

IT Squared App for Aternity and Riverbed

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Application Description

The objective of the IT Squared App for Aternity and Riverbed is to provide Splunk analytics and visualizations of the ingested AppInternals and Aternity data:

- Objects under monitoring (e.g. applications, transactions) and their topology – such as an instance running on (which servers), and which server tags are used to groups the servers
- Metrics and delays for objects under monitoring; for example counts and aggregations of normal, slow, very slow transactions
- Alerts – generated by AppInternals and sent via SNMP
- Metrics and location data for Business Activities ingested from Aternity
- Data normalization and enrichment for out of the box integration with Splunk ITSI Module for Application Performance Monitoring

Technical Details:

- The Application works with data supplied by the IT Squared / Cloud-Native Integration for Riverbed APM
- EUEM dashboards also are compatible with data supplied by the Riverbed technical add-on for Aternity
- The Application is installed on the Search Heads
- Correct configuration / editing of the Lookup Files is required (see **Lookup Instructions**)

Note: Before updating the application please save a copy of the Lookup Files. It is a requirement to add the Files back after completing the update.

Installation

Splunk Requirements:

Splunk Enterprise 6.6 or later

Installation steps:

1. Install latest version of the IT Squared App for Aternity and Riverbed from [Splunkbase](#). It has to be installed on the Search Heads only.
2. Configure Lookup Files (see **Lookup Instructions**).

The Application works with data supplied by the IT Squared / Cloud-Native Integration for Riverbed APM. EUEM dashboards also are compatible with data supplied by the Riverbed technical add-on for Aternity.

Once everything is configured, open the Application in Splunk Web UI and work with data ingested from AppInternals using Application / Transaction / Instance / Server / Server tag dashboards, and with Aternity data using EUEM dashboards.

The Application also provides 6 (six) pre-built panels globally available for embedding into your own dashboards (see **Using Pre-built Panels**).

Lookup Instructions

This section describes how to edit lookup .csv files defining mapping between various AppInternals and Aternity entities (names, ID, URL, SNMP traps, etc.).

There are several fields in various events coming from the AppInternals server that are referring to the server itself:

- “Pretty” host name for both metric and delay events.
- Host name parsed from SNMP traps.
- URL used for drilldowns.

Reliable mapping between these fields is required. This can be achieved by entering correct values into **aix_host_mapping.csv** file lookup.

Lookup File Editing

The IT Squared App for Aternity and Riverbed looks for mapping configured in the **aix_host_mapping.csv** and **aternity_mapping.csv** files, located within the App at **\$SPLUNK_HOME/etc/apps/appinternals/lookups**. It is possible to either edit the files directly from the operating system, or use the following instructions:

1. Install Lookup File Editor

Download the “[Lookup File Editor](#)” App from Splunkbase and install it alongside the IT Squared App for Aternity and Riverbed.

2. Edit the mapping

Once the Look File Editor is installed, launch it and enter “aix” or “aternity” into the “Filter by name” field. This action will return the **aix_host_mapping.csv** or **aternity_mapping.csv** link. Click on the link to edit corresponding .csv file.

Editing using the Lookup Editor is straightforward; it is possible to right-click the table for editing options. Add/Edit rows in the table and enter the relevant mappings:

- “pretty” host name, the corresponding host name for SNMP traps, and the URL for drilldowns for AppInternals
- Account Name, Account ID and the corresponding server URL for drilldowns for Aternity

Note: Make sure URLs notation is defined **without** last “/”.

Using Pre-built Panels

After the installation of the IT Squared App for Aternity and Riverbed 6 (six) pre-built panels will be globally available for embedding into dashboards.

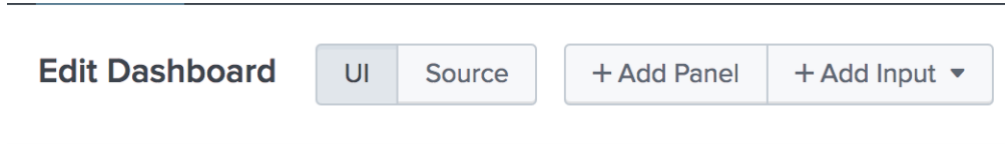
1. AppInternals_Application_Filters
2. AppInternals_Top_N_Transaction_with_worst_Server_Time
3. AppInternals_Instance_Filters
4. AppInternals_Instance_Details
5. AppInternals_Server_Filters
6. AppInternals_Server_Details

Within the Application, there are 3 (three) example dashboards that demonstrate the functionality of the pre-built panels.

