# HiveOS and HiveManager 6.2r1 Release Notes

Release Versions: HiveOS and HiveManager 6.2r1

Platforms: AP110, AP120, AP121, AP141, AP170, AP230, AP330, AP350, BR100, BR200, BR200-WP, BR200-LTE-VZ, SR2024, SR2024P, SR2124P, SR2148P; VPN Gateway Appliance, and VPN Gateway Virtual Appliance; HiveManager Online, and HiveManager Physical and Virtual Appliances.

Release Date: September 9, 2014

These are the release notes for HiveOS 6.2r1 firmware and HiveManager 6.2r1 software. These releases contain numerous new and enhanced features, summaries of which are described in the following section. For more detailed descriptions, see the *Aerohive New Features Guide*. Known issues are described in the "Known Issues" on page 7 section and "Addressed Issues" on page 8 section near the end of this document.

⦅¡⦆ *Although HiveOS 3.4r4 was the last release for the HiveAP 20 series, HiveManager 6.2r1 can continue to manage all Aerohive platforms. However, you must push full configuration updates to them because some commands have been removed, which would cause delta configuration updates to fail. HiveManager can support full and delta configuration updates to APs, BRs, and SR series devices running HiveOS 5.1, 6.0, 6.1, and 6.2.*

## Memory Increase Required before Upgrading to HiveManager 6.0 or Later

Before upgrading HiveManager software on existing HiveManager physical appliances and HiveManager Virtual Appliances to 6.0r1 or later, you must first increase their memory to 3 gigabytes. For instructions about increasing the memory for a physical HiveManager appliance, see the instructions in *Memory Upgrade for 1U HiveManager Appliances*. For instructions about increasing the memory for a HiveManager Virtual Appliance, see "Increasing Memory, CPU, and VM Param Settings for the HiveManager Virtual Appliance" on page 5.

⦅¡⦆ *Before upgrading HiveManager, it is always a good precaution to do a full backup of the database.*

# New Features and Enhancements in the 6.2 Release

The following sections describe the new features and feature enhancements in the HiveOS and HiveManager 6.2r1 releases.

## New and Enhanced HiveOS and HiveManager 6.2r1 Features

The following are the new features and feature enhancements in the HiveOS and HiveManager 6.2r1 releases. For more information about these new and enhanced features, see the *Aerohive New Features Guide*.

## New and Enhanced HiveOS 6.2r1 Features

The following are the new features and feature enhancements in the HiveOS 6.2r1 release.

**IPv6 Enhancements:** This release introduces the following enhancements to provide basic IPv6 support and ease the transition from IPv4 to IPv6 networks:

- **Multiple VLAN Support for SSIDs** prevents IPv6 client devices from self-assigning incorrect IPv6 addresses  based on multicast RAs (router advertisements) from multiple VLANs.
- **IPv4 and IPv6 Traffic Filtering by Ethertype** allows you to control the type of IP traffic on your Aerohive devices.
- **Display Client IPv6 Addresses** introduces CLI commands that display MAC and IPv6 addresses of associated client devices.
- **DHCP6 Shield and RA Guard** improve security and prevent network disruption caused by rogue or misconfigured IPv6 servers by blocking RAs on all access interfaces and allowing them only on backhaul interfaces.

**Multicast-to-Unicast Conversion Supported on AP230**: Multicast-to-unicast conversion helps manage multicast traffic efficiently and reliably. It uses IGMP snooping to avoid sending frames destined for WLAN hosts to the wired distribution system and vice versa. It also forwards multicast frames to WLAN hosts using unicast addresses. This provides strong wireless communication because unicast frames are acknowledged, retried, and rate controlled dynamically. Multicast frames are sent as a series of unicast packets addressed individually to each multicast group member. A typical use of this feature is to stream video from a centralized server to multicast group members connected to the WLAN.

**sFlow for APs:** This release introduces support for sFlow, an industry standard, that allows you to monitor your network by providing traffic information to perform traffic monitoring. It thereby enables you to detect security breeches, troubleshoot network issues, monitor congestion, and perform traffic profiling. In this release, sFlow is supported on APs and is available in HiveOS through the command line interface (CLI) or through the Supplemental CLI tool in HiveManager. You can view the monitor information provided by the sFlow commands with a third-party application such as Wireshark, SolarWinds, or sFlowTrend.

