



**Hewlett Packard**  
Enterprise

# HPE Application Performance Management

Software Version: 9.26

## APM - Diagnostics Integration Guide

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# Welcome to This Guide

Welcome to the APM - Diagnostics Integration Guide. This guide describes how to set up and verify an integration of Diagnostics with APM.

Integrating Diagnostics with APM enables integrating with the larger APM family of HPE Software products, such as Real User Monitor, Business Process Monitor, SiteScope, Operations Manager i, Service Health Analyzer, and TransactionVision.

Integration with APM Platform services enables the following:

- Diagnostic discovered entities are published as configuration items (CIs) in the Run-Time Service model within a APM solution, aligned with all other discovery content sent by other domains.
- Access to Diagnostics from within APM (Service Health and myBSM).
- Drill down to Diagnostics data from various APM reports and Dashboard.

**Note:** Although Diagnostics versions 9.x can integrate with older versions of BAC and BSM, the procedures in this guide are specific to Diagnostics 9.26 with APM 9.30.

# Chapter 1: Setting Up an Integration Between APM and Diagnostics

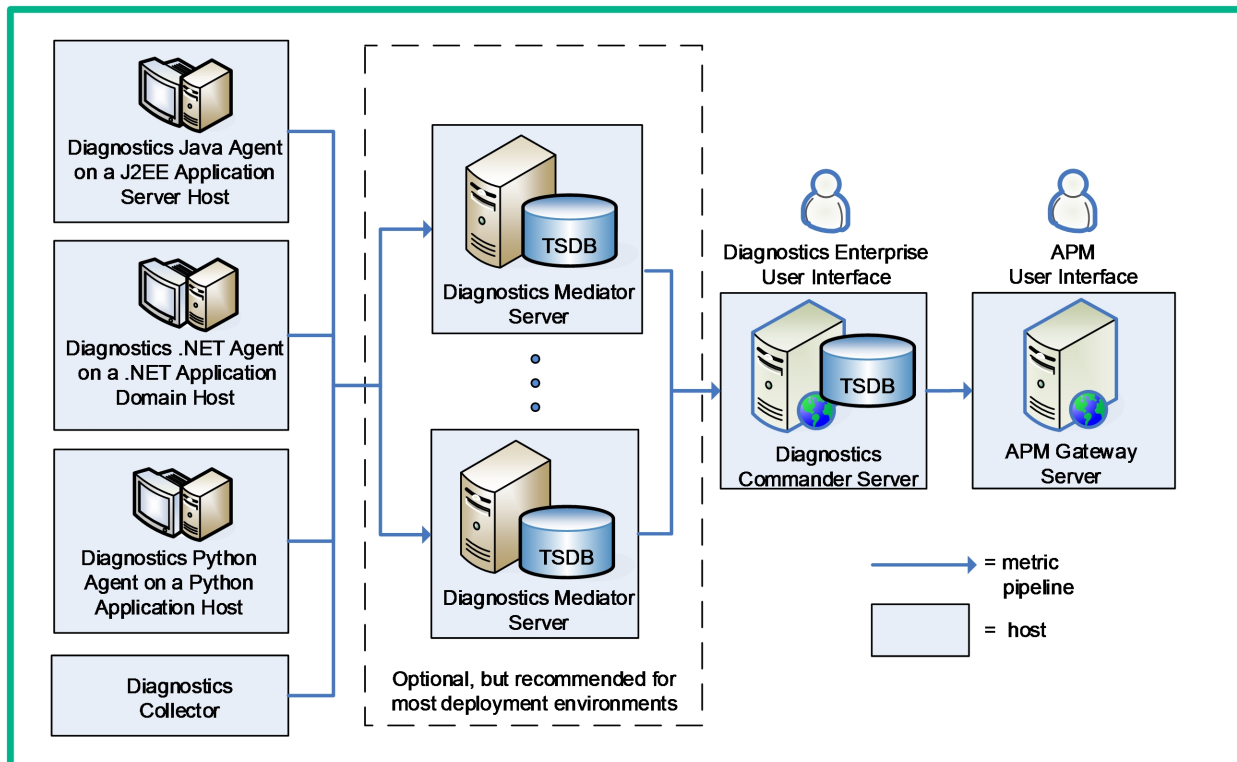
Information is provided on setting up the integration between HPE APM and Diagnostics.

This section includes:

- ["About the Integration of Diagnostics with APM" on the next page](#)
- ["Diagnostics Data Sent to APM" on the next page](#)
- ["Task 1: Prepare the Diagnostics Commander Server" on page 9](#)
- ["Task 2: Identify the APM Servers and Determine How They are Accessed" on page 10](#)
- ["Task 3: Enable HTTPS Communication " on page 11](#)
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- ["Task 8: Assign Permissions for Diagnostics Users in APM" on page 17](#)

## About the Integration of Diagnostics with APM

In an integration between Diagnostics and APM, all data flows from a single Diagnostics commander server in the deployment environment to a APM Gateway Server in the deployment environment. The Diagnostics commander server that is integrated with APM continues to provide the non-integrated Diagnostics Diagnostics Enterprise UI.



When a Diagnostics commander server is configured to communicate with APM, it includes the following components:

- **The Operations Manager (OM) agent.** The OM agent sends Health Indicator(HI) update events to OMi.
- **Integration Adapter Policy Activation (IAPA) components.** These components support communication with OMi.

## Diagnostics Data Sent to APM

When Diagnostics is integrated with APM, a subset of its collected data is sent to APM as follows:

- **Configuration items (CIs).** Diagnostics populates an extensive set of application infrastructure, web service and business transaction CIs in the APM Run-time Service Model (RTSM) and provides information on relationships between CIs in common data models. For example, Hosts, Application Servers, and Databases.

CIs are sent to APM through the UCMDB interface.

- **Metrics.** Diagnostics sends metrics from probes and collectors to APM.

Health Indicator status (coloring) for business transaction and web service CIs populated by Diagnostics is metric-based. Status for metric based KPIs and Health Indicators is sent to APM from Diagnostics in data samples. Diagnostics sends data samples to APM and rules in APM are used to evaluate the data and set the indicator's status. You can change default objectives for business transaction and Web service Health Indicators in APM Admin > Service Health. See the APM Documentation Library for information on using Service Health Admin.

Diagnostics sends data samples that contain the metrics to APM where they are persisted in the APM profile database, typically one that is dedicated to Diagnostics data. Information from these samples is used in to determine status of KPIs and Health Indicators in APM.

Diagnostics provides the following data samples to APM:

- ws\_perf\_aggr\_t (SOA Sample)
  - ws\_event\_aggr\_t (SOA Sample)
  - appmon\_vu\_t (Transaction (BPM) Sample)
  - dg\_trans\_t (Business Transaction (Diagnostics) sample)
- **Events.** Diagnostics sends threshold violations as events to OMi. Health Indicator status (coloring) for application infrastructure CIs populated by Diagnostics is event-based. Status for event-based Health Indicators is sent to OMi from Diagnostics when there is a threshold violation on relevant metrics. The threshold violation event data is sent to OMi through the OMi event channel.

This event channel is supported by the OM agent and IAPA components that are installed with the Diagnostics commander server.

