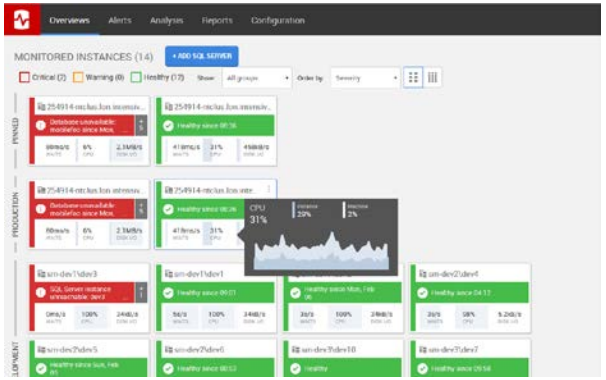
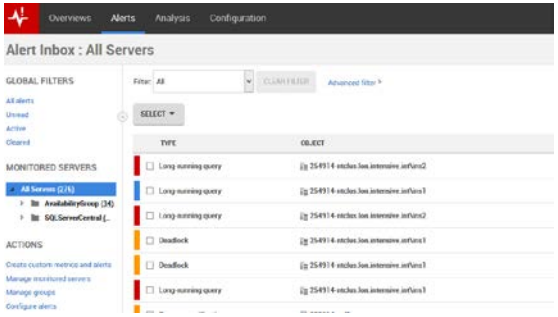
SQL Monitor


Overviews
Alerts
Analysis
Reports
Configuration
MONITORED INSTANCES (14)
+ ADD SQL SERVER
PINNED
PRODUCTION
DEVELOPMENT

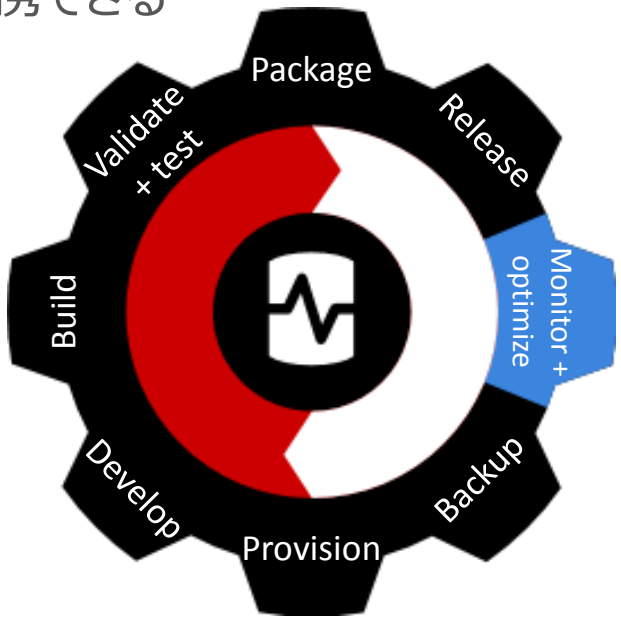

Overviews
Alerts
Analysis
Configuration
Alert Inbox : All Servers
GLOBAL FILTERS
MONITORED SERVERS
ACTIONS


Time range:
24 hours
Mon, Nov 2 16:05
Tue, Nov 3 16:05
Compare with:
24 hours earlier
Sun, Nov 1 16:05
Mon, Nov 2 16:05
Extend baseline by:
previous time ranges
Last 1h
Last 6h
Last 24h
Last 7 days
Today
This week
Export (csv)
LINES
REGIONS

SQL Monitor導入によるメリット

Human Interactive Technology inc.

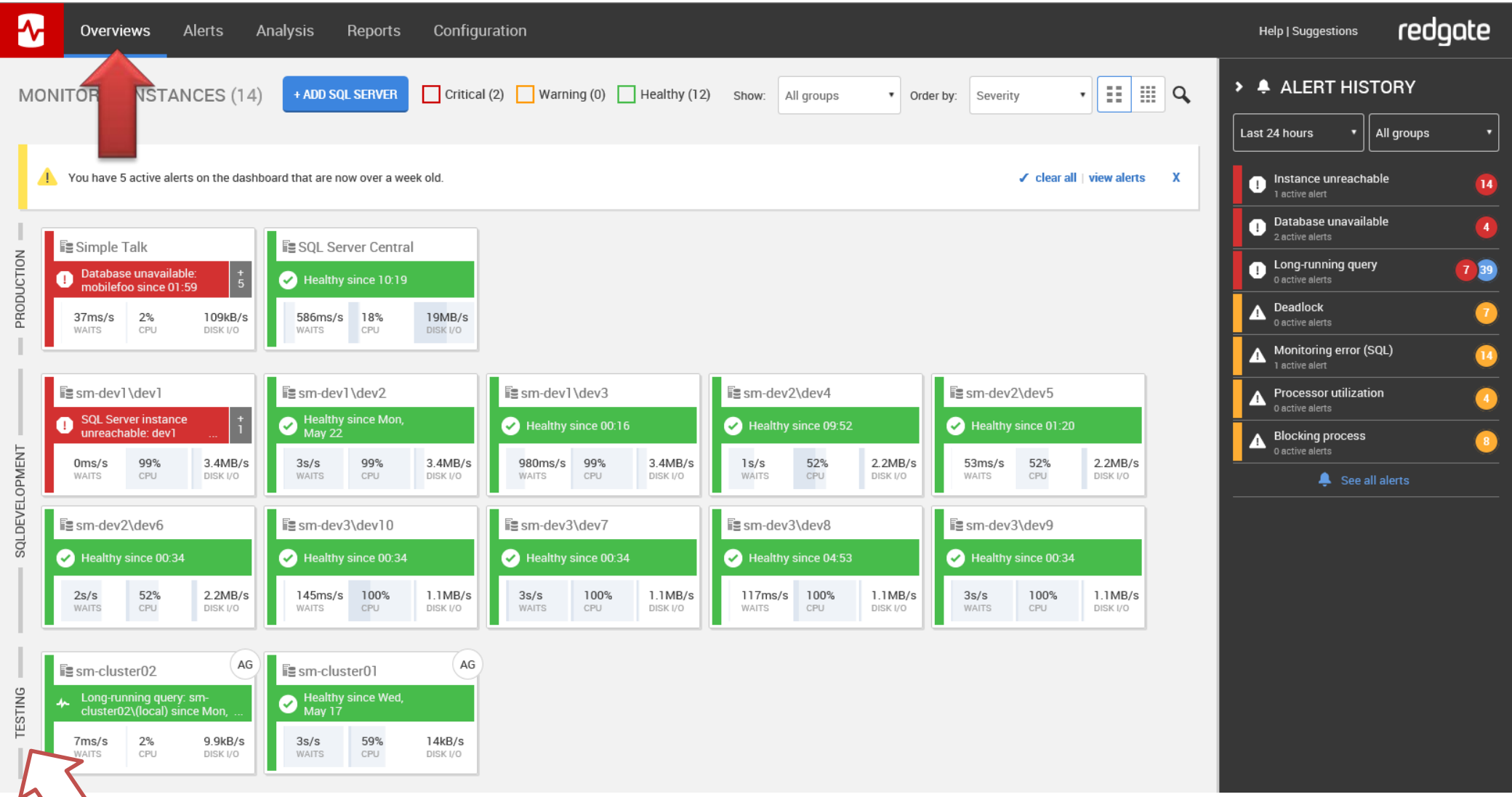
- 問題発生前に異常を検出
- いつもと違う動きや負荷を検出
- 負荷の種類の差異を判別できる
- 原因究明までの時間を短縮
- アプリケーションの変更前と変更後のパフォーマンスや影響度合いを比較できる
- 必要なメンバーに対し、必要なアラートを、適した手段で連携できる
- 管理業務時間の大幅な短縮
- バッチの中のどのクエリかが判る
- 再現テストをする必要がない
- SQL Server固有のメトリックスを収集できる
  - ラッチアンドロック、バッファキャッシュ
- 自社開発またはツールを組み合わせるよりも、低コストで容易に実現できる。



Database DevOps - Monitor & optimize.

Overview – 各SQL Serverの負荷状況一覧

Human Interactive Technology inc.

