



IBM Software Group

IBM® WebSphere® Application Server V7

z/OS® Systems Management Facility 120-9



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This presentation shows the new System Management Facility 120-9 capability for WebSphere Application Server V7.0 on z/OS.

Agenda

- Systems Management Facility 120-9



This presentation briefly discusses the Systems Management Facility (SMF) 120-9 records.

Systems Management Facility (SMF) 120-9

- New SMF 120, subtype 9
 - ▶ Create / write record without unreasonable overhead
 - ▶ Dynamically activate / deactivate



A new SMF 120 subtype 9 record has been added which can be used for capacity planning, chargeback, and application profiling. The new record will create and write data records without incurring an unreasonable overhead cost.

This new record will contain information customers have requested. Any data collection that adds substantially to the cost of acquiring that data is optional. This allows the base record to be relatively inexpensive to capture. Additionally, you can activate or deactivate this record dynamically.

SMF 120-9 configuration variables

- New configuration variables
 - ▶ *server_SMF_request_activity_enabled*
 - ▶ *server_SMF_request_activity_CPU_detail*
 - ▶ *server_SMF_request_activity_timestamps*
 - ▶ *server_SMF_request_activity_security*



There are four new configuration variables used to control the new SMF record. The names are consistent with the names used for the existing SMF variables.

The first variable turns the SMF 120-9 record on or off. The variable name is *server_SMF_request_activity_enabled* and it defaults to 0. When the value is set to '1' the feature is enabled.

The next three variables turn on or off particular sub-sections of the SMF 120-9 record. Their setting is meaningless if the record itself is turned off.

The three optional sections are:

processor usage details: *server_SMF_request_activity_CPU_detail*,

formatted timestamps : *server_SMF_request_activity_timestamps*

security information: *server_SMF_request_activity_security*

The default value for all the variables is zero. To enable one of the sections, the value must be set to one. Records cut with these sections disabled will have zeroes in the location triplets at the top of the record.

SMF 120-9 modification commands

- Modify commands
 - ▶ F <server>,SMF,REQUEST,ON
 - ▶ F <server>,SMF,REQUEST,OFF
 - ▶ F <server>,SMF,REQUEST,CPU,ON
 - ▶ F <server>,SMF,REQUEST,CPU,OFF
 - ▶ F <server>,SMF,REQUEST,TIMESTAMPS,ON
 - ▶ F <server>,SMF,REQUEST,TIMESTAMPS,OFF
 - ▶ F <server>,SMF,REQUEST,SECURITY,ON
 - ▶ F <server>,SMF,REQUEST,SECURITY,OFF



For each of the configuration variables described on the previous slide, there is a matching Modify command listed here.

The first two turn the record itself on or off. The following three pairs turn the subsections on or off.

SMF 120-9 modification commands

- Display command
 - ▶ F <server>,DISPLAY,SMF



Here is a display command that will indicate the current settings of the four values. It should also indicate when the last SMF record (120-9) was cut and how many SMF records have been successfully and unsuccessfully cut since the server started. Also shown is the last non-zero return code from an attempt to write an SMF record, this helps resolve the problem of trying to determine why there are missing SMF records.

Customer implications

- Utilize mapping macro provided
- Can include user data blobs
 - ▶ Five types per record restriction
 - ▶ Max 2k in length per blob
- Utilize SMFEventNotifier object



If you write your own programs to analyze SMF records, you can make use of the mapping macro provided to map the SMF records. The mapping is in 390-assembler.

You can provide your own user data blobs for inclusion in the record. Be aware that the number of types per record is restricted to 5. Any blobs provided by the connectors or the other application code needs to be considered to avoid hitting this limit. If you provide your own data, you will also want to provide a way to format it. This is consistent with the current SMF formatting strategy. There is a maximum length of 2k per blob.

Since the SMF 120 Subtype 9 record can be turned on or off dynamically, users can be informed when you start or stop writing the record. This avoids creating a data blob if you are not going to write it. To do this an SMFEventNotifier object needs to be registered.

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