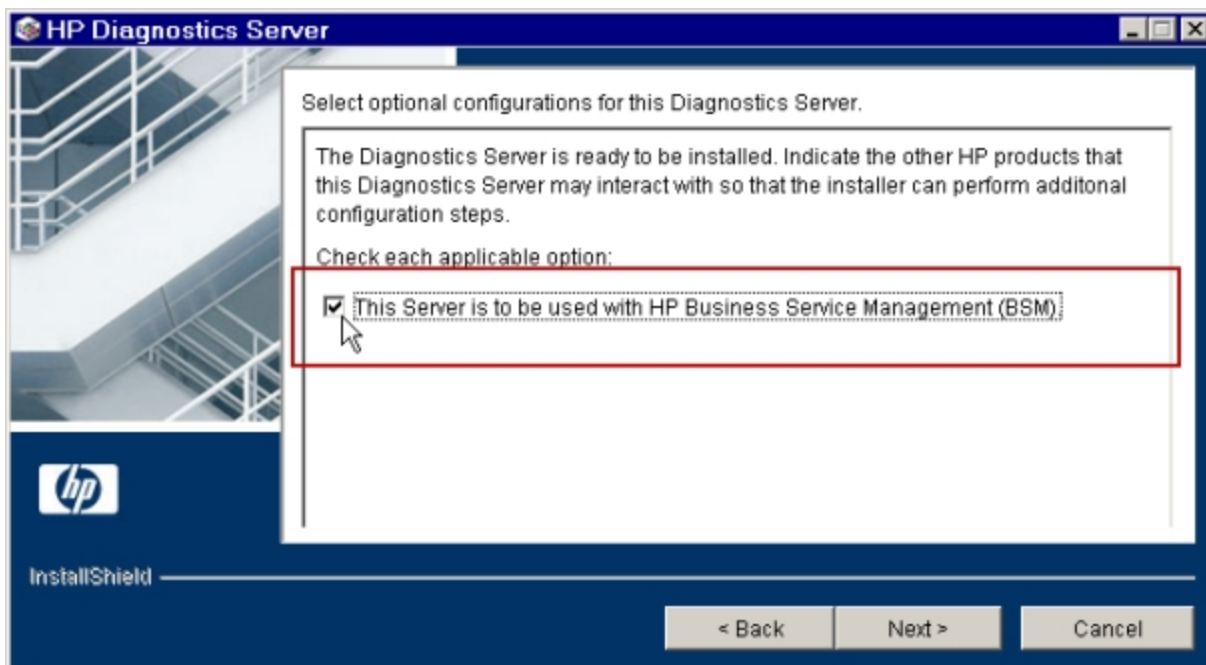
See "Integrations with other HP Products" in the Diagnostics User Guide for more information on Diagnostics data in APM.



## Task 1: Prepare the Diagnostics Commander Server

Identify the Diagnostics commander server to be used in the integration and prepare it as follows:

- Make sure that the Diagnostics commander server has the data that you want to expose in APM.
- Make sure that the Diagnostics commander server is configured to communicate with APM. This configuration is typically accomplished when the Diagnostics commander server is installed by specifying the following option during the installation:



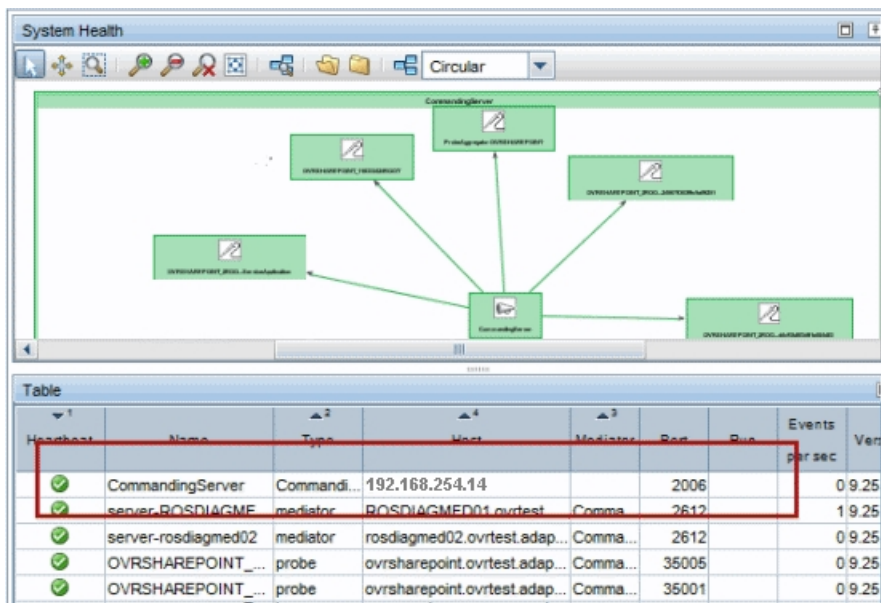
This option requires that the user running the installation have root access on Linux or Administrative privileges on Windows.

If the Diagnostics commander server was installed without this option, you can add the configuration to an existing Diagnostics commander server. You do not need to re-install the Diagnostics commander server. See "Manual Installation of OM Agent and IAPA Components" in the HPE Diagnostics Server Installation and Administration Guide.

You can verify that the OMA Agent and IAPA Components are installed on an existing Diagnostics command server by checking if the following directory exists on the Diagnostics Commander Server host: **C:\Program Files\HP\HP BTO Software** or **/opt/HP/HP\_BTO\_Software**.

- Make a note of the fully-qualified domain name (FQDN) and port of the Diagnostics commander server. You will need this information in a later task.

You can access the System Health view in the Diagnostics UI to find this information:



- If there is a firewall between the Diagnostics commander server and the APM Gateway Server, open the port used by the Diagnostics commander server. See "Working with Firewalls " on page 20.

## Task 2: Identify the APM Servers and Determine How They are Accessed

Identify the APM Gateway Server and Processing Servers and understand how they are accessed. Work with the APM administrator to obtain this information. You need to know the following:

- The Gateway Server URL to be used for access by data collectors. This may be any of the following:
  - Default Virtual Gateway Server for Data Collectors URL.** Defines the URL used to access the Gateway Server for Data Collectors. Specify the full URL with the port number (for example: http://myhost.mydomain.com:88). For the host name in the URL, supply the full name of the host, including the domain name and the port number. If a NAT device (i.e. load balancer, reverse proxy, SSL Accelerator) is in use to access the Gateway Server for Data Collectors, supply the URL of the NAT device including the port number (for example: https://virtualIP:99).
  - Direct Gateway Server for Data Collectors URL.** Defines the URL used by internal HPE services to access the Gateway Server for Data Collectors. Even if a load balancer is in use, supply the internal (not virtual) host name.
  - Local Virtual Gateway Server for Data Collectors URL.** Defines the URL used to access the specified machine's Gateway Server for Data Collectors. Specify the full URL with the port number (for example: http://myhost.mydomain.com:88). For the host name in the URL, supply the full name of the host, including the domain name and port number. If defined, this setting's value overrides the Default Virtual Gateway Server for Data Collectors URL setting.

**Tip:** If APM has already been configured for Data Collectors, you can obtain these values from the APM UI as follows. Access **Admin > Platform > Setup and Maintenance > Infrastructure Settings**. In the Infrastructure Settings Manager section, select **Foundations** and then select

**Platform Administration** from the drop-down list. In the “Platform Administration – Host Configuration” group you can view the Data Collector URLs that are to be used by HPE Diagnostics.

See the the APM Application Administration Guide for more information.