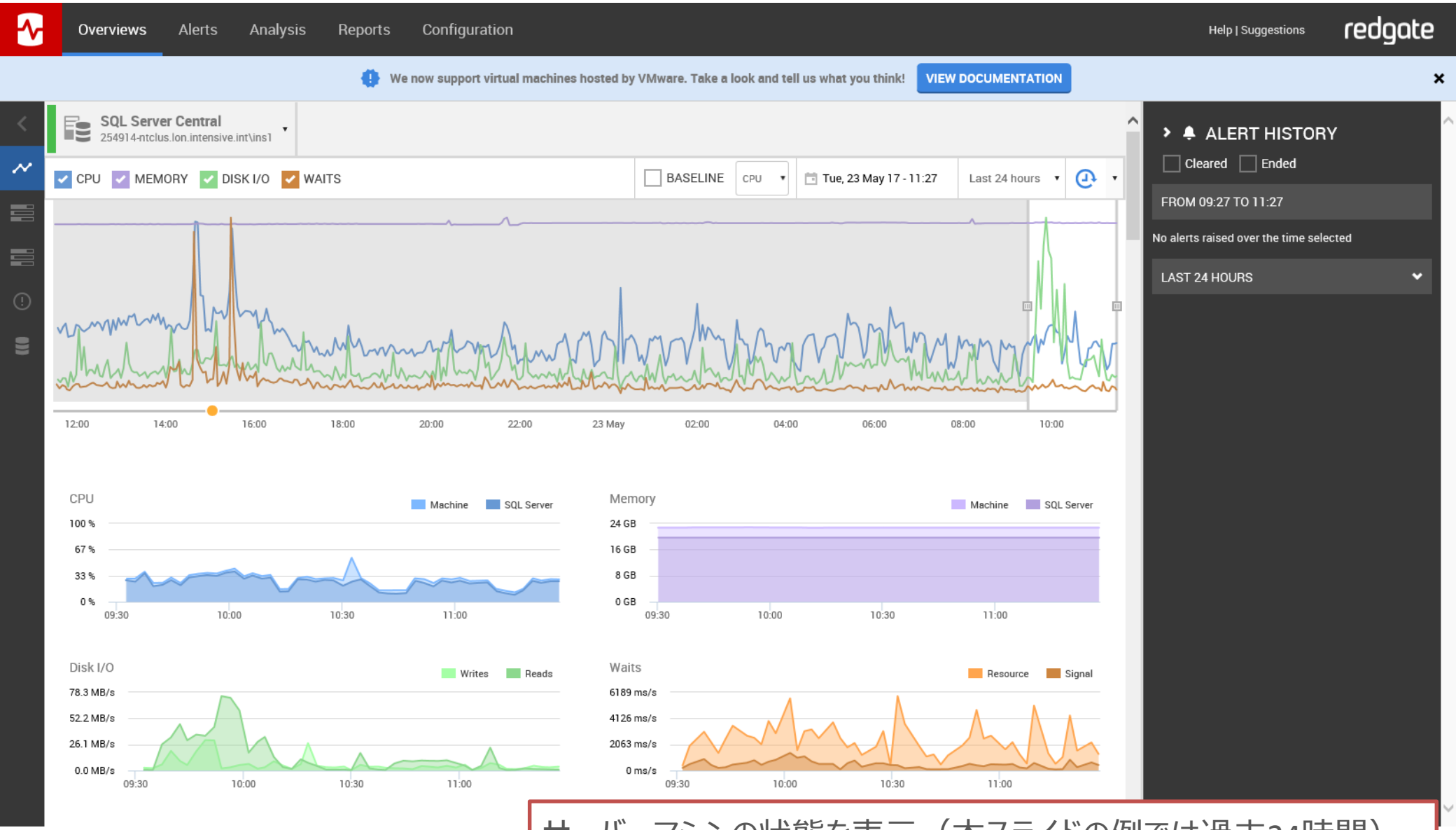


サーバーをグループ化して管理

SQL Server 2000, 2005, 2008, 2012, 2014, 2016 をサポート

SQL Serverマシンのメトリクス

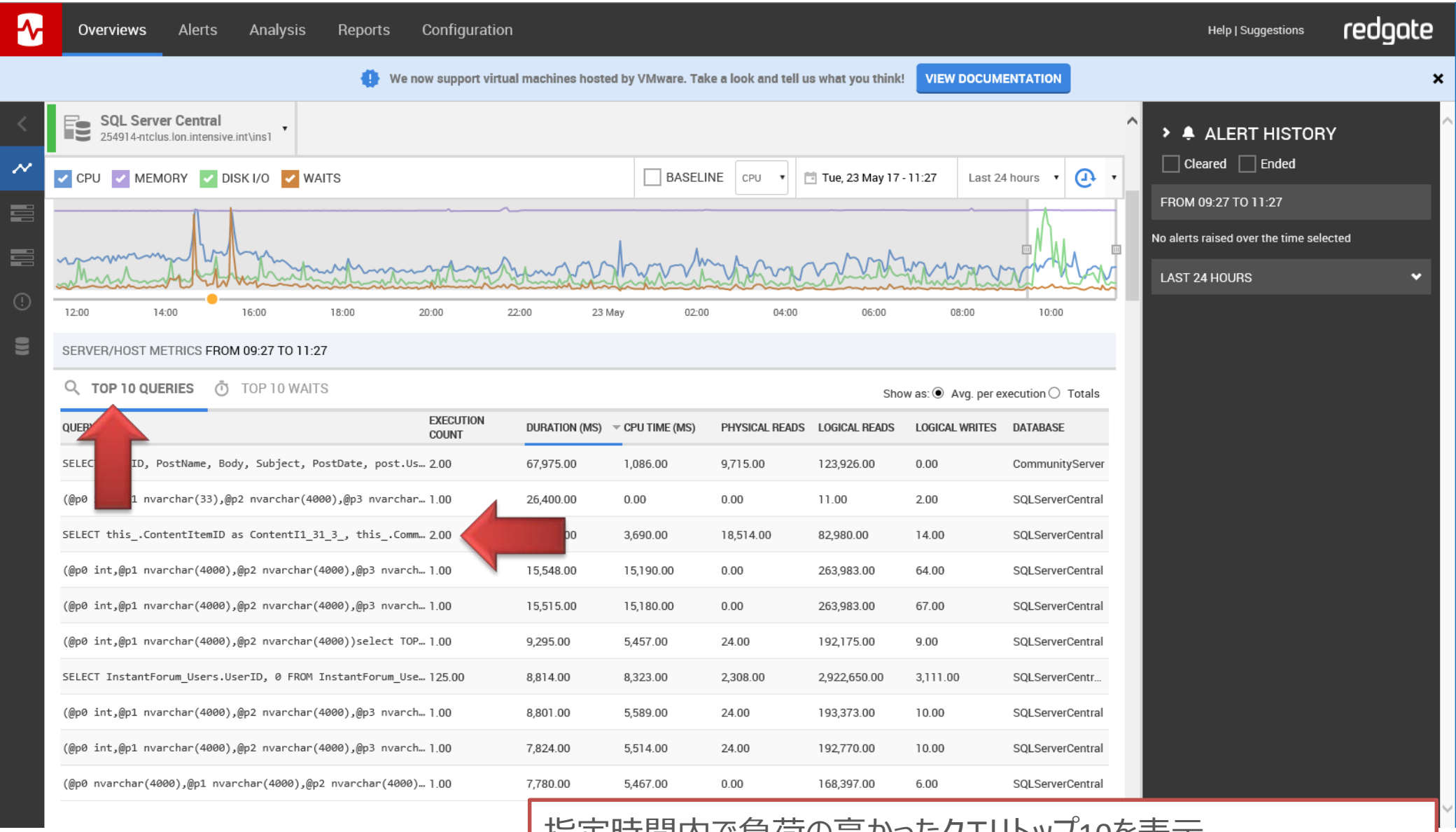
Human Interactive Technology inc.



サーバーマシンの状態を表示（本スライドの例では過去24時間）

トップ10 クエリ

Human Interactive Technology inc.

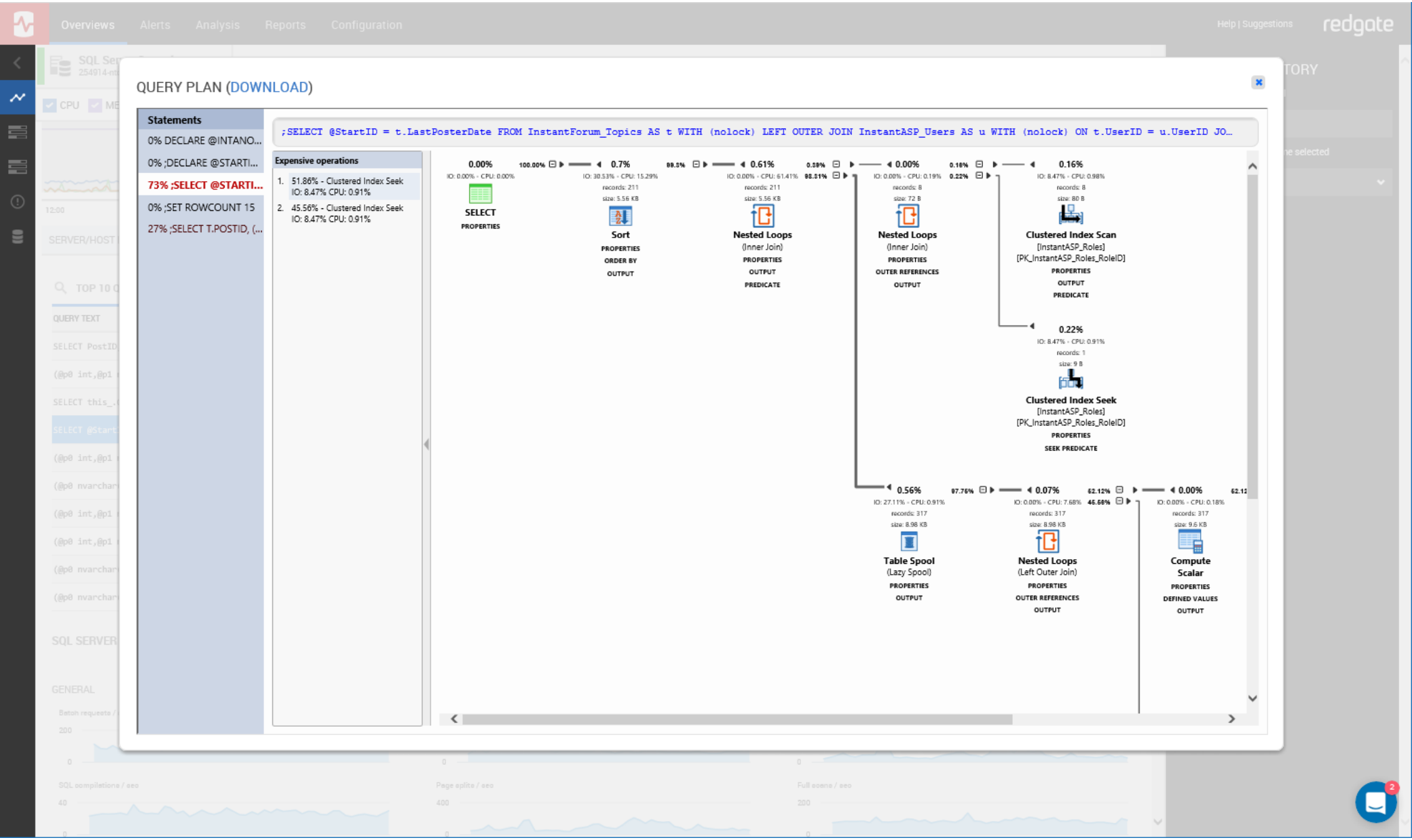


QUERY	EXECUTION COUNT	DURATION (MS)	CPU TIME (MS)	PHYSICAL READS	LOGICAL READS	LOGICAL WRITES	DATABASE
SELEC ID, PostName, Body, Subject, PostDate, post.Us…	2.00	67,975.00	1,086.00	9,715.00	123,926.00	0.00	CommunityServer
(@p0 1 nvarchar(33),@p2 nvarchar(4000),@p3 nvarchar…	1.00	26,400.00	0.00	0.00	11.00	2.00	SQLServerCentral
SELECT this_.ContentItemID as ContentI1_31_3_, this_.Comm…	2.00	00	3,690.00	18,514.00	82,980.00	14.00	SQLServerCentral
(@p0 int,@p1 nvarchar(4000),@p2 nvarchar(4000),@p3 nvarch…	1.00	15,548.00	15,190.00	0.00	263,983.00	64.00	SQLServerCentral
(@p0 int,@p1 nvarchar(4000),@p2 nvarchar(4000),@p3 nvarch…	1.00	15,515.00	15,180.00	0.00	263,983.00	67.00	SQLServerCentral
(@p0 int,@p1 nvarchar(4000),@p2 nvarchar(4000))select TOP…	1.00	9,295.00	5,457.00	24.00	192,175.00	9.00	SQLServerCentral
SELECT InstantForum_Users.UserID, 0 FROM InstantForum_Use…	125.00	8,814.00	8,323.00	2,308.00	2,922,650.00	3,111.00	SQLServerCentr…
(@p0 int,@p1 nvarchar(4000),@p2 nvarchar(4000),@p3 nvarch…	1.00	8,801.00	5,589.00	24.00	193,373.00	10.00	SQLServerCentral
(@p0 int,@p1 nvarchar(4000),@p2 nvarchar(4000),@p3 nvarch…	1.00	7,824.00	5,514.00	24.00	192,770.00	10.00	SQLServerCentral
(@p0 nvarchar(4000),@p1 nvarchar(4000),@p2 nvarchar(4000)…	1.00	7,780.00	5,467.00	0.00	168,397.00	6.00	SQLServerCentral

