

Active - Active ImageNow Server

Getting Started Guide

ImageNow Version: 6.7.x



perceptivesoftware

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What is an Active-Active Server Configuration?

In ImageNow 6.7, you can install and configure ImageNow Server as active-active, with embedded services installed on multiple single-server instance or nodes. The database, OSM, and shared files reside as separate services. Two active server instances are configured, one as the primary node and one as the secondary node. Both servers run at the same time as individual servers with separate workloads. In the event that one server fails, the other server picks up the workload and client connections from the failed server without interrupting transactions or affecting end users. As soon as the primary server is back online, it reclaims the transactions from the secondary server and resumes its duties as the primary server.

The purpose of this document is to provide a technical overview of an active-active server configuration as it relates to ImageNow and is intended for a server administrative audience. This document covers the following aspects of an ImageNow setup using active-active:

- Benefits of an active-active server setup
- ImageNow active-active system architecture
- Running multiple instances of ImageNow Server
- Command-line arguments

Available documentation

For more information about failover and active-active server configuration for ImageNow, refer to the following documentation list. The documents are available on the Product Documentation tab of the Customer Portal on www.perceptivesoftware.com.

Note Before setting up your active-active server system, refer to the documentation for any third-party hardware and software products you are using.

More Information	Referenced Document
Before installing or updating your ImageNow system, review these documents:	<p><i>ImageNow High Availability Overview Technical Guide</i></p> <p><i>ImageNow Server Installation and Setup Guide</i></p> <p>If you are updating your ImageNow system from a previous version, refer to the <i>ImageNow Server and Client Update Readme</i>.</p>
For information about requirements of the system, refer to:	<i>ImageNow Technical Specifications</i>
For overall architecture information, refer to:	<i>ImageNow Architecture Technical Paper</i>

More Information	Referenced Document
For information on active-passive failover instead of high-availability, refer to:	<i>ImageNow Active-Passive Failover Cluster Administrator Guide</i>
If you plan to use the Microsoft Cluster Server as part of your high-availability system, refer to:	<i>ImageNow Server Cluster Resource Monitor Installation Guide</i>

Benefits of an active-active server setup

To create system redundancy in an active-passive server configuration, an environment is installed on one server and a second environment is installed on a companion server. These servers run on separate nodes, sharing the workload between the two. This second server sits unused most of the time, only being utilized when the primary server fails. This requires launching a new session and logging in again after services have been restored. Agents must also reconnect and establish sessions when the primary server goes down.

In ImageNow 6.7 or higher, when you configure an active-active server configuration, two or more servers run at the same time, so that when a server goes down, resources automatically allocate to one or more server instances. In this scenario, clients automatically reconnect to the new server, while resubmitting uncommitted transactions. Users running client applications remain unaware of the server switch. This active-active server switch occurs seamlessly and without the need for you to start a second server, so that users do not experience the same downtime as when you must restart the server in an active-passive setup.

