Interface and Connection Monitoring Setup with SAP Solution Manager 7.2

- Application Operations in SAP Solution Manager 7.2 provides System and Application Management capabilities for central monitoring, alerting, analytics, and administration of SAP centric cloud and on-premise solutions.
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Monitoring Activation
Application Operations in SAP Solution Manager 7.2 provides System and Application Management capabilities for central monitoring, alerting, analytics, and administration of SAP centric cloud and on-premise solutions.
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Application Operations in SAP Solution Manager 7.2 provides System and Application Management capabilities for central monitoring, alerting, analytics, and administration of SAP centric cloud and on-premise solutions.
An interface channel in Interface and Connection Monitoring (ICMon) can be set up and monitored in two different monitoring use-cases. One is...
the application operations related view of Integration Monitoring. The second one is the more business process focused view from Business Process Monitoring.

Please note that you can assign one channel to more than one ICMon scenario and/or business process interface. The data is collected only once and displayed in whatever ICMon scenario or business process you are coming from. This reduces the data collection load on the managed system and the data load on SAP Solution Manager.

The access path to the setup and the steps that have to be taken before you can actually set up the monitoring for the interface channel are slightly different even though the actual channel monitoring setup is identical for both contexts.

Infrastructure Configuration

Please note that you have to perform the infrastructure configuration no matter of you want to set up the interface monitoring in the context of Integration Monitoring or in the context of Business Process Monitoring.

Configure Monitoring Infrastructure

The infrastructure configuration has to be done whenever you want to use interface and connection monitoring. It can only be accessed via transaction SOLMAN_SETUP --> Application Operations --> Integration Monitoring --> Interfaces and Connections. The Setup itself consists of several steps which are executed as a Guided Procedure. Each step contains a help section as well as a logging area.

Several Configuration Steps are necessary in order to prepare the Monitoring and Alerting Infrastructure. Most of these steps are common for all Monitoring use cases.

Check Prerequisites

In this step, you can execute a check whether the prerequisite(s) for the configuration of the Interface and Connection Monitoring infrastructure is fulfilled. It usually refers to the status of the Basic Configuration. This step is the same as in the System Monitoring configuration.
If you want to execute the activity manually check the activity documentation for the activity. If the status of the activity is red, click the “Show” link in the column “Details” in the log area. Fix all issues mentioned here.

**Configure Manually (optional)**

In this step you have the possibility to customize content for Interface Monitoring specific notifications and incidents, created automatically in case an Alert is generated in the Central Alert Inbox of Solution Manager. You can e.g. change the information of the subject line of the email or the content of the email.

Please be aware that this is a global setting, that influences all emails, not only the ones for Interface and Connection Monitoring.

**Default Settings**

In this step, you have the possibility to enable/disable and configure Auto-Incidents and Auto-Notifications for Interface and Connection Monitoring in general, i.e. independent of a specific scope.

For Auto-Notifications, it is recommended to add a specific *Recipients List* (instead of individual recipients) which can be maintained via *Maintain Recipients List*. By doing so you avoid re-configuration in case you would simply activate/de-activate notifications for a specific recipient.
Reporting Settings

In this step, you activate the BI content for the BI based reporting. At first you have to wait for the result of the health check. If the health check comes back green and the BI content was not activated yet, please activate it by clicking the "Start" button. This will schedule the CCMS_BI_SETUP job, that activates the content. The job runs for a while and cannot be scheduled if another CCMS_BI_SETUP job is already running. If you want you can check the job in transaction SM37.

To successfully activate the BI content please make sure that the software component Local Developments (No Automatic Transport) (Technical name LOCAL) is set to modifiable and the client is open for changes.

Housekeeping

In the Housekeeping step you can adjust the lifetime data of the data in the BW and also the housekeeping of the alert and metric store. The default values in both cases are optimized to other Solution Manager functionality and should only be adjusted if instructed so by SAP.
Update Content

In the step "Update Content" you update the monitoring content for all technical monitoring with new content delivered by SAP. Please note that you have to have Rapid Content Delivery configured to download content updates in you Solution Manager system. Without RCD you will not receive updates automatically and might miss important content changes. Follow the instructions in the Rapid Content Delivery wiki to set up RCD.

