



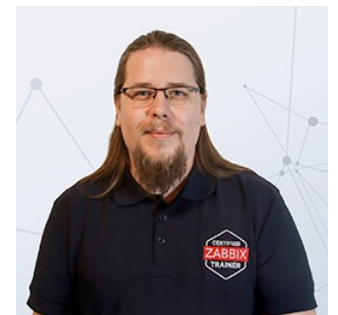
Métriques, KPI & SLA

De la collecte à la surveillance des engagements

Jérôme LEPAGE | Formateur, JLepage

Thomas SCIOT | Formateur, UTAK

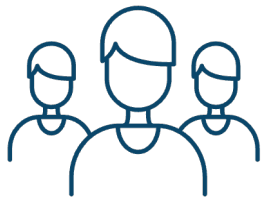
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Qui sommes-nous ?





Jérôme LEPAGE



La certification qualité a été délivrée au titre de la catégorie d'action suivante :

- ACTIONS DE FORMATION



Remettre du sens et de l'humain au cœur des processus



Formations et accompagnement Zabbix



Automatisation (avec et sans IA)

UTAK

Thomas SCIOT



Formation



Support



Accompagnement

La surveillance du SI

Le monitoring "out-of-the-box"



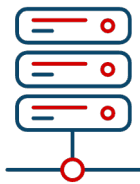
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Exemple de supervision d'une application web



Systeme d'exploitation



Base de données



Serveur HTTP



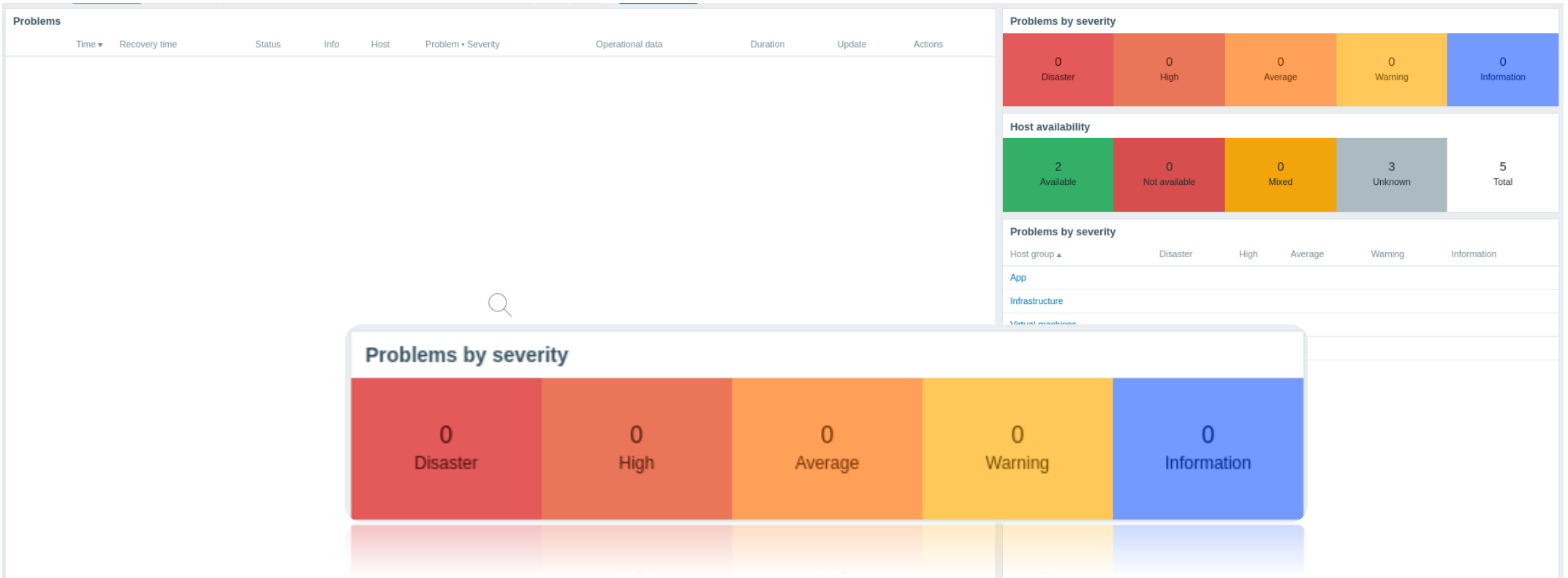
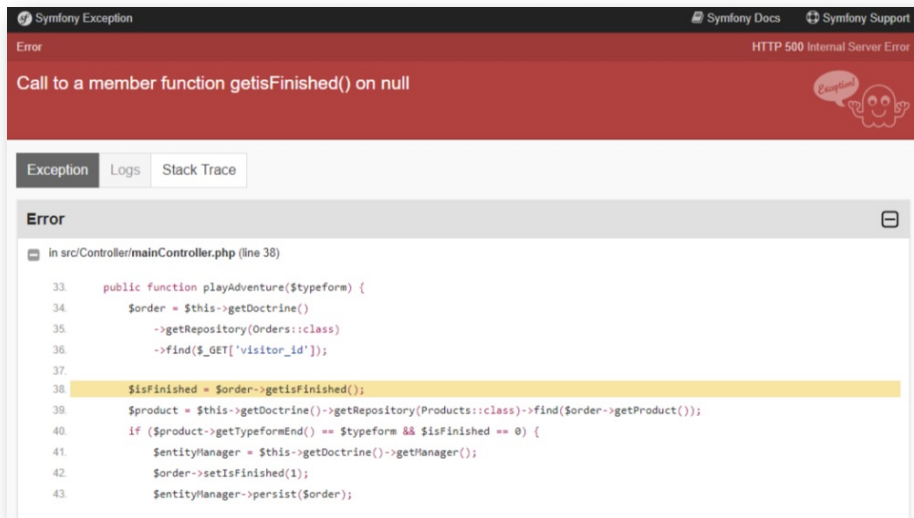