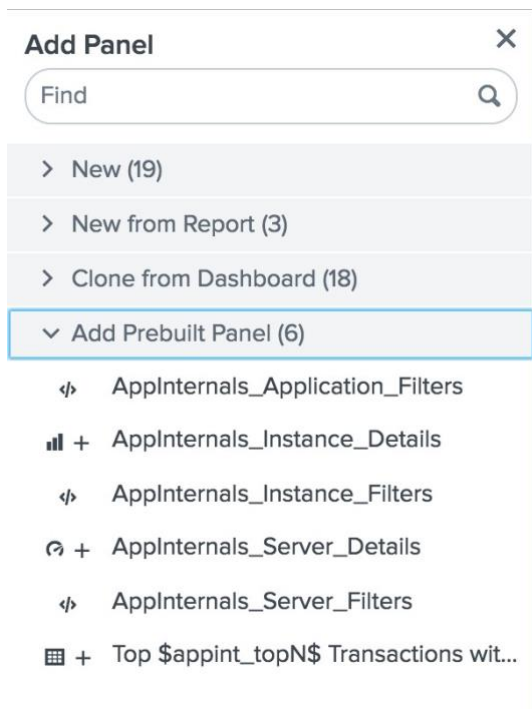
1. Transactions Panels Sample Dashboard
2. Instance Panels Sample Dashboard
3. Sever Panels Sample Dashboard

Embedding Panels

In order to embed a Panel the user should select “Add Panel” when the dashboard is in edit mode.



From the “Add Panel” fly out menu, select “Add Prebuilt Panel” and select the desired panel from the list presented.



Panel Descriptions

1. AppInternals_Application_Filters

This panel performs the following functions:

- Adds the Inputs to select the AppInternals Server and Application
- Generates required parameters and restrictions for operation of the AppInternals_Top_N_Transaction_with_worst_Server_Time panel
- Offers a range of AppInternals drilldowns for the selected application

AppInternal Server

Riverbed-onprem ▾
✕

Application

DotNet ▾
✕

Show Top N results

[<AppInternals: Application Dashboard>](#) |
 [<AppInternals: Performance Summary>](#) |
 [<AppInternals: Instance Summary>](#)

Prerequisites: Correctly configured Lookup File (See Lookup Instructions)

Input Tokens: None

Output Tokens (available for other panels):


- **ppint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_app_token** - Chosen Application
- **appint_topN** - Number of results to show
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

For a sample Dashboard demonstrating the panel, please see “**Transactions Panels Sample Dashboard**”.

2. AppInternals_Top_N_Transaction_with_worst_Server_Time

This panel performs the following functions:

- Adds the Table Top N Transactions with the worst Server Time
- Offers a range of Appinternals drilldowns for the selected transaction from the table

Top 5 Transactions with the worst Server Time				
transaction ▾	application ▾	AppInternals... ▾	Requests # ▾	Requests Trend ▾
Login	N/A	Riverbed-onprem	134,903	

Input Tokens:

- **appint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_app_token** - Chosen Application
- **appint_topN** - Number of results to show
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

Output Tokens (available for other panels):

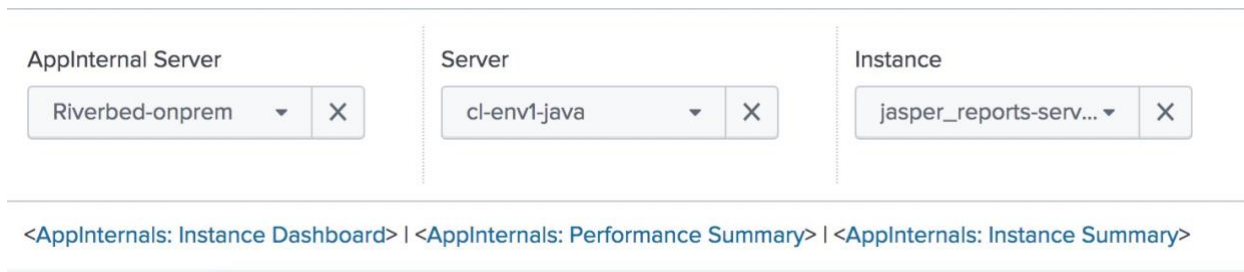
- **trname_token** - Chosen Transaction Name
- **trid_token** - Chosen Transaction Id

For a sample Dashboard demonstrating the panel, please see “**Transactions Panels Sample Dashboard**”.