- The Gateway Server URL to be used for access by application users. This is the **Default Virtual Gateway Server for Application Users URL**. If this URL is different from the Gateway Server URL used by data collectors you must edit the `<diag_server_install_dir>\etc\webserver.properties` file and add to the parameter `bac.gw.whitelist` the Gateway Server URL used by data collectors in the format:

```
http://<FQDN of the Gateway Server URL used by data collectors>/topaz
```

For example: **http://apm\_gw\_machine.mydomain.com/topaz**

**Note:**

- You can add multiple Gateway Servers using a comma (,) as a separator.
- If you use different Gateway Servers for users and data collectors, you must add all of the Gateway Servers used.

- The Data Processing Server (DPS) URL that is to be used for access from the Gateway Server. Typically this is  
http://<data\_processing\_server\_FQDN>:80.
- Login information to the DPS host. These credentials are needed as part of the certificate configuration in some scenarios.

For more information about the DPS, see the Platform Administration section in the APM Help.

## Task 3: Enable HTTPS Communication

If the Diagnostics commander server is going to send data to a APM server in a hardened environment, you must configure the Diagnostics commander server to communicate securely with the APM Gateway Server.

The basic flow for any data collector connecting to secure APM is as follows:

- Obtain the appropriate root CA certificate(s) from the APM environment and import it into the JVM used by the data collector.
- Configure the connection to APM to use HTTPS.
- Make sure data flows over the secure connection.

**Note:** APM 9.30 (https) does not accept self signed certificates. When integrating Diagnostics with APM 9.30, make sure the Diagnostics server certificates are not self signed.

### To enable secure communications between the Diagnostics commander server and the APM Gateway Server:

1. (Optional) Enable the Diagnostics commander server for HTTPS communication as described in the "Enabling HTTPS Between Components" chapter of the HPE Diagnostics Server Installation and Administration Guide.
2. If your Diagnostics commander server is configured with SSL:

- Copy the Diagnostics certificate file, **diag\_server\_commander.cer**, from the Diagnostics commander server installation directory, **<diag\_server\_install\_dir>/etc/**, to the APM host.
- Import the copied certificate, **diag\_server\_commander.cer**, into the APM server cacert keystore by running the following commands on all of the APM Gateway and Data Processing Servers, even if they are not accessed directly (for example, even if they are accessed using reverse proxy, or through a load balancer):

```
<APM_server_install_dir>/jre/bin/keytool
-import -file <copied_diag_certificate_directory>/diag_server_commander.cer
-keystore <APM_server_install_dir>/jre/lib/security/cacerts -alias SERVER
```

```
<APM_server_install_dir>/jre64/bin/keytool
-import -file <copied_diag_certificate_directory>/diag_server_commander.cer
-keystore <APM_server_install_dir>/jre64/lib/security/cacerts -alias SERVER
```

- Replace **<APM\_server\_install\_dir>** with the path to the installation directory for the APM server host.
- Replace **<copied\_diag\_certificate\_directory>** with the path to the copied Diagnostics certificate file.

Type **changeit** when you are prompted to enter the keystore password.

Type **yes** instead of the default **no** when you are asked if the certificate should be trusted.

- Restart all of the APM Gateway and Data Processing Servers.
3. Copy all root CA certificates (for example, for reverse proxy, Data Processing Servers, Gateway Servers) that were issued for the APM environment, **<APM\_certificate\_file.cer>**, to the Diagnostics Server host.
  4. Import the copied certificates into the Diagnostics Server cacert keystore by running the following command on the Diagnostics Server host.

```
<diag_server_install_dir>/jre/bin/keytool
-import -file <copied_APM_certificate_directory>/<APM_certificate_file.cer>
-keystore <diag_server_install_dir>/JRE/lib/security/cacerts
```

- Replace **<diag\_server\_install\_dir>** with the path to the installation directory of the Diagnostics commander server.
- Replace **<copied\_APM\_certificate\_directory>** with the path to the copied APM certificate file.

Type **changeit** when you are prompted to enter the keystore password.

Type **yes** instead of the default **no** when you are asked if the certificate should be trusted.

5. The communication between the Diagnostics commander server and the APM Gateway Server is now secure. Select **HTTPS** for the Diagnostics Server protocol field when you register the Diagnostics commander server.

## Task 4: Register the Diagnostics Commander Server in APM

To register the Diagnostics Commander Server in APM:

1. Log in to APM.
2. Select **Admin > Diagnostics**. The Diagnostics Server Details page is displayed:

The screenshot shows a web browser window with the title "Business Service Management - Diagnostics Configuration". The browser's address bar shows "MyBSM Applications Admin Help Site Map". The main content area is titled "Diagnostics Server Details" and contains the following text:

Make sure that the Diagnostics Server is accessible from the Business Service Management machine and from users' Web browsers through the values you enter in the fields below.  
 Note: The values defined here are needed for application links and data connections.

Enter Diagnostics Server details:

Diagnostics Server host name:

Diagnostics Server port number:

Diagnostics Server protocol:

Submit

3. Provide the details for the Diagnostics commander server as follows:

**Diagnostics Server host name.** Enter the fully-qualified host name of the Diagnostics commander server.

If you have enabled HTTPS communication (as described in ["Task 3: Enable HTTPS Communication" on page 11](#)), enter the Diagnostics commander server name exactly as it was specified in the **CN** parameter when you created the keystore for the Diagnostics commander server. You should have used the **fully qualified domain name** for the subject (CN) in the certificate.

**Diagnostics Server port number.** Enter the port number used by the Diagnostics commander server. Your Diagnostics commander server may use the default port numbers: **2006** for HTTP or **8443** for HTTPS.

**Diagnostics server protocol.** Select the communication protocol through which APM connects to Diagnostics commander server, either **HTTP** or **HTTPS**.

If you select **HTTPS** as your communication protocol, the Diagnostics commander server must be enabled for HTTPS. See ["Task 3: Enable HTTPS Communication" on page 11](#).

**Diagnostics root context.** If APM is configured to use a custom context root and you have configured Diagnostics commander server to use a custom context root, enter the Diagnostics commander context root. See "Configuring a Custom Context Root" in HPE Diagnostics Server Installation and Administration Guide

**Note:** To be able to open Diagnostics or MyBSM from the APM user interface, the user must have access to the Diagnostics Commander through the URL configured when registering Diagnostics in APM.

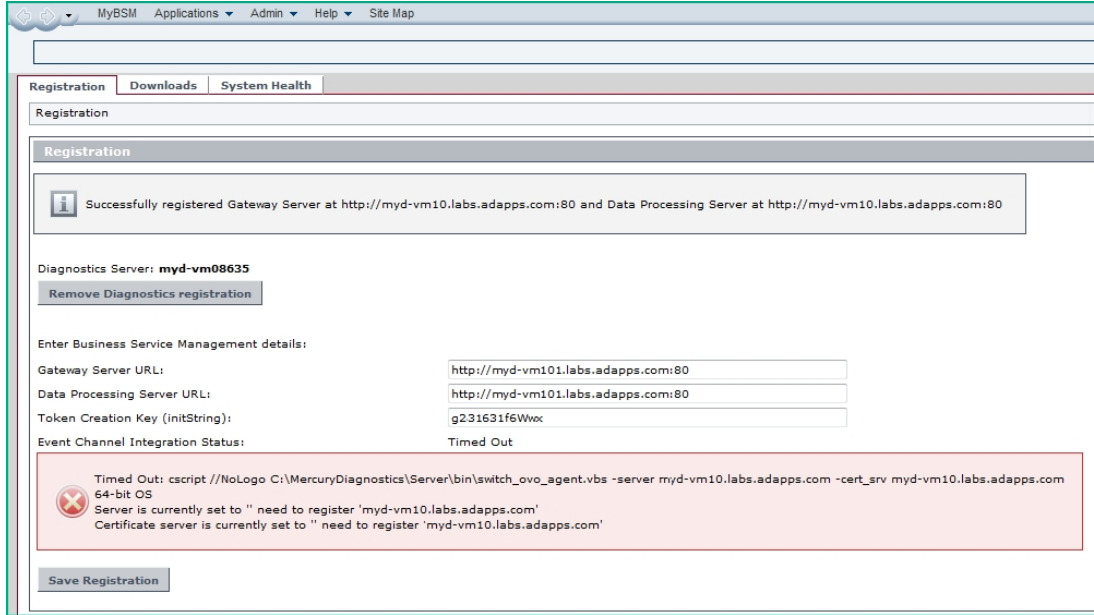
4. Click **Submit**.