指定時間内で負荷の高かったクエリトップ10を表示

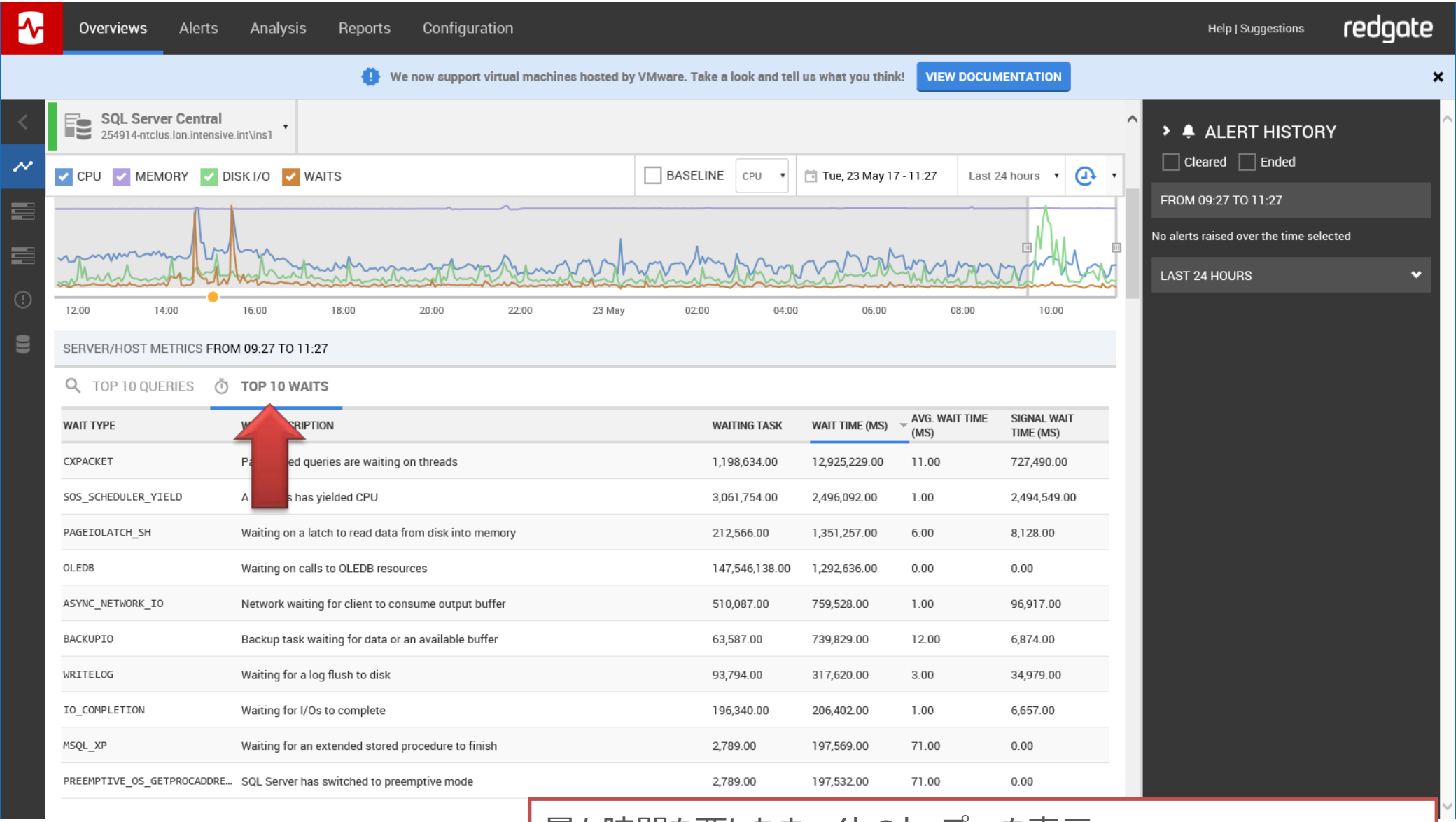
クエリプラン

Human Interactive Technology inc.



トップ10 ウェイト

Human Interactive Technology inc.

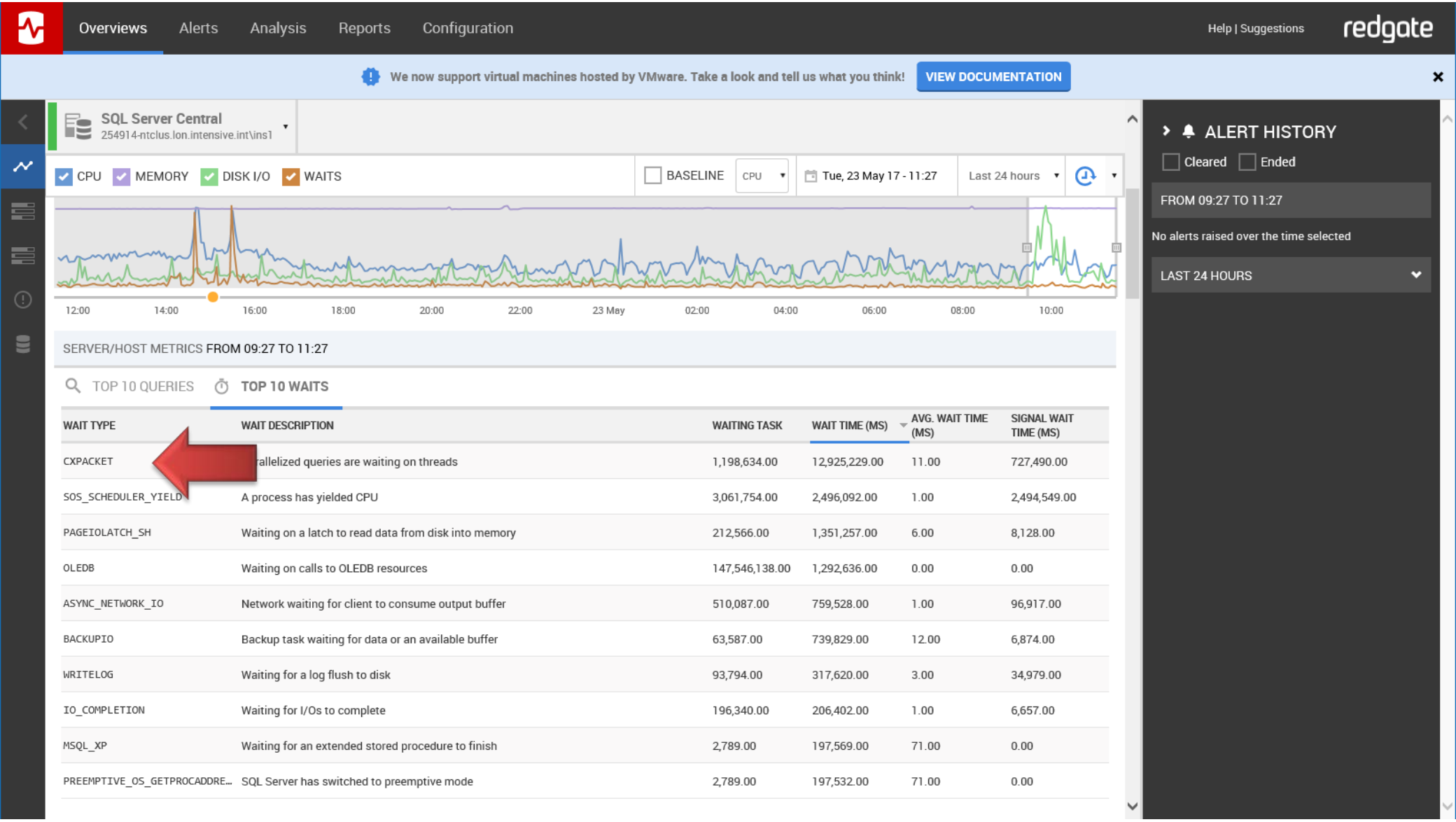


WAIT TYPE	W…CRIPTION	WAITING TASK	WAIT TIME (MS)	AVG. WAIT TIME (MS)	SIGNAL WAIT TIME (MS)
CXPACKET	Pa…ed queries are waiting on threads	1,198,634.00	12,925,229.00	11.00	727,490.00
SOS_SCHEDULER_YIELD	A …s has yielded CPU	3,061,754.00	2,496,092.00	1.00	2,494,549.00
PAGEIOLATCH_SH	Waiting on a latch to read data from disk into memory	212,566.00	1,351,257.00	6.00	8,128.00
OLEDB	Waiting on calls to OLEDB resources	147,546,138.00	1,292,636.00	0.00	0.00
ASYNC_NETWORK_IO	Network waiting for client to consume output buffer	510,087.00	759,528.00	1.00	96,917.00
BACKUPIO	Backup task waiting for data or an available buffer	63,587.00	739,829.00	12.00	6,874.00
WRITELOG	Waiting for a log flush to disk	93,794.00	317,620.00	3.00	34,979.00
IO_COMPLETION	Waiting for I/Os to complete	196,340.00	206,402.00	1.00	6,657.00
MSQL_XP	Waiting for an extended stored procedure to finish	2,789.00	197,569.00	71.00	0.00
PREEMPTIVE_OS_GETPROCADDRE…	SQL Server has switched to preemptive mode	2,789.00	197,532.00	71.00	0.00

最も時間を要したウェイトのトップ10を表示

トップ10 ウェイト

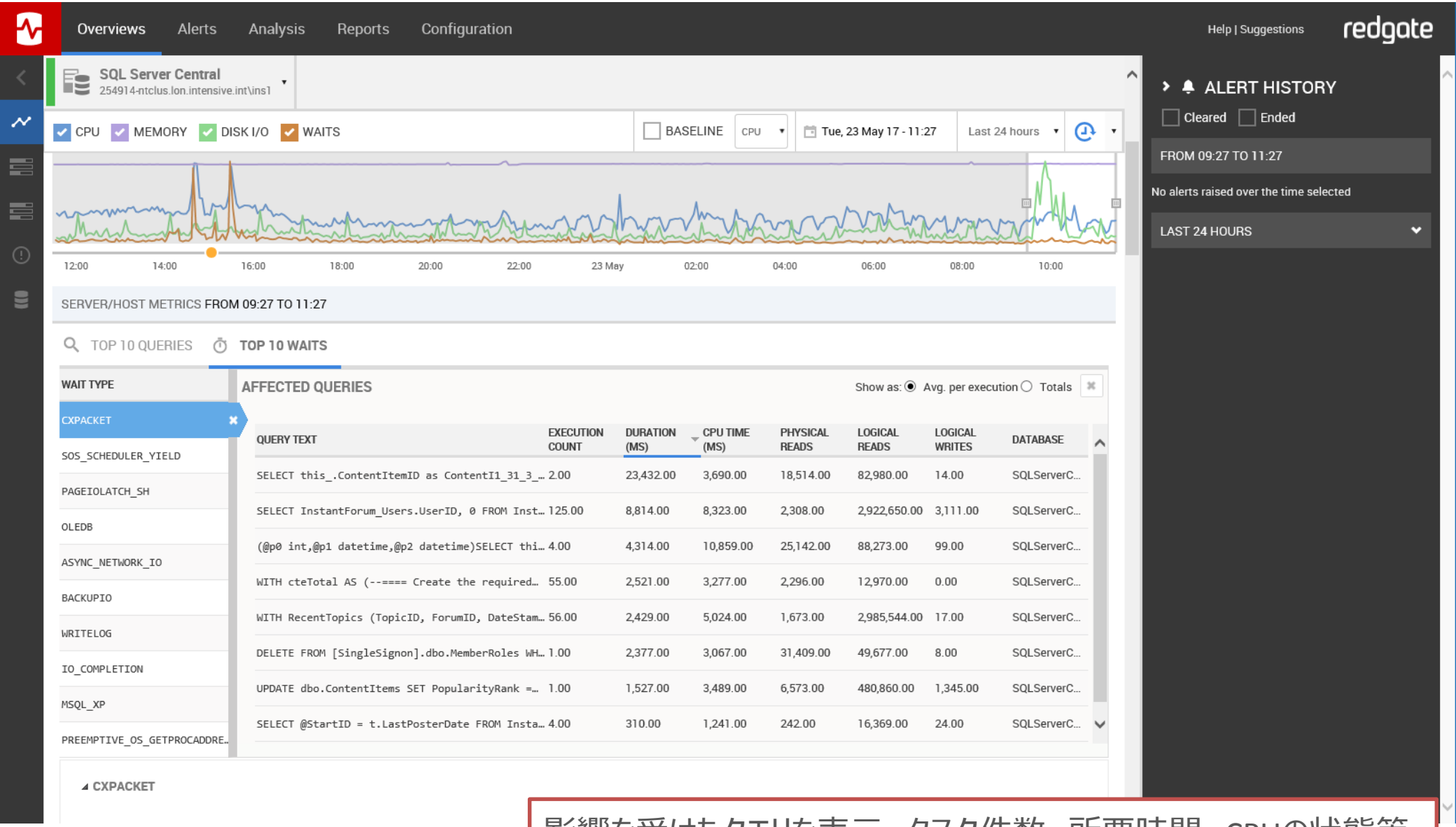
Human Interactive Technology inc.