**WIPS Sensor Mode**: You can now configure Aerohive APs to function as dedicated WIPS (wireless intrusion prevention service) or presence sensors. Whereas an AP must normally divide its time between servicing clients and scanning the channel, APs that operate as dedicated sensors do not service clients and instead spend all their time scanning for (and mitigating) rogue devices or collecting client presence information.

**Outbound SSH from HiveOS**: HiveOS 6.2r1 provides SSH client connectivity capabilities to reach otherwise unreachable Aerohive devices on the same subnet. This is an SSH CLI-driven troubleshooting tool for debugging remote Aerohive devices in your wireless network.

## New and Enhanced HiveManager 6.2r1 Features

The following are the new features and enhancements in the HiveManager 6.2r1 release.

**Supplemental CLI Tool Support:** In this release, the Supplemental CLI tool provides an efficient way for you to issue and upload CLI commands to multiple devices from the HiveManager GUI simultaneously.

**Application Visibility and Control DPI Engine Upgraded to NAVL 4.x**: The DPI engine for Application Visibility and Control has been upgraded to NAVL 4.x, which is capable of classifying over 1200 applications that can be extracted from corresponding application traffic to provide deeper visibility and granularity into user activities.

**Stateless Bonjour Gateway**: The Bonjour Gateway scalability enhancement in this release allows you to deploy this feature without a constraint in the maximum number of advertised Bonjour services that it can support. In addition, the Bonjour Gateway default behavior filter rules are now configured to deny services. As a result, any rule you add automatically permits the specified service.

**Multiple Spanning Tree Protocol Support**: Aerohive switches now support MSTP (Multiple Spanning Tree Protocol), which you can enable and configure to create an independent STP (Spanning Tree Protocol) instance for several selected groups of VLANs on your network. MSTP provides more flexibility than standard STP or RSTP (Rapid Spanning Tree Protocol). Also, MSTP is less processor-intensive than using protocols that bind a separate STP process for each VLAN individually. You can choose an STP mode in the network policy, and then override the policy-level settings on specific devices where required.

**HiveManager Upgrade Process Enhancements**: HiveManager 6.2r1 describes the software update process when upgrading the HiveManager software image to a later version. During the update process, a separate window clearly indicates each step of the upgrade progress from uploading, verifying, and extracting the image as well as checking the system operation, backing up the data, rebooting the system, and restoring its database**.**

**Viewing Enrolled Clients for Social Login, ID Manager, and Client Management:** On the *Active Clients* and *Wireless Clients* pages, new icons appear for the three Aerohive Mobility Suite applications under the Managed column. These icons provide you with convenient access to Social Login, ID Manager, and Client Management from the HiveManager GUI as well as allow you to retrieve information quickly about the enrolled client devices.

**ID Manager Enhancements in HiveManager**: This release adds enhancements to the ID Manager Test Tool in HiveManager, allowing you to sort test results. Also, the report now lists reasons for authentication failures, such as an incorrect password.

## Changes to Behavior and Appearance

The following change to behavior and appearance was introduced in the HiveOS and HiveManager 6.2r1 firmware release:

- **DNS Name Change:** In this release, Aerohive is changing the IP addresses of its default DNS object. As a result, you might need to update other (non-Aerohive) products in your network to handle the DNS object. For example, if you have a firewall policy that permits outgoing connections to the old DNS IP addresses 201.128.124.9 and 168.143.87.77 and denies connections to all other DNS servers, you will need to modify it to reference the new IP addresses of 208.67.220.220 and 208.67.222.222. If you do not use the Aerohive default DNS object, you do not need to make any changes.

- **User Profile ID Reassignment**: When authenticating to the network with a mobile BYOD (company-owned or personal mobile device), Aerohive devices can now apply reassigned user profiles based on multiple factors, such as OS detection and MDM (mobile device management) status, without forcing a change in the VLAN or IP address.

- **WIPS Adds Enable or Disable Option**: In 6.2r1, HiveManager adds an option to enable or disable WIPS. By default, it is disabled. As a result, WIPS is disabled after you upgrade to 6.2r1 and upload the configuration onto your devices.

## Upgrading HiveManager Software

Aerohive supports upgrading to the 6.2r1 HiveManager software from HiveManager 5.1r2 or later. If your system is running an image earlier than 5.1r2, follow the steps in the 5.1r2 Aerohive release notes to upgrade HiveManager to 5.1r2 first before upgrading them to 6.2r1.

