**Systems Manager**

* Systems Manager allows you to centralize operational data from multiple AWS services and automate tasks across your AWS resources
* You can create logical groups of resources such as applications, different layers of an application stack, or production versus development environments
* With Systems Manager, you can select a resource group and view its recent API activity, resource configuration changes, related notifications, operational alerts, software inventory, and patch compliance status
* You can also take action on each resource group depending on your operational needs
* Systems Manager provides a central place to view and manage your AWS resources, so you can have complete visibility and control over your operations
* Centralized console and toolset for wide variety of systems managemtn tasks
* Designed for managing a lrge fleet of systems – tens or hundreds
* SSM Agent enables System Manager features and supports all Oss supported by OS as well as back to Windows Server 2003 and Raspbian
* SSM Agent installed by default on recent AWS-provided base AMIs and Linux and Windows
* Managed AWS-based and on-premises bnased systems via the agent
* The AWS Systems Manager console integrates with AWS Resource Groups, and it offers grouping capabilities in addition to other native integrations
* Systemsn Manager Inventory:
  + AWS Systems Manager collects information about your instances and the softwawre installe don them, helping you to understand your configurations and installed paplications
  + You can collect data about applications, files, network configurations, Windows services, registries, server roles, updates, and any other system properties
  + The gathered data enables you to manage application assets, track licenses, monitor file integrity, discover applications not installed by a traditional installer and more
* Configuration Compliance
  + AWS Systems Manager lets you scan your managed instances for patch compliance and configuration inconsistencies
  + You can collect and aggregate data from multiple AWS accounts and Regions, and then drill down into specific resources that aren’t compliant
  + By default, AWS Systems Manager displays data about patching and associations. You can also customize the service and create your own compliance types base on your requirements
* Automation
  + AWS Systems Manager allows you to safely automate common and repetitive IT operations and management tasks across AWS resources.
  + With Systems Manager, you can create JSON documents that specify a specific list of tasks or use community published documents
  + These documents can be executed directly through the AWS Management Console, CLIs, and SDKs, scheduled in a maintenance window, or triggered based on changes to AWS resources through CW Events
  + You can track the execution of each step in the documents as well as require approvals for each step
  + You can also incrementally roll out changes and automatically halt when errors occur
* Run Command:
  + Use Systems Manager Run Command to remotely and securely manage the configuration of your managed instances at scale. Use Run Command to perform on-demand changes like updating applications or running Linux shell scripts and Windows PowerShell commands on a target set ot dozens or hundreds of instancees
* Session Manager:
  + AWS Systems Manager provides you safe, secure remote management of your instances at scale without logging into your servers, replacing the need for bastion hosts, SSH, or remote PowerSHell
  + It provides a simple way of automating common administrative tasks across groups of instances such as registry edits, user management and software patch installations
  + Through integration with AWS Identity and Access Management(IAM) you can apply granular permissions to control the actions users can perform on instances
  + All actions taken with Systems Manager are recorded by CT, allowing you to audit chandges throughout your environment
* Patch Manager:
  + AWS Systems Manager helps you select and deploy OS and software patches automatically across large groups of EC2 or on-premises instances
  + Through patch baselines, you can set rules to auto-approve select categories of patches to be installed, such as operating system or high severity patches, and you can specify a list of patches that override these rules and are automatically approved or rejected
  + You can also schedule maintenance windows for your patches so that they are only applied during preset times
  + Systems Manager helps ensure that your software is up-to-date and meets your compliance policies
* Maintenance Windows:
  + AWS System Manager lets you schedule windows of time to run administrative and maintenance tasks across your instances
  + This ensures that you can select a conventient and safe time to install patches and updates or make other configuration changes, improving the avaiilability and reliability of your services and applications
* Distributor:
  + Distributor is an AWS Systems Manager feature that enables you to securely store and distribute software packages in your organization
  + You can use Distributor with existing Systems Manager features like Run Command and State Manager to control the lifecyle of the packages running on your instances
* State Manager:
  + AWS Systems Manager provides configuraiton management, which helps you maintain consistent configuration of your EC2 on-premises instancesa
  + This allows you to separate your secrets and configutaion data from your code. Parameters can be tagged and organized into hierarchies, helping you to manage parameters more easily
  + For example, you can use the same parameter name, ‘db-string’ , with a different hierarchichal path, ‘dev/db-string’ or ‘prod/db-string’, to store different values.
  + Systems manager is integrated with AWS KMS, allowing you to automatically encrypt the data you store
  + You can also control user and resource access to parameters using AWS Identity and Access Management(IAM). Parameters can be referenced through other AWS services, such as ECS, Lambda and CF