WAIT TYPE	WAIT DESCRIPTION	WAITING TASK	WAIT TIME (MS)	AVG. WAIT TIME (MS)	SIGNAL WAIT TIME (MS)
CXPACKET	rallelized queries are waiting on threads	1,198,634.00	12,925,229.00	11.00	727,490.00
SOS_SCHEDULER_YIELD	A process has yielded CPU	3,061,754.00	2,496,092.00	1.00	2,494,549.00
PAGEIOLATCH_SH	Waiting on a latch to read data from disk into memory	212,566.00	1,351,257.00	6.00	8,128.00
OLEDB	Waiting on calls to OLEDB resources	147,546,138.00	1,292,636.00	0.00	0.00
ASYNC_NETWORK_IO	Network waiting for client to consume output buffer	510,087.00	759,528.00	1.00	96,917.00
BACKUPIO	Backup task waiting for data or an available buffer	63,587.00	739,829.00	12.00	6,874.00
WRITELOG	Waiting for a log flush to disk	93,794.00	317,620.00	3.00	34,979.00
IO_COMPLETION	Waiting for I/Os to complete	196,340.00	206,402.00	1.00	6,657.00
MSQL_XP	Waiting for an extended stored procedure to finish	2,789.00	197,569.00	71.00	0.00
PREEMPTIVE_OS_GETPROCADDRE...	SQL Server has switched to preemptive mode	2,789.00	197,532.00	71.00	0.00

トップ10 ウェイト – 詳細表示

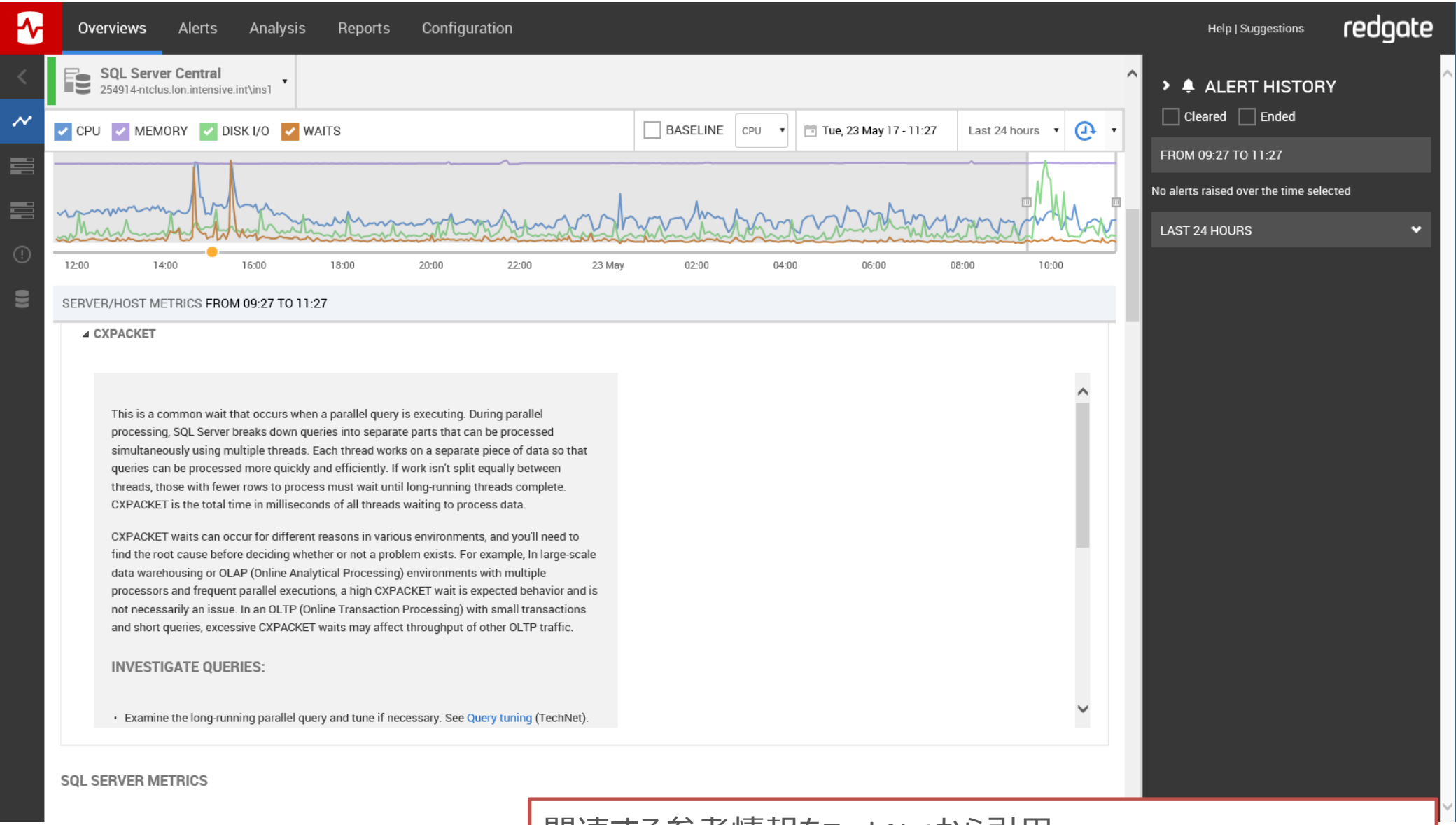
Human Interactive Technology inc.



影響を受けたクエリを表示。タスク件数、所要時間、CPUの状態等

参考情報の引用

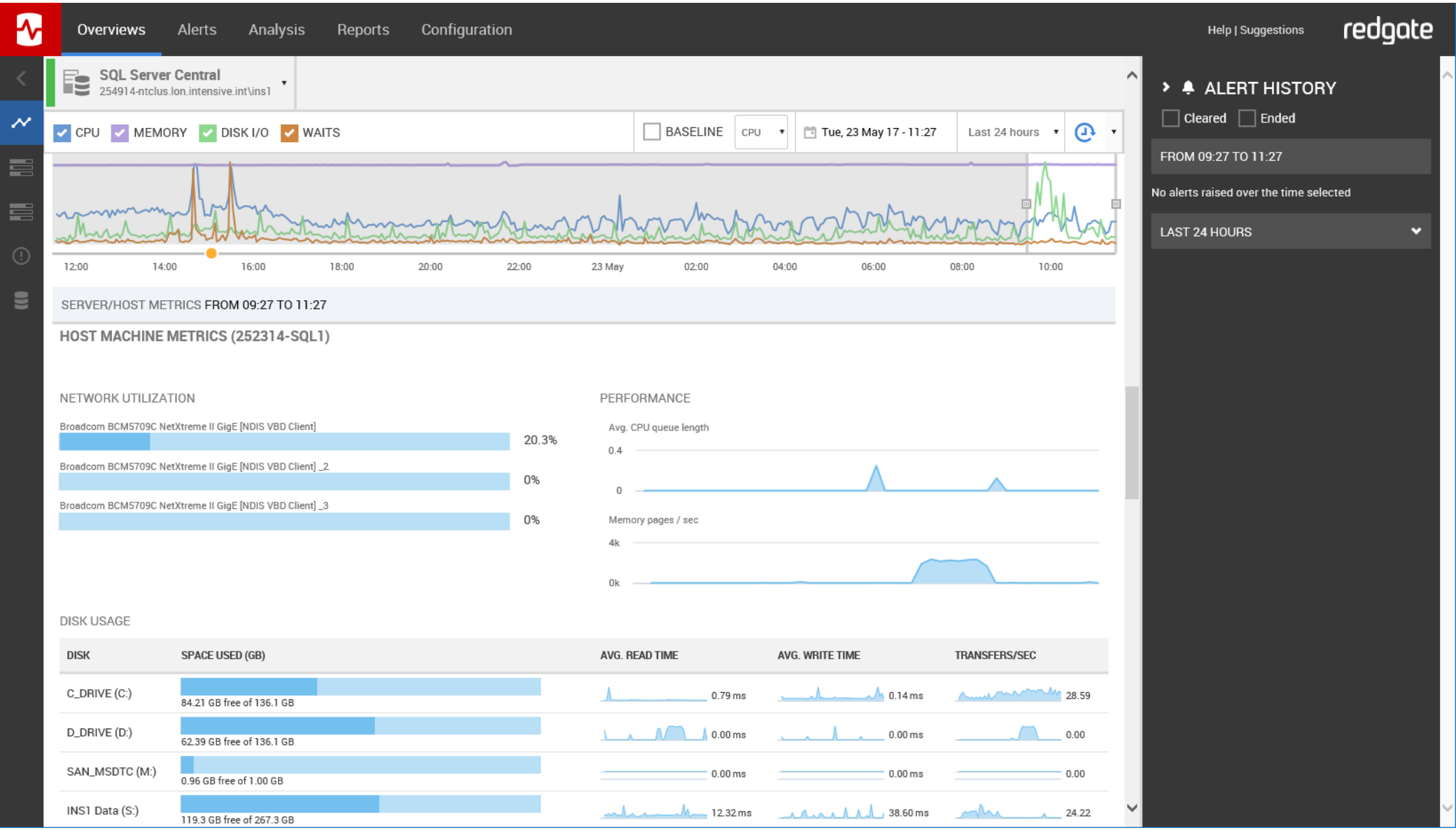
Human Interactive Technology inc.