If new content is found in Solution Manager you can use the "Update Content" button to update the content.

Please note that the content update affects all functionalities of Technical Monitoring, not only Interface and Connection Monitoring.

Configure Automatically

The Configure Automatically step is important after a content update to make sure all available interface types as well as key figures can be set up. In this activity the meta data information for the ICMon Configuration UI are retrieved from the updated content.

In addition, you have the possibility to create a demo scenario (Self-Monitoring), which shall help to understand the ICMon configuration. If you execute this activity an ICMon scenario containing some configured Interface Channels will be created and the IF Channels will be activated automatically. The ICMon scenario is available in the ICMon UI afterwards.
Standard Users (optional)

In this optional step, you can create the standard Level 1 and Level 2 Interface and Connection Monitoring Template/Demo Users in the SAP Solution Manager system. When you create a template user, the system assigns roles and authorizations automatically.

The level 1 user can distribute problems in the Alert Inbox, to other users. Besides the ICMon UI he is able to access the Alert overview monitor and can create notifications/incidents.

The level 2 user has all authorization of the level 1 user plus additional permissions to act as the second level support for certain problems. He is able to work in the Alert Inbox and performance Root Cause Analysis activities in order to process relevant problems.

Creation of an Interface Channel

The main difference between the usage of a channel in Business Process Monitoring or Integration Monitoring is how the channel is initially created. In Integration Monitoring the interface channel is part of a Interface and Connection Monitoring scenario, while in Business Process Monitoring the channel would be attached to a business process interface. Technically its all the same channels, which is why you can assign one and the same channel to an Interface and Connection Monitoring scenario as well as a business process interface no matter where it was initially created.

Channel Creation in Interface and Connection Monitoring

Define Monitoring Scope

The first step in the interface channel monitoring setup with Interface and Connection Monitoring is the creation of an Interface and Connection Monitoring scenario. Without selecting a scenario you cannot proceed to the next setup steps. A scenario is a set of technical systems and/or
hosts. The scenario should involve all systems and/or hosts for which you would like to monitor interfaces and communications. Hosts are currently only relevant for File Monitoring.

**Prerequisite:** Before you can configure Interface Channel Monitoring for a scenario, you have to finish the Managed System Configuration for the technical systems included in the scenario.

If you would like to monitor communications from/to components which are not part of the systems landscape in Solution Manager (e.g. middleware components or if you like to bundle several front end components), you can either create a Technical System of type **Unspecified** or you can use ICMon internal unspecified components (see below). ICMon internal unspecified components don't need to be specified during this step.

In the step "Define Scope" click the "Create" button to create a new scenario. If you want to change an existing scenario select the scenario from the list and click the "Maintain" button.

Enter a name for the ICMon scenario. You cannot use blanks or special characters in the technical name.

> In order to avoid known problems in the Monitoring UI, please do not use scenario names longer than 30 characters.

You can add the following components to your technical scenario:

- Technical System: An ABAP or Java system maintained in the system landscape (LMDB) of Solution Manager
- External Services: External services like Cloud services or SFTP servers maintained in the managed systems configuration
- Hosts: Hosts maintained in the system landscape of Solution Manager
If you decided to use the ICMon internal unspecific component you don’t have to add it here, you will add it later during the setup of the single channels.

In the last step of the scenario creation you review your systems and save the scenario.

### Scenario-specific Configuration

Select the scenario you want to set up and click “Next” to move to the next step. If you don’t select a scenario you cannot move to the next step. For each scenario you have to perform the following steps.

#### Select Scenario Attributes

In order to tag an Interface Channel, so-called Interface Channel Attributes can be used. These tags can be used to assign e.g. business process information to the channel, to make it easier to understand the impact of a technical interface channel to business. In the IFMon Semantics of interface channel attributes are freely definable and can be reused in other Interface Monitoring scenarios. If you want to attach attributes to the interface channels in your scenario, you need to select the relevant one in this activity. The selected attributes are valid for the whole scenario and can be used as a filter in the Monitoring UI.

Setup of External Services

Please note that external services are now set up and maintained in the managed systems configuration in transaction SOLMAN_SETUP.

Please also refer to the wiki Cloud Services Configuration for Hybrid Scenarios

If you decided to use the ICMon internal unspecific component you don’t have to add it here, you will add it later during the setup of the single channels.

