Hosting as a Service (HaaS) Playbook

Version 0.92

Document History

Author/Editor	Date	Reason for Change	Version
Patrick Desbrow	8/10/2014	Draft	0.90
Adrian Newby	8/17/2014	Edits and Formatting	0.91

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Hosting as a Service (HaaS) Overview

CrownPeak offers a Hosting service for existing users of the Content Management System (CMS) environment. This Hosting service operates in the CrownPeak environment, which is based on Amazon Web Services (AWS). CrownPeak offers several deployment options, which are described in more detail below.

Hosting as a Service (HaaS) – Benefit

Some of the benefits of the CrownPeak Hosting service include:

Standard
- o A managed hosting environment for Hosting
- o Regular maintenance and updates
- o Monitored seven days a week and 24 hours a day
- o Several Hosting types and versions
- o Highly Available (HA) configuration

Options
- o Trans-/intercontinental Disaster Recovery (DR)
- o Separate production and non-production environments for increased stability
- o Encryption of data at rest (Provided via CrownPeak Enhanced Data Security Services)

Hosting Types / Supported Versions

The CrownPeak HaaS is available on two Hosting platforms: Linux and Microsoft:

- • Linux Ubuntu Server (12.94 LTS) with
- o Apache HTTP Server version (2.4.x) for PHP, Perl, Python, Ruby,
- o Apache Tomcat version (7.0.54) for Java Servlet and JavaServer Pages (JSP) support
- o Other Options: https://projects.apache.org/indexes/language.html#Java
- • MS Windows Server (2012 R2) with
- o Internet Information Server (IIS) version (8)
- o Apache Tomcat version (7.0.54) for Java Servlet and JavaServer Pages (JSP) support

Hosting Size / Capacity

- • 2 vCPU
- • 7.5 GB Memory
- • Up to 1 TB disk space

Note: Additional disk space can be added as needed. Additional cost may apply.

High Availability (HA)

The CrownPeak HaaS environment is highly available within a single AWS Region. Data is synchronized between servers.

Disaster Recovery (DR)

Disaster Recovery is an extra level of protection where the CrownPeak HaaS service is deployed in two separate AWS Regions. Data is asynchronously replicated between these two locations.

Hosting Access and Security

As a managed service, CrownPeak HaaS does not offer end users the ability to connect directly to the platform. The CrownPeak Content Management System (CMS) is the primary method for delivering content to the Hosting environment. Configuration changes to the hosting servers can be delivered to CrownPeak in the form of scripts, which CrownPeak systems administrators will run on customers' behalf. Any log files produced by such scripts are delivered back to the customer.

The CrownPeak HaaS is based on a production level support model and provides only the necessary

levels of access required by the web servers and the privileged users that are required to update the

configuration settings in the environment. The following are the standard access levels:

- • Administrative Level Access – This is limited to CrownPeak IT Operations staff. All configuration changes must be scripted and submitted via the standard CrownPeak support process
- • User Level Access – Customer solution designers may wish to create restricted-permissions, user-level service accounts to be used by application server connection pools , etc. These user accounts may be created via the scripting process, as described above.

Production and Non-Production Environments (Separation of Environments)

CrownPeak offers production hosting servers in a managed environment. A production environment requires a specific set of hardware, infrastructure and change control procedures to ensure a high level of stability. A single HaaS deployment provides a highly available Hosting platform deployed in a single AWS Region. While this is a highly cost-efficient model for delivery of persistent data services, it carries the risk that instability in the development stages may compromise the platform and impair production service. To mitigate this risk, CrownPeak recommends that CrownPeak HaaS services be deployed as pairs, one HaaS platform supporting production operations and one platform supporting all other development lifecycle stages. This approach ensures that production service delivery is insulated from any instability that may be introduced through the normal course of development, QA and load testing operations.

Maintenance and Support Updates

The CrownPeak Hosting service includes regular maintenance and support updates such as the installation of service packs, security updates and other recommended vendor updates. These updates are applied at the request of customers and during a pre-arranged CrownPeak maintenance window. CrownPeak assumes that these updates have been previously tested by the customer in a non-production environment and that the customer is satisfied that the update will have no negative impact on the CrownPeak production environment. CrownPeak will not be responsible for any outage arising from the application of a security patch or any other form of vendor-supplied update, provided that the update has been properly applied in accordance with the vendor's instructions. However, CrownPeak will provide prompt recovery and rollback services if necessary to reverse the negative impact of any applied update.