<sup>«¡»</sup> *To upgrade the AP230 firmware from HiveOS version 6.1r5 to 6.2r1 or later, you must first upgrade from version 6.1r5 to 6.1r6 followed by a second upgrade from 6.1r6 to 6.2r1.*

## Memory Increase Required before Upgrading to HiveManager 6.0 or Later

Before upgrading HiveManager software on existing 32-bit HiveManager physical appliances and HiveManager Virtual Appliances to 6.0r1 or later, you must first increase their memory to 3 gigabytes. For 64-bit HiveManager Virtual Appliances, you must increase the memory to 8 gigabytes. For instructions about increasing the memory for a physical HiveManager appliance, see the instructions in *Memory Upgrade for 1U HiveManager Appliances.* For instructions about increasing the memory for a HiveManager Virtual Appliance, see "Increasing Memory, CPU, and VM Param Settings for the HiveManager Virtual Appliance" on page 5.

## Upgrade HiveManager 5.1r2 or later to 6.2r1

Use the following procedure to up grade a HiveManager standalone or HA pair.

| From | Action | To |
|------|--------|-----|
| HiveManager 5.1r2 or later | Upgrade to HiveManager 6.2r1 | HiveManager 6.2r1 |
| HiveOS 5.1r2 or later | Use HiveManager running HiveManager 6.2r1 to manually upgrade managed devices to HiveOS 6.2r1 | HiveOS 6.2r1 |

1.  Back up your database as a safety precaution (click **Home > Administration > HiveManager Operations > Back Up Database**).
2.  Save the 6.2r1 HiveManager software file to a directory on your management system or SCP server. (Log in and download the 6.2r1 HiveManager software file from the Aerohive Support page.)
3.  Log in to HiveManager running 5.1r2 or later and then upload the 6.2r1 HiveManager software file.

    To update HiveManager, click **Home > HiveManager Operations > Update Software**, select the method to upload the HiveManager software, and then click **OK**. When the upload is complete, HiveManager automatically reboots to activate its new software.

4.  HiveManager periodically checks for new HiveOS firmware releases that it can download to itself for distribution to managed devices. If HiveManager is connected to the Internet, it automatically obtains HiveOS firmware image files for every type of managed device from the Aerohive update server and makes the image files available in about 15-30 minutes, depending on how many image files it is downloading and its connection speed to the server.

    ⁽⁽ᵢ⁾⁾ *For a successful upgrade, Aerohive suggests rebooting 100 series devices before upgrading their HiveOS images from 6.1r2 or earlier and only upgrading them during their off-peak hours.*

    To update the HiveOS firmware image files manually, log back in to HiveManager, select the device or devices of the same type for which you want to update the HiveOS firmware, click **Update > Advanced > Upload and Activate HiveOS Firmware**, select the appropriate HiveOS image from the list for the selected device type, and then click **Upload**. If the firmware is not available in the list of HiveOS images, click **Add/Remove** and obtain the HiveOS image you want from the update server, your local directory, or SCP server. If you are managing various Aerohive device types, repeat the upload process for all your managed devices, and then reboot them to activate their new firmware.

# Increasing Memory, CPU, and VM Param Settings for the HiveManager Virtual Appliance

Before you can upgrade a 32-bit HiveManager Virtual Appliance to 6.0 or later, you must increase the memory for it within the ESXi hypervisor to 3 gigabytes, set the number of virtual sockets for its CPU to 2, and change VM params to 1024 megabytes.
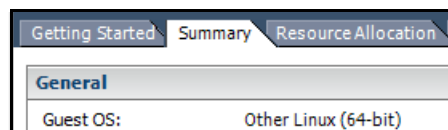
<sup>((i))</sup> *Upgrading the 64-bit HiveManager Virtual Appliance to 6.0 or later does not require any changes to its default memory (4 GB), CPU (4 virtual sockets), and VM param settings (1480 MB). A new 6.2r1 installation of a 64-bit HiveManager Virtual Appliance .ova file has a default memory size of 8 GB.*

1. From the vSphere Client on your management system, log in to the ESXi hypervisor hosting the HiveManager Virtual Appliance whose memory you want to increase.

