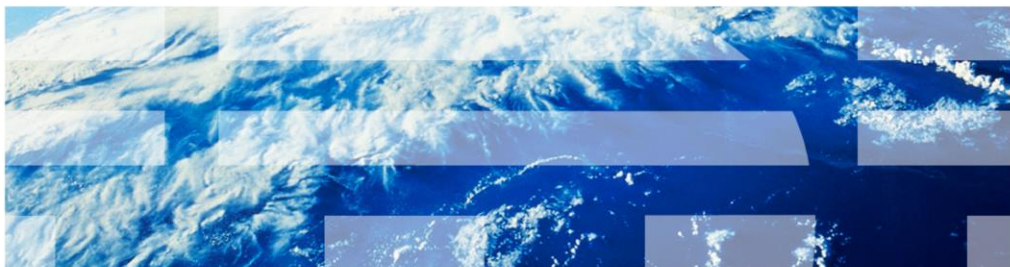


IBM Tivoli Netcool OMNibus Version 7.3

Object server and object server gateway multitier architecture overview



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Object server and object server gateway multitier architecture overview.

Objectives

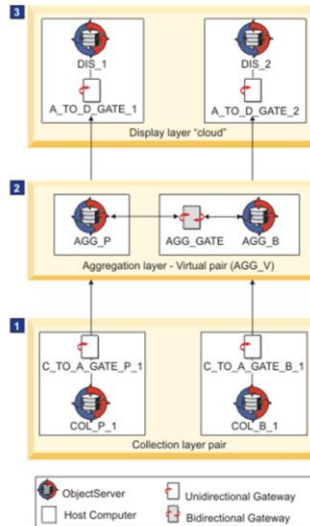
When you complete this module, you should be able to:

- Describe the IBM Tivoli Netcool OMNIBus multitier architecture
- Describe the collection layer
- Describe the aggregation layer
- Describe the display layer
- Understand primary object server failover and failback
- Understand backup object server failover and failback
- Describe resynchronization
- Name and define Netcool OMNIBus high availability terms

When you complete this module, you should be able to:

- Describe the IBM Tivoli Netcool OMNIBus multitier architecture
- Describe the components and function of the Collection Layer, Aggregation Layer, and the Display Layer
- Understand Primary Object Server failover and failback processes
- Understand Backup Object Server failover and failback processes
- Describe the Resynchronization process and how it minimizes event loss
- Name and define terms used in describing Netcool OMNIBus high availability

Netcool OMNibus multitier architecture overview



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Object server and object server gateway multitier architecture overview

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The IBM Tivoli Netcool OMNibus multitier architecture is composed of as many as three tiers called the aggregation layer, display layer, and the collection layer.

The multitier architecture is based around the aggregation layer. An environment can start with a single pair of object servers with a bidirectional gateway in the aggregation Layer.

You can then add collection or display layers at any time.

Tivoli Netcool OMNIbus high availability terms

- The following terms used within this module are defined below:
- Bidirectional: Sends and receives data on two sides
- Events: Network element notifications, alarms, and alerts sent to OMNIbus collection layer
- Failover: Switching redundant architecture such that backup components are active and primary components are standby or offline
- Failback: Switching back redundant system architecture such that primary components are active and the backup components are standby or offline
- Resynchronization: Comparing primary to backup system component and adding the data stored one that is not currently found stored on the other
- Unidirectional: Sends data to one location, receives data from one location

The following terms are used within this module:

- Bidirectional: Sends and receives data on two sides. Each side of such a device can both send and receive data independent of the ports on the other interface side of the device
- Events: Network element notifications, alarms, and alerts sent to OMNIbus collection layer object servers
- Failover: The switching of a duplex or redundant system architecture such that the backup components are active and the primary components are on standby or offline
- Failback: The switching back of a duplex or redundant system architecture such that the primary components are again active and the backup components are on standby or offline
- Resynchronization: A process that involves comparing a primary to a backup system component and adding the data stored on one that is not currently found stored on the other
- Unidirectional: Sends data in one direction only and receives data in one direction only

