

HP Data Protector Smart Plug-in for HP Operations Manager



Accelerate backup operations with actionable insights

HP Data Protector Smart Plug-in: analytical insight and adaptive intelligence

Today's information, characterized as unique, complex, and growing at speeds that challenge even the best IT professionals, is often being stored on an IT infrastructure that is also unique, complex, and growing. Backup and recovery represents a core process in maintaining this IT setting. However, relying on traditional data backup and recovery approaches alone no longer meets the needs of organizations.

Instead, data backup and recovery software solutions must enable more intelligent decision-making by integrating predictive analysis. When your backup and recovery is based on operational analytics, you can create a more adaptive core IT function, one that is just as elastic as your data center. A backup software solution that can create a shared and collaborative view of backup and recovery operations, in real time, enables an approach that supports informed decisions and the appropriate mobilization of resources.

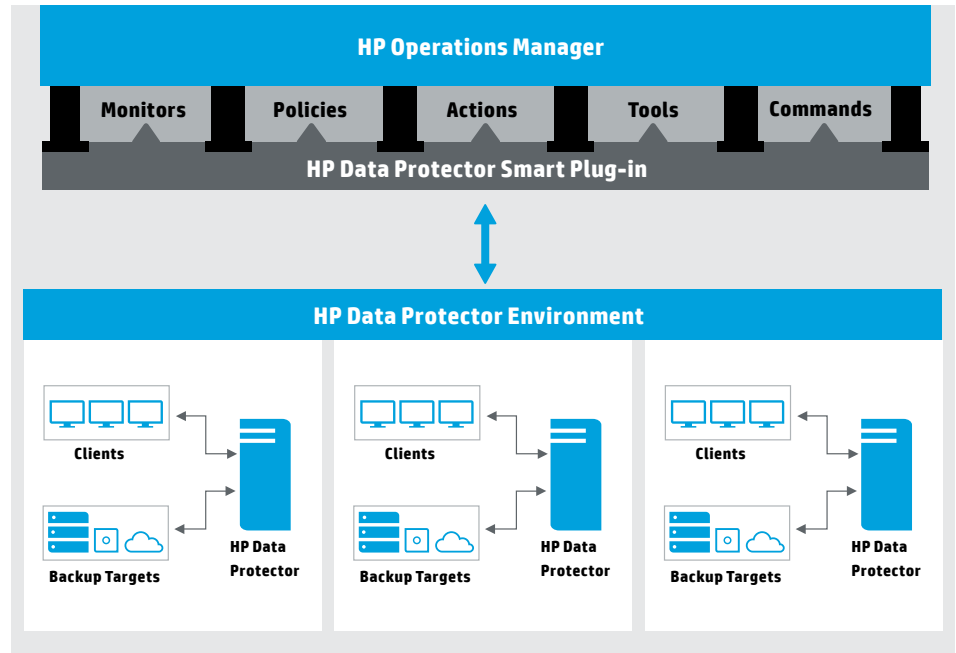
HP Data Protector Smart Plug-in for HP Operations Manager (OM) delivers real-time intelligent monitoring, analysis, isolation, remediation, and reporting for HP Data Protector environments. As seen in figure 1, Data Protector Smart Plug-in continually monitors the health and state of each component in the backup and recovery infrastructure to provide you with actionable insight that can increase the effectiveness of your data protection services.

Many IT organizations use HP OM to monitor and troubleshoot applications and infrastructure but they are also looking for data backup and recovery health visibility and the means to identify where and to what degree issues and changes impact your backup infrastructure, especially in a distributed environment. Although IT may not be directly responsible for monitoring the physical components of the infrastructure, the additional hardware and software information provided by the Data Protector Smart Plug-in solution can dramatically enhance troubleshooting capabilities in the following ways:

- Continually monitor backup infrastructure components
- Isolate and report on problems impacting your ability to meet service-level agreements (SLAs)
- Offer remediation recommendations and orchestrating solutions to identified issues

With HP Data Protector Smart Plug-in, your IT staff benefits from detailed backup and recovery health information delivered to HP OM about the physical, virtual, and logical components of the Data Protector environment. The result is unprecedented visibility into the health of your backup and recovery infrastructure from within HP OM. IT administrators can use Data Protector Smart Plug-in interface for integrated end-to-end monitoring, automated diagnosis, and intuitive reporting across their complete backup and recovery infrastructure (physical and/or virtual).