3. AppInternals_Instance_Filters

This panel performs the following functions:

- Adds Inputs to selected Appinternals Server, Infrastructure Server and Instance
- Generates the necessary parameters and restrictions for the correct operation of the AppInternals_Instance_Details panel
- Offers a range of Appinternals drilldowns for the selected Instance



Prerequisites: Correctly configured Lookup File (See Lookup Instructions)

Input Tokens: None

Output Tokens (available for other panels):

- **appint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_srv_token** - Chosen infrastructure Server
- **appint_inst_token** - Chosen Instance
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

For a sample Dashboard demonstrating the panel, please see “**Instance Panels Sample Dashboard**”.

4. AppInternals_Instance_Details

- Adds **Requests #** timechart for chosen Instance & Server
- Adds **Server Performance** timechart for chosen Instance & Server
- Adds **Delay times by Category** timechart for chosen Instance & Server

- Adds **Delay times by Package** timechart for chosen Instance & Server
- Adds **Threads** timechart for chosen Instance & Server
- Adds **Garbage Collecting Time** timechart for chosen Instance & Server

Input Tokens:

- **appint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_srv_token** - Chosen infrastructure Server
- **appint_inst_token** - Chosen Instance
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

Output Tokens (available for other panels): None

For a sample Dashboard demonstrating the panel, please see “**Instance Panels Sample Dashboard**”.

5. AppInternals_Server_Filters

- Adds Inputs to selected Appinternals Server and Infrastructure Server
- Generates the necessary parameters and restrictions for the correct operation of the AppInternals_Server_Details panel
- Offers a range of Appinternals drilldowns for the selected Infrastructure Server

The screenshot shows a configuration interface for the 'AppInternals_Server_Filters' panel. It features two side-by-side dropdown menus. The first menu, labeled 'AppInternal Server', has 'Riverbed-onprem' selected. The second menu, labeled 'Server', has 'cl-env1-java' selected. Below these filters, there is a breadcrumb trail: '<AppInternals: Server Instance Summary> | <AppInternals: Server Dashboard>'. The interface is clean and uses a light blue and grey color scheme.

Prerequisites: Correctly configured Lookup File (See Lookup Instructions)

Input tokens: None

Output tokens (available for other panels):

- **appint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_srv_token** - Chosen infrastructure Server
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

For a sample Dashboard demonstrating the panel, please see “**Server Panels Sample Dashboard**”.

6. AppInternals_Server_Details

- Adds **CPU (Busy) Avg** value for chosen Infrastructure Server
- Adds **CPU Statistics** timechart for chosen Infrastructure Server
- Adds **Avg RAM Usage** value for chosen Infrastructure Server
- Adds **Memory Statistics** timechart for chosen Infrastructure Server
- Adds **Disk I/O Utilization** timechart for chosen Infrastructure Server
- Adds **Network Utilization** timechart for chosen Infrastructure Server

Input tokens:

- **appint_host_token** - Chosen AppInternals Server
- **aixurl_token** - URL of chosen AppInternals Server
- **appint_srv_token** - Chosen infrastructure Server
- **tokDurationAix** - Dashboard earliest time converted to AppInternals format
- **tokEarliestAix** - Dashboard latest time converted to AppInternals format

Output tokens (available for other panels): None

For a sample Dashboard demonstrating the panel, please see “**Server Panels Sample Dashboard**”.

Integration with Splunk ITSI Module for Application Performance Monitoring

The IT Squared App for Aternity and Riverbed adds configuration out of the box for data enrichment and normalization for integration with Splunk ITSI deployment, in particular Splunk ITSI Module for Application Performance Monitoring.

If you are using Splunk ITSI, the **itoad_admin** role needs access to all indexes with data that you want to monitor in ITSI. You have to add the following configuration change on each search head running Splunk IT Service Intelligence. If you have a search head cluster, perform these steps on one node and the Splunk platform replicates the configuration change to all cluster nodes.

1. Go to **Settings > Access controls**, then click **Roles**.
2. Click **itoad_admin** to edit it.
3. Scroll down to **Indexes searched by default**.
4. Click on the index that contain data ingested from AppInternals to move it into the list of indexes searched by default.
5. Click **Save**.

Defining AppInternals to Aternity Mapping

Transactions ingested from AppInternals can be mapped to Business Activities coming from Aternity. One AppInternals transaction can be mapped to one or many Business Activities.

On AppInternals side we are operating with **application_id + transaction_id** pairs, and on Aternity side with **application_name + activity_name** pairs. In current Application version mapping should be defined with the help of Aternity_Mapping calculated field.