Collection layer

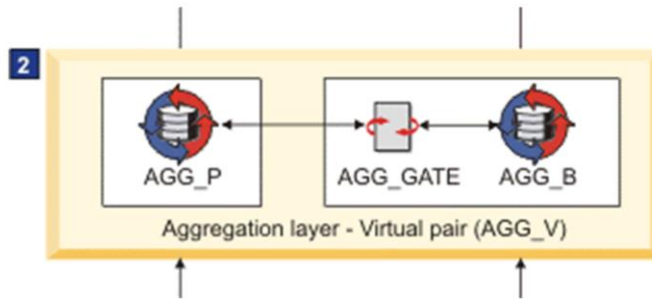
- Primary and backup collection object server, additional pairs can be added
- Unidirectional object server gateway from each object server to the virtual aggregation object server pair
- Probes send events to collection layer

Probes and other event sources connect to the Collection layer. Collection layer events are initially correlated before being sent to the Aggregation layer.

The collection tier architecture differs from the aggregate tier with regard to the object server gateways. As you can see, both the primary and the backup collection layer object servers have their own uni-directional gateways. These gateways only send data output from the Collection layer as input data to the aggregation layer object servers.

Aggregation layer

- Primary and backup object server pair
- Bidirectional object server gateway between primary and backup aggregate object servers



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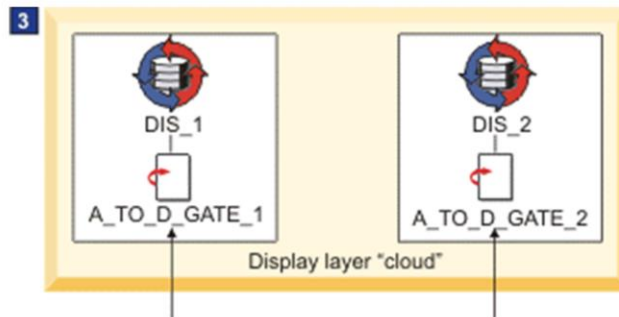
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The aggregation layer tier is composed of three main components:

- A primary object server
- A backup object server
- A bidirectional object server gateway linked between the primary and backup object servers

Display layer



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Object server and object server gateway multitier architecture overview

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The display layer has a pair of display object servers.

Additional single display object servers can be added.

Unidirectional object server gateways bring events from the virtual aggregate object server pair to each display object server.

Desktop event lists and a web GUI/webtop connect to the display layer.

Object server failover/failback

- Primary object server is unavailable
 - Automatic failover to the backup object server
 - Bidirectional object server gateway signals the backup object server
 - Backup object server acts as primary and enables required triggers.
- Primary object server is again available
 - Automatic failback to the primary object server
 - Bidirectional object server gateway resynchronizes primary object server with events from backup object server
 - Triggers on backup object server are disabled

When the Primary Object Server is unavailable, clients automatically failover to the Backup Object Server.

The Bidirectional Object Server Gateway automatically signals the Backup Object Server that it is acting as primary and enables the required triggers.

When the Primary Object Server is again available, clients automatically failback to the Primary Object Server.

The Bidirectional Object Server Gateway resynchronizes the Primary Object Server with events from the Backup.

When the Primary object server is active the triggers on Backup Object Server are disabled.

Object server failover/failback configuration

- Three triggers required in object server failover/failback scenario for the automatic enabling and disabling of the primary_only trigger group
- Failover
 - **Backup_startup**: Disables primary object server primary_only trigger group during backup object server startup
 - **Backup_counterpart_down**: Bi-directional object server gateway signals that the primary object server is unavailable
 - Primary_only trigger group is enabled on the backup object server
- Failback
 - **Backup_counterpart_up**: Bi-directional object server gateway signals that the primary object server is again available
 - Primary_only trigger group is disabled on the backup object server

Three object server triggers are used during controlled failover/failback – backup_startup, backup_counterpart_down, and backup_counterpart_up.

During the failover process the backup object server starts and the bidirectional object server gateway sends notification that the primary object server is not available. The primary_only trigger group on the primary object server is disabled while the primary_only trigger group on the backup object server is enabled.

During the failback process the bi-directional gateway sends notification that the primary object server is back online. At this time the primary_only triggers are disabled on the backup object server while those on the primary object server are restored.

Summary

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- Describe the IBM Tivoli Netcool OMNIBus multitier architecture
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