2. To check which type of system you have, select the name of the HiveManager Virtual Appliance, click **Summary**, and check whether the Guest OS indicates that it is 32 or 64 bits.

   <sup>((i))</sup> *You can also check the system type in the HiveManager GUI. In the HiveManager 5.0 and 5.1 releases, click **Home > Dashboard**, and view the model number in the HiveManager System Information widget. The VM 1U model is 32 bits, and the VM 2U model is 64.*
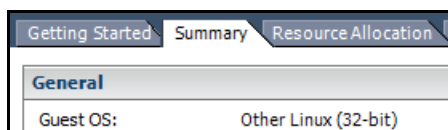


   **32-bit HiveManager Virtual Appliance**        **64-bit HiveManager Virtual Appliance**
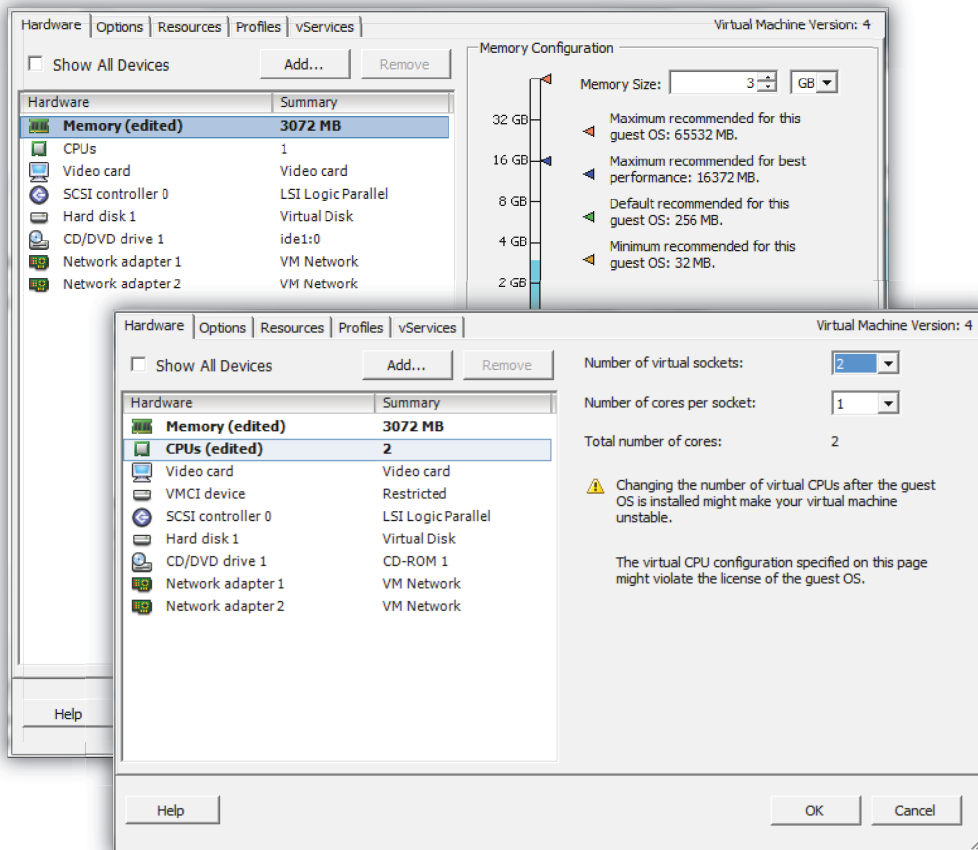
3. If it is a 32-bit system, keep the name of the HiveManager Virtual Appliance selected, click the **Console** tab, click in the console window, and then log in to the HiveManager CLI shell. If it is a 64-bit system and is still using the default settings, you are not required to change them. However, if you want to, you can increase the memory from 4 GB to 8 GB by performing the following steps.



4. To shut down the virtual appliance, enter **5** (Shut down the System) and then enter **Y** when prompted to confirm the action.

5. In the vSphere Client GUI, right-click the HiveManager Virtual Appliance name in the left navigation panel, and then click **Edit Settings**.

6. On the *Hardware* tab, click **Memory**, change the value in the Memory Size field to **3 GB** for a 32-bit system or up to **8 GB** for a 64-bit system, and then click **OK**. (For a 64-bit system using its default values, there is no need to change any other settings.)

7. For a 32-bit system, select **CPUs**, from the Number of virtual sockets drop-down list, choose **2**, and then click **OK**.