To add/change mapping follow these steps:

1. Go to **Web UI -> Settings -> Fields -> Calculated fields** and create Aternity_Mapping field (or edit if it already exists).
2. If you are creating the field, enter **aix_metric** as sourcetype and **Aternity_Mapping** as field name.
3. Add/Edit **eval** expression according to the following notation. We are using operator **case** to define multiple individual mappings. In the example below **blue mapping** defines **one-to-one** relationship, and **green mapping** defines **one-to-many** relationship. There is also **1=1** final expression catching all unmapped pairs and setting Aternity_Mapping as **null** for them.

An example:

```
case(application_id=2 AND transaction_id=44, "(YourApp)-(Home)", application_id=2 AND transaction_id=55, mvappend("(YourApp)-(Securities Landing)", "(SAP)-(Search Account)"), 1=1, null)
```

Destination app

Apply to

Name *
Name of the field whose value will be calculated

Eval expression *
A valid eval expression, e.g. x + 3

Note: In the future Aternity_Mapping field would be defined during data ingestion,

Defining Business Processes for Aternity Data

Contextually the IT Squared App for Aternity and Riverbed Business Process is a set of Business Activities that, once completed, accomplish an organizational goal. In other words you define Business Process as a collection of Application + Business Activities pairs ingested from Aternity.

The Application is looking on tags for Business Process definition. Tags in Splunk allow assigning names to specific **single** field and value combinations, so to accommodate Application + Business Activities pairs Event Types are used.

To add/change Business Process definitions follow these steps:

1. Go to **Web UI -> Settings -> Event types**
2. Create/Edit Business Process eventtype definition
3. Enter a unique Eventtype name. We suggest the following notation for future management convenience: BP-(Business Process Name)
4. Add/Edit **search string** defining which Application + Business Activity pairs belong to this Business Process. Make sure **sourcetype** is **aternity***. Below is search string example:

```
(sourcetype=aternity* (APPLICATION_NAME="Microsoft Outlook" AND (ACTIVITY_NAME="Send Mail To Outbox" OR ACTIVITY_NAME="Open Mail" OR ACTIVITY_NAME="Preview Mail")) OR (APPLICATION_NAME="SAP" AND (ACTIVITY_NAME="Search Account" OR ACTIVITY_NAME="Create Account" OR ACTIVITY_NAME="Save Record")))
```

5. Add/Edit Tag(s) for this event type. You cannot define tags with spaces in Splunk, so substitute them with underscores. Business Process tag notation is **Business_Process_Name_biz**. Note that **_biz** suffix is mandatory, it is being used to filter Business Process definition tags from any other tags set up by other Splunk applications.

Destination App	<input type="text" value="riverbed"/>
Name *	<input type="text" value="BP-(Business Process Example)"/>
Search string *	<input type="text" value='(sourcetype=aternity* (APPLICATION_NAME="Microsoft Outlook" AND (ACTIVITY_NAME="Send Mail To Outbox" OR ACTIVITY_NAME="Open Mail" OR ACTIVITY_NAME="Preview Mail")) OR (APPLICATION_NAME="SAP" AND (ACTIVITY_NAME="Search Account" OR ACTIVITY_NAME="Create Account" OR ACTIVITY_NAME="Save Record")))'/>
Tag(s)	<input type="text" value="Business_Process_Example_biz"/>
	<small>Enter a comma-separated list of tags.</small>
Color	<input type="text" value="none"/>
Priority	<input type="text" value="1 (Highest)"/>
	<small>Highest priority shows up first in a result.</small>

Troubleshooting FAQ

1. If the Application dashboards show no search results:
 - Make sure that your user role has access to indexes with data ingested from AppInternals and/or Aternity and they are included into the list of indexes searched by default – check this in role settings.
 - Make sure that index with data ingested from AppInternals holds results for the time frame selected on dashboards – check this with direct search on index.
2. If Business Processes and Activities dashboard ends up with empty panels, make sure that Business Processes are correctly defined for the Aternity Data (see **Defining Business Processes for Aternity Data**).
3. If drilldowns to EUEM to APM dashboards end up with empty panels, make sure that **Aternity_Mapping** calculated field containing AppInternals App/TX mapping to one or many Aternity App/Business Activities is defined correctly (see **Defining AppInternals to Aternity Mapping**).
4. If drilldowns from the Application dashboards do not pass selected time frame into AppInternals, it means that your time format is different from default. Contact us and we will change it according to your Splunk settings.