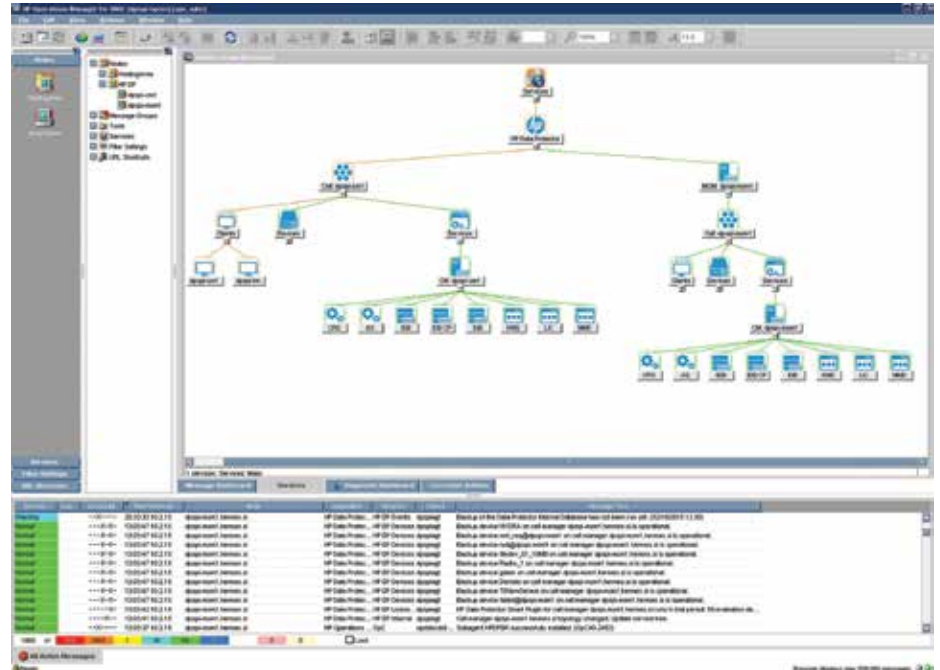
Figure 1. Relationship between HP Data Protector infrastructure and HP OM



HP Data Protector Smart Plug-in delivers:

- **Real-time discovery, visualization, and utilization analysis**—proactively monitor, cross correlate, and auto-detect issues that impact backup and recovery operations in heterogeneous virtualized and physical infrastructures. Gain deep visibility into data backup and recovery infrastructure usage to dramatically accelerate data backup and recovery performance monitoring and reduce the time and complexities involved in mastering multiple management tools or having to negotiate proprietary monitoring tools related to the components of backup and recovery—without leaving HP OM.
- **Instant diagnostics and actionable insight**—separate cause from effect and dramatically accelerate diagnosis in simple or complex backup infrastructures to give IT administrators actionable information by pinpointing the real root cause of data protection problems more quickly and accurately.
- **Context-sensitive issue isolation with assistive remediation**—gain configurable alerting for correlated events, sustained conditions, and escalations, enabling IT staff to remain abreast of critical issues in the backup and recovery infrastructure with assistive troubleshooting to resolve issues before they affect those who rely on the data protection service.
- **Flexible visualization and reporting**—graphically presented insights into the current backup and recovery infrastructure enables the IT administrator to discover ways to improve utilization. IT can identify unused components to better load balance workloads, identify whether or not recovery-point objectives (RPOs) and SLAs remain achievable, visualize the precise information needed to enable proactive decision-making, and take the most appropriate action associated with the report content.
- **Manage and control backup and recovery operations**—with context-sensitive orchestration of the HP Data Protector technology stack (backup target(s) to cells, to cell managers, to backup agents), you gain control over the actions that can be taken on each to achieve a well-defined and fully optimized data protection operation.