関連する参考情報をTechNetから引用。

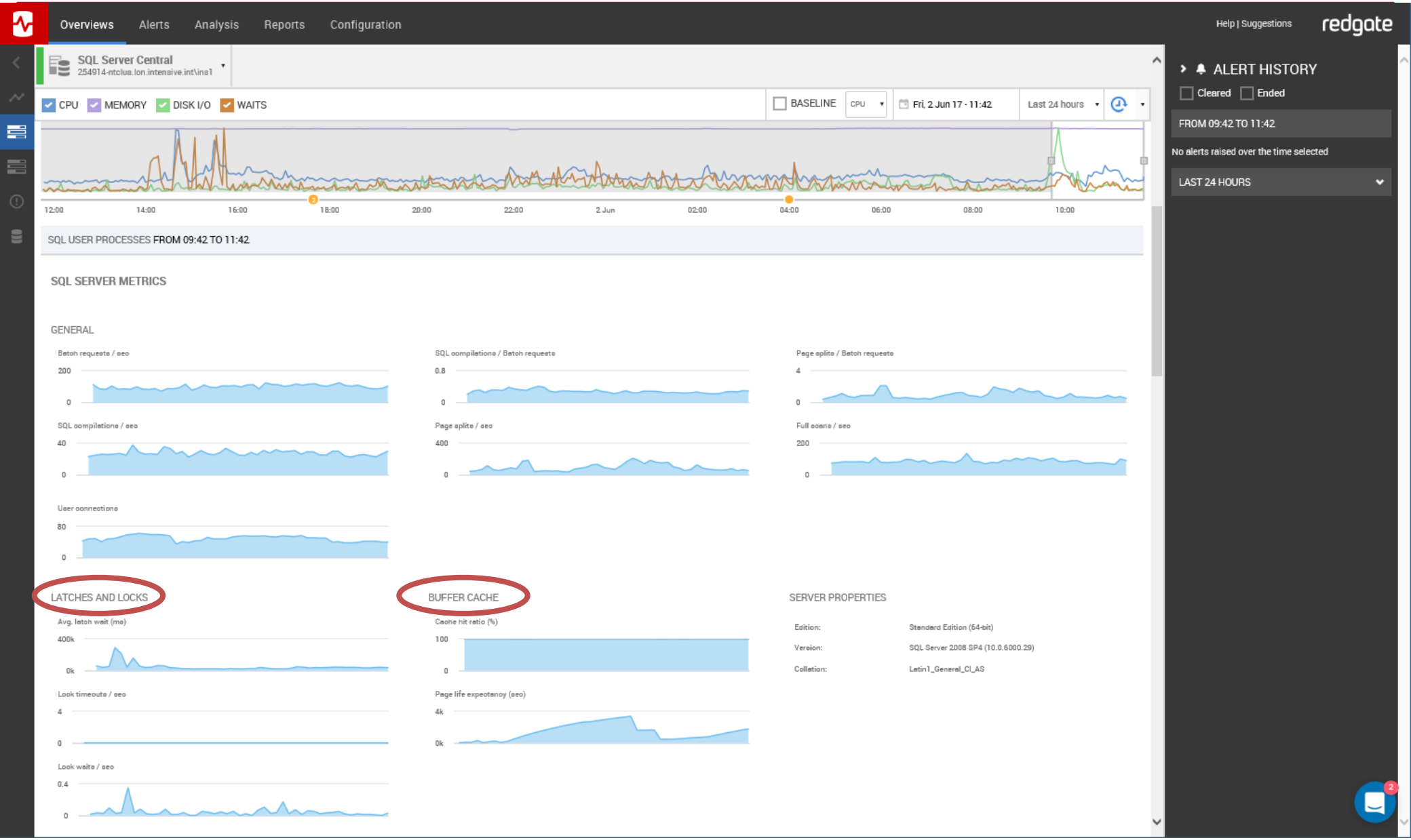
サーバーマシンのメトリクス

Human Interactive Technology inc.



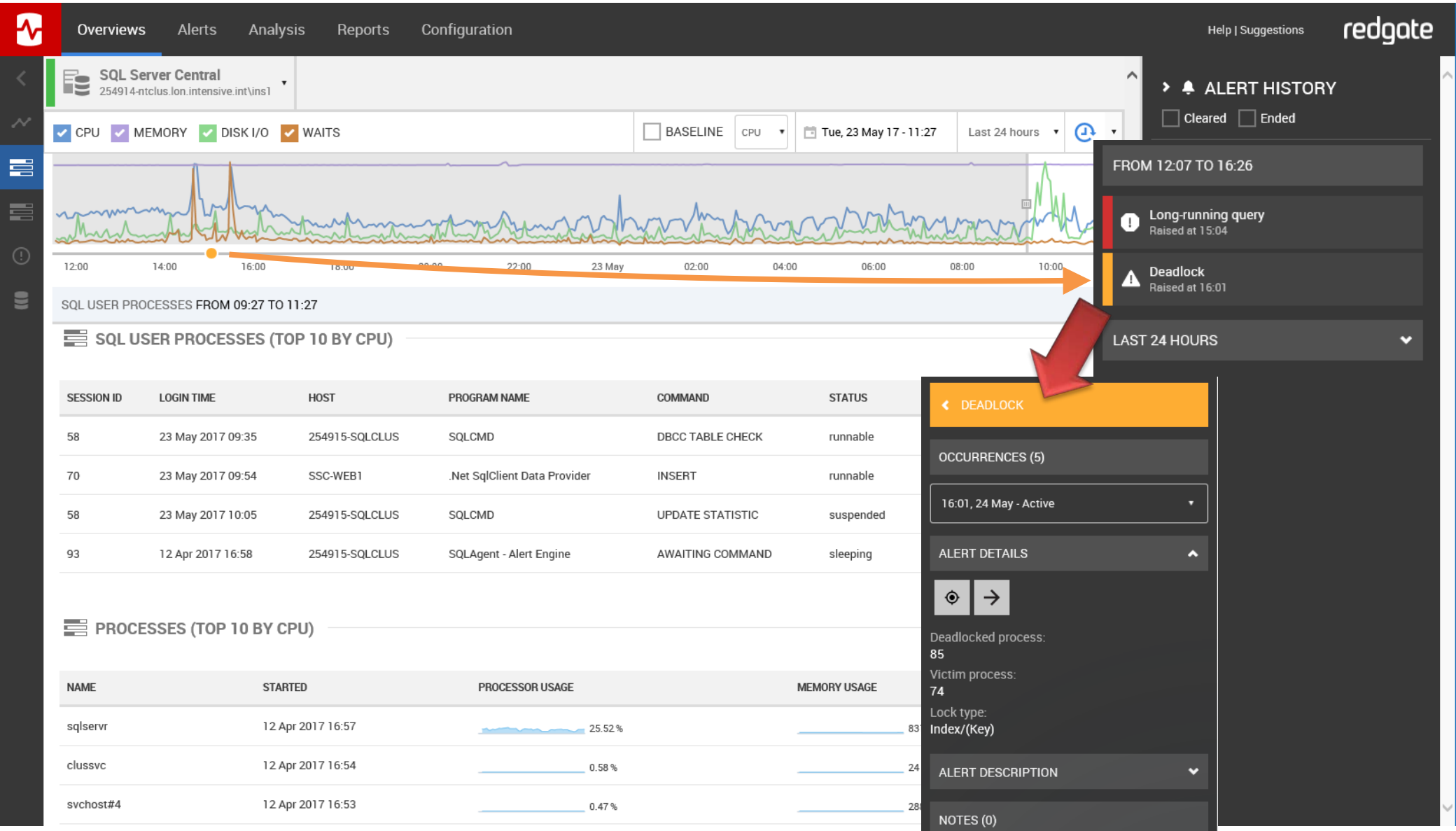
SQL Serverメトリクス

Human Interactive Technology inc.



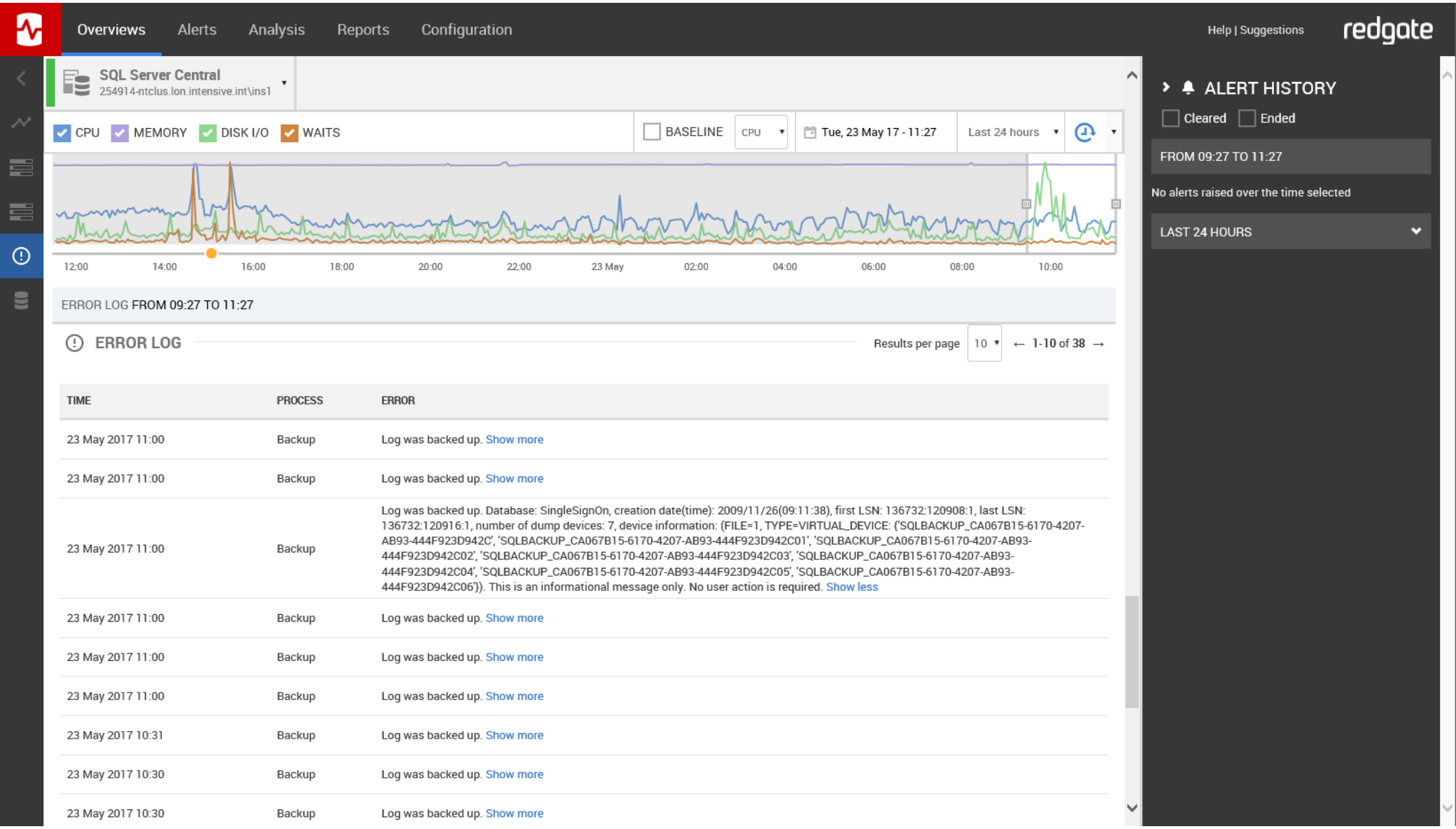
SQL ユーザープロセス

Human Interactive Technology inc.



