webMethods Optimize for Infrastructure

Guide for Enterprise Transaction Systems

Version 9.7

October 2014

This document applies to webMethods Optimize for Infrastructure Version 9.7.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Table of Contents

Preface

This documentation explains how to monitor information from Software AG's enterprise products with webMethods Optimize. It is complemental to the guides listed below under *Additional Information*.

Note: The term "Enterprise Transaction Systems" comprises Software AG's enterprise products such as Adabas, ApplinX, EntireX and Natural.

This documentation is organized under the following headings:

Release Notes	Overview of the new and changed features in this version.
Introduction	Overview of the required environment and of the products that can be monitored with webMethods Optimize.
Installation	Describes the prerequisites and provides installation information for infrastructure monitoring.
Setting Up Infrastructure Monitoring	Product-specific configuration of the environments that are used for monitoring the enterprise product lines. Set up the Natural RPC servers for the monitoring of Adabas, Natural and Entire Net-Work. Customize the default settings of the Adabas and Natural Data Collectors in the Adabas/Natural Data Collector profile. Test program for reviewing the data provided by the Adabas and Natural Data Collectors. Configure and test the Infrastructure Data Collector. How to add assets and monitor components. How to define a common action for all rules. How to trace the Adabas and Natural Data Collectors. How to trace the enterprise products and the EntireX communication in the Infrastructure Data Collector.
MashApps	Information on the available MashApps for infrastructure monitoring.
Conventions and Definitions for KPIs and Built-In Rules	Naming conventions for the KPIs, possible aggregation types and dimensions that are used for infrastructure monitoring. General information on automatically monitored KPIs and on the built-in rules.
KPI Definitions for Infrastructure Monitoring	Describes the dimensions, KPIs and built-in rules monitored by the Infrastructure Data Collector.
Optimize API for Natural	How to enable Natural applications to send business and event data to Optimize via the Web Service Data Collector.
Frequently Asked Questions	Answers to frequently asked questions.

Additional Information

How to get started with webMethods Optimize is not in the scope of this documentation. It is required that you read the webMethods Optimize documentation prior to reading this

documentation. Basic information (such as concepts or handling of Optimize) is not repeated in this documentation. This information can be found in the following Optimize guides:

- *Configuring BAM*
- *Administering webMethods Optimize*
- *webMethods Optimize User's Guide*

If it was installed, the webMethods Optimize documentation is available in the */_documentation* directory. By default, this directory is located in the main installation directory.

For detailed information on the Software AG enterprise products that can be monitored with webMethods Optimize, see ***http://documentation.softwareag.com/*** (Empower login required).

I Release Notes

1 Release Notes

As of version 9.7, application monitoring is done with EntireX. webMethods Optimize is no longer used for this purpose. Therefore, all references to application monitoring have been removed from this documentation. Application monitoring is now described in the EntireX documentation.

II Introduction

2 Introduction

General Information

Optimize enables you to monitor all Software AG component resources in real time. The Optimize solution for infrastructure monitoring makes use of the following components: Infrastructure Data Collector, Web Service Data Collector, and Optimize.

The Infrastructure Data Collector monitors the system and operational data associated with Software AG runtime components (such as Integration Servers, Broker Servers, Brokers, adapters, Adabas, ApplinX, Natural, Com-plete, EntireX as well as associated Adabas and Natural subproducts) and reports the status of these components with Optimize for Infrastructure. You use Optimize for Infrastructure to monitor the status of individual managed objects as well as the overall status of your system.

Optimize implementations perform the following main functions:

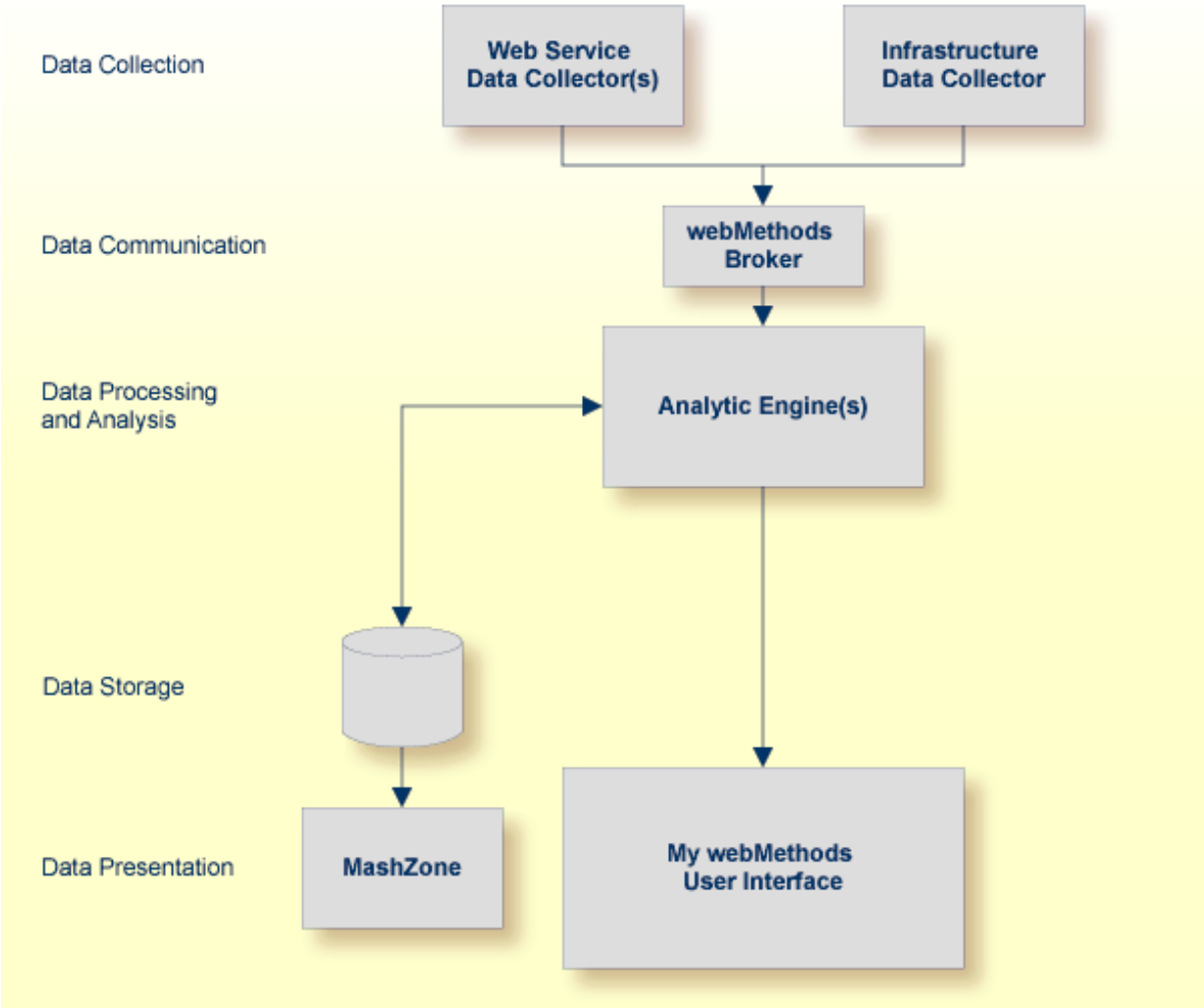
- data collection
- data communication
- data processing and analysis
- data storage
- data presentation

Each subcomponent can reside on its own separate host, or all subcomponents can reside on the same host.

The existing Optimize product was extended for monitoring Software AG's enterprise products. In Optimize, no special handling is required for the enterprise products: the installation is done with the Optimize installation and you can use the My webMethods user interface or MashZone as the presentation layer.

A typical Optimize implementation for monitoring the infrastructure data of Software AG's enterprise products using the Infrastructure Data Collector is shown in the graphic below.

Optimize also includes a Web Service Data Collector which can be used to display data in the form of custom KPIs. A Natural API is provided for simple usage of this Web Service Data Collector from Natural applications.



Infrastructure Monitoring

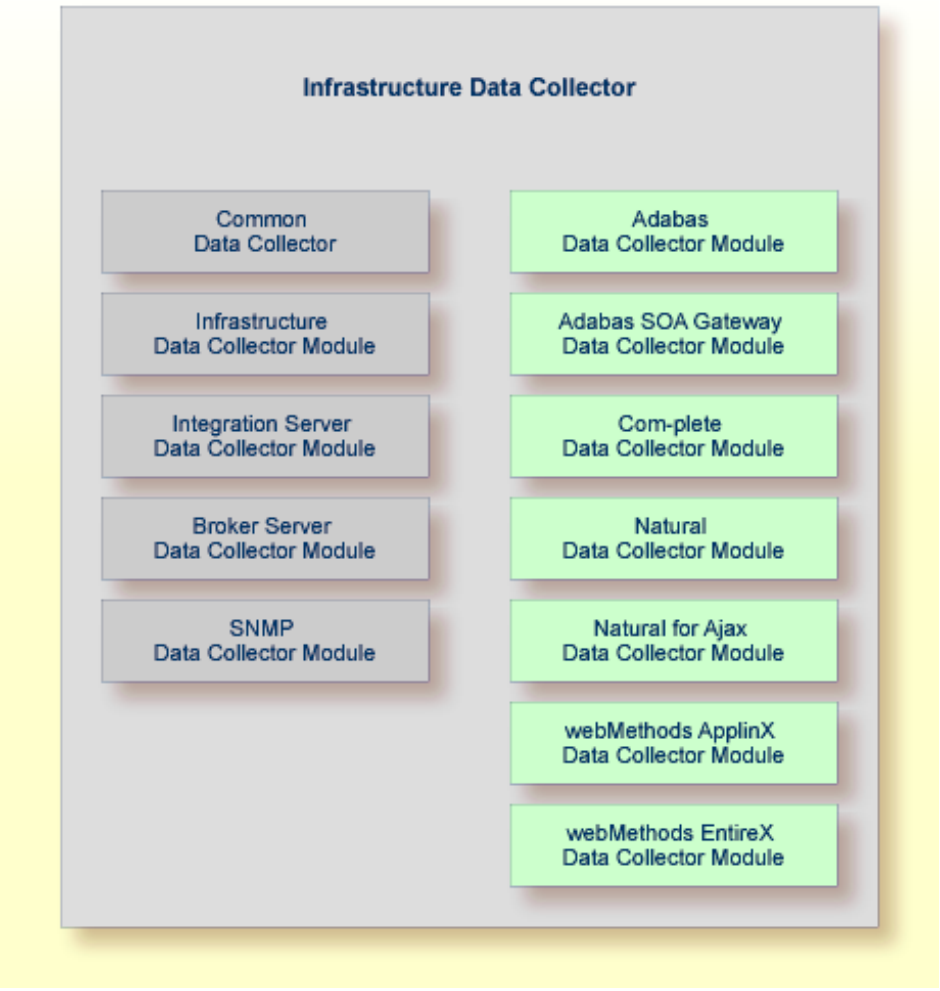
With infrastructure monitoring, Software AG's enterprise products such as Adabas, ApplinX, EntireX or Natural are polled for infrastructure monitoring data. The Infrastructure Data Collector initiates the polling in regular intervals and receives the monitoring data which is then stored in the data storage. You can find out, for example, the number of calls to a database in the interval, the number of calls to EntireX Broker in the interval, the number of logons denied in Natural Security, and many more. Diagrams showing the values of the KPIs (key performance indicators) over time are visualized in the My webMethods user interface.

The Infrastructure Data Collector contains the following additional packages which, if enabled, allow the collection of data from Software AG's enterprise products:

- AdabasDC

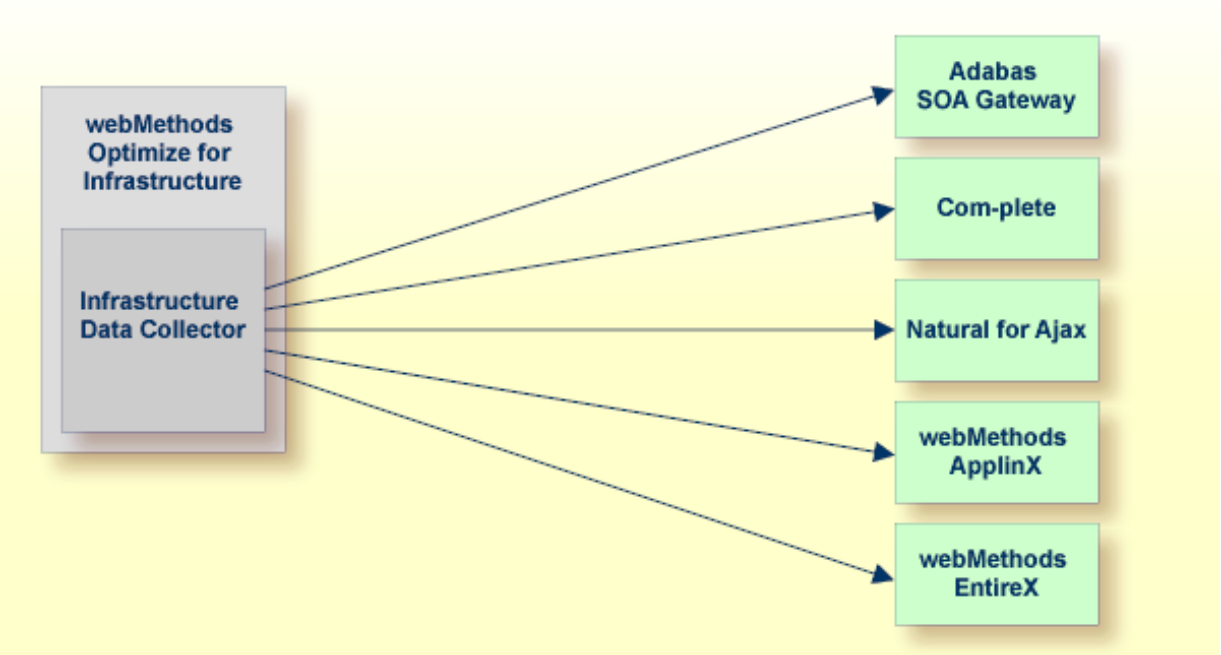
- SOAGatewayDC
- ApplinXDC
- CompleteDC
- EntireXDC
- NaturalDC
- NaturalAjaxDC

The available packages are illustrated in the graphic below.



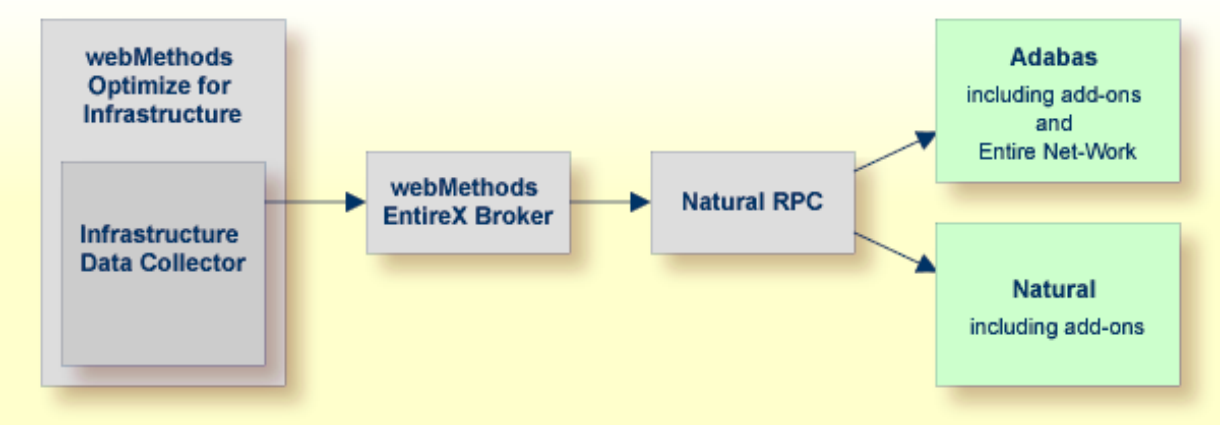
For monitoring Software AG's enterprise products and components, specific environments have to be set up. In principle, there are two types of environments:

- Some products (Adabas SOA Gateway, Com-plete, Natural for Ajax, webMethods ApplinX and webMethods EntireX) can be monitored directly. Besides Optimize for Infrastructure and the monitored product, no further infrastructure is necessary.



- Other products (Adabas, Natural and Entire Net-Work) are monitored using a Natural RPC server. In addition to Optimize for Infrastructure and the monitored product, Natural, an EntireX Broker and Broker stubs have to be available.

  One or more Natural RPC servers have to be set up for the diverse environments to be monitored. The products and components that can be monitored depend on the RPC server type. For example, a batch server monitors all global Natural components; a CICS server monitors in general only local environment-specific Natural components.



For further information, see *Setting Up Infrastructure Monitoring*.

Supported Products

The Software AG enterprise products listed below can be monitored if they are installed in your environment.

Mainframe

- Adabas
- Adabas Caching Facility
- Adabas Delta Save
- Adabas Event Replicator
- Adabas Fastpath
- Adabas Review
- Adabas SAF Security
- Adabas SOA Gateway
- Adabas Transaction Manager
- Com-plete
- Entire Net-Work
- Entire Operations
- Entire Output Management
- Entire System Server
- Natural [1]
- Natural Advanced Facilities
- Natural Connection [2]
- Natural Development Server
- Natural for Ajax
- Natural for DB2 [2]
- Natural for VSAM [2]
- Natural Review
- Natural RPC [2]
- Natural SAF Security
- Natural Security
- Natural SQL Gateway [2]

- Natural Web I/O Interface (server)
- webMethods ApplinX
- webMethods EntireX
- zIIP Enabler for Natural [2]

Notes:

[1] Some Natural components such as Natural for Adabas require the Natural Optimize Monitor Buffer Pool for the monitoring.

[2] This product requires the Natural Optimize Monitor Buffer Pool for the monitoring.

UNIX and Windows

- Adabas
- Adabas SOA Gateway
- Entire Operations (UNIX only)
- Entire Output Management (UNIX only)
- Natural
- Natural for Ajax
- Natural Security
- webMethods ApplinX
- webMethods EntireX

Coexistence with Other Software AG Products

Optimize will not replace any of Software AG's existing monitoring tools. All monitoring components in the different products have special assignments and will be developed further, in parallel to Optimize.

Special monitors such as Review will not be replaced by Optimize. In the future, they will be enhanced in such a way that they deliver data to Optimize. Review Natural Monitor has already been adapted and will deliver additional value to Optimize, if available.

III Installation

An environment for monitoring the infrastructure data of Software AG's enterprise products with webMethods consists of several components that are packaged and installed differently. webMethods Optimize installation is required as the base. For the specific environment requirements for infrastructure monitoring, refer to corresponding topic below.

The information provided in this part is organized under the following headings:

Installing webMethods Optimize

Installation for Infrastructure Monitoring

3 Installing webMethods Optimize

The prerequisite version for the functionality described in this documentation is the following:

- webMethods Optimize 9.0 or above.

webMethods Optimize can be downloaded and installed using the Software AG Installer. If webMethods Optimize has not yet been installed, see the *Installing webMethods Products* guide.

Supported platforms:

- Windows
- UNIX (AIX, HP-UX, Solaris)
- Linux (SUSE, Red Hat)

4 Installation for Infrastructure Monitoring

General Information

For infrastructure monitoring of Software AG's enterprise products with webMethods Optimize for Infrastructure, specific components are required and specific prerequisites must be met. This is described in the topics below.

Prerequisites for the Monitoring Platform

The following components are required on the monitoring platform:

1. webMethods Optimize for Infrastructure.
2. Optional, only if an EntireX Broker is not yet available in the customer environment: EntireX Broker.

   An existing EntireX Broker can be used instead.
3. Optional, only if the **Optimize API for Natural** is to be used: Web Service Data Collector of Optimize.

Note: A Broker is required to monitor Adabas, Natural and related products. The Broker attribute `MAX-MESSAGE-LENGTH` should be set to greater than or equal to 60000.

After download and installation of webMethods Optimize, use the Central Configuration tool to select the metadata definition for the Software AG enterprise product groups which are to be monitored. You can load the following metadata packages (the name in parentheses is the related package name):

- Adabas Definitions (AdabasDC). This comprises the Adabas-related monitoring objects and Entire Net-Work for mainframes.
- Adabas SOA Gateway Definitions (SOAGatewayDC).
- ApplinX Definitions (ApplinXDC).
- Com-plete Definitions (CompleteDC).
- EntireX Definitions (EntireXDC).
- Natural Definitions (NaturalDC). This comprises the Natural-related monitoring objects.
- Natural Ajax Definitions (NaturalAjaxDC).

For detailed information on the Central Configuration tool, see the *Configuring BAM* guide.

Prerequisites for the Monitored Platform

The following components are required on the monitored platform:

1. Monitored product/component.
2. EntireX Mini Runtime (Broker stubs).

Notes:

1. For monitoring the Adabas product group and Entire Net-Work, Natural is required.
2. EntireX Broker stubs have to be available to set up the Natural RPC server.

Supported mainframe platforms:

- z/OS
- z/VSE
- BS2000/OSD

Supported Open Systems platforms:

- Windows Server
- AIX
- HP-UX
- Solaris
- SUSE Linux
- Red Hat Linux

Installing the EntireX Broker (Optional)

If an EntireX Broker is not available, an EntireX Broker for the Natural RPC communication must be installed. The Broker can be downloaded and installed using the Software AG Installer 9, for the same platform on which Optimize for Infrastructure is installed.

For installation details, see the EntireX installation documentation.

Installing the EntireX Broker Stubs (EntireX Mini Runtime)

If EntireX is not available on one of the monitored platforms, the EntireX Broker stubs (EntireX Mini Runtime) must be installed.

Mainframe

Depending on the platform to be monitored, the Broker stubs for z/OS, z/VSE or BS2000/OSD need to be installed from the EntireX package which is part of the delivery.

There is no need to set up EntireX via SMA. Only the library needs to be installed. You can simply generate the JCL for downloading the library from the Tape function of the SMA main menu.

It is recommended to set up the Natural RPC environment for using the TCP transport method and loading the stubs dynamically. For further information, see ***Preparing Your Application to Perform Broker Calls***.

UNIX and Windows

For UNIX and Windows platforms, the EntireX Mini Runtime can be downloaded and installed from Software AG's Empower site at ***https://empower.softwareag.com/***. For configuration details, see the readme file which is provided with the mini runtime.

Prerequisites for the Monitored Products

For the monitored products, no specific installation steps are required. For the installation or updates, refer to the particular documentation. In general, all versions of a product which are supported by Software AG can be monitored by Optimize. If not all versions of a product are supported by Optimize, the version *which is at least required* is listed in the topics below. Some products have additional prerequisites which are also described.

- Adabas - Mainframe
- Adabas - UNIX and Windows
- Adabas Client Add-On Products
- Adabas Event Replicator
- Adabas Review
- Adabas SOA Gateway
- Com-plete
- Entire Net-Work - Mainframe
- Entire Operations - Mainframe and UNIX
- Entire Output Management - Mainframe and UNIX
- Entire System Server

- Natural - Mainframe
- Natural - UNIX and Windows
- Natural Development Server - Mainframe
- Natural for Ajax
- Natural Web I/O Interface (Server) - Mainframe
- webMethods ApplinX
- webMethods EntireX

Adabas - Mainframe

- For Adabas Version 8.1.4, the following Zaps must be applied:
  - z/OS: AO814007, AO814008, AO814009 and AO814011.
  - z/VSE: AD814010.
- For Adabas Version 8.2.2, the following Zaps must be applied:
  - z/OS: AO822011, AU822011, AU822018.
  - z/VSE: AU822011, AU822018.
  - BS2000/OSD: AB822011, AB822023, AU822011, AU822018.
- If Adabas is to be monitored under BS2000/OSD:
  - For the generation of the Natural front end, use the setting `ADACOM=ADABAS`.
  - Set the following NATPARM parameter:

    ```
    CSTATIC=(...,ADATMZ,...)
    ```

  - Use the following job card for the Natural startup job deck:

    ```
    /SET-FILE-LINK  DDLIB,$PRD.ADA822.MOD
    ```

    Or if the old ISP format is used:

    ```
    /FILE    $PRD.ADA822.MOD,DDLIB
    ```

  - The `ADALNK` and `SSFB2C` should not be bound to the Natural front end. Bind the Natural front end with `ADAUSER` and `TMZLOD` instead. For example:

    ```
    INCLUDE ADAUSER ,$PRD.ADA822.MOD
    INCLUDE TMZLOD  ,$PRD.ADA822.MOD
    ```

  - For Adabas Version 8.2.3, copy the element `TMZLOD(R)` in `ADA823.BS2LX01` into the Adabas library.
- When running in a clustered environment, Entire Net-Work must be installed. Otherwise, the monitoring data from the cluster nuclei cannot be collected for the database totals.

- For Adabas or Entire Net-Work monitoring, link the `AOSASM` module to the Natural nucleus of the RPC server.

Adabas - UNIX and Windows

- Only databases of Adabas Version 6.1 or above can be monitored.
- One of the following is required on the monitored platform. The databases need not be upgraded.
  - Adabas Version 6.1.10 Fix 4 and the Adabas Client Package Version 6.2.1.
  - Adabas Version 6.3.
- On UNIX, the following is required:
  - `$ADADIR/$ADAVERS/lib` must be defined in `LD_LIBRARY_PATH`. It is not set automatically.
  - For Adabas Client Version 6.3.1.8, the module *libsagovo5.so* has to be copied from `$ADADIR/$ADAVERS/lib` into `$ACLDIR/ACLVERS/lib`.

Notes:

1. For monitoring Adabas 6.1 and 6.3, Natural Version 6.3.13 is required.
2. Adabas Version 6.2 is currently not supported.

Adabas Client Add-On Products

- Client add-on product (such as Adabas Fastpath or Adabas Transaction Manager) Version 8.1.2 with the latest service packs.
- If Adabas client add-on products are to be monitored, Natural Security must be configured in such a way that the Natural RPC server has access to the library `SYSMW`*`nnn`*, where *`nnn`* is the Adabas version.

Adabas Event Replicator

- Adabas Event Replicator Version 3.2.1
- The following Zaps must be applied:
  - Adabas Event Replicator Version 3.2.1: AZ321021 and AAZ321022.

Adabas Review

- Adabas Review Version 4.6.1.
- The following Zaps must be applied:
  - AO813059, AO814029, AO822027.

Adabas SOA Gateway

- Adabas SOA Gateway Version 2.4.1.

Com-plete

- Com-plete Version 6.7.
- For monitoring Com-plete: install the Com-plete HTTP server.

Entire Net-Work - Mainframe

- Entire Net-Work Version 6.2.1.
- The following Zaps must be applied:
  - Entire Net-Work Version 6.2.1: WY621001 and WM621006.
  - Entire Net-Work Version 6.2.2: WY622001.
  - Entire Net-Work Version 6.3.1: WY631001.

Note: The Entire Net-Work Zaps must be applied if a password different from `ALL` is to be set.

Entire Operations - Mainframe and UNIX

- Entire Operations Version 5.3.1 Cumulative Fix 3.

Entire Output Management - Mainframe and UNIX

- Entire Output Management Version 3.3.1.

Entire System Server

- Entire System Server Version 3.5.1.

  If Entire System Server Version 3.4.1 is installed, the following Zap must be applied:

  - XC72033 for z/OS
  - XC72040 for z/VSE

  This is regardless of whether you plan to monitor Entire System Server nodes or not. Otherwise, it may happen that Entire System Server nodes are included in the list of Adabas servers.

Natural - Mainframe

- Natural Version 8.2.3 Fix 2.

  The following Zaps must be applied:

  - NA93074
  - NA93075

Note: For a list of products monitored through the Natural Optimize Monitor Buffer Pool, see ***Natural > Mainframe*** in the section *Product-Specific Environment Configuration*.

Natural - UNIX and Windows

- Natural Version 6.3.13 for UNIX.
- Natural Version 6.3.13 for Windows.

Natural Development Server - Mainframe

One of the following Natural Development Server versions:

- z/OS: Natural Development Server Version 2.2.7.
- z/VSE: Natural Development Server Version 2.2.7 Fix 3.
- BS2000/OSD: Natural Development Server Version 2.2.7 Fix 6 or Natural Development Server Version 8.2.2 Fix 2; and Smarts Version 2.7.2 PL20.

Natural for Ajax

- Natural for Ajax Version 8.2.1.

Natural Web I/O Interface (Server) - Mainframe

One of the following Natural Web I/O Interface versions:

- z/OS: Natural Web I/O Interface Version 1.1.6.
- z/VSE: Natural Web I/O Interface Version 1.1.6 Fix 3.
- BS2000/OSD: Natural Web I/O Interface Version 1.1.6 Fix 6 or Natural Web I/O Interface Version 8.2.2 Fix 2; and Smarts Version 2.7.2 PL20.

webMethods ApplinX

- All supported versions.

webMethods EntireX

- All supported versions.

Installation Verification

1. Configure your products and your environment as described in the *Configuration* part of this documentation.
2. For products that are monitored using a Natural RPC server: Start a Natural session, log on to `SYSEDM`, invoke the Natural program `MENU` and discover all objects. You should get a list of all Natural and Adabas objects which can be monitored from within this Natural session. For detailed information, see *Testing the Adabas and Natural Data Collectors* later in this documentation.
3. For products that are monitored directly: Use a browser to access the system on which your Infrastructure Data Collector is installed and check the result. For detailed information, see *Testing the Infrastructure Data Collector* later in this documentation.
4. Define assets in the webMethods discovery function and perform a discovery. The result "completed" means that the product could be called successfully.
5. Go to the **Monitored Components** page and select the objects and KPIs for monitoring.

Note: For detailed information on how to add assets and how to monitor components, see the *Administering webMethods Optimize* guide.

IV Setting Up Infrastructure Monitoring

The information provided in this part is organized under the following headings:

5 Product-Specific Environment Configuration

General Information

This document describes the product-specific configuration of the environments that are used for monitoring the enterprise product lines.

Any product or associated subproduct can only be monitored if the required version is installed in your environment. For information on the required versions, see *Prerequisites*.

In general, a component discovered by a specific RPC server will be monitored by the same RPC server. Any restrictions regarding RPC server settings described in here apply in the same way for discovery as for monitoring.

A single Natural RPC server can be used to monitor components of both Adabas and Natural by specifying the same RPC server in the Adabas asset definition and in the Natural asset definition in the Optimize discovery. For monitoring multiple instances of some components, it may be necessary to set up multiple RPC servers. For example, if Natural Review is to be monitored in multiple CICS environments, an RPC server must run in each CICS. The sections below describe for each product which RPC servers are required for the monitoring.

For each RPC server monitoring Adabas or Natural components, one instance of the "Adabas Collector" or "Natural Collector" product component is automatically created. The collector component monitors the monitoring itself. The "Collector State" KPI indicates whether the collector has been reached. If it is "offline", the connection from Optimize to the "Adabas Collector" or "Natural Collector" must be checked and re-established. Therefore, it is strongly recommended that you keep an eye on the corresponding rules (Adabas or Natural Collector not reached).

The following table lists all monitored product components and the asset type to which the component belongs.

Product Component	Asset Type
Adabas Caching Facility	Adabas
Adabas Delta Save	Adabas
Adabas Event Replicator	Adabas
Adabas Event Replicator - Destination	Adabas
Adabas Event Replicator - Input Queue	Adabas
Adabas Event Replicator - Subscription	Adabas
Adabas Fastpath	Adabas
Adabas Fastpath - Database	Adabas
Adabas Review	Adabas
Adabas SAF Security	Adabas
Adabas Server (Mainframe)	Adabas

Product Component	Asset Type
Adabas Server (UNIX and Windows)	Adabas
Adabas SOA Gateway	Adabas SOA Gateway
Adabas SOA Gateway Operation	Adabas SOA Gateway
Adabas Transaction Manager	Adabas
Com-plete	Com-plete
Data Collector - Adabas	Adabas
Data Collector - Natural	Natural
Entire Net-Work	Adabas
Entire Operations	Natural
Entire Operations - Task	Natural
Entire Output Management	Natural
Entire Output Management - Monitor Task	Natural
Entire Output Management - Printer	Natural
Entire System Server	Natural
Natural Advanced Facilities - Spool	Natural
Natural Advanced Facilities - Printer	Natural
Natural Buffer Pool (Mainframe)	Natural
Natural Buffer Pool (UNIX and Windows)	Natural
Natural CICS	Natural
Natural CICS - Thread Group	Natural
Natural Connection	Natural
Natural Development Server	Natural
Natural for Adabas	Natural
Natural for Ajax - Server	Natural Ajax
Natural for Ajax - Web Context	Natural Ajax
Natural for DB2	Natural
Natural for VSAM	Natural
Natural Nucleus	Natural
Natural Optimize	Natural
Natural Review	Natural
Natural Roll Server	Natural
Natural RPC	Natural
Natural SAF Security	Natural
Natural Security	Natural
Natural SQL Gateway	Natural
Natural Swap Pool	Natural

Product Component	Asset Type
Natural Web I/O Interface - Server	Natural
Software AG Editor	Natural
webMethods ApplinX - Server	ApplinX
webMethods ApplinX - Application	ApplinX
webMethods ApplinX - Service	ApplinX
webMethods EntireX - Broker	EntireX
webMethods EntireX - Server	EntireX
zIIP Enabler for Natural	Natural

In the following sections, the products are listed according to their asset types.

Adabas

The following topics are covered below:

Mainframe

A Natural RPC server monitors the databases and associated subproducts, the Fastpath buffer and Entire Net-Work nodes of one SVC entry of one LPAR. It is recommended to use a batch RPC server for this task.

The SVC number is derived from the database that is used for the `FNAT` of the current Natural session. The name of the LPAR is the one in which this Natural session actually runs.

The following components are monitored:

- Adabas Server
- Adabas Caching Facility
- Adabas Delta Save
- Adabas Event Replicator
  - Destination
  - Input Queue
  - Subscription
- Adabas Fastpath
  - Database

- Adabas Review
- Adabas SAF Security
- Adabas Transaction Manager
- Entire Net-Work
- Adabas Data Collector

If an implicit discovery is to be performed, the load library of Adabas Version 8.1.4 or higher is required on the monitored platform, and the latest `ADATMZ` delivered in the LX library `ADA814LX02`. There is no need to upgrade the databases.

Implicit discovery of Adabas Review requires `ADATMZ` and `ADALNKR` of Adabas Version 8.2.3.

Implicit discovery on BS2000/OSD requires Adabas Version 8.2.2.

If the Adabas Version 8.1.4 (or higher) load library (or the latest `ADATMZ` and `ADALNKR` members) is not present, the objects that are to be monitored can be explicitly specified in the **Adabas/Natural Data Collector profile**.

To get a higher resolution for the KPI **CPU Time** of an Adabas server, apply AN822285, AN823161, AN824095 or AN825030 for the appropriate Adabas version.

UNIX and Windows

One Natural RPC server monitors one Adabas environment (*ADABAS.INI* file). All Adabas servers of Adabas Version 6.1 and above can be monitored if they were created with the workbench. It is required that the Adabas server is online during the discovery process.

The following Adabas components are monitored:

- Adabas Server
- Adabas Data Collector

Monitoring of the following Adabas Server space KPIs requires at least Natural Version 6.3.14 and at least Adabas Version 6.3.1 with hotfix 10:

Space - ASSO Used
Space - ASSO Used (Large Blocks)
Space - ASSO Used (Small Blocks)
Space - DATA Used
Space - DATA Used Largest

Adabas SOA Gateway

Monitoring requires no specific environment. There is a one-to-one correlation between the asset and the Adabas SOA Gateway.

The following components are monitored:

- Adabas SOA Gateway
  - Operation

Important: For monitoring the Adabas SOA Gateway, the **Server Stats collection** option must be set to **On** in the SOA Gateway Control Center. You find this option in the **Properties** view for the selected server, on the **Statistics** tab.

See also *Infrastructure Data Collector Configuration*.

ApplinX

Monitoring requires no specific environment. There is a one-to-one correlation between the asset and the ApplinX server.

The following components are monitored:

- ApplinX - Server
  - Application
  - Service

Com-plete

Monitoring requires no specific environment. There is a one-to-one correlation between the asset and Com-plete.

The following component is monitored:

- Com-plete

See also *Infrastructure Data Collector Configuration*.

EntireX

Monitoring requires no specific environment. There is a one-to-one correlation between the asset and one EntireX Broker.

The following components are monitored:

- EntireX - Broker
  - Server

See also *Infrastructure Data Collector Configuration*.

Natural

The products and components listed below are monitored by the Natural Data Collector. Therefore, you have to set up a Natural asset if it has not already been set up for another Natural component.

The following topics are covered:

- Natural Security (Mainframe, UNIX and Windows)
- Natural SQL Gateway (Mainframe)
- Natural Swap Pool (Mainframe)
- Software AG Editor (Mainframe)
- zIIP Enabler for Natural (Mainframe)

Mainframe

With Natural 8.2.1 on z/OS, Natural 8.2.3 on z/VSE and Natural 8.2.4 on BS2000/OSD, the Natural Optimize Monitor Buffer Pool has been introduced, which collects statistical data of Natural components. The Natural Optimize Monitor Buffer Pool is able to monitor all component instances running in one LPAR. Therefore, only one batch RPC server per LPAR is required for all of these components.

For information on how to start the Natural Optimize Monitor Buffer Pool, see *Optimize Monitor Buffer Pool* in the *Operations* documentation which is part of the Natural for Mainframes documentation. The data collection of the Natural Optimize Monitor Buffer Pool is activated with the Natural parameter `O4I=ON`.

The following products and components do not use the Natural Optimize Monitor Buffer Pool for data collection and are monitored without it:

- Natural
  - Natural Roll Server
- Natural Advanced Facilities
  - Spool
  - Printer
- Natural Review
- Natural SAF Security
- Entire Operations
  - Task
- Entire Output Management
  - Monitor task
  - Printer
- Entire System Server
- Natural Data Collector

The following products and components can only be monitored with the Natural Optimize Monitor Buffer Pool:

- Natural

  - Natural for Adabas
  - Natural Nucleus
  - Natural Optimize
- Natural Connection
- Natural for DB2
- Natural for VSAM
- Natural RPC
- Natural SQL Gateway
- zIIP Enabler for Natural

The following products and components are monitored with the Natural Optimize Monitor Buffer Pool if the used Natural version supports this feature in general. If the Natural Optimize Monitor Buffer Pool is not activated or in error, the component will neither be discovered nor monitored. If the Natural version does not support the Natural Optimize Monitor Buffer Pool, the products and components are monitored without it.

- Natural
  - Natural buffer pool
  - Natural swap pool
  - Software AG Editor
- Natural CICS
  - Thread group
- Natural Development Server
- Natural Security
- Natural Web I/O Interface (server)

Note: In Optimize, the Software AG Editor is referred to as Natural Editor, and the zIIP Enabler for Natural is referred to as Natural zIIP.

Mainframe with Natural Optimize Monitor Buffer Pool

Natural Review is the only product requiring a CICS RPC server. All other Natural products and components are monitored by default by a batch RPC server only. This is because a CICS RPC server would be unable to monitor the components when CICS is not active.

For test environments, a parameter is available which allows monitoring all Natural components from a CICS RPC server. See *Adabas/Natural Data Collector Profile* for more information.

Mainframe without Natural Optimize Monitor Buffer Pool

Natural local components (such as local buffer pools) can only be monitored by an RPC server in the same environment. Natural global components (such as global buffer pools) are monitored by default by a batch RPC server only. This is because a CICS RPC server would be unable to monitor the components when CICS is not active.

For test environments, a parameter is available which allows monitoring Natural global components from a CICS RPC server. See *Adabas/Natural Data Collector Profile* for more information.