Figure 2. Topographical view of HP Data Protector infrastructure within HP OM



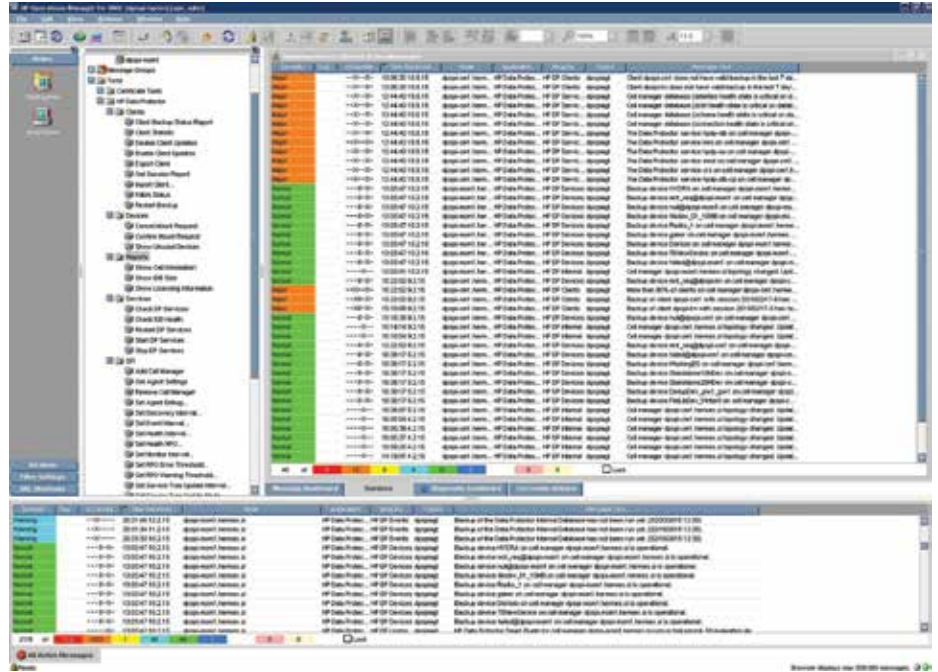
Real-time discovery, visualization, and utilization analysis

HP Data Protector Smart Plug-in actively collects, correlates, and analyzes the state of the components (physical and/or virtual) used in the backup and recovery process, providing topological displays with context-sensitive, state-based cues. This level of visualization allows IT administrators to operate in a “backup and recovery operations center” mode, to make more informed decisions and take decisive actions based on real-time information. The interactive map correlates data backup and recovery information and state from edge-based or remote offices to the core data center. With HP Data Protector Smart Plug-in, IT administrators have a single-pane-of-glass view of the performance and health of the backup and recovery infrastructures to use in making proactive decisions on current and future data protection operations.

In addition to monitoring, HP Data Protector Smart Plug-in provides utilization analytics of the backup and recovery infrastructure. With this level of insight into the technology stack, IT staff gain deep visibility into how efficiently the data protection infrastructure is being utilized. When combined with real-time monitoring, you can dramatically improve the over or under utilization of the infrastructure while reducing operational complexities associated with distributed IT organizations. Correlating this information in a single pane of glass further improves the efficiencies of IT staff, allowing them to perform these tasks without the need to specialize in and negotiate through proprietary monitoring tools.

Statistics allow you to determine where the data backup and recovery infrastructure is oversubscribed and underutilized. Oversubscription results in extended backup windows and an unbalanced workload that affects the backup operation. The impacts to the backup and recovery process can be just as detrimental when infrastructure is underutilized. Striking an efficient balance between workloads and infrastructure capability and availability enables IT administrators to enable SLAs to be achieved and to better plan for new workloads when they are brought online. With HP Data Protector Smart Plug-in real-time monitoring of the backup and recovery environment, you can easily identify the bottlenecks associated with oversubscription and underutilization.