If the server name you entered is incorrect or if the server is unavailable, an error message is displayed. Correct this information if necessary and click **Submit** again.

The Diagnostics commander server details are saved in APM and the APM server details are automatically registered on the Diagnostics commander server host.

You can view the APM server details in your Diagnostics Server configuration by viewing the Registered Components page at [http://<Diagnostics\\_Commanding\\_Server\\_Name>:2006/registrar/](http://<Diagnostics_Commanding_Server_Name>:2006/registrar/). View the rows where the type is "BSM Server".

5. The **Registration** tab in the Diagnostics Configuration page opens:



Provide the details for the APM servers as follows:

**Gateway Server URL.** By default, the root URL of the current APM Gateway Server is displayed. Modify this as needed. See ["Task 2: Identify the APM Servers and Determine How They are Accessed" on page 10](#).

**Data Processing Server URL.** Typically you can leave this field at the default value. In high-availability deployments where the DPS's functionality changes from one DPS to another, enter the Gateway Server URL for this field. In such deployments the APM DPS server cannot be accessed from the Diagnostics Server and the APM Gateway Server has been configured to tunnel certificate requests to the Processing Server (such as when the Gateway and Processing Server are on the other side of a Load Balancer or SSL Accelerator).

You may still need to manually grant certificates as described in the following step.

**Token Creation key (initString).** Enter the APM token creation key in the field. To find the Token Creation Key (initString), enter the following URL in a browser and locate the initString in the table that is displayed:

- ```
http://<APM Gateway Server>:29000/mbean?objectname=Topaz%3AService%3DLW-SSO+Configuration
```

Once you save the registration, this token creation key is written to the Diagnostics **lwso.properties** file.

**Event Channel Integration Status.** The event channel is how the OM agent and IAPA components of the Diagnostics commander server send threshold-violation events to OM. The event channel requires certificates to communicate securely.

6. Navigate back to the **Admin > Diagnostics > Registration** tab in the APM user interface. Click **Save Registration**.

## Task 5: Manually Configure the Diagnostics Server with the OMi Server

To enable the Diagnostics server to send events related to threshold violations to the OMi server:

1. In the Diagnostics server, in the server\bin directory run the following:

```
cscript switch_ovo_agent.vbs -server <FQDN of OMi> -cert_srv <FQDN of OMi>
```

2. Go to **OMi Administration > Certificate Requests** and grant the required certificates.
3. Run the following script again:

```
cscript switch_ovo_agent.vbs -server <FQDN of OMi> -cert_srv <FQDN of OMi>
```

## Task 6: Perform Post-Registration Configuration

Perform the following steps as needed for your deployment environment.

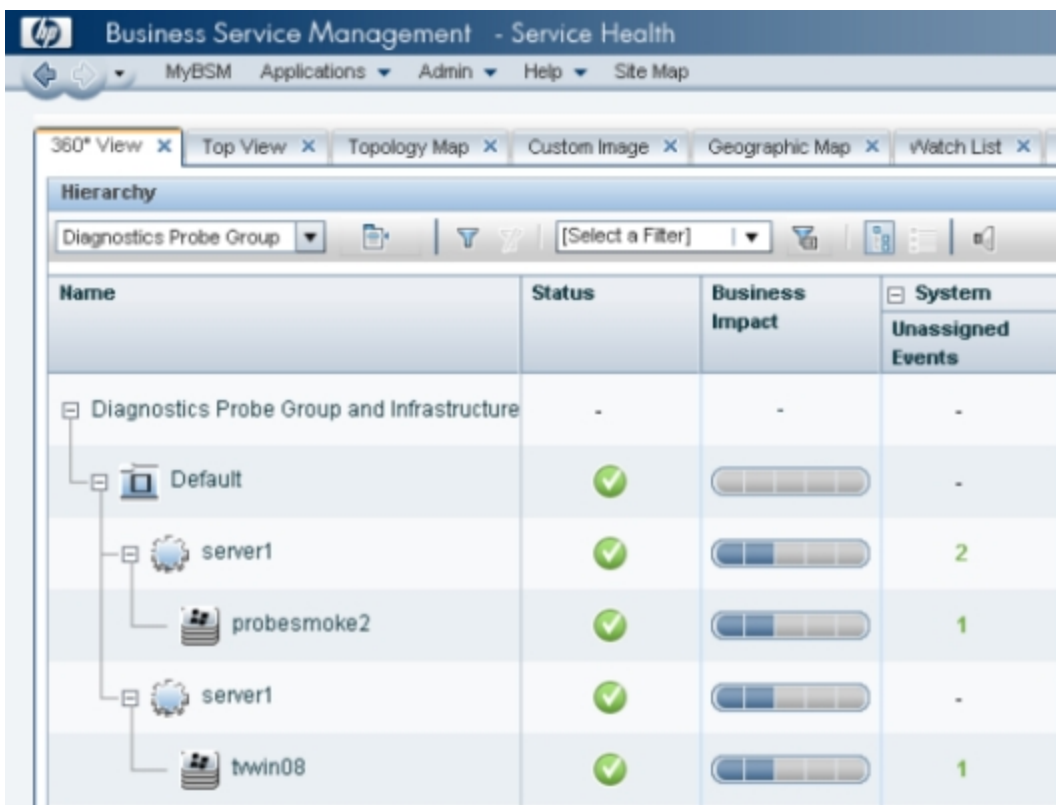
- Enable cookies in the web browser used to access APM.  
Cookies must be enabled to view Diagnostics data in APM. This can usually be accomplished by adding the registered Diagnostics commander server as a trusted site in the browser configuration.

## Task 7: Verify the Integration

You verify the integration of Diagnostics with APM as follows:

- In APM, select **Applications > Diagnostics** to open the Diagnostics UI.  
If the "Do you want to run this application" prompt appears, click **Run**.  
You should see the same user interface that you see when accessing the standalone Diagnostics commander server.
- In APM, select **Applications > Service Health** to open the Service Health pages.  
On the 360° View tab, select **Diagnostics Probe Groups and Infrastructure**. Expand the root in the

Name column. You should see a server for each agent that reports to the Diagnostics commander server.



