

Introducing the Precise add-on AppTier

This section includes the following topics:

- [About the Precise Add-on AppTier](#)
- [Components of the Add-on AppTier](#)
- [How the Collectors work](#)
- [Where to get more information](#)

About the Precise Add-on AppTier

The Add-on AppTier extends agent-based data collection to applications currently not supported by Precise products. It is an SDK (Software Development Kit) used by a customer's application development team, a third-party vendor, or other professional services team to create an application Collector for new AppTiers in the Precise environment.

AppTier is the Precise abbreviation for an application tier in a Precise environment. Each AppTier contains the instances of one technology (third-party software tool) for functional and business-related views. Precise agents monitor, process, and communicate performance-related information for that tier. An installed Add-on Collector monitors new App-Tier instances and collects application-specific performance data.

The customer's application development team, third-party vendor, or other professional services team plan and develop how the Add-on AppTier collects the application-specific information.

You must perform the following actions to create an Add-on AppTier:

- Develop an Add-on AppTier installation package with files that describe the new application to the Precise environment.
- Install the Add-on AppTier plug-in installation package to a Precise environment and test it.
- Develop the Add-on AppTier Collector. The software designer must either develop the Collector for the application, or use the ARM API standard inside the application.
- Distribute the Add-on AppTier installation package and Collector to Precise users.

Two options are available for planning the Add-on AppTier:

- Design the Add-on AppTier Collector (or external Collector) that generates XML output files. Insight will process and load the data to the Precise product suite.
- Use the ARM (Application Response Measurement) standard API (Application Programming Interface), supplied by Precise Corporation. ARM is an open-source specification and API standard which defines an API library that can be used for integration to a Precise installation. The Insight SDK Collector can quickly extract the minimum information when the system is idle.

Components of the Add-on AppTier

To understand the process of introducing a new AppTier to a Precise environment, you should know how components are used to create an Add-on AppTier.

The following are major Add-on AppTier components:

- If using XML format, a user-defined Add-on AppTier Collector that collects data after installation to the monitored server.
- If using an ARM standard API, an Insight SDK Collector that collects data from the Insight ARM extension dynamic library in the monitored server.
- Insight FocalPoint in the Precise FocalPoint server
- Add-on AppTier plug-in installation package that introduces a new AppTier to the Precise FocalPoint server

About the Add-on AppTier Collector

The Add-on AppTier Collector is user-defined to collect application-specific information in XML format files. As an external Collector, the customer's home-grown application development team, third-party vendor, or other professional services team develops the Collector.

The Add-on AppTier Collector is separate from an Insight Collector. Currently, it can be developed in any programming language or script. When the XML file format is used, the Add-on AppTier Collector passes the data to the Precise Listener by writing files to a folder under the Precise installation directory. The Precise Listener also includes a Harvester. The Harvester is responsible for collecting application-specific data files and transferring the performance files from the monitored server to the Precise FocalPoint server.

About the Insight SDK Collector

The Insight SDK Collector collects application specific information using an ARM standard API. The Insight SDK Collector receives ARM API events from the monitored application in order to extract performance information. An SDK software designer needs to develop the ARM call back functions used inside the monitored application.

For more details regarding the ARM standard, refer to: <http://www.opengroup.org/management/arm/>. When using ARM SDK format, the Insight SDK Collector passes the data to the Precise Listener by writing files to a folder under the Precise installation directory. The Precise Listener also includes a Harvester. The Harvester is responsible for collecting application-specific data files and transferring the performance files from the monitored server to the Precise FocalPoint server.

About Insight FocalPoint in the Precise FocalPoint server

Insight FocalPoint (usually installed on the Precise FocalPoint server) aggregates all of the performance information that all Insight agents collect. See [How the Collectors work](#) for more information.

About the Add-on AppTier plug-in installation package

The Add-on AppTier plug-in installation package includes one or more XML files which contain metadata that describes the new Add-on AppTier to the Precise environment. The software designer defines the Add-on AppTier application entities, counters, and general application-level definitions.

