SUSE Linux Enterprise 16の導入

SUSE Linux Enterprise 15と16の主な違い

概要

この記事では、SLE 15と16の主な違いについて説明します。

目的

この記事は、SLE 16へのアップグレードを評価するのに役立ちます。

所要時間

この記事の理解には10分ほどを要します。

目標

SLE 16を最適に導入する方法を理解します。

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1 最小CPUアーキテクチャのサポート

	AMD64/Intel 64 (x86-64)	IBM POWER (ppc64le)	IBM Z (s390x)	ARM (AArch64)
SLES 15	x86-64-v1	POWER8	z12	ARMv8.0-A
SLES 16	x86-64-v2[1、 2]	POWER10[3]	z14	ARMv8.0-A

[1] 全体的なパフォーマンスを向上させるため、SLES 16ではx86-64-v3向けに最適化された共有ライブラリもいくつか提供されています。これらのライブラリは、v3をサポートするシステムに自動的にインストールされ、使用されます。パッケージ名に`x86_42_v3`という文字列が含まれている場合、そのパッケージが最適化されていることがわかります。

[2] SLES 16では32ビットアプリケーションのサポートが削除されました。SUSE Package Hubから`grub2-compat-ia32`パッケージをインストールすることで、Linuxカーネルは32ビットシステムコールを有効にすることができます。

[3] SLES 16はPower9でも実行可能ですが、SUSEがサポートしているのはPower10以上のみです。

2 バージョン管理とリリースサイクル

- SLE 15では、年次アップデートにサービスパック(SP)を使用します。これには、SP1、SP2、SP3、SP4、SP5、SP6、およびSLE 15用にリリースされた最後のSPであるSP7が含まれます。
- SLE 16では、SPの代わりに16.0、16.1などのマイナーリリースを使用する、バージョンの新しい命名スキーマが導入されています。リリースは毎年11月に予定されています。最初のリリースである16.0は、2025年 11月に予定されています。

3 ライフサイクル

- SUSE Linux Enterprise Server 15は、サービスパックごとに1.5年間(例外あり)の一般サポートを提供し、LTSS (長期サービスパックサポート)やESPOS (Extended Service Pack Overlap Support)などのさまざまな延長サポートオプションを提供します。SLE 15の合計サポートは、最長13年間(10年間の一般サポート+3年間のLTSS)にわたります。SLES

15 SP7の一般サポートは2031年7月31日まで、LTSSは2034年7月31日まで、LTSS Coreは2037年12月31日までです。SUSE Linux Enterprise Server for SAP applications 15 SPの合計サポート期間は4.5年です。

- SLES 16は、2038年以降の将来に備えています。一般サポートは2035年11月に終了し、LTSSとExtreme LTSSは2040年以降に終了する予定です。SUSE Linux Enterprise Server for SAP applications 16には、1.5年間の一般サポートと3年間の延長サポートがあります。

4 システム管理

- SLE 15以前では、インストール、設定、およびシステム管理にYaSTが使用されていました。無人インストールとスクリプトインストールは、AutoYaSTによって実行されました。
- SLE 16では、システム管理に大きな変更が加えられています。
  - インストール(無人を含む)はAgamaに移行します。Agamaは、Webベースのフロントエンド、コマンドラインインタフェース、および統合用のAPIを備えた新しいインストーラです。ソフトウェア設定管理(SCM)ツールを優先したインストールに焦点を当てています。Agamaは、繰り返しの設定インポートをサポートしています。
  - 設定管理では、SUSE Multi-Linux Managerを介してSaltとAnsibleを使用します。これにより、すぐに実行できる自動化でお客様をサポートします。
  - リモート管理は、1対1の管理のためのWebベースのフロントエンドであるCockpitによって処理されます。

SLE 16のこれらの変更は、SaltおよびAnsibleとの統合を改善し、Webブラウザを介したリモートインストールを可能にし、プロセスを制御するためのさまざまなインタフェース(Web、CLI、HTTP API)を提供することを目的としています。

5 セキュリティフレームワーク

- SLE 15はデフォルトでAppArmorを使用します。SELinuxはポリシーなしで出荷されます。
- SLE 16には、デフォルトで400を超えるモジュールのポリシーがSELinuxに搭載されており、システムのほぼ全体を制限します。必要に応じて、システムの一部を制限せずに実行できます。SUSE Linux Enterprise Server for SAP applications 16では、SELinuxによるワークロードの分離が改善され、データとデータフロー、およびコンテナの分離が提供されます。