A CICS Natural RPC server monitors the following products and local components:

- Natural
  - Local Natural buffer pool
  - Natural swap pool
  - Software AG Editor (using a local editor buffer)
- Natural CICS
  - Thread group
- Natural Review
- Natural Data Collector

A batch Natural RPC server monitors the following products and components:

- Natural
  - Natural buffer pool
  - Natural Roll Server
  - Natural swap pool (BS2000/OSD)
  - Software AG Editor
- Natural Advanced Facilities
  - Spool
  - Printer
- Natural Development Server
- Natural SAF Security
- Natural Security
- Natural Web I/O Interface (server)
- Entire Operations
  - Task
- Entire Output Management

- Monitor task
- Printer
- Entire System Server
- Natural Data Collector

Note: In Optimize, the Software AG Editor is referred to as Natural Editor.

UNIX and Windows

The following Natural products and components are monitored:

- Natural
  - Natural buffer pool
- Natural Security
- Entire Operations
  - Task
- Entire Output Management
  - Monitor task
  - Printer
- Natural Data Collector

Data Collector - Natural (Mainframe, UNIX and Windows)

The Natural Data Collector is a Natural-written component of Optimize for Infrastructure. It collects the Natural-related data on the server side. A Natural Collector instance is automatically created for each RPC server monitoring a Natural asset.

Entire Operations (Mainframe and UNIX)

Monitoring Entire Operations requires a batch RPC server. In general, the Entire Operations system file (`LFILE 216`) used by the Natural RPC server is monitored. Additional system files are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Entire Output Management (Mainframe and UNIX)

Monitoring Entire Output Management requires a batch RPC server. In general, the Entire Output Management system file (`LFILE 91`) used by the Natural RPC server is monitored. Additional system files are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Entire System Server (Mainframe)

Monitoring Entire System Server requires a batch RPC server. The Natural RPC server must be started with the settings `ASIZE > 0, DB=(PROCESS,148)` and the Natural nucleus must be linked with `NATGWNPR`.

The implicit discovery of Entire System Server nodes requires the member `ADATMZ`. For more information on this member, see the information provided for **Adabas**. Additional Entire System Server nodes are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Note: Some Entire System Server KPIs are not available under BS2000/OSD.

Natural Advanced Facilities (Mainframe)

Monitoring Natural Advanced Facilities requires a batch RPC server. In general, the `FSPOOL` system file used by the Natural RPC server is monitored. Additional `FSPOOL` system files are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Monitoring a spool file or any printer defined in the spool file requires that the user statistics of the spool file are activated. The user statistics can be activated in the Natural Spool Administration in the following way:

1. Enter the Natural system command `SYSPOOL`.
2. Enter "30" to invoke the function "Spool File Properties".
3. Enter "5" to invoke the function "Set Spool Option".
4. Enter "1" to invoke "Spool File Options".

If the user statistics are not activated, the KPI "Natural Spool User Statistics State" indicates "offline". In this case, no other KPIs are provided and printers cannot be monitored.

Monitoring a specific printer defined in the spool file requires that the printer statistics are activated. The printer statistics can be activated in the Natural Spool Administration in the following way:

1. Enter the Natural system command `SYSPOOL`.
2. Enter "31" to invoke the function "Objects".
3. Enter "4" to invoke the function "Printer".
4. Specify the printer name or enter an asterisk (*) to select a printer from a list.

5. Set "Statistics" to "Y".

If the printer statistics are not activated, the KPI "Printer Statistics Activated" indicates "offline". In this case, only static KPIs are provided. Especially the number of lines/pages/reports printed cannot be monitored.

Natural Buffer Pool (Mainframe)

With Natural Optimize Monitor Buffer Pool

Monitoring a Natural buffer pool requires a batch RPC server. It monitors all local and global buffer pools.

Without Natural Optimize Monitor Buffer Pool

A local Natural buffer pool will be monitored only if the Natural RPC server is running with the local Natural buffer pool.

Monitoring a global Natural buffer pool requires a batch RPC server. It monitors all global Natural buffer pools of the Natural subsystem (identified by the Natural profile parameter `SUBSID`) in which this RPC server is running.

If multiple local Natural buffer pools or if global buffer pools from multiple Natural subsystems have to be monitored, multiple RPC servers have to be started.

Natural Buffer Pool (UNIX and Windows)

For each particular Natural buffer pool to be monitored, a Natural RPC server running with this buffer pool has to be started.

Note: The same interface could be used to monitor a read-only buffer pool, however, not all returned values may be meaningful. Therefore, it is not recommended to monitor a read-only buffer pool.

Natural CICS (Mainframe)

With Natural Optimize Monitor Buffer Pool

Monitoring Natural CICS requires a batch RPC server. It monitors all Natural CICS components in all CICS systems.

Without Natural Optimize Monitor Buffer Pool

Natural CICS with its threads can be monitored if the RPC server is running with the same Natural CICS system directory. If multiple Natural CICS systems or multiple CICS systems have to be monitored, multiple RPC servers must be set up.

Natural Connection (Mainframe)

Natural Connection can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural Development Server and Natural Web I/O Interface (Mainframe)

With Natural Optimize Monitor Buffer Pool

Monitoring an NDV or NWO server requires a batch RPC server. The HTTP monitor is not required for monitoring, and the HTTP monitor state KPIs ("NdvHttpMonitorState" and "NwoHttpMonitorState") are obsolete.

Without Natural Optimize Monitor Buffer Pool

Monitoring an NDV or NWO server requires a batch RPC server.

The Natural Data Collector calls an HTTP monitor to access the NDV or NWO servers. The data for Optimize for Infrastructure will be collected by the servers themselves. The HTTP monitor must be configured at the installation of an NDV or NWO server. See the corresponding configuration descriptions in the Natural Development Server documentation and in the Natural Web I/O Interface documentation (the Natural Web I/O Interface documentation is part of the Natural documentation).

An NDV or NWO server is only monitored if the host name and the port number of an HTTP monitor is specified in the **Adabas/Natural Data Collector profile**. Multiple NDV or NWO servers can be monitored from one Natural RPC server.

The RPC server must be configured so that it is able to perform an HTTP request (see *Installation for REQUEST DOCUMENT* and *PARSE XML Statements* in the installation documentation for Natural for Mainframes).

The monitoring of the Natural Development Server CPU time on BS2000/OSD requires SMARTS BS2000 V272 PL20 or above.

Natural for Adabas (Mainframe)

Natural for Adabas can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural for DB2 (Mainframe)

Natural for DB2 can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural for VSAM (Mainframe)

Natural for VSAM can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural Nucleus (Mainframe)

The Natural Nucleus component monitors the Natural Unicode and code page support (ICU) and the Natural `PARSE XML` and `REQUEST DOCUMENT` statement usage.

A Natural nucleus can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural Optimize (Mainframe)

The Natural Optimize component monitors the Natural Optimize Monitor Buffer Pool. If the Natural Optimize Monitor Buffer Pool is deactivated or in error, the Natural products and components using the Natural Optimize Monitor Buffer Pool cannot be monitored and the Natural Optimize state KPI ("NatOptState") indicates "offline". It is therefore strongly recommended to keep an eye on the corresponding rule ("Natural Optimize Not Active") in every environment in which the Natural Optimize Monitor Buffer Pool is available. A batch RPC server is required for the monitoring of Natural Optimize.

Natural Review (Mainframe)

Monitoring Natural Review requires a CICS RPC server. It monitors the Natural CICS-environmental information collected by Natural Review. Natural Review collects runtime statistics about all CICS Natural transactions started with `RDCSIZE` greater than or equal to 2. If multiple CICS systems have to be monitored, multiple RPC servers must be set up.

Natural Roll Server (Mainframe)

Monitoring a Natural Roll Server requires a batch RPC server. It monitors all Natural Roll Servers.

Natural RPC (Mainframe)

Natural RPC can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural SAF Security (Mainframe)

Monitoring Natural SAF Security requires a batch RPC server.

The implicit discovery of Natural SAF Security requires the member `ADATMZ`. For more information on this member, see the information provided for **Adabas**. Additional Natural SAF Security instances are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Natural Security (Mainframe, UNIX and Windows)

With Natural Optimize Monitor Buffer Pool

Monitoring Natural Security requires a batch RPC server. It monitors all Natural Security `FSEC` system files.

Without Natural Optimize Monitor Buffer Pool

Monitoring Natural Security requires a batch RPC server. It monitors its current `FSEC` system file. Additional `FSEC` system files are monitored if they are specified in the **Adabas/Natural Data Collector profile**.

Natural Security collects statistical data for Optimize. The monitoring of this statistical data requires that the Natural Security statistics are activated. Optimize administrates the Natural Security statistics automatically at the monitoring call. If the statistics are found to be disabled or expired at a monitoring call, they are switched on for one day. The KPI "Natural Security State" is set to "online" but no other KPIs are provided with this first monitoring call. If the current time is close to the expiration time (2 hours or less), the expiration time is prolonged by a week. Note that an Optimize discovery does not change the Natural statistics state or expiration date.

Natural SQL Gateway (Mainframe)

Natural SQL Gateway can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural Swap Pool (Mainframe)

With Natural Optimize Monitor Buffer Pool

Monitoring a Natural swap pool requires a batch RPC server. It monitors all Natural swap pools.

Without Natural Optimize Monitor Buffer Pool

- **z/OS and z/VSE**
  A Natural swap pool can be monitored if the RPC server is running with the same Natural CICS system directory as the Natural swap pool. If multiple Natural swap pools have to be monitored, multiple RPC servers must be set up.
- **BS2000/OSD**
  Monitoring the Natural swap pool requires a batch RPC server.

  For the monitoring of a global swap pool, an RPC server of its own has to be set up for each swap pool that is to be monitored. For the installation of these servers, the following applies:

  - For the generation of the Natural RPC batch server, the front-end part of the Natural batch driver (macro `NAMBS2`) has to be assembled with the new keyword parameter `KPI=SWP`.
  - For the generation of the module `BS2STUB` (front-end part of the RPC batch server), you have to define the necessary common memory pools, including the swap pool to be monitored.

  The following example shows the `ADDON` entry for the global swap pool:

```
        ADDON NAME=SWP42XGA,                                          -
              TYPE=SWP,                                               -
              STAT=GLOBAL
```

  Note: For swapping of its own threads, the RPC server is not able to use the global swap pool which is to be monitored. Therefore, do not specify `KPI=SWP` together with `SERVER=YES`.

  If multiple Natural swap pools have to be monitored, multiple RPC servers must be set up.

Software AG Editor (Mainframe)

Note: In Optimize, the Software AG Editor is referred to as Natural Editor.

With Natural Optimize Monitor Buffer Pool

Monitoring Software AG Editor requires a batch RPC server. It monitors all local and global Software AG Editor buffer pools.

Without Natural Optimize Monitor Buffer Pool

A local Software AG Editor buffer pool will be monitored only if the Natural RPC server is running with the local Software AG Editor buffer pool.

Monitoring a global Software AG Editor buffer pool requires a batch RPC server. It monitors all global Software AG Editor buffer pools of the Natural subsystem (identified by the Natural profile parameter `SUBSID`) in which this RPC server is running.

If multiple local Software AG Editor buffer pools or if global editor buffer pools from multiple Natural subsystems have to be monitored, multiple RPC servers have to be started.

zIIP Enabler for Natural (Mainframe)

Note: In Optimize, the zIIP Enabler for Natural is referred to as Natural zIIP.

The zIIP Enabler for Natural can only be monitored with the Natural Optimize Monitor Buffer Pool. A batch RPC server is required for the monitoring.

Natural Ajax

For the monitoring of Natural for Ajax, the Natural for Ajax web service for Optimize for Infrastructure must be installed. For detailed information, see the Natural for Ajax documentation.

There is a one-to-one correlation between the asset and Natural for Ajax on an application server or servlet container.

The following components are monitored:

- Natural for Ajax - Server
  - Web context

6 Preparing Your Application to Perform Broker Calls

Broker Stubs under z/OS with Natural

For using the Broker stubs with Natural in a batch or CICS environment, the stub module BKIMBTSO or CICSETB respectively is loaded dynamically. The Broker stubs require the IBM Language Environment runtime library to be installed.

BKIMBTSO for Natural in z/OS Batch and TSO

1. Add the EntireX load library (*EXXvrs.LOAD*) to your STEPLIB concatenation when running the Natural RPC server.
2. Start the Natural RPC server with the following profile parameters:

```
RCA=(BROKER),RCALIAS=(BROKER,BKIMBTSO)
```

For example:

```
//STEP EXEC PGM=NATBATvs,PARM=('RCA=(BROKER),RCALIAS=(BROKER,BKIMBTSO)')
```

This will dynamically load BKIMBTSO and each Broker call will use this stub. Loading the broker stub BKIMBTSO dynamically will work even if NATETB23 has already been statically linked to Natural. You do not need to link the Broker stub BKIMBTSO statically to Natural.

CICSETB for Natural in CICS

1. Add the following definition to the CICS CSD cluster:

```
* ---------------------------------------------------------------- *
* CSD Definition for Broker Stubs
* ---------------------------------------------------------------- *
  DEFINE PROGRAM(CICSETB) GROUP(EXX)
    DESCRIPTION(CICS NETWORK BROKER STUB)
    LANGUAGE(ASSEMBLER)

  DEFINE PROGRAM(CICSETB2) GROUP(EXX)
    DESCRIPTION(CICS TCP BROKER STUB)
    LANGUAGE(LE370)

  DEFINE PROGRAM(EXAGLUE) GROUP(EXX)
    DESCRIPTION(CICS GLUE PGM FOR TCP STUB)
    LANGUAGE(LE370)

DEFINE PROGRAM(EXAMEM) GROUP(EXX)
  DESCRIPTION(CICS STUB SESSION HANDLER)
  LANGUAGE(ASSEMBLER)
```

2. Add the EntireX load library (*EXXvrs.LOAD*) to both the DFHRPL chain and the STEPLIB chain of the CICS started tasks JCL.
3. Start the Natural RPC server task with the following profile parameters:

```
RCA=(BROKER),RCALIAS=(BROKER,CICSETB)
```

For example:

```
N426 RCA=(BROKER),RCALIAS=(BROKER,CICSETB)
```

This will dynamically load CICSETB and each Broker call will use this stub.

Broker Stubs under z/VSE with Natural

For using the Broker stubs with Natural in a batch or CICS environment, the stub module BKIMB or BKIMC respectively is loaded dynamically. The Broker stubs require the IBM Language Environment to be installed.

BKIMB for Natural in z/VSE Batch

1. Include the EntireX sublibrary (*EXXvrs*) into the LIBDEF search chain when running the Natural RPC server.
2. Start the Natural RPC server with the following profile parameters:

```
RCA=(BROKER),RCALIAS=(BROKER,BKIMB)
```

BKIMC for Natural in z/VSE CICS

1. To enable CICS to find the various programs, include the EntireX sublibrary (*EXXvrs*) into the CICS LIBDEF search chain and add following definitions to your CICS CSD file:

```
DEFINE PROGRAM(BKIMC) GROUP(EXX) DESCRIPTION(ENTIREX BROKER STUB INTERFACE) ↩
LANGUAGE(ASSEMBLER)
DEFINE PROGRAM(BROKERC) GROUP(EXX) DESCRIPTION(ENTIREX BROKER STUB) LANGUAGE(C)
```

2. Start the Natural RPC server with the following profile parameters:

```
RCA=(BROKER),RCALIAS=(BROKER,BKIMC)
```

For example:

```
N426 RCA=(BROKER),RCALIAS=(BROKER,BKIMC)
```

This will dynamically load `BKIMC` and each Broker call will use this stub.

Broker Stubs under BS2000/OSD with Natural

For using the Broker stubs with Natural in a batch or TIAM environment, the stub module `BROKER` is loaded dynamically.

1. Add the following assignments to the Natural startup procedure:

```
/ADD-FILE-LINK LINK-NAME=BLSLIB00,FILE-NAME=<EXXvrs.LIB>
/ADD-FILE-LINK LINK-NAME=ETBLIB,FILE-NAME=<EXXvrs.LIB>
```

2. Start the Natural RPC server with the following profile parameters:

```
RCA=(BROKER),RCALIAS=(BROKER,BROKER)
```

Verifying the Installation of the Broker Stub under Natural

1. Log on to the Natural library `SYSRPC` and enter `MENU`.
2. Invoke Service Directory Maintenance (`SM`) from the main menu.
3. Define the node and server, and save your changes.
4. Invoke Server Command Execution (`XC`) from the main menu for the node and server defined in the previous step.
5. Ping the server with the command `PI`.

   Your environment and the Broker stub are installed correctly if you receive one of the following:

   - An answer from the RPC server.
   - `00070007 Service not registered`, meaning that the broker is up but the RPC server is down.
   - `02150148 Connection error`, meaning that the broker and the RPC server are down.

7 RPC Server Configuration and Start

General Information

The monitoring of an Adabas or Natural asset type requires that one or more Natural RPC servers have been set up. The products and product components monitored by the Adabas and Natural asset types are listed in ***Product-Specific Environment Configuration***.

It is recommended that these RPC servers are used for Optimize only.

If the RPC server is running under Natural Security, the library `SYSEDM` must be defined in Natural Security.

CICS

1. The RPC server configuration under CICS assumes that you use the RPC server front-end. For the installation of the RPC server front-end, refer to *Installing the Natural CICS Interface* which is part of the installation documentation that is provided with Natural for Mainframes.
2. Create the Natural profile *rpc-profile* using `SYSPARM` with the following parameters:

```
RPC=(
RPCSIZE=64,
MAXBUFF=30,
ACIVERS=9,
SERVER=ON,
SRVNAME=name-of-RPC-server,
SRVNODE=broker-ID,
SRVUSER=user-ID-for-RPC-server-registry,
TRACE=(2,E),
),
PRINT=((10),AM=CICS,TYPE=TD,DEST=CICS-destination-for-RPC-server-trace),
TTYPE=ASYL,INTENS=1,EJ=OFF,TMODEL=5,
SENDER=CICS-destination-for-primary-output,
RCA=BROKER,RCALIAS=(BROKER,CICS-broker-stub),
RDCSIZE=0,
STACK=(LOGON SYSEDM)
```

3. If the Natural Optimize Monitor Buffer Pool is not supported by the used Natural version and Natural Development Server or Natural Web I/O Interface is to be monitored, add parameters to support the `REQUEST DOCUMENT` statement:

```
XML=(ON,RDOC=ON,PARSE=ON,...
```

For further information, see the description of the Natural profile parameter `XML` in the *Parameter Reference* which is part of the Natural for Mainframes documentation.

4. Define *`CICS-destination-for-RPC-server-trace`* and *`CICS-destination-for-primary-output`* as extrapartitioned TD queues to CICS using CEDA.

   Recommended extra partition parameter settings:

   ```
   RECORDSize = 136
   BLOCKSize = 140
   RECORDFormat = Variable
   BLOCKFormat = Unblocked
   Printcontrol = blank
   ```

5. Define *`CICS-broker-stub`*:
   - Under z/OS, set *`CICS-broker-stub`* to "CICSETB".
   - Under z/VSE, set *`CICS-broker-stub`* to "BKIMC".
6. Alternative 1 - Start the RPC server from an online Natural session:

   ```
   LOGON SYSRPC
   ```

   ```
   GLOBALS IA=$
   ```

   ```
   STARTSFE SFE-transaction-ID NCI-interface-nucleus-name PROFILE=rpc-profile
   ```

7. Alternative 2 - Start the RPC server from PLTPI:
   - Create the copy *`rpcfrnp`* of `XNCIFRNP` and add the following Natural profile parameters to `DYNPARMS`:

     ```
     TTYPE=ASYL,INTENS=1,IA=$,STACK=(LOGON SYSRPC;
     STARTSFE transaction-ID NCI-interface-nucleus-name PROFILE=rpc-profile;FIN)
     ```

   - Assemble and link *`rpcfrnp`* with `ENTRY XNCIFRNP`.
   - Define *`rpcfrnp`* to CICS using CEDA.
   - Add *`rpcfrnp`* to the PLTPI.
   - Assemble and link the PLTPI.
   - Restart CICS.

Mainframe Batch

1. Create a Natural profile using SYSPARM or a CMPRMIN data set with the following parameters:

```
RPC=(
RPCSIZE=64,
MAXBUFF=30,
ACIVERS=9,
SERVER=ON,
SRVNAME=name-of-RPC-server,
SRVNODE=broker-ID,
SRVUSER=user-ID-for-RPC-server-registry,
TRACE=(2,E),
),
PRINT=((10),AM=STD,DEST=CMPRT10),EJ=OFF,
RCA=BROKER,RCALIAS=(BROKER,BKIMBTSO),
RDCSIZE=0,
STACK=(LOGON SYSEDM)
```

2. If the Natural Optimize Monitor Buffer Pool is not supported by the used Natural version and Natural Development Server or Natural Web I/O Interface is to be monitored, add parameters to support the REQUEST DOCUMENT statement:

```
XML=(ON,RDOC=ON,PARSE=ON,...
```

   For further information, see the description of the Natural profile parameter XML in the *Parameter Reference* which is part of the Natural for Mainframes documentation.

3. Submit a standard Natural batch session and assign CMPRMIN, CMPRINT and CMPRT10.

UNIX and Windows

1. Create the Natural parameter file *rpc-parm* using the Configuration Utility with the following profile parameters:

   - **Client/Server > Remote Procedure Call > RPC (General)**
     Set MAXBUFF to 30.

     Set ACIVERS to 9.
   - **Client/Server > Remote Procedure Call > RPC (Server)**
     Set SERVER to ON.

     Set SRVNAME to *name-of-RPC-server*.

     Set SRVNODE to *broker-ID*.

Set SRVUSER to *user-ID-for-RPC-server-registry*.

Set TRACE to the following values: **Trace level** to 2 and **Trace on error** to ON.

- **Natural Execution Configuration > Program Loading and Deletion**
  Set STACK to LOGON SYSEDM.
- **Natural Execution Configuration > Device/Report Assignments > Report Assignments**
  Assign report 10 to LPT10.
- **Natural Execution Configuration > Device/Report Assignments > Device Assignments**
  Assign the RPC server trace file to LPT10.

2. Start a Natural session:

```
natural batchmode parm=rpc-parm cmprint=primary-output-file &
```

8 Adabas/Natural Data Collector Profile

About the Profile

Optimize for Infrastructure offers an option to customize the default settings of the Adabas and Natural Data Collectors: the Adabas/Natural Data Collector profile. The profile is a Natural text member named PROFILES. A template profile named PROFILE is provided in the Natural system library SYSEDM. The profile settings only affect the monitoring of the products which are monitored by the Adabas and Natural assets.

Discovering Components

In general, Optimize discovers component instances automatically and requires no specification in the profile. For some components, however, the automatic discovery is restricted or not possible at all. For these components, instances can be specified in the profile.

For an Optimize discovery request, the Adabas and Natural Data Collectors return all automatically discovered component instances and the instances specified in the profile. If a component instance is discovered multiple times (for example, automatically and via the specification in the profile), the Data Collector discards the doubles.

If no instance is specified in the profile for a specific component or if the profile is not allocated, the Adabas and Natural Data Collectors return by default the components which can be discovered automatically.

Automatic Discovery with ADATMZ on the Mainframe

If ADATMZ and ADALNKR of the Adabas version mentioned in the table below are accessed from the Natural RPC environment, several components are discovered automatically and need not be specified in the profile. These components are:

Component	Required Adabas Version
Adabas Server	8.1.4 or above
Adabas Cluster	8.1.4 or above
Adabas Event Replicator	8.1.4 or above
Adabas Fastpath	8.1.4 or above
Adabas Review	8.2.3 or above
Adabas Transaction Manager	8.1.4 or above
Entire Net-Work	8.1.4 or above
Entire System Server	8.1.4 or above
Natural SAF Security	8.1.4 or above

For further information on ADATMZ, see ***Adabas*** in the section *Product-Specific Environment Configuration*.

Automatic Discovery with Natural Optimize Monitor Buffer Pool

If the used Natural version supports the Natural Optimize Monitor Buffer Pool, the following products are discovered automatically and the corresponding profile entries are obsolete:

- Natural Development Server
- Natural Security
- Natural Web I/O Interface (server)

Tracing the Adabas and Natural Data Collectors

A trace level can be specified in the Adabas/Natural Data Collector profile which overrides the Optimize trace level setting.

Identification of Natural System Files

Using the `FILE-NAME` parameter, you can specify whether the file name is to be added to instances which are identified by a Natural system file.

Activating, Modifying and Deactivating the Profile

You have to start a Natural session in the environment in which the products to be monitored are running, and you have to use the same `FNAT` Natural system file as the RPC server.

To activate profile settings

1 Save the text member `PROFILE` under the name `PROFILES` in the library `SYSEDM`.

2 In the text member `PROFILES`, set the required parameters (see ***Editing the Profile*** for detailed information) and save the modifications.

3 Run an Optimize discovery against the environment.

To modify profile settings

1 Edit the text member `PROFILES` in the library `SYSEDM`.

2 Set the required parameters (see ***Editing the Profile*** for detailed information) and save the modifications.

3 Run an Optimize discovery against the environment.

To deactivate profile settings

1 Delete the text member PROFILES from the library SYSEDM.

2 Run an Optimize discovery against the environment.

If the PROFILES member is not available in the library SYSEDM, the default values are used.

Editing the Profile

This section provides general information on editing the text member PROFILES.

Each line is limited to 90 bytes. Empty lines or lines that start with an asterisk (*) are considered as comments and are therefore ignored. Blanks in front of an entry and any entries after an inline comment indicator (/*) are also ignored. However, you must not put a blank at the beginning of a PARM line.

The parameter entries for a component are entered in a parameter block. A parameter block starts with the following entry:

```
PARM=parm
```

where *parm* is any of the following values:

Value of *parm*	Component	Mainframe	UNIX and Windows
ADABAS	Adabas Server	yes	yes
ADABAS-CLUSTER	Adabas Cluster	yes	no
ADABAS-FILES	Adabas Files	yes	no
ADAREV	Adabas Review	yes	no
ATM	Adabas Transaction Manager	yes	no
FASTPATH	Adabas Fastpath	yes	no
FILE-NAME	File name for Natural system files	yes	yes
NCI-DISCOVER	Natural Online Environment Discovery	yes	no
NDV-NWO	Natural Development Server and Natural Web I/O Interface Server	yes	no
NETWORK	Entire Net-Work (Mainframe)	yes	no
NOM	Entire Output Management	yes	yes
NOP	Entire Operations	yes	yes
NPR	Entire System Server	yes	no
NSAF	Natural SAF Security	yes	no

Value of *parm*	Component	Mainframe	UNIX and Windows
NSC	Natural Security	yes	yes
PLEXNAME	All mainframe components	yes	no
REPLICATOR	Adabas Event Replicator	yes	no
SPOOL	Natural Spool	yes	no
TRACE	Collector Trace	yes	yes

The above table also shows whether a parameter is available on the mainframe or on UNIX and Windows.

A parameter block consists of any number (can be zero) of lines, each containing one parameter entry. The layout of the parameter entries depends on the component (see ***Parameter Specification*** for further information).

A parameter block ends at the start of the next block (PARM=*parm*) or at the end of the member.

If a parameter block is not specified for a component or if a PARM line is specified but no parameter entry, the default value is used.

Each parameter block should be specified only once in the PROFILES member. If the same parameter block is specified multiple times, all parameter blocks but the first parameter block are ignored.

Parameter Specification

This section describes the individual parameter entries for the components monitored by the Adabas and Natural Data Collectors. It covers the following topics:

- Adabas Server
- Adabas Cluster
- Adabas Files
- Adabas Event Replicator
- Adabas Fastpath
- Adabas Review
- Adabas Transaction Manager
- Collector Trace
- Entire Net-Work (Mainframe)
- Entire System Server
- Entire Operations
- Entire Output Management
- File Name for Natural System Files
- Natural Development Server and Natural Web I/O Interface Server
- Natural Online Environment Discovery

- Natural SAF Security
- Natural Security
- Natural Spool (Natural Advanced Facilities)
- Sysplex Environment

Adabas Server

- **Mainframe**
  In general, Adabas servers on the mainframe are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

  Note: Adabas cluster databases are specified with the Adabas Cluster component. Do not include Adabas cluster databases into the Adabas Server component.

- **UNIX and Windows**
  In general, Adabas servers on UNIX and Windows are discovered automatically and need not be specified in the profile.

Syntax

```
PARM=ADABAS
ddddd
```

where *ddddd* is the database ID (DBID) of an Adabas server (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=ADABAS
10
1424
```

Adabas Cluster

In general, Adabas clusters are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=ADABAS-CLUSTER
ddddd.nnnnn
```

where *ddddd* is the database ID (DBID) of an Adabas cluster (1 to 5 digits) and *nnnnn* is the ID of an Adabas nucleus (NUCID) in an Adabas cluster (1 to 5 digits). The values must be separated by a dot (.).

Default

Automatic discovery only.

Example

```
PARM=ADABAS-CLUSTER
50009.50901
97.318
```

Adabas Files

The Adabas file KPIs are part of the Adabas Server event map. The monitoring of these KPIs can be controlled by the keyword settings of the ADABAS-FILES parameter in the profile.

Critical File Extent

The directory entries for the Adabas file extents (AC, AC2, NI, UI and DATA) share a common space in the FCB. This space is part of one ASSO block and is therefore limited. For Optimize, a file becomes critical if the percentage of the used space exceeds the value given with the EXTENT keyword. If this is the case, the file should be reorganized to reduce the number of extents. Note that it cannot precisely be calculated how many extents fit into the free space because ASSO (AC, AC2, NI and UI) and DATA extents are of different sizes.

Critical ISN Range

If an Adabas file is defined with ISNSIZE=3, a maximum of 16.777.215 ISNs is available. If ISNSIZE=4, Adabas permits up to 4.294.967.294 records. For performance reasons, Optimize does not watch the number of records loaded. Instead, it watches the highest used ISN (TOPISN). The range of used ISNs runs from MINISN to TOPISN. The total ISN range starts at MINISN and ends at:

- MAXISN if NOACEXTENSION is set for the file,
- 4.294.967.294 for ISNSIZE=4,
- MINISN + 16.777.214 for ISNSIZE=3 (the highest possible ISN is 4.294.967.294).

For Optimize, a file becomes critical if the percentage of used ISNs exceeds the value given with the `ISNRANGE` keyword.

If the ISN range is critical for a file with `ISNSIZE=3`, the file should be upgraded to `ISNSIZE=4`.

If the ISN range is critical for a file with `ISNSIZE=4`, the data of the file should be rearranged.

Note that if a file is defined with `ISNREUSE`, a lot of ISNs might still be free although the `TOPISN` is high.

If a file is defined with `USERISN=YES` and ISNs are not used from the bottom up, the `TOPISN` might not reflect the ISN usage at all. Files with `USERISN=YES` are only monitored if the keyword `USERISN=YES` is specified in the profile.

For expanded files, only the last file in the chain is checked for a critical ISN range.

Collection Time

The collection of Adabas file data can be time-consuming. By default, file data is therefore collected only once a day. However, it is also possible to collect file data once an hour or always by specifying the `COLLTIME` keyword. If file data is to be collected once a day, this is performed at midnight by default. If desired, you can specify another time (for example, a time when there is low load on the machine).

The last collection time is saved in the RPC server environment. If you restart the RPC server, it may happen that file data is collected again.

Long List Information

If the `LIST LONG` keyword is specified, the "*List" KPIs contain the file number and the percentage value of each critical file. Depending on the KPI, additional information is added behind the percentage value.

For the KPI "AdabasFilesCriticalExtentsList", the following additional information is added:

```
nx
```

where *n* is the number of allocated extents. Example:

```
12:80%97x,31:91%112x
```

In the above example, file 12 uses 80 percent of the space for the file extent entries with 97 extents allocated. File 31 uses 91 percent of the space for the file extent entries with 112 extents allocated.

For the KPI "AdabasFilesCriticalIsnRangeList", the following additional information is added:

N	If NOACEXTENSION is set for the file.
R	If ISNREUSE=YES is set for the file.
S4	If ISNSIZE=4 is set for the file.
U	If USERISN=YES is set for the file.
X	If the file is an expanded file and the last file in the chain.

Example:

```
12:93%NUX,31:52%RS4
```

In the above example, file 12 uses 93 percent of the ISN range, the file is defined with NOACEXTENSION, ISNREUSE=NO, ISNSIZE=3 and USERISN=YES. It is the last file in a chain of expanded files.

File 31 in the above example uses 52% of the ISN range, the file is not defined with NOACEXTENSION, but with ISNREUSE=YES, ISNSIZE=4 and USERISN=NO. It is no expanded file.

Syntax

```
PARM=ADABAS-FILES
keyword entry
```

Each line starts with a keyword followed by one or more entries. The keyword and all entries are separated by blanks.

The following keywords are available:

<table>
<tr><th>Keyword</th><th>Description</th><th>Affected KPIs</th></tr>
<tr><td>EXTENT</td><td>The threshold for critical file extent in percentage of the total space for extent entries. A file becomes critical if the space used for extent entries has exceeded the critical threshold. Possible entries:

0-100</td><td>AdabasFilesCriticalExtents
AdabasFilesCriticalExtentsList</td></tr>
<tr><td>ISNRANGE</td><td>The threshold for critical file ISN range in percentage of the total ISN range. A file becomes critical if the used ISN range has exceeded the critical threshold. Possible entries:

0-100</td><td>AdabasFilesCriticalIsnRange
AdabasFilesCriticalIsnRangeList</td></tr>
<tr><td>USERISN</td><td>Specifies whether files with USERISN are monitored for critical ISN range. Possible entries:

YES — Files with USERISN are monitored.

NO — Files with USERISN are not monitored.</td><td>AdabasFilesCriticalIsnRange
AdabasFilesCriticalIsnRangeList</td></tr>
</table>

Keyword	Description		Affected KPIs
LIST	Specifies whether a short or a long list of critical files is generated. Possible entries:		AdabasFilesCriticalExtentsList AdabasFilesCriticalIsnRangeList
	SHORT	The list contains the file numbers. For example, "27,31,128".	
	LONG	The list contains the file numbers and the corresponding percentage values. For example, "27:93%,31:91%,128:99%". Additional information can be added behind the percentage value as described under ***Long List Information***. For example, "27:93%S4U".	
COLLTIME	The collection time for file data. Possible entries:		AdabasFilesCriticalExtents AdabasFilesCriticalExtentsList AdabasFilesCriticalIsnRange AdabasFilesCriticalIsnRangeList AdabasFilesLoaded
	ALL	All file data is collected.	
	HOUR	File data is collected once an hour.	
	DAY *hh*	File data is collected once a day. *hh* specifies the hour of the day when the data is collected (00-23, default: 00).	

Default

```
EXTENT 90
ISNRANGE 90
USERISN NO
LIST SHORT
COLLTIME DAY 00
```

Example

```
PARM=ADABAS-FILES
EXTENT   75
ISNRANGE 95
USERISN  YES
LIST     LONG
COLLTIME DAY 21
```

With the above settings,

- an Adabas file is counted as critical if the space used for file extents has exceeded 75 percent of the available space;
- an Adabas file is counted as critical if the used ISN range has exceeded 95 percent of the total ISN range;
- files with `USERISN=YES` are counted for critical ISN range;

- the list KPIs of critical files contain the file numbers, the percentage values and additional information;
- Adabas file data is collected once a day at 9 o'clock PM (21 hours).

Adabas Event Replicator

In general, Event Replicator Servers are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=REPLICATOR
ddddd
```

where *ddddd* is the Event Replicator ID (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=REPLICATOR
50000
12345
```

Adabas Fastpath

In general, Adabas Fastpath buffers are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=FASTPATH
nnnnn
```

where *nnnnn* is the Adabas Fastpath buffer ID (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=FASTPATH
508
40002
```

Adabas Review

In general, Adabas Review is discovered automatically and needs not be specified in the profile. See also ***Automatic Discovery with ADATMZ on the Mainframe***.

Syntax for Monitoring a Review Hub

```
PARM=ADAREV
Hub ddddd
```

where *ddddd* is the Adabas Review hub ID (1 to 5 digits).

Syntax for Monitoring a Local Review (no Clusters)

```
PARM=ADAREV
Local ddddd
```

where *ddddd* is the database ID of an Adabas server (1 to 5 digits) monitored by Adabas Review.

Syntax for Monitoring a Local Review (Clusters)

```
PARM=ADAREV
Local ddddd.nnnnn
```

where *ddddd* is the database ID (DBID) of an Adabas cluster (1 to 5 digits), and *nnnnn* is the ID of an Adabas nucleus (NUCID) in an Adabas cluster (1 to 5 digits) monitored by Adabas Review. The values must be separated by a dot (.).

Default

Automatic discovery only.

Example

```
PARM=ADAREV
Hub 500
Local 50001
Local 50002.50003
```

Adabas Transaction Manager

In general, Adabas Transaction Managers are discovered automatically and need not be specified in the profile. See also ***Automatic Discovery with ADATMZ on the Mainframe***.

Syntax

```
PARM=ATM
ddddd
```

where *ddddd* is the Adabas Transaction Manager ID (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=ATM
12345
```

Collector Trace

The Adabas and Natural Data Collectors provide a trace function which allows monitoring and debugging the data sent to Optimize. For further information, see ***Tracing the Adabas and Natural Data Collectors***.

In general, the trace level is set in the Infrastructure Data Collector. If a trace level is specified in the Adabas/Natural Data Collector profile, it overrides the Optimize trace level setting.

A change of the profile trace setting comes into effect with the next discovery or when the RPC server is restarted.

Syntax

```
PARM=TRACE
nn server client:port
```

where *nn* is the trace level, *server* is the name of the RPC server, *client* is the Infrastructure Data Collector client (host) name, and *port* is the port number of the Infrastructure Data Collector (IDC). The values are separated by blanks. *client* and *port*, however, are separated by a colon.

Possible values for the trace level:

0 to 10
OP

If "OP" is specified, the Optimize trace level is used.

If an asterisk (*) is specified as the server name, client name or port number, the given trace level is used as the default trace level for all servers, clients or ports.

If the last entries in a line are omitted, they are treated as if asterisks have been specified.

Default

Trace level of the Infrastructure Data Collector.

Example

```
PARM=TRACE
2
3  *     cli1
5  RPC2  cli2
OP RPC3  cli3:1234
```

With the above setting, the default Adabas Data Collector and Natural Data Collector trace level for all RPC servers, clients and port is 2 (error messages and warnings).

The trace level 3 (information summary) is used for client "cli1" (all servers, all ports).

The RPC server "RPC2" called from client "cli2" (all ports) runs with trace level 5 (component trace), whereas the RPC server "RPC3" called from client "cli3" (IDC port 1234 only) uses the trace level specified in Optimize.

Entire Net-Work (Mainframe)

In general, Entire Net-Work nodes are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=NETWORK
target-ID node
```

where *target-ID* is the Entire Net-Work target ID (1 to 5 digits) and *node* is the Entire Network node name (up to 8 characters).

Default

Automatic discovery only.

Example

```
PARM=NETWORK
123 ABNODE
12345 NWKNODE
```

Entire System Server

In general, Entire System Server nodes are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=NPR
nnnnn
```

where *nnnnn* is the Entire System Server node ID (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=NPR
145
148
```

Entire Operations

The Adabas and Natural Data Collectors automatically discover the Entire Operations system file (`LFILE "EOR SYSF1"`) which is used by the Natural RPC server. If additional Entire Operations system files are to be monitored, they must be specified in the profile.

Syntax

```
PARM=NOP
ddddd/fffff
```

where *ddddd* is the database ID (DBID) and *fffff* is the file number (FNR) of the Entire Operations system file (1 to 5 digits each). The values must be separated by a slash (/).

Default

Automatic discovery only.

Example

```
PARM=NOP
123/456
```

Entire Output Management

The Adabas and Natural Data Collectors automatically discover the Entire Output Management system file (`LFILE "NOM"`) which is used by the Natural RPC server. If additional Entire Output Management system files are to be monitored, they must be specified in the profile.

Syntax

```
PARM=NOM
ddddd/fffff
```

where *ddddd* is the database ID (DBID) and *fffff* is the file number (FNR) of the Entire Output Management system file (1 to 5 digits each). The values must be separated by a slash (/).