Figure 3. List of HP Data Protector health and status messages in severity order



Instant diagnostics and actionable insight

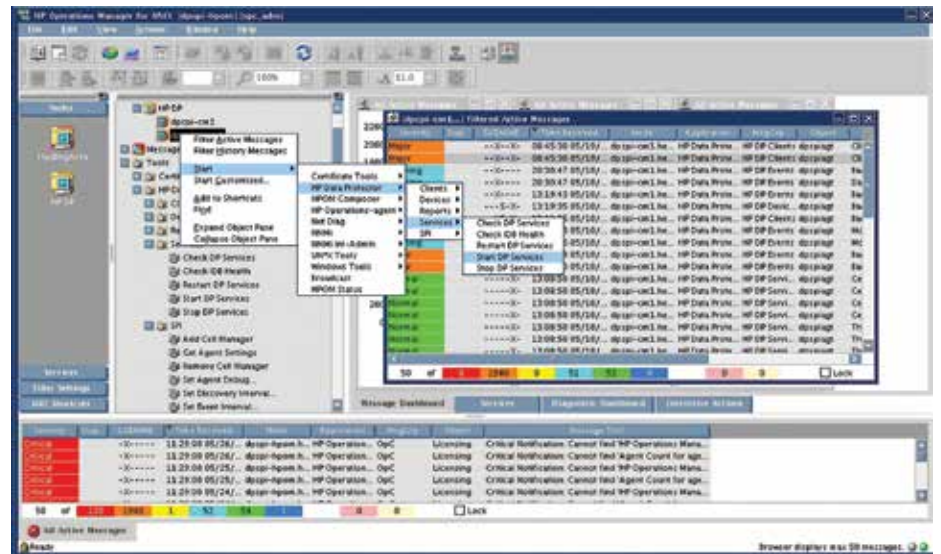
Monitoring the health and performance of the backup and recovery infrastructure is the first step in identifying what has happened. The next logical step is to identify how one issue may relate to the next. The diagnostic and actionable insight provided by HP Data Protector Smart Plug-in allows for the separation of cause and effect while uncovering often-unrelated dependencies that have an effect on the infrastructure.

Using graphical cues and visualization interfaces, HP Data Protector Smart Plug-in delivers actionable insight by providing the tasks that can be used to address the issues uncovered in the diagnostic analysis. In real time, IT staff can quickly isolate issues and execute solutions that make use of HP Data Protector best practices. This degree of self-service greatly improves the IT organization's ability to resolve issues before the end user experiences an issue related to the backup and recovery of their critical and operational data.

Context-sensitive issue isolation with assistive remediation

HP Data Protector Smart Plug-in is designed to isolate problems within the backup and recovery infrastructure to include the identification of relationships and dependencies. Architected in this manner, IT administrators can rely on HP Data Protector Smart Plug-in when performing root-cause analysis during problem discovery efforts. It also provides context-sensitive assistive remediation in the form of linked tasks that can be executed from within HP OM to resolve issues. Assistive remediation is available for each component of the data protection infrastructure, local or remote.

Figure 4. Assistive remediation enables administrators to respond actively to service states for HP Data Protector components



Flexible views with qualitative statistics

Because the backup and recovery infrastructure encompasses clients, backup servers, and devices, HP Data Protector Smart Plug-in is capable of monitoring, analyzing, and reporting at every level of the data protection topology. This interactive monitoring tool allows IT administrators to drill as deeply into the dependencies and relationship as required to isolate and resolve issues. HP Data Protector Smart Plug-in is delivered with ready-made views that can monitor backup device requests and operational states, client-level backup states, Data Protector server status (including internal components), and can also display the current infrastructure's ability to meet RPOs based on ongoing backup and recovery operations.

Dynamic reporting of the backup and recovery infrastructure delivers levels of visualization to support decision-making. When this capability is bound to intelligent trending, based on an operational analytics engine, IT administrators are able to understand the true capabilities of the infrastructure. Business leaders identify with and develop expectations based on assurances that their information is being protected and can be recovered when it is needed. Addressing the need for this level of detail is often manual, requiring the correlation of data from different management interfaces. With the HP Data Protector Smart Plug-in, IT administrators can interrogate the backup and recovery infrastructure to determine and quantify the true RPOs that the data backup and recovery infrastructure can deliver. This information is provided through the results of the analytics and qualitative statistics engine embedded within the Smart Plug-in.