Tableau de bord

Problème

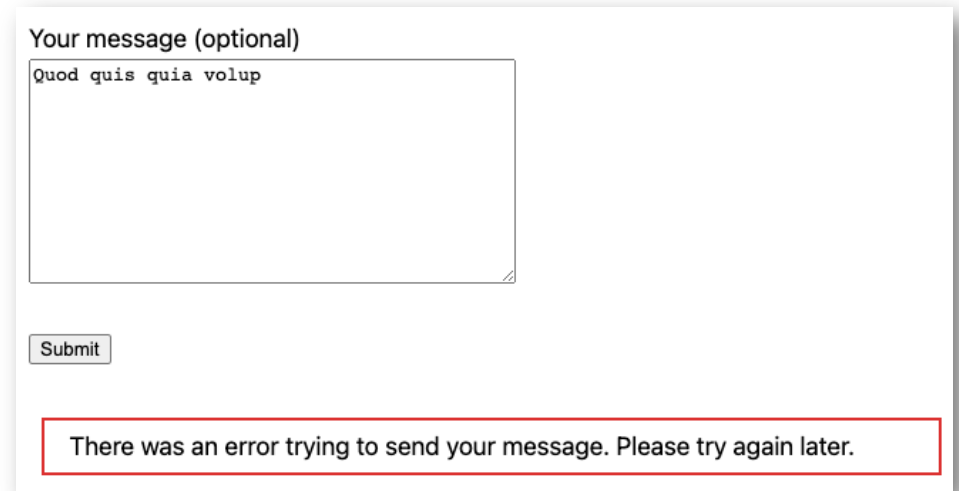


```
Symfony Exception | Symfony Docs | Symfony Support
Error | HTTP 500 Internal Server Error
Call to a member function getIsFinished() on null

Exception | Logs | Stack Trace

Error
in src/Controller/mainController.php (line 38)
33. public function playAdventure($typeform) {
34.     $order = $this->getDoctrine()
35.         ->getRepository(Orders::class)
36.         ->find($_GET['visitor_id']);
37.
38.     $isFinished = $order->getIsFinished();
39.     $product = $this->getDoctrine()->getRepository(Products::class)->find($order->getProduct());
40.     if ($product->getTypeformEnd() == $typeform && $isFinished == 0) {
41.         $entityManager = $this->getDoctrine()->getManager();
42.         $order->setIsFinished(1);
43.         $entityManager->persist($order);
```

Erreur applicative 1



Your message (optional)

Quod quis quia volup

Submit

There was an error trying to send your message. Please try again later.