Default

Automatic discovery only.

Example

```
PARM=NOM
1234/56
```

File Name for Natural System Files

You can specify whether the file name is to be added to instances which are identified by a Natural system file. This affects the following components:

- Entire Operations
- Entire Output Management
- Natural Advanced Facilities - Spool
- Natural Security

Syntax

```
PARM=FILE-NAME
entry
```

where *entry* is any of the following values:

Entry	Description
YES	Instances are identified by the file number and name.
NO	Instances are identified by the file number only.

Default

YES

Example

The Natural Security system file 1000/120 has the name PROD-FSEC. With the following profile setting, it is monitored as "01000/00120 PROD-FSEC" (note that file number and file name are separated by a blank):

```
PARM=FILE-NAME
YES
```

With the following profile setting, it is monitored as "01000/00120":

```
PARM=FILE-NAME
NO
```

Natural Development Server and Natural Web I/O Interface Server

To monitor a Natural Development Server or a Natural Web I/O Interface server, the Natural Data Collectors perform HTTP requests against the HTTP monitor task. The HTTP monitor task must run on the same host as the RPC server. The port of the HTTP monitor task is defined by the configuration parameter HTPMON_PORT of the Natural Development Server.

Note: If the used Natural version supports the Natural Optimize Monitor Buffer Pool, Natural Development Servers and Natural Web I/O Interface servers are discovered automatically. In this case, the NDV-NWO parameter is obsolete.

Syntax

```
PARM=NDV-NWO
host:port
```

where *host*:*port* is the host name and the port number of the HTTP monitor task, separated by a colon. Do not specify "http://" with the host name. This will be added automatically.

If you have multiple HTTP monitor tasks running on the same host, you may specify more than one task. Since all tasks deliver all the same data, Optimize only uses the first active task for monitoring. The other tasks are used as backup tasks if the first task is not running.

Default

Natural Development Servers or Natural Web I/O Interface servers are not discovered/monitored.

Example

```
PARM=NDV-NWO
MYHOST:1234
```

Natural Online Environment Discovery

Global Natural components (such as global buffer pools) should be monitored by a batch RPC server. This is because an RPC server running in an online environment such as CICS is unable to monitor the components when the online environment is not active. The default settings of the Adabas and Natural Data Collectors support this demand by not searching for global Natural components during the discovery when running in an online environment.

However, in a test environment it may be desired that all Natural components (global and local components of the online environment) are monitored by one RPC server only. This RPC server must run in the online environment so that the local components of the online environment can be monitored. The profile can be configured in such a way that this RPC server also monitors global Natural components.

Syntax

```
PARM=NCI-DISCOVER
entry
```

where *entry* is any of the following values:

Entry	Description
LOCAL	An RPC server running in an online environment discovers only local components. This is the recommended setting.
GLOBAL	An RPC server running in an online environment discovers all components. This setting should only be used in test environments.

Default

```
LOCAL
```

Example

In a test environment, discover and monitor all Natural components by an RPC server running in the online environment:

```
PARM=NCI-DISCOVER
GLOBAL
```

Natural SAF Security

In general, Natural SAF Security daemon IDs are discovered automatically and need not be specified in the profile. See also *Automatic Discovery with ADATMZ on the Mainframe*.

Syntax

```
PARM=NSAF
nnnnn
```

where *nnnnn* is the Natural SAF Security daemon ID (1 to 5 digits).

Default

Automatic discovery only.

Example

```
PARM=NSAF
145
148
```

Natural Security

The Adabas and Natural Data Collectors automatically discover the Natural Security system file (`FSEC`) which is used by the Natural RPC server. If additional `FSEC` files are to be monitored, they must be specified in the profile.

Note: If the used Natural version supports the Natural Optimize Monitor Buffer Pool, the Natural Security system files are discovered automatically. In this case, the `NSC` parameter is obsolete.

Syntax

```
PARM=NSC
ddddd/fffff
```

where *ddddd* is the database ID (DBID) of the FSEC system file and *fffff* is the file number (FNR) of the FSEC system file (1 to 5 digits each). The values must be separated by a slash (/).

Default

Automatic discovery only.

Example

```
PARM=NSC
14/8
1424/512
```

Natural Spool (Natural Advanced Facilities)

The Adabas and Natural Data Collectors automatically discover the Natural spool system file (FSPOOL) which is used by the Natural RPC server. If additional FSPOOL files are to be monitored, they must be specified in the profile.

Syntax

```
PARM=SPOOL
ddddd/fffff
```

where *ddddd* is the database ID (DBID) of the FSPOOL system file and *fffff* is the file number (FNR) of the FSPOOL system file (1 to 5 digits each). The values must be separated by a slash (/).

Default

Automatic discovery only.

Example

```
PARM=SPOOL
14/9
12345/5001
```

Sysplex Environment

The hierarchy of every component contains the host dimension. For a mainframe component running in a sysplex environment, the displayed host dimension can be built up using the sysplex name and the host name. This has the advantage that hosts belonging to the same sysplex are grouped together. Moreover, for cluster totals only the sysplex name is used as the host dimension and thus belongs to the same grouping.

The default sysplex environment specification can be set in Optimize as described in the Optimize guide *Configuring BAM*, in the section *Defining ETS Resource Module Settings*.

If the `PLEXNAME` parameter is specified in the `PROFILES` text member of the library `SYSEDM`, it overwrites the Optimize settings. The Optimize settings correspond to the following `PLEXNAME` values:

Optimize Settings	`PLEXNAME` Values	Host Dimension
0	`NO`	host
1	`NO`	host
2	`PLEX`	sysplex
3	`YES`	host_sysplex
4	`YES`	host_sysplex

Syntax

```
PARM=PLEXNAME
entry
```

where *entry* is any of the following values:

Entry	Description
`YES`	The sysplex name and the host name are used as the host dimension.
`NO`	Only the host name is used as the host dimension.
`PLEX`	Only the sysplex name is used as the host dimension.

Default

As defined in Optimize.

Example

Use the sysplex name and the host name as the host dimension:

```
PARM=PLEXNAME
YES
```

9 Testing the Adabas and Natural Data Collectors

Invoking the Test Program

A test program is available which enables you to review the data provided by the Adabas and Natural Data Collectors. The test program runs on the local machine which is in general the environment in which the products to be monitored are running. To perform the test program neither Optimize nor an RPC server is required. Thus, it can be used as a first check to see whether all of the Adabas and Natural information can be found that you plan to monitor.

To invoke the test program

1 Go to the Natural system library `SYSEDM`.

2 Enter the command `MENU`.

The following screen appears:

```
14:09:11           ***** ADABAS/NATURAL DATA COLLECTOR *****          2010-11-03
User UID                            - Menu -                           MOPTTEST

               Code    Function            Asset Type
                                           Adabas ............... Y
                 I     Info                Natural .............. Y
                 D     Discover
                 M     Monitor             Trace Level (0-10)
                 A     Adabas Files        Discover .............  5
                 E     Event Maps          Monitor (discover) ..  1
                 P     Profile             Monitor ..............  6
                 V     Validate
                 ?     Help                Monitor Event Map
                 .     Exit                ____________________________________

         Code .. _                         Write to Work ....... N




Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit  Info  Disc  Moni  AdaFi Emap  Prof  Vali             ↩
 ↩
```

Note: The **Adabas Files** function which is shown in the above screen is only shown when you invoke this screen on a mainframe. It is not shown when you invoke this screen in UNIX or Windows.

Displaying Information

With the **Info** function, the Adabas or Natural Data Collector information is displayed. This is the information that is normally used by Optimize in its asset administration in order to find out whether the collector is enabled.

```
Natural Data Collector Info
---------------------------
Collector ..............: Server
Client (dummy name) .....: Client
Server (dummy name) .....: Server
Asset type .............: Natural
Host ...................: daeplex_daef
Natural library .........: SYSEDM
Natural version .........: 04.02.07
SYSEDM version ..........: 2.0020
Client version ..........: 2
Response ................: 0
Returned message ........:
Date ...................: 2010-11-03 12:41:39.7
Description ............: Natural asset calling Natural RPC server Server
running on daeplex_daef DAEFCIA1 QA42 (z/OS CICS).                    ↩
```

The data displayed by this function has the following meaning:

Property	Description
Collector	The collector name. In general, the server name is used as the collector name.
Client	The name of the client, that is, the name of the host on which the Infrastructure Data Collector is running. Since the test program is not called by a client, the dummy name "Client" is used by the test program.
Server	The name of the Natural RPC server. Since the test program is not running under an RPC server, the dummy name "Server" is used by the test program.
Asset type	The asset type "Adabas" or "Natural".
Host	The name of the host on which the Adabas Data Collector or Natural Data Collector is running.
Natural library	The name of the Natural library in which the Adabas Data Collector or Natural Data Collector is running.
Natural version	The Natural version as returned by the Natural system variable `*NATVERS`.
SYSEDM version	The (internal) version and revision of the Adabas Data Collector or Natural Data Collector.
Client version	The (internal) version of the client part of the Adabas Data Collector or Natural Data Collector. Since the test program is not called by a client, a fake value is provided.
Response	The response code returned to Optimize.

Property	Description
Returned message	The message returned to Optimize (for Response > 0).
Description	The information text returned to Optimize. The information text is logged in the Infrastructure Data Collector log file if the corresponding trace is activated.

To display information

1 Enter the code "I" for the **Info** function.

Or:

Press PF4. But only do this *after* specifying the information described below. Pressing ENTER is not required in this case.

2 Specify the asset type for which the function is to be performed: enter "Y" next to **Adabas** and/or **Natural**.

3 Specify whether the trace is to be written to a work file. See also *Writing the Result to a Work File*.

4 Press ENTER.

Note: Trace levels are not considered by this function. Any settings are disregarded.

Testing the Discovery and Monitoring

With the **Discover** and **Monitor** functions, the Adabas Data Collector or Natural Data Collector discovery and monitoring is performed.

The discovery searches for all available Adabas or Natural components.

The monitoring requires as input a list of components and KPIs to be monitored. To get the list of components, the monitoring first performs a discovery. Then, it performs the monitoring for all discovered components. With a wildcard notation, it forces that all available KPIs are monitored. However, it is also possible to restrict the monitoring to components of a specific event map.

Note: The automatic discovery of Adabas components does currently not work when running under CICS. Components specified in the profile will be discovered in any case.

```
Monitor components for Asset type 1 Natural
---------------------------- Optimize Monitoring ----------------------------
Collector ..............: Server
Client .................: Client
Server .................: Server
Asset type .............: Natural
Host ...................: daeplex_daef
Natural library ........: SYSEDM
SYSEDM version .........: 2.0020
Client version .........: 2
Trace level ............: 6
Number of Event Maps ....: 128
Maximum number of Facts .: 39
Total number of Facts ...: 1723
Elapsed Time ...........: 8.1
Response ...............: 0
Date ...................: 2010-11-03 11:38:57
------------------------------------ Input -------------------------------------
------------------------------------------------------------------------------ Ev
Event Map: NaturalCollector                                                    1
------------------------------------------------------------------------- Hi - Na
```

The **Discover** and **Monitor** functions display the trace data. Therefore, the output layout depends on the specified trace level. For a detailed description of the trace, see *Tracing the Adabas and Natural Data Collectors*. The test program uses the trace levels specified in its menu. The trace settings in the profile or in Optimize are disregarded.

With the **Discover** and **Monitor** functions, it is possible to write the result to a work file. On the mainframe, the data is downloaded to the PC if Entire Connection is available; otherwise it is written to work file 7. In UNIX and Windows, the data is written to the trace data set as described in *Location of the Log File*. The *server* part of the trace file name is the dummy server name "Server".

To test the discovery and monitoring

1 Enter the code "D" for the **Discover** function.

Or:

Enter the code "M" for the **Monitor** function.

Or:

Press PF5 for the **Discover** function or PF6 for the **Monitor** function. But only do this *after* specifying the information described below. Pressing ENTER is not required in this case.

2 Specify the asset type for which the function is to be performed: enter "Y" next to **Adabas** and/or **Natural**.

3 Specify the trace level (0 through 10). See also *Trace Levels*.

The different trace level options apply for the different functions:

- The trace level that you specify with the option **Discover** is only used when you perform the **Discover** function.
- The trace level that you specify with the option **Monitor (discover)** is only used for the discovery part of the **Monitor** function.
- The trace level that you specify with the option **Monitor** is only used for the monitoring part of the **Monitor** function.

4 If you want to restrict the discovery or monitoring to components of a specific event map, enter the name of the event map (or part of its name) in the **Monitor Event Map** field.

If you want to ensure that only the given event map name is discovered or monitored, precede the name with an equal sign (=). For example, specify "=EntireOperations" to discover/monitor EntireOperations but not EntireOperationsTask.

If you want to discover or monitor all event maps again, clear the **Monitor Event Map** field.

5 Specify whether the trace is to be written to a work file. See also *Writing the Result to a Work File*.

6 Press ENTER.

Testing the Monitoring of Adabas Critical Files

The **Adabas Files** function is only available on the mainframe. With this function, the monitoring of the Adabas critical files can be tested without modifying the Adabas/Natural Data Collector profile.

```
15:40:24           ***** ADABAS/NATURAL DATA COLLECTOR *****          2010-11-03
User UID                        - Adabas Files -                       MADATEST


        Property                              Value

        Database IDs ....................... 0      0      0      0
        Cluster database ID ................ 0      Nuc .. 0      0      0
        Threshold file extent (0-100) ..... 10
        Threshold ISN range (0-100) ....... 10
        Monitor files with UserIsn (Y/N) .. Y
        List long (Y/N) ................... Y
        Monitor file KPIs only (Y/N) ...... Y
        Trace level (0-10) ................ 6
        Write to Work (Y/N) ............... N









Command ===>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        Exit                   Prof        ↩
```

The **Adabas Files** function displays trace data. Therefore, the output layout depends on the trace level that you specify in the above screen. The trace settings in the Adabas/Natural Data Collector profile or in Optimize are disregarded. For detailed descriptions of the trace levels, see *Tracing the Adabas and Natural Data Collectors*.

Note: When you enter the **Adabas Files** screen, the values are set as defined in the Adabas/Natural Data Collector profile. The values can later be restored to the profile settings by pressing PF7 or by entering the direct command `P`, `PROF` or `PROFILE`.

To test the monitoring of Adabas critical files

1 Enter the code "A" for the **Adabas Files** function and press ENTER.

Or:

Press PF7. Pressing ENTER is not required in this case.

The **Adabas Files** screen appears in which you can specify further information.

Note: In the menu, the specification of additional information (such as asset type or trace level) is not required for this function. Any settings in the menu are disregarded.

2 You can specify the following information in the **Adabas Files** screen:

Property	Description
Database IDs	You can specify four database IDs.
Cluster database ID	You can specify a cluster database ID with three nucleus IDs. The cluster database ID can also be used for an Adabas Parallel Services database.
Threshold file extent	You can specify a threshold percentage value (a value between 0 and 100). A file is counted as critical when the used space for file extents has exceeded the specified threshold percentage value.
Threshold ISN range	You can specify a threshold percentage value (a value between 0 and 100). A file is counted as critical when the used ISN range has exceeded the specified threshold percentage value.
Monitor files with UserIsn	You can specify whether files with `USERISN` are to be monitored for critical ISN range or not.
List long	If set to "N", the KPIs for listing files (AdabasFilesCriticalExtentsList and AdabasFilesCriticalIsnRangeList) contain the file numbers of the critical files. If set to "Y", the KPIs for listing files contain, in addition to the file numbers, the used percentage value and other information.
Monitor file KPIs only	If set to "Y", only the file KPIs and the state and version of the database server or cluster nucleus are monitored. If set to "N", all KPIs are monitored. Note that for a cluster, the file KPIs are part of the database totals values and not of the cluster nucleus values.
Trace level	You can specify the trace level (0 through 10). See also *Trace Levels*.
Write to Work	You can specify whether the output is to be written to a work file. See also *Writing the Result to a Work File*.

Note: The critical file extents, the ISN range and the long list information are described in detail in the section *Adabas Files*. The `COLLTIME` keyword which can be specified in the Adabas/Natural Data Collector profile is not used by the **Adabas Files** function. The file KPIs are always monitored (this corresponds to `COLLTIME=ALL`).

3 Press ENTER.

When you have activated the trace level 10 (full trace), the following information is written to the log:

```
OPTPARMA: Adabas critical files - Extents > 10%, ISN range > 10% (UserIsn=yes), ↩
data collected always, long list.
```

The above message shows the currently used parameter settings for the monitoring of the Adabas critical files.

When you have activated the trace level 9 (success messages) or higher, the following information is written to the log:

```
MONADA  : Adabas Server: 00009 Files: 87 Crit-extents: 2 (246 ↩
NOM31-CONTAINER:31.3%) Crit-ISNs: 6 (22 NOP531-SATLOG:100%)
```

The above message is written for each monitored database server or database cluster. It shows the number of files loaded, the number of files with critical file extents and the number of files with critical ISN range. The values in parentheses show the file number, the name of the file with the highest percentage value, and the percentage value itself. These values are displayed even if the highest value is below the given threshold.

4 To exit the **Adabas Files** screen, press PF3. Or enter a dot (.) as a direct command. Or enter the direct command `EXIT`, `QUIT` or `FIN`.

Listing the Event Maps

The **Event Maps** function lists all event maps which are supported by the Adabas and Natural Data Collectors. The list may contain event maps which are not available in the currently used environment.

```
                        ADABAS/NATURAL DATA COLLECTOR
                               Event Map List

 Nbr  Event Map
----- ------------------------------------------------------------
   1  AdabasCollector
   2  AdabasDeltaSave
   3  AdabasEventRep
   4  AdabasEventRepDest
   5  AdabasEventRepInQueue
   6  AdabasEventRepSubscr
   7  AdabasFastpath
   8  AdabasFastpathDatabase
   9  AdabasOSServer
  10  AdabasServer
  11  AdabasSAFSecurity
  12  AdabasTransactionManager
  13  Complete
  14  EntireNetwork
  15  EntireOperations
  16  EntireOperationsTask
  17  EntireOutputManagement
  18  EntireOutputManagementMon                ↩
```

For detailed information on the event maps, see *KPI Definitions for Infrastructure Monitoring*.

To list the event maps

1 Enter the code "E" for the **Event Maps** function.

Or:

Press PF8. But only do this *after* specifying the information described below. Pressing ENTER is not required in this case.

2 Specify whether the result is to be written to a work file. See also ***Writing the Result to a Work File***.

3 Press ENTER.

Notes:

1. The specification of the asset type is not required for this function. Any setting is disregarded.
2. Trace levels are not considered by this function. Any settings are disregarded.

Displaying Profile Information

The **Profile** function lists the values used in the Adabas/Natural Data Collector profile.

```
Adabas/Natural Data Collector - Profile (used values)
-----------------------------------------------------

Parameter: ADABAS
  00010
  49999
  50000

Parameter: ADABAS-CLUSTER
  50009.50901
  50009.50902
  50009.50903

Parameter: REPLICATOR
  50000
  50008

Parameter: FASTPATH
  40002

Parameter: ATM
  00019                                                                ↩
```

For detailed information on these values, see ***Adabas/Natural Data Collector Profile***.

To display profile information

1 Enter the code "P" for the **Profile** function.

Or:

Press PF7. But only do this *after* specifying the information described below. Pressing ENTER is not required in this case.

2 Specify whether the result is to be written to a work file. See also ***Writing the Result to a Work File***.

3 Press ENTER.

Notes:

1. The specification of the asset type is not required for this function. Any setting is disregarded.
2. Trace levels are not considered by this function. Any settings are disregarded.

Validating the Adabas and Natural Data Collectors

The **Validate** function checks the availability of some product-specific modules which are required for the discovery or monitoring.

On the mainframe, the result looks as follows:

```
Validate Adabas/Natural Data Collector
--------------------------------------
Environment ..............: MAINFRAME z/OS
SYSEDM ...................: Version: 3.0054 Date: 2011-08-24 19:00
Natural ..................: Version: 08.02.02 Library: SYSEDM
Natural Optimize Monitor : Version: 8210
Adabas ADATMZ ............: Version: 8.2.8. SVCs found: 26.
Adabas AOS Interface ....: Version: 08.01.04 (FNAT database 10)
Adabas Fastpath .........: Version: 812 (target)
Entire System Server ....: Version: 3.5.1 (Node 148 XCOM148)
Date .....................: 2011-08-24 18:08:48.6
```

Under UNIX and Windows, the result looks as follows:

```
Validate Adabas/Natural Data Collector
--------------------------------------
Environment ..............: UNIX SunOS
SYSEDM ...................: Version: 3.0001 Date: 2011-10-02 15:00
Natural ..................: Version: 06.03.08 Library: SYSEDM
Adabas ADAAIF ............: Entries: 14 Active DBs: 10
Date .....................: 2011-11-04 11:33:49.8
```

If a product-specific module is not available, a corresponding message is written. If the module is available, the data displayed by this function has the following meaning:

Property	Description
Environment	The machine class, the name of the operating system and, if relevant, the TP monitor used.
SYSEDM	The version, revision and last delivery date of the SYSEDM application.
Natural	The Natural version and library.
Natural Optimize Monitor	The version of the Natural Optimize Monitor Buffer Pool.
Adabas ADATMZ	The version of the ADATMZ module and the number of SVCs found in the Adabas SVC table.
Adabas AOS Interface	The version of the Adabas database on which the Natural FNAT system file resides.
Adabas Fastpath	The version of the first target found.
Entire System Server	The version of the first node found.
Adabas ADAAIF	The number of entries and of active databases in the Adabas database table.
Date	Current date and time.

To display validation information

1 Enter the code "V" for the **Validate** function.

Or:

Press PF8. But only do this *after* specifying the information described below. Pressing ENTER is not required in this case.

2 Specify whether the result is to be written to a work file. See also ***Writing the Result to a Work File***.

3 Press ENTER.

Notes:

1. The specification of the asset type is not required for this function. Any setting is disregarded.
2. Trace levels are not considered by this function. Any settings are disregarded.

Writing the Result to a Work File

In general, it is possible to write the result to a work file. On the mainframe, the data is downloaded to the PC if Entire Connection is available; otherwise it is written to work file 7. In UNIX and Windows, the data is written to the trace data set as described in ***Location of the Log File***. The *server* part of the trace file name is the dummy server name "Server".

When the output for the specified function is written to a work file, it is not shown on the screen.

To write the result to a work file

- Enter "Y" in the **Write to Work** field.

  Note: When you specify "N", the output is shown on the screen.

Direct Commands

In general, any code, function or PF-key name can be entered in the command line.

Command	Description
`I` or `INFO`	Display the Adabas or Natural Data Collector information.
`D`, `DISC` or `DISCOVER`	Perform the Adabas or Natural Data Collector discovery.
`M`, `MONI` or `MONITOR`	Perform the Adabas or Natural Data Collector monitoring.
`A`, `ADA` or `ADAFI`	Test the monitoring of the Adabas critical files.
`E` or `EMAP`	List the event map names.
`P`, `PROF` or `PROFILE`	Display the Adabas/Natural Data Collector profile.
`V`, `VALI` or `VALIDATE`	Validate the Adabas and Natural Data Collectors.
. (dot), `EXIT`, `QUIT` or `FIN`	Leave `SYSEDM`.
? (question mark) or `HELP`	Display the help information.
`MENU ON`	Switch to online input mode. This is the default input mode when running online.
`MENU OFF`	Switch to batch input mode. This is the default input mode when running in batch (mainframe).
* (asterisk)	Comment (ignored).

Batch Input Mode

When invoking the `MENU` command for the `SYSEDM` library from a mainframe batch job, the input fields can be entered in keyword/delimiter mode (`IM=D`). To make the batch input stream more readable, the **Command** line is at the first position and the **Code** field has been removed.

Position	Keyword	Description	Possible Values	Default Value
1	COMMAND	Any command which is listed under *Direct Commands*.	Any direct command	*none*
2	ADABAS	Discover and monitor the Adabas asset type.	Y or N	Y
3	NATURAL	Discover and monitor the Natural asset type.	Y or N	Y
4	TRACE	Trace level for discovery.	1 through 10	5
5	TRACE-MD	Trace level for monitoring (discovery part).	1 through 10	1
6	TRACE-M	Trace level for monitoring.	1 through 10	6
7	EVENTMAP	Restrict the monitoring to the given event map.	Any event map name	*none*
8	WORK	Write the output to work file 7.	Y or N	N

Sample Batch Input

Monitor Natural Security with the full trace for the discovery and monitoring parts and write the result to work file 7:

```
LOGON SYSEDM
MENU
MONITOR,TRACE=10,10,10,ADABAS=N,EVENTMAP=NATURALSECURITY,WORK=Y
EXIT
FIN
```

Note: The keywords COMMAND, TRACE-MD and TRACE-M have been omitted because the corresponding values are in the correct positions.

10 Infrastructure Data Collector Configuration

Several aspects of the data collectors of the following products are controlled by specific configuration settings in the Infrastructure Data Collector:

- Adabas SOA Gateway
- Com-plete
- webMethods EntireX

For detailed information, see *Defining Logical Server Subcomponents for the Infrastructure Data Collector* in the *Configuring BAM* guide.

11 Testing the Infrastructure Data Collector

General Information

To verify the communication to and installation of the products described below, you can use a browser.

The required URLs are listed below. You have to substitute *host* and *port* in the given URLs with the host name and port number of the system on which your Infrastructure Data Collector is installed.

Adabas SOA Gateway

Use the following URL:

```
http://host:port/statService?GET&Group=*&Type=*&Name=*
```

When the product has correctly been installed, statistics such as the following are shown:

```
<Statistics>
 <Group id="Server">
  <Type id="Request">
   <Name id="list">
    <total_count>0</total_count>
    <errors_ocurred>0</errors_ocurred>
    <total_time>0.000</total_time>
    <high_time>0.000</high_time>
    <low_time>0.000</low_time>
   </Name>
```

If empty statistics are shown, statistics have not been switched on for the Adabas SOA Gateway. See also ***Adabas SOA Gateway*** in *Product-Specific Environment Configuration*.

Com-plete

Use the following URL:

```
http://host:port/cgi/wmopti
```

When the product has correctly been installed, status information such as the following is shown:

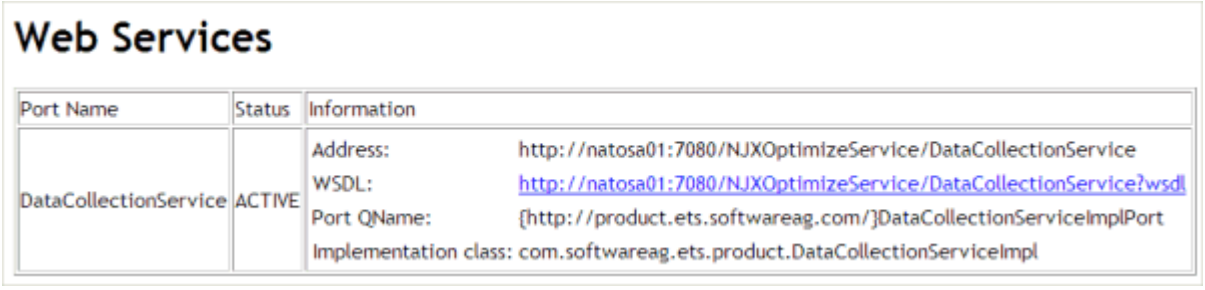
```
<OptimizeData>
 <EventMap Id="CompleteSystemStatus">
  <SysplexName>DAEPLEX</SysplexName>
  <HostName>DAEF</HostName>
  <CompleteName>-DAEFCO-</CompleteName>
  <CompleteVersion>661.05</CompleteVersion>
  <JobName>DAEFCO</JobName>
  <ActiveUsers>33</ActiveUsers>
  <NumberTransactions>120662</NumberTransactions>
  <SumResponseTimeMS>10940051</SumResponseTimeMS>
  <CPUtimeMS>1431995</CPUtimeMS>
  <AdabasCalls>2081637</AdabasCalls>
  <SumAdaResponseTimeMS>8752058</SumAdaResponseTimeMS>
  <SumThreadQueueLengths>0</SumThreadQueueLengths>
  <SumProcessorQueueLengths>0</SumProcessorQueueLengths>
  <TibtabSlots limit="00400" used="00048" />
  <Region24bitKB limit="0008128" used="0003716" />
  <Region31bitKB limit="1048576" used="0100596" />
  <SpoolFileSpaceKB limit="0024687" used="0000033" />
  <SDFileSpaceKB limit="0064005" used="0032560" />
 </EventMap>
</OptimizeData>
```

Natural for Ajax

Use the following URL:

```
http://host:port/NJXOptimizeService/DataCollectionService
```

When the product has correctly been installed, information such as the following is shown:



webMethods ApplinX

Use the following URL:

```
http://host:port/applinx/services
```

When the product has correctly been installed, a list of applications such as the following is shown:

```
<Applications>
  <Application Name="SabraFood" Description="AS/400 Inventory Demo Application" />
  <Application Name="InstantDemo" Description="" />
  <Application Name="CompositeDemo" Description="" />
  <Application Name="SOADemo" Description="Insurance Service-Oriented Application ↩
Demo" />
</Applications>
```

12 Administration

Optimize enables you to discover, add, monitor, and delete Software AG's enterprise product components of your IT infrastructure environment. This capability is installed as an integral part of the Optimize for Infrastructure Data Collector and does not require any additional configuration. Optimize also enables you to configure and monitor these components to maximize efficiency of your system.

Before you can monitor the resources in your environment, you have to discover them. For discovering Software AG's enterprise product components, the following asset types are available:

- Adabas
- Adabas SOA Gateway
- ApplinX
- Com-plete
- EntireX
- Natural
- Natural Ajax

After the discovery, you can then configure the component instances and KPIs associated with each monitored component type. For a brief description of each KPI, see ***KPI Definitions for Infrastructure Monitoring***.

For detailed information on how to add assets, how to edit connection parameters, and how to monitor components, see the *Administering webMethods Optimize* guide.

Notes:

1. The **Add Network** function for adding Software AG's enterprise product components to your environment is not yet supported.

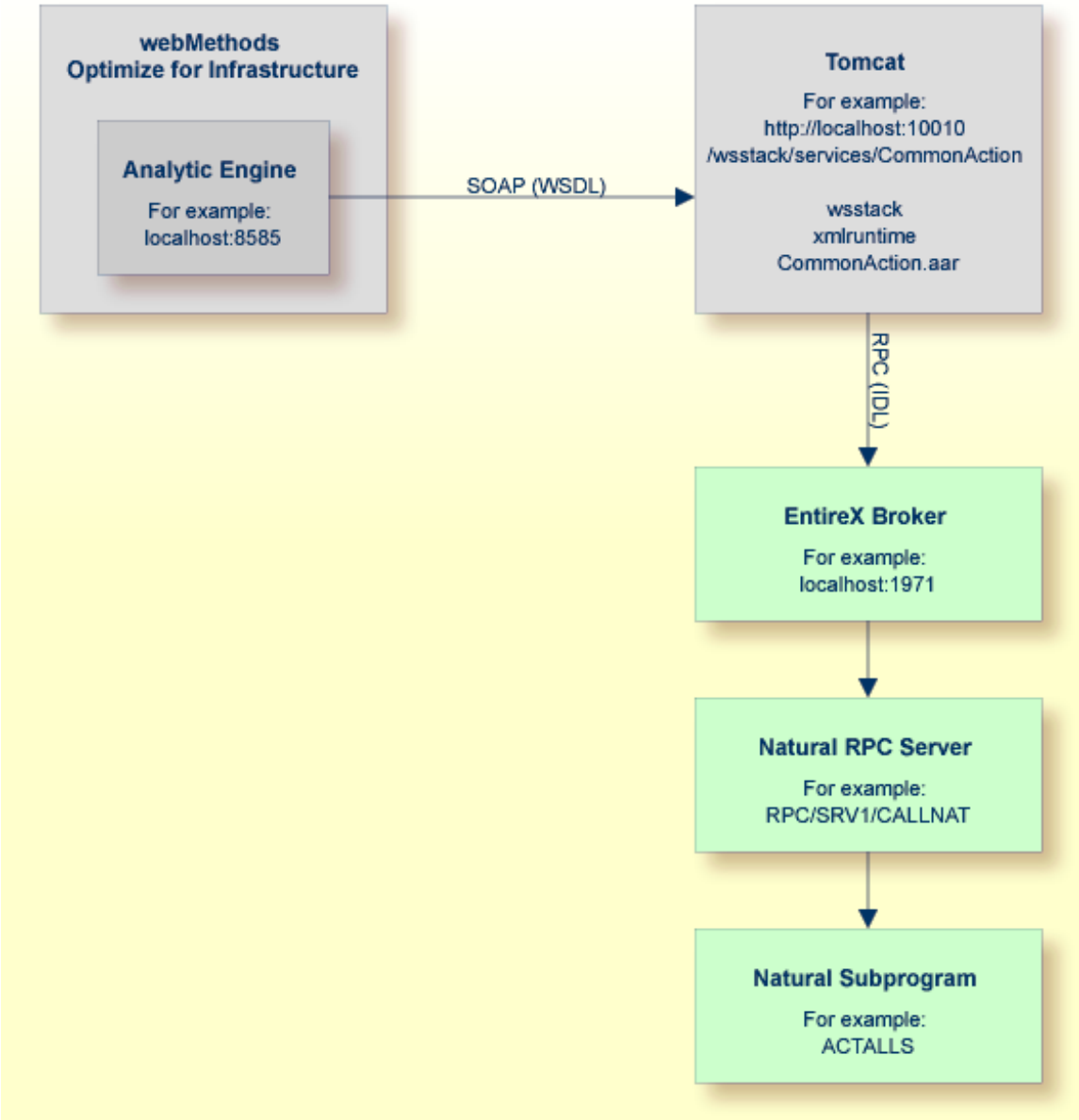
2. If a user ID and password is required for the asset definition, it is recommended to use a system account with a password that does not expire. This avoids security violations that are due to frequent password change requests.

13 Defining a Common Action for All Rules

General Information

When a rule is violated, you can have Optimize trigger a web service action. For example, suppose that you defined a rule to determine when a Natural Development Server goes offline. Also suppose that Natural can call a service that attempts to restart the Natural Development Server. You can define an action that, when the Natural Development Server rule is violated, invokes a web service that calls a Natural RPC server that executes a subroutine which restarts the Natural Development Server.

This chapter explains how you add a common action to your rules, including the built-in rules such as "EntireX Broker Connection Error", "EntireX Server Available Error", "Adabas Server Not Active" or "Natural Development Server Not Active". In addition to the action, you have to generate a web service using EntireX, and you have to create a Natural subprogram which is able to process the information from the web service. This is also explained in this chapter.



The above graphic shows a SOAP call that is sent from the Analytic Engine of Optimize to a Tomcat server in the case of a rule violation. The Tomcat server invokes a web service which sends information about the rule violation to the Natural subprogram.

Configuring the Web Service Action in Optimize

So that Optimize can send rule violations to a web service, you have to

- configure a web service action, and
- add the web service action to the required rules.

This section briefly explains how to configure a web service action with the name "CommonAction". For more detailed information, see the following Optimize guides:

- *Administering webMethods Optimize*, chapter *Setting Up Web Service Actions*.
- *Optimizing BPM and System Resources with BAM: webMethods Optimize User's Guide*, chapter *Defining Rules*, section *Specifying Alert Actions*.

To define the action

1 Log on to My webMethods.

2 Go to **Navigate > Applications > Administration > System-Wide > Environments > Define Environments**.

3 Click the name of the environment for which you want to define the action.

4 Select the **Configure Servers** tab.

5 Expand **Analytic Engine** in the tree and click **WSAction Settings**.

6 Copy the following code and paste it into the text box for the **WSAction Settings** for your Analytic Engine.

```
<?xml version="1.0" encoding="UTF-8"?>
<properties>
    <property name="action">
        <string meta="name">CommonAction</string>
        <string meta="url">http://localhost:8080/wsstack/services/CommonAction?wsdl</string>
        <string meta="method">CommonAction</string>
        <list>
            <element><string>RuleName</string></element>
            <element><string>RuleInstanceName</string></element>
            <element><string>RuleDefinition</string></element>
            <element><string>RuleEvaluation</string></element>
            <element><string>RuleSla</string></element>
            <element><string>RuleCustomer</string></element>
            <element><string>RuleSeverity</string></element>
            <element><string>RuleStatus</string></element>
            <element><string>Attributes</string></element>
            <element><string>Time</string></element>
        </list>
    </property>
</properties>
```

7 If your web service is not running on `localhost:8080`, adapt the corresponding line in the above code.

8 Save your changes.

9 Click the **Finish** button.

10 Deploy the updated environment.

11 Restart the Analytic Engine.

12 Add the action you have just defined to all required rules (for example, to the built-in rule "EntireX Broker Connection Error").

Generating and Testing the Web Service with EntireX

You will now generate and test a web service which receives a rule violation from Optimize and sends data to Natural. You can either do this with the Software AG Designer in which EntireX has been installed, or with EntireX. Use the description in the corresponding section below.

For more information on the EntireX functions mentioned below, see the following guides within the EntireX documentation:

- *EntireX XML/SOAP Wrapper*, section *XML/SOAP Runtime Environment*.
- *EntireX Administration under Windows*, section *Configuring the EntireX XML/SOAP Listener*.

The following topics are covered below:

Using Software AG Designer

When using the Software AG Designer, you can use the integrated Tomcat server.

To generate and test a web service with Software AG Designer

1 Install the Software AG Designer with EntireX.

2 Open the **Project Explorer** view.

3 Create a general project, for example, with the name "CommonAction".

4 In the new project, create a Software AG IDL file, for example, with the name "CommonAction.idl".

5 Copy the following code, paste it into the editor for the new IDL file (replace any existing code with the new code), and save your changes.

```
/* Interface for Optimize Common Action

library 'CommonAction' is

   program 'ACTALLS':'CommonAction' is
   define data parameter
      1 RuleName (AV) In         /* name of the base rule, an instance of which has fired
      1 RuleInstanceName (AV) In /* name of the rule instance that fired
      1 RuleDefinition (AV) In   /* definition of the rule
      1 RuleEvaluation (AV) In   /* evaluation of the rule
      1 RuleSla (AV) In          /* Service Level Agreement (SLA) associated with the rule
      1 RuleCustomer (AV) In     /* customer associated with the rule
      1 RuleSeverity (AV) In     /* severity of the rule
     1 RuleStatus (AV) In       /* compliance status (Rule Violation or In Compliance) of the rule
    1 Attributes (AV/V) In     /* Array of strings containing key = value pairs of all attributes ↩
in the rule diagnosis
      1 Time (AV) In             /* time that the rule went out of compliance
   end-define
```

`ACTALLS` in the above code is the sample Natural program which is explained later in this chapter.

6 Select your IDL file in the **Project Explorer** view and then proceed as follows:

1. Invoke the context menu and choose **Properties**.
2. Go to the **EntireX Web Service Wrapper** page, and then to the **Mapping** tab.
3. Adapt the settings in the **Broker ID** and **Server Address** text boxes to your requirements.

7 Select your IDL file in the **Project Explorer** view once more and then proceed as follows:

1. Invoke the context menu and choose **Generate Web Service from Software AG IDL**.
2. In the resulting dialog box, select the **Deploy service** check box, and then deploy the EntireX web service.

   The **Console** view should now inform you that your web service has successfully been deployed, and additional files should now be shown in the **Project Explorer** view.

8 Select your IDL file in the **Project Explorer** view once more and then proceed as follows:

1. Invoke the context menu and choose **Test Software AG IDL**.
2. In the resulting dialog box, make sure that the settings in the **Broker** and **Server** text boxes are correct for your requirements, and that the specified server is active.

   Tip: Using the **Ping** button, you can find out whether the specified server is active.

3. In the **RuleName (AV)** text box, specify a name. This can be any name you like.
4. Choose the **Call** button.

   When you later check the output on the specified server, you will see that name.

