

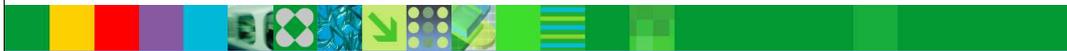


IBM Software Group

## Informix Dynamic Server

### *Enterprise replication – Monitoring changes using 'cdr view' in V10.00.xC9*

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This presentation provides an overview of the changes and new features within enterprise replication in Informix® Dynamic Server V10.00.xC9. These features were added based on feedback from business partners after using enterprise replication within an embedded environment. Information has been provided regarding a few larger changes, but a complete review of all changes has not been done.

## Features

- Monitoring changes for the Enterprise Replication (ER) environment
  - ▶ New System Monitoring Interface (SMI) tables
  - ▶ Global view of ER environment
    - “cdr view”

New features and changes include the ability to monitor changes for the Enterprise Replication environment, or ER environment. There are new System Monitoring Interface tables, or SMI tables, and a global view of the ER environment through the use of the “cdr view”.

## Monitoring changes - overview

- Current behavior
  - ▶ No pre-existing behavior
- Customer problem
  - ▶ Difficult to programmatically administer and monitor ER across multiple nodes
- Improvements in V10.00.xC9
  - ▶ New SMI tables for customer monitoring and OpenAdmin Tool (OAT) usage
  - ▶ New “cdr view” option for global view of ER environment

Monitoring changes is a new feature. There is no pre-existing behavior. Many customers find it difficult to programmatically administer and monitor ER across multiple nodes. To deal with these difficulties, new SMI tables were added for customer monitoring and OAT usage. Building on these new SMI tables is a new cdr option known as the ‘cdr view’. The cdr view provides several new ways to view your entire ER environment.

## Monitoring changes - cdr view

- Allows for monitoring of all ER nodes
- Run onstat and cdr commands consolidated

The new cdr view option allows for the monitoring of all ER nodes in the domain from the server. Previously you would physically run onstat and cdr commands from the local nodes individually. This feature consolidates this task into one command.

## Monitoring changes - cdr view syntax

- Syntax for running cdr view
  - ▶ `cdr view [-c server] [-r interval] objects [options]`
    - c server --connect=server connect to server
    - r interval --repeat=repeat interval in seconds
- Sub-commands
  - ▶ Description of major sub-commands found in Enterprise Replication – Monitoring Changes - cdr view syntax in V10.00.xC9 document.
- Several options relate to major functions



The syntax for cdr view is shown on this slide.

A description of the major sub-commands are found in the “Enterprise replication - Changes and new features in V10.00.xC9” presentation. Several options relate to major functions within an ER server and others are more general.

## Monitoring changes - cdr view syntax (continued)

- Options available
  - ▶ Check
  - ▶ Delete
  - ▶ Help
  - ▶ Quiet
  - ▶ Repair
  - ▶ Repeat
  - ▶ Verbose

This slide contains options to the cdr view command. The options are:

--check.  
--delete  
--help  
--quiet  
--repair  
--repeat  
--verbose

A description of these options can be found in the “Enterprise replication – Monitoring changes - cdr view syntax in V10.00.xC9” presentation. There is also a complete syntax diagram of the cdr view found within this presentation.

## Monitoring changes - cdr view state

- **ER state column**
  - ▶ Active = ER is running normally
  - ▶ Shut Down = ER has been shut down on this node
  - ▶ Uninitialized = Server does not have ER defined
- **Capture state, network state, apply state columns**
  - ▶ Running = ER component is running normally
  - ▶ Down = ER component is not running
  - ▶ Uninitialized = Server not a source server for ER



The output of the cdr view state option is a listing of all ER nodes, the ER state, the capture state, the network state, and the apply state. The ER state column may contain Active, Shut Down, and Uninitialized. The other three columns, Capture, Network, and Apply state may contain Running, Down, and Uninitialized.

## Monitoring changes - cdr view ddr

- Summary of cdr view ddr command
  - ▶ (onstat -g ddr)
- SPOOL DISK USAGE
  - ▶ total amount of memory
  - ▶ amount of available metadata
  - ▶ user data space
  - ▶ (onstat -d)

The DDR section is a summary of the cdr view ddr command. (onstat -g ddr)

The SPOOL DISK USAGE section shows the total amount of memory, in bytes, in the sbspaces that Enterprise Replication uses to store spooled transaction row data, and the amount of available metadata and user data space. (onstat -d).