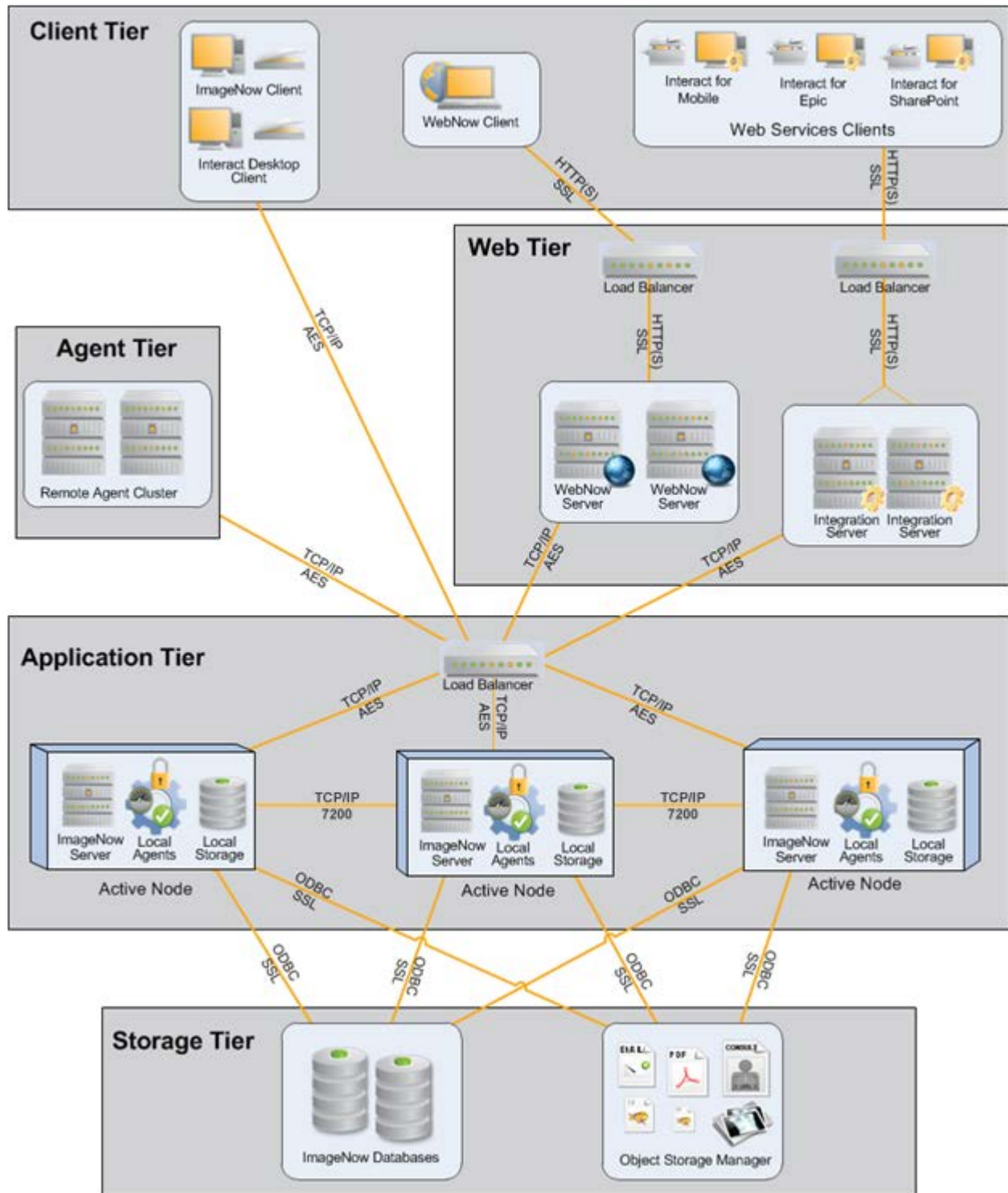
Load balancing is an inherent feature of an active-active server configuration. As a result, you can distribute workloads using load-balancing hardware devices, which allows the distribution of the workload across multiple server machines. Using load balancing, you can quickly increase efficiencies in your system performance.

An active-active server setup also allows for easier system maintenance, because the system continues to handle transactions when a server is taken offline for routine maintenance.

ImageNow active-active system architecture

The following table and figure is a high-level overview of the system architecture behind a high-availability ImageNow Server configuration. A detailed explanation of each tier is available in the *ImageNow High Availability Overview Technical Guide*, available in the Customer Portal on the Perceptive Software website.

Tier	Description
Client	Contains the ImageNow Client, Interact Desktop, WebNow Client, and other web clients such as Interact for Epic and SharePoint.
Agent	Contains external, server-side agents, such as Forms Agent, Output Agent, Mail Agent, and Recognition Agent. Additional instances of these agents might provide enhanced performance along with optimizing your overall system. Refer to the agent installation guide for more information.
Web	Contains the products that connect ImageNow to the web, including WebNow Servers and Integration Server. WebNow accesses data from the ImageNow Server through a web application server. Integration Server allows for third-party application functionality that is compatible with HTTP web services, to send and receive data from ImageNow Server.
Application	Contains one or more nodes, where each node contains an instance of ImageNow Server; and local storage for the bin, log, and temp directories and embedded agent directories, such as job and workflow. Note In an active-active configuration, the nodes must directly connect through port 7200. The Message Queueing Agents do not communicate through the load balancer. You may notice interconnection errors and some unresponsive services if the nodes cannot access port 7200.
Storage	Contains the ImageNow database, which stores the metadata and system information, and the Object Storage Manager (OSM), which stores the document objects.



Running multiple instances of ImageNow Server

The following sections contain information about running multiple instances of ImageNow Server, including distinguishing log and temporary file outputs, IP addresses, and node paths.

Server-instance naming

During the installation of an instance of ImageNow Server, the instance provides a unique name to identify that instance within the system. Additionally, instance names are unique across all instances of the ImageNow Server. The instance names distinguish log and temporary file outputs in environments that have multiple instances installed to a clustered file system. Configuration files utilize instance names so that multiple instances can share the configuration files. Instance names are often required when performing certain server management activities.

Traffic routing

Traffic routing for an active-active ImageNow Server setup is available for passing multiple server IP addresses to the server. For example, an agent looks at each IP address in order until the agent finds an open address to connect to the server.