9 Double-click the generated XMM file in the **Project Explorer** view, and then go to the **XML Samples** tab.

10 Select the generated AAR file in the **Project Explorer** view and then proceed as follows:

1. Invoke the context menu and choose **Test EntireX Web Service**.

   This displays the **XML Tester** view.

2. Copy the code that is shown on the **XML Samples** tab (make sure to use the code for the "Request Document" action), and paste it in the upper **Text View** tab of the **XML Tester** view.

3. Choose the green Play button which is provided in the local toolbar of the **XML Tester** view, and then check the result at the bottom of the **XML Tester** view.

Using EntireX

When using EntireX (without the Software AG Designer), you have to install a web server. You can use, for example, Tomcat. In addition, you have to download the file *CommonAction.aar* from Empower (see below).

To add a web service with EntireX

1 Install EntireX.

In a later step, you will need to copy the following files from the EntireX installation: *wsstack.war* and *entirex.jar*. You can find them in the following directories:

`<EntireXHome>\WS-Stack\webapp\wsstack.war`

`<EntireXHome>\EntireX\classes\entirex.jar`

2 Install the web server and then start it.

The description below applies to Tomcat.

3 Copy the file *wsstack.war* into the `<TomcatHome>\webapps` directory.

Wait until the WAR file has been unpacked. You will find a `<TomcatHome>\webapps\wsstack` directory.

4 Copy the file *entirex.jar* into the `<TomcatHome>\webapps\wsstack\WEB-INF\lib` directory.

5 Log in to Empower (***https://empower.softwareag.com/***), go to **Products > Download Components > Optimize for Infrastructure** and look for the component "Rule Action". Download this component (*CommonAction.zip*) and then unpack the ZIP file to get the file *CommonAction.aar*.

6 Copy the file *CommonAction.aar* into the `<TomcatHome>\webapps\wsstack\WEB-INF\services` directory.

7 Edit the file *<TomcatHome>\webapps\wsstack\WEB-INF\conf\axis.xml* and add the following new parameter:

```
<parameter name="EntireX-XML-Listener">
   <parameter name="services" location="./exx.xml" />
</parameter>
```

8 Add a new file *<TomcatHome>\webapps\wsstack\WEB-INF\conf\exx.xml* with the following content:

```
<?xml version="1.0" encoding="utf-8" ?>
<serviceGroup>
   <service name="CommonAction">
      <exx-brokerID>localhost:1971</exx-brokerID>
      <exx-service>RPC/SRV1/CALLNAT</exx-service>
   </service>
</serviceGroup>
```

Here you must enter your EntireX Broker and your Natural RPC server on which the `ACTALLS` subprogram is located.

If the web service now receives an action from Optimize, it will call the Natural subprogram `ACTALLS`.

Creating a Natural Subprogram

You have to create a Natural subprogram which is able to process the information from the web service.

The following sample Natural subprograms are provided in the `SYSEDM` library:

- `ACTALL`
  `ACTALL` can be used as common action for any rule. It writes a message, including rule and instance details, to the output. If the program runs on a mainframe and the rule severity is "1 - Critical" or "2 - High", an informational message concerning the rule violation is sent to the operator console.
- `ACTALL1`
  `ACTALL1` is an enhanced version of `ACTALL`. It does not only write informational messages to the output and console, it also performs an action as a showcase. If the specified Adabas server or Natural Development Server goes offline on the mainframe, it is restarted automatically. The program uses Entire System Server (NPR) to restart the service. On UNIX or Windows, a shell command is executed to restart an Adabas server. A maintenance time window can be specified in which the action will not be performed.

You can activate one of the above sample subprograms. To do so, you have to save the sample program under the name ACTALLS, adjust it to your needs and catalog it.

If you use ACTALL1 as the template for ACTALLS, you must edit ACTALLS before cataloging it. You have to adjust the maintenance time window, the instance name and the console command to your needs. The corresponding lines are indicated by "<== adjust".

Caution: Do not modify the original ACTALL and ACTALL1 programs which are delivered with Natural. These programs might be overwritten when a Natural fix is loaded.

Note: In Optimize, you can enable and disable a rule. Moreover, you can edit the rule expression and specify a time window in which the rule should not fire at all.

The following parameters are passed to ACTALLS when it is called after a rule violation:

Parameter	Format	Description
RULENAME	(A) DYNAMIC	The name of the base rule, an instance of which has fired. The available rule names are listed in the section *KPI Definitions for Infrastructure Monitoring* with the built-in rules in the column *Administration Name*.
RULEINSTNAME	(A) DYNAMIC	The name of the rule instance that fired and the reason why it fired according to the naming template in the Optimize rule definition.
RULEDEFINITION	(A) DYNAMIC	The definition of the rule according to the rule expression in the Optimize rule definition.
RULEEVALUATION	(A) DYNAMIC	The evaluation of the rule, how many intervals with critical values have been found.
RULESLA	(A) DYNAMIC	The Service Level Agreement (SLA) associated with the rule.
RULECUSTOMER	(A) DYNAMIC	The customer associated with the rule.
RULESEVERITY	(A) DYNAMIC	The severity of the rule. The possible values are available in the program array L_SEVERITY.
RULESTATUS	(A) DYNAMIC	The rule compliance status such as "Rule Violation".
ATTRIBUTES	(A/1:*) DYNAMIC	An array of strings containing "key = value" pairs of all attributes in the rule diagnosis, such as "HostName = pcxyz03".
EVENTTIME	(A) DYNAMIC	The time the rule went out of compliance.

Sample Natural Output

The samples in this section show the Natural output from the web service action which has been defined for the built-in rules listed below. The sample output for EntireX has been generated using the general template `ACTALL`, whereas the sample output for the Adabas server and Natural Development Server has been generated using the `ACTALL1` template which has been adjusted to restart these instances. For the Natural Development Server, a sample of a console message is shown as well.

- EntireX Broker Connection Error
- EntireX Server Available Error
- Adabas Server Not Active
- Natural Development Server Not Active

EntireX Broker Connection Error

```
Optimize Rule Violated => EntireX Broker Connection Error
  Instance = slesvnat3.EntireX.1971 not available
  Severity = 2 - High
  Time = 2012-02-01 15:13:28.3 MEZ
  EntireXBrokerState = 0.0
  Product = EntireX
  EntireXPort = 1971
  HostName = slesvnat3
```

EntireX Server Available Error

```
Optimize Rule Violated => EntireX Server Available Error
  Instance = slesvnat3.EntireX.1971.RPC/RAILWAY/JAVA not available
  Severity = 2 - High
  Time = 2012-02-01 14:08:07.970 MEZ
  EntireXServer = RPC/RAILWAY/JAVA
  Product = EntireX
  EntireXServerState = 0.0
  EntireXPort = 1971
  HostName = slesvnat3
```

Adabas Server Not Active

```
Optimize Rule Violated => Adabas Server Not Active
  Instance = daeplex_daef.Adabas Server.65535 DB65535 not active
  Severity = 2 - High
  Time = 2012-02-02 13:43:08.153 MEZ
  Product = Adabas Server
  AdabasState = 0.0
  AdabasServer = 65535 DB65535
  HostName = daeplex_daef
Optimize Rule Action => daeplex_daef.Adabas Server.65535 DB65535 started. Time: ↩
2012-02-02 13:43:24
```

Natural Development Server Not Active

```
Optimize Rule Violated => Natural Development Server Not Active
  Instance = daeplex_daef.NDV Server.NDV42 (4762) - Local not active
  Severity = 2 - High
  Time = 2012-02-16 17:05:25.830 CET
  NdvServer = NDV42 (4762) - Local
  Product = NDV Server
  NdvState = 0.0
  NdvHttpMonitorState = 1.0
  HostName = daeplex_daef
Optimize Rule Action => daeplex_daef.NDV Server.NDV42 (4762) started. Time: ↩
2012-02-16 17:05:42
```

The following message is written to the operator console:

```
17.05.42 STC37644  +Optimize Rule Violated => daeplex_daef.NDV Server.NDV42 (4762) ↩
-  952
   952              Local not active. Severity: 2 - High. Time: 2012-02-16 ↩
17:05:25.830
   952              CET
17.05.42 STC37644  +Optimize Rule Action => daeplex_daef.NDV Server.NDV42 (4762) ↩
started. Time: 2012-02-16 17:05:42
```

14 Tracing the Adabas and Natural Data Collectors

Activating the Trace

You activate the trace by configuring the ETS Resource Module settings of the Infrastructure Data Collector. For detailed information, see *Defining ETS Resource Module Settings* in the *Configuring BAM* guide.

You can change the value of the **Trace Level** property to any value described below. The default value is 4 (debug).

If an Adabas/Natural Data Collector profile is not created, the default trace level for the Adabas and Natural Data Collectors is the trace level provided by the Infrastructure Data Collector. This trace level can be overwritten by the `TRACE` parameter in the Adabas/Natural Data Collector profile. A change in the profile trace settings comes into effect with the next discovery or when the RPC server is restarted. See ***Collector Trace***.

Trace Levels

The trace levels used by the Adabas and Natural Data Collectors are listed in the table below. In general, a higher trace level also contains the information of the lower trace levels. For example, if you select trace level 3 (info), error messages and warnings are also logged.

It is recommended that you use at least trace level 2 (warning) so that error messages and warnings are logged. For a production environment, trace level 3 (info) is a good choice. It generates a spare log of the load of the data collectors. Higher trace levels can produce a lot of output. Therefore, they should only be used over short periods of time when analyzing the discovered or monitored data.

The Adabas and Natural Data Collector event maps contain KPIs (AdabasCollectorTrace and NaturalCollectorTrace) that indicate the currently used trace level. See ***Data Collector - Adabas*** and ***Data Collector - Natural*** in the section *Monitored KPI Definitions and Built-In Rules*.

Level	Name	Description
0	Critical error	Log critical errors. Currently not used.
1	Error	Log error messages.
2	Warning	Log warnings.
3	Info (summary)	Log a summary information line for each call to the Collector.
4	Debug	Not used by the Adabas and Natural Data Collectors.
5	Instances	General information, plus compact list of the discovered and monitored component instances.

Level	Name	Description
6	Details (KPIs)	Detailed list of the discovered and monitored component instances and of the monitored KPIs.
7	Product-specific	Write product-specific trace data.
8	Input data	Log input data.
9	Success messages	Write success messages.
10	Full trace	Write more detailed product-specific trace data.

Detailed information on the trace levels used by the Adabas and Natural Data Collectors is provided in the following topics:

- Critical Errors
- Errors and Warnings
- Information Trace
- Instance Trace
- Detailed Trace
- Product-Specific Trace
- Input Data Trace
- Success Messages Trace
- Full Trace

Critical Errors

Trace level: 0

If the trace level is set to "0", only critical errors are logged. Currently, there is no such error situation in the Adabas and Natural Data Collectors. Therefore, the trace level "0" switches logging off completely.

Errors and Warnings

Trace level: 1 and 2

If the Adabas and Natural Data Collectors encounter an error or warning, a message is written to the log file. The message looks similar to the following:

```
Client:Port ------------- Optimize Discovery Messages ----- 2010-11-03 16:53:38
Error-1 => DISNSC  : Invalid Natural Security file 00251/00018 (NAT3148 from ↩
NAT42028).
------------------------------ End of Messages ------------------------------
```

The message header line contains the client (host) name, the IDC port, whether this is a discovery or monitoring message, and the date. An error or warning message line starts with the error or warning count and displays the program which encountered the error and the error/warning message itself.

Information Trace

Trace level: 3

When the information trace (level 3) is active, an information line is logged for each call to the Adabas and Natural Data Collectors. The information line looks similar to the following:

```
Discover Natural 2010-11-04 09:04:53 E-Maps:   11 Insts:    87 Time:     0.7   ↩
Server Client:Port
Monitor  Natural 2010-11-04 09:10:35 E-Maps:   87 Facts:   943 Time:     0.2   ↩
Server Client:Port
```

Each line contains the following information:

- The function "Discover" or "Monitor".
- The asset type "Adabas" or "Natural".
- Date and time of the call.
- The number of event maps returned to Optimize. For the monitoring, this is the number of event map instances.
- The number of component instances discovered or the number of facts (dimensions and KPIs) monitored.
- The elapsed time in seconds required to collect the information.
- The server name.
- The client (host) name.
- The IDC port number.

Instance Trace

Trace level: 5

When the instance trace (level 5) is active, general information and the list of instances is logged.

For the discovery, the general information looks as follows:

```
----------------------------- Optimize Discovery -----------------------------
Collector ..............: Server
Client .................: Client
IDC Port ...............: Port
Server .................: Server
Asset type .............: Natural
Environment ............: Natural MF CICS (global)
Host ...................: daeplex_daef
Natural library .........: SYSEDM
SYSEDM version ..........: 2.0020
Client version ..........: 2
```

```
Trace level .............: 5
Number of Event Maps ....: 11
Number of Instances .....: 87
Max number of Instances .: 64
Elapsed Time ............: 0.2
Errors ..................: 0
Warnings ................: 0
Response ................: 0
Date ....................: 2010-11-04 10:25:22                  ↩
```

For the monitoring, the general information looks as follows:

```
---------------------------- Optimize Monitoring -----------------------------
Collector ...............: Server
Client ..................: Client
IDC Port ................: Port
Server ..................: Server
Asset type ..............: Natural
Host ....................: daeplex_daef
Natural library .........: SYSEDM
SYSEDM version ..........: 2.0020
Client version ..........: 2
Trace level .............: 5
Number of Event Maps ....: 87
Number of Facts .........: 943
Maximum number of Facts .: 15
Elapsed Time ............: 0.4
Errors ..................: 0
Warnings ................: 0
Response ................: 0
Date ....................: 2010-11-04 17:21:39                      ↩
```

The general information includes the following:

- The header line shows whether the log is written during the discovery or during the monitoring.
- The name of the Adabas Data Collector or Natural Data Collector.
- The client (host) name.
- The Infrastructure Data Collector port number.
- The server name.
- The asset type "Adabas" or "Natural".
- Discovery only: The environment in which the RPC server is running. The environment determines for which products the discovery process is performed.
- The name of the host on which the Adabas Data Collector or Natural Data Collector is running.
- The Natural library of the Adabas Data Collector or Natural Data Collector.
- The (internal) version and revision of the server part (`SYSEDM`) of the Adabas Data Collector or Natural Data Collector.

- The (internal) version of the client part of the Adabas Data Collector or Natural Data Collector.
- The currently used trace level.
- The number of event maps returned to Optimize. For the discovery, this is the number of event map types. For the monitoring, this is the number of event map instances.
- Discovery only: The total number of discovered component instances.
- Monitoring only: The total number of monitored facts (dimensions and KPIs).
- Discovery only: The maximum number (per event map) of discovered component instances.
- Monitoring only: The maximum number (per event map) of monitored facts (dimensions and KPIs).
- The elapsed time in seconds required to collect the information.
- The number of errors and warnings.
- The response code returned to Optimize.
- The date and time of the call.

The general information is also logged for higher trace levels.

The list of instances looks as follows:

```
--------------------------------- Instances ------------------------------- In
daeplex_daef.Natural Collector.Server                                        1
daeplex_daef.Natural Editor.QA42_QA42EDIT                                    2
daeplex_daef.Natural CICS.DAEFCIA1_QA42OCB                                   3
daeplex_daef.Natural CICS.DAEFCIA1_QA42OCB.Thread Group QA42OG01             4
daeplex_daef.Natural Roll Server.QA42_QAROLL42                               5
```

The list shows the discovered or monitored component instances. On the right side, the component instances (In) are counted.

Detailed Trace

Trace level: 6

When the detailed trace (level 6) is active, the following information is logged during the discovery:

```
------------------------------------------------------------------------------ Ev
Event Map: NaturalCICS                                                        1
-------------------------------------------------------------------------------
Dimensions:
HostName.Product.NaturalBufferPool                                              ↩

------------------------------------------------------------------------------ In
Instances:
daeplex_daef.Natural CICS.DAEFCIA1_QA42OCB                                    1
```

The following information is logged during the monitoring:

```
------------------------------------------------------------------------------ Ev
Event Map: NaturalCICS                                                          1
------------------------------------------------------------------------------ At
HostName                       daeplex_daef                                     1
Product                        Natural CICS                                     2
NaturalCICS                    DAEFCIA1_QA420CB                                 3
NCIState                       1                                                4
NCISirBlockExtension           4                                                5
NCISystemDirectoryRecoveries   0                                                6
NCISystemStartTime             2010-11-03 07:39:51                              7
NCIThreadGroups                1                                                8
NCIUsersActive                 16                                               9
NCIUsersActiveMax              21                                              10
------------------------------ End of Monitoring ------------------------------
```

The detailed trace consists of a general part and of event map-specific parts. The general part is described under ***Instance Trace***.

The event map-specific part of the discovery displays the event map name, the dimensions and the component instances discovered for the event map. For the monitoring, it displays the event map name and the name and value of each KPI monitored. Note that the trace always shows non-delta values which can be compared with values displayed in product-specific statistic tools (such as `SYSBPM`). The delta values displayed in Optimize are calculated in the Infrastructure Data Collector from two succeeding values that are returned by the Adabas Data Collector or by the Natural Data Collector.

On the right side, the event maps (Ev) are counted. For each event map, the component instances (In) or fact attributes (At) are counted additionally.

Product-Specific Trace

Trace level: 7

When the product-specific trace (level 7) is active, product-specific information is written to the log messages. In addition, the elapsed time spent to discover or monitor product-specific data is logged. The log entries look as follows:

```
Environment: Adabas MF
OP3DISC : DISCOLL  - Event maps: 1 Instances: 1 Dimensions: 3 Time: 0.0
DISADA2 : ADATMZ-GSVC: Version: 8.2.2 SVCs found: 25
DISADA2 : Adabas: 00010 (FNAT database) opened. Version: 08.01.04
```

The first line shows the `SYSEDM` environment (depends on the asset and platform).

In general, each of the following lines starts with the name of the program which has written the log entry. The second line (written by `OP3DISC`) shows the number of event maps, instances and

dimensions returned by the program DISCOLL (“discover collector”) and the elapsed time spent in that program. A similar log is written by OP3MONI for the monitoring. The other lines in the above example (written by DISADA2) contain Adabas-specific trace data.

Input Data Trace

Trace level: 8

When the input data trace (level 8) is active during the discovery, the values read from the profile are logged.

```
Read Profile Parameter NSC, entries: 3
  00010/00024
  00010/00030
  00010/00033
```

During monitoring, the components and KPIs selected in Optimize are logged. On the right side, the event maps (Ev), component instances (In) and KPIs (Kp) are counted.

```
---------------------------------- Input ---------------------------------- Ev
Event Map: NaturalCICS                                                     1
-------------------------------------------------------------------------- In
Selected Instances:
daeplex_daef.Natural CICS.DAEFCIA1_QA420CB                                 1
-------------------------------------------------------------------------- Kp
Selected KPIs:
NCIState                                                                   1
NCISirBlockExtension                                                       2
NCISystemDirectoryRecoveries                                               3
NCISystemStartTime                                                         4
NCIThreadGroups                                                            5
NCIUsersActive                                                             6
NCIUsersActiveMax                                                          7
--------------------------------------------------------------------------
```

Success Messages Trace

Trace level: 9

When the success messages trace (level 9) is active, product-specific information regarding successful operations is written to the log messages. The log entries look as follows:

```
MONADA  : Adabas Server: 00010 AC8SYS: Calls: 215655350
MONADA  : Adabas Server: 00010 AC8STR: CPU-time: 22518
MONADA  : Adabas Server: 00010 AC8PRM: Threads: 15
MONADA  : Adabas Server: 00010 AC8DCQ: Command Queue: 33/150
```

Full Trace

Trace level: 10

The full trace (level 10) contains all trace information of the Adabas and Natural Data Collectors. It contains additional information such as unsuccessful operations. The log entries look as follows:

```
NSRVLIST: NDV Server DAEFNDV    (7315) - RC 12: O4I interface not implemented
NSRVLIST: NDV Server DAEFNDV4   (7319) - RC 12: O4I interface not implemented
```

Location of the Log File

Mainframe

The trace data is written to the primary output destination of Natural. In batch, this is the `CMPRINT` data set of the Natural RPC server job. In CICS, this is the sender destination (data set of the CICS job). If the output fails, the trace is suppressed.

UNIX and Windows

The trace data is written to a work file which has the following name:

EDM_*asset_server_yyyymmdd*

where *asset* is the name of the asset (Adabas or Natural), *server* is the name of the RPC server, and *yyyymmdd* is the current date.

Thus, for each asset and each RPC server, you will find one log file per day. The log file is allocated when the first entry is written to the file.

The log file is allocated in the temporary Natural directory which has been defined in the local Natural configuration file. For more information on the Natural temporary directory, see *Installation Assignments* in the *Configuration Utility* documentation which is provided for Natural for UNIX and Natural for Windows.

If a temporary Natural directory has not been defined in the local configuration file, the log file is stored in the directory defined by the UNIX or Windows environment variable `TEMP` or, if `TEMP` is not defined, in the directory defined by the environment variable `TMP`. If none of the above is defined, the trace is written to the output of the RPC server. If this fails, the trace is suppressed.

15 Tracing the Enterprise Products in the Infrastructure Data Collector

Activating the Trace

You activate the trace by configuring the collector settings of the Infrastructure Data Collector. For detailed information, see *Defining Collector Settings* in the *Configuring BAM* guide.

You can change the value of the **Trace Level** property for the following Data Collector packages:

- Adabas Data Collector
- Adabas SOA Gateway Data Collector
- ApplinX Data Collector
- Com-plete Data Collector
- EntireX Data Collector
- Natural Data Collector
- Natural Ajax Data Collector

Location of the Log File

The trace data is written to a file which has the following name:

server.log

When more than one log file is available, a number is added to the file name which is incremented by 1 for each additional log file:

server.log.*n*

The log file is located in the following directory:

installation-directory\profiles\InfraDC\logs

Reading the Output

The output of the data collector modules and the sent data is marked as shown in the following table:

Item	Text in the Output
Adabas Data Collector	AdabasDC
Adabas SOA Gateway Data Collector	SOAGatewayDC
ApplinX Data Collector	ApplinXDC
Com-plete Data Collector	CompleteDC
EntireX Data Collector	EntireXDC
Natural Data Collector	NaturalDC
Natural Ajax Data Collector	NaturalAjaxDC
Sent Data	MAP

Example:

```
2009-09-15 00:01:11 CEST [ISU.0000.9999V1] EntireXDC:
717*PollThreads:MyHost:1971*ExxDCPoll.OnPoll() MAP EntireXBroker:
{EntireXPublishersPercentage=0.0, EntireXCommunicationBuffers=3,
EntireXBroker=1971, EntireXLongBuffers=2, EntireXTopics=0, EntireXServers=1,
EntireXLongBuffersPercentage=0.0, EntireXPlatform=Version 8.0.0.0 Platform
Windows Server, EntireXShortBuffersPercentage=0.0, EntireXUOWs=0,
EntireXCommunicationBuffersPercentage=0.0, EntireXUOWsPercentage=0.0,
EntireXShortBuffers=3, Product=EntireX, EntireXClients=2, EntireXCalls=39,
HostName=MyHost, EntireXOpenConnectionsPercentage=0.29,
EntireXSubscribersPercentage=0.0, EntireXClientsPercentage=0.0,
EntireXBrokerState=1, EntireXSubscribers=0, EntireXServersPercentage=0.0,
EntireXOpenConnections=6, EntireXPublishers=0, EntireXTopicsPercentage=0.0}
```

This means, the EntireXDC module sends this event map from the EntireX Broker MyHost running on port 1971 to the Analytic Engine.

16 Tracing the EntireX Communication in the Infrastructure

Data Collector

Activating the Trace

You activate the trace by configuring the ETS Resource Module settings of the Infrastructure Data Collector. For detailed information, see *Defining ETS Resource Module Settings* in the *Configuring BAM* guide.

You can change the default value of the **Trace Level** property to any values described below.

Trace Levels

Logging for the EntireX communication is enabled with one of the following trace levels.

Trace Level 6

With trace level 6, each call between the data collector package and EntireX Broker is logged.

Trace Level 7

With trace level 7, each call and the data between the data collector package and EntireX Broker is logged.

Location of the Log File

The trace data is written to a file which has the following name:

entirex*yyyymmdd*.log

This file is located in the following directory:

installation-directory\profiles\InfraDC\logs

Reading the Output

Trace Level 6

Example:

```
2009-09-14 00:06:07.776/PollThreads:MyHost:1971
SEND(BID=MyHost:1971,UID=OPTIMIZE,CID=NEW,SC=SAG,SN=ETBCIS,SV=INFO,W=5S,
SL=559,RL=7168,LS=CP1252,API=9,XRL=0,ANODE=MyHost,ATYPE=Java,AVERS=8.0.1.20,
ANAME=Java Runtime,ETXL=256,PU=09Sep13-030944-000000-00000J)

2009-09-14 00:06:07.776/PollThreads:MyHost:1971   SEND returns:
CID=100000000000003QP,EC=00000000,RETL=112,SEQID=9237,UOWST=RECV_NONE,
TXT=Successful response
```

This means, the data collector for MyHost:1971 sends 559 bytes to the server SAG/ETBCIS/INFO. EntireX Broker returns 112 bytes and confirms.

Trace Level 7

Example:

```
2009-09-21 14:34:55.548/Thread-87
SEND(BID=MyHost:1973,UID=dba,CID=NONE,SC=RPC,SN=OPT_SERVER,
SV=CALLNAT,W=60S,SL=357,RL=7168,LS=CP1252,API=9,XRL=0,ANODE=MyHost,
ATYPE=Java,AVERS=8.0.1.20,ANAME=Java Runtime,ETXL=256,RPCPGM=OPTDISC,
PU=09Sep20-031855-000000-00000D)
2009-09-21 14:34:55.548/Thread-87 Sending Data 357 bytes:
00000000     32303230 2A525043  2A303030 30303030  |2020*RPC*0000000|
00000010     30393230 30303030  30303038 36303030  |0920000000086000|
00000020     30303030 31373830  30303030 30303131  |0000178000000011|
00000030     36303030 30303030  32393430 30303030  |6000000029400000|
00000040     30303036 33303030  30303030 30202020  |0006300000000   |
00000050     4E433030 30303030  30303135 4C423D30  |NC0000000015LB=0|
00000060     2C554944 3D332C64  6261504D 3D372C4F  |,UID=3,dbaPM=7,O|
00000070     50544449 53435054  3D35342C 456E7469  |PTDISCPT=54,Enti|
00000080     72655820 4A617661  20525043 20436C69  |reX Java RPC Cli|
00000090     656E7420 382E302E  312E3230 2057696E  |ent 8.0.1.20 Win|
000000A0     646F7773 20323030  3320352E 32207838  |dows 2003 5.2 x8|
000000B0     362E4D49 342C304D  49342C30 4F412856  |6.MI4,0MI4,00A(V|
000000C0     29302C30 4F49342C  304F4934 2C305349  |)0,00I4,00I4,0SI|
000000D0     342C3053 41285629  302C3053 47285529  |4,0SA(V)0,0SG(U)|
000000E0     312C312C 30534128  5629302C 30534128  |1,1,0SA(V)0,0SA(|
000000F0     562C5529 302C302C  30534728 5529322C  |V,U)0,0,0SG(U)2,|
00000100     312C3053 4128562C  5529302C 302C3053  |1,0SA(V,U)0,0,0S|
00000110     4128562C 5529302C  302C3053 47322C30  |A(V,U)0,0,0SG2,0|
00000120     5347312C 302E2B30  30303030 30303030  |SG1,0.+000000000|
```

```
00000130     312B3030 30303030  30303031 31362C4F  |1+000000000116,O|
00000140     50545F57 42453120  73727677 6265312B  |PT_SERVER MyHost|
00000150     30303030 30303030  30372B30 30303030  |+0000000007+0000|
00000160     30303030 30                          |000000          |

2009-09-21 14:34:55.548/Thread-87 Received Data 313 bytes:
00000000     32303230 2A525043  2A303030 30303030  |2020*RPC*0000000|
00000010     30393630 30303030  30303231 37303030  |0960000000217000|
00000020     30303030 30303030  30303030 30303030  |0000000000000000|
              -same as above-
00000040     30303030 30303031  32363937 35202020  |0000000126975   |
00000050     4E433030 30303030  30303030 20202020  |NC0000000000    |
00000060     4E443D39 302C3135  30365365 72766572  |ND=90,1506Server|
00000070     30323031 30312C20  20202020 20202020  |020101,         |
00000080     20202020 20202020  20202020 20202020  |                |
              -same as above-
000000C0     45543D35 392C4F50  54444953 43202039  |ET=59,OPTDISC  9|
000000D0     39393920 4E415436  39373520 53656375  |999 NAT6975 Secu|
000000E0     72697479 20657272  6F722O6F 6E205365  |rity error on Se|
000000F0     72766572 2C2O7265  61736F6E 2031202C  |rver, reason 1 ,|
00000100     2E4E453D 31382C30  312C4F50 54444953  |.NE=18,01,OPTDIS|
00000110     43203939 39393031  4F50543D 32362C4E  |C 999901OPT=26,N|
00000120     61747572 616C2052  50432053 65727665  |atural RPC Serve|
00000130     72205250 43363333  2E                |r RPC633.       |
2009-09-21 14:34:55.548/Thread-87   SEND returns: EC=00000000,RETL=313,
SEQID=62,UOWST=RECV_NONE,TXT=Successful response
2009-09-21 14:34:55.548/Thread-87 Broker Error 1001 0012: OPTDISC
9999 NAT6975 Security error on Server, reason 1 ,., NE=01,OPTDISC 9999010
```

Here, we see that the data collector tries an `OPTDISC` call to the server OPT_SERVER and gets a security error.

V MashApps

The information provided in this part is organized under the following headings:

17 Infrastructure Monitoring MashApps

General Information

MashZone is a browser-based application from Software AG which enables you to visualize any data from various, independently distributed data sources in a so-called MashApp.

Software AG provides sample MashApps for the infrastructure monitoring of selected Enterprise Transaction Systems product components. The MashApps show and evaluate data which is collected by Optimize for Infrastructure. They are showcases how a KPI-specific visualization can be achieved with MashZone.

Sample MashApps for the following product components are available for download:

- Adabas Server
- EntireX Broker
- Natural Security
- Natural zIIP Enabler

Preparing to Use the MashApps

The following topics are covered below:

Downloading the MashApps

The MashApps and related data are provided in a zip file in Empower, as a download component for Optimize for Infrastructure. To download the zip file, proceed as follows:

1. Log in to Empower (***https://empower.softwareag.com/***).
2. Go to **Products & Documentation > Download Components > Optimize for Infrastructure**.
3. Download the "Infrastructure Monitoring MashApps" component (*O4I_MashApps.zip*).

   In addition to the zip file, Empower also provides a readme file (*Readme_O4I_MashApps.txt*) which contains the latest update information.

Unpacking the Zip File

You have to unpack the *O4I_MashApps.zip* file to the following directory, depending on the MashZone version that you are using:

- For MashZone 9.0 and above:

```
<installation-directory>\server\bin\work\work_mashzone_<t>\mashzone_data
```

  <t> indicates the type of the MashZone server. Types are *s*, *m*, and *l*. For example, *work_mashzone_m* for a medium type.

- For MashZone versions lower than 9.0:

```
<installation-directory>
```

where <*installation-directory*> is the MashZone installation directory.

After unpacking the zip file, the following directories are available in the MashZone installation directory:

Directory	Content
*importexport**Optimize_<date>*	MashApps for Optimize for Infrastructure.
*resources**Optimize*	Resources used by the MashApps. Initially, this directory contains the resources which do not have to be edited.
*resources**Optimize_src*	Source directory for resources which have to be edited (further information is provided below) and copied into the *resources**Optimize* directory.
*assets**colorschemes*	Color schemes. The color schemes for Optimize for Infrastructure are named *O4I_*.xml*.

Editing the Resource Files

To adapt the MashApps to your requirements, you have to edit the resource files in the *resources**Optimize_src* directory as described below. The resource files are Excel files. To edit them, Microsoft Excel or any other tool which is able to handle Excel files is required.

The following resource files are provided:

- ***Filter.xlsx***
  This file contains the instance filter definitions. Specify one line for each filter/instance combination. A line is ignored if any entry is empty.

  In the Adabas Server MashApp, the filters with a `Product="Adabas Server"` specification are listed in the **Filter** selection box. If a specific filter is selected, only the instances belonging to that filter are shown.

Sheet	Column	Description
Filter	Filter	Specify the filter name.
	Product	Specify the product component name.
	Instance	Specify the instance name. For Adabas Cluster instances, specify the name of the server without nucleus specifications.

Example

Three Adabas servers are used in production:

00001 PROD-A
00002 PROD-B
00003 PROD-C

Two Adabas servers are related to project A:

00001 PROD-A
00011 TEST-A

In the *Filter.xlsx* file, you specify the following entries:

Filter	Product	Instance
Production	Adabas Server	00001 PROD-A
Production	Adabas Server	00002 PROD-B
Production	Adabas Server	00003 PROD-C
Project A	Adabas Server	00001 PROD-A
Project A	Adabas Server	00011 TEST-A

In the Adabas Server MashApp, you will find the filter entries for "Production" and "Project A". If you select a filter, all Adabas Server charts will only show data for the Adabas servers which correspond to the selected filter. If you select "No filter", data for all Adabas servers is shown, even for those which are not referred to in any filter.

- ***Products.xls***
  This file contains product component-specific settings. In general, there is one sheet for each product component. On each sheet, you can specify a value for each given property.

Sheet	Property	Description
Adabas Server (MF)	Call Duration yellow	The Adabas call duration is the average time in milliseconds that is needed for a database call. The lower the call duration, the better the database performance. Good, average and poor performance is indicated in the MashApp by a green, yellow or red colored background, respectively. Specify the value of the yellow threshold (in units of milliseconds) for which the call duration leaves the green zone. Default: 1.
	Call Duration red	Specify the value of the red threshold (in units of milliseconds) for which the call duration leaves the yellow zone. Default: 5.
Natural zIIP	NormFactor	Specify the CPU normalization factor of your z/OS machine. The default value is 1 which means that no normalization is used.

- ***Server.xls***

  This file contains the specification of the webMethods Optimize server. If you use multiple servers, you have to specify one line for each server. The delivered *Server.xls* file contains one sample line for a locally running Analytic Engine. Remove this line if it is not suitable for your environment.

Sheet	Column	Description
URL	URL	Specify the URL and port for the MashZone access to the webMethods Optimize server. For Optimize version 9.0 or above, use the port of the Optimize Analytic Engine/WS Registry (default: 12503). Otherwise use the port of the Integration Server (default: 5555).
	Integration Server	Specify "y" if an Integration Server is used. Otherwise specify "n".
	Description	Specify a descriptive name for the webMethods server. The descriptions are used in the **Optimize Server** selection of the MashApps.
	Enable	A server is only shown in the **Optimize Server** selection of the MashApps if "Enable" is set to "y".

- ***TimePeriod.xls***

  This file contains time-related information. Especially, it is used to determine the time zone which is needed for the Optimize access from MashZone.

Sheet	Column	Description
Time Zone	My Location	Mark the line belonging to your location with an "X".

Note: The sample MashApp "Monitor EntireX Broker Calls Sample" does not make use of the resource files.

Activating the MashApps

To activate a MashApp, make sure you have a Professional, Enterprise or Event license file, that you have administrator rights, and then proceed as follows:

1. Copy all resource files from *resources\Optimize_src* to *resources\Optimize*.
2. Invoke MashZone.
3. Go to the **Administration** page (see the corresponding link at the top of the page) and then to the **Import/Export/Delete** page.
4. Import the MashZone archive files (**.mzp*) from the *importexport\Optimize_<date>* directory using the **Import** function.

   As an alternative, you can remove all files from the *importexport* directory, copy the files from the *importexport\Optimize_<date>* directory into the *importexport* directory, and then import the MashApps using the **Import all** function.

   The MashApps in the *importexport\Optimize_<date>* directory are named as follows:

   M_<MashApp name> <version>_<revision>_<date>-<time>.mzp

   where the MashApp name can be one of the following:

MashApp Name	Description
Monitor Adabas Server	Monitor Adabas Server (mainframe) KPIs.
Monitor EntireX Broker Calls Sample	MashApp sample which shows how to access Optimize for Infrastructure data from MashZone. The MashApp can be used as a template for monitoring Optimize for Infrastructure KPIs. Before you can use this sample, you have to edit the associated data feed "O4I Read EntireXCalls Sample" and adjust it to your needs.
Monitor EntireX Broker Calls	Monitor the distribution and history of EntireX Broker calls. The MashApp can be used as a template for monitoring Optimize for Infrastructure KPIs in a selected time range.
Monitor Natural Security	Monitor Natural Security KPIs.
Monitor Overview	Overview of the MashApps for the Enterprise Transaction Systems product components.
Monitor zIIP Enabler for Natural	Monitor zIIP Enabler for Natural KPIs and CP/zIIP utilization.

Using the MashApps

After you have activated the MashApps as described above, you can open the MashApp "Monitor Overview". This MashApp provides links to all other infrastructure monitoring MashApps.

The following example shows the buffer efficiency history (last hour) of selected Adabas servers. If the buffer efficiency is monitored in short aggregated time intervals like one minute, it can be very high (higher than 10000). Nevertheless, the interesting values are those where the buffer efficiency is poor, which are the values lower than 10. The buffer efficiency-specific visualization in the MashApp uses a logarithmic chart so that peeks as well as critical values can be viewed appropriately.

18 Integrating MashZone in My webMethods Server

You can connect MashZone to My webMethods using MashZone as a portlet in My webMethods Server. This connection enables you to display MashZone or individual MashApps in an embedded window (frame) on a My webMethods web page (workspace).

To integrate MashZone in My webMethods Server, you have to publish the MashZone portlet in the My webMethods user interface. This is required so that the MashZone client can be used as a portlet in My webMethods Server.

For detailed information on how to install the MashZone portlet together with My webMethods and how to publish it, see the MashZone help.

See also *Administering My webMethods Server*.

VI

19 Conventions and Definitions for KPIs and Built-In Rules

Naming Conventions

This section describes the naming conventions for the KPIs that are used for infrastructure monitoring of Software AG's enterprise products. The administration names and KPI names are listed in the section *KPI Definitions for Infrastructure Monitoring*.

Administration Names

Administration names are used throughout the Optimize administration. They are also displayed in the **KPI Instance Detail** panel when data for the KPI instance is shown in tabular format (after clicking the **View Data** button). In general, the administration name of a KPI or dimension is a compound word in which the single words are joined without spaces and are capitalized within the compound ("CamelCase"). For infrastructure monitoring, the first part reflects the product component.

The following examples show administration names. The product component name within the administration name is indicated in bold.

- **Adabas**AssoReads
- **Natural**SessionLogons
- **EntireX**CommunicationBuffers

Monitor IDs and KPI Names

The monitor ID is displayed in the Optimize monitoring. It denotes an instance of a KPI. For a unique identification, the monitor ID consists of the component's hierarchical dimensions and the KPI name, separated by a dot (.). The single dimensions are also separated by dots. The KPI name is the descriptive name of the KPI containing blanks if appropriate.

The following examples show monitor IDs. The KPI name within the monitor ID is indicated in bold.

- daeplex_daef.Adabas Server.00123 PRODDB.**ASSO - Number of Reads**
- daeplex_daef.Natural Review.CICS0001.**Session Logons**
- srvxyz1.EntireX.1971.**Communication Buffers**

Aggregation Types

Multiple values obtained by Optimize in a collection interval are aggregated according to the defined Optimize aggregation type. Some KPIs, however, require a special treatment or cannot be used for calculations at all. The following table describes all possible aggregation types.

