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NDO2DB Oracle

Erfahrungen bei der Portierung von NDO2DB nach ORACLE

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Technische Informatik an der TU Wien — Mär '07

Domainverwaltung Universität Wien — Jul '07

NDO2DB Oracle — Sep '07

Nagios Workshop — Jun '08

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Inhalt

- Nagios Situation an der Universität Wien
- wieso Oracle?
- Pro*C vs OCI
- Probleme bei der Portierung
- Performance
- Status Quo
- Wie's weitergeht

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Nagios an der Universität Wien

Server 1

RedHat 5

996 hosts

9754 services

Server 2

RedHat 5.1

996 hosts

9754 services

Test

RedHat 5.1

984 hosts

9858 services

Domainis

RedHat 4

142 hosts

1163 services

DB 2

RedHat 5.1

DB 1

RedHat 5

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wieso Oracle?

bereits vorhanden:

- **Know-How**
- **Integration in bestehende Oracle Applikationen**
- **DB-Mechanismen**
  - RT-Replication
  - Verfügbarkeit
  - Ausfallsicherheit (Oracle RAC)
- **Infrastruktur**
- **Oracle Lizenzen inkl. Support**

Nachfrage nach Oracle Support

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Pro*C vs OCI (1/3)

OCI Vorteile:

- **bessere Performance**
- **reduzierte Codegröße**
- **tiefgehende Kontrolle über den Programmablauf**

Häufige Probleme mit OCI:

- **OCI Code ist schwierig zu Schreiben und Warten**
- **Angeblich beherrschen nur Wenige das Schreiben und Warten von OCI Anwendungen**

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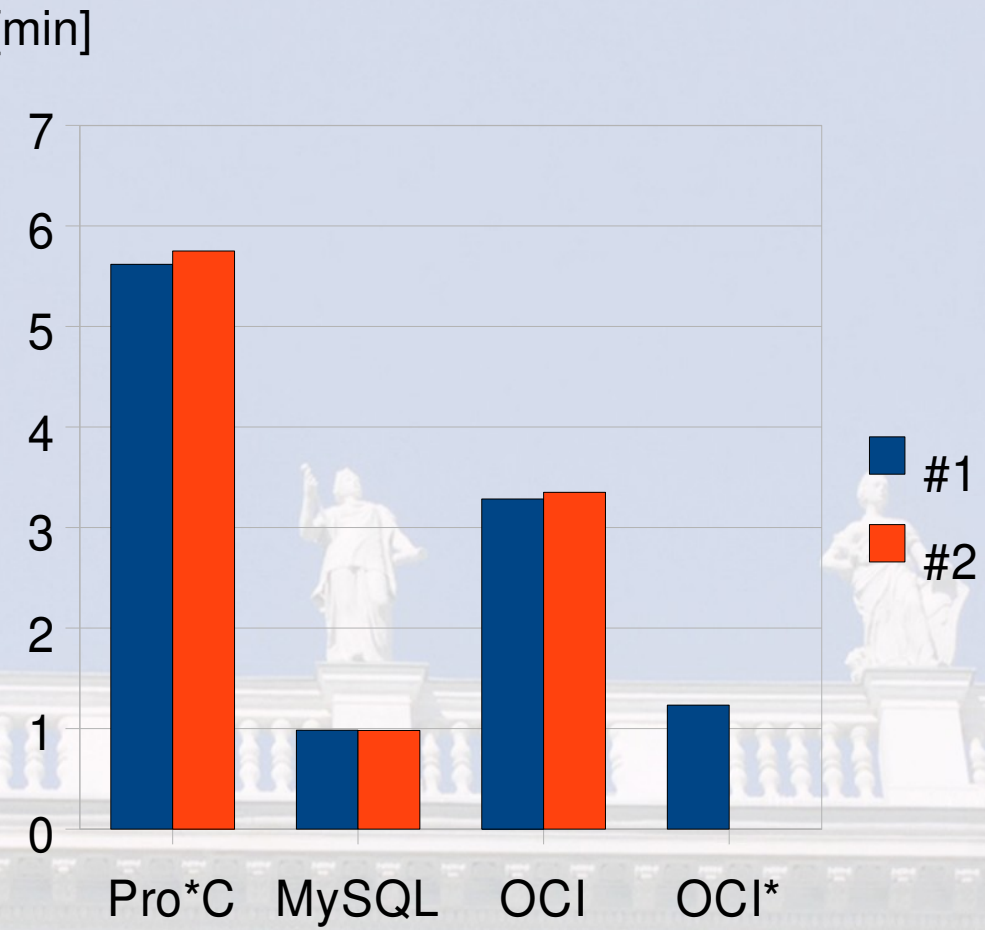
Pro*C vs OCI (2/3)