Erreur applicative 2



Résultat



Monitoring "Unitaire"

Chaque composant est supervisé indépendamment et ne permet pas une représentation de la santé du service



Alertes remontées par les utilisateurs

Remontées de problèmes par les utilisateurs et/ou les métiers.



Forte dissonance cognitive ...

Entre ce qui est supervisé et ce que constatent les utilisateurs. Comment est-ce possible ?



Impact



Utilisateur insatisfait

Mauvaise expérience utilisateur



Image de l'entreprise écornée, perte de confiance

Perte de confiance des utilisateurs

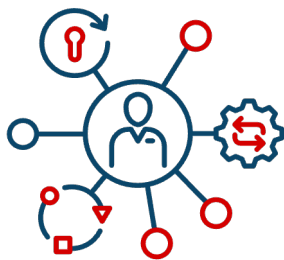


Impact financier direct ou indirect

Baisse de fréquentation, baisse de CA, ...

La surveillance métier

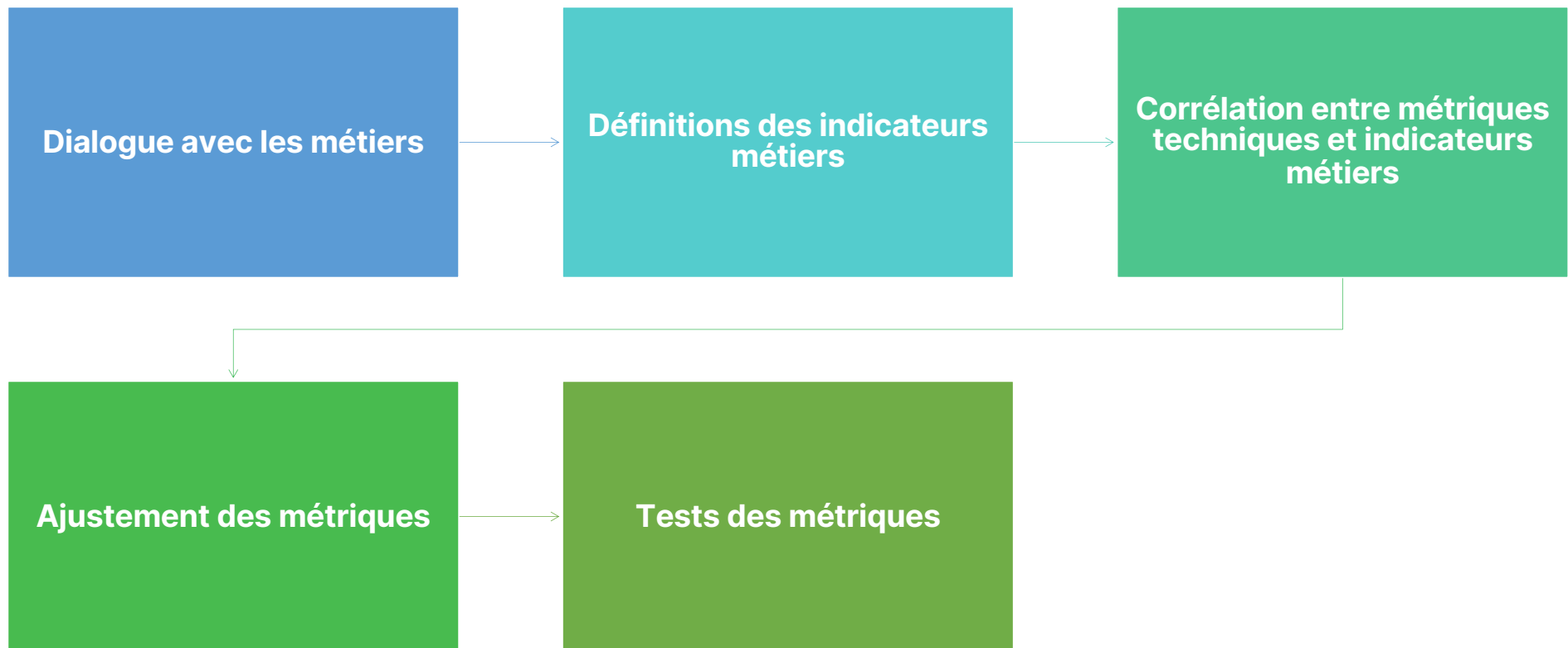
La supervision au-delà du SI



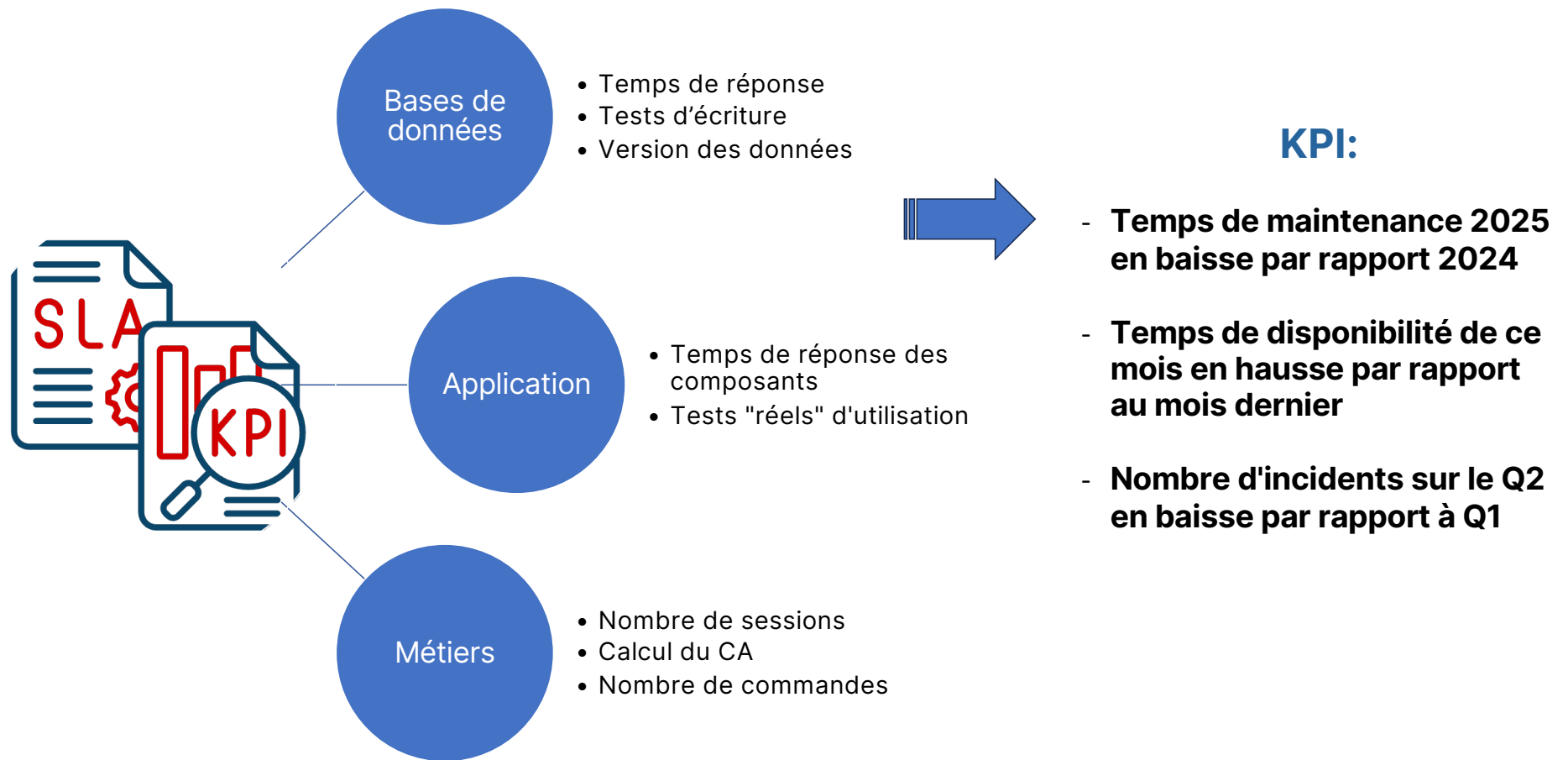
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Mise en place du dialogue : des indicateurs métiers