8.  With the name of the HiveManager Virtual Appliance still selected, click **Power on the virtual machine**.

9.  After the HiveManager Virtual Appliance is powered back on, click the **Console** tab, click in the console window, and log in to the HiveManager CLI shell.

10. Enter **3 - 2 - 2** to navigate to Advanced Product Configuration > Configure VM Params > Change VM Params, and then enter **1024** (for 1 GB).

11. Reboot the HiveManager Virtual Appliance to apply this setting. (You can navigate back to the home menu, and enter **4** for Reboot Appliance.)

12. After the HiveManager Virtual Appliance finishes rebooting, check that it recognizes its increased memory size by returning to the console window, logging back in to the HiveManager CLI shell, and entering **2 - 4** (Display System Information > Display Hardware Information). To complete the memory upgrade procedure, check that the MemTotal value for a 32-bit system is approximately 3,000,000 KB. (The MemTotal value for a 64-bit system is approximately 8,000,000 KB.)

# Documentation

Product documentation is still in progress at the time of these releases and is not yet available. However, the *Aerohive New Features Guide* as well as Help for HiveOS CLI commands are ready. To use the CLI Help, enter "`keyword-SPACE-?`" for example: `qos ?` In addition, there are online CLI reference guides that provide the syntax and explanations for every command in the CLI. They also include information on accessing the CLI through console, Telnet, and SSH connections, tips on using the CLI, and some keyboard shortcuts.

## Help System for Mobile Devices

Aerohive allows you to link directly to a mobile version of our HiveManager 6.2r1 Help system. In cases where viewing the Help system in a browser is inconvenient or impossible, you can view the Help content on your smart phone. The HiveManager 6.2r1 Mobile Help system can be viewed using phones that do not support some of the advanced mobile web technologies. It does this by detecting the device on which you are attempting to view the Help system and forwards your request to one of two independent versions of the mobile Help system.

# Known Issues

The following are known issues in the HiveOS 6.2r1 and HiveManager 6.2r1 releases.

## Known Issues in HiveOS 6.2r1

| | |
|---|---|
| CFD-524 CFD-632 | Multicast traffic on the AP230 is slower due to a Wi-Fi driver issue, resulting in lower system throughput when multicast traffic is present. |
| 34059 | There is an issue with the SR Series switches supplying a PoE connection to an AP370 (or AP390) when both ports on the AP are connected to switch and you remove the Ethernet cable that supplies the PoE connection. When you reconnect the Ethernet cable quickly, the AP cannot receive power over the PoE connection from the switch. |
| | Work Around: If you unplug the primary PoE connection between an AP370 (or AP390) and a switch, make sure you leave it unplugged for at least 5 seconds before plugging in the Ethernet cable again to restore power to the AP. |
| 33835 | Some DHCP servers, such as Windows 2003, are slow to respond or do not respond to the DHCP discover message under certain conditions. As a result, Bonjour Gateway might not discover services on some VLANs or some services are discovered and then disappear at random. |
| 33825 | Not all DNS traffic is blocked by the Aerohive Layer 7 firewall. With Layer 7 firewalls, two packets (one incoming and one outgoing) are required to identify and block DNS traffic. For short IP sessions of one or two packets, it can appear that DNS traffic is not being blocked. The Layer 3 firewall, operating on source and destination ports in the packets, can block all DNS traffic. |
| 33630 | Client devices using the Intel 7260 wireless card have difficulties connecting to the Aerohive WLAN when Radio Resource Management (802.11k) is enabled. |
| 33084 | For Application Visibility and Control, HiveOS cannot recognize Microsoft Lync Media application traffic running on Windows 7. Also, it cannot recognize Microsoft Lync IM, Presence, or login traffic as Lync Control applications on iOS devices. |

| 32904 | Within the Aerohive Application Visibility and Control feature, you cannot block Microsoft Lync Control, Lync Share, and Lync Media applications after a user logs into your network. <br><br> Work Around: Block Lync Control, Lync Share, and Lync Media applications before users log in. |
|---|---|
| 32894 | The switch link up/link down test for Aerohive switches fails as the result of a CLI user interface wait-reply timeout error. |
| 32060 | When an SR2024P device running HiveOS 6.1r3 is upgraded from 6.1r3 to 6.1r6 and you need to roll back to the previous version of HiveOS using the CLI `reboot backup` command, the 1-Gigabit fiber port connections do not return to their previous UP status. <br><br> Work Around: If you need to roll back to the previous version of HiveOS, use the `save image` command rather than the `reboot backup` command. |
| 25195 | On the AP230 only, unusual conditions with high interference might cause the airtime percentages to occasionally add up to over 100%. |