Type	Description
average	Optimize calculates the average value of the data collected over each collection interval.
composite	The KPI is a composite of two other KPIs by performing a mathematical operation (add, subtract, multiply or divide). Composite KPIs are not listed for KPI selection in the **Monitored Components** page of Optimize. Therefore, they cannot explicitly be selected. Composite KPIs are monitored automatically if the corresponding base KPIs have been selected.
delta	The value reflects the increase of a counter in the polling interval. For multiple polling intervals in a collection interval, the data points are summarized.
generic	The KPI is not used for monitoring. This is generally the type of non-numeric values such as names. A generic KPI does not have an associated KPI name. In Optimize, a generic KPI can be visualized in the **KPI Instance Detail** panel by clicking the **View Data** button.
last value	Optimize uses the value of the last data collected in the collection interval.
state	Optimize uses the value of the last data collected in each collection interval where the possible values are 1 (online) or 0 (offline).
sum	Optimize summarizes the data points collected over each collection interval.

The **Type** column of the KPI tables in *KPI Definitions for Infrastructure Monitoring* shows the aggregation type that is used for a given KPI.

Generally Used Dimensions for Infrastructure Monitoring

The following dimensions are used for all Software AG enterprise products and components:

Level	Administration Name	Displayed Value	Remark	Example
1	Host	*host-name*	For non-sysplex systems	sunnat5z5
		sysplex-name_host-name	For sysplex systems	DAEPLEX_DAEF
		sysplex-name	For sysplex totals	DAEPLEX
2	Product	*product-name*		Natural Buffer Pool
3 ≥	*component-name*	*component-instance*		QA42_QA42GBP

Note: For sysplex systems, the PLEXNAME parameter in the Adabas/Natural Data Collector profile allows using the *host-name* without preceding *sysplex-name*.

The *component-name* is the name of the product component without spaces (similar to the administration names of the KPIs).

The *component-instance* is the name of the instance. If required, additional parts are added to make it unique or easier to read.

Examples:

Component Name	Component Instance	Description
AdabasServer	00123 PRODDB	The database name is added to the DBID to make it easier to read.
NaturalBufferPool	QA42_QA42GBP	The Natural subsystem ID is put in front of the buffer pool name to make it unique.
EntireXBroker	1971	The Broker port name.

Detailed lists of the used dimensions can be found in *KPI Definitions for Infrastructure Monitoring*.

Automatically Monitored KPIs

Object state KPIs (such as "AdabasState" or "AdabasCollectorState") are automatically monitored once the corresponding component type instance has been selected. When you configure the monitored components, the object state KPIs are not provided for selection. It is not possible to manually add an object state KPI to use for a component type, and it is not possible to remove an object state KPI for a component type.

Built-In Rules

The pre-defined rules listed in *KPI Definitions for Infrastructure Monitoring* are added automatically to the Optimize rule list the first time the Infrastructure Data Collector is started in your environment. By default, essential rules which verify the state of a component are enabled, whereas the other rules are disabled. These rules are provided as examples. They may need to be modified to provide the desired results for your environment before you enable the rule. If a specific rule is not relevant for your environment, you may disable or even delete it.

Several rules refer to the state of the monitored component. When the component is inactive, Optimize indicates a rule violation.

Most rules fire as soon as the data arrives in Optimize, that is, at the polling interval. For technical reasons, rules which refer to composite KPIs fire at the accumulation time, that is, at the KPI interval.

In general, Optimize verifies the rule condition only if a value is provided. If the connection to Optimize is down (for example, if the RPC server is not running for infrastructure monitoring), the Adabas and Natural components cannot provide data. From the Optimize view, the state of the Adabas and Natural components is unknown and the corresponding rules do not indicate a rule violation. Indeed, a failing connection from Optimize to the Adabas Data Collector or Natural Data Collector requires a different action as, for example, an inactive Natural buffer pool. To address this situation, special state KPIs are provided with the Adabas and Natural Data Collectors ("AdabasCollectorState" and "NaturalCollectorState"). These state KPIs indicate "offline" when no data is provided from the collector at the polling time. Like other state KPIs, the Collector state KPIs are automatically monitored. It is strongly recommended to keep an eye on the corresponding rules (“Adabas collector not reached” or “Natural collector not reached”). If any of these rules is violated, the connection from Optimize to the Adabas and Natural Data Collectors must be checked and reestablished so that the Adabas and Natural components can be monitored properly.

20 KPI Definitions for Infrastructure Monitoring

Adabas Caching Facility

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Caching".
AdabasCaching	The cached Adabas Server database ID and name; nucleus ID for cluster

KPIs of Event Map AdabasCaching

Administration Name	KPI Name	Unit	Type	Description
AdaCacheEfficiency	Cache Efficiency	%	composite	The Adabas caching efficiency. Composite KPI: 100 * AdaCacheReadCache / AdaCacheReadTotal
AdaCacheReadAheadAvg	Read Ahead Average Blocks per EXCP	blocks	composite	The average read ahead RABN blocks per EXCP. Composite KPI: AdaCacheReadAheadRabn / AdaCacheReadAheadExcps
AdaCacheReadAheadExcps	Read Ahead EXCPs	count	delta	The number of EXCPs read ahead.
AdaCacheReadAheadRabn	Read Ahead RABNs	count	delta	The number of RABNs read ahead.
AdaCacheReadCache	Read Cache	count	delta	The number of cache reads.
AdaCacheReadExcps	Read EXCPs	count	delta	The number of read EXCPs.
AdaCacheReadTotal	Read Total	count	delta	The total number of reads (EXCPs or cache).
AdaCacheSpacesActive	Cache Spaces - Active	count	last value	The number of active cache spaces.
AdaCacheSpacesDefined	Cache Spaces - Defined	count	last value	The number of defined cache spaces.
AdaCacheState	Adabas Caching State	state	state	The state of the Adabas Caching Facility (online/offline). This KPI is automatically monitored.
AdaCacheWriteCache	Write Cache	count	delta	The number of cache writes.

Note: EXCP is the abbreviation for *execute channel program* (UPAM SVC for BS2000).

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Caching Not Active	Adabas.AdaCacheState = 0	2 - High	The Adabas Caching is not active.

Adabas Delta Save

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Delta Save".
AdabasDeltaSave	The ID and name of the Delta-Save-enabled database.

KPIs of Event Map AdabasDeltaSave

Administration Name	KPI Name	Unit	Type	Description
DeltaDlogAreaUsage	DLOG Area Usage	percent	last value	Occupancy of the DLOG area. If full, delta save is disabled or next Delta Save tape is created (triggered by user exit).
DeltaSaveLastDeltaSave	Last Delta Save Number	count	last value	The number of the last Delta Save tape.
DeltaSaveLastFullSave	Last Full Delta Save Number	count	last value	The number of the last Full Delta Save tape.
DeltaSaveState	Delta Save State	state	state	The state of the Adabas Delta Save (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Delta Save DLOG Full	Adabas.DeltaDlogAreaUsage > 80	2 - High	The DLOG area is more than 80 % full.
Adabas Delta Save Not Active	Adabas.DeltaSaveState = 0	2 - High	Adabas Delta Save is not active.

Adabas Event Replicator

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Event Replicator".
AdabasEventRep	The ID and name of the Event Replicator server.

KPIs of Event Map AdabasEventRep

Administration Name	KPI Name	Unit	Type	Description
RepBytesSentTotal	Bytes Sent Total	count	delta	The total number of bytes sent in the messages.
RepFreeSLOGAssoSpace	SLOG - ASSO Free Blocks	percent	last value	Free space on ASSO for SLOG entries.
RepFreeSLOGDataSpace	SLOG - DATA Free Blocks	percent	last value	Free space on DATA for SLOG entries.
RepHWMRepPool	High-Water Mark - Replication Pool (RPL)	percent	last value	The high-water mark of the Replication Pool (RPL).
RepMessagesTotal	Replicated Messages Total	count	delta	The number of replicated messages.
RepPendTransactions-Total	Pending Transactions Total	count	last value	The number of pending transactions.
RepSLOGEntriesTotal	SLOG - Number of Entries	count	last value	The total number of entries in the SLOG file.
RepState	Replicator - State	state	state	The state of the Event Replicator (online/offline). This KPI is automatically monitored.
RepTransactionsTotal	Replicated Transactions Total	count	delta	The number of replicated transactions.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Event Replicator Not Active	Adabas.RepState = 0	2 - High	The Event Replicator is not active.
Adabas Event Replicator SLOG ASSO Full	Adabas.RepFreeSLOGAssoSpace < 10	2 - High	Less than 10% of the SLOG ASSO space is free.
Adabas Event Replicator SLOG DATA Full	Adabas.RepFreeSLOGDataSpace < 10	2 - High	Less than 10% of the SLOG DATA space is free.

Adabas Event Replicator - Destination

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Event Replicator".
AdabasEventRep	The ID and name of the Event Replicator server.
AdabasEventRepDest	The Event Replicator destination.

KPIs of Event Map AdabasEventRepDest

Administration Name	KPI Name	Unit	Type	Description
RepDestBytesSent	Bytes Sent	count	delta	The number of bytes sent.
RepDestCommandsCommitted	Commands Committed	count	delta	The number of commands committed.
RepDestCommandsPending	Commands Pending	count	last value	The number of commands pending.
RepDestLatency	Latency Time of Last Transaction	ms	last value	Latency time of last transaction. This value is only available for Adabas destinations.
RepDestMessagesSent	Messages Sent	count	delta	The number of messages sent.
RepDestPendingTransactions	Pending Transactions	count	last value	The number of pending transactions.
RepDestReplicatedTransactions	Replicated Transactions	count	delta	The number of replicated transactions.
RepDestSlogDelog	SLOG - Delogged Count	count	delta	SLOG delogged count.

Administration Name	KPI Name	Unit	Type	Description
RepDestSlogEntries	SLOG - Number of Entries	count	last value	Number of SLOG entries for this destination.
RepDestSlogLog	SLOG - Logged Count	count	delta	SLOG logged count.
RepDestState	State of the Event Replicator Destination	state	state	State of the Event Replicator destination (active or not). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Event Replicator Destination Not Active	Adabas.RepDestState = 0	2 - High	The Event Replicator destination is not active.

Adabas Event Replicator - Input Queue

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Event Replicator".
AdabasEventRep	The ID and name of the Event Replicator server.
AdabasEventRepInQueue	The Event Replicator input queue name.

KPIs of Event Map AdabasEventRepInQueue

Administration Name	KPI Name	Unit	Type	Description
RepInQBackouts	Number of Backouts	count	delta	The number of backouts.
RepInQBytes	Number of Bytes Received	count	delta	The number of bytes received.
RepInQCommits	Number of Commits	count	delta	The number of commits.
RepInQMessages	Number of Messages	count	delta	The number of messages.
RepInQPendingBytes	Number of Pending Bytes	count	last value	The number of pending bytes.
RepInQPendingMessages	Number of Pending Messages	count	last value	The number of pending messages.
RepInQState	State of the Event Replicator Input Queue	state	state	The state of the Event Replicator input queue. This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Event Replicator Input Queue Closed	Adabas.RepInQState = 0	2 - High	The Event Replicator input queue is closed.

Adabas Event Replicator - Subscription

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Event Replicator".
AdabasEventRep	The ID and name of the Event Replicator server.
AdabasEventRepSubscr	The Event Replicator subscription name.

KPIs of Event Map AdabasEventRepSubscr

Administration Name	KPI Name	Unit	Type	Description
RepSubInitialStateCompleted	Initial-State Transactions Completed	count	delta	The number of initial-state transactions completed.
RepSubLostData	Lost Data Count	count	delta	The number of lost data.
RepSubRepTransactions	Replicated Transactions	count	delta	The number of replicated transactions.
RepSubRepUtilityFunctions	Utility functions	count	delta	The number of replicated utility functions.
RepSubState	State of the Event Replicator Subscription	state	state	The state of the Event Replicator subscription (active or not). This KPI is automatically monitored.
RepSubUserTransactions	User Transactions	count	delta	The number of replicated user transactions.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Event Replicator Subscription Not Active	Adabas.RepSubState = 0	2 - High	The Event Replicator subscription is not active.

Adabas Fastpath

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Fastpath".
AdabasFastpath	The ID and name of the Adabas Fastpath buffer.

KPIs of Event Map AdabasFastpath

Administration Name	KPI Name	Unit	Type	Description
AFPAsynBufferManagerState	Asynchronous Buffer Manager State	state	state	The state of the Fastpath Buffer Manager (online/offline). This KPI is automatically monitored.
AFPDirAccOptAttempts	Direct Access - Optimization Attempts	percent	last value	All direct access optimization attempts as a fraction of the total number of commands.
AFPDirAccSuccOptAttempts	Direct Access - Successful Optimization Attempts	percent	last value	The successful direct access optimization attempts as a fraction of all direct access optimization attempts.
AFPReadAheadOptAttempts	Read-Ahead - Optimization Attempts	percent	last value	All read-ahead optimization attempts as a fraction of the total number of commands.
AFPReadAheadSuccOpt-Attempts	Read-Ahead - Successful Optimization Attempts	percent	last value	The successful read-ahead optimization attempts as a fraction of all read-ahead optimization attempts.
AFPTotalCommands	Commands - Total	count	delta	The number of commands received by the Fastpath Buffer Manager during the last measuring interval.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Fastpath Buffer Manager Not Active	Adabas.AFPAsynBufferManagerState = 0	2 - High	The Fastpath Buffer Manager is not active.

Adabas Fastpath - Database

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Fastpath".
AdabasFastpath	The ID and name of the Adabas Fastpath buffer.
AdabasFastpathDatabase	The ID of the Adabas Fastpath database.

KPIs of Event Map AdabasFastpathDatabase

Administration Name	KPI Name	Unit	Type	Description
AFPDbDirAccOptAttempts	Direct Access - Optimization Attempts	percent	last value	All direct access optimization attempts as a fraction of the total number of commands for this database server.
AFPDbDirAccSuccOptAttempts	Direct Access - Successful Optimization Attempts	percent	last value	The successful direct access optimization attempts as a fraction of all direct access optimization attempts for this database server.
AFPDbReadAheadOptAttempts	Read-Ahead - Optimization Attempts	percent	last value	All read-ahead optimization attempts as a fraction of the total number of commands for this database server.
AFPDbReadAheadSuccOpt-Attempts	Read-Ahead - Successful Optimization Attempts	percent	last value	The successful read-ahead optimization attempts as a fraction of all read-ahead optimization attempts for this database server.
AFPDbState	Adabas Fastpath Database State	state	state	The state of the database server (online/offline). This KPI is automatically monitored.

Administration Name	KPI Name	Unit	Type	Description
AFPDbTotalCommands	Commands - Total	count	delta	The number of commands received by the Fastpath Buffer Manager for this database server during the last measuring interval.

Adabas Review

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Review".
AdabasReview	The Adabas Review mode (Hub or local) and ID (Hub or Adabas Server database).

KPIs of Event Map AdabasReview

Administration Name	KPI Name	Unit	Type	Description
AdaRevCPU	CPU Time	ms	delta	The CPU time used by Review. In local mode this is the CPU time used by the subtask only.
AdaRevClogRecords	Command Log Records	count	delta	The number of command log records received.
AdaRevIOs	I/Os	count	delta	The number of I/Os including SYSOUT, user defined log files and others.
AdaRevMemoryFree	Memory Free	bytes	last value	The bytes of free memory which can be used by Review.
AdaRevMemoryTotal	Memory Total	bytes	composite	The total bytes of memory which can be used by Review. Composite KPI: AdaRevMemoryUsed + AdaRevMemoryFree
AdaRevMemoryUsed	Memory Used	bytes	last value	The bytes of memory currently used by Review.
AdaRevReports	Active Reports	count	last value	The number of active reports.
AdaRevReviewBuffer32-KHwm	Review-Buffer-32K HWM	bytes	last value	The high-water-mark of the Review buffer which contains 32K slots.

Administration Name	KPI Name	Unit	Type	Description
AdaRevReviewBuffer32-KUsed	Review-Buffer-32K Used	bytes	last value	The total bytes of memory used by Review for the Review Buffer which contains 32K slots.
AdaRevReviewBuffer4-KHwm	Review-Buffer-4K HWM	bytes	last value	The high-water-mark of the Review buffer which contains 4K slots.
AdaRevReviewBuffer4-KUsed	Review-Buffer-4K Used	bytes	last value	The total bytes of memory used by Review for the Review Buffer which contains 4K slots.
AdaRevState	Adabas Review State	state	state	The state of the Adabas Review (online/offline). This KPI is automatically monitored.
AdaRevVersion			generic	The version of the Adabas Review.

Note: The high-water-mark KPIs contain the highest value of the last monitoring interval.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Review Memory Full	Adabas.AdaRevMemoryUsed / Adabas.AdaRevMemoryTotal > 90%	3 - Medium	More than 90% of the memory is used.
Adabas Review Not Active	Adabas.AdaRevState = 0	2 - High	The Adabas Review is not active.

Adabas SAF Security

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas SAF Security".
AdabasSAFSecurity	The ID and name of the SAF secured Adabas Server database and the ID of the nucleus for cluster nuclei.

KPIs of Event Map AdabasSAFSecurity

Administration Name	KPI Name	Unit	Type	Description
ASAFActiveUsers	Active Users	count	last value	The number of currently active users.
ASAFCrossLevelCheckSaved	Cross-Level - Check Saved	count	delta	The number of times the SAF Server satisfied a cross-level authorization request from its cache, without calling the external security system.
ASAFCrossLevelChecks-Denied	Cross-Level - Denied	count	delta	The number of failed cross-level authorization checks (access denied).
ASAFCrossLevelOverwrites	Cross-Level - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached cross-level authorization request. If this number is high, consider increasing `DBNCU` and/or `NWNCU` parameters.
ASAFCrossLevelSuccessful	Cross-Level - Successful	count	delta	The number of successful cross-level authorization checks against the external security system.
ASAFFileCheckSaved	File - Check Saved	count	delta	The total number of times ADASAF satisfied a file authorization request without calling the external security system.
ASAFFileOverwrites	File - Overwrites	count	delta	The number of times ADASAF had to overwrite a previously cached file. If this number is high, consider increasing `MAXFILES`.
ASAFFreeUserArea	Free User Area	percent	last value	The percentage of free user areas in the cache.
ASAFNormalCheckSaved	Normal - Check Saved	count	delta	The number of times the SAF Server satisfied a normal authorization request from its cache, without calling the external security system.
ASAFNormalDenied	Normal - Denied	count	delta	The number of failed normal authorization checks (access denied).
ASAFNormalOverwrites	Normal - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached normal authorization request. If this number is high, consider increasing `DBNCU` and/or `NWNCU` parameters.
ASAFNormalSuccessful	Normal - Successful	count	delta	The number of successful normal authorization checks.
ASAFState	Adabas SAF Security State	state	state	The state of the Adabas SAF Security.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas SAF Security Cross-Level Checks Denied	Adabas.ASAFCrossLevelChecksDenied > 0	3 - Medium	The Adabas SAF Security denied cross-level checks.
Adabas SAF Security Cross-Level Checks Overwrites	Adabas.ASAFCrossLevelOverwrites > 0	4 - Low	The Adabas SAF Security has overwritten previously cached cross-level authorization entries.
Adabas SAF Security File Checks Overwrites	Adabas.ASAFFileOverwrites > 0	4 - Low	The Adabas SAF Security has overwritten previously cached file authorization entries.
Adabas SAF Security Normal Checks Denied	Adabas.ASAFNormalDenied > 0	3 - Medium	The Adabas SAF Security denied normal checks.
Adabas SAF Security Normal Checks Overwrites	Adabas.ASAFNormalOverwrites > 0	4 - Low	The Adabas SAF Security has overwritten previously cached normal authorization entries.
Adabas SAF Security Not Active	Adabas.ASAFState = 0	2 - High	The Adabas SAF Security is not active.

Adabas Server (Mainframe)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Server".
AdabasServer	The ID and name of the Adabas Server database and the ID of the nucleus for cluster nuclei.

KPIs of Event Map AdabasServer

Administration Name	KPI Name	Unit	Type	Description
AdabasAssoReads	ASSO - Number of Reads	count	delta	The number of reads from ASSO.
AdabasAssoWrites	ASSO - Number of Writes	count	delta	The number of writes to ASSO.
AdabasBufferEfficiency	Adabas Buffer Efficiency	ratio	composite	The Adabas buffer efficiency (logical/physical reads). Composite KPI: AdabasLogicalReads / AdabasPhysicalReads
AdabasBufferflushes	Buffer Flushes	count	delta	The number of Adabas buffer flushes.
AdabasCallsTotal	Calls - Total	calls	delta	The number of calls to the database.
AdabasCallsTotalRemote	Calls - Total Remote Calls	calls	delta	The number of remote calls to the database.
AdabasClusterReadsAsynchronous	Cluster - Reads - Asynchronous	count	delta	The number of cluster asynchronous reads.
AdabasClusterReadsInCache	Cluster - Reads - in Cache	count	delta	The number of cluster reads from cache.
AdabasClusterReadsNotInCache	Cluster - Reads - not in Cache	count	delta	The number of cluster reads not from cache.
AdabasClusterReadsStructureFull	Cluster - Reads - Structure Full	count	delta	The number of cluster structure full reads.
AdabasClusterReadsSynchronous	Cluster - Reads - Synchronous	count	delta	The number of cluster synchronous reads.
AdabasClusterValidates	Cluster - Validates	count	delta	The number of cluster validates.
AdabasClusterValidatesInvalid-Blocks	Cluster - Validates - Invalid Blocks	count	delta	The number of cluster invalid blocks for a validate.
AdabasClusterWritesAsynchronous	Cluster - Writes - Asynchronous	count	delta	The number of cluster asynchronous writes.
AdabasClusterWritesNotWritten	Cluster - Writes - not Written	count	delta	The number of cluster writes not written.
AdabasClusterWritesStructureFull	Cluster - Writes - Structure Full	count	delta	The number of cluster structure full writes.
AdabasClusterWritesSynchronous	Cluster - Writes - Synchronous	count	delta	The number of cluster synchronous writes.
AdabasClusterWritesWritten	Cluster - Writes - Written	count	delta	The number of cluster writes.

Administration Name	KPI Name	Unit	Type	Description
AdabasCpuTime	CPU Time	seconds	delta	The CPU time of the database.
AdabasDataReads	DATA - Number of Reads	count	delta	The number of reads from DATA.
AdabasDataWrites	DATA - Number of Writes	count	delta	The number of writes to DATA.
AdabasFilesCriticalExtents	Files - Critical Extents	count	last value	The number of files for which the space left for extent entries has exceeded a critical threshold. The critical threshold (in percent of the total space) can be specified in the Adabas/Natural Data Collector profile. See *Adabas Files*.
AdabasFilesCriticalExtentsList			generic	The list of files with critical extents.
AdabasFilesCriticalIsnRange	Files - Critical ISN Range	count	last value	The number of files for which the free ISN range has exceeded a critical threshold. The critical threshold (in percent of the total space) can be specified in the Adabas/Natural Data Collector profile. See *Adabas Files*.
AdabasFilesCriticalIsnRangeList			generic	The list of files with critical ISN range.
AdabasFilesLoaded	Files - Loaded	count	last value	The number of files loaded.
AdabasLogicalReads	Number of Logical Reads	count	delta	The number of logical reads from Adabas buffer.
AdabasNucs	Number of Active Cluster Nuclei	count	last value	The number of nuclei in a clustered environment.
AdabasPhysicalReads	Number of Physical Reads	count	delta	The number of physical reads from ASSO and DATA.
AdabasPlogWrites	PLOG - Number of Writes	count	delta	The number of writes to PLOG.
AdabasQueueCommand	Queues - Command Queue Elements Used	percent	last value	The occupancy of the command queue.

Administration Name	KPI Name	Unit	Type	Description
AdabasQueueHold	Queues - Hold Queue Elements Used	percent	last value	The occupancy of the hold queue.
AdabasQueueUser	Queues - User Queue Elements Used	percent	last value	The occupancy of the user queue.
AdabasReplHWMRepPool	Replication - High-Water Mark Replication Pool (RPL)	percent	last value	The high-water mark of the replication pool.
AdabasReplMsgTotal	Replication - Replicated Messages Total	count	delta	The number of replicated messages.
AdabasReplRepPoolUsed	Replication - Replication Pool (RPL) Used	percent	last value	The current used size of the replication pool.
AdabasReplTransPend	Replication - Replicated Transactions Pending	count	last value	The number of pending replication transactions.
AdabasReplTransTotal	Replication - Replicated Transactions Total	count	delta	The number of replicated transactions.
AdabasSpaceAssoExtents	Space - ASSO Extents	extents	last value	The number of ASSO extents.
AdabasSpaceAssoUsed	Space - ASSO Used Blocks	percent	last value	The occupancy of the ASSO extents.
AdabasSpaceDataExtents	Space - DATA Extents	extents	last value	The number of DATA extents.
AdabasSpaceDataUsed	Space - DATA Used Blocks	percent	last value	The occupancy of the DATA extents.
AdabasState	Adabas Server State	state	state	The state of the database server or cluster nucleus. "Offline" indicates that the component is not active or in error. This KPI is automatically monitored.
AdabasVersion			generic	The version of the Adabas Server.
AdabasWorkPart1Used	WORK Part 1 (LP) Used	percent	last value	The current used size of WORK part 1.
AdabasWorkPart2Used	WORK Part 2 (LWKP2) Used	percent	last value	The current used size of WORK part 2.

Administration Name	KPI Name	Unit	Type	Description
AdabasWorkPart3Used	WORK Part 3 Used	percent	last value	The current used size of WORK part 3.
AdabasWorkPoolUsed	Work Pool Used	percent	last value	The occupancy of the work pool.
AdabasWorkReads	WORK - Number of Reads	count	delta	The number of reads from WORK.
AdabasWorkWrites	WORK - Number of Writes	count	delta	The number of writes to WORK.

Note: In the Adabas/Natural Data Collector profile, you can specified how often Adabas file data is to be collected. By default, it is only collected once a day. See *Adabas Files*.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Server ASSO Full	Adabas.AdabasSpaceAssoUsed > 90	2 - High	More than 90% of the ASSO space is used.
Adabas Server DATA Full	Adabas.AdabasSpaceDataUsed > 90	2 - High	More than 90% of the DATA space is used.
Adabas Server Files Critical Extents	Adabas.AdabasFilesCriticalExtents > 0	3 - Medium	There are files running out of space for the extent entries. These files should be reorganized.
Adabas Server Files Critical ISN Range	Adabas.AdabasFilesCriticalIsnRange > 0	3 - Medium	There are files running out of available ISNs. If applicable, increase the ISNSIZE of the file to 4.
Adabas Server High CPU Time	Adabas.AdabasCpuTime > 50	2 - High	The Adabas Server needed a high CPU time.
Adabas Server Not Active	Adabas.AdabasState = 0	2 - High	The Adabas Server is not active.
Adabas Server User Queue Full	Adabas.AdabasQueueUser > 80	2 - High	More than 80% of the user queue is used.
Adabas Server Work Pool Full	Adabas.AdabasWorkPoolUsed > 80	2 - High	More than 80% of the work pool is used.

Adabas Server (UNIX and Windows)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Server".
AdabasOSServer	The ID and name of the Adabas Server database.

KPIs of Event Map AdabasOSServer

Administration Name	KPI Name	Unit	Type	Description
AdabasOSAttBuffAreaUsed	Attached Buffer Area Used (LAB)	percent	last value	The occupancy of the LAB.
AdabasOSBufferEfficiency	Adabas Buffer Efficiency	ratio	composite	The Adabas buffer efficiency (logical/physical reads). Composite KPI: AdabasOSLogicalReads / AdabasOSPhysicalReads
AdabasOSBufferflushes	Buffer Flushes	count	delta	The number of Adabas buffer flushes.
AdabasOSBufferpoolUsed	Buffer Pool Used (LBP)	percent	last value	The occupancy of LBP.
AdabasOSCallsTotal	Calls - Total	calls	delta	The number of calls to the database.
AdabasOSCommQuEleThr	Command Queue Elements per Thread	count	last value	The number of command queue elements used per thread.
AdabasOSCommQuUsed	Command Queue Elements	count	last value	The number of command queue elements used.
AdabasOSHwmAttBuffExt-AreaUsed	High-Water Mark Attached Buffer Extended Area Used (LABX)	percent	last value	The occupancy of the LABX.
AdabasOSHwmNoOfISNs-HoldSingleUser	High-Water Mark Number of ISNs in Hold Queue by Single Users	count	last value	The highest number of ISNs in hold by a single user.
AdabasOSLogicalReads	Number of Logical Reads	count	delta	The number of logical reads from Adabas buffer.
AdabasOSNoOfISNsHold	Number of ISNs in Hold Queue	count	last value	The number of ISNs in hold by all users.

Administration Name	KPI Name	Unit	Type	Description
AdabasOSPhysicalReads	Number of Physical Reads	count	delta	The number of physical reads from ASSO and DATA.
AdabasOSPlogWrites	PLOG - Number of Writes	count	delta	The number of writes to PLOG.
AdabasOSSpaceAssoExtents	Space - ASSO Extents	extents	last value	The number of ASSO extents.
AdabasOSSpaceAssoUsed	Space - ASSO Used	percent	last value	The occupancy of the ASSO extents.
AdabasOSSpaceAssoUsed-Large	Space - ASSO Used (Large Blocks)	percent	last value	The occupancy of the ASSO extents with large index blocks (>= 16 KB).
AdabasOSSpaceAssoUsed-Small	Space - ASSO Used (Small Blocks)	percent	last value	The occupancy of the ASSO extents with small index blocks (< 16 KB).
AdabasOSSpaceDataExtents	Space - DATA Extents	extents	last value	The number of DATA extents.
AdabasOSSpaceDataUsed	Space - DATA Used	percent	last value	The occupancy of the DATA extents.
AdabasOSSpaceDataUsed-Largest	Space - DATA Used Largest	percent	last value	The occupancy of the DATA extents with the largest block size.
AdabasOSState	Adabas Server State	state	state	The state of the database server. This KPI is automatically monitored.
AdabasOSThreadsUsed	Threads Used (NT)	percent	last value	The occupancy of the threads.
AdabasOSUserQuUsed	User Queue Elements Used (NU)	percent	last value	The occupancy of NU.
AdabasOSVersion			generic	The version of the Adabas Server.
AdabasOSWorkPoolUsed	Work Pool Used (LWP)	percent	last value	The occupancy of the LWP.
AdabasOSWorkReads	WORK - Number of Reads	count	delta	The number of reads from WORK.
AdabasOSWorkWrites	WORK - Number of Writes	count	delta	The number of writes to WORK.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas OS Server ASSO Full	Adabas.AdabasOSSpaceAssoUsed > 90	2 - High	More than 90% of the ASSO space is used.
Adabas OS Server ASSO Large Blocks Full	Adabas.AdabasOSSpaceAssoUsedLarge > 90	2 - High	More than 90% of the large ASSO blocks are used.
Adabas OS Server ASSO Small Blocks Full	Adabas.AdabasOSSpaceAssoUsedSmall > 90	2 - High	More than 90% of the small ASSO blocks are used.
Adabas OS Server Command Queue	Adabas.AdabasOSCommQuEleThr > 2	2 - High	More than 2 command queue elements used per thread.
Adabas OS Server DATA Full	Adabas.AdabasOSSpaceDataUsed > 90	2 - High	More than 90% of the DATA space is used.
Adabas OS Server DATA Largest Blocks Full	Adabas.AdabasOSSpaceDataUsedLargest > 90	2 - High	More than 90% of the largest DATA blocks are used.
Adabas OS Server Many ASSO Extents	Adabas.AdabasOSSpaceAssoExtents > 150	3 - Medium	More than 150 ASSO extents have been allocated.
Adabas OS Server Many DATA Extents	Adabas.AdabasOSSpaceDataExtents > 500	3 - Medium	More than 500 DATA extents have been allocated.
Adabas OS Server Not Active	Adabas.AdabasOSState = 0	2 - High	The Adabas Server is not active.
Adabas OS Server User Queue	Adabas.AdabasOSUserQuUsed > 80	2 - High	More than 80 user queue elements used.

Adabas SOA Gateway

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "SOA Gateway".
AdabasSOAGateway	The port of the SOA Gateway.

KPIs of Event Map AdabasSOAGateway

Administration Name	KPI Name	Unit	Type	Description
SOAGatewayAvgTime	Average Operation Time	seconds	composite	The average round trip time per operation. Composite KPI: SOAGatewayTime / SOAGatewayCount
SOAGatewayCount	Operation Count	count	delta	The number of times an operation has been called.
SOAGatewayErrorsOccurred	Errors Occurred	count	delta	The number of times an operation has failed.
SOAGatewayHighTime	Highest Operation Time	seconds	last value	The highest round trip time for an operation.
SOAGatewayLowTime	Lowest Operation Time	seconds	last value	The lowest round trip time for an operation.
SOAGatewayState	SOA Gateway State	state	state	The state of the SOA Gateway (online/offline). This KPI is automatically monitored.
SOAGatewayTime	Operation Time	seconds	delta	The accumulated round trip time for all operations.

Built-In Rules

Administration Name	Expression	Severity	Description
SOA Gateway Available Error	Adabas.SOAGatewayState = 0	2 - High	The SOA Gateway is not available.

Adabas SOA Gateway Operation

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "SOA Gateway".
AdabasSOAGateway	The port of the SOA Gateway.
AdabasSOAGatewayOperation	The group, type and name of the SOA Gateway operation.

KPIs of Event Map AdabasSOAGatewayOperation

Administration Name	KPI Name	Unit	Type	Description
SOAGatewayOperation-AvgTime	Average Operation Time	seconds	composite	The average round trip time for the operation. Composite KPI: SOAGatewayOperationTime / SOAGatewayOperationCount
SOAGatewayOperation-Count	Operation Count	count	delta	The number of times the operation has been called.
SOAGatewayOperation-ErrorsOccurred	Errors Occurred	count	delta	The number of times the operation has failed.
SOAGatewayOperation-HighTime	Highest Operation Time	seconds	last value	The highest round trip time for the operation.
SOAGatewayOperation-LowTime	Lowest Operation Time	seconds	last value	The lowest round trip time for the operation.
SOAGatewayOperation-Time	Operation Time	seconds	delta	The accumulated round trip time for the operation.

Adabas Transaction Manager

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Transaction Manager".
AdabasTransactionManager	The ID and name of the Adabas Transaction Manager.

KPIs of Event Map AdabasTransactionManager

Administration Name	KPI Name	Unit	Type	Description
ATMCommitsATM-only	Commits ATM-only	count	delta	The number of committed transactions solely controlled by the Adabas Transaction Manager.
ATMCommitsExternal	Commits External	count	delta	The number of committed transactions controlled by an external transaction coordinator.
ATMCommitsTotal	Commits Total	count	delta	The total number of committed transactions.

Administration Name	KPI Name	Unit	Type	Description
ATMHeuristicTermination	Heuristic Termination	count	delta	The number of transactions that were backed out due to heuristic reasons. Heuristic termination happens if Adabas runs out of internal resources and cannot wait for the Adabas Transaction Manager to do the second phase. Adabas finishes the transaction immediately and therefore takes an integrity risk.
ATMState	Adabas Transaction Manager State	state	state	The state of the Adabas Transaction Manager (online/offline). This KPI is automatically monitored.
ATMTransactionTimeouts	Transaction Timeouts	count	delta	The total number of transactions that were backed out because the global transaction time limit was exceeded.
ATMTransactionsATM-only	Transactions ATM-only	count	delta	The number of processed transactions solely controlled by the Adabas Transaction Manager.
ATMTransactionsExternal	Transactions External	count	delta	The number of processed transactions controlled by an external transaction coordinator.
ATMTransactionsOpen	Transactions Open	count	delta	The number of currently open transactions.
ATMTransactionsTotal	Transactions Total	count	delta	The total number of processed transactions.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Transaction Manager Heuristic Terminations	Adabas.ATMHeuristicTermination > 0	3 - Medium	Heuristic terminations occurred.
Adabas Transaction Manager Not Active	Adabas.ATMState = 0	2 - High	The Adabas Transaction Manager is not active.

Com-plete

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Com-plete".
Complete	The name and URL of the Com-plete.

KPIs of Event Map Complete

Administration Name	KPI Name	Unit	Type	Description
CompleteActiveUsers	Active Users	users	last value	The number of active users.
CompleteAdabasCalls	Adabas Calls	calls	delta	The number of Adabas calls performed by all Com-plete users.
CompleteAdabasResponseTime	Adabas Response Time	ms	delta	The Adabas response time summarized over all Adabas calls.
CompleteAvgAdabasRspTime	Average Adabas Response Time per Call	ms	composite	The average Adabas response time per call. Composite KPI: CompleteAdabasResponseTime / CompleteAdabasCalls
CompleteAvgRspTime	Average Response Time per Transaction	ms	composite	The average Com-plete response time per transaction. Composite KPI: CompleteResponseTime / CompleteNumberTransactions
CompleteCpuTime	CPU Time	ms	delta	The Com-plete CPU time.
CompleteLinesApslog	Lines Written to APSLOG	count	delta	The number of lines written to APSLOG.
CompleteNumberTransactions	Number of Transactions	transactions	delta	The number of transactions.
CompletePhysicalRollouts	Physical Roll-outs	count	delta	The number of physical roll-outs.
CompleteProcessorQueue-Length	Processor Queue Length	count	last value	The processor queue length.

Administration Name	KPI Name	Unit	Type	Description
CompleteRegion24BitLimit	24-Bit Region Limit	KB	last value	The maximum size of the 24-bit region.
CompleteRegion24BitUsed	24-Bit Region Used	KB	last value	The current used size of the 24-bit region.
CompleteRegion31BitLimit	31-Bit Region Limit	KB	last value	The maximum size of the 31-bit region.
CompleteRegion31BitUsed	31-Bit Region Used	KB	last value	The current used size of the 31-bit region.
CompleteResponseTime	Response Time	ms	delta	The Com-plete response time.
CompleteSdFileSpaceLimit	SD File Space Limit	KB	last value	The maximum size of the SD file.
CompleteSdFileSpaceUsed	SD File Space Used	KB	last value	The current used size of the SD file.
CompleteSpoolFileSpaceLimit	Spool File Space Limit	KB	last value	The maximum size of the spool file.
CompleteSpoolFileSpaceUsed	Spool File Space Used	KB	last value	The current used size of the spool file.
CompleteState	Com-plete State	state	state	The state of the Com-plete (online/offline). This KPI is automatically monitored.
CompleteThreadDumps	Thread Dumps Written	count	delta	The number of thread dumps written.
CompleteThreadQueueLength	Thread Queue Length	count	last value	The thread queue length.
CompleteTibtabEntriesLimit	TIBTAB Entries Limit	count	last value	The maximum number of TIBTAB entries.
CompleteTibtabEntriesUsed	TIBTAB Entries Used	count	last value	The current number of TIBTAB entries.
CompleteVersion			generic	The version of the Com-plete.

Built-In Rules

Administration Name	Expression	Severity	Description
Com-plete 24-Bit Region Full	Com-plete.CompleteRegion24BitUsed / Com-plete.CompleteRegion24BitLimit >= 90%	2 - High	The Com-plete 24-bit region is 90% full.
Com-plete 31-Bit Region Full	Com-plete.CompleteRegion31BitUsed / Com-plete.CompleteRegion31BitLimit >= 90%	2 - High	The Com-plete 31-bit region is 90% full.
Com-plete Not Active	Com-plete.CompleteState = 0	2 - High	The Com-plete is not active.

Administration Name	Expression	Severity	Description
Com-plete SD File Full	Com-plete.CompleteSdFileSpaceUsed / Com-plete.CompleteSdFileSpaceLimit >= 90%	2 - High	The Com-plete SD file is 90% full.
Com-plete Spool File Full	Com-plete.CompleteSpoolFileSpaceUsed / Com-plete.CompleteSpoolFileSpaceLimit >= 90%	2 - High	The Com-plete spool file is 90% full.
Com-plete TIBTAB Full	Com-plete.CompleteTibtabEntriesUsed / Com-plete.CompleteTibtabEntriesLimit >= 90%	2 - High	The Com-plete TIBTAB is 90% full.

Data Collector - Adabas

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Adabas Collector".
AdabasCollector	The name of the Adabas Data Collector. It is built up by the *RPC-server-name*.