Pro*C	OCI
05:37	03:17
05:45	03:21

MySQL	OCI*
00:59	01:14
00:59	



*) ohne COMMIT_ON_SUCCESS

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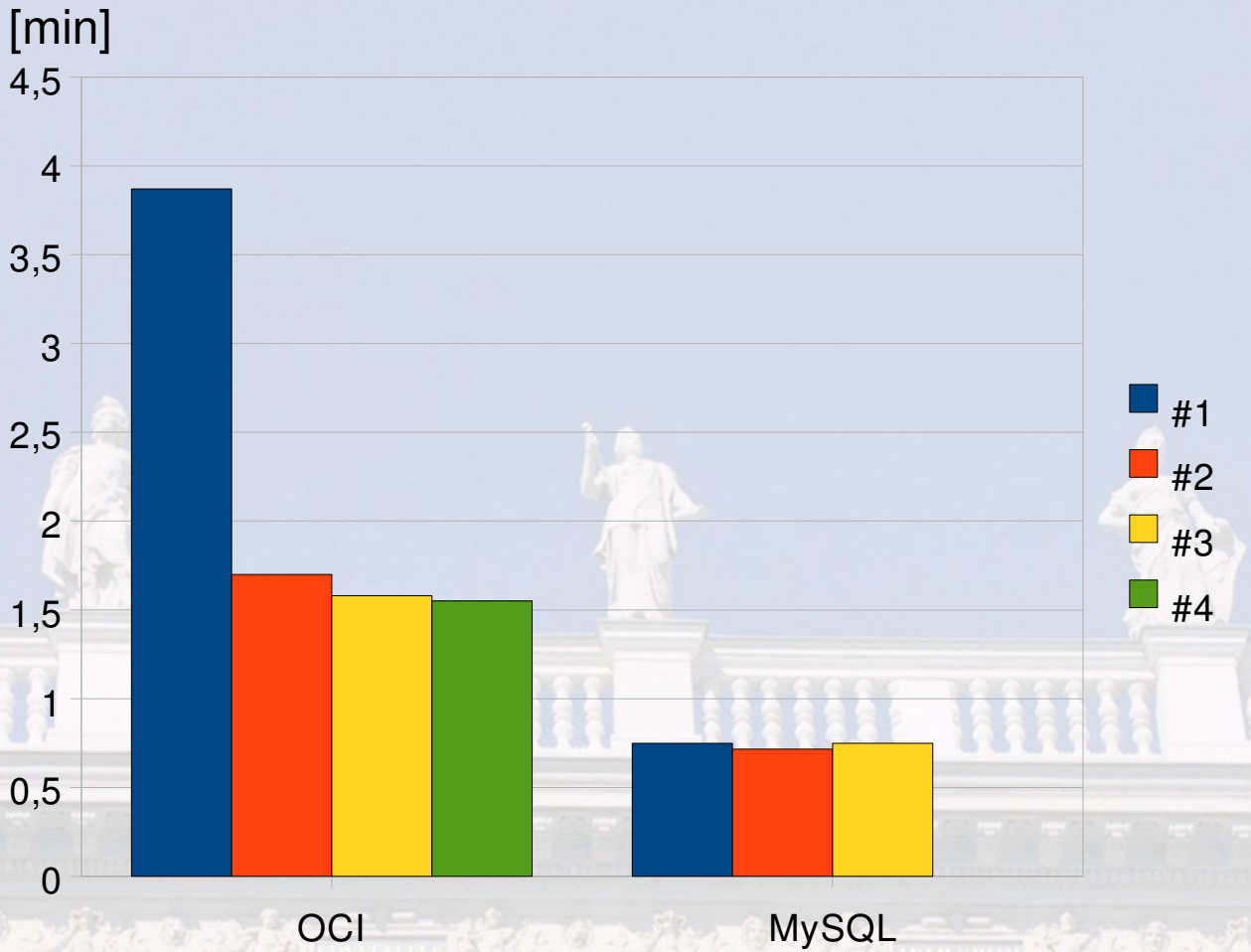
Pro*C vs OCI (3/3)