In the last step of the scenario creation you review your systems and save the scenario.
Schedule Extractors

In this activity extractors are scheduled which are relevant for collecting the information from the managed ABAP system. You can find these extractors in the EFWK under the setup type IC_MON.

Load ST-A/PI Meta Data from Managed System

Some of the data collectors we use for interface monitoring on the ABAP system are historically shipped with ST-A/PI and their availability depends on the ST-A/PI version installed on the managed system. To know which monitors are available for each managed ABAP system you need to download the meta data information for the monitors from the ABAP system.

Activate Web Service Monitoring

If you want to monitor synchronous web service calls regarding performance and number of executions of your ABAP system, you first need to activate local Web Service Monitoring in the managed system. The URL attached to this activity provides a jump-in to the SAP note 1639329 which describes how to do this. For further information, please refer to the activity documentation. This step is also mandatory if you would like to use the Web Service Performance Monitoring.

EEM Script Configuration

You can create UXMon (User Experience Monitoring) scripts to monitor the availability of your interfaces with synthetic load. You need to create UXMon scripts to monitor the availability of Web Services. To create such a script please refer to the wiki page for creating the ICMon Availability Script. You can find more information on UXMon in general in the UXMon wiki.

Activate SAP MII Monitoring

If you have an SAP MII (Manufacturing Integration and Intelligence) in your landscape you can use Interface and Connection Monitoring to monitor the SAP MII data servers, JVo messages and SAP MII transactions. To connect to the SAP MII system you need to create an RFC destination as described in SAP note 2208124.

Channel Creation
In the next step you can now either create a new Interface Channel, or you can assign or copy an existing one. You can also delete or un-assign channels.

If you want to assign an already existing channel to your scenario switch to the view “All relevant channels” and all available channels will appear. What channels you see depends also on the system in your scenario.

Select the channel you want to assign and click the “Assign” button. You don’t have to change anything in the channel not even reactivate it. The data from this channel will be added to the monitoring UI for your scenario.

To create a new Interface Channel click the “Create” button.

In the emerging window you now enter the channel name, the channel type and select a monitoring template depending on the type. For some IF channel types you can select from more than one template. The differences are described in the channel specific documentation below.

In the next step you enter the source and the target system. If your source/target system is a technical system in the landscape added to this
If you want to add a non-SAP system, which is not part of LMDB, select "Unspecific Managed Object" as Source/Target type and then you can either enter the name for the system or select it from already existing unspecific systems from the input help. Note that the unspecific system serve as placeholder in the graphic but no actual monitoring happens on these systems!

If you have selected a channel type that can be measured in source or target system and you have selected source and target systems that both support the measurement (e.g. both ABAP systems for IDoc channels) you can also select the measuring point in this step. The measuring point defines where the data collection takes place. Usually the measuring point will be selected automatically and you should only change it if you know what you are doing and it is necessary. If no measuring point is selected the monitoring for this channel will not work. Double-check that the channel type and the selected template match the system you use for this channel.

**Creating Interface Channels in Business Process Monitoring**

If you have documented business processes in the Solution Documentation tool of you SAP Solution Manager you can attach an interface directly to a business process and then attach interface monitoring to said interface. Information on how to use the new Solution Documentation with SAP Solution Manager 7.2 please refer to the wiki for [Solution Documentation and Implementation](https://wiki.sap.com/wiki/index.php/Solution_Documentation_and_Implementation) or to the SAP Help section for [Process Management](https://help.sap.com/help/sap_solman_72/).

**Load ST-A/PI Meta Data from Managed System**

Before you can attach any interface monitoring to your interfaces you have to load the ST-A/PI meta data from the managed system. This is necessary to know which monitors are available in the ST-A/PI installed in the respective managed system.

The meta data load cannot be done from the Solution Documentation. Instead you have to use the Object Administration for Business Process Monitoring and Analytics. To access this tool via the Solution Manager Launch Pad (SM_WORKCENTER) --> Business Process Monitoring --> Object Administration

In the object administration find your Solution and navigate to the sub-node for the Logical Components.
Select the system(s) and click the “Load Monitor Definitions” button.