Nodes

In an active-active environment, nodes actively route data just as they would in a traditional server environment. However, in an active-active environment, there is one-node-instance per machine, spread across several machines. When you configure nodes, ensure that paths in the database are valid on both nodes and that settings in INI files are valid on both nodes.

Using a server farm for load balancing

A server farm is a collection of real servers that operate behind a virtual IP address, streamlining the server workload by spreading it among many physical servers using a load-balancer. For example, when a connection is made to a virtual IP address with a load-balancer, the load-balancer picks the best real server to handle the connection. A server farm also increases redundancy by allowing other servers to handle incoming requests if one fails.

The following is a high-level overview of setting up a server farm. For detailed instructions, refer to the “Assemble and configure a server farm” section in the *ImageNow Server and Client Installation and Setup Guide*, available in the Customer Portal on the Perceptive Software website.

Configure server health monitoring

This is the system a load balancer uses to determine if a real server is available to accept incoming connections. It includes a simple machine ping to determine if the machine is online, and a specific ImageNow Server probe that verifies that the server is running and responding to requests. Following are some of the parameters for setting up health monitoring.

Note The following overview, along with the configuration steps in the *ImageNow Server and Client Installation and Setup Guide* are for a Cisco Application Control Engine (ACE) Module. There may be configuration steps that are specific for the third-party product you are using for load balancing. When setting up the server farm, refer to the third-party documentation for more information.

- Determine the type of health probe. For ImageNow Server, it is a TCP health probe.
- Set the probe interval count. This is the time interval between sending probes during a health check.
- Set the pass detect interval. This is the time interval between sending probes during a health check when the server is in a known bad state.
- Set the pass detect count. This is the number of successful responses a probe must produce before the server is marked as healthy.
- Set the fail detect count. This is the consecutive number of times a probe must fail before the server is marked as failed.
- Set the timeout response count. This is the amount of time that a server has to return a response during a probe. If it does not return a response within the set time, the probe fails and the server is marked as failed.

Setup real servers

A real server is a physical machine that hosts data, manages network resources, and processes the workload from clients. Adding real servers involves setting the servers up on a VLAN interface. The servers are located on the same subnet as the VLAN interface. After setting up servers on real machines, use the following steps to add them to the hardware load-balancer configuration:

- Name the servers.
- Set the IP address.
- Set the connection limits.
- Start ImageNow Server on the real server machines.

Configure a server farm

Configuring a server farm involves initiating the health probe and setting an action for a failed health check. You can load balance ImageNow Message Queuing Agent; however, the health status of Message Queuing Agent is based on the health status of ImageNow Server. Following are some of the parameters for setting up the server farm:

- Set purge as the action for a failed health check.
- Add the real server to the server farm.
- Set the port number. This is the port ImageNow Server listens on. It is also the same port that is set for the health probe.
- Set a backup server and port. This server becomes active if the real server is in a failed state.
- Set the server weight. Servers with higher weights receive more connections as a ratio of their weight to other servers' weights.
- Deploy the server.

Configure a virtual server

Virtual servers are interfaces that accept incoming connections and route them to a real server. Following are parameters for setting up a virtual server:

- Set the virtual server IP address. This is the address the client uses to connect to one of the machines in the server farm.
- Set the VLAN interface.
- Set load balancing as the primary action.

Command-line arguments

There are two methods for using command line arguments in an ImageNow active-active configuration. The first is service commands, and the second is INTTool.

The following sections contain a high-level overview of service commands and INTTool. To learn more about using command line arguments to manage ImageNow in an active-active configuration, refer to "Administer the Server" in Administrator Help.

Use service commands

You use service commands to manage ImageNow services, such as ImageNow Server and agents. With service commands, you can display the status of a server instance, start and stop specific instances of a

server, and install or unistall server instances. You can also use service commands to manage multiple instances of ImageNow Server.

The service command syntax is `<service><-command> <instance_name>`, where `<instance_name>` allows you to execute a command on multiple instances of the same server that run in parallel in an active-active environment.

Refer to “Administer using Command Line Tools” in Administrator Help for a list of the available service commands and their functions.

Use INTool

INTool is a command line tool that is installed by default when you install ImageNow Server. Using INTool, you can manage your server, databases, and object storage manager data. You can also rate your system performance, manage licenses, and obtain table structure information.

You can display a list of INTool commands by opening a command prompt window, changing the drive to the `inserver6\bin` directory for 32-bit system, or `inserver6\bin64` for 64-bit system, and then entering `intool`.

Refer to “INTool commands” in Administrator Help for a list of the available INTool commands and their functions.