Figure 5. Analyze RPOs based on the HP Data Protector infrastructure

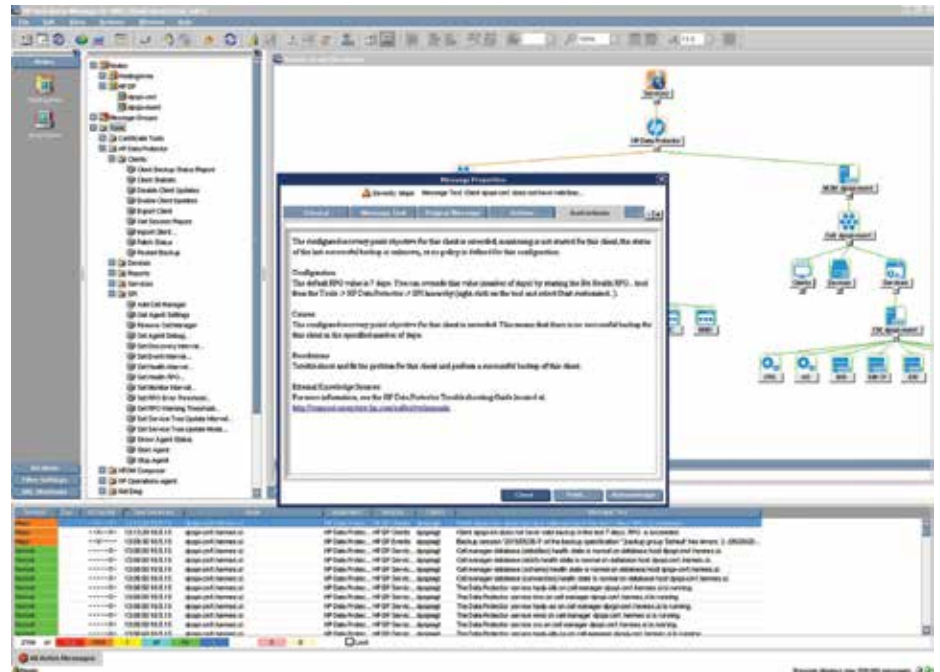
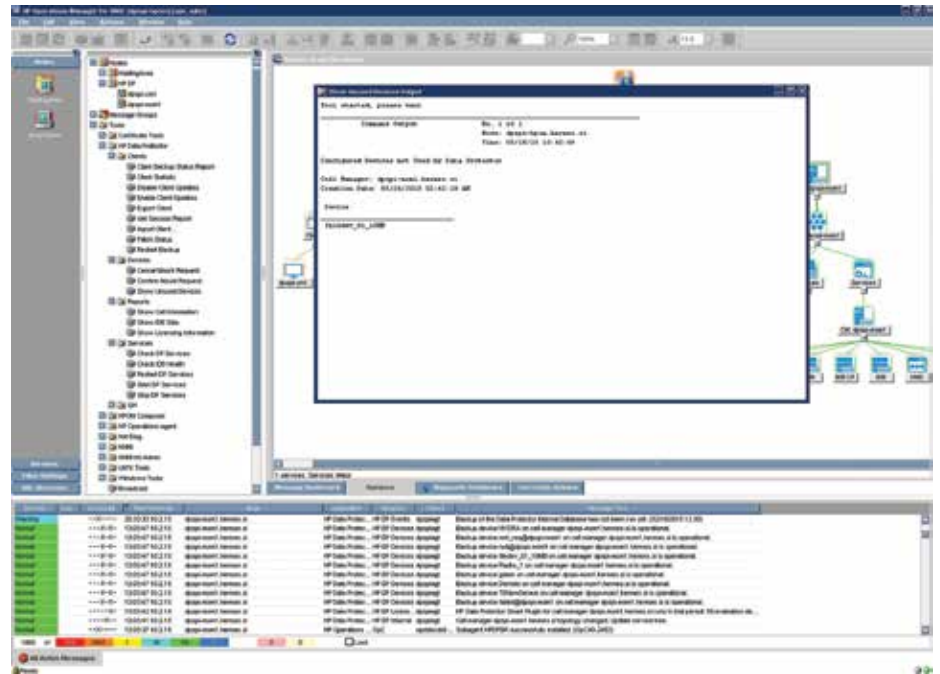


Table 1. HP Data Protector Smart Plug-in features

Monitoring and reporting source	What's monitored
Backup server monitoring and reporting	<ul style="list-style-type: none"> HP Data Protector services and service states HP Data Protector license compliance monitoring HP Data Protector internal database consistency
Client monitoring and reporting	<ul style="list-style-type: none"> Active and previous backup session state Discover clients that operate unprotected
Backup device monitoring and reporting	<ul style="list-style-type: none"> Current mount state/status of backup media Active state of current backup operations
SLA compliance	<ul style="list-style-type: none"> Ability to meet RPOs Time-lapse report between backups
HP Data Protector infrastructure	<ul style="list-style-type: none"> HP Data Protector cell agent state HP Data Protector installation version HP Data Protector patch levels

Figure 6. Discover backup devices not in use for data protection operations



Manage and control backup and recovery operations

As IT infrastructure and workloads continue to be more agile and elastic, the need for the backup and recovery process to be equally agile is paramount to a successful data protection strategy. The benefits of centralizing the monitoring, analysis, and reporting of the data protection technology stack to include assistive issue remediation into HP OM can be extended when you add in the ability to also control backup and recovery management operations.