KPIs of Event Map AdabasCollector

Administration Name	KPI Name	Unit	Type	Description
AdabasCollectorAttributes	Number of Attributes	count	sum	The total number of attributes (facts and dimensions) in the event maps.
AdabasCollectorCalls	Number of Calls to the Collector	count	sum	The number of calls to the collector. Sending the data of one asset to Optimize counts as one call.
AdabasCollectorElapsed-Time	Elapsed Time	seconds	sum	The elapsed time spent for the data collection.
AdabasCollectorErrors	Number of Errors	count	sum	The number of errors reported by the Adabas Data Collector while collecting the data for the monitoring.
AdabasCollectorEventMaps	Number of Event Maps	count	sum	The number of event maps sent to Optimize.
AdabasCollectorNatural-Version	Natural Nucleus Version	version	last value	The version of the Natural nucleus used by the Adabas Data Collector.
AdabasCollectorState	Collector State	state	state	The state of the Adabas Collector (online/offline). The value indicates

Administration Name	KPI Name	Unit	Type	Description
				whether the collector has been reached. This KPI is automatically monitored.
AdabasCollectorTrace	Collector Trace Level	level	last value	The collector trace level (0-10).
AdabasCollectorWarnings	Number of Warnings	count	sum	The number of warnings reported by the Adabas Data Collector while collecting the data for the monitoring.

Built-In Rules

Administration Name	Expression	Severity	Description
Adabas Collector Not Reached	Collector.AdabasCollectorState = 0	2 - High	The Adabas Data Collector has not been reached. Therefore the Adabas components cannot be monitored. Check and re-establish the connection from Optimize to the Adabas Data Collector.
Adabas Collector Reported Errors	Collector.AdabasCollectorErrors > 0	2 - High	The Adabas Data Collector reported errors. The error messages can be found in the Adabas Data Collector log file.
Adabas Collector Reported Warnings	Collector.AdabasCollectorWarnings > 0	3 - Medium	The Adabas Data Collector reported warnings. The warning messages can be found in the Adabas Data Collector log file.

Data Collector - Natural

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Collector".
NaturalCollector	The name of the Natural Data Collector. It is built up by the *RPC-server-name*.

KPIs of Event Map NaturalCollector

Administration Name	KPI Name	Unit	Type	Description
NaturalCollectorAttributes	Number of Attributes	count	sum	The total number of attributes (facts and dimensions) in the event maps.
NaturalCollectorCalls	Number of Calls to the Collector	count	sum	The number of calls to the collector. Sending the data of one asset to Optimize counts as one call.
NaturalCollectorElapsed-Time	Elapsed Time	seconds	sum	The elapsed time spent for the data collection.
NaturalCollectorErrors	Number of Errors	count	sum	The number of errors reported by the Natural Data Collector while collecting the data for the monitoring.
NaturalCollectorEventMaps	Number of Event Maps	count	sum	The number of event maps sent to Optimize.
NaturalCollectorNatural-Version	Natural Nucleus Version	version	last value	The version of the Natural nucleus used by the Natural Data Collector.
NaturalCollectorState	Collector State	state	state	The state of the Natural Collector (online/offline). The value indicates whether the collector has been reached. This KPI is automatically monitored.
NaturalCollectorTrace	Collector Trace Level	level	last value	The collector trace level (0-10).
NaturalCollectorWarnings	Number of Warnings	count	sum	The number of warnings reported by the Natural Data Collector while collecting the data for the monitoring.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Collector Not Reached	Collector.NaturalCollectorState = 0	2 - High	The Natural Data Collector has not been reached. Therefore the Natural components cannot be monitored. Check and re-establish the connection from Optimize to the Natural Data Collector.
Natural Collector Reported Errors	Collector.NaturalCollectorErrors > 0	2 - High	The Natural Data Collector reported errors. The error messages can be found in the Natural Data Collector log file.
Natural Collector Reported Warnings	Collector.NaturalCollectorWarnings > 0	3 - Medium	The Natural Data Collector reported warnings. The warning messages can be found in the Natural Data Collector log file.

Entire Net-Work (Mainframe)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Net-Work".
EntireNetwork	The name of the Entire Net-Work node.

KPIs of Event Map EntireNetwork

Administration Name	KPI Name	Unit	Type	Description
WCPNodeState	Entire Net-Work Node State	state	state	The state of the Net-Work node. This KPI is automatically monitored.
WCPNumberActiveLinks	Number of Active Links	count	last value	The number of active links of this node.

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Net-Work Node Not Active	EntireNetwork.WCPNodeState = 0	2 - High	The Entire Net-Work node is not active.

Entire Operations

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Operations".
EntireOperations	The database ID and file number of the Entire Operations system file.

KPIs of Event Map EntireOperations

Administration Name	KPI Name	Unit	Type	Description
NOPActiveJobsPermanentJcl-LoadErrors	Active Jobs - Permanent JCL Load Errors	count	last value	The number of active jobs with permanent JCL load errors.
NOPActiveJobsPermanent-PrerequisiteCheckErrors	Active Jobs - Permanent Prerequisite Check Errors	count	last value	The number of active jobs with permanent prerequisite check errors.
NOPActiveJobsSubmittedOr-Executing	Active Jobs - Submitted or Executing	count	last value	The number of active jobs currently submitted or executing.
NOPActiveJobsWaiting	Active Jobs - Waiting (Total)	count	last value	The number of active jobs waiting, total.
NOPActiveJobsWaitingFor-Condition	Active Jobs - Waiting for Condition	count	last value	The number of active jobs waiting for a condition.
NOPActiveJobsWaitingFor-Node	Active Jobs - Waiting for Node	count	last value	The number of active jobs waiting for a node.
NOPActiveJobsWaitingFor-Resource	Active Jobs - Waiting for Resource	count	last value	The number of active jobs waiting for a resource.
NOPActiveJobsWaitingForStart-Time	Active Jobs - Waiting for Start Time	count	last value	The number of active jobs waiting for start time.
NOPEmailsSentError	Emails - Sent Error	count	delta	The number of email sendings failed.
NOPEmailsSentOk	Emails - Sent Ok	count	delta	The number of emails sent successfully.
NOPJclLoadError	JCL - Load Error	count	delta	The number of JCLs for which the load failed.
NOPJclLoadOk	JCL - Load Ok	count	delta	The number of successfully loaded JCLs.
NOPJobsActivationError	Jobs - Activation Error	count	delta	The number of jobs for which the activation failed.
NOPJobsActivationOk	Jobs - Activation Ok	count	delta	The number of successfully activated jobs.
NOPJobsEndedError	Jobs - Ended Error	count	delta	The number of jobs finished with an error.
NOPJobsEndedOk	Jobs - Ended Ok	count	delta	The number of successfully ended jobs.
NOPJobsSubmittedError	Jobs - Submitted Error	count	delta	The number of jobs for which the submit failed.
NOPJobsSubmittedOk	Jobs - Submitted Ok	count	delta	The number of successfully submitted jobs.

Administration Name	KPI Name	Unit	Type	Description
NOPLatestStartTimeExceeded	Latest Start Time Exceeded	count	delta	The number of jobs with latest start time exceeded.
NOPMonitorErrors	Monitor Errors	count	delta	The number of monitor errors.
NOPMonitorTasksGeneral-Purpose	Monitor Tasks - General Purpose	count	last value	The number of general purpose monitor tasks.
NOPMonitorTasksNatAnd-AsynchronousExits	Monitor Tasks - NAT and Asynchronous Exits	count	last value	The number of monitor tasks for Natural and asynchronous exits.
NOPMonitorTasksSeriousError	Monitor Tasks - Serious Error	count	last value	The number of monitor tasks which are required to be active but are in error.
NOPMonitorTasksSpecial-Purpose	Monitor Tasks - Special Purpose	count	last value	The number of special monitor tasks.
NOPNetworksActivationError	Networks - Activation Error	count	delta	The number of networks for which the activation failed.
NOPNetworksActivationOk	Networks - Activation Ok	count	delta	The number of successfully activated networks.
NOPNodesActive	Nodes - Active	count	last value	The number of currently active nodes.
NOPNodesError	Nodes - Error	count	last value	The number of nodes which are in error state.
NOPNodesErrorList			generic	List of the nodes which are in error state.
NOPNodesLogonError	Nodes Logon Error	count	delta	The number of nodes with logon error.
NOPNodesLogonOk	Nodes - Logon Ok	count	delta	The number of successfully activated networks.
NOPState	Entire Operations Monitor State	state	state	The state of the Entire Operations Monitor (online/offline). This KPI is automatically monitored.
NOPSysoutPassedToNomError	Sysout - Passed to NOM Error	count	delta	The number of failed sysout passings to Entire Output Management (NOM).
NOPSysoutPassedToNomOk	Sysout - Passed to NOM Ok	count	delta	The number of sysouts successfully passed to Entire Output Management (NOM).
NOPVersion	Entire Operations Version	version	last value	The version of Entire Operations (*vvrrsspp*).

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Operations Active Jobs With Permanent JCL Load Errors	Natural.NOPActiveJobsPermanentJclLoadErrors > 0	3 - Medium	Entire Operations active jobs with permanent JCL load errors.
Entire Operations Active Jobs With Permanent Prerequisite Check Errors	Natural.NOPActiveJobsPermanentPrerequisiteCheckErrors > 0	3 - Medium	Entire Operations active jobs with permanent prerequisite check errors.
Entire Operations Email Sendings Failed	Natural.NOPEmailsSentError > 0	3 - Medium	Entire Operations email sendings failed.
Entire Operations JCLs Load Failed	Natural.NOPJclLoadError > 0	3 - Medium	Entire Operations JCLs load failed.
Entire Operations Jobs Activation Failed	Natural.NOPJobsActivationError > 0	3 - Medium	Entire Operations jobs activation failed.
Entire Operations Jobs Finished With Error	Natural.NOPJobsEndedError > 0	3 - Medium	Entire Operations jobs finished with error.
Entire Operations Jobs Submit Failed	Natural.NOPJobsSubmittedError > 0	3 - Medium	Entire Operations jobs submit failed.
Entire Operations Jobs With Latest Start Time Exceeded	Natural.NOPLatestStartTimeExceeded > 0	3 - Medium	Entire Operations jobs with latest start time exceeded.
Entire Operations Monitor Errors	Natural.NOPMonitorErrors > 0	3 - Medium	Entire Operations monitor errors.

Administration Name	Expression	Severity	Description
Entire Operations Monitor Tasks Required To Be Active But Are In Error	Natural.NOPMonitorTasksSeriousError > 0	3 - Medium	Entire Operations monitor tasks required to be active but are in error.
Entire Operations Networks Activation Failed	Natural.NOPNetworksActivationError > 0	3 - Medium	Entire Operations networks activation failed.
Entire Operations Nodes Logon Error	Natural.NOPNodesLogonError > 0	3 - Medium	Entire Operations nodes logon error.
Entire Operations Nodes in Error State	Natural.NOPNodesError > 0	3 - Medium	Entire Operations nodes in error state.
Entire Operations Not Active	Natural.NOPState = 0	2 - High	The Entire Operations Monitor is not active or in error.
Entire Operations Sysout Passings to NOM Failed	Natural.NOPSysoutPassedToNomError > 0	3 - Medium	Entire Operations sysout passings to Entire Output Management (NOM) failed.

Entire Operations - Task

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Operations".
EntireOperations	The database ID and file number of the Entire Operations system file.
EntireOperationsTask	The Entire Operations monitor task number and type. Possible task types are *General*, *Natural* and *Special*.

KPIs of Event Map EntireOperationsTask

Administration Name	KPI Name	Unit	Type	Description
NOPTaskActivated	Task Activated	state	state	The state of the task activation (online/offline). "Offline" indicates that the task is not active.
NOPTaskState	Task State	state	state	The state of the task (online/offline). "Offline" indicates that the task is in error which implies that the *Task active* KPI is also"offline". This KPI is automatically monitored.
NOPTaskStateInfo			generic	Short description of the task state.
NOPTaskTimeActive	Task Time - Active	seconds	delta	The task active time (elapsed time).
NOPTaskTimeTotal	Task Time - Total	seconds	delta	The total task time.
NOPTaskUsage	Task time - Usage	ratio	composite	The task active time in relation to the total time. Composite KPI: NOPTaskTimeActive / NOPTaskTimeTotal

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Operations Monitor Task High Active Time	Natural.NOPTaskTimeActive / Natural.NOPTaskTimeTotal >= 80%	3 - Medium	The Entire Operations Monitor Task required a high task time (80% or more).
Entire Operations Monitor Task In Error	Natural.NOPTaskState = 0	2 - High	The Entire Operations Monitor Task is in an error state.

Administration Name	Expression	Severity	Description
Entire Operations Monitor Task Not Active	Natural.NOPTaskActivated = 0	3 - Medium	The Entire Operations Monitor Task is not active.

Entire Output Management

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Output Management".
EntireOutputManagement	The database ID and file number of the Entire Output Management system file.

KPIs of Event Map EntireOutputManagement

Administration Name	KPI Name	Unit	Type	Description
NOMActivePrinterTasks	Active Printer Tasks	count	last value	The current number of parallel active printer tasks.
NOMLines	Lines Printed - Total	lines	delta	The total number of lines printed. This value is only counted for text reports.
NOMLinesAvg	Lines Printed - Average	lines	composite	The average number of lines printed per text report. Composite KPI: NOMLines / NOMReportsText
NOMOrders	Orders	count	last value	The number of active order numbers of the current monitor cycle.
NOMPrinters	Number of Printers	count	last value	The number of printers which are defined in the Entire Output Management.
NOMPrintoutsError	Printouts in Error	count	last value	The number of printouts of the printout queue which are in error.
NOMPrintoutsWaiting	Printouts Waiting	count	last value	The number of currently waiting printouts (status "ready for print").
NOMReportsBinary	Reports Binary - Total	count	delta	The total number of binary reports.
NOMReportsFailed	Reports Failed - Total	count	delta	The total number of reports failed.
NOMReportsPrinted	Reports Printed - Total	count	delta	The total number of reports printed.
NOMReportsText	Reports Text - Total	count	delta	The total number of text reports.

Administration Name	KPI Name	Unit	Type	Description
NOMSize	Size Printed - Total	KB	delta	The total size (in kilobytes) of the reports printed. This value is only counted for binary reports.
NOMSizeAvg	Size Printed - Average	lines	composite	The average size (in kilobytes) of the reports printed per binary report. Composite KPI: NOMSize / NOMReportsBinary
NOMState	Entire Output Management State	state	state	The state of the Entire Output Management (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Output Management Not Active	Natural.NOMState = 0	2 - High	The Entire Output Management is not active or in error.
Entire Output Management Printouts in Error	Natural.NOMPrintoutsError > 0	3 - Medium	Printouts of any printout queue are in error.

Entire Output Management - Monitor Task

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Output Management".
EntireOutputManagement	The database ID and file number of the Entire Output Management system file.
EntireOutputManagementMon	The monitor task number.

KPIs of Event Map EntireOutputManagementMon

Administration Name	KPI Name	Unit	Type	Description
NOMMonActive	Monitor Task Active	state	state	The activation state of the Entire Output Management monitor task (online/offline). "Offline" indicates that the monitor task is inactive or has been closed or abended.
NOMMonProfile			generic	The profile of the monitor task.
NOMMonState	Monitor Task State	state	state	The state of the Entire Output Management monitor task. "Offline" indicates that the monitor task has abended. This KPI is automatically monitored.
NOMMonStateInfo			generic	Short description of the monitor task state.
NOMMonTimeActive	Time - Active	seconds	delta	The active time of the monitor task.
NOMMonTimeIdle	Time - Idle	seconds	delta	The inactive time of the monitor task.
NOMMonTimeReal	Time - Real	seconds	composite	The real time spent. This KPI is used in rules for time percentage calculations. Composite KPI: NOMMonTimeActive + NOMMonTimeIdle
NOMMonWaitTime	Wait Time (current)	seconds	last value	The current wait time if the monitor is idle.

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Output Management Monitor Task Abended	Natural.NOMMonState = 0	2 - High	The Entire Output Management monitor task abended.
Entire Output Management Monitor Task High Activity	Natural.NOMMonTimeActive / Natural.NOMMonTimeReal >= 90%	4 - Low	The monitor task was active for the most time of the polling interval. If the "Intervals Before True" value is increased in the rule definition, the rule will only fire when the monitor task has a high activity over multiple polling intervals.
Entire Output Management Monitor Task Not Active	Natural.NOMMonActive = 0	4 - Low	The Entire Output Management monitor task is not active.

Entire Output Management - Printer

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire Output Management".
EntireOutputManagement	The database ID and file number of the Entire Output Management system file.
EntireOutputManagementPr	The name of the printer.

KPIs of Event Map EntireOutputManagementPr

Administration Name	KPI Name	Unit	Type	Description
NOMPrLastPrintoutState	Entire Output Management Last Printout State	state	state	The state of the last printout (online/offline). The state is set to offline if the last printout failed or if Optimize is unable to collect the printer statistical data, for example if the printer is no longer defined in NOM. If the printer is new defined and no printout has send to it so far, its state is offline as well. This KPI is automatically monitored.
NOMPrLastPrintoutState-Info			generic	Short description of the last printout state.
NOMPrLines	Lines Printed	count	delta	The number of lines printed. This value is only counted for text reports.
NOMPrReportsBinary	Reports Binary	count	delta	The number of binary reports.
NOMPrReportsFailed	Reports Failed	count	delta	The number of reports failed.
NOMPrReportsPrinted	Reports Printed	count	delta	The number of reports printed.
NOMPrReportsText	Reports Text	count	delta	The number of text reports.
NOMPrSize	Size Printed	KB	delta	The size (in kilobytes) of the reports printed. This value is only counted for binary reports.

Built-In Rules

Administration Name	Expression	Severity	Description
Entire Output Management Last Printout Failed	Natural.NOMPrLastPrintoutState = 0	2 - High	The last printout sent to the printer failed or printer statistical data cannot be retrieved.

Entire System Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Entire System Server".
EntireSystemServer	The ID and name of the Entire System Server.

KPIs of Event Map EntireSystemServer

Administration Name	KPI Name	Unit	Type	Description
NPRCpuTime	CPU Time	ms	delta	The CPU time of the Entire System Server node. BS2000/OSD: Only available if the Entire System Server startup parameter `SERVER-DYN` is set to `NO`.
NPRMemUsed	Memory Used	KB	last value	The memory (real storage) used by the Entire System Server node. This KPI is not available under BS2000/OSD.
NPRNodeState	Entire System Server Node State	state	state	The state of the Entire System Server node. This KPI is automatically monitored.
NPRSIOCount	I/O Count	count	delta	The number of I/Os. BS2000/OSD: Only available if the Entire System Server startup parameter `SERVER-DYN` is set to `NO`.
NPRStorageUsedAbove	Storage Used Above 16 MB	percent	last value	The percentage of the virtual storage used above the 16 MB line. This KPI is not available under BS2000/OSD.

Administration Name	KPI Name	Unit	Type	Description
NPRStorageUsedBelow	Storage Used Below 16 MB	percent	last value	The percentage of the virtual storage used below the 16 MB line. This KPI is not available under BS2000/OSD.
NPRUsers	Users	count	last value	Current number of users.

Built-In Rules

Administration Name	Expression	Severity	Description
Entire System Server Node Not Active	EntireSystemServer.NPRNodeState = 0	2 - High	The Entire System Server is not active.
Entire System Server Storage Above Full	EntireSystemServer.NPRStorageUsedAbove > 90	3 - Medium	More than 90% of the storage above the 16 MB line is used.
Entire System Server Storage Below Full	EntireSystemServer.NPRStorageUsedBelow > 90	3 - Medium	More than 90% of the storage below the 16 MB line is used.

Natural Advanced Facilities - Spool

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Spool".
NaturalSpool	The database ID and file number of the Natural Spool system file FSPOOL.

KPIs of Event Map NaturalSpool

Administration Name	KPI Name	Unit	Type	Description
SpoolLines	Total Number of Lines Printed	lines	delta	The total number of lines printed.
SpoolPages	Total Number of Pages Printed	pages	delta	The total number of pages printed.
SpoolPrintersDefined	Printers Defined in Spool File	printers	last value	The number of printers defined in the spool file.
SpoolPrintersMonitored	Printers Monitored	printers	last value	The number of printers in the Natural spool file which can be monitored.

Administration Name	KPI Name	Unit	Type	Description
				These are all defined printers which have the statistics activated. The *Total number of reports/pages/lines* are the summarize values of all these printers.
SpoolPrintersUsed	Printers Used	printers	last value	The number of printers used. These are all printer which have at least one report printed.
SpoolReports	Total Number of Reports Printed	reports	delta	The total number of reports printed.
SpoolState	Natural Spool User Statistics State	state	state	The state of the Natural spool file and user statistics (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Spool Not Active	Natural.SpoolState = 0	2 - High	The Natural spool file is not online or the user statistics is not active.
Natural Spool Printers Unused	Natural.SpoolPrintersMonitored > 0	4 - Low	There are monitored printers in the Natural spool file which have never been used.

Natural Advanced Facilities - Printer

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Spool".
NaturalSpool	The database ID and file number of the Natural Spool system file FSPOOL.
NaturalPrinter	The name of the printer.

KPIs of Event Map NaturalPrinter

Administration Name	KPI Name	Unit	Type	Description
PrinterActivated	Printer Activated	state	state	The state of the printer activation. "Offline" indicates that the printer has been deactivated by the operator command DE.
PrinterIdle	Days Printer Idle	days	last value	The number of days the printer is idle.
PrinterLastUsedTime			generic	The time the printer has been used last (CPU or local time).
PrinterLines	Number of Lines Printed	lines	delta	The number of lines printed.
PrinterPages	Number of Pages Printed	pages	delta	The number of pages printed.
PrinterReports	Number of Reports Printed	reports	delta	The number of reports printed.
PrinterState	Printer State	state	state	The state of the Natural Printer (online/offline). "Offline" indicates that the printer is in error. This KPI is automatically monitored.
PrinterStateInfo			generic	Short description of the current printer state.
PrinterStatistics	Printer Statistics Activated	state	state	The state of the printer statistics. "Online" indicates that the printer statistics is activated.
PrinterSystem			generic	The TP system for which the printer has been defined.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Printer Idle Year	Natural.PrinterIdle > 365	4 - Low	The printer is idle for more than a year.
Natural Printer In Error	Natural.PrinterState = 0	2 - High	The printer is in an error state.

Natural Buffer Pool (Mainframe)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Buffer Pool".
NaturalBufferPool	For a global buffer pool: The Natural subsystem ID and the buffer pool name. For a local buffer pool in CICS: "Local", CICS name and Natural directory name. For a local buffer pool in batch: "Local" and job name.

KPIs of Event Map NaturalBufferPool

Administration Name	KPI Name	Unit	Type	Description
BpCacheGetSearchRatio	Buffer Pool Cache Get/Search Ratio	ratio	composite	The cache get/search ratio serves as a buffer pool cache efficiency indicator. It indicates the number of objects the buffer pool could load from the buffer pool cache, instead of a Natural system file. The higher the value (closer to 1), the better the cache efficiency. Composite KPI: BpCacheGetSuccess / BpCacheSearch
BpCacheGetSuccess	Buffer Pool Cache Get Calls - Successful	count	delta	The number of successful get calls the buffer pool cache performed, that is, the number of objects the buffer pool cache swapped into the buffer pool.
BpCacheObjectReuse	Buffer Pool Cache Object Reuse Factor	ratio	composite	The value shows the overall reuse factor; that is, how often an object loaded once into the buffer pool cache could be successfully reloaded into the buffer pool. The higher the value, the better the buffer pool cache efficiency. Composite KPI: BpCacheGetSuccess / BpCachePutSuccess
BpCachePutSuccess	Buffer Pool Cache Put Calls - Successful	count	delta	The number of put calls that resulted in an object to swapped from the buffer pool into the buffer pool cache.
BpCacheSearch	Buffer Pool Cache Search Calls	count	delta	The number of search calls the buffer pool sent to the buffer pool cache while

Administration Name	KPI Name	Unit	Type	Description
				attempting to find an object in the buffer pool cache.
BpCacheState	Buffer Pool Cache State	state	state	The state of the buffer pool cache (online/offline).
BpLoad	Buffer Pool Loads - Total	count	composite	The total number of loads into the buffer pool. Composite KPI: BpLoadDb + BpLoadCache
BpLoadCache	Buffer Pool Loads from Cache	count	delta	The number of times an object was loaded from the buffer pool cache. It indicates the number of database loads saved.
BpLoadCycles	Buffer Pool Load Cycles	count	delta	This field indicates the number of times a search has been performed starting from the top of the buffer pool. This number gives an estimate of the frequency of cycling through the buffer pool in a wrap-around fashion.
BpLoadDb	Buffer Pool Loads from Database	count	delta	The number of times an object was loaded from a Natural system file into the buffer pool.
BpLocate	Buffer Pool Locate Calls - Successful	count	delta	The total number of successful locate calls.
BpLocateLoadRatio	Buffer Pool Locate/Load Ratio	ratio	composite	The locate/load ratio serves as a buffer pool efficiency indicator. The larger the number, the better the buffer pool is performing. It is the primary indicator of the buffer pool performance. Composite KPI: BpLocate / BpLoadDb
BpState	Buffer Pool State	state	state	The state of the Natural buffer pool (online/offline). This KPI is automatically monitored.
BpSteplibSearch	Buffer Pool Steplib Searches	count	delta	The number of normal locate calls that occurred from failed attempts to find an object in a steplib library. The fewer the number of steplib searches, the better the buffer pool is performing.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Buffer Pool Cache Get-Search Ratio	Natural.BpCacheGetSearchRatio < 0,1	2 - High	The Natural buffer pool cache get/search ratio < 0.1.
Natural Buffer Pool Cache Object Reusage	Natural.BpCacheObjectReuse < 1	2 - High	The Natural buffer pool cache get/put ratio < 1.
Natural Buffer Pool Locate-Load Ratio	Natural.BpLocateLoadRatio < 10	2 - High	The Natural buffer pool locate/load ratio < 10.
Natural Buffer Pool Not Active	Natural.BpState = 0	2 - High	The Natural buffer pool is not active.

Natural Buffer Pool (UNIX and Windows)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Buffer Pool".
NaturalBufferPoolOS	The name of the Natural buffer pool.

KPIs of Event Map NaturalBufferPoolOS

Administration Name	KPI Name	Unit	Type	Description
BpOSActivatedObjects	Activated Objects	objects	delta	The number of activated objects.
BpOSAllocatedMemory	Allocated Memory	bytes	last value	The size of the allocated memory.
BpOSAttemptedLocates	Attempted Locates	locates	delta	The number of attempted locates.
BpOSCurrentUsers	Current Number of Users	users	last value	The current number of users.
BpOSDormantObjects	Dormant (Inactive) Objects	objects	last value	The number of dormant (inactive) objects.
BpOSFreeMemory	Free Memory	bytes	last value	The size of the free memory.
BpOSGenerationDate			generic	The generation date of the Natural buffer pool.
BpOSLoadedObjects	Loaded Objects	objects	delta	The number of objects loaded.
BpOSLocateLoadRatio	Buffer Pool Locate/Load Ratio	ratio	composite	The locate/load ratio serves as a buffer pool efficiency indicator. The larger the number, the better the buffer pool is

Administration Name	KPI Name	Unit	Type	Description
				performing. It is the primary indicator of the buffer pool performance. Composite KPI: BpOSAttemptedLocates / BpOSLoadedObjects
BpOSMemorySize	Memory Size	bytes	last value	The size of the memory.
BpOSPeakUsers	Peak Number of Users	users	last value	The peak (highest) number of users.
BpOSStartTime			generic	The start time of the Natural buffer pool.
BpOSState	Buffer Pool State	state	state	The state of the Natural buffer pool (online/offline). This KPI is automatically monitored.
BpOSVersion			generic	The version of the Natural buffer pool.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Buffer Pool OS Locate-Load Ratio	Natural.BpOSLocateLoadRatio < 10	2 - High	The Natural buffer pool locate/load ratio < 10.
Natural Buffer Pool OS Many Objects Loads	Natural.BpOSLoadedObjects / Natural.BpOSDormantObjects >= 10%	2 - High	The Natural buffer pool loaded many objects in relation to the number of dormant objects.
Natural Buffer Pool OS Not Active	Natural.BpOSState = 0	2 - High	The Natural buffer pool is not active.

Natural CICS

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural CICS".
NaturalCICS	The name of the CICS and the name of the Natural CICS system directory

KPIs of Event Map NaturalCICS

Administration Name	KPI Name	Unit	Type	Description
NCISirBlockExtension	SIR Block Extension	count	last value	The number of SIR block extensions.
NCIState	Natural CICS State	state	state	The state of the Natural CICS (online/offline). This KPI is automatically monitored.
NCISystemDirectoryRecoveries	System Directory Recoveries	count	delta	The number of system directory recoveries.
NCISystemStartTime			generic	The Natural CICS system start time.
NCIThreadGroups	Thread Groups	count	last value	The number of thread groups.
NCIUsersActive	Users Active	users	last value	The number of users currently active.
NCIUsersActiveMax	Users Active - Maximum Number	users	last value	The maximum number of users active since Natural CICS started.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural CICS Directory Recovery	Natural.NCISystemDirectoryRecoveries > 0	3 - Medium	The Natural CICS directory recovered. This indicates that a failure of the Natural CICS system has occurred.
Natural CICS SIR Block Extension Allocated	Natural.NCISirBlockExtension > 0	3 - Medium	Natural CICS SIR block extension allocated.

Natural CICS - Thread Group

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural CICS".
NaturalCICS	The name of the CICS and the name of the Natural CICS system directory
NaturalCICSThread	The name of the Natural CICS thread group.

KPIs of Event Map NaturalCICSThread

Administration Name	KPI Name	Unit	Type	Description
NCIThreadQueueSize	Thread Group Queue Size	count	last value	The number of sessions waiting for a thread.
NCIThreadQueueSizeMax	Thread Group Queue Size - Maximum Value	bytes	last value	The maximum queue size of the thread group used so far.
NCIThreadRollFacility			generic	The Roll Facility used.
NCIThreadSize	Thread Group Size	bytes	last value	The size of the thread group.
NCIThreadState	State of Natural CICS Thread Group	state	state	The state of the Natural CICS thread group (online/offline). This KPI is automatically monitored.
NCIThreadStorage	Thread Group Storage Used	bytes	last value	The storage used by the thread group.
NCIThreadTCBs	Thread Group Number of TCBs	count	last value	The number of TCBs in the thread group.
NCIThreadType			generic	The thread group type.
NCIThreadUsers	Thread Group Users	users	last value	The number of current thread group users.
NCIThreadUsersMax	Thread Group Users - Maximum Number	users	last value	The maximum number of thread group users active since Natural CICS started.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural CICS Thread Queue Size	Natural.NCIThreadQueueSize > 2	2 - High	The Natural CICS thread group queue size is greater than 2.

Natural Connection

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Connection".
NaturalConnection	The Natural nucleus name.

KPIs of Event Map NaturalConnection

Administration Name	KPI Name	Unit	Type	Description
NaturalConnectionCommand-Downloads	Command Downloads	count	delta	The number of command downloads.
NaturalConnectionDownload-Blocks	Download Blocks	count	delta	The number of downloaded blocks.
NaturalConnectionDownload-Bytes	Download Bytes	bytes	delta	The length of the downloaded data.
NaturalConnectionDownload-FileSizeAvg	Download File Size Average	bytes	composite	The average size of a downloaded file. Composite: NaturalConnectionDownloadBytes / NaturalConnectionDownloadFiles
NaturalConnectionDownload-Files	Download Files	count	delta	The number of file downloads.
NaturalConnectionDownload-Records	Download Records	count	delta	The number of downloaded records.
NaturalConnectionElapsed-Time	Elapsed Time	ms	delta	The elapsed time spent for the data transfer.
NaturalConnectionReport-Blocks	Report Blocks	count	delta	The number of transferred report blocks.
NaturalConnectionReport-Bytes	Report Bytes	bytes	delta	The length of the transferred reports.
NaturalConnectionReportSize-Avg	Report Size Average	bytes	composite	The average size of a transferred report. Composite: NaturalConnectionReportBytes / NaturalConnectionReports
NaturalConnectionReports	Reports	count	delta	The number of transferred reports.

Administration Name	KPI Name	Unit	Type	Description
NaturalConnectionReports-Records	Report Records	count	delta	The number of transferred report records.
NaturalConnectionState	Natural Connection State	state	state	The state of Natural Connection (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool or if the Natural Connection support has been switched off. This KPI is automatically monitored.
NaturalConnectionUpload-Blocks	Upload Blocks	count	delta	The number of uploaded blocks.
NaturalConnectionUpload-Bytes	Upload Bytes	bytes	delta	The length of the uploaded data.
NaturalConnectionUploadFile-SizeAvg	Upload File Size Average	bytes	composite	The average size of an uploaded file. Composite: NaturalConnectionUploadBytes / NaturalConnectionUploadFiles
NaturalConnectionUploadFiles	Upload Files	count	delta	The number of file uploads.
NaturalConnectionUpload-Records	Upload Records	count	delta	The number of uploaded records.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Connection Not Active	Natural.NaturalConnectionState = 0	2 - High	Natural Connection is not active.

Natural Development Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "NDV Server".
NdvServer	The name, port and type (local/remote) of the Natural Development Server (NDV).

KPIs of Event Map NdvServer

Administration Name	KPI Name	Unit	Type	Description
NdvCpuTime	CPU Time	seconds	delta	The CPU time used by the server. This includes Natural Development Server and Natural tasks. Under BS2000 it is the CPU time consumed by the SMARTS Natural Development Server application main task and all worker tasks.
NdvHttpMonitorState	HTTP Monitor State	state	state	The state of the HTTP Monitor Server (online/offline). This KPI is automatically monitored. If the HTTP Monitor Server is offline, Natural Development Servers and their KPIs cannot be monitored. **Note:** The KPI becomes obsolete if the Natural Optimize Monitor Buffer Pool is used for the data collection.
NdvIOBuffersReceived-AverageSize	I/O Buffers Received - Average Size	bytes	composite	The average size of the I/O buffers received from the client. Composite KPI: NdvIOBuffersReceivedSize / NdvIOBuffersReceivedNumber
NdvIOBuffersReceived-Number	I/O Buffers Received - Number	count	delta	The number of I/O buffers received from the client. A user request will be forwarded to a Natural Development Server in one or more I/O buffers.
NdvIOBuffersReceivedSize	I/O Buffers Received - Size	bytes	delta	The size of the I/O buffers received from the client. The size of one I/O buffer depends on the user request.
NdvIOBuffersSentAverageSize	I/O Buffers Sent - Average Size	bytes	composite	The average size of the I/O buffers sent to the client. Composite KPI: NdvIOBuffersSentSize / NdvIOBuffersSentNumber
NdvIOBuffersSentNumber	I/O Buffers Sent - Number	count	delta	The number of I/O buffers sent to the client. A Natural Development Server answers a user request by sending one or more I/O buffers.
NdvIOBuffersSentSize	I/O Buffers Sent - Size	bytes	delta	The size of the I/O buffers sent to the client. The size of one I/O buffer depends on the user request.

Administration Name	KPI Name	Unit	Type	Description
NdvNaturalCalls	Natural Calls	count	delta	The number of calls (queries) to the Natural nucleus.
NdvNaturalTime	Natural Time	seconds	delta	The elapsed time spent for tasks in the Natural nucleus.
NdvNaturalTimeAverage	Natural Time - Average	seconds	composite	The average elapsed time spent in Natural. Composite KPI: NdvNaturalTime / NdvNaturalCalls
NdvServerCalls	Server Calls	count	delta	The number of server calls (receives) caused by client action.
NdvServerTime	Server Time	seconds	delta	The elapsed time spent in the server (excluding elapsed time spent in Natural).
NdvServerTimeAverage	Server Time - Average	seconds	composite	The average elapsed time spent in the server (excluding elapsed time spent in Natural). Composite KPI: NdvServerTime / NdvServerCalls
NdvServerTimeTotal	Server Time Total	seconds	delta	The time spent in the server (time between receive and send/terminate). NdvServerTimeTotal is the sum of NdvNaturalTime and NdvServerTime.
NdvServerTimeTotalAverage	Server Time Total - Average	seconds	composite	The average elapsed time spent in the server including calls to Natural. Composite KPI: NdvServerTimeTotal / NdvServerCalls
NdvSessionsCurrent	Sessions - Current Number	count	last value	The current number of sessions.
NdvSessionsTotal	Sessions - Total Number	count	delta	The number of sessions activated during the last measuring interval.
NdvState	Natural Development Server State	state	state	The state of the Natural Development Server (online/offline). This KPI is automatically monitored.
NdvStorageUsed	Storage Used	bytes	last value	The current storage used, that is the total storage allocated. This value varies depending on the number of users or the activity of users.
NdvThreadQueueNatural	Thread Queue - Natural	count	last value	The current number of sessions queuing a Natural thread. A Natural call typically results in a request of a

Administration Name	KPI Name	Unit	Type	Description
				Natural thread. A Natural thread may be rolled out.
NdvThreadQueueServer	Thread Queue - Server	count	last value	The current number of sessions queuing a server thread.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Development Server HTTP Monitor Server Not Active	Natural.NdvHttpMonitorState = 0	2 - High	The HTTP Monitor Server is not active.
Natural Development Server High Natural Elapsed Time	Natural.NdvNaturalTimeAverage > 2000	3 - Medium	The average elapsed time spent in Natural is greater than 2 seconds.
Natural Development Server Not Active	Natural.NdvState = 0	2 - High	The Natural Development Server is not active.

Natural Editor (Software AG Editor)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Editor". In Optimize, the Software AG Editor is referred to as "Natural Editor".
NaturalEditor	For a global editor buffer pool: The Natural subsystem ID and the editor buffer pool name. For a local editor buffer pool in CICS: "Local", CICS name and Natural directory name. For a local buffer pool in batch: "Local" and job name.

KPIs of Event Map NaturalEditor

Administration Name	KPI Name	Unit	Type	Description
EditorBufferPoolBlocks	Buffer Pool Blocks	blocks	last value	The total number of buffer pool blocks available.
EditorBufferPoolBlocks-Used	Buffer Pool Blocks Used	blocks	last value	The number of buffer pool blocks currently used.
EditorBufferPoolStartTime			generic	The start time of the buffer pool.
EditorReadWork	Number of Read Work	count	composite	The number of editor read requests. Composite KPI: EditorReadWorkBp + EditorReadWorkFile
EditorReadWorkBp	Number of Read Work File from the Buffer Pool	count	delta	The number of editor read requests satisfied by the buffer pool.
EditorReadWorkFile	Number of Read Work File from the Work File	count	delta	The number of editor read requests satisfied by the work file.
EditorState	State of Natural Editor	state	state	The state of the Software AG Editor (online/offline). This KPI is automatically monitored.
EditorWorkFileWork	Work File Work Records	records	last value	The total number of records in the work part of the work file.
EditorWorkFileWorkUsed	Work File Work Records Used	records	last value	The number of records currently used in the work part of the work file.
EditorWriteWork	Number of Write Work	count	composite	The number of editor write requests. Composite KPI: EditorWriteWorkBp + EditorWriteWorkFile
EditorWriteWorkBp	Number of Write Work File to the Buffer Pool	count	delta	The number of editor write requests satisfied by the buffer pool.
EditorWriteWorkFile	Number of Write Work File to the Work File	count	delta	The number of editor write requests satisfied by the work file.

Note: If an editor buffer pool is started but not yet initialized, only the state and count KPIs are provided for monitoring.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Editor Buffer Pool Full	Natural.EditorBufferPoolBlocksUsed / Natural.EditorBufferPoolBlocks >= 80%	2 - High	The Software AG Editor buffer pool is 80% full.
Natural Editor Not Active	Natural.EditorState = 0	2 - High	The Software AG Editor buffer pool is not active.
Natural Editor Work Full	Natural.EditorWorkFileWorkUsed / Natural.EditorWorkFileWork >= 80%	2 - High	The Software AG Editor work file is 80% full.

