | Base | | **Estimated time:** | 2.00 hours |
| **Target version:** | v0.7 | | | |

**Description**

Name::getSuccessor returns the "successor" of a name.
As of ndn-cxx 0.6.1, this is defined as:

```
 *  The successor of a name is defined as follows:
 *
 *      N represents the set of NDN Names, and X,Y ∈ N.
 *      Operator < is defined by canonical order on N.
 *      Y is the successor of X, if (a) X < Y, and (b) ∄ Z ∈ N s.t. X < Z < Y.
 *
 *  In plain words, successor of a name is the same name, but with its last component
 *  advanced to a next possible value.
 *
 *  Examples:
 *
 *  – successor for / is /%00
 *  – successor for /%00%01/%01%02 is /%00%01/%01%03
 *  – successor for /%00%01/%01%FF is /%00%01/%02%00
 *  – successor for /%00%01/%FF%FF is /%00%01/%00%00%00
```

With ImplicitSha256DigestComponent and typed name components (#4526) in Packet03Transition, the implementation and examples no longer match the definition.
According to the definition,

* successor for / is /sha256digest=0000000000000000000000000000000000.
* successor for /sha256digest=ffffffffffffffffffffffffffffffff is /2=....
* all other cases: the last component does not change type.

**Related issues:**

| | |
|---|---|
| Blocked by ndn-cxx - Feature #4526: Recognize typed name components | **Closed** |

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**History**

**#1 - 04/02/2018 05:12 PM - Junxiao Shi**

*- Blocked by Feature #4526: Recognize typed name components added*

**#2 - 04/02/2018 05:16 PM - Junxiao Shi**

*- Description updated*

While it is trivial to update the implementation, I doubt the necessity of Component::getSuccessor and Name::getSuccessor functions.

From #1677-1:

Successor of name is needed by repo-ng to handle rightmost selector.

Packet Format v0.3 removes ChildSelector, so CS and repo index do not need to handle rightmost selector.
Is there any other use case? If not, I propose to deprecate and eliminate getSuccessor.

**#3 - 04/13/2018 03:38 PM - Davide Pesavento**

Should this be fixed for 0.6.2?

**#4 - 04/13/2018 03:58 PM - Junxiao Shi**

> Should this be fixed for 0.6.2?

This does not block v0.6.2 release. The problem is not caused by the introduction of typed name components. It existed since ImplicitSha256DigestComponent, and nothing is noticably broken so far.

**#5 - 07/19/2018 07:57 AM - Junxiao Shi**

- *Status changed from New to In Progress*

- *Assignee set to Junxiao Shi*

**#6 - 07/19/2018 08:44 AM - Junxiao Shi**

- *Status changed from In Progress to Code review*

- *% Done changed from 0 to 100*

https://gerrit.named-data.net/#/c/ndn-cxx/+/4861

**#7 - 07/26/2018 04:24 AM - Junxiao Shi**

- *Status changed from Code review to Closed*

**#8 - 07/31/2018 07:58 AM - Junxiao Shi**

- *Blocked by Feature #4658: Encode and decode Interest ApplicationParameters added*

**#9 - 07/31/2018 07:59 AM - Junxiao Shi**

- *Status changed from Closed to In Progress*

- *% Done changed from 100 to 50*

Reopen because #4658 defines TLV-TYPE 2 as InterestParametersSha256DigestComponent, which necessitates another update of getSuccessor logic.

**#10 - 07/31/2018 10:57 AM - Junxiao Shi**

- *% Done changed from 50 to 70*

- *Estimated time changed from 1.00 h to 2.00 h*

https://gerrit.named-data.net/4891 recognizes InterestParametersSha256DigestComponent

**#11 - 08/02/2018 08:07 AM - Junxiao Shi**

- *Status changed from In Progress to Resolved*

- *% Done changed from 70 to 100*

**#12 - 09/07/2018 05:41 PM - Davide Pesavento**

- *Blocked by deleted (Feature #4658: Encode and decode Interest ApplicationParameters)*

**#13 - 09/07/2018 05:41 PM - Davide Pesavento**

- *Status changed from Resolved to Closed*

**#14 - 09/22/2018 08:45 AM - Davide Pesavento**

- *Tags set to Packet03Transition*