エラーログ

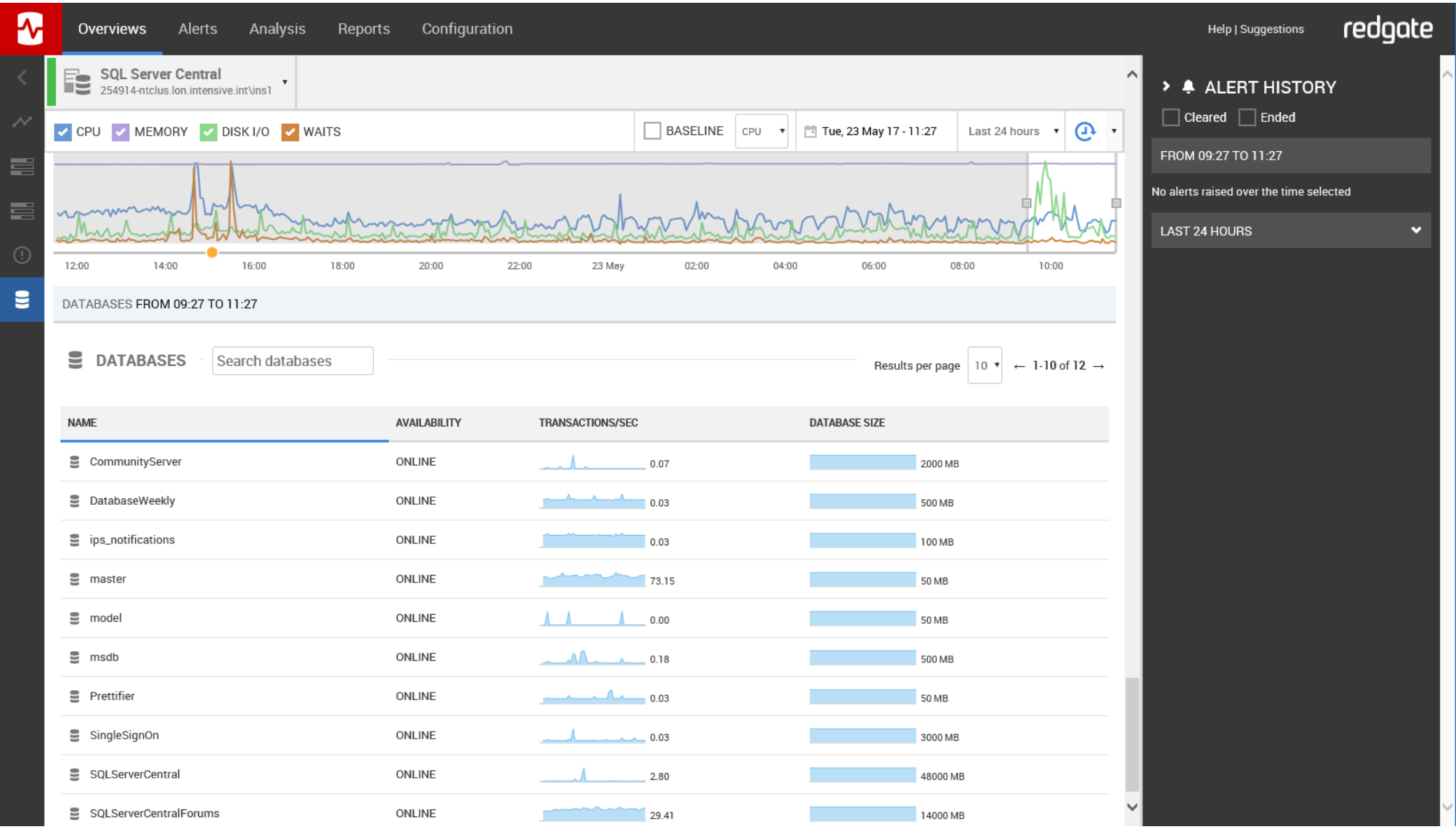
Human Interactive Technology inc.



TIME	PROCESS	ERROR
23 May 2017 11:00	Backup	Log was backed up. Show more
23 May 2017 11:00	Backup	Log was backed up. Show more
23 May 2017 11:00	Backup	Log was backed up. Database: SingleSignOn, creation date(time): 2009/11/26(09:11:38), first LSN: 136732:120908:1, last LSN: 136732:120916:1, number of dump devices: 7, device information: (FILE=1, TYPE=VIRTUAL_DEVICE: {'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C01', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C02', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C03', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C04', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C05', 'SQLBACKUP_CA067B15-6170-4207-AB93-444F923D942C06'}). This is an informational message only. No user action is required. Show less
23 May 2017 11:00	Backup	Log was backed up. Show more
23 May 2017 11:00	Backup	Log was backed up. Show more
23 May 2017 11:00	Backup	Log was backed up. Show more
23 May 2017 10:31	Backup	Log was backed up. Show more
23 May 2017 10:30	Backup	Log was backed up. Show more
23 May 2017 10:30	Backup	Log was backed up. Show more

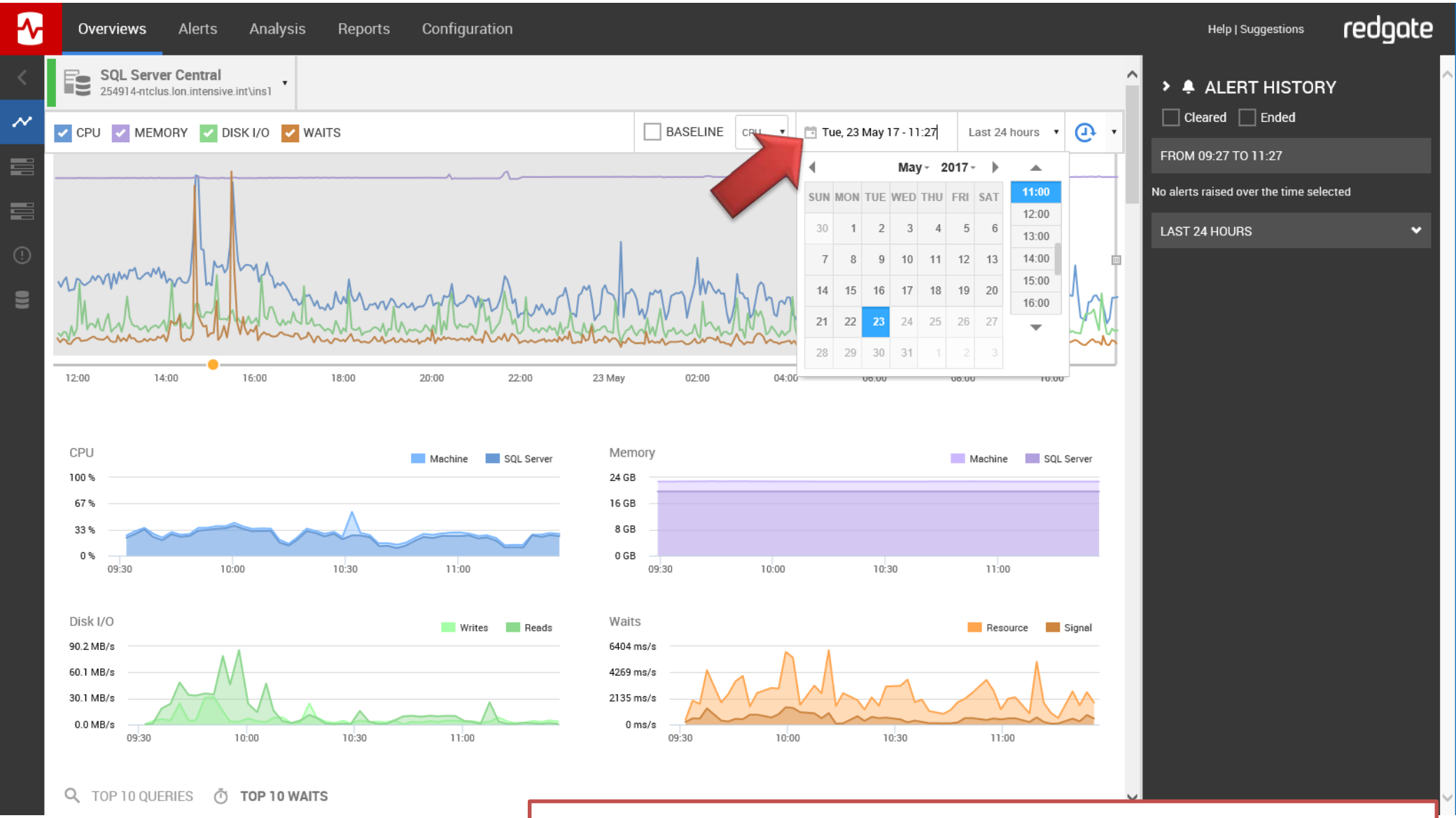
データベースのステータス一覧

Human Interactive Technology inc.



過去データの取得

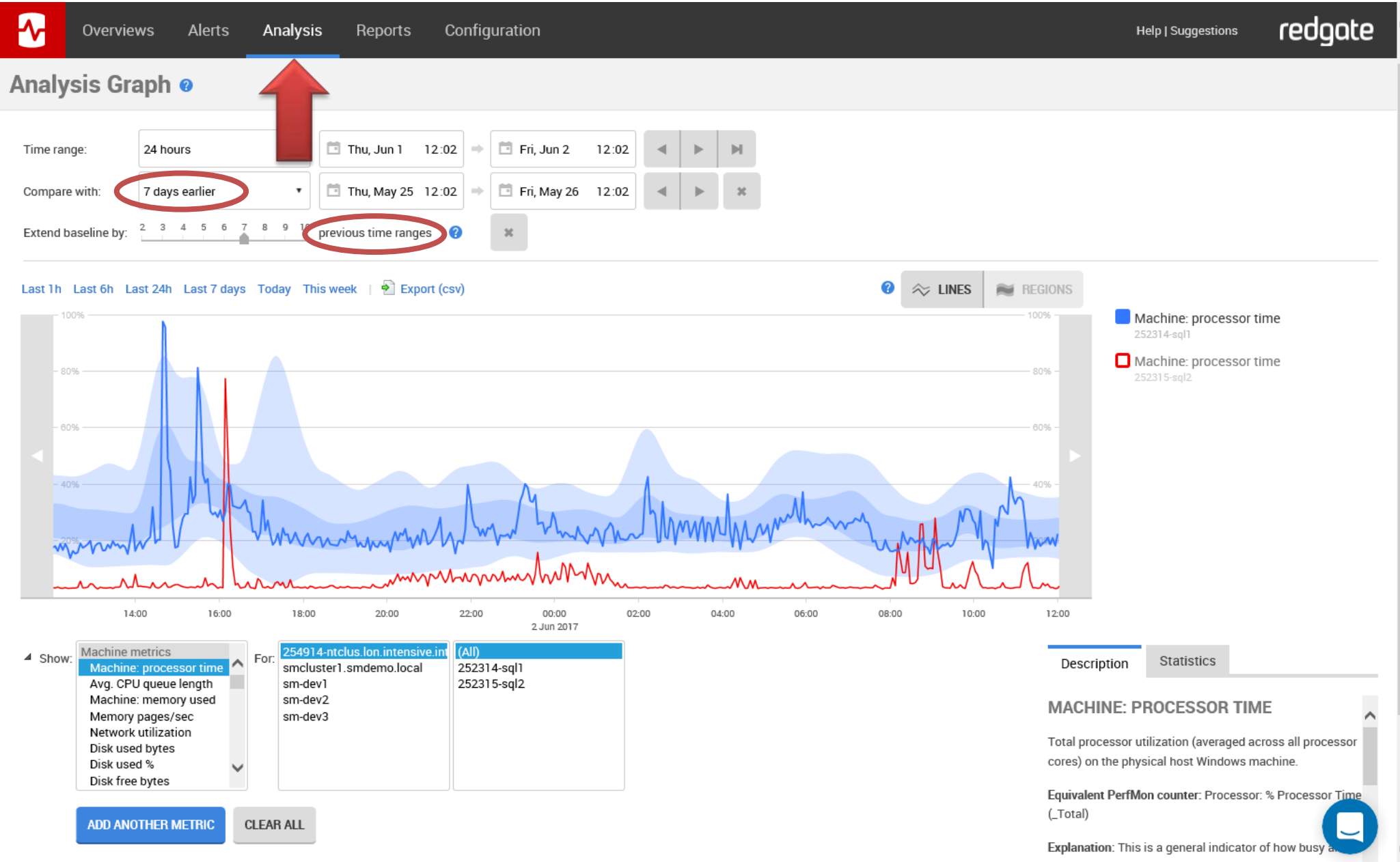
Human Interactive Technology inc.