OCI
03:52
01:42
01:35
01:33

MySQL
00:45
00:43
00:45



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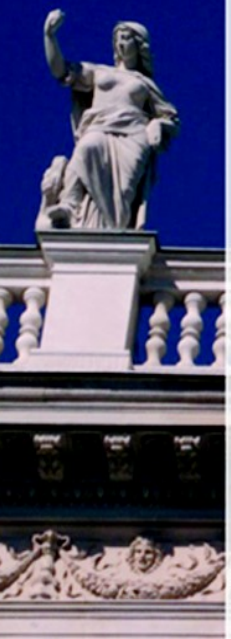
Probleme bei der Portierung

- Keine Erfahrung mit Oracle oder Nagios
- Oracle Client Integration
- MySQL-spezifische SQL Statements
- Oracle/MySQL Differenzen
- Möglichst wenig Änderung am Stammcode



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Oracle Client Integration

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- separates Projekt
- simple API

Oracle Instant Client

- keine Installation
- kein ORACLE_HOME muss gesetzt werden
- weniger Speicherplatz
- beinhaltet alle notwendigen Files für OCI Applications

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MySQL-spezifische SQL Statements

MySQL

```
INSERT INTO table
SET column = value, ...
ON DUPLICATE KEY
UPDATE column = value, ...
```

ORACLE

```
MERGE INTO table
USING DUAL ON (condition)
WHEN MATCHED THEN
UPDATE SET (
   column = value, ...
) WHEN NOT MATCHED THEN
INSERT (column, ...)
VALUES (value, ...)
```

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Projektpage

www.nagiosprojects.org

- **hosted by Andurin**
- **SVN**
- **Wiki**

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Performance

Wie messen?