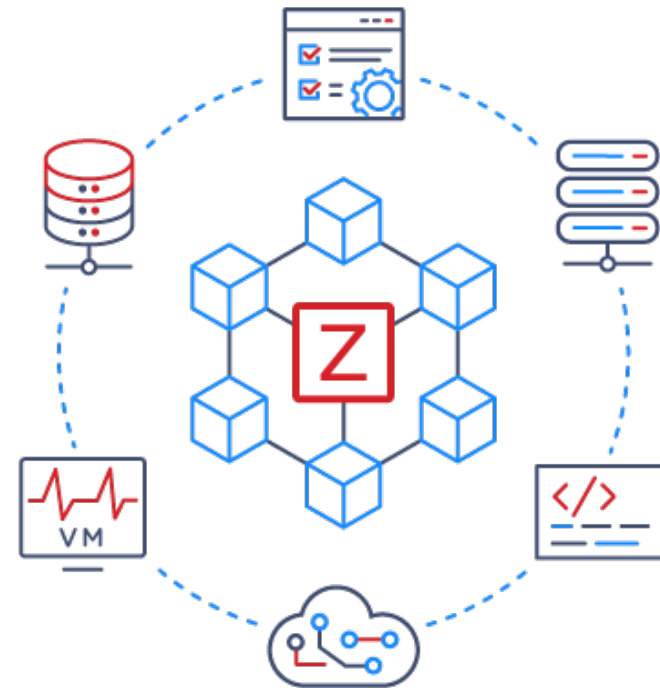
Exemples d'indicateurs clé de performance (KPI)