The Add-on AppTier plug-in, a component of the Precise FocalPoint server, reads the plug-in installation package and builds or updates the necessary Precise metadata files. The Add-on AppTier plug-in installation package also invokes the processes needed to implement changes. For example, the installation package invokes the PMDB process to perform schema changes in the database. If needed, consult with the Precise research and development team regarding Add-on AppTier metadata development.

About Add-on AppTier metadata

Each performance record, generated by the user-defined Collector, can include the following information:

- **Entities.** They are identifiers invoked and/or processed by the monitored application, such as: Activity name, Client IP address, user or login name, program name, and others.
- **Server time measurements.** These are time-based counters that indicate the time it took for the monitored application to process the activity till completion.
Service time counters can represent various functions within the monitored application. These counters were involved in processing the activity, such as: authentication time, email delivery time, database time, and others.
- **Statistical counters.** They count additional properties for the activities, such as: activity message size and I/O Bytes/sec.
- **Executions counts.** The count the number of activities that occurred in one time slice (every 15 minutes).

How the Collectors work

AdminPoint performs the plug-in installation and defines the instances. After plug-in installation, certain screens display the new Add-on AppTier instance in AdminPoint. Both the Add-on AppTier Collector (external) and Insight SDK Collectors can start providing performance data for monitoring.

When the Add-on AppTier Collector is used, it passes the data as XML formatted files to the Precise Listener by writing files to a folder under the Precise installation directory.

The Insight ARM extension is a dynamic library within the application which implements the ARM API and transfers transaction information to the Insight SDK Collector. The Insight SDK Collector correlates the transactions and creates XML performance files.

The Precise Listener (in the monitored server) includes a Harvester that collects application-specific data files from both the Add-on AppTier Collector (external Collector) and the Insight SDK Collector file directory and transfers the performance files from the monitored server to the Insight FocalPoint. Files are loaded from the monitored (Collector) servers to the Insight FocalPoint.

The Insight FocalPoint aggregates all of the performance information that all Precise Collectors collect and stores the collected information in a centralized location. For received application-specific data files, the Insight FocalPoint runs a pre-load process to read the files and converts the data to Precise standards, such as: common time adjustments and location calculations. The pre-load process creates the PMDB load files for the performance records.

The PMDB, on the Precise FocalPoint server, stores performance records as history received from Insight FocalPoint. The data is correlated along AppTiers (allowing Cross AppTier analysis) in the PMDB. Report Manager retrieves the information from the PMDB and generates reports.

The following items display the performance data:

- StartPoint is the dashboard startup screen.
- Here you select the environment, AppTier, and technology to be viewed
- Insight is a GUI screen which associates the problem(s) with their sources
- AdminPoint is the administration tool.
- It lets you add, delete, or change AppTiers and their technologies in a Precise environment
- Report Manager is the reporting tool. It compares the actual performance metrics to an appropriate baseline and identifies significant deviations:
 - **Report Manager** displays the following types of reports:
 - **Top-n reports** identify major business activities and resource hogs
 - **Trend reports** establish and analyze long-term system behavior
 - **Exception reports** identify deviations from an established baseline, and from long-term system behavior
 - **Customized reports**

About Insight SDK Collector processing

The Add-on AppTier application data is processed before being harvested by the Precise Listener. The software designer defines the order for processing the application data.

The application data is processed as follows:

- Get the transaction status events from the Insight ARM extension dynamic library, such as transaction start and transaction end.
- Correlate the transaction events using the transaction correlation mechanism.
- Format the transaction data according to the Add-on AppTier XML format.
- Write the transaction to the output file.
- Close the output file and create the signature file at the end of each time slice (every 15 minutes).

About Insight SDK Collector information flow

The Insight SDK Collector receives information from the Insight ARM extension dynamic library by using a dedicated process for each monitored instance, called `psi_sdk_poll`. A single process (one per monitored instance) called `psi_sdk` writes SDK files under the Precise Listener directory.

Where to get more information

More information on Precise, its products, technical notes, and so on, can be found in the Release Notes document for this version.

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