## Known Issues in HiveManager 6.2r1

| 28720 | The Aerohive Application Visibility and Control Feature might only be able to recognize the "Facebook" and "Facebook Messages" applications in the applications watchlist due to a recent change by Facebook, Inc which makes HTTPS the default connection protocol. The other six Facebook applications, "Facebook Apps", "Facebook Event", "Facebook Post", "Facebook Search", "Facebook Video", and "Facebook Video Chat", might be recognized if the Facebook user connects to Facebook using HTTP instead of HTTPS, which is the new default secure connection protocol. These applications are available from the Reports > Report Settings page, from the *System Defined Applications* tab. |
|---|---|
| 27123 | In ID Manager, the email and phone fields on the *Self Registration* page accept special characters that are not related to email or phone numbers, and then return illegible data because of these characters. <br><br> Work Around: Make sure to enter only the characters that are valid for email and phone numbers. |
| 20947 | In Bonjour Gateway, you cannot set a static VLAN when you create a wireless network policy. <br><br> Work Around: Configure a device as a DHCP server instead of configuring a static VLAN. |
| 15162 | Although Wi-Fi statistical reports show data at one-minute intervals accurately, they do not normalize the data for ten-minute intervals, which causes the data to appear exaggerated in the charts. |

# Addressed Issues

The following issues were addressed in HiveOS 6.2r1 or HiveManager 6.2r1.

## Addressed Issues in HiveOS 6.2r1

| CFD-361 | An issue occurred when upgrading the BR100 to HiveOS version 6.1r6. It was possible to cause the device to become unresponsive. |
|---|---|
| CFD-353 | After HiveOS firmware was upgraded in networks where Cisco Model 7925G phones were deployed, APs did not connect to the Cisco phones. This issue has been resolved. |

| 32257 | For very short sessions when an AP230 was using wide-channel mode (80-MHz channel width), its upstream and downstream throughput was about 20% lower than Aerohive expected. This issue was addressed. |
| --- | --- |
| 32168 | The default QoS rate control and queuing policies might have limited the Layer 2 VPN encryption throughput rate on the VPN Gateway. |
| 31730 | The Layer 2 bridge access throughput of the AP230 was less than 500 Mbps. |

## Addressed Issues in HiveManager 6.2r1

| CFD-549 | After HiveManager was upgraded, the configurations for APs operating as RADIUS servers using "Strip realm name from filter" were not properly carried over during the upgrade. If the configuration was subsequently uploaded to the APs, the APs returned to their default settings, causing a difference in behavior and RADIUS authentication to fail. This issue has been resolved. |
| --- | --- |
| CFD-480 | Even though no configuration modifications were made to a device in the VHM, the *Audit* icon displayed on the *All Devices* page indicated that there was a configuration mismatch, meaning that the device configuration was modified. |
| CFD-413 | When configuring an HTTP proxy server, the HTTP Proxy Server IP Address/Domain Name field only allowed a 32-character or shorter length domain name instead of a 128-character domain name. In this release, a 128-character domain name is permitted. |
| CFD-21 | Multiple languages for the captive web portal use policy acceptance template running on AP121s and BR100s on HiveManager Online accounts did not display the expected language or displayed a series of question marks. |
| 33275 | In the *SSID Access Security* section of the *SSIDs* configuration page, the note that appears after choosing WPA-(WPA or Auto)-PSK for WPA/WPA2-PSK (Personal), WPA-(WPA or Auto)-PSK for Private PSK, or WPA-(WPA or Auto)-802.1X for WPA/WPA2 802.1X (Enterprise) was confusing. The note now states:<br><br>Note: "WPA" is for platforms introduced before 6.1r5 and "Auto" (WPA or WPA2) is for platforms introduced in 6.1r5 or later. |
| 32687 | When updating the HiveManager *Customer ID Retrieval* service, the message "Disable the proxy for ID Manager service successfully" appeared erroneous even though the HTTP proxy was not enabled. |