Natural for Adabas

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural for Adabas".
NaturalForAdabas	The Natural nucleus name. For ADAMODE = (2 or 3), an additional instance is created which monitors the special/internal calls issued by the secondary user. This instance is identified by the Natural nucleus name and the indicator "(internal)".

KPIs of Event Map NaturalForAdabas

Administration Name	KPI Name	Unit	Type	Description
NatAdaCallsSystemData	Calls - System Data	count	delta	The number of database calls against logical system files of Software AG products. These are the Natural system files like `FNAT`, `FUSER` or `FDIC`, and all files defined by the Natural profile parameter `LFILE`.
NatAdaCallsUserData	Calls - User Data	count	delta	The number of database calls against user files (all files which are not accessed via `LFILE` definition).
NatAdaCommandsModify	Commands - Modify	count	delta	The number of database modification commands (A1, E1, N1/N2) issued by Natural.

Administration Name	KPI Name	Unit	Type	Description
NatAdaCommandsOther	Commands - Other	count	delta	The number of other database commands (like OP, ET) issued by Natural.
NatAdaCommandsRetrieve	Commands - Retrieve	count	delta	The number of database retrieval commands (L*x*, S*x*) issued by Natural.
NatAdaCommandsRetrieve-Multifetch	Commands - Retrieve Multifetch	count	delta	The number of database retrieval commands using Multifetch.
NatAdaCommandsTotal	Commands - Total	count	delta	The total number of database commands issued by Natural.
NatAdaHoldUnsuccessful	Hold Unsuccessful	count	delta	The number of database calls that attempted to hold an ISN already in the hold queue for another user (indicated by a nucleus response code 145).
NatAdaMonitoringState	Natural for Adabas Monitoring State	state	state	The state of Natural for Adabas monitoring (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool. This KPI is automatically monitored.
NatAdaTimeAdabas	Time - Adabas	ms	delta	The elapsed time spent in the Adabas nucleus.
NatAdaTimeAdabasAvg	Time - Adabas Average	ms	composite	The average Adabas nucleus time. Composite KPI: NatAdaTimeAdabas / NatAdaCommandsTotal
NatAdaTimeCommand	Time - Command	ms	delta	The elapsed time spent to execute the Adabas commands which is the transport time plus the Adabas nucleus time.
NatAdaTimeCommandAvg	Time - Command Average	ms	composite	The average Adabas command time. Composite KPI: NatAdaTimeCommand / NatAdaCommandsTotal
NatAdaTimeGateway	Time - Gateway	ms	delta	The elapsed time spent in the Adabas gateway. It does not include the command time.
NatAdaTimeGatewayAvg	Time - Gateway Average	ms	composite	The average Adabas gateway time. Composite KPI: NatAdaTimeGateway / NatAdaCommandsTotal
NatAdaTimeTransport	Time - Transport	ms	delta	The transport time from the Adabas gateway to the Adabas nucleus and back.

Administration Name	KPI Name	Unit	Type	Description
NatAdaTimeTransportAvg	Time - Transport Average	ms	composite	The average transport time. Composite KPI: NatAdaTimeTransport / NatAdaCommandsTotal
NatAdaUsingAcb	Using ACB	count	delta	The number of database calls using the Adabas Control Block (ACB).
NatAdaUsingAcbx	Using ACBX	count	delta	The number of database calls using the extended Adabas Control Block (ACBX).

Built-In Rules

Administration Name	Expression	Severity	Description
Natural for Adabas Many Unsuccessful Holds	Natural.NatAdaHoldUnsuccessful / Natural.NatAdaCommandsTotal >= 3%	2 - High	Natural issued many unsuccessful attempts to hold an ISN (in relation to the total number of commands).
Natural for Adabas Monitoring Not Active	Natural.NatAdaMonitoringState = 0	2 - High	The Natural for Adabas monitoring is not active.

Natural for Ajax - Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Ajax Server".
NaturalAjaxServer	The name of the application server or web container.

KPIs of Event Map NaturalAjaxServer

Administration Name	KPI Name	Unit	Type	Description
NaturalAjaxServerHeap-MemoryFree	Heap Memory - Free	bytes	last value	The free size of the Java virtual machine heap memory.
NaturalAjaxServerHeap-MemoryTotal	Heap Memory - Total	bytes	composite	The total size of the Java virtual machine heap memory. Composite KPI: NaturalAjaxServerHeapMemoryUsed + NaturalAjaxServerHeapMemoryFree

Administration Name	KPI Name	Unit	Type	Description
NaturalAjaxServerHeap-MemoryUsed	Heap Memory - Used	bytes	last value	The used size of the Java virtual machine heap memory.
NaturalAjaxServerState	Server State	state	state	The state of the Natural for Ajax server (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Ajax Heap Memory Full	NaturalAjax.NaturalAjaxServerHeapMemoryUsed / NaturalAjax.NaturalAjaxServerHeapMemoryTotal >= 90%	3 - Medium	The heap memory is nearly full.
Natural Ajax Server Not Active	NaturalAjax.NaturalAjaxServerState = 0	2 - High	The Natural for Ajax server is not active.

Natural for Ajax - Web Context

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Ajax Server".
NaturalAjaxServer	The name of the application server or web container.
NaturalAjaxWebContext	The name of the Natural for Ajax web context.

KPIs of Event Map NaturalAjaxWebContext

Administration Name	KPI Name	Unit	Type	Description
NaturalAjaxWebContext-AvgPageSwitchTime	Average Page Switch Time	ms	composite	The average response time for page switches. Composite KPI: NaturalAjaxWebContextPageSwitchTime / NaturalAjaxWebContextPageSwitches
NaturalAjaxWebContext-AvgPageUpdateTime	Average Page Update Time	ms	composite	The average response time for for page updates. Composite KPI: NaturalAjaxWebContextPageUpdateTime / NaturalAjaxWebContextPageUpdates

Administration Name	KPI Name	Unit	Type	Description
NaturalAjaxWebContext-AvgWebIOScreenTime	Average Web I/O Screen Time	ms	composite	The average response time for Web I/O screens. Composite KPI: NaturalAjaxWebContextWebIOScreenTime / NaturalAjaxWebContextWebIOScreens
NaturalAjaxWebContext-IdleServiceThreads	Idle Service Threads	count	last value	The number of service threads in the resource adapter, which are currently idle.
NaturalAjaxWebContext-IdleWorkerThreads	Idle Worker Threads	count	last value	The number of worker threads in the resource adapter, which are currently idle.
NaturalAjaxWebContext-PageReuse	Page Reuse	count	composite	The value shows how often the content on an already loaded page was updated. The higher the value, the better the efficiency of the application and its usage. Composite KPI: NaturalAjaxWebContextPageUpdates / NaturalAjaxWebContextPageSwitches
NaturalAjaxWebContext-PageSwitchTime	Page Switch Time	ms	delta	The summarized response times for page switches. This does not contain the processing time in the user's web browser.
NaturalAjaxWebContext-PageSwitches	Page Switches	count	delta	The number of page switches. The value is incremented each time a user switches to another page.
NaturalAjaxWebContext-PageUpdateTime	Page Update Time	ms	delta	The summarized response times for page updates. This does not contain the processing time in the user's web browser.
NaturalAjaxWebContext-PageUpdates	Page Updates	count	delta	The number of page updates. The value is incremented each time the content of an already loaded page is updated.
NaturalAjaxWebContext-SessionTimeOuts	Session Timeouts	count	delta	The number of sessions that were disconnected due to client inactivity.
NaturalAjaxWebContext-SessionsActive	Active Sessions	count	last value	The number of active sessions.
NaturalAjaxWebContext-State	Web Context State	state	state	The state of the Natural for Ajax web context (online/offline). This KPI is automatically monitored.
NaturalAjaxWebContext-WebIOScreenTime	Web I/O Screen Time	ms	delta	The summarized response times for Web I/O screens. This does not contain the processing time in the user's web browser.
NaturalAjaxWebContext-WebIOScreens	Web I/O Screens	count	delta	The number of displayed Natural Web I/O screens.

Built-In Rules

Administration Name	Expression	Severity	Description
The Natural for Ajax web context is not active.	NaturalAjax.NaturalAjaxWebContextState = 0	2 - High	The Natural for Ajax web context is not active.

Natural for DB2

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural for DB2".
NaturalForDB2	The Natural nucleus name.

KPIs of Event Map NaturalForDB2

Administration Name	KPI Name	Unit	Type	Description
NatDB2CommandsMultipleRow-Fetches	Commands - Multiple Row Fetches	count	delta	The number of multiple row fetches.
NatDB2CommandsOther	Commands - Other	count	delta	The number of other database commands (like OP, ET).
NatDB2CommandsRetrieval	Commands - Retrieval	count	delta	The number of retrieval commands.
NatDB2CommandsRetrieval-MultipleRow	Commands - Retrieval Multiple Row	count	delta	The number of retrieval commands satisfied from multiple row buffer.
NatDB2CommandsRowUpdate	Commands - Row Update	count	delta	The number of rows updated.
NatDB2CommandsTotal	Commands - Total	count	delta	The total number of database commands issued by Natural.
NatDB2CommandsUpdates	Commands - Update	count	delta	The number of update commands.
NatDB2DB2StoredProcedure-Calls	DB2 Stored Procedure Calls	count	delta	The number of DB2 stored procedure calls.
NatDB2FailingRequests-DeadlockOrTimeout	Failing Requests - Deadlock Or Timeout	count	delta	The number of failing SQL requests due to deadlock or timeout (SQL code -911, -913).

Administration Name	KPI Name	Unit	Type	Description
NatDB2FailingRequestsResource-LimitExceeded	Failing Requests - Resource Limit Exceeded	count	delta	The number of failing SQL requests due to resource limit exceeded (SQL code -905).
NatDB2FailingRequestsTotal	Failing Requests - Total	count	delta	The total number of failing SQL requests.
NatDB2FailingRequests-UnavailableResource	Failing Requests - Unavailable Resource	count	delta	The number of failing SQL requests due to unavailable resource (SQL code -904).
NatDB2MonitoringState	Natural for DB2 Monitoring State	state	state	The state of Natural for DB2 monitoring (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool. This KPI is automatically monitored.
NatDB2RequestsDynamicSQL	Requests - Dynamic SQL	count	delta	The number of dynamic SQL requests.
NatDB2RequestsStaticSQL	Requests - Static SQL	count	delta	The number of static SQL requests.
NatDB2TimeCommand	Time - Command	ms	delta	The elapsed time spent to execute the DB2 commands.
NatDB2TimeCommandAvg	Time - Command Average	ms	composite	The average DB2 command time. Composite KPI: NatDB2TimeCommand / NatDB2CommandsTotal
NatDB2TimeGateway	Time - Gateway	ms	delta	The elapsed time spent in the DB2 gateway (Natural for DB2 nucleus). It does not include the command time.
NatDB2TimeGatewayAvg	Time - Gateway Average	ms	composite	The average DB2 gateway time. Composite KPI: NatDB2TimeGateway / NatDB2CommandsTotal

Built-In Rules

Administration Name	Expression	Severity	Description
Natural for DB2 Deadlock Or Timeout	Natural.NatDB2FailingRequestsDeadlockOrTimeout > 0	3 - Medium	Natural issued SQL requests which failed due to deadlock or timeout (SQL code -911, -913)
Natural for DB2 Monitoring Not Active	Natural.NatDB2MonitoringState = 0	2 - High	The Natural for DB2 monitoring is not active.
Natural for DB2 Resource Limit Exceeded	Natural.NatDB2FailingRequestsResourceLimitExceeded > 0	3 - Medium	SQL requests failed due to resource limit exceeded (SQL code -905).
Natural for DB2 Unavailable Resource	Natural.NatDB2FailingRequestsUnavailableResource > 0	3 - Medium	SQL requests failed due to unavailable resource (SQL code -904).

Natural for VSAM

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural for VSAM".
NaturalForVSAM	The Natural nucleus name.

KPIs of Event Map NaturalForVSAM

Administration Name	KPI Name	Unit	Type	Description
NatVSAMBufferFlushes	Buffer Flushes	count	delta	The number of enforced LSR (local shared resources) buffer flushes.
NatVSAMCallsSystemData	Calls - System Data	count	delta	The number of VSAM calls against logical system files of Software AG products. These are the Natural system files like FNAT, FUSER or FDIC, and all files defined by the Natural profile parameter LFILE.
NatVSAMCallsUserData	Calls - User Data	count	delta	The number of VSAM calls against user data sets (all data sets which are not accessed via LFILE definition).
NatVSAMCommandsModify	Commands - Modify	count	delta	The number of VSAM modification commands issued by Natural (like INSERT, DELETE or UPDATE).
NatVSAMCommandsOther	Commands - Other	count	delta	The number of other VSAM commands issued by Natural (like OPEN or END OF TRANSACTION).
NatVSAMCommandsRetrieve	Commands - Retrieve	count	delta	The number of VSAM retrieval commands issued by Natural (like READ or FIND).
NatVSAMCommandsRetrieve-Multifetch	Commands - Retrieve Multifetch	count	delta	The number of VSAM retrieval commands using Multifetch reading a Natural system file.
NatVSAMCommandsTotal	Commands - Total	count	delta	The total number of VSAM commands issued by Natural.
NatVSAMDeferredWrites	Deferred Writes	count	delta	The number of deferred write calls for LSR (local shared resources) pools.
NatVSAMHoldUnsuccessful	Hold Unsuccessful	count	delta	The number of VSAM calls that attempted to hold a record already in the hold queue for another user (indicated by a Natural error 3541).
NatVSAMModifyUnsuccessful	Modify Unsuccessful	count	delta	The number of VSAM calls that attempted to modify a held record already modified by another transaction (indicated by a Natural error 3520).
NatVSAMMonitoringState	Natural for VSAM Monitoring State	state	state	The state of Natural for VSAM monitoring (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool. This KPI is automatically monitored.

Administration Name	KPI Name	Unit	Type	Description
NatVSAMShortFixed	Short On Storage - Fixed Buffers	count	delta	The number of short-on-storage errors for fixed buffers handling threads.
NatVSAMShortVariable	Short On Storage - Variable Buffers	count	delta	The number of short-on-storage situations for variable buffers handling threads.
NatVSAMTimeCommand	Time - Command	ms	delta	The elapsed time spent to execute the VSAM commands.
NatVSAMTimeCommandAvg	Time - Command Average	ms	composite	The average VSAM command time. Composite KPI: NatVSAMTimeCommand / NatVSAMCommandsTotal
NatVSAMTimeGateway	Time - Gateway	ms	delta	The elapsed time spent in the VSAM gateway (Natural VSAM nucleus).
NatVSAMTimeGatewayAvg	Time - Gateway Average	ms	composite	The average VSAM gateway time. Composite KPI: NatVSAMTimeGateway / NatVSAMCommandsTotal

Built-In Rules

Administration Name	Expression	Severity	Description
Natural for VSAM Monitoring Not Active	Natural.NatVSAMMonitoringState = 0	2 - High	The Natural for VSAM monitoring is not active.
Natural for VSAM Short On Storage For Fixed Buffers	Natural.NatVSAMShortFixed > 0	3 - Medium	Short-on-storage errors occurred for fixed buffers handling threads.
Natural for VSAM Unsuccessful Holds	Natural.NatVSAMHoldUnsuccessful > 0	3 - Medium	Natural issued unsuccessful attempts to hold a record.
Natural for VSAM Unsuccessful Modifies	Natural.NatVSAMModifyUnsuccessful > 0	3 - Medium	Natural issued unsuccessful attempts to modify a record.

Natural Nucleus

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Nucleus".
NaturalNucleus	The Natural nucleus name.

KPIs of Event Map NaturalNucleus

Administration Name	KPI Name	Unit	Type	Description
NatNucIcuBufferOverflows	ICU - Buffer Overflows	count	delta	The number of buffer overflows during code page conversion.
NatNucIcuConversionsCodePages	ICU - Conversions Code Pages	count	delta	The number of conversions from one code page to another code page.
NatNucIcuConversionsFromUnicode	ICU - Conversions From Unicode	count	delta	The number of conversions from Unicode.
NatNucIcuConversionsToUnicode	ICU - Conversions To Unicode	count	delta	The number of conversions to Unicode.
NatNucIcuConversionsTotal	ICU - Conversions Total	count	delta	The total number of code page or Unicode conversions.
NatNucIcuConverterCloseRequests	ICU - Converter Close Requests	count	delta	The number of requests to close a converter.
NatNucIcuConverterOpenRequests	ICU - Converter Open Requests	count	delta	The number of requests to open a converter.
NatNucIcuFailedConversions	ICU - Failed Conversions	count	delta	The number of failed Unicode or code page conversions.
NatNucIcuLengthConversionCode-Pages	ICU - Length Conversion Code Pages	bytes	delta	The accumulated length of the data converted from one code page to another code page.
NatNucIcuLengthConversionFrom-Unicode	ICU - Length Conversion From Unicode	bytes	delta	The accumulated length of the data converted from Unicode.

Administration Name	KPI Name	Unit	Type	Description
NatNucIcuLengthConversionTo-Unicode	ICU - Length Conversion To Unicode	bytes	delta	The accumulated length of data converted to Unicode.
NatNucIcuState	ICU - State	state	state	The state of the Natural Unicode and code page support (online/offline). The state depends on the setting of the Natural parameter `CFICU`.
NatNucIcuTime	ICU - Time	ms	delta	The CPU time spent by the ICU.
NatNucIcuTimeAverage	ICU - Time Average	ms	composite	The average CPU time spent by the ICU. Composite: NatNucIcuTime / NatNucIcuConversionsTotal
NatNucNaturalNucleusMonitoring-State	Natural Nucleus Monitoring State	state	state	The state of Natural Nucleus monitoring (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool. This KPI is automatically monitored.
NatNucParseXmlFailed	Parse XML - Failed	count	delta	The number of failed `PARSE XML` executions.
NatNucParseXmlInternalIcuCalls	Parse XML - Internal ICU Calls	count	delta	The number of internal ICU calls for `PARSE XML` execution.
NatNucParseXmlLength	Parse XML - Length	bytes	delta	The accumulated length of the parsed documents.
NatNucParseXmlParserCallbacks	Parse XML - Parser Callbacks	count	delta	The number of callbacks from the XML parser `EXPAT`.
NatNucParseXmlState	Parse XML - State	state	state	The state of the Natural `PARSE XML` statement support (online/offline). The state depends on the setting of the Natural parameter `XML` and the subparameter `PARSE`.
NatNucParseXmlTime	Parse XML - Time	ms	delta	The elapsed time while the XML parser `EXPAT` is active.
NatNucParseXmlTimeAverage	Parse XML - Time Average	ms	composite	The average elapsed time spent by the XML parser. Composite: NatNucParseXmlTime / NatNucParseXmlTotal
NatNucParseXmlTotal	Parse XML - Total	count	delta	The total number of `PARSE XML` executions.

Administration Name	KPI Name	Unit	Type	Description
NatNucReqDocAccessLocal	Request Document - Access Local	count	delta	The number of local requests (no proxy).
NatNucReqDocAccessRemote	Request Document - Access Remote	count	delta	The number of remote requests (proxy).
NatNucReqDocAccessSecure	Request Document - Access Secure	count	delta	The number of secure requests (HTTPS).
NatNucReqDocAccessTotal	Request Document - Access Total	count	delta	The total number of `REQUEST DOCUMENT` executions.
NatNucReqDocInternalIcuCalls	Request Document - Internal ICU Calls	count	delta	The number of internal ICU calls for `REQUEST DOCUMENT` execution.
NatNucReqDocLengthInbound	Request Document - Length Inbound	bytes	delta	The accumulated length of the inbound HTTP messages.
NatNucReqDocLengthOutbound	Request Document - Length Outbound	bytes	delta	The accumulated length of the outbound HTTP messages.
NatNucReqDocMethodGet	Request Document - Method GET	count	delta	The number of requests using the `GET` method.
NatNucReqDocMethodHead	Request Document - Method HEAD	count	delta	The number of requests using the `HEAD` method.
NatNucReqDocMethodPost	Request Document - Method POST	count	delta	The number of requests using the `POST` method.
NatNucReqDocMethodPut	Request Document - Method PUT	count	delta	The number of requests using the `PUT` method.
NatNucReqDocState	Request Document - State	state	state	The state of the Natural `REQUEST DOCUMENT` statement support (online/offline). The state depends on the setting of the Natural parameter `XML` and the subparameter `RDOC`.
NatNucReqDocTimeCommunication	Request Document - Time Communication	ms	delta	The elapsed wait time for inbound and outbound messages.

Administration Name	KPI Name	Unit	Type	Description
NatNucReqDocTimeCommunication-Average	Request Document - Time Communication Average	ms	composite	The average wait time for the `REQUEST DOCUMENT` communication. Composite: NatNucReqDocTimeCommunication / NatNucReqDocAccessTotal
NatNucReqDocTimeInbound	Request Document - Time Inbound	ms	delta	The elapsed wait time for inbound messages (socket receive).
NatNucReqDocTimeOutbound	Request Document - Time Outbound	ms	delta	The elapsed wait time for outbound messages (socket send).

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Nucleus ICU Buffer Overflow	Natural.NatNucIcuBufferOverflows > 0	3 - Medium	An ICU buffer overflow occurred.
Natural Nucleus ICU Conversion Failed	Natural.NatNucIcuFailedConversions > 0	3 - Medium	The ICU code page or Unicode conversion failed.
Natural Nucleus Monitoring Not Active	Natural.NatNucNaturalNucleusMonitoringState = 0	2 - High	The Natural Nucleus monitoring is not active.
Natural Nucleus Parse XML failed	Natural.NatNucParseXmlFailed > 0	3 - Medium	The execution of `PARSE XML` failed.

Natural Optimize

The Natural *Optimize Monitor Buffer Pool* (here denoted as "Natural Optimize") consists of the pool header with control information, the session data pool and the KPI pool. The Natural nucleus writes the session statistics into the session data pool in a wrap-around manner. The aggregation daemon reads the statistics from the session data pool, cumulates it, and writes it into the KPI pool. Products which collect internally their own statistics (such as Natural CICS or Natural Development Server) write directly into the KPI pool.

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Optimize".
NaturalOptimize	The name of the job which runs the aggregation daemon and allocates and owns the Natural Optimize Monitor Buffer Pool data space.

KPIs of Event Map NaturalOptimize

Administration Name	KPI Name	Unit	Type	Description
NatOptComponents	Components	count	last value	The number of components (products and subproducts) in the KPI pool.
NatOptDaemonState	Natural Optimize Daemon State	state	state	The state of the Natural Optimize daemon (online/offline). This KPI is automatically monitored.
NatOptDataPoolDataInput	Data Pool Data Input	bytes	delta	The size of the session data written by the Natural nucleus into the session data pool.
NatOptDataPoolOverwrites	Data Pool Overwrites	count	delta	The number of times the nucleus has overwritten data not yet processed by the aggregation daemon.
NatOptDataPoolUsed	Data Pool Used	percent	last value	The percentage of the session data pool which is not yet processed by the aggregation daemon.
NatOptDataPoolWraps	Data Pool Wraps	count	delta	The number of times the nucleus has reached the end of the session data pool and started writing from the top again.
NatOptInstancesMonitored	Instances - Monitored	count	last value	The number of currently monitored component instances in the KPI pool.
NatOptInstancesTotal	Instances - Total	count	last value	The total number of component instances in the KPI pool.
NatOptKpiPoolUsed	KPI Pool Used	percent	last value	The percentage of the KPI pool currently used.
NatOptState	Natural Optimize State	state	state	The state of Natural Optimize (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Optimize Daemon Not Active	Natural.NatOptDaemonState = 0	2 - High	The Natural Optimize aggregation daemon is not active. Therefore all Natural components delivering statistics through the Natural Optimize session data pool cannot be monitored.
Natural Optimize Data Pool Full	Natural.NatOptDataPoolUsed > 90	3 - Medium	The Natural Optimize session data pool is more than 90 % full.
Natural Optimize KPI Pool Full	Natural.NatOptKpiPoolUsed > 90	2 - High	The Natural Optimize KPI pool is more than 90 % full.
Natural Optimize Not Active	Natural.NatOptState = 0	2 - High	The Natural Optimize Monitor Buffer Pool is not active. Therefore all Natural components delivering statistics through the Natural Optimize Monitor Buffer Pool cannot be monitored.
Natural Optimize Overwrites	Natural.NatOptDataPoolOverwrites > 0	2 - High	The Natural nucleus has overwritten statistical data before the daemon has processed it. The statistics from Natural Optimize for the current interval is therefore not valid.

Natural Review Monitor

If Natural Review is available, Optimize calls it to monitor Natural sessions and transactions. Natural Review itself is not monitored.

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Review".
NaturalReview	The name of the CICS.

KPIs of Event Map NaturalReview

Administration Name	KPI Name	Unit	Type	Description
NaturalAdabasCommand-Time	Adabas Command Time	ms	delta	The Adabas command time.
NaturalAvgDbCalls	Average Transaction Database Calls	calls	composite	The average number of database calls for all transactions monitored. Composite KPI: NaturalDbCalls / NaturalTransactions
NaturalAvgDbCommand-Time	Average Database Call Command Time	ms	composite	The average database call command time for all sessions monitored. Composite KPI: NaturalAdabasCommandTime / NaturalDbCalls
NaturalAvgDbElapsed-Time	Average Database Call Elapsed Time	ms	composite	The average database call elapsed time for all sessions monitored. Composite KPI: NaturalDbTime / NaturalDbCalls
NaturalAvgResponseTime	Average Transaction Response Time	ms	composite	The average response time for all transactions monitored. Composite KPI: NaturalResponseTime / NaturalTransactions
NaturalDbCalls	Number of Database Calls	calls	delta	The number of database calls.
NaturalDbTime	Database Calls Elapsed Time	ms	delta	The database calls elapsed time.
NaturalResponseTime	Response Time	ms	delta	The summarized response times. The *response time* is the amount of time required to process the user's transaction.
NaturalReviewState	Natural Review Monitor State	state	state	The state of the Natural Review Monitor (online/offline). This KPI is automatically monitored.
NaturalSessionLogoffs	Session Logoffs	sessions	delta	Number of session logoffs.
NaturalSessionLogons	Session Logons	sessions	delta	Number of session logons.
NaturalSessionsActive	Active Sessions	sessions	last value	Number of active sessions.
NaturalTransactions	Number of Transactions	transactions	delta	The number of transactions. A *transaction* is registered each time

Administration Name	KPI Name	Unit	Type	Description
				the Enter key or a PF key is pressed.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Review High Response Time	Natural.NaturalAvgResponseTime > 2000	2 - High	The average response time of Natural transactions is greater than 2 seconds.
Natural Review Not Active	Natural.NaturalReviewState = 0	2 - High	The Natural Review Monitor is not active.

Natural Roll Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Roll Server".
NaturalRollServer	The ID of the Natural subsystem and the Roll Server name.

KPIs of Event Map NaturalRollServer

Administration Name	KPI Name	Unit	Type	Description
RsDirectReads	Direct Reads from Roll File	count	delta	The number of direct reads from the roll file.
RsDirectWrites	Direct Writes to Roll File	count	delta	The number of direct writes to the roll file.
RsHighestThreadSize	Highest Thread Size	bytes	last value	The highest thread size.
RsLrbSlotsUsed	LRB Slots Used	percent	last value	The percentage of currently used LRB slots.
RsLrbSteals	LRB Steals	count	last value	The number of LRB steals.
RsMaxUsers	Maximum Number of Users	users	last value	The maximum number of users.
RsReads	Reads from Roll Server	count	delta	The number of reads from the Roll Server.
RsSlotStages	Slot Stages	count	last value	The number of slot stages.

Administration Name	KPI Name	Unit	Type	Description
RsState	Natural Roll Server State	state	state	The state of the Natural Roll Server (online/offline). This KPI is automatically monitored.
RsUsers	Users	users	last value	The number of users (sessions).
RsVersion			generic	The version of the Roll Server.
RsWaits	Waits for Staging Task	count	delta	The number of waits for Staging Task.
RsWrites	Writes to Roll Server	count	delta	The number of writes to the Roll Server.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Roll Server Direct Writes	Natural.RsDirectWrites > 0	4 - Low	Natural Roll Server direct writes occurred.
Natural Roll Server Many LRB Slots Used	Natural.RsLrbSlotsUsed > 90	3 - Medium	The Natural Roll Server uses more than 90% of the LRB slots.
Natural Roll Server Many LRB Steals	Natural.RsLrbSteals / Natural.RsWrites >= 10%	3 - Medium	Natural Roll Server many LRB steals occurred.
Natural Roll Server Not Active	Natural.RsState = 0	2 - High	The Natural Roll Server is not active.

Natural RPC

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural RPC".
NaturalRPC	The RPC job name or the RPC service name indicated by "Job" or "Service", respectively. Under CICS, the CICS job name and the RPC server transaction ID are used as RPC job name. If multiple jobs are started for the same service, the "Service" instance monitors the totals of all these jobs. Otherwise both instances monitor the same values and it is sufficient to monitor one of the both.

KPIs of Event Map NaturalRPC

Administration Name	KPI Name	Unit	Type	Description
NatRpcBroker			generic	The EntireX Broker name(s).
NatRpcJobName			generic	The names of the jobs started for the Natural RPC service. [1]
NatRpcJobs	Jobs	count	last value	The number of started jobs for the service. [1]
NatRpcMaxbuffExpansion-Length	MAXBUFF Expansion Length	kbytes	delta	The length of the MAXBUFF expansions.
NatRpcMaxbuffExpansions	MAXBUFF Expansions	count	delta	The number of MAXBUFF expansions.
NatRpcMessageInputLength	Message Input Length	bytes	delta	The message input length.
NatRpcMessageInputLength-Avg	Message Input Length per Request	bytes	composite	The average message input length per request. Composite KPI: NatRpcMessageInputLength / NatRpcRequests
NatRpcMessageOutputLength	Message Output Length	bytes	delta	The message output length.
NatRpcMessageOutputLength-Avg	Message Output Length per Request	bytes	composite	The average message output length per request. Composite KPI: NatRpcMessageOutputLength / NatRpcRequests
NatRpcRequests	Requests	count	delta	The number of requests.
NatRpcServerTasksActive	Server Tasks - Active	count	last value	The number of active server tasks. [2]
NatRpcServerTasksStarted	Server Tasks - Started	count	last value	The number of started server tasks. [2]
NatRpcServerTasksWaiting	Server Tasks - Waiting	count	last value	The number of waiting server tasks. [2]
NatRpcService			generic	The Natural RPC service name. [3]
NatRpcServiceRequests	Service Requests	count	delta	The number of service requests.
NatRpcState	Natural RPC State	state	state	The state of the Natural RPC (online/offline). This KPI is automatically monitored.
NatRpcStorageAvailable	Storage Available	kbytes	last value	The storage available in the address space above the 16 MB line. [2]

Administration Name	KPI Name	Unit	Type	Description
NatRpcTimeRpcServer	Time - RPC Server	ms	delta	The time spent in the RPC server. It does not include the service execution time.
NatRpcTimeRpcServerAvg	Time - RPC Server per Request	ms	composite	The average time spent in the RPC server per request. Composite KPI: NatRpcTimeRpcServer / NatRpcRequests
NatRpcTimeServiceExecution	Time - Service Execution	ms	delta	The time spent for the service (Natural subprogram) execution.
NatRpcTimeServiceExecution-Avg	Time - Service Execution per Request	ms	composite	The average time spent for the service execution per request. Composite KPI: NatRpcTimeServiceExecution / NatRpcRequests

All KPI data reflect the state at the end of the last performed RPC request.

Notes:

[1] This KPI is only available if the RPC service name is used as dimension identifier.
[2] This KPI is only available for RPC servers that are started using the RPC server front-end.
[3] This KPI is only available if the RPC job name name is used as dimension identifier.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural RPC Not Active	Natural.NatRpcState = 0	2 - High	The Natural RPC is not active.

Natural SAF Security

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural SAF Security".
NaturalSAFSecurity	The ID and jobname of the Natural SAF daemon.

KPIs of Event Map NaturalSAFSecurity

Administration Name	KPI Name	Unit	Type	Description
NSAFActiveUsers	Active Users	count	last value	The number of currently active users.
NSAFFreeUserArea	Free User Area	percent	last value	The percentage of free user areas in the cache.
NSAFNaturalEnvironmentCheck-Saved	Natural Environment - Check Saved	count	delta	The number of times the SAF Server satisfied a Natural environment authorization request from its cache, without calling the external security system.
NSAFNaturalEnvironment-Denied	Natural Environment - Denied	count	delta	The number of failed Natural environment authorization checks (access denied).
NSAFNaturalEnvironment-Overwrites	Natural Environment - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached Natural environment authorization request. If this number is high, consider increasing the number of items buffered.
NSAFNaturalEnvironment-Successful	Natural Environment - Successful	count	delta	The number of successful Natural environment authorization checks.
NSAFNaturalLibraryCheckSaved	Natural Library - Check Saved	count	delta	The number of times the SAF Server satisfied a Natural library authorization request from its cache, without calling the external security system.
NSAFNaturalLibraryDenied	Natural Library - Denied	count	delta	The number of failed Natural library authorization checks (access denied).

Administration Name	KPI Name	Unit	Type	Description
NSAFNaturalLibraryOverwrites	Natural Library - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached Natural library authorization request. If this number is high, consider increasing the number of items buffered.
NSAFNaturalLibrarySuccessful	Natural Library - Successful	count	delta	The number of successful Natural library authorization checks.
NSAFNaturalRpcServiceCheck-Saved	Natural RPC Service - Check Saved	count	delta	The number of times the SAF Server satisfied a Natural RPC service authorization request from its cache, without calling the external security system.
NSAFNaturalRpcServiceDenied	Natural RPC Service - Denied	count	delta	The number of failed Natural RPC service authorization checks (access denied).
NSAFNaturalRpcService-Overwrites	Natural RPC Service - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached Natural RPC service authorization request. If this number is high, consider increasing the number of items buffered.
NSAFNaturalRpcService-Successful	Natural RPC Service - Successful	count	delta	The number of successful Natural RPC service authorization checks.
NSAFState	Natural SAF Security State	state	state	The state of the Natural SAF Security.
NSAFUserDefinedResourceCheck-Saved	User-defined Resource - Check Saved	count	delta	The number of times the SAF Server satisfied a user-defined resource authorization request from its cache, without calling the external security system.
NSAFUserDefinedResource-Denied	User-defined Resource - Denied	count	delta	The number of failed user-defined resource authorization checks (access denied).
NSAFUserDefinedResource-Overwrites	User-defined Resource - Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached user-defined resource authorization request. If this number is high, consider increasing the number of items buffered.
NSAFUserDefinedResource-Successful	User-defined Resource - Successful	count	delta	The number of successful user-defined resource authorization checks.

Administration Name	KPI Name	Unit	Type	Description
NSAFUserOverwrites	User Overwrites	count	delta	The number of times the SAF Server had to overwrite a previously cached user information. If this number is high, consider increasing the total buffer size.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural SAF Security Natural Environment Denied	Natural.NSAFNaturalEnvironmentDenied > 0	3 - Medium	The Natural SAF Security denied Natural environment checks.
Natural SAF Security Natural Environment Overwrites	Natural.NSAFNaturalEnvironmentOverwrites > 0	4 - Low	The Natural SAF Security has overwritten previously cached Natural environment information.
Natural SAF Security Natural Library Denied	Natural.NSAFNaturalLibraryDenied > 0	3 - Medium	The Natural SAF Security denied Natural library checks.
Natural SAF Security Natural Library Overwrites	Natural.NSAFNaturalLibraryOverwrites > 0	4 - Low	The Natural SAF Security has overwritten previously cached Natural library information.
Natural SAF Security Natural RPC Service Denied	Natural.NSAFNaturalRpcServiceDenied > 0	3 - Medium	The Natural SAF Security denied Natural RPC service checks.
Natural SAF Security Natural RPC Service Overwrites	Natural.NSAFNaturalRpcServiceOverwrites > 0	4 - Low	The Natural SAF Security has overwritten previously cached Natural RPC service information.
Natural SAF Security Not Active	Natural.NSAFState = 0	2 - High	The Natural SAF Security is not active.
Natural SAF Security User Overwrites	Natural.NSAFUserOverwrites > 0	4 - Low	The Natural SAF Security has overwritten previously cached user information.
Natural SAF Security User-defined Resource Denied	Natural.NSAFUserDefinedResourceDenied > 0	3 - Medium	The Natural SAF Security denied user-defined resource checks.

Administration Name	Expression	Severity	Description
Natural SAF Security User-defined Resource Overwrites	Natural.NSAFUserDefinedResourceOverwrites > 0	4 - Low	The Natural SAF Security has overwritten previously cached user-defined resource information.

Natural Security

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Security".
NaturalSecurity	The database ID and file number of the Natural Security system file FSEC.

KPIs of Event Map NaturalSecurity

Administration Name	KPI Name	Unit	Type	Description
SecLogon	Logons - Total	count	composite	The number of logons (initial and subsequent). Composite KPI: SecLogonInit + SecLogonSubseq
SecLogonDenied	Logons Denied - Total	count	composite	The number of denied logons (by authentication or authorization). Composite KPI: SecLogonDeniedAuthentication + SecLogonDeniedAuthorization
SecLogonDeniedAuthentication	Logons Denied by Authentications	count	delta	The number of failed authentication attempts (e.g. wrong password).
SecLogonDeniedAuthorization	Logons Denied by Authorizations	count	delta	The number of failed authorization attempts (e.g. wrong library).
SecLogonInit	Logons - Initial	count	delta	The number of initial logons / session starts.
SecLogonSubseq	Logons - Subsequent	count	delta	The number of subsequent logons.
SecState	Natural Security State	state	state	The state of the Natural Security and statistics (online/offline). "Offline"

Administration Name	KPI Name	Unit	Type	Description
				means in error. This KPI is automatically monitored.
SecUsersLocked	Users Locked	users	delta	The number of users locked during the monitor interval.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Security Logon Denied	Natural.SecLogonDenied > 0	3 - Medium	Logons have been denied by Natural Security.
Natural Security Not Active	Natural.SecState = 0	2 - High	The Natural Security or the NSC statistics is not active.
Natural Security Users Locked	Natural.SecUsersLocked > 0	3 - Medium	Users have been locked by Natural Security.

Natural SQL Gateway

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural SQL Gateway".
NaturalSQLGateway	The Natural nucleus name.

KPIs of Event Map NaturalSQLGateway

Administration Name	KPI Name	Unit	Type	Description
NatSqlCommandsOther	Commands - Other	count	delta	The number of other database commands (like OP, ET).
NatSqlCommandsRetrieval	Commands - Retrieval	count	delta	The number of retrieval commands.
NatSqlCommandsRowUpdate	Commands - Row Update	count	delta	The number of rows updated.
NatSqlCommandsTotal	Commands - Total	count	delta	The total number of database commands issued by Natural.
NatSqlCommandsUpdates	Commands - Update	count	delta	The number of update commands.
NatSqlFailingRequestsTotal	Failing Requests - Total	count	delta	The total number of failing SQL requests.

Administration Name	KPI Name	Unit	Type	Description
NatSqlMonitoringState	Natural SQL Gateway Monitoring State	state	state	The state of Natural SQL Gateway monitoring (online/offline). The state is set to offline if the instance is not found in the Natural Optimize Monitor Buffer Pool. This KPI is automatically monitored.
NatSqlTimeCommand	Time - Command	ms	delta	The elapsed time spent to execute the SQL commands.
NatSqlTimeCommandAvg	Time - Command Average	ms	composite	The average SQL command time. Composite KPI: NatSqlTimeCommand / NatSqlCommandsTotal
NatSqlTimeGateway	Time - Gateway	ms	delta	The elapsed time spent in the SQL gateway.
NatSqlTimeGatewayAvg	Time - Gateway Average	ms	composite	The average SQL gateway time. Composite KPI: NatSqlTimeGateway / NatSqlCommandsTotal

Built-In Rules

Administration Name	Expression	Severity	Description
Natural SQL Gateway Monitoring Not Active	Natural.NatSqlMonitoringState = 0	2 - High	The Natural SQL Gateway monitoring is not active.