- CPU/MEM/LOAD
- Active Check Latency
- Mitschnitt des NDO Socket Traffics

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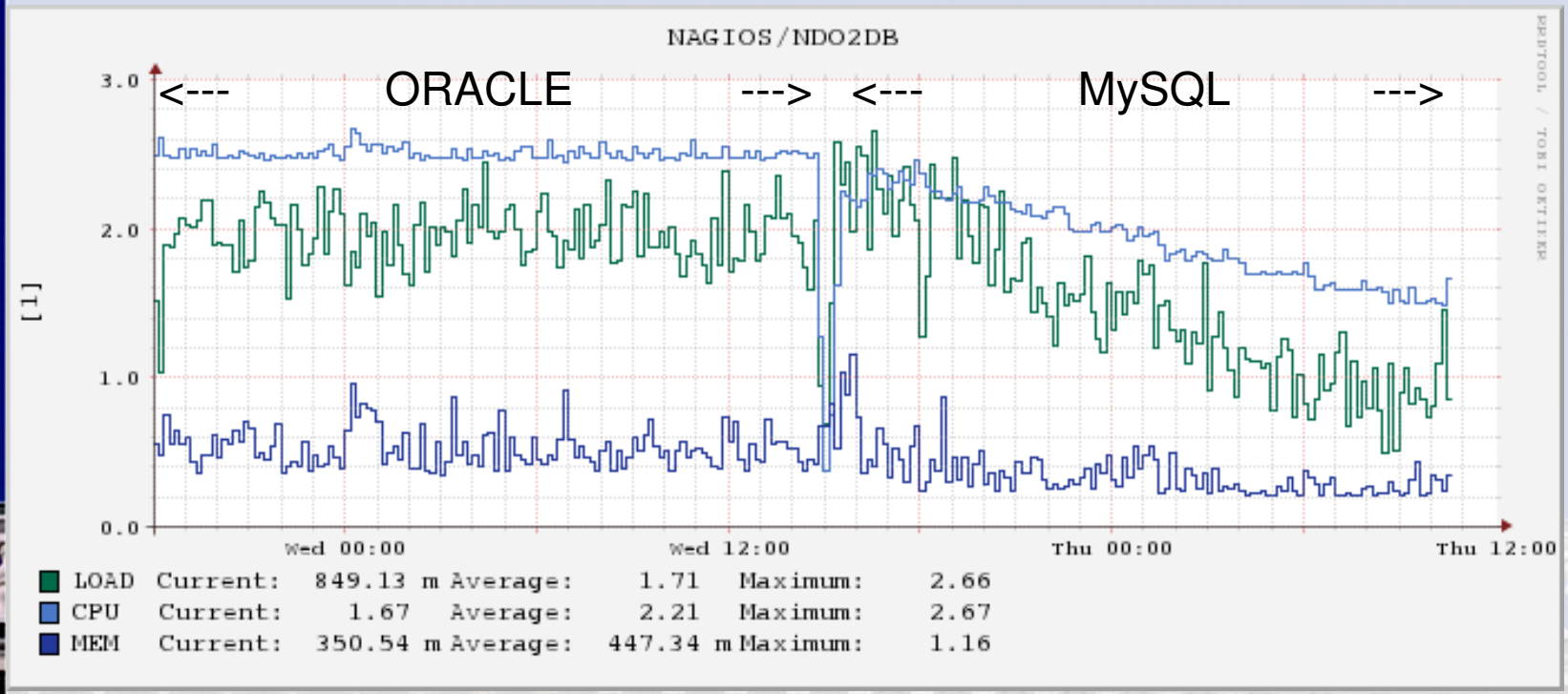
Performance

LOAD/CPU/MEM



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Performance

active service latency

<--- ORACLE ---> <--- MySQL --->

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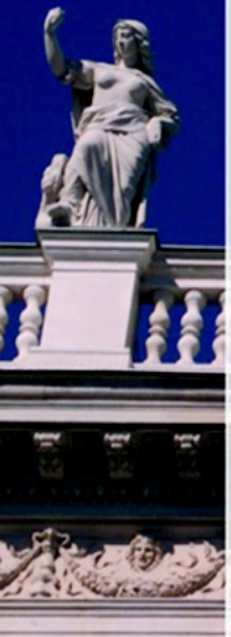