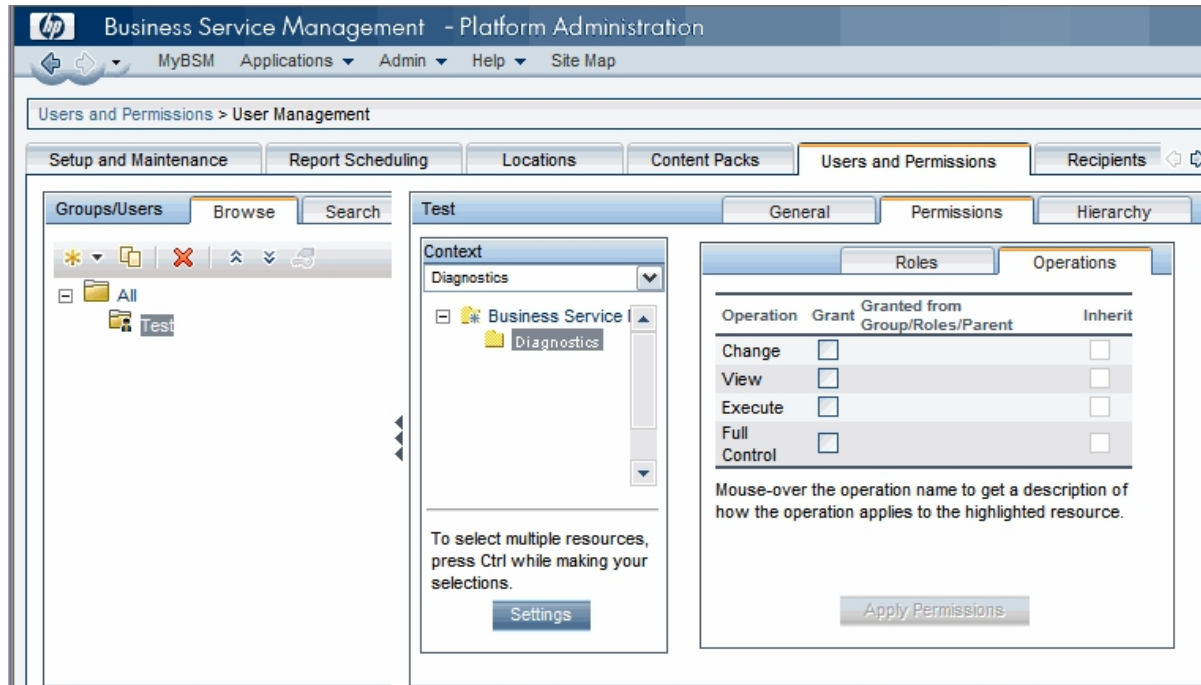
If these verification steps fail, see ["Troubleshooting the Integration of APM with Diagnostics" on page 27](#). For more information about how Diagnostics data appears in APM, see the HPE Diagnostics User Guide.



## Task 8: Assign Permissions for Diagnostics Users in APM

When an existing or new APM user opens Diagnostics from APM, their permissions are picked up from the APM session.

In APM, the permissions for Diagnostics are specified in the **Admin > Platform > Users and Permissions > User Management** page, **Diagnostics** context:



When applying permissions in APM, administrators can grant Diagnostics users the following types of permission operations:

- **Change:** Enables viewing Diagnostics administration and configuring the Diagnostics settings.
- **View:** Enables viewing the Diagnostics application when accessing Diagnostics from APM.
- **Execute:** Enables setting thresholds in Diagnostics.
- **Full Control:** Enables performing all operations on Diagnostics, and granting and removing permissions for those operations.

Diagnostics permissions can also be inherited from APM roles.

### Note:

- Any roles that have been created in the Diagnostics system are not propagated to APM when that Diagnostics system is integrated. For users that access Diagnostics by logging into APM, any role permissions defined in Diagnostics Applications do not apply. Application permissions must be set on specific APM user names or by using built-in user groups such as "(any\_diagnostics\_user)". You can assign and manage the comparable user permissions by using the APM User Management page.
- Updates to APM user permissions are only picked up when the user opens Diagnostics. If

Diagnostics is already open, changes will not be detected until it is closed and reopened. For example, changes to user specific permissions by an admin are not applied until that user logs in for a new session.

APM passwords are never sent to Diagnostics—Diagnostics trusts a successful APM login.

For detailed information about how to assign user permissions in APM, see Platform Administration in the HPE APM Documentation Library.

# Chapter 2: Additional Configuration of the Integration

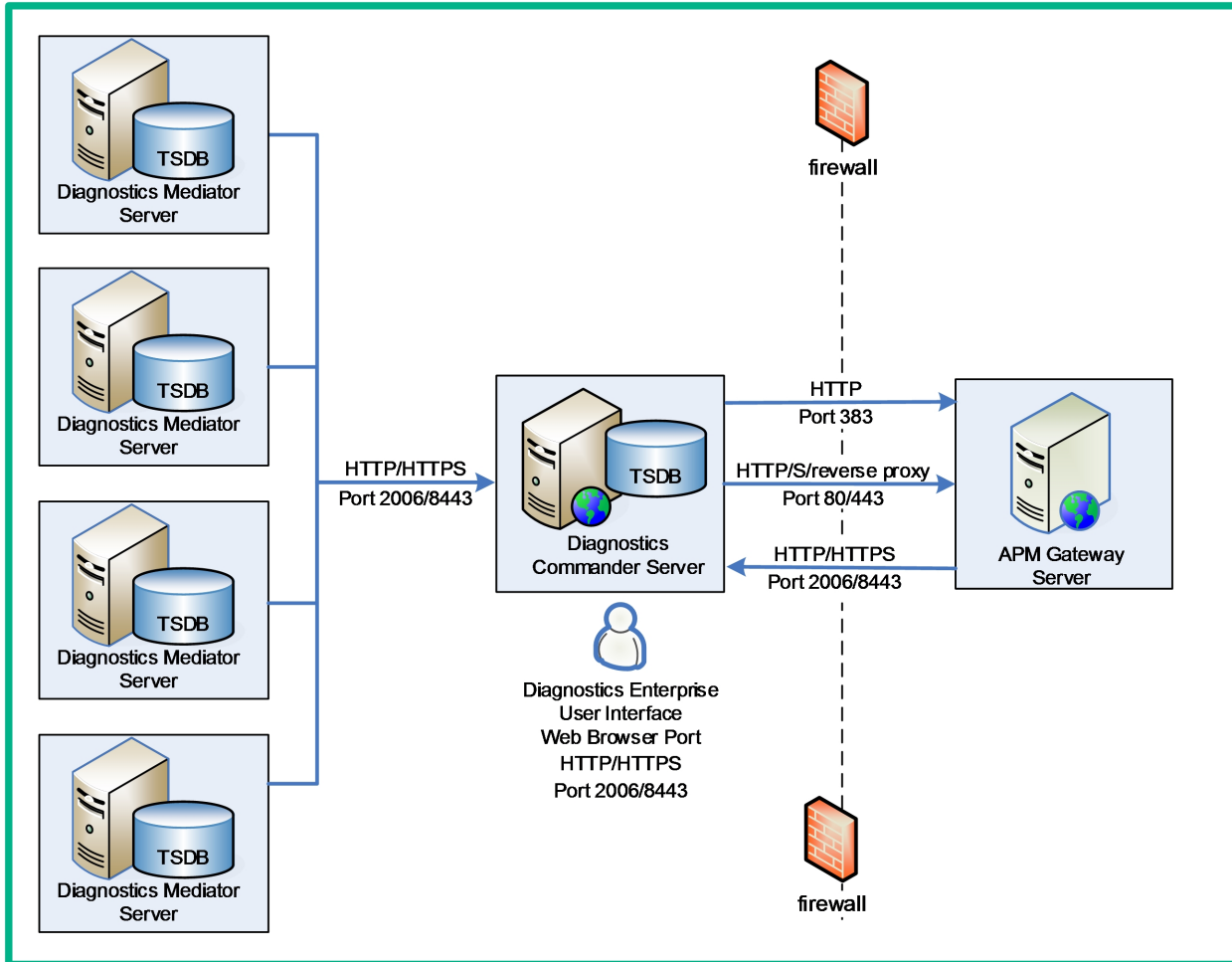
The following configurations of the integration of Diagnostics with APM may be needed in your deployment environment:

- ["Working with Firewalls " on the next page](#)
- ["Set the Password for Data Collectors to Access RTSM" on page 21](#)
- ["Enabling Integration with APM's SHA" on page 21](#)
- ["Discovery of IIS Metadata for CI Population of IIS Deployed ASP.NET Applications" on page 22](#)
- ["Configuring Individual IP Addresses for Multiple Application Servers" on page 22](#)
- ["Removing the Diagnostics Registration" on page 23](#)
- ["Diagnostics and OM Server Co-existence" on page 23](#)
- ["Upgrading When an Integration Exists" on page 25](#)

**Note:** The examples in this chapter use hyphens to prefix command arguments. Copy-and-paste of the examples fails in some cases because the hyphen is pasted as a dash. Replace the dash with a hyphen (ASCII 0x2d) before running the command.

# Working with Firewalls

The following diagram shows the default ports in a Diagnostics-APM deployment.



To configure the firewall to enable the communications between Diagnostics components and APM, open the ports that will allow the following:

- HTTP requests from the Diagnostics mediator servers to the Diagnostics Commander Server on port 2006 (HTTPS 8443).
- HTTP requests from the APM server to the Diagnostics Commander Server, on port 2006 (HTTPS 8443).
- HTTP requests from the Diagnostics commander server to APM Server on port 80 (Reverse proxy 443).
- HTTP requests from the Diagnostics UI web browser client machine to the Diagnostics commander server on port 2006 (HTTPS 8443).

## Set the Password for Data Collectors to Access RTSM

APM administrators configure the APM servers to create and connect to the APM databases/user schemas by using the Setup and Database Configuration utility.

This utility allows administrators to override the initial default password for all data collectors, including Diagnostics, to access the RTSM database. If the password is changed by using the Setup and Database Configuration utility, you must make a corresponding change to the password that is stored in the Diagnostics configuration.

To change the password in the Diagnostics configuration, access the Diagnostics commander server and modify the `<diag_server_install_dir>/etc/cmdbProperties.xml` file to add the obfuscated password to the `<userPassword>` entry:

```
<customer>
  <!-- customerId is an Integer -->
  <customerId>1</customerId>
  <customerName>Default Client</customerName>
  <userName>diagnostics</userName>
  <!-- userPassword may be obfuscated -->
  <userPassword>11z0h1wu61kxw1jy11hse1jd21</userPassword>
</customer>
<customer>
```

Create an obfuscated password using the web application included with Diagnostics. From standalone Diagnostics, access the Security page (<http://<host name>:2006/security>) and select **Encrypt Password** at the bottom of the page. Replace `<host name>` with the name of the host on which the Diagnostics server is installed.

For more information about the Setup and Database Configuration utility, see the APM Installation Guide.

## Enabling Integration with APM's SHA

You can enable an integration between Diagnostics and APM's Service Health Analyzer (SHA). With this integration data samples containing host metrics and probe metrics are sent from the Diagnostics commander server to APM where the metrics are put into the APM SHA database.

The SHA application uses these metrics as well as metrics from other samples to create baselines. The SHA application compares metrics to the baseline and reports anomalies as performance issues are detected. For an anomaly you can drill down to Diagnostics Probes view or Hosts view for detailed Diagnostic data (see APM's Service Health Analyzer documentation for details on using SHA).

The integration of Diagnostics with SHA is not enabled by default.

### To enable the integration:

1. On each Diagnostics mediator server that reports to the Diagnostics commander server, locate the `/etc/server.properties` file.
2. Make the following changes.

```
# Send host metrics for Service Health Analyzer (SHA)
bac.diag.sha.host.metric.create.samples=true
# Send probe metrics for Service Health Analyzer (SHA)
bac.diag.sha.probe.metric.create.samples=true
```

- Restart each Diagnostics mediator server.
- Once the integration is enabled and the host metrics and probe metrics from Diagnostics are available in APM's SHA database you then select these CIs in the SHA Admin application for use in anomaly detection.

You can also define filters in Diagnostics to determine which host and probe metrics are sent to SHA's database. Use the following XML files in the Diagnostics server's `/etc` directory to filter these metrics. Filters are based on regular expression matching similar to data exporting.

- **shaHostMetrics.xml**. Include/exclude filters for host metrics
- **shaProbeMetrics.xml**. Include/exclude filters for probe metrics

## Discovery of IIS Metadata for CI Population of IIS Deployed ASP.NET Applications

For CI population the .NET Agent installer automatically discovers the IIS configuration metadata for ASP.NET applications that are deployed under IIS versions 6.x or greater at the time of installation. You can request that the agent re-scan your IIS configuration to update for any additions or changes that occurred after installation. The re-scan does not occur automatically.

To request the rescan, select **Start > HP Diagnostics .NET Probe > Rescan ASP.NET Applications** on the .NET Agent Host.

For information about the CIs related to ASP.NET applications, see "CI Population and Models" in the HPE Diagnostics User Guide.

For troubleshooting information related to the discovery of IIS Metadata, see ["IIS Configuration Data Not Showing in APM" on page 29](#).

## Configuring Individual IP Addresses for Multiple Application Servers

By default, multiple application servers on the same machine monitored by a single Java Agent use the machine's main IP address for reporting purposes. This means that in the RTSM only one CI is created for all the application servers.

To configure the Java Agent to report each application server's individual IP address (so that in the RTSM a CI is created for each one), in the **probe.properties** file, set the **local.ip.for.reporting** parameter to the IP address to use for reporting. For example, `local.ip.for.reporting=123.123.123.123`. If you use individual property files for application servers you must set the `local.ip.for.reporting` parameter in each individual file.

You can also set the `local.ip.for.reporting` parameter using the application server start command: `-Dlocal.ip.for.reporting=123.123.123.123`.

For details on using individual property files and using the -D start command, see the "Specifying Probe Properties as Java System Properties" section in the Java Agent Guide.

## Removing the Diagnostics Registration

You can remove the Diagnostics registration completely.

### To remove the Diagnostics registration:

1. Select **Admin > Diagnostics**.
2. In the Registration tab, click the **Remove Diagnostics registration** button.
3. In the message that opens, click **OK** to confirm that you want to remove the Diagnostics registration.  
A message is displayed, confirming that you successfully removed the Diagnostics registration.

## Diagnostics and OM Server Co-existence

If the Diagnostics commander server is to be installed on a host that already contains an OM agent, you must perform the following configuration.