Natural Swap Pool

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural Swap Pool".
NaturalSwapPool	The name of the CICS and the name of the Natural CICS system directory when running under CICS; the swap pool name when running under UTM.

KPIs of Event Map NaturalSwapPool

Administration Name	KPI Name	Unit	Type	Description
NSwapCacheState	Natural Swap Pool Cache State	state	state	The state of the Natural swap pool cache (online/offline).
NSwapCacheUseCount	Cache Use Count	count	delta	The number of successful cache writes.
NSwapDeserters	Deserters	count	delta	The number of deserters (requests which are even bigger than the biggest slot). Only counted when the swap pool is active.
NSwapGuests	Guests	count	delta	The number of guests (requests for which all slots of the appropriate size are occupied and which are therefore handled by a bigger slot).
NSwapIOs	I/Os	count	delta	The number of roll file I/Os (writes).
NSwapReorgs	Reorganizations	count	delta	The number of swap pool reorganizations.
NSwapRepairs	Repairs	count	delta	The number of repairs.
NSwapRequests	Requests	count	delta	The number of requests (dialog steps).
NSwapSizeHits	Size Hits	count	delta	The number of slot size hits (requests which would fit into a slot). Only counted when the swap pool is active.
NSwapState	Natural Swap Pool State	state	state	The state of the Natural swap pool (online/offline). This KPI is automatically monitored.
NSwapUseCount	Use Count	count	delta	Use count (requests which are handled by any slot).

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Swap Pool Low Use Count	Natural.NSwapUseCount / Natural.NSwapRequests <= 70%	3 - Medium	Only few requests have been handled inside of the swap pool. The requests did not find a free slot and had to be handled by the cache or by the roll file.
Natural Swap Pool Many Deserters	Natural.NSwapDeserters / Natural.NSwapRequests >= 10%	3 - Medium	Many requests have been bigger than the biggest slot and had to be handled by the cache or by the roll file.
Natural Swap Pool Many Guests	Natural.NSwapGuests / Natural.NSwapUseCount >= 30%	3 - Medium	Many requests have not been handled in the slot corresponding to their size because all of these slots have been occupied. The request was therefore handled by a bigger slot which means a waste of resources.

Administration Name	Expression	Severity	Description
Natural Swap Pool Many I/Os	Natural.NSwapIOs / Natural.NSwapRequests >= 10%	3 - Medium	Many roll file I/Os.
Natural Swap Pool Not Active	Natural.NSwapState = 0	2 - High	The Natural swap pool is not active.
Natural Swap Pool Repaired	Natural.NSwapRepairs > 0	3 - Medium	The Natural swap pool has repaired itself.

Natural zIIP (zIIP Enabler for Natural)

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "Natural zIIP". In Optimize, the zIIP Enabler for Natural is referred to as "Natural zIIP".
NaturalzIIP	The Natural Optimize Monitor Buffer Pool name is used as Natural zIIP name. If multiple Natural versions are running on the LPAR, each Natural Optimize Monitor Buffer Pool collects the Natural zIIP statistics of the corresponding Natural version. Therefore the Natural Optimize Monitor Buffer Pool name can be used for a unique identification of the Natural zIIP statistics.

KPIs of Event Map NaturalzIIP

Administration Name	KPI Name	Unit	Type	Description
NAZCpuTimeCp	CPU Time - CP	ms	composite	The CPU time used on CPs. Composite KPI: NAZCpuTimeTotal - NAZCpuTimezIIP
NAZCpuTimeElapsed	CPU Time - Elapsed	ms	delta	The elapsed time between two measurement points. The elapsed time can be used to adjust the other KPI values to a common time interval.
NAZCpuTimeEligible	CPU Time - Eligible	ms	delta	The CPU time used in zIIP-eligible workload on CPs or zIIPs.
NAZCpuTimeEligibleCp	CPU Time - Eligible on CP	ms	composite	The CPU time used in zIIP-eligible workload on CPs because no zIIP was free.

Administration Name	KPI Name	Unit	Type	Description
				Composite KPI: NAZCpuTimeEligible - NAZCpuTimezIIP
NAZCpuTimeLparCp	CPU Time - LPAR CP	ms	composite	The overall CPU time used on CPs. Composite KPI: NAZCpuTimeLparTotal - NAZCpuTimeLparzIIP
NAZCpuTimeLparTotal	CPU Time - LPAR Total	ms	delta	The overall CPU time used in the LPAR.
NAZCpuTimeLparzIIP	CPU Time - LPAR zIIP	ms	delta	The overall CPU time used on zIIPs.
NAZCpuTimeTotal	CPU Time - Total	ms	delta	The total CPU time used by Natural in all zIIP enabled sessions in the LPAR.
NAZCpuTimezIIP	CPU Time - zIIP	ms	delta	The CPU time used on zIIPs.
NAZModeSwitches	Mode Switches	count	delta	The number of switches from SRB into TCB mode.
NAZProcessorsCP	Processors - CP	count	last value	The number of CPs.
NAZProcessorszIIP	Processors - zIIP	count	last value	The number of zIIPs.
NAZS0F8Intercepts	S0F8 Intercepts	count	delta	The number of S0F8 abends due to SVC execution in SRB mode.
NAZSrbStarts	SRB Starts	count	delta	The number of starts of an SRB process by Natural.
NAZState	Natural zIIP State	state	state	The state of the Natural zIIP (online/offline). If the Natural zIIP entry is not found in the Natural Optimize Monitor Buffer Pool, the Natural zIIP is treated as "offline". This KPI is automatically monitored.
NAZzIIPUtilizationEligible	zIIP Utilization of Eligible	%	composite	The percentage of the CPU time used in zIIP-eligible workload which was executed on zIIPs. Composite KPI: 100 * NAZCpuTimezIIP / NAZCpuTimeEligible
NAZzIIPUtilizationLpar	zIIP Utilization of LPAR	%	composite	The percentage of the overall LPAR CPU time which was executed on zIIPs. Composite KPI: 100 * NAZCpuTimeLparzIIP / NAZCpuTimeLparTotal
NAZzIIPUtilizationTotal	zIIP Utilization of Total	%	composite	The percentage of the total Natural CPU time which was executed on zIIPs. Composite KPI: 100 * NAZCpuTimezIIP / NAZCpuTimeTotal

Built-In Rules

Administration Name	Expression	Severity	Description
Natural zIIP Low zIIP Utilization of Eligible Workload	Natural.NAZzIIPUtilizationEligible < 90	3 - Medium	Less than 90% of the CPU time used in zIIP-eligible workload was executed on zIIPs.
Natural zIIP Not Active	Natural.NAZState = 0	2 - High	The Natural zIIP is not active.
Natural zIIP S0F8 Intercepts	Natural.NAZS0F8Intercepts > 0	3 - Medium	S0F8 abends occurred due to SVC executions in SRB mode.

Notes:

1. The KPIs "CPU Time - LPAR ..." comprise all tasks in the LPAR. All other "CPU time" KPIs reflect the time spent by Natural in all zIIP enabled Natural sessions in the LPAR (in the Natural enclave).
2. Coding is either executed in TCB mode or in SRB mode. If it is running in TCB mode, it can be executed on CPs only. Before it can be executed on zIIPs, it must be switched into SRB mode. If Natural detects zIIP-eligible coding, it switches into SRB mode. But if no zIIP is free, the zIIP-eligible coding must be executed on CP. If the rule "Natural zIIP Low zIIP Utilization of Eligible Workload" fires from time to time, more zIIP processors should be provided.

CPU-Time KPIs

The table below shows the processors and processing modes to which specific KPIs apply.

<table>
<tr><th>Others on CP</th><th>Natural Enclave on CP - TCB Mode</th><th>Natural Enclave on CP - SRB Mode</th><th>Natural Enclave on zIIP - SRB Mode</th><th>Others on zIIP</th></tr>
<tr><td colspan="5">CPU Time - LPAR Total</td></tr>
<tr><td colspan="3">CPU Time - LPAR CP</td><td colspan="2">CPU Time - LPAR zIIP</td></tr>
<tr><td></td><td colspan="3">CPU Time - Total</td><td></td></tr>
<tr><td></td><td colspan="2">CPU Time - CP</td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="2">CPU Time - Eligible</td><td></td></tr>
<tr><td></td><td></td><td>CPU Time - Eligible on CP</td><td>CPU Time - zIIP</td><td></td></tr>
</table>

Terminology

Term	Description
CP	Abbreviation for "general mainframe Central Processor" also named "general purpose processor".
Enclave	With Natural zIIP, the enclave comprises all zIIP enabled Natural sessions in the LPAR.
SRB	Abbreviation for "Service Request Block".
SRB mode	Privileged processing mode used by the system and required for running on zIIPs.
TCB	Abbreviation for "Task Control Block".
TCB mode	Standard processing mode for applications running on CPs.
zIIP	Abbreviation for "IBM System z Integrated Information Processor".

Natural Web I/O Interface - Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "NWO Interface".
NwoServer	The name, port and type (local/remote) of the Natural Web I/O Interface server (NWO).

KPIs of Event Map NwoServer

Administration Name	KPI Name	Unit	Type	Description
NwoCpuTime	CPU Time	seconds	delta	The CPU time used by the server. This includes Natural Web I/O Interface server and Natural tasks.
NwoHttpMonitorState	HTTP Monitor State	state	state	The state of the HTTP Monitor Server (online/offline). This KPI is automatically monitored. If the HTTP Monitor Server is offline, Natural Web I/O Interface servers and their KPIs cannot be monitored. **Note:** The KPI becomes obsolete if the Natural Optimize Monitor Buffer Pool is used for the data collection.
NwoIOBuffersReceived-AverageSize	I/O Buffers Received - Average Size	bytes	composite	The average size of the I/O buffers received from the client.

Administration Name	KPI Name	Unit	Type	Description
				Composite KPI: NwoIOBuffersReceivedSize / NwoIOBuffersReceivedNumber
NwoIOBuffersReceived-Number	I/O Buffers Received - Number	count	delta	The number of I/O buffers received from the client. A user request will be forwarded to a Natural Web I/O Interface server in one or more I/O buffers.
NwoIOBuffersReceivedSize	I/O Buffers Received - Size	bytes	delta	The size of the I/O buffers received from the client. The size of one I/O buffer depends on the user request.
NwoIOBuffersSentAverageSize	I/O Buffers Sent - Average Size	bytes	composite	The average size of the I/O buffers sent to the client. Composite KPI: NwoIOBuffersSentSize / NwoIOBuffersSentNumber
NwoIOBuffersSentNumber	I/O Buffers Sent - Number	count	delta	The number of I/O buffers sent to the client. A Natural Web I/O Interface server answers a user request by sending one or more I/O buffers.
NwoIOBuffersSentSize	I/O Buffers Sent - Size	bytes	delta	The size of the I/O buffers sent to the client. The size of one I/O buffer depends on the user request.
NwoNaturalCalls	Natural Calls	count	delta	The number of calls (queries) to the Natural nucleus.
NwoNaturalTime	Natural Time	seconds	delta	The elapsed time spent for tasks in the Natural nucleus.
NwoNaturalTimeAverage	Natural Time - Average	seconds	composite	The average elapsed time spent in Natural. Composite KPI: NwoNaturalTime / NwoNaturalCalls
NwoServerCalls	Server Calls	count	delta	The number of server calls (receives) caused by client action.
NwoServerTime	Server Time	seconds	delta	The elapsed time spent in the server (excluding elapsed time spent in Natural).
NwoServerTimeAverage	Server Time - Average	seconds	composite	The average elapsed time spent in the server (excluding elapsed time spent in Natural). Composite KPI: NwoServerTime / NwoServerCalls

Administration Name	KPI Name	Unit	Type	Description
NwoServerTimeTotal	Server Time Total	seconds	delta	The time spent in the server (time between receive and send/terminate). NwoServerTimeTotal is the sum of NwoNaturalTime and NwoServerTime.
NwoServerTimeTotalAverage	Server Time Total - Average	seconds	composite	The average elapsed time spent in the server including calls to Natural. Composite KPI: NwoServerTimeTotal / NwoServerCalls
NwoSessionsCurrent	Sessions - Current Number	count	last value	The current number of sessions.
NwoSessionsTotal	Sessions - Total Number	count	delta	The number of sessions activated during the last measuring interval.
NwoState	Natural Web I/O Interface Server State	state	state	The state of the Natural Web I/O Interface server (online/offline). This KPI is automatically monitored.
NwoStorageUsed	Storage Used	bytes	last value	The current storage used, that is the total storage allocated. This value varies depending on the number of users or the activity of users.
NwoThreadQueueNatural	Thread Queue - Natural	count	last value	The current number of sessions queuing a Natural thread. A Natural call typically results in a request of a Natural thread. A Natural thread may be rolled out.
NwoThreadQueueServer	Thread Queue - Server	count	last value	The current number of sessions queuing a server thread.

Built-In Rules

Administration Name	Expression	Severity	Description
Natural Web I/O Interface Server HTTP Monitor Server Not Active	Natural.NwoHttpMonitorState = 0	2 - High	The HTTP Monitor Server is not active.
Natural Web I/O Interface Server High Natural Elapsed Time	Natural.NwoNaturalTimeAverage > 2000	3 - Medium	The average elapsed time spent in Natural is greater than 2 seconds.
Natural Web I/O Interface Server Not Active	Natural.NwoState = 0	2 - High	The Natural Web I/O Interface server is not active.

webMethods ApplinX - Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "ApplinX".
ApplinXServer	The ID of the ApplinX Server.

KPIs of Event Map ApplinXServer

Administration Name	KPI Name	Unit	Type	Description
ApplinXAllocatedMemory	Allocated Memory	bytes	last value	The total amount of memory (in bytes) that is currently allocated to ApplinX server on the Java Virtual Machine.
ApplinXFreeMemory	Free Memory	bytes	last value	The amount of memory (in bytes) currently available for ApplinX to use.
ApplinXIdleThreads	Idle Threads	threads	average	The number of threads that were activated, but are currently not being used.
ApplinXSessions	Sessions	sessions	average	The total number of sessions presently connected to the server.
ApplinXStartedThreads	Started Threads	threads	average	The number of threads that were activated.
ApplinXState	ApplinX Server State	state	state	The state of the ApplinX server (online/offline). This KPI is automatically monitored.

Built-In Rules

Administration Name	Expression	Severity	Description
ApplinX Server Connection Error	ApplinX.ApplinXState = 0	2 - High	No connection to the ApplinX Server.

webMethods ApplinX - Application

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "ApplinX".
ApplinXServer	The ID of the ApplinX Server.
ApplinXApplication	The name of the ApplinX application.

KPIs of Event Map ApplinXApplication

Administration Name	KPI Name	Unit	Type	Description
ApplinXAppBytesReceived	Bytes Received	bytes	average	The number of bytes received from the host.
ApplinXAppBytesSent	Bytes Sent	bytes	average	The number of bytes sent to the host.
ApplinXAppServices	Services	services	average	The number of services that are connected to a specific application.
ApplinXAppSessions	Sessions	sessions	average	The number of sessions that are connected to a specific application.
ApplinXAppState	ApplinX Application State	state	state	The state of the ApplinX application (online/offline). This KPI is automatically monitored.

webMethods ApplinX - Service

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "ApplinX".
ApplinXServer	The ID of the ApplinX Server.
ApplinXApplication	The name of the ApplinX application.
ApplinXService	The name of the ApplinX service.

KPIs of Event Map ApplinXService

Administration Name	KPI Name	Unit	Type	Description
ApplinXServiceActive-Connections	Active Connections	connections	average	The number of connections currently held by a session (user).
ApplinXServiceAverageWaitTime	Average Wait Time	ms	last value	The average time (in milliseconds) sessions waited for a READY connection.
ApplinXServiceConnectionCount	Connection Count	connections	average	The total number of connections in the service (since the last time the service was started), ignoring broken connections.
ApplinXServiceMaxConcurrent-Sessions	Max Concurrent Sessions	sessions	last value	The maximum number of sessions that were connected concurrently since the host service started.
ApplinXServiceMaxConnections	Maximum Connections	connections	last value	The maximum number of connections that were connected concurrently since the service started.
ApplinXServiceMaxWaitTime	Maximum Wait Time	ms	last value	Maximum time, since the session started, that a user waited for a connection.
ApplinXServiceNumberOf-CurrentlyWaitingUsers	Number of Currently Waiting Users	users	last value	The number of users currently waiting for a connection.
ApplinXServiceNumberOf-DelayedUsers	Number of Delayed Users	users	last value	The total number of users who waited for a connection since the service was last started
ApplinXServiceNumberOf-Timeouts	Number of Timeouts	count	last value	The number of users who received a timeout after a connection was not assigned to them.
ApplinXServicePercentOfWaiting	Percent of Waiting	percent	last value	The percent of sessions that did not immediately get a connection when trying to connect to ApplinX.
ApplinXServiceProcessing-Connections	Processing Connections	connections	average	The number of connections currently in the Processing state.
ApplinXServiceReady-Connections	Ready Connections	connections	average	The number of connections ready for use.

Administration Name	KPI Name	Unit	Type	Description
ApplinXServiceSessionCount	Session Count	sessions	last value	The total number of sessions that were connected to the host service since the service started.
ApplinXServiceState	ApplinX Service State	state	state	The state of the ApplinX Service (online/offline). This KPI is automatically monitored.

webMethods EntireX - Broker

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "EntireX".
EntireXBroker	The port of the EntireX Broker.

KPIs of Event Map EntireXBroker

Administration Name	KPI Name	Unit	Type	Description
EntireXBrokerState	EntireX Broker State	state	state	The state of the EntireX Broker (online/offline). This KPI is automatically monitored.
EntireXCalls	Calls	calls	delta	The number of EntireX calls.
EntireXCallsFirstWorker	Calls for First Worker	percent	average	Percentage of EntireX calls processed by the first worker. Only monitored, when more than one worker is active.
EntireXCallsLastWorker	Calls for Last Worker	percent	average	Percentage of EntireX calls processed by the last worker. Only monitored when more than one worker is active.
EntireXClients	Clients	clients	average	The number of clients active.
EntireXClientsPercentage	Clients Used	percent	average	Percentage of clients active. Only monitored when dynamic memory allocation is disabled.
EntireXCommunicationBuffers	Communication Buffers	buffers	average	The number of active communication buffers. [2]
EntireXCommunicationBuffers-Percentage	Communication Buffers Used	percent	average	Percentage of communication buffers active. Percentage of open

Administration Name	KPI Name	Unit	Type	Description
				socket connections active. Only monitored when dynamic memory allocation is disabled. [2]
EntireXConversations	Conversations	count	average	The number of active conversations. [3]
EntireXConversations-Percentage	Conversations Used	percent	average	The percentage of active conversations. Only monitored when dynamic memory allocation is disabled. [3]
EntireXLongBuffers	Long Buffers	buffers	average	The number of long buffers active.
EntireXLongBuffersPercentage	Long Buffers Used	percent	average	Percentage of long buffers active. Only monitored when dynamic memory allocation is disabled.
EntireXMemory	Memory	bytes	average	The size of the used storage in bytes. [3]
EntireXMemoryPercentage	Memory Used	percent	average	The percentage of the used storage. Percentage of open socket connections active. Only monitored when dynamic memory allocation is disabled.[3]
EntireXNumberAuthentication-Failed	Authentication Failed	count	last value	Failed authentications. Only monitored when EntireX Broker security is activated. [2]
EntireXNumberAuthorization-Failed	Authorization Failed	count	last value	Failed authorizations. Only monitored when EntireX Broker security is activated. [2]
EntireXOpenConnections	Socket Connections	connections	average	The total number of open socket (TCP/IP and SSL) connections. [2]
EntireXOpenConnections-Percentage	Socket Connections Used	percent	average	Percentage of open socket connections active. Only monitored when dynamic memory allocation is disabled. [2]
EntireXParticipants	Participants	count	average	The number of active client, server, publisher and subscriber. [3]
EntireXParticipantsPercentage	Participants Used	percent	average	The percentage of active client, server, publisher and subscriber. Only monitored when dynamic memory allocation is disabled. [3]
EntireXPlatform	Platform		generic	Platform description.
EntireXPublishers	Publishers	publishers	average	The number of publishers active. [2]

Administration Name	KPI Name	Unit	Type	Description
EntireXPublishersPercentage	Publishers Used	percent	average	Percentage of publishers active. Only monitored when dynamic memory allocation is disabled. [1]
EntireXServers	Servers	servers	average	The number of servers active.
EntireXServersPercentage	Servers Used	percent	average	Percentage of servers active. Only monitored when dynamic memory allocation is disabled.
EntireXShortBuffers	Short Buffers	buffers	average	The number of short buffers active.
EntireXShortBuffersPercentage	Short Buffers Used	percent	average	Percentage of short buffers active. Only monitored when dynamic memory allocation is disabled.
EntireXSubscribers	Subscribers	subscribers	average	The number of subscribers active. [1]
EntireXSubscribersPercentage	Subscribers Used	percent	average	Percentage of subscribers active. Only monitored when dynamic memory allocation is disabled. [1]
EntireXTopics	Topics	topics	average	The number of topics active. [1]
EntireXTopicsPercentage	Topics Used	percent	average	Percentage of topics active. Only monitored when dynamic memory allocation is disabled. [1]
EntireXUOWs	Unit of Works	uows	average	The number of UOWs active.
EntireXUOWsPercentage	Unit of Works Used	percent	average	Percentage of UOWs active. Only monitored when dynamic memory allocation is disabled.
EntireXWorkerQueues	Worker Queues	count	average	The number of used worker queue entries. [3]
EntireXWorkerQueues-Percentage	Worker Queues Used	percent	average	The percentage of used worker queue entries. Only monitored when dynamic memory allocation is disabled. [3]

Notes:

[1] Available as of EntireX Version 7.2.
[2] Available as of EntireX Version 7.3.
[3] Available as of EntireX Version 8.2.

Built-In Rules

Administration Name	Expression	Severity	Description
EntireX Broker Authentication Failed	EntireX.EntireXNumberAuthenticationFailed > 10	3 - Medium	EntireX authentication failed.
EntireX Broker Authorization Failed	EntireX.EntireXNumberAuthorizationFailed > 10	3 - Medium	EntireX authorization failed.
EntireX Broker Connection Error	EntireX.EntireXBrokerState = 0	2 - High	No connection to the EntireX Broker.
EntireX Broker Connections Open	EntireX.EntireXOpenConnections > 200	3 - Medium	EntireX open socket connections.
EntireX Broker Last Worker Used	EntireX.EntireXCallsLastWorker > 25	3 - Medium	EntireX last worker used.

webMethods EntireX - Server

Dimensions

Administration Name	Displayed Value
Host	The name of the host.
Product	The product component name "EntireX".
EntireXBroker	The port of the EntireX Broker.
EntireXServer	The name of the EntireX Server.

KPIs of Event Map EntireXServer

Administration Name	KPI Name	Unit	Type	Description
EntireXServerBusyServers	Busy Servers	servers	delta	The number of times a client request (`SEND` with `CONVID=NEW` or `NONE`) could not be immediately assigned to a waiting server in one time interval.
EntireXServerConversations	Conversations	conversations	average	The number of conversations active for service.
EntireXServerInstances	Server Instances	servers	average	The number of servers active for service.
EntireXServerRequests	Calls	calls	delta	The number of requests (number of `SEND` commands with `CONVID=NEW` or `NONE`), since broker started, of the first worker in one time interval.

Administration Name	KPI Name	Unit	Type	Description
EntireXServerState	EntireX Server State	state	state	The state of the EntireX Server (online/offline). This KPI is automatically monitored.
EntireXServerUOWs	Unit of Works	uows	average	The maximum number of active UOWs.

Built-In Rules

Administration Name	Expression	Severity	Description
EntireX Server Available Error	EntireX.EntireXServerState = 0	2 - High	The EntireX Server is not available.

21 Optimize API for Natural

What is the Optimize API for Natural?

The Natural application programming interface (API) USR4217N enables Natural applications to send business and event data to Optimize via the Web Service Data Collector. In order to use this API, the Web Service Data Collector of Optimize must be installed.

The following API-related objects are contained in the Natural system library SYSEXT (they are available on mainframe, UNIX and Windows platforms):

Object Name	Description
USR4217N	API subprogram (cataloged object) that can be used to send data to Optimize.
USR4217P	Example program (source object) that can be used to test the effect of the API.
USR4217T	Text object that contains a description of the API. The description comprises purpose, function and calling conventions of the API and relevant keywords.

For further information on the SYSEXT utility, see *Utilities* in the Natural documentation for the appropriate platform.

Using the Optimize API for Natural

If you want to use the Optimize API for Natural, you have to copy the API subprogram USR4217N to one of the following: the library SYSTEM, the steplib library, or to any application.

The calling program has to contain a CALLNAT statement with the following parameters:

```
CALLNAT 'USR4217N'
        P-Target
        P-Event-Type
        P-Array-of-Data (*)
        P-Time-A
        P-Return-Msg
        P-Return-Code
        P-Return-Soapmsg
        P-Return-Soapcode
```

In structured mode, the parameters must be defined using the DEFINE DATA statement. In reporting mode, they must be defined using the RESET statement. For detailed information on the parameters, see the Natural text object USR4217T.

Configuring the New KPIs in Optimize

When the Optimize API for Natural is called for the first time with a new event type specified in `P-Event-Type`, Optimize allocates a rough event map for the supplied structure. Before you can monitor the new KPIs, additional configuration is required.

Note: See also *Configuring KPIs* in the *Administering webMethods Optimize* guide.

To configure the new KPIs

1 Go to **Navigate > Applications > Administration > Analytics > KPIs > System Data**.

The new event type is an element of the "Unmapped Event Types".

2 Click on the new event type to display the list of fields.

3 Click on each field to edit the field mapping. Use the **Field** name as **Display Name**. Select the type of the field:

Type	Description
Dimension	The first entries sent in `P-Array-of-Data-Name` supply the dimensions as part of the hierarchy which will be displayed in the Optimize Analytics Overview. Specify whether it is an existing dimension or a new dimension. For a new dimension, you may use the field name as **Dimension** and as **Attribute**.
Transaction	Use this for generic fields containing alphanumeric text.
Fact	Use this for KPIs containing numeric values. Select the calculation type and specify the unit of measurement (UOM), for example "count", "ms" (milliseconds), "percent", "seconds", or "state".
Date	Use this for date fields.

4 When all fields are configured, specify the name of the event information (use the Event Type name) and save the event map. The event map is now an element of "Event Maps not categorized".

5 If the event map does not use an existing hierarchy, you must add a new hierarchy. Go to **Navigate > Applications > Administration > Analytics > KPIs > KPI Hierarchies**. Click **Add Hierarchy** and proceed as follows:

- Specify any unique name for the hierarchy.
- Select the root dimension of your hierarchy, that is, the one sent in `P-Array-of-Data-Name(1)`.
- Add a child (dimension) for each further dimension of your hierarchy.
- Save the hierarchy.

6 Go to **Navigate > Applications > Administration > Analytics > KPIs > System Data** and add the KPI definition for each fact field. For each field, click **Add KPI** and proceed as follows.

In the **KPI Definition** (lower part of the screen):

- As the definition type, select **Individual.**
- As the event mapping, select the event map name sent in `P-Event-Type`.
- Select the fact associated to the KPI.
- Select the hierarchy created in the previous step.
- Select the dimension which was added as the last child to the hierarchy.

In the **KPI Information** (upper part of the screen):

- Specify a name. You can use the fact name.
- Specify a naming template. The naming template is used in the Analytics Overview. You can insert the dimension variables as a prefix of the naming template by clicking on the button behind the **Naming Template** text box.

When all information has been specified, save the KPI.

If desired, you can add “composite” KPIs which are derived from the new KPIs and rules for the new KPIs.

22 Frequently Asked Questions

Monitoring

Which steps are necessary to monitor a component?

To monitor a component, proceed as follows:

1. Configure the product-specific environments that are used for monitoring. See *Product-Specific Environment Configuration*.
2. Log on to My webMethods.
3. Go to **Navigate > Applications > Administration > Analytics > Infrastructure Components > Discovery** and add an asset.
4. Perform a discovery (that is, click on the green arrow). Click the **Refresh** button to verify whether the discovery was successful.
5. Go to **Navigate > Applications > Administration > Analytics > Infrastructure Components > Monitored Components**, click the product to be monitored, and then select the components and KPIs.
6. To view the monitor data, go to **Navigate > Applications > Monitoring > System-Wide > Analytics Overview**.

Why are not all selected KPIs monitored sometimes?

This may have one of the following reasons:

- If the connection to the component is down, KPIs of the component cannot be monitored. The state flag of the Adabas or Natural Collector indicates this situation.
- If the monitored component is down, only the component state flag is provided ("offline").
- When the monitoring is restarted, KPIs displaying delta values are not provided for the first polling interval. This is because the Infrastructure Data Collector interface needs at least two succeeding values for the delta calculation. See *KPI Definitions for Infrastructure Monitoring*: KPIs where the type is "delta" use the delta calculation.
- Some KPIs reflect features which are not applicable to every component of the given product. For example, the "cache" KPIs of the Natural buffer pool can only be monitored if the buffer pool uses a cache. A special state flag indicates this situation.
- Some event maps monitor similar products. They contain common KPIs and product-specific KPIs. For example, the "cluster" KPIs of the Adabas Server event map are only displayed if the Adabas Server runs as a cluster.
- If the Natural version supports the Natural Optimize Monitor Buffer Pool and this buffer pool is down or in error, several Natural products and components cannot be monitored. The affected

products and components are listed in *Product-Specific Environment Configuration* > *Natural* > *Mainframe*.

Why do I not see a diagram in the KPI Instance Detail view of the Analytics Overview?

To display the graphics, Adobe Flash Player is required. Make sure that Adobe Flash Player Version 10 or above is installed.

What is the recommended view in the Analytics Overview?

For Software AG's enterprise products, the preferred view in the My webMethods Analytics Overview is **Dimension Tree** with **Show Component Categories** unchecked.

Any other view can also be used.

How can I select the configuration for the Analytics Overview?

When you log on to My webMethods for the first time, the message “No Configuration Selected” is displayed in the Analytics Overview. To select the configuration, proceed as follows:

1. Go to **Navigate > Applications > Administration > Analytics > Overview Configuration**.

   Initially, only the configuration with the name **Analytics System View** is available.
2. Click the red “disabled” icon ( ) for the configuration that you want to use.

   The icon switches to the green “enabled” icon ( ).
3. Go to **Navigate > Applications > Monitoring > System-Wide > Analytics Overview**.
4. From the **Overview Configuration** drop-down list box in the upper right corner, select the configuration that you want to use (for example, **Analytics System View**).

How can I change the Max Results Enforced setting for pages?

In the Analytics Overview and in some other screens of My webMethods, it may happen that a red message "Max Results Enforced (*nnn*)" is displayed (where *nnn* can be any number). This means that not all potential elements of the screen are displayed. To change the “Max Results Enforced” setting, proceed as follows:

1. In the **Search** frame, select the **Options** tab.
2. Change the value in **Max Results** as desired, or select **No Maximum**.
3. Click the **Save** button.

How can I set up the monitoring of critical Adabas files?

You can specify the parameters for monitoring critical Adabas files in the Adabas/Natural Data Collector profile (see *Adabas Files*).

If you do not know which threshold values are appropriate for your environment, you can start the test program (`SYSEDM`) and select the **Adabas Files** function (see *Testing the Monitoring of Adabas Critical Files*). In a first approach, perform the test monitoring with low threshold values (such as 5%), with UserIsn=Y and the long list. Use trace level 10 to receive the file-specific trace entries, and monitor file KPIs only to shorten the output.

In the output, you can evaluate the KPIs for listing files (AdabasFilesCriticalExtentsList and AdabasFilesCriticalIsnRangeList). For the critical extents, you see the percentage value and the corresponding allocated extents. Example:

```
12:80%97x,31:91%112x
```

In the list, you can see which files would be critical if you would select a higher threshold. If you know how many extents should be allocated at most or should be free at least, you can determine the average percentage value corresponding to an extent, and use this value as the threshold.

For the critical ISN range, you see the currently used percentage values and how the file is defined. Example:

```
12:93%NU,31:52%RS4
```

In the list, you can see which files would be critical if you would select a higher threshold. If files defined with `USERISN=YES` (indicated by a "U") have an abnormally high percentage value, it might be better to sort them out by specifying `USERISN=NO` in the profile.

By default, the Adabas critical file data is collected only once a day. The trace output shows the elapsed time for the monitoring of the database(s) you have selected. Example:

```
OPTMONI : MONADA   - Event maps: 2 Attributes: 13 Time: 0.4
```

From the displayed elapsed time, you can estimate how long it would take to monitor all databases. You can then decide whether you would like to monitor Adabas critical files more often, for example, once an hour.

Rules and Alerts

Can I change the predefined rules?

In general, all predefined rules can be modified. This is done in My webMethods. Go to **Navigate > Applications > Administration > Analytics > Rules > Rule List** and click on the rule name.

Some predefined rules are essential for proper monitoring of the products. These are in general the rules referring state KPIs. Other predefined rules serve as samples. You can edit a rule and adjust the limits to your needs. You can disable a rule by clicking the green "enabled" icon (), or you can even delete a rule completely.

Which environment settings are required to send an e-mail alert?

Proceed as follows:

1. Configure the firewall of the machine on which My webMethods Server (MWS) is running so that the mail server port is opened.
2. Configure the access protection rules of your anti-virus software so that the processes *java.exe* and *mwssvc.exe* are allowed to send mail.

Where do I specify the mail server for sending an e-mail alert?

Before any e-mail can be sent from Optimize, the name of the mail server has to be specified in the mail settings for the Analytic Engine.

To configure the mail settings, log on to My webMethods as administrator and proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > Environments > Define Environments**.
2. Click the name of the environment for which you want to configure the mail settings.
3. Select the **Configure Servers** tab.
4. Expand **Analytic Engine** in the tree (by clicking on the plus sign in front of it).
5. Click **Mail Settings**.
6. Specify the following options:

Option	Description
Mail Server	The name of the mail server.
Default Sender	The address that is to be shown as the sender in the test e-mail.
Admin Address	The address to which the test e-mail is to be sent.

7. Click the **Test Connection** button.

   A test e-mail is sent to the Admin Address specified before. You should receive a message such as the following: "Connected to SMTP server successfully. If you did not receive an e-mail, be sure the Admin Address is correct and try again."

   You should now check the inbasket of the recipient specified in the Admin Address to find out whether the test e-mail was delivered correctly.
8. Click the **Save** button.

Where do I specify the e-mail address of a user?

Before an e-mail alert can be sent, the e-mail address of the user who is to receive the e-mail alert must be known to Optimize.

Log on to My webMethods as administrator and then proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > User Management > Users**.
2. Click the name of the user who is to receive the e-mail.
3. Fill the **E-mail Address** field.
4. Click the **Save** button.

Note: If you want to specify your own e-mail address, it is not required to log on as administrator.

How can I send an e-mail alert?

An e-mail alert can be sent for any predefined rule or for any additionally created rule.

Log on to My webMethods and then proceed as follows:

1. Go to **Navigate > Applications > Administration > Analytics > Rules > Rule List**.
2. Click the name of the rule for which you want to send an e-mail alert.
3. Click the **Add Alert** button.

   A drop-down list box is now shown below the **Add Alert** button. If the drop-down list box is empty, you must first define an e-mail address for a user as described above.
4. Select a user from the drop-down list box.

5. Click the **Save** button.

Administration

How can I set the timeout in My webMethods Server (MWS)?

This is configured in the file *web.xml* which is stored in `<drive>`*:\webMethods8\MWS\server\default\deploy\portal.war\WEB-INF*.

1. Edit the file *web.xml*.
2. In the section `<session-config>`, specify the required timeout value, in units of seconds, in `<session-timeout>`.

```
<session-config>
   <session-timeout>60</session-timeout>
</session-config>
```

How can I configure the polling interval?

The polling interval specifies how often the Infrastructure Data Collector polls the monitored products for statistical data. The polling interval should be a divisor of the collection interval which is defined with the KPI. In general, the collection interval for Software AG's enterprise products is five minutes. Therefore, it makes sense to use either five minutes or one minute as the polling interval. The recommended value is five minutes; this is also the default value.

To configure the polling interval, proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > Environments > Define Environments**.
2. Click the name of the environment for which you want to configure the polling interval.
3. Select the **Configure Servers** tab.
4. Expand **Infrastructure Data Collector** in the tree (by clicking on the plus sign in front of it).
5. Click **Collector Settings**.
6. Specify the value for **Monitor Polling Interval** (in units of minutes) as desired.
7. Click the **Save** button.

How can I publish the MashZone portlet in the Workspace Tools section of My webMethods Server (MWS)?

When the MashZone portlet has been installed in My webMethods Server, the system administrator can publish it in the **Workspace Tools** section. You can then drag it into a workspace. See also *Integrating MashZone in My webMethods Server*.

User Management

How can I set up a new user?

Log on to My webMethods as administrator and then proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > User Management > Users**.
2. Click the **Add User** button.
3. Fill the fields in the **Create User** frame and click the **Create** button.
4. Fill the user attributes as desired and click the **Save** button.

How can I assign administrator rights to a user?

Log on to My webMethods as administrator and then proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > User Management > Roles**.
2. Click the role name **My webMethods Administrators**.
3. Select the **Members** tab.
4. Click the **Edit Members** button.
5. Click the **Search** button.

   If many users are defined, you can restrict the search by specifying a keyword. The list of available users is displayed in the left window.
6. In the **Available** window, click the name of the user to whom you want to assign administrator rights and then click the arrow which shows to the right.

   The user is moved from the **Available** window to the **Selected** window.
7. Click the **Apply** button.
8. Click the **Save** button.

Environment Configuration

How can I start an RPC server automatically?

In a mainframe CICS environment, start the RPC server from PLTPI. See *RPC Server Configuration and Start* for more details.

In a mainframe batch environment, run the RPC job as started task.

Logging

Where can I find the log files?

- **Adabas and Natural Data Collectors**
  The log file of the Adabas and Natural Data Collectors is written to an output data set of the RPC or CICS job on the mainframe. Under UNIX and Windows, the log file is written to a work file on the Natural temporary directory. For more details, see *Tracing the Adabas and Natural Data Collectors*.
- **Infrastructure Data Collector**
  By default, the Infrastructure Data Collector logging for the data collector packages of Software AG's enterprise products is written to the *\profiles\InfraDC\logs* directory into a file with the following name:

  server*yyyymmdd*.log

  See also *Tracing the Enterprise Products in the Infrastructure Data Collector*.
- **EntireX Communication**
  The EntireX communication logging in the Infrastructure Data Collector is written to the *\profiles\InfraDC\logs* directory into a file which has the following name:

  entirex*yyyymmdd*.log

  See also *Tracing the EntireX Communication in the Infrastructure Data Collector*.

where *yyyymmdd* in the above file names stands for the current date (year month day).

How can I restrict the amount of disk space used for logging?

To restrict the amount of disk space, proceed as follows:

1. Go to **Navigate > Applications > Administration > System-Wide > Environments > Define Environments**.
2. Click the name of the environment for which you want to restrict the amount of disk space.
3. Select the **Configure Servers** tab.
4. Expand **Default Settings** in the tree (by clicking on the plus sign in front of it).
5. Click **Journal Logging**.
6. Click the target name **DailyFile**.
7. Specify the value for **Max # Log Files** as desired.
8. Click the **Save** button.

If you restrict the number of log files and the maximum number is reached, the oldest log file will be removed before a new file is allocated.

How can I set the trace level on the server (Adabas, Natural)?

By default, both the Adabas Data Collector and the Natural Data Collector use the Optimize Infrastructure Data Collector logging level as the trace level. The default trace level can be overridden using the `TRACE` parameter as described in *Adabas/Natural Data Collector Profile*.