MERGE

MERGE INTO nagios_servicestatus USING DUAL ON (service_object_id='53195') WHEN MATCHED THEN UPDATE SET instance_id='1', status_update_time=(SELECT unixts2date(1212659996) FROM dual), output='OK: CPU load avg (5 min): 3%, temperature', perfdata='', current_state='0', has_been_checked='1', should_be_scheduled='1', current_check_attempt='1', max_check_attempts='3', last_check=(SELECT unixts2date(1212659995) FROM dual), next_check=(SELECT unixts2date(1212660295) FROM dual), check_type='0', last_state_change=(SELECT unixts2date(1212565402) FROM dual), last_hard_state_change=(SELECT unixts2date(1212565402) FROM dual), last_hard_state='0', last_time_ok=(SELECT unixts2date(1212659995) FROM dual), last_time_warning=(SELECT unixts2date(0) FROM dual), last_time_unknown=(SELECT unixts2date(0) FROM dual), last_time_critical=(SELECT unixts2date(0) FROM dual), state_type='1', last_notification=(SELECT unixts2date(0) FROM dual), next_notification=(SELECT unixts2date(0) FROM dual), no_more_notifications='0', notifications_enabled='1', problem_has_been_acknowledged='0', acknowledgement_type='0', current_notification_number='0', passive_checks_enabled='1', active_checks_enabled='1', event_handler_enabled='1', flap_detection_enabled='1', is_flapping='0', percent_state_change='0.000000', latency='602.744000', execution_time='0.180780', scheduled_downtime_depth='0', failure_prediction_enabled='1', process_performance_data='1', obsess_over_service='1', modifi ed_service_attributes='0', event_handler='', check_command='check_snmp_cisco_loadavg!dgnfas!60!75!', normal_check_interval='5.000000', retry_check_interval='1.000000', check_timeperiod_object_id='159' WHEN NOT MATCHED THEN INSERT (instance_id, service_object_id, status_update_time, output, perfdata, current_state, has_been_checked, should_be_scheduled, current_check_attempt, max_check_attempts, last_check, next_check, check_type, last_state_change, last_hard_state_change, last_hard_state, last_time_ok, last_time_warning, last_time_unknown, last_time_critical, state_type, last_notification, next_notification, no_more_notifications, notifications_enabled, problem_has_been_acknowledged, acknowledgement_type, current_notification_number, passive_checks_enabled, active_checks_enabled, event_handler_enabled, flap_detection_enabled, is_flapping, percent_state_change, latency, execution_time, scheduled_downtime_depth, failure_prediction_enabled, process_performance_data, obsess_over_service, modified_service_attributes, event_handler, check_command, normal_check_interval, retry_check_interval, check_timeperiod_object_id) VALUES ('1', '53195', (SELECT unixts2date(1212659996) FROM dual), 'OK: CPU load avg (5 min): 3%, temperature', '', '0', '1', '1', '1', '3', (SELECT unixts2date(1212659995) FROM dual), (SELECT unixts2date(1212660295) FROM dual), '0', (SELECT unixts2date(1212565402) FROM dual), (SELECT unixts2date(1212565402) FROM dual), '0', (SELECT unixts2date(1212659995) FROM dual), (SELECT unixts2date(0) FROM dual), (SELECT unixts2date(0) FROM dual), (SELECT unixts2date(0) FROM dual), '1', (SELECT unixts2date(0) FROM dual), (SELECT unixts2date(0) FROM dual), '0'

