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# Components and indicators

## Monitoring coverage

flowchart LR  
EXP["fast-epdg /metrics :9817"] --> CFG["Config 2 metrics"]  
EXP --> NET["Network 1 metric"]  
EXP --> PROTO["Protocols L5-L7 15 metrics"]  
EXP --> SVC["Service KPI 4 metrics"]  
EXP --> SESS["Session State 4 metrics"]  
EXP --> APP["Application 3 metrics"]  
EXP --> SYS["System 4 metrics"]  
PROTO --> IKEV2["IKEv2 SWu — 3"]  
PROTO --> GTPC["GTPv2-C S2b — 4"]  
PROTO --> GTPU["GTP-U S2b data — 3"]  
PROTO --> DIA["Diameter SWm/SWx/S6b — 5"]

## Quantitative review by category

Category	Number of metrics	Survey interval	Key indicators
<b>Config</b>	2	10 sec	Configuration status, reload counter
<b>Network</b>	1	10 sec	Node connection status (PGW/AAA/HSS)
<b>IKEv2 (SWu)</b>	3	10 sec	Reports by type (IKE_SA_INIT, IKE_AUTH, CREATE_CHILD_SA), delay diagram, errors
<b>GTPv2-C (S2b)</b>	4	10 sec	Messages (Create/Modify/Delete Session), delays, errors, relays
<b>GTP-U data plane</b>	3	10 sec	Packets/bytes, tunneling errors
<b>Diameter (SWm/SWx/S6b)</b>	5	10 sec	Command code messages (DER/DEA, MAR/MAA, AAR/AAA), delays, errors, watchdog, connection status
<b>Service KPI</b>	4	10 sec	Percentage of successful attempts, duration histogram, service availability, uptime
<b>Session State</b>	4	10 sec	IKE SA, Child SA, GTP sessions, all users
<b>Application</b>	3	10 sec	Number of streams, memory, log messages by levels
<b>System</b>	4	10 sec	CPU recycling, memory, memory disposal, open FD
<b>Total</b>	<b>33 metrics</b>		

## Naming principles

All metrics have the prefix `epdg_` and are organized in a hierarchy:

```
epdg_
├── config_*           # Configuration
├── network_*         # Network layer
├── ikev2_*           # SWu (IKEv2/IPSec)
├── gtp_*             # S2b control-plane GTPv2-C
├── gtpu_*            # S2b data-plane GTP-U
├── diameter_*        # SWm/SWx/S6b
├── service_*         # Service KPIs (attach, availability, uptime)
├── session_*         # Session Status (IKE SA, Child SA, GTP, subscribers)
├── app_*             # App Metrics (memory, threads, logs)
└── system_*          # System metrics (CPU, disk, network)
```