6 ネットワーキングスタック

- SLE 15では、wickedと NetworkManagerを使用していました。
- SLE 16では、NetworkManagerを使用した単一スタックに焦点を当てています。

7 展開

- SLE 15では、仮想マシンまたはパブリッククラウド用のすぐに実行できるイメージと、YaSTによる手動展開またはAutoYaSTによる自動化用のインストールメディアが提供されていました。**`linuxrc`**駆動型設定を備えた特別なインストール環境が使用されていました。AutoYaSTプロファイルのインポートは、1回限りのタスクでした。
- SLE 16では、仮想マシンまたはパブリッククラウドにすぐに実行できるイメージが使用され、Agamaによる手動/自動展開が使用されます。Agamaインストーラには、Webインタフェース、コマンドライン、またはHTTP APIを介してアクセスできます。Agamaは、繰り返しの設定インポートが可能です。**`dracut`**、`systemd`、NetworkManagerを備えた標準的なライブメディアを使用し、選択された**`linuxrc`**オプションによる後方互換性レイヤを提供します。

8 initシステム

- SLE 15では、ネイティブユニットとサードパーティのSysV initスクリプトとの互換性を備えたsystemdを使用していました。
- SLE 16では、SysV initからの移行を完了し、systemdネイティブユニットのみを使用します。

9 デフォルトのOS設定

- SLE 15では、デフォルトのOS設定は主に /etcに配置されました。
- SLE 16では、デフォルトは /usrに配置され、/etcはカスタマイズ用です。ベンダが提供するデフォルトと管理者によるカスタマイズを分離することで、更新が容易になり、オプションで読み取り専用の/usrファイルシステムも作成できます。

10 /tmpは tmpfsを使用する

- SLE 15では、/tmp は通常のフォルダまたはパーティションでした。Btrfsをルートファイルシステムとするデフォルト設定では、Btrfsサブボリュームでした。
- SLE 16では、/tmpはtmpfsファイルシステムを使用します。これは、物理RAMやスワップ領域にデータを保存するため、読み取りや書き込みの処理が非常に高速になります。

重要: /tmpは永続的ではなくなりました

tmpfsでは、/tmpのコンテンツは再起動間で永続しません。/tmpに永続的なデータを書き込むアプリケーションがある場合は、/var/cacheのような別の場所を使用するように適応させます。

重要: /tmpのサイズを過度に大きくしないでください

tmpfsファイルシステムインスタンスを、システムの物理RAMとスワップ領域の合計を超えるサイズで設定すると、利用可能なメモリが不足してシステムが応答しなくなるデッドロックが発生する可能性があります。

11 デスクトップ環境

- SLE 15では、GNOMEをデフォルトのデスクトップ環境として使用していました。SUSE Linux Enterprise DesktopおよびSUSE Linux Enterprise Workstation Extensionは、デスクトップ生産性ツールを共有していました。
- SLE 16では、最小限のGNOMEデスクトップを使用します。これにより、セキュリティ対象領域を最小限に抑えることができます。SUSE Linux Enterprise Desktopは、16.0では予定されていません。

12 新しくなった高可用性スタック

	SLE HA 15	SLE HA 16
Pacemaker	バージョン2	バージョン3
Corosync	バージョン2	バージョン3
分散ファイルシステム	OCFS2、GFS2 (読み取り専用)	GFS2 (完全サポート)
フェンスエージェント	すべてのエージェントを1つのパッケージに収める	エージェントを個別にパッケージ化する

13 削除されたテクノロジ

SLE 16では、OSのフットプリントとセキュリティ攻撃ベクトルを削減するために、特定のテクノロジが削除されています。

- システム:32ビットアプリケーションのサポートが削除されました。SUSE Package Hubから`grub2-compat-ia32`パッケージをインストールすることで、Linuxカーネルは32ビットシステムコールを有効にすることができます。
- システム:SysV initスクリプトは削除されました。代わりに、ネイティブの`systemd`ユニットを使用します。
- ネットワーク:**`wicked`**は削除され、NetworkManagerが採用されました。

- ネットワーク:NISは使用されなくなりました。代わりにLDAPを選択します。
- ネットワーク:ISC DHCPサーバは削除され、より新しいKea DHCPが採用されました。
- Windows Subsystem for Linux:WSL1のサポートは削除され、WSL2が採用され、完全なシステムコール互換性を持つフルLinuxカーネルが提供されるようになりました。

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If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

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