

# List Pagination Snapshots for YANG-driven Protocols

Draft-awwhl-netconf-list-pagination-snapshot-00

## IETF 119 NETCONF WG 2024-03-19

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# Intro

- Based on work from draft-ietf-netconf-list-pagination
- Put in separate draft in order to not impede the list-pagination draft
- Requirements: Open question which need to be resolved for a solution

# Requirements

- What should a snapshot include?
  - Entire list, list keys?
- How should a snapshot be reused
  - RESTCONF needs to be able to reuse it between sessions
- What is the lifecycle for a snapshot?
- Snapshot automatically deallocated after timeout

# Requirements cont'd

- How should a client signal snapshot deallocation?
- Unable to allocate snapshot due to resource constraints
- Implicit deallocation when pagination is finished?
- Security considerations for protecting against DoS, taking many (huge) snapshots

# Solution overview

- “snapshot” query parameter
  - NETCONF, RESTCONF
- Snapshot support
  - “config false” list or leaf-list
  - letf-system-capabilities per-node-capabilities augmented with “snapshot” leaf
- YANG model

# “snapshot” query parameter

- Client requests server to take snapshot before starting pagination
- MAY be supported for “config false” lists and leaf-lists
- Boolean value
  - Default false
- If snapshots not supported, return “snapshot-not-supported” in error-app-tag

# “snapshot” query param NETCONF

- Add “snapshot” node
  - RPCs: get, get-config, get-data
- Augment “lpgsnap:snapshot-param-grouping”

# “snapshot” query param NETCONF

```
augment /nc:get/nc:input:
```

```
+---w snapshot? Boolean
```

```
augment /nc:get-config/nc:input
```

```
+---w snapshot? Boolean
```

```
augment /ncds:get-data/ncds:input
```

```
+---w snapshot? Boolean
```

```
augment /sysc:system-capabilities/sysc:datastore-capabilities  
        /sysc:per-node-capabilities
```

```
+--ro snapshot? empty
```



# “snapshot” query param RESTCONF

- HTTP query parameter
  - GET, HEAD
- No support
  - HTTP Status “501 Not Implemented”
  - error-type “application”
  - error-tag “invalid-value”
  - error-app-tag “snapshot-not-supported”

# “snapshot” query param RESTCONF

- Unsupported method or target resource
  - “400 Bad request”
  - error-tag “operation-not-supported”

# YANG model

name: ietf-list-pagination-snapshot

namespace: urn:ietf:params:xml:ns:yang:ietf-list-pagination-snapshot

prefix: lpgsnap

# RESTCONF capability

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Capability Identifier

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:snapshot

urn:ietf:params:restconf:capability:snapshot:1.0

# Next steps

- Adopt document
- Work on open questions in requirements
- More feedback from the WG

Thank you!

Questions?