CrownPeak also performs routine optimization as part of its normal operational maintenance regimen.

Note: CrownPeak will not provide an opinion on security patches released by the vendor or provide an

independent data vulnerability assessment.

Hosting Backups and Recovery

CrownPeak HaaS performs automatic Hosting backups on a regular basis. Customers should submit a support request via the normal CrownPeak customer service process to request restoration or recovery services. The following are the standard Hosting backup and recovery features:

- • Full backups – Every fifteen (15) minutes
- • Return to Operation (RTO) – Backups can be recovered and applied within six (2) hours of the request
- • Recovery Point Objective (RPO) – Maximum data loss is limited to thirty (30) minutes.
- • Backup Retention – Backups are retained for ninety (90) days. Longer retention periods are available via CrownPeak's Long Term Archival Storage option.

Note: Additional backup schedules and retention options can be added as needed. Additional costs may apply.

Monitoring Support

The CrownPeak HaaS is monitored 7 days a week and 24 hours a day by a set of tools that will alert the Hosting service team. HaaS is monitored and logged at several levels including:

- • Platform – CPU percentage, network traffic, disk reads, disk writes
- • Disk Storage – Current size, growth rates, large changes in size up or down
- • Hosting Service – Levels of activity based on visitors to the Web sites

Note: CrownPeak maintains comprehensive performance monitoring for internal purposes. Generally, these statistics are not shared with customers. However, on a case-by-case basis, CrownPeak may share performance statistics in the course of troubleshooting or diagnosing a particular issue.

Capacity Planning and Storage Management

CrownPeak monitoring continuously tracks the size and growth of each customer's HaaS. The internal CrownPeak Hosting service team is alerted when the Hosting size or activity level reaches predetermined thresholds. With respect to disk capacity, disk storage is transparently allocated as necessary up to the limit of 1 TB (1,099,511,627,776 bytes).

Note: Additional disk capacity can be provided as needed. Additional cost may apply.

Backups and Data Extracts from the Hosting

CrownPeak HaaS is provided under the terms and conditions of the master subscription agreement in place between the customer and CrownPeak. Accordingly, at the conclusion of the subscription, CrownPeak will provide a copy of all Hosting data to the customer in an agreeable format.

During the lifetime of the subscription, backups are maintained for CrownPeak internal purposes only. However, periodic extracts may be requested as part of a Professional Services engagement.

Frequently Asked Questions (FAQ)

Question: Are separate environments available for production and non-production?

Answer: Yes, if these options are specified in your contract.

Question: Are regular update and service packs update part of the Hosting service.

Answer: Yes, please see the Maintenance and Support Updates section above for details.

Question: Are High Availability (HA) and Disaster Recovery (DR) options available.

Answer: Yes, please see the High Availability (HA) and Disaster Recovery (DR) section above for details.

Question: How are hosting configuration changes made?

Answer: All requests must be scripted and submitted as a CrownPeak support request.

Question: How is content added and removed from the hosting environment?

Answer: The CrownPeak Content Management System (CMS) is the primary method for delivering content to the Hosting environment. Configuration changes to the hosting servers can be delivered to CrownPeak in the form of scripts, which CrownPeak systems administrators will run on customers' behalf. Any log files produced by such scripts are delivered back to the customer.

Question: During the development phase, could CrownPeak provide sufficient access to the Hosting to allow users to connect with an administration tool?

Answer: No. For customers requiring this level of access during development, CrownPeak recommends that a separate environment be deployed locally to the developer. CrownPeak provides technical specifications and Amazon Machine Images to assist developers in provisioning environments that match those provided by CrownPeak HaaS.

Hosting as a Service (HaaS) Terminology

Below is a list of common terms associated with Hosting as a Service (HaaS).

Term	Definition
AWS	Amazon Web Services. (CrownPeak is an AWS Advanced Technology Partner.)
CMS	The CrownPeak Content Management System (CMS)
Disaster Recovery	Redundant hardware and services in a secondary location and uses as a failure option when the primary location is unavailable.
High Availability	Redundant hardware and services in one location to prevent a single point of failure
HaaS	Hosting as a Service
SaaS	Software as a Service
SQL	Structured Query Language. A special-purpose programming language designed for managing data held in a relational Hosting management system (RDBMS).

Notes and Additional Information

More information can be found on Connect: *https://connect.crownpeak.com/*