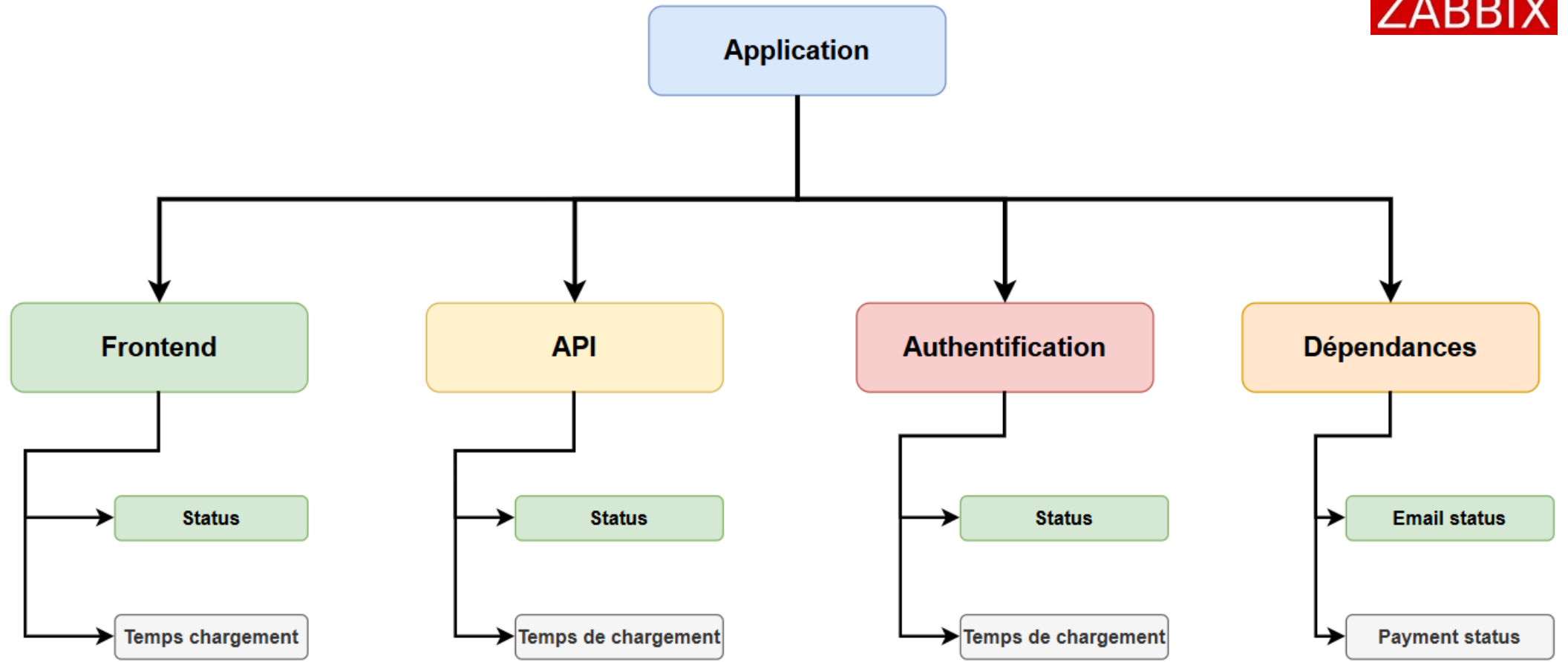
Alignement des indicateurs



Nombreux protocoles de collecte

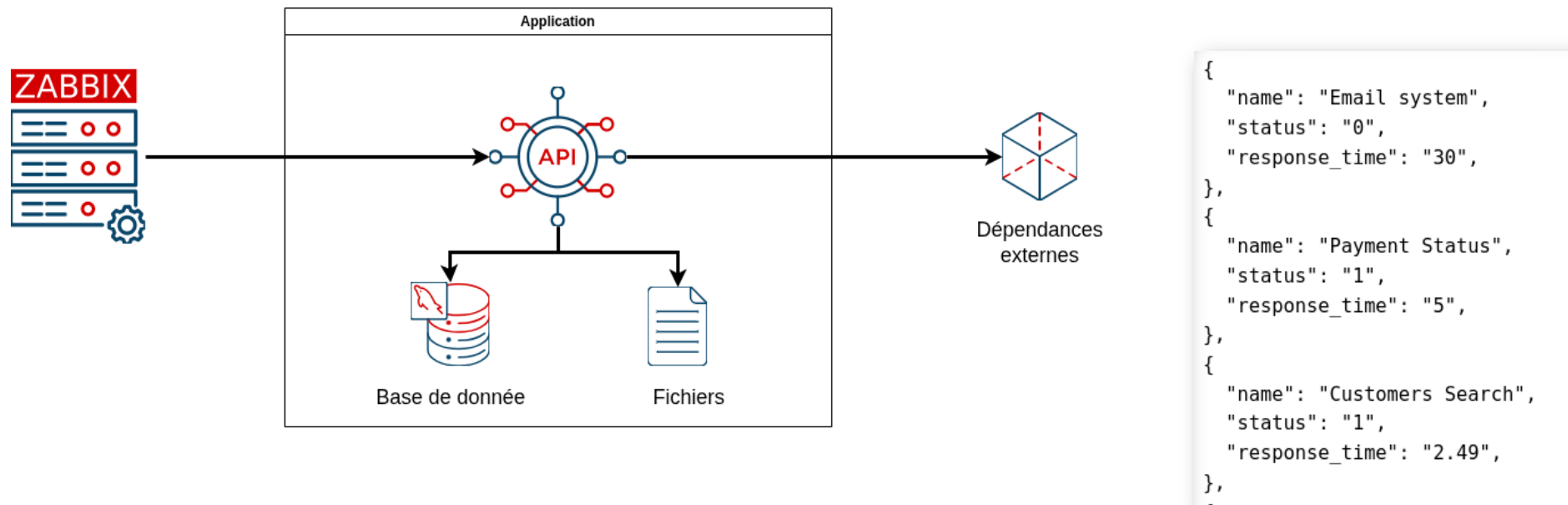


Nombreuses méthodes de collecte



Organisation des services

Test et remontée d'informations par l'application via une API



API interne

Retour JSON depuis l'application

| Problems | | | | | | | |
|-------------|------|-------------|-----------------------------------|------------------|----------|--------|---------|
| Time ▼ | Info | Host | Problem • Severity | Operational data | Duration | Update | Actions |
| 06:25:29 PM | | Application | Mail system response time to high | 10 | 3m 36s | Update | |
| 06:25:27 PM | | Application | Payement system unavailable | 0 | 3m 38s | Update | |

| Problems by severity | | | | |
|----------------------|-----------|--------------|--------------|------------------|
| 1 Disaster | 0 High | 1 Average | 0 Warning | 0 Information |