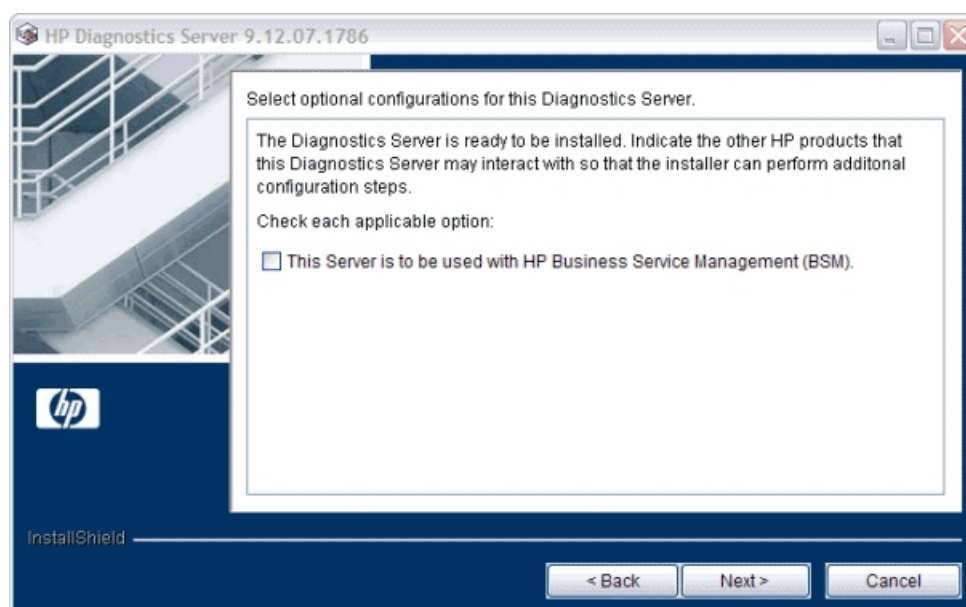
### OM Agent Installed Before Diagnostics commander server is Installed

This scenario assumes that the OM agent is already present and reporting to an OM server on the host where the Diagnostics commander server is to be installed.

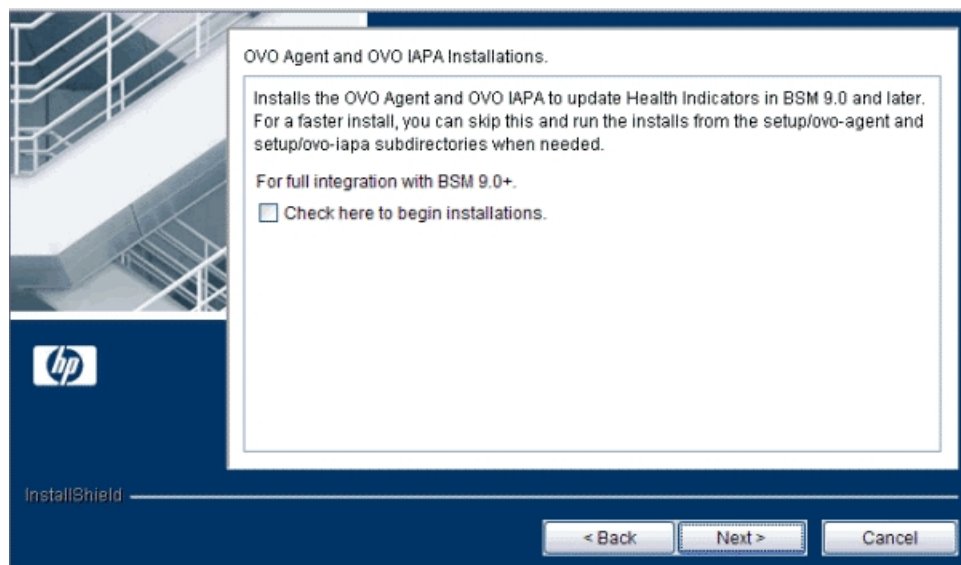
#### To setup coexistence when OM Agent is installed first:

1. Begin the Diagnostics commander server installation as described in HPE Diagnostics Server Installation and Administration Guide.

At this step, check the BSM integration checkbox:



When the install comes to this step, leave this checkbox clear (unchecked):



2. On the Diagnostic commander server, install the IAPA component manually.  
For more information, see "Manual Installation of OM Agent and IAPA Components" in the HPE Diagnostics Server Installation and Administration Guide).
3. Register Diagnostics in APM as described in "[Task 4: Register the Diagnostics Commander Server in APM](#)" on page 13.
4. On the Diagnostics commander server host, go to `<diag_server_install_dir>\bin` and **execute** `switch_ovo_agent.vbs` or on UNIX `switch_ovo_agent.sh`, specifying the OM server as the target for `-server` and `-cert_srv`.

Note: On Linux, you have to run this command as root.

For example:

```
cscript switch_ovo_agent.vbs -server machine.mycompany.com -cert_srv
machine.mycompany.com .com
```

5. Determine the core ID for the OM Server. On the Diagnostics commander execute:

```
bbcutil -ping <OM Server>
```

6. Copy directory: `<diag_server_install_dir>\newconfig\ovo-agent\policies\mgrconf` to `<diag_server_install_dir>\newconfig\ovo-agent\policies\tmp`  
If the mgrconf directory doesn't exist, contact support to get the content of this directory. Also if you have a more complex setup (for example with multiple OM managers) you may need to make additional changes to the file below.
7. Edit the file: `<diag_server_install_dir>\newconfig\ovo-agent\policies\tmp\mgrconf\FF9A8F04-B5E3-43C3-999B-7A9492C35014_data`.
  - Locate the string `${OM_MGR_SRV}` and replace all occurrences with the FQDN of the HPOM management server.



- Locate the string `#{OM_MGR_SRV_ID}` and replace all occurrences with the core ID of the HPOM management server.
- Locate the string `#{OMi_MGR_SRV}` and replace all occurrences with the FQDN of the HPOM management server.
- Locate the string `#{OMi_MGR_SRV_ID}` and replace all occurrences with the core ID of the HPOM management server.

**Note:** In case of a more complex OM setup you may need to add additional entries in this file.

8. Go to the directory: `<diag_server_install_dir>\newconfig\ovo-agent\policies\tmp` and install the policy:

```
ovpolicy -install -dir mgrconf
```

## Configure Trusted Certificates

In an environment with multiple OM servers, you must configure each server to trust certificates that the other servers issued. This task involves exporting every server's trusted certificate, and then importing this trusted certificate to every other server. You must also update the agent's trusted certificates, so that the agent also trusts the OM servers.

### To configure trusted certificates for every OM server:

1. On every OM server, export the trusted certificate to a file using the following command:

```
ovcert -exporttrusted -file <file>
```

The command generates a file with the name that you specify.

2. Copy each file to every other server, and then import the trusted certificate using the following commands:

```
ovcert -importtrusted -file <file>
ovcert -importtrusted -ovrg server -file <file>
```

3. On the Diagnostics system (in case an agent was already installed), update the trusted certificates using the following

```
ovcert -updatetrusted
```

## Upgrading When an Integration Exists

Check the Diagnostics Compatibility Matrix in the APM System Requirements and Support Matrixes for information about which versions of APM are compatible with Diagnostics.

An existing integration of APM and Diagnostics is affected by upgrades to either APM or Diagnostics.

**If the APM system is upgraded or re-installed:**

- Re-register the Diagnostics Commander Server in APM. See "[Task 4: Register the Diagnostics Commander Server in APM](#)" on page 13.
- It takes 12 hours before CIs from Diagnostics resume being sent to APM. You can force the CIs to be sent to APM sooner by performing a Synchronize operation. See "[Synchronize CIs Between Diagnostics and APM](#)" on page 28.