In the column “Loaded On” you can see when the last load took place. You don’t have to rerun the load except if there was a change to the ST-A/PI release in the managed system (Support Package or Note).

**Activate SAP MII Monitoring**

If you want to monitor a SAP MII (Manufacturing Integration and Intelligence) system in your business process you have to activate this before the setup as described here.

**Channel Creation**

To create an interface channel attached to a business process interface navigate to the Solution Administration tool either via transaction SOLADM or via the Solution Manager Launch Pad (SM_WORKCENTER) --> Business Process Monitoring --> Solution Documentation

Navigate to the Solution in which the business process containing your interface is located.
Navigate to the interface on which you want to attach the channel. Your first node should be “Business Processes”!

Right-click in a free line in the ‘Elements of <interface>’ area and select “New” --> “Operations” --> “Alerting”

In the next step select the system in which you want to measure and the interface monitoring template (channel type) and click “Create”. 
Now you have to enter a channel name and you cannot adjust the measuring point here anymore, as this is determined by your selection in the step before!

You could however change the source/target system (depending on which system you selected before) to "Unspecific Managed Object".

In the next step you do the configuration for the channel. Please refer to the next section for details.

You can also assign existing channels to the interface. To do this change the radio button in the "Create Alerting Object" to "Assign existing Object". You will only see channels which contain the same systems as the interface. You will also see channels for systems that are in the same logical component group but in another role.
Monitoring Configuration for Interface Channels

The actual monitoring setup for the interface channels is the same for ICMon and BPMon. As I mentioned before you can assign channels created in BPMon to an ICMon scenario and the other way around.

Every interface type requires a slightly different setup as it has different input parameters and KPIs. All possible channel types and their setup are described in detail in the following.

However we want to highlight two new functionalities during the interface and metric configuration.

Copy Interfaces and Parameter Sets

You can now copy interfaces and parameter sets. Select the interface you want to copy and click the "Copy" button.

To copy a parameter set click the "Copy Parameter Set" button on the "Metric configuration" tab.

Expert Configuration Facilitated

We also improved the maintenance of the expert configuration fields. We introduced the form view, which allows you a easy maintenance of expert fields without having to show them (and live with the impossible long scroll-bar). Click on the button "Form view":
Re-use Interface Attributes from Interface Documentation

Now it is possible to re-use the documentation maintained for interfaces in Solution Documentation.

You can maintain this information in Solution Documentation as technical attributes for an interface. Please make sure you enter via the path “Libraries”.

Right-click in the ‘Elements of <interface>’ area and select “New” --> “Interface Details” --> “Interface Details”

Enter the information on the “Technical Attributes” and the “Routing Attributes” tab and save your entries.
Now you can select those entries via the button "Default Values" during the interface setup.

Select the correct interface and click the "Ok" button to transfer the information.

**Setting up the Monitoring for the different IF Channel Types**

Please select the interface type from the list below to navigate to the specific setup pages.

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Channel Attributes

In addition to the interface specific setup and metrics, for each Interface Channel you can add and specify the so-called **Interface Channel attributes**. These attributes are later on available as tags and filter attributes in the Monitoring UI. What attributes are available depend on the scenario attributes you selected in step 5.1.

### Channel Details

On the tab "Technical details" you see technical information to the channel. Here you also see the measuring point for your channel. Please make sure that you always also see a client for ABAP managed systems.

### Referenced Metrics

New is the tab "Referenced metrics". On this tab you can reference metrics from other use-cases to show possible dependencies. The event will then show up in the Interface and Connection Monitoring UI under the channel. The status propagation and the alerting however still happen in the original use-case.

Once you have opened the Reference Manager you can create a new reference.
Find the managed system and the event that you want to reference.