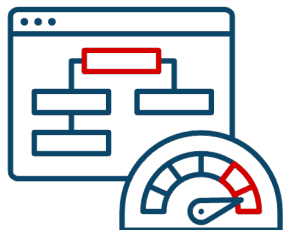
| Host availability | | | | |
|-------------------|--------------------|------------|--------------|------------|
| 2 Available | 0 Not available | 0 Mixed | 3 Unknown | 5 Total |

| Problems by severity | | | | | |
|----------------------|----------|------|---------|---------|-------------|
| Host group ▲ | Disaster | High | Average | Warning | Information |
| App | 1 | | 1 | | |
| Infrastructure | | | | | |
| Virtual machines | | | | | |
| Zabbix servers | | | | | |

Zabbix remonte les erreurs applicatives

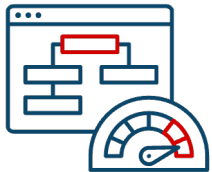
Les services

Concertez-vous sur l'essentiel



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Objectifs



Surveiller le service rendu aux utilisateurs



Notifier le statut du service



Mesurer les engagements

Les services permettent d'offrir une couche d'abstraction vis-à-vis de la technique pure afin de mesurer la disponibilité de l'ensemble.

Services ? [Create service](#) [View](#) [Edit](#)

Name Tags **Any** **Service** **Problem**

Status **Any** **OK** **Problem** **And/Or** **Or**

Only services without children tag **Does not contain** value [Remove](#)

Only services without problem tags [Add](#)

[Apply](#) [Reset](#)

| <input type="checkbox"/> | Name | Status | Root cause | Created at | Tags | |
|--------------------------|--------------------------|--------|------------|------------|---------------------|-------|
| <input type="checkbox"/> | My App 2 | OK | | 2026-05-03 | application: my app | + ↗ ✕ |

0 selected [Mass update](#) [Delete](#) Displaying 1 of 1 found

Les services par Zabbix

Services

All services / My App

My App

Parent services:

Status: OK

SLA:

Tags: application: my app

| <input type="checkbox"/> Name | Status | Root cause | Created at |
|---|--------|------------|------------|
| <input type="checkbox"/> Frontend 9 | OK | | 2026-05-03 |
| <input type="checkbox"/> API 8 | OK | | 2026-05-03 |
| <input type="checkbox"/> Authentification | OK | | 2026-05-17 |
| <input type="checkbox"/> Dépendances | OK | | 2026-05-17 |

Organisation des services

Des déclencheurs

| Time | Severity | Info | Host | Problem | Duration | Update | Actions | Tags |
|-------------|----------|-------------|------|-----------------------------------|----------|------------------------|---------|--|
| 06:25:29 PM | Average | Application | | Mail system response time to high | 9m 18s | Update | | application: my app component: mail scope: performance |
| 06:25:27 PM | Disaster | Application | | Payment system unavailable | 9m 20s | Update | | application: my app component: payment scope: availability |

Service ? ×

Service **Tags 2** Child services

* Name

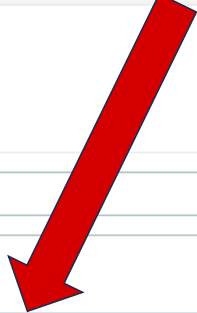
Parent services
type here to search

Problem tags

| Name | Operation | Value | |
|--|-----------|---|------------------------|
| <input type="text" value="application"/> | Equals ▾ | <input type="text" value="my app"/> | Remove |
| <input type="text" value="component"/> | Equals ▾ | <input type="text" value="mail"/> | Remove |
| <input type="text" value="scope"/> | Equals ▾ | <input type="text" value="availability"/> | Remove |

[Add](#)

* Sort order (0->999)



aux services Zabbix

Les SLA

Mesurer et suivre les engagements



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Définitions

SLI : Service Level Indicator

Quels sont les indicateurs qui seront utilisés ?