**If the Diagnostics system is upgraded or re-installed:**

1. Restore the **RegistrarPersistence.xml** file from the **etc.old** folder to the new **etc** folder.
2. Check the Integration as described in "[Task 7: Verify the Integration](#)" on page 15.

After the upgrade, you will not be able to view events in APM. For further information, see "[Diagnostics and OM Server Co-existence](#)" on page 23.

# Chapter 3: Troubleshooting the Integration of APM with Diagnostics

This section includes:

- ["Unable to view HI status on Application Infrastructure CIs in APM 9.30" below](#)
- ["Missing Link in the Standalone Diagnostics UI" below](#)
- ["Authentication Dialog Displayed in MyBSM" on the next page](#)
- ["Diagnostics Cannot Access RTSM" on the next page](#)
- ["Synchronize CIs Between Diagnostics and APM" on the next page](#)
- ["IIS Configuration Data Not Showing in APM" on page 29](#)

**Note:** The examples in this chapter use hyphens to prefix command arguments. Copy-and-paste of the examples fails in some cases because the hyphen is pasted as a dash. Replace the dash with a hyphen (ASCII 0x2d) before running the command.

## Unable to view HI status on Application Infrastructure CIs in APM 9.30

In previous releases of BSM, Diagnostics sent CIs, metrics, and events to BSM. Health Indicator status (coloring) for the Application Infrastructure CIs was based on events sent to BSM through the OMi event channel.

In APM 9.30, due to the OMi removal, Diagnostics sends events to OMi and continues to send CIs and metrics to APM.

As a result of this change, the Application Infrastructure CIs (Diagnostic Probe, Oracle/MSSql Database, IBM WebSphere MQ, WebSphere AS Dynamic Caching, IBM WebSphere MQ, IBM MQ, WebLogic AS, JBOSS AS, SQL Server, MSSQL Database, Oracle iAS, Oracle, SAP, SAP R3 Server, VMware ESX Server, and Host Node) do not show the correct HI Status in APM 9.30.

The HI status for these CIs appears as *Undetermined* (blue question mark). If you are upgrading from BSM 9.2x to APM 9.30, the last status received for the CI before the upgrade will be displayed.

To view the HI status of these CIs in OMi, follow the procedures in ["Task 5: Manually Configure the Diagnostics Server with the OMi Server" on page 15](#).

## Missing Link in the Standalone Diagnostics UI

If the Diagnostics UI is launched from APM and in addition the Diagnostics UI is launched in standalone mode on the same host, the Maintenance link in the Diagnostics UI in standalone mode is not available.

To resolve this issue close both instances of the Diagnostics UI and re-launch the Diagnostics standalone UI.

## Authentication Dialog Displayed in MyBSM

If the Diagnostics Diagnostics commander server is installed in a different domain than the APM Gateway server, the MyBSM Diagnostics Dashboard may show an authentication dialog before the Diagnostics dashboard applet is displayed. This occurs if Lightweight Single Sign-On (LWSSO) has not been configured to add the Diagnostics server domain as a trusted domain.

To fix this issue, ensure that the domain that the Diagnostics server is running on is listed in APM's Single Sign-On page.

1. In APM select **Admin > Platform > Users and Permissions > Authentication Management > Single Sign-On Configuration**.
2. Click the **Configure** button.
3. Click **Next** in the wizard to get to the Single Sign-On page.
4. Click the **Add a Trusted host/domain** icon and enter the Diagnostics Server's domain.
5. Click **Next**.
6. Click **Next**.
7. Click **Finish**. This logs you out of APM. Log back in to APM and open the MyBSM Diagnostics Dashboard.

## Diagnostics Cannot Access RTSM

If you do not see Diagnostics data in APM's Service Health application, check the `<diag_server_install_dir>/log/ucmdb.log` file for errors such as:

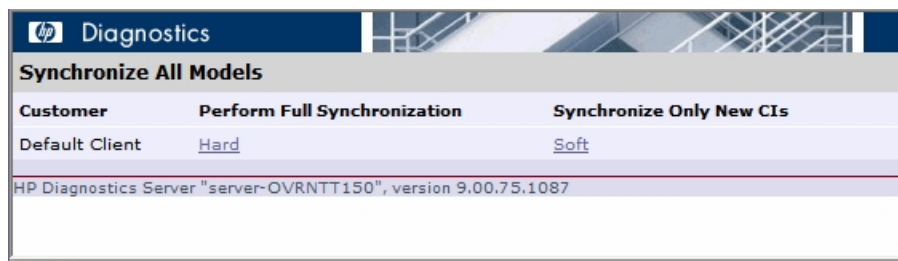
```
WARNING : BAC uCMDB relay failed for customer Default Client. Connection to BAC
failed
java.lang.Exception: InvalidCredentialsException Authentication failed
```

This typically indicates that the password to access RTSM from Diagnostics is incorrect. All data collectors, including Diagnostics, must specify a password to access RTSM. This password is specified on the APM side by using the Setup and Database Configuration utility. On the Diagnostics side, this password is stored on the Diagnostics commander server in the `<diag_server_install_dir>/etc/cmdbProperties.xml` file. These passwords must be the same. See "[Set the Password for Data Collectors to Access RTSM](#)" on [page 21](#).

## Synchronize CIs Between Diagnostics and APM

If you need to force a synchronization between Diagnostics and APM for Diagnostics populated models (CIs), a **synchronize** function is available on the Diagnostics commander server.

From the main Diagnostics UI select **Configure Diagnostics** (or from any Diagnostics view select the **Maintenance** link in the top right corner) and the Components page is displayed. Select the **synchronize** link to display the page for synchronizing models.



Anytime a APM system is upgraded or re-installed, a manual hard sync is needed (or a wait period of 12 hours) before CIs from Diagnostics are forwarded to APM. To do a hard sync, select **Hard**.

## IIS Configuration Data Not Showing in APM

If the CI population from a .NET agent is not occurring in APM as expected, first rescan the environment as described in ["Discovery of IIS Metadata for CI Population of IIS Deployed ASP.NET Applications" on page 22](#).

If the problem persists, the following summary of the workflow for CI population may be helpful in debugging:

- **The iis\_discovery\_data.xml file.** Discovered IIS configuration metadata is written to the `<probe_install_dir>\etc\iis_discovery_data.xml` file. Each rescan operation updates this file. At runtime the .NET Agent queries the `iis_discovery_data.xml` file for IIS configuration metadata associated with the instrumented appdomain. If the associated metadata is found, the agent forwards the data to its Diagnostic Server which populates the RTSM CIs for .NET application.
- **Privilege Requirements for Discovery of IIS Deployed ASP.NET Applications.** The user must have Administrator privileges on the machine that the .NET Agent is installed on, in order to execute WMI queries and create the `iis_discovery_data.xml` file.
- **Debugging the Discovery of IIS Deployed ASP.NET Applications.** If the `iis_discovery_data.xml` file is not created or there is any reason to suspect that some of its metadata may be inaccurate, you can enable the creation of a detailed debug file to examine the results of the WMI queries.

To enable the creation of a detailed debug file, change the last parameter of the Target Property for the **Start > HP Diagnostics .NET Probe > Rescan ASP.NET Applications** shortcut from "false" to "true". When the Rescan ASP.NET Applications shortcut is executed, a `<probe_install_dir>/log/AutoDetect.log` file is created. Note that you should have Administrator privileges when executing this shortcut. You can send the **AutoDetect.log** to HP Support for analysis.

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