HP Data Protector Smart Plug-in helps IT administrators analyze the edge of the backup and recovery network to identify clients not being protected so they can add the client to the infrastructure by binding it to a backup target via a defined backup specification. In addition, IT administrators can assess the client's current HP Data Protector component installations to validate and compare version levels and ensure the clients are at consistent patch levels. Finally, as issues arise, which may affect the backup operation, with HP Data Protector Smart Plug-in, IT administrators can monitor current backup operations, and if interrupted, can manage the backup restart process from within the HP OM interface.

Extending the need to build a dynamically responsive backup and recovery architecture, HP Data Protector Smart Plug-in provides administrative tools to enable the installation of the Smart Plug-in agent as well as its removal when assets are retired. Reports can be executed to validate that the components of the backup and recovery infrastructure being monitored have the latest agent installed and can be started and stopped, as necessary. Finally, IT administrators have granular control over the agent polling and reporting intervals, as well as the level of alerting and debugging the agents generate and report on.

In addition to the real-time monitoring and analytics capabilities of the HP Data Protector Smart Plug-in, IT administrators can also take advantage of the integration's reporting features to determine the RPOs the infrastructure is currently achieving, and audit their Data Protector infrastructure to ensure they are properly licensed for their backup set sizes. Additionally, the IT administrator can use the HP Data Protector Smart Plug-in to perform backup-related actions, such as mounting backup sets, discovering unmanaged Data Protector servers, deploying HP Data Protector Smart Plug-in monitoring agents to them, and checking the health of the Data Protector environment on each deployed server.

Adaptive backup and recovery with HP data protection solutions

The HP suite of integrated backup software products deliver a comprehensive range of operational analytics capabilities that address the gaps associated with traditional or commoditized backup and recovery models to enable an adaptive approach including:

- Application and infrastructure backup analysis to effectively prioritize backup operations
- Infrastructure performance monitoring to identify potential conflicts associated with connections between the source and target, media, and session throughput rates
- “What-if” scenarios to characterize backup data sets used as a common federated deduplication model to potentially curb backup capacity requirements before the space is depleted
- Capacity trending to expose current infrastructure utilization rates in conjunction with forward-looking predictions that reveal gaps in the infrastructure where backup and recovery needs will not be met
- Root-cause analysis with resolution recommendations
- Recommendations to optimize backup environments, and self-tune and self-correct backup policies to improve business continuity within your IT environment

The integrated suite includes HP Data Protector software, HP Data Protector Smart Plug-in, and HP Backup Navigator. These products join forces to deliver strong visualization and analytical capabilities that allow you to take action in real time, based on insights derived from your HP Data Protector environment.

- **HP Data Protector software** is the core component of the backup and recovery software solution family, and helps you meet current and future backup and recovery challenges and business requirements with a robust architecture designed to scale from small and medium businesses, to the world’s largest and most complex enterprise IT environments.
- **HP Data Protector Smart Plug-in** is designed to extend the functionality of industry-leading IT operations management tools to support monitoring, reporting, and troubleshooting in HP Data Protector environments. HP Data Protector Smart Plug-in supports HP OM, and is a cross-platform data center management system that helps you monitor services, devices, and operations for multiple systems from a single console.
- **HP Data Protector Management Pack** is designed to extend the functionality of industry-leading IT operations management tools to support monitoring, reporting, and troubleshooting in HP Data Protector environments. HP Data Protector Management Pack supports Microsoft® System Center Operations Manager (SCOM), a component of Microsoft System Center, and is a cross-platform data center management system that helps you monitor services, devices, and operations for multiple systems from a single console.
- **HP Backup Navigator** is an interactive Web-based reporting tool that correlates related, but often disparate, pools of information. Backup Navigator presents the content graphically in the form of dashboards, graphs, and charts, with detailed information around the backup performance and capacity utilization. The backup software solution also offers what-if reports that can be used to make real-time and future need decisions.

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