NAME

scan_rt_i − Class for Scanning an R*tree index in the Shore Storage Manager

SYNOPSIS

```
#include <sm_vas.h>  // which includes scan.h

class scan_rt_i {
public:

    stid_t                  stid;
    tid_t                   tid;
    ndx_t                   ntype;

    NORET                   scan_rt_i(
       const stid_t&                stid,
       sob_cmp_t                c,
       const nbox_t&                box,
       bool                        include_nulls=false,
       concurrency_t            cc = t_cc_page);

    NORET                   ~scan_rt_i();

    rc_t                    next(
       nbox_t&                  key,
       void*                    el,
       smsize_t&                elen,
       bool&                    eof);

    void                    finish();

    bool                    eof()  { return _eof; }
    bool                    error_detected()
};
```

DESCRIPTION

Class **scan_rt_i supports scanning an R*tree index.**

TODO

Updates While Scanning

A common question is what is the effect of changes to an index made by a transaction that is also scanning the index. It is not safe to change anything in the file while scanning. Instead, a list of changes should be made during the scan and only performed after the scan is complete.

Null Values

R-trees can contain entries with "null" keys, which are represented by polygons of dimension 0. The data type
`class nbox_t`
contains
`bool nbox_t::is_Null() const;`

`static nbox_t& nbox_t::Null;`
for creating and detecting null keys in R-trees.

When scanning an R-tree index, you can skip (default) or collect the entries with "null" keys, according to the value given in the *include_nulls* argument when you create the iterator.

The semantics of a search with nulls is as follows:

inside
: Null is inside everything, including Null.

cover
: Null covers nothing except Null.

overlap
: Null overlaps everything (and everything overlaps null).

ERRORS

To do.

VERSION

This manual page applies to Version 2.0 of the Shore Storage Manager.

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SEE ALSO

rtree(ssm), scan_index_i(ssm) intro(ssm)