**Reference Creation: Step 1 (Select target Managed Object)**

- Managed Object Name: QSK
- Managed Object Type: DBMS

**Results List: 5 Managed Objects**

<table>
<thead>
<tr>
<th>Managed Object Name</th>
<th>Managed Object Type</th>
<th>Managed Object/Subtype</th>
</tr>
</thead>
<tbody>
<tr>
<td>QSK</td>
<td>DBMS</td>
<td></td>
</tr>
<tr>
<td>QSK.DETypeForSAP/SAP3_SRV1one2two16</td>
<td>DBINSTANCE</td>
<td></td>
</tr>
<tr>
<td>QSK=ABAP (16)</td>
<td>T_SYSTEM</td>
<td>ABAP</td>
</tr>
<tr>
<td>QSK=ABAP</td>
<td>INSTANCE</td>
<td>ABAP</td>
</tr>
<tr>
<td>QSK=ABAP (16)</td>
<td>INSTANCE</td>
<td>ABAP</td>
</tr>
</tbody>
</table>
Refresh the view in the Reference Manager afterwards.

You will see the metric in the Monitoring view.
**Monitoring Activation**

In the step "Activation" you maintain thresholds, define notification settings, adapt data collection parameter for the IF channels and activate the monitoring.

The interfaces are displayed in an Interface-Alert-Metric hierarchy. On the different levels you have different configuration options.

The columns "Update needed" and "Status" inform you about the activation state of a channel. Yellow means the configuration has changed and the activation needs an update or the channel is not activated. Only when channels are activated changes are distributed to the run-time components and data is collected.

For each metric you can decide if it is reporting-relevant. If you activate reporting for a metric, the metric will appear in the Monitoring UI dashboards. Please note that if you change the flag on alert level, it will be inherited by all metrics under this alert. The same goes for changing it on interface level.

Settings for notifications and incidents for alerts are changed on alert level. Select the alert you want to adjust and the settings for the notifications and incidents will show up in a panel below.

You have the same options for notification and incident settings as for System Monitoring.

To change the thresholds and the collection interval for metrics you have to select the metric level. If you have to make changes here depends on the metric and differs from channel type to channel type. Please refer also to the single channel type setup descriptions above.

**Data Collection Settings**

On the tab "Data Collection" you can adjust the collection frequency and the scheduling settings on metric level.
For the collector types “RFC Pull” and “Diagnostic Agent (push)” you can also set up an advanced monitoring schedule. This way you can make the schedule depending on weekday, time restrictions or a factory calendar.

**Asynchronous Data Collection**

Please note that the collection mode “Asynchronous Data Collection” performs the data collection based on a data collection job scheduled in the managed system. The job is called `BPM_DATA_COLLECTION_*` and is scheduled on a regular basis in the managed system. By default it runs every 5 minutes. Usually metrics where the data collection is resource intensive or runs usually longer than `rdsip/max_wprun_time` are scheduled with the asynchronous data collection mode. It is **not recommended** to change this setting for metrics that already have this setting by default. Dialog processing of the data collection would impact the performance of the managed system too much. Be aware that the value in the field “Collection Interval” determines the frequency how often the measured value is evaluated, not how often the data collection actually runs.

For the collector types “RFC Pull” and “Diagnostic Agent (push)” you can also set up an advances monitoring schedule. This way you can make the schedule depending on weekday, time restrictions or a factory calendar.

**Advanced Scheduling for Diagnostics Agent (Push)**

When using the “Advanced Scheduling” option with the Diagnostic Agent (push) data collector type please note that you cannot set the data collection frequency to daily. The collection frequency has to be a period during the day. Otherwise the scheduling will not work correctly.

**Threshold Settings**

On the tab “Thresholds” you can change the threshold settings for your metrics. Every metric comes with a default threshold. You can change this, but you can always reset the metric by clicking the “Set to default” button. All threshold type known from System Monitoring can be selected.
If you maintained more than one interface in your interface channel (e.g. by adding two IDoc types to be monitored) you will see these interfaces as two lines on the threshold tab. You can choose to set the threshold on the metric level and the interfaces will inherit these thresholds. However you can also decide to have different thresholds for the interfaces. To achieve this you can uncheck the "Inherited"-flag and set the threshold as needed.

Activation

Once you have set all thresholds and data collection period you can activate the interface monitoring. You have different options to activate the interfaces.

Deactivation

The activation takes place in a background job, except you select the dialog mode activation. A progress bar shows the status of the background job.

Threshold Type Restrictions

Please note that for most metrics originating from the former BPMon Interface Monitoring certain thresholds are recommended and other thresholds might not work as expected. Please refer to the single IF setup pages to learn about recommended thresholds for these metrics.
If necessary you can also deactivate all or single interfaces.