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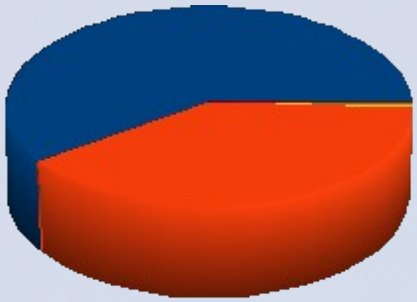
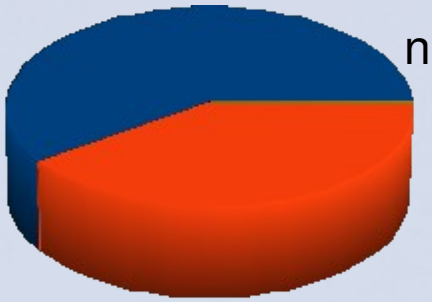
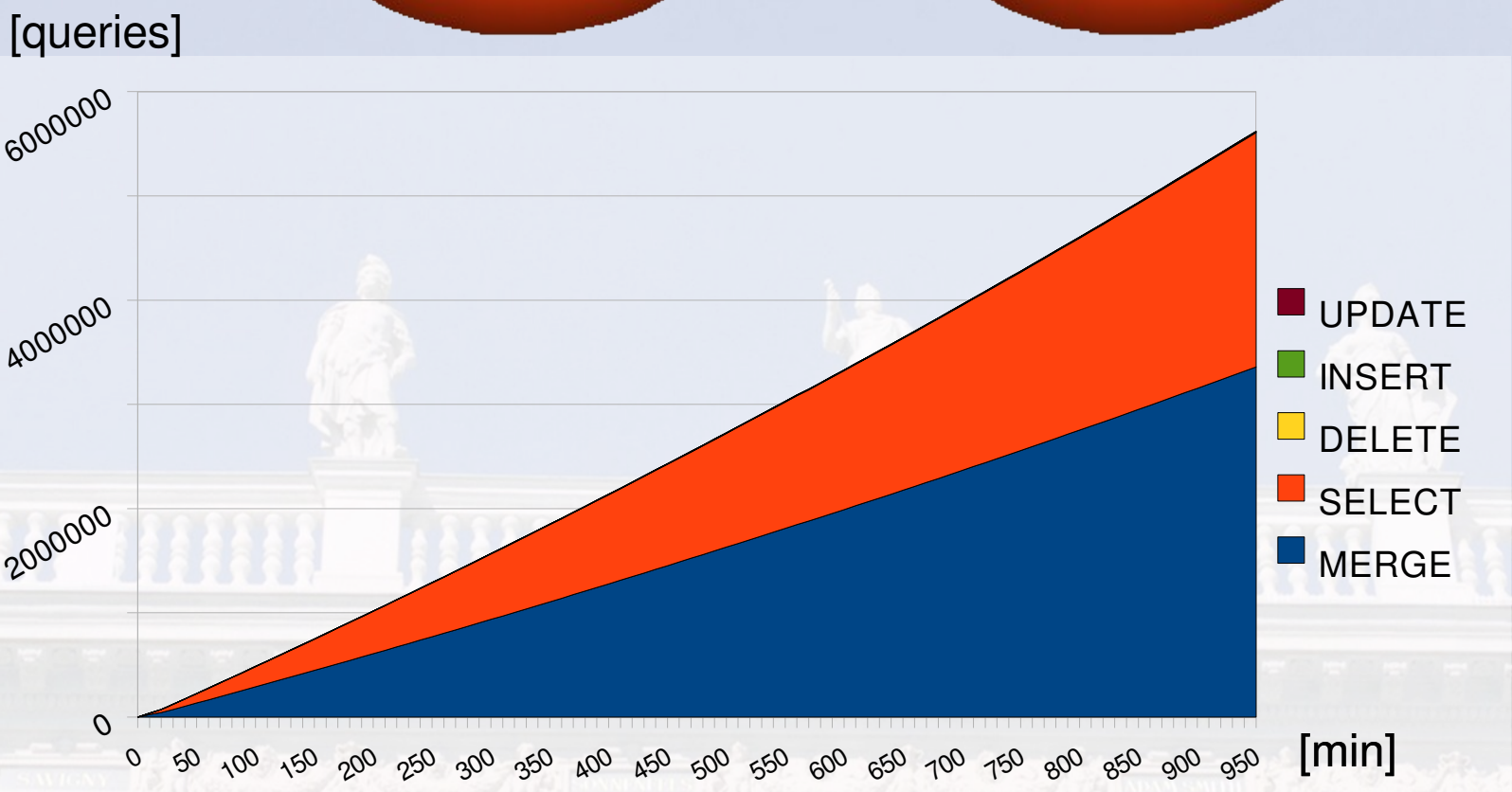
Statistiken



nach 10'



nach 990'



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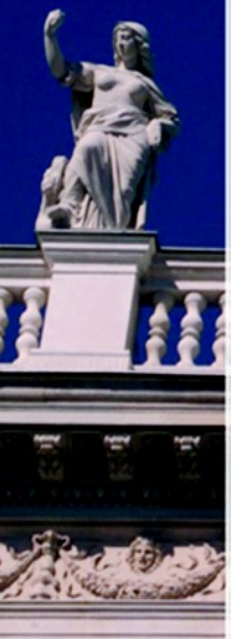
Status Quo

- Suche nach Optimierungsmöglichkeit
- Einsatz auf Produktivserver
- Nagios-Workshop



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Wie's weitergeht

- Optimieren
- Integration in die offiziellen NDO-Utils
- Test mit 2+ Hosts die in dieselbe DB schreiben

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Vielen Dank!