## Monitoring changes - cdr view ddr (continued)

- **SENDQ**
  - ▶ summary of cdr view sendq command
    - onstat -g rqm SENDQ
- **RECVQ**
  - ▶ summary of the cdr view rcv command
    - onstat -g rqm RECVQ
- **NETWORK**
  - ▶ summary of cdr view nif command
    - onstat -g nif
- **APPLY**
  - ▶ summary of cdr view apply command
    - onstat -g rcv

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The SENDQ section is a summary of the cdr view sendq command. (onstat -g rqm SENDQ)

The RECVQ section is a summary of the cdr view rcv command. (onstat -g rqm RECVQ)

The NETWORK section is a summary of the cdr view nif command. (onstat -g nif)

The APPLY section is a summary of the cdr view apply command. (onstat -g rcv)

## Monitoring changes - cdr view ddr (continued)

- cdr view ddr output
  - ▶ Log capture information
  - ▶ Total number of log pages available
  - ▶ Number of log pages until a DDRBLOCK occurs

The output for cdr view ddr shows log capture information for every node in the ER environment. Two new columns have been added to help administrators know the total number of log pages available, and the number of log pages until a DDRBLOCK occurs.

## Monitoring changes - cdr view profile

- cdr view profile output
  - ▶ ER server major components
    - DDR
    - SENDQ
    - NETWORK
    - SPOOL DISK USAGE
    - RECVQ
    - APPLY

The output from cdr view profile shows a summary of the major components of an ER server: DDR, SENDQ, NETWORK, SPOOL DISK USAGE, RECVQ, and APPLY. Previously, these major components were viewed using onstat.

## Monitoring changes - cdr view servers

- cdr view servers output
  - ▶ Shows view from each server individually
- Server column
  - ▶ Server used to view domain
- Peer column
  - ▶ Names of other ER servers



The output of cdr view servers is very similar to cdr list servers, except, it shows the view from each server individually. The Peer column lists the names of the other ER servers as seen from this node.

## Monitoring changes - cdr view sendq and cdr view rcv

- cdr view sendq output
  - ▶ Summary of sendq output of each ER server
  - ▶ Similar to information shown in 'onstat -g rqm sendq'
- cdr view rcv output
  - ▶ Summary of each node's receive queue



The output of cdr view sendq is a summary of the sendq output of each ER server, and is similar to information shown in 'onstat -g rqm sendq'.

The output of cdr view rcv is a summary of each node's receive queue.

## Monitoring changes - cdr view apply

- cdr view apply output
  - ▶ Consolidation of information from various onstats
- Goal
  - ▶ To give administrator a view of how ER server applies data to target node
    - Useful in determining if data applied correctly
    - Useful in determining network latency issues



The output of cdr view apply is a consolidation of information from various onstats. The goal is to give the administrator a view into how the ER server is applying data to this target node. This information is useful in determining if data being sent to a server is being applied correctly, or if there are network latency issues.

## Monitoring changes - cdr view nif and cdr view ris

- cdr view nif output
  - ▶ Summary of 'onstat -g nif' output for entire ER environment
- cdr view ris output
  - ▶ Portion of each existing RIS file

The output of cdr view nif is a summary of the 'onstat -g nif' output – for the whole ER environment. The output of cdr view ris will list a portion of each RIS file that may exist on any of the nodes in the ER environment.

## Monitoring changes - cdr view ats, atmdir, and risdir

- cdr view ats output
  - ▶ Portion of each existing ATS file
- cdr view atmdir output
  - ▶ File names of any files in ATS directory
- cdr view risdir output
  - ▶ file names of files in RIS directory

The output of `cdr view ats` will list a portion of each ATS file that exists on any of the nodes in the ER environment. The output of `cdr view atmdir` will list the file names of any files in the ATS directory on each ER server. The output of **`cdr view risdir`** will list the file names of any files in the RIS directory on each ER server.

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