SLO : Service Level Objective

Quels sont les objectifs attendus pour ces indicateurs ?

SLA : Service Level Agreement

Contrat d'engagement sur des objectifs (basés sur des indicateurs), en cas de non-respect des pénalités sont appliquées.

du service au SLA

Service ? X

Service **Tags 3** Child services

Tags

| Name | Value | |
|-------------|-------------|------------------------|
| scope | performance | Remove |
| application | my app | Remove |
| component | API | Remove |

[Add](#)

[Update](#) [Clone](#) [Delete](#) [Cancel](#)

Tags du service

SLA

SLA [Excluded downtimes](#)

* Name

* SLO %

Reporting period Daily Weekly Monthly Quarterly Annually

Time zone ▼

Schedule 24x7 Custom

* Effective date 📅

* Service tags

| Name | Operation | Value | |
|--|---------------------------------------|--|------------------------|
| <input type="text" value="scope"/> | <input type="text" value="Equals"/> ▼ | <input type="text" value="performance"/> | Remove |
| <input type="text" value="application"/> | <input type="text" value="Equals"/> ▼ | <input type="text" value="my app"/> | Remove |
| <input type="text" value="component"/> | <input type="text" value="Equals"/> ▼ | <input type="text" value="API"/> | Remove |

[Add](#)

Association au SLA

Visualisation des services

| SLI Performance | | | | | | | | | | | | | | | | |
|------------------|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Service | SLO | 2026-05-03 | 2026-05-04 | 2026-05-05 | 2026-05-06 | 2026-05-07 | 2026-05-08 | 2026-05-09 | 2026-05-10 | 2026-05-11 | 2026-05-12 | 2026-05-13 | 2026-05-14 | 2026-05-15 | 2026-05-16 | 2026-05-17 |
| API | 99.9% | N/A | 39.846 | 0 | 0 | 0 | 0 | 0 | 63.9189 | 99.9305 | 99.7916 | 99.9317 | 100 | 100 | 100 | 100 |
| Authentification | 99.9% | N/A | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Dépendances | 99.9% | N/A | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Frontend | 99.9% | N/A | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Visualisation des indicateurs

| SLI Service API | | | | | | |
|-----------------|-------|---------|-------------|-------------|--------------|--------------------|
| Day | SLO | SLI | Uptime | Downtime | Error budget | Excluded downtimes |
| 2026-05-17 | 99.9% | 100 | 18h 32m 56s | 0 | 1m 6s | |
| 2026-05-16 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-15 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-14 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-13 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-12 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-11 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-10 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-09 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-08 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-07 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-06 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-05 | 99.9% | 100 | 1d | 0 | 0 | |
| 2026-05-04 | 99.9% | 32.2511 | 7h 44m 25s | 16h 15m 35s | -16h 15m 8s | |
| 2026-05-03 | 99.9% | 0 | 0 | 7h 2m 9s | -7h 2m 9s | |

Détails d'un service



MERCI !

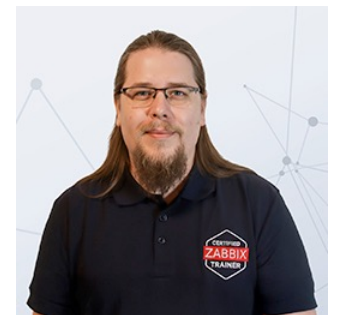
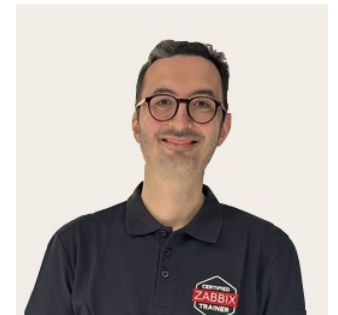
Questions & Réponses ?



Jérôme LEPAGE | Formateur, *JLepage*

Thomas SCIOT | Formateur, *UTAK*

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**Merci à vous
Paldies jums**



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