遡って確認したい日付と時刻を選択

過去の同時間帯との比較

Human Interactive Technology inc.



アラートの分析

Human Interactive Technology inc.

Overviews | Alerts | Analysis | Reports | Configuration | Help | Suggestions | redgate

Alert Inbox : All Servers

GLOBAL FILTERS

All alerts
Unread
Active
Cleared

MONITORED SERVERS

All Servers (513)
- Production (213)
- SQLDevelopment (29...
- Testing (2)

ACTIONS

Create custom metrics and alerts
Manage monitored servers
Manage groups
Configure alerts
Subscribe to RSS alert feed

To receive email alerts you must first enter your Mail Server settings.

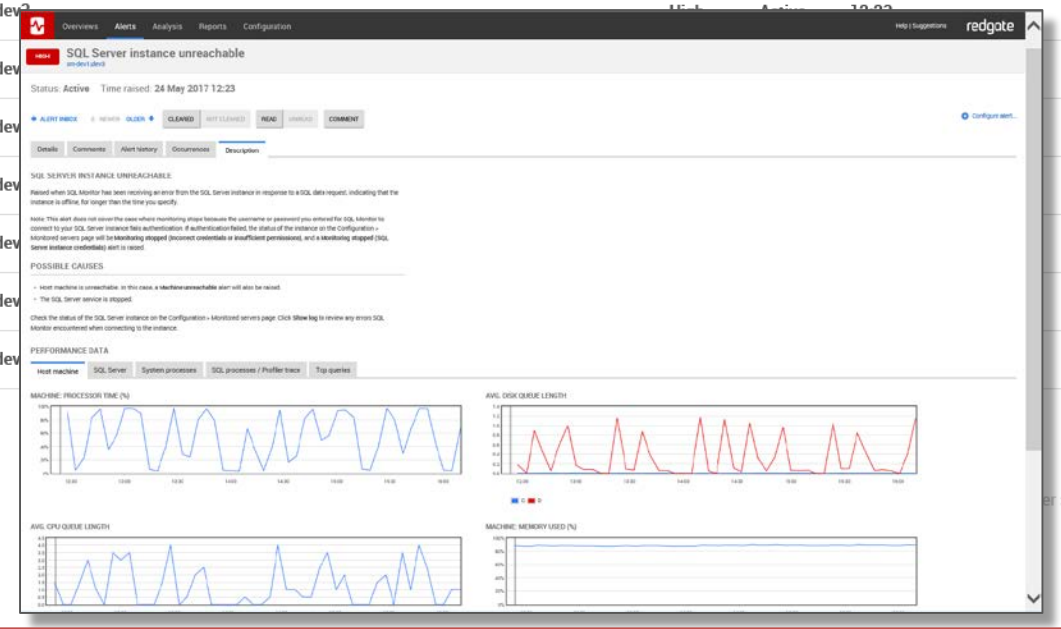
Filter: Custom * | CLEAR FILTER | Custom dashboard filter, so advanced options disabled.

Showing 1-7 of 7 << Newest < Newer Older > Oldest >>

SELECT

TYPE	OBJECT	SEVERITY	STATUS	TIME	ACTIONS
SQL Server instance unreachable	sm-dev1\dev2				
SQL Server instance unreachable	sm-dev1\dev				
SQL Server instance unreachable	sm-dev1\dev				
SQL Server instance unreachable	sm-dev1\dev				
SQL Server instance unreachable	sm-dev1\dev				
SQL Server instance unreachable	sm-dev1\dev				
SQL Server instance unreachable	sm-dev1\dev				

SELECT

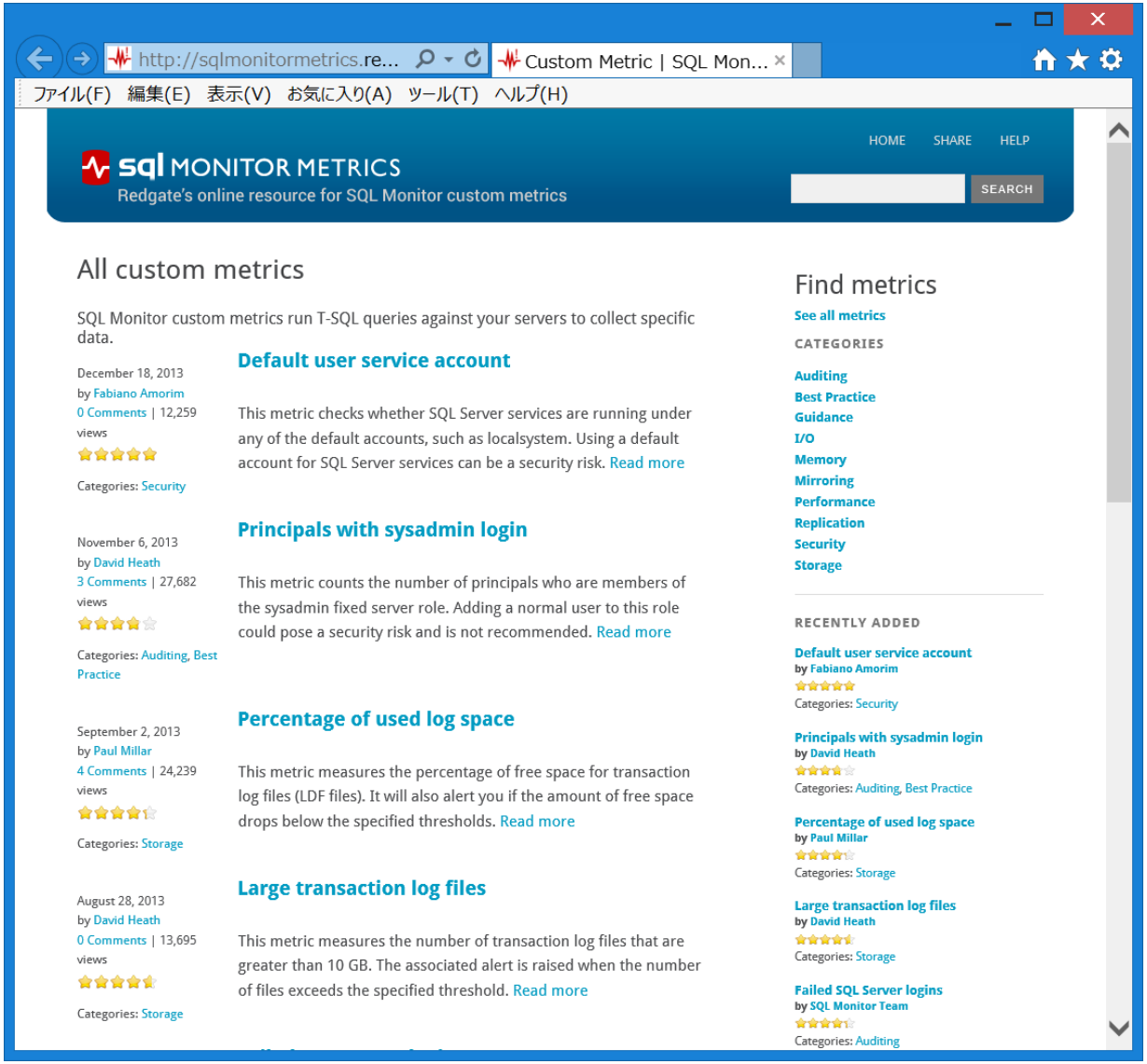


アラートの詳細を表示。カスタマイズ可能なアラートは標準装備の40種類に加え、専用サイトからダウンロードして入手可能

カスタムメトリクスの入手

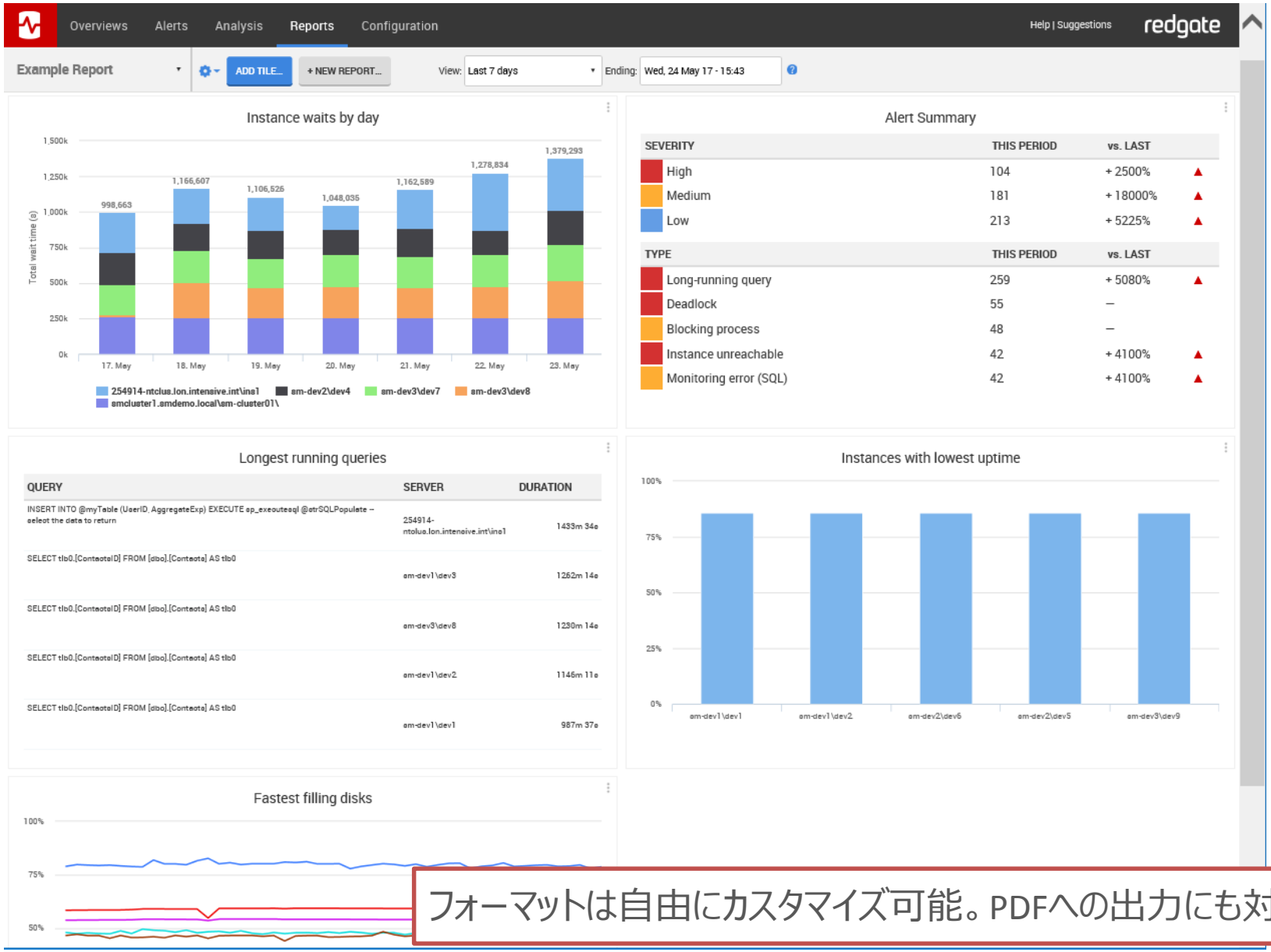
Human Interactive Technology inc.

http://sqlmonitormetrics.red-gate.com/category/custom-metric/



稼働状況レポートの発行

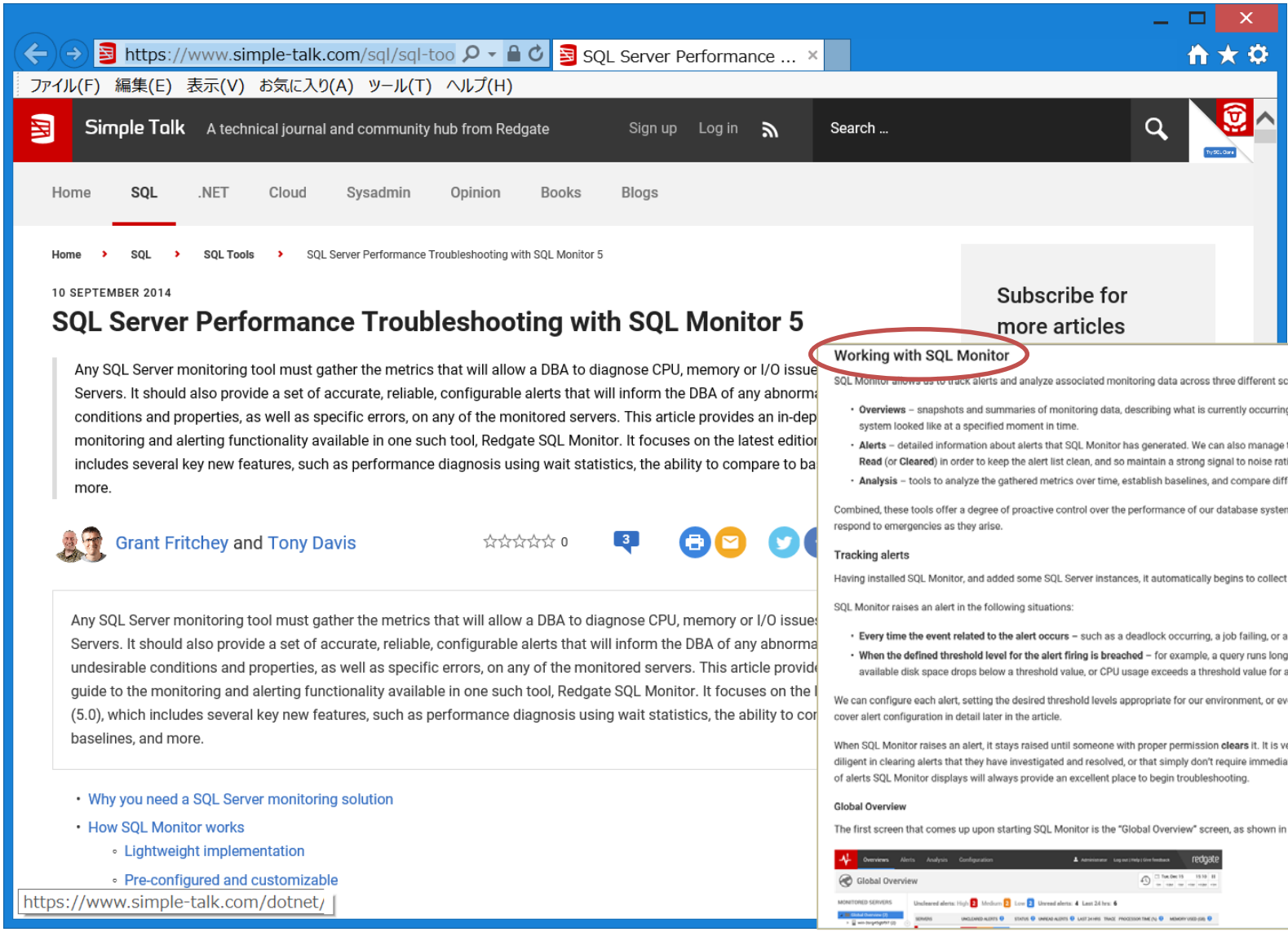
Human Interactive Technology inc.



フォーマットは自由にカスタマイズ可能。PDFへの出力にも対応。

トラブルシューティング

https://www.simple-talk.com/sql/sql-tools/sql-server-performance-troubleshooting-with-sql-monitor-5/



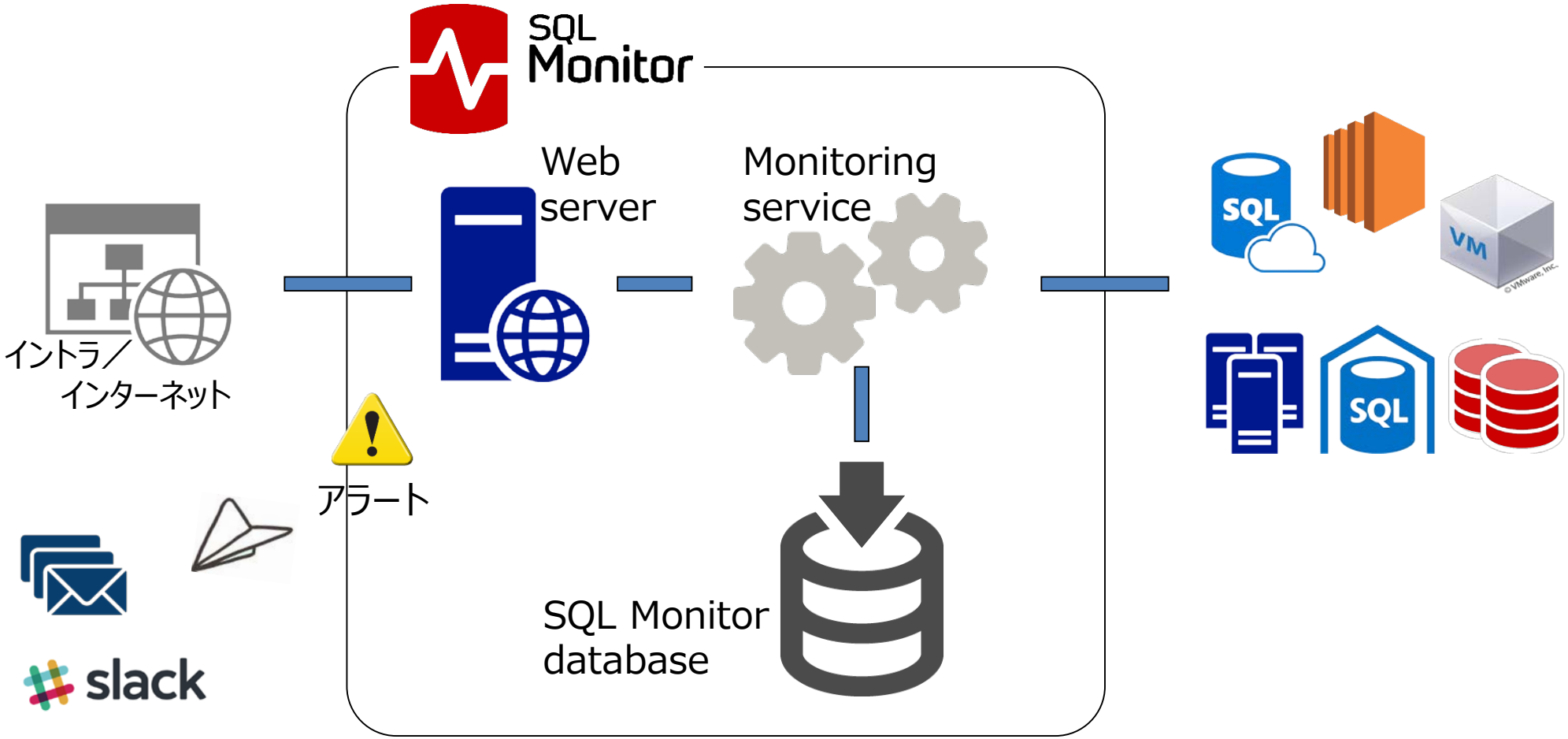
SQL Monitor 機能まとめ

Human Interactive Technology inc.

	SQL Monitor	SSMS
SQL Serverを環境ごとにグループ化し、1画面で表示	○	○
指定した時間帯のTOP10クエリの検出	○	△ ※1
指定した時間帯のTOP10ウェイトの検出	○	△ ※2
過去の統計情報の取得	○	×
TechNet関連情報の画面内表示	○	×
クエリパフォーマンス、ジョブの健全性など詳細なアラート	○	×
メール以外のアラートの配信手段（SLACK、SNMP）	○	×
総括レポート作成機能	○	○
Azureに立てたSQL Serverのモニタリング	○	○※3
Amazon EC2	○	○※3
VMware	○	○※3

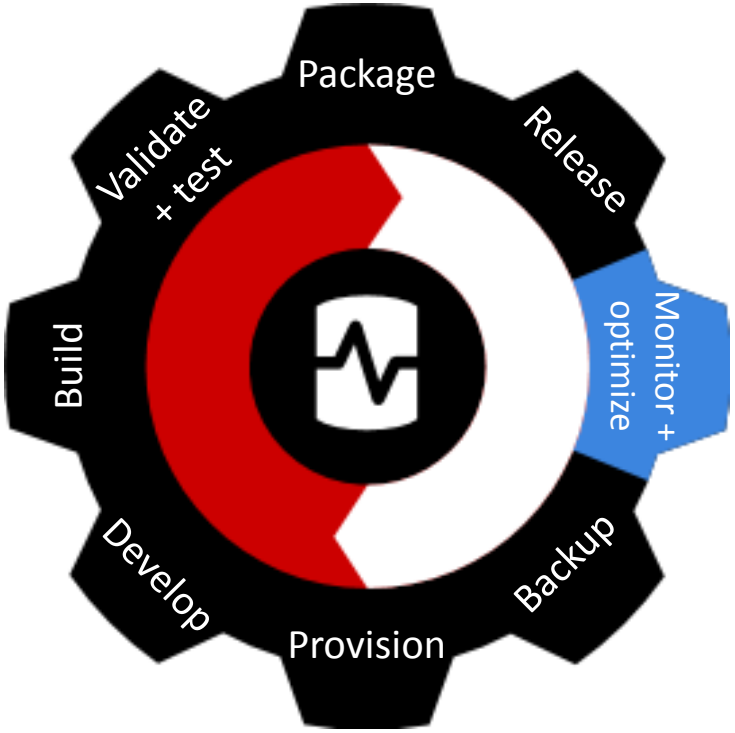
※1 クエリ一覧の表示は可能
※2 Wait一覧の表示は可能
※3 画面上に表示されている統計情報のモニタリングは可能

システム構成



1日当たりのディスク消費量は、SQL Server 1台につき150～450MB。
例：10台のSQL Serverを1週間モニターした場合、10GB～30GBを消費。

SQL Monitor



Database DevOps - Monitor & optimize

Redgate's Database DevOps solution lets you extend your DevOps practices to SQL Server databases so that you can optimize productivity, agility and performance across the full database